

The background of the cover is a photograph of a calm lake or river. In the foreground, there are several large, bushy rhododendrons with dark green leaves and numerous light pink flowers. The water reflects the sky and the surrounding trees. The overall scene is peaceful and scenic.

The
Rhododendron
Official Journal of the Australian Rhododendron Society

2001

Volume 41



ARTHUR W. HEADLAM

Above *R. konori* L.S.37 – see *The Vireya Story*, page 50.

Below *R. sinofalconeri* – see *Rhododendrons Down Under*, page 18.



RAY COX

Front Cover On the Jiaozi-Shan Plateau – see page 63. Photograph by Sue Wells.

The Rhododendron

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The Australian Rhododendron Society Inc.

Aims

The Society's objective is to encourage interest in and disseminate information and knowledge about the genus *Rhododendron* and to provide a medium with which all persons interested in the genus may communicate and co-operate with others of similar interest.

Membership

Membership of the Society is open to all persons interested in the objectives of the Society upon payment of the annual membership subscription. For further information contact the Branches' or National Council's Secretaries.

Subscriptions

Australian members pay an annual subscription to the Society's National Council of A\$15 per annum. The annual journal *The Rhododendron* is included as a benefit of membership. Individual branches collect membership subscriptions from their own members, which may include amounts additional to the National Council subscription.

Subscription for overseas members is A\$25 per annum, which includes affiliation with a nominated Australian branch, and airmail delivery of *The Rhododendron*. Overseas subscriptions may be paid by bank draft, and in certain branches by Visa or Mastercard.

Contact Details

Details of local branches, along with Office Bearers of the Australian Rhododendron Society, may be found on page 80.

The President's Report

DR ALLAN KERR GRANT

It is both a pleasure and a responsibility at this time of the year to provide a Report for the Journal and to the members as the end of my first year as President draws near. I hope members received an earlier letter this year in which I attempted to communicate – an essential in a widely spread National society such as ours.

Please bear with me if I firstly indulge in some nostalgia.

An awareness and love for rhododendrons started many long years ago in 1951–1952 when I was in England undergoing advanced postgraduate training in medicine. My wife and I were based mainly in London. Together with our first born of one year, we lived on a shoestring but those two years were amongst the happiest we have experienced. Even now we have memories of warm sunny days spent on the lawns and amongst the plants, especially the rhododendrons, of Kew Gardens. My affection for these beautiful and fairly sensitive plants has continued and expanded since those times. It has produced a challenge to grow them, know them and enjoy them. This is despite the problems of living in the driest State of the driest Continent in the world.

As a result of the latter, there is a notable tendency for new members of the South Australian Branch, and I guess of other Branches also, to become despondent when their rhododendrons become sick and die as the result of blistering heat which is compounded later by oxygen deficiency produced by over zealous watering which drowns the plant.

Even if these assaults of nature are survived, the hostile attacks of lace bugs, petal blight, rust and many other diseases need to be recognised, prevented and treated. Life is not easy for the rhododendron grower and lover, whether their patient is in a temperate or tropical area. From my experience with both humans and rhododendrons of over 50 years, the difference is that rhododendrons cannot tell you when they are feeling sick. Death comes surely and rapidly.

It is therefore of greatest importance that newcomers to our Branches shall be told of the above problems, advised about prevention and cure and, most important of all, counselled and supported when they exhibit evidence of stress and a potential state of severe depression. These problems result in the loss of our members unless they are dealt with. Plants are, in many ways, similar to human beings and this is what makes them so bewitching. The 'older' members of our Society have an important role to play in ensuring there is information on prevention and care at the regular meetings. I am

convinced that short cultural sessions on these matters should be part of these. Indeed, as I have found in my life as a physician, it is equally important to speak to students of one's failures as well as the triumphs.

My earlier letter made reference to the outstanding success of the Rhododendrons Down Under meeting which was organised by the Victorian Branch, and especially by Barry Stagoll. Indeed, the benefits of this Conference are still occurring, with an increased communication to the National body and our Branches from rhodoholics in many parts of the world. Friendships were created and have continued. So much so that we now have overseas visitors booked to attend the meeting in October.

The number of members in the Society appears to be fairly stable. However, there are ways and means whereby new members can be seduced into the Society. There is a need to promote the high profile of both temperate climate rhododendrons and, especially vireyas. A perception exists that rhododendron societies have a tendency to elitism for several reasons. Societies which deal with plants need, by their actions, to dispel this belief at their regular meetings and produce an atmosphere of enjoyment in these gatherings. There is a need to instil such an attitude to compensate for the stress that besets us; and to overcome the problems of distance by increased personal communication. There is a significant possibility that the NSW Branch will be a part of the National Society and this is great news.

Finally, I must express my deep gratitude to all members of the Council for their support and hard work, especially the Secretary and the Treasurer. Council has learned with great sadness there is a potential that Graeme Eaton will resign as the Society's Registrar. Graeme has been a dedicated and superb person in this sometimes stressful role. His presence on Council will be hard to replace. The duties of a Registrar, whilst not easy, are very important.

Dr Allan Kerr Grant

Annual Weekend of Events 2002

An Invitation

The 2002 National Council Meeting of the ARS and annual weekend of events will be hosted by the Southern Tasmanian Branch on the 25th, 26th and 27th of October 2002.

A cordial invitation is offered to all members of the society to join us for an entertaining range of activities that is designed to appeal to rhodo enthusiasts and their partners.

There will be visits to excellent gardens in the foothills of Mount Wellington and the suburbs of Hobart, and for those not so inclined, the opportunity to stroll though the world famous Salamanca Market on the Saturday. Many of our newer gardens are now reaching a level of maturity which makes them well worth seeing, while at the same time newer plants including imports from New Zealand and America are being planted to maintain interest all round.

The weekend also coincides with our annual Rhododendron Show, which is held in the Hobart Town Hall. This is a beautiful building from our convict past, and worth a look, even when not full of beautiful rhodo blooms.

Another proposal is to hold an art exhibition in conjunction with the show. I'm sure that many of our members have looked at paintings of everything from leatherwoods to daffodils, but rarely are there any rhodo paintings. The plan is to have 40 to 50 works of art depicting rhodos at the front of the Town Hall and on the stage. The paintings will be for sale, so come prepared.

We also hope to auction a painting that will be donated by a contributing artist. This is an ambitious project which should help make this event a really memorable one.

More details of the Saturday night dinner, guest speaker and accommodation available will be included in the registration brochure, which will be sent out early next year. There's plenty for us to look forward to so start planning your Tassie holiday now!

Ted Cutlan – for the members of the ARS, Southern Tasmanian Branch Inc.

The Spring 2002 ARS Annual Weekend Event

The Society's next national Annual Weekend Event will be hosted by the
Southern Tasmania Branch,
and will be held in the Hobart area over the weekend of
26th and 27th October 2002.

We suggest you note these dates in your diary now,
so you can get prepared to join our Southern Tasmanian members next
Spring, for a weekend complete with great garden visiting and great
hospitality, in the company of fellow rhododendron enthusiasts.

See Ted Cutlan's article in this issue.

As usual, Branch Newsletters (and the ARS website at www.austarmetro.com.au/~mirra) will carry more details of the event and the booking arrangements nearer the time.

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The future for Vireyas

SYLVIA SAPERSTEIN

Let's face it: vireya species are not easy to grow in a garden even for the seasoned enthusiast. There are the so-called easy species which we can grow – these are mainly from fairly low altitudes and have a wide distribution in the wild. But there are also all the others which have adapted to extremely specialised habitats, ranging from sea level to 4,000 metres. For many of these it is impossible to manipulate our garden environment to ensure their survival.

According to collectors like David Binney from NZ, it really is zero hour for the species. In Sulawesi where he has collected several times the destruction of habitat is rampant; this as new species are still being found. So it looks as though only well-endowed public gardens and enthusiasts of independent means will be able to ensure their survival. I think there is enough proof of the fact that there needs to be a critical mass of growers in any given country, whatever plant it might be, to ensure the survival of a species. Take, for instance, the fate of the Foxtail Palm in north Queensland. It has been plundered in the wild for seed and its habitat is shrinking fast, but one can now buy the seed even in the USA, so there is little chance of it being lost forever.

Unfortunately this can't happen with vireyas. One has only to look at little *R. saxafragoïdes* from the alpine areas of PNG, with its intense UV light and frosty nights, a species that has been shaped in every detail by its environment. It looks so terribly vulnerable and far from home in the collections I have seen, yet so enchanting with its bright single blooms held horizontally on rigidly upright little stalks and a trunkless bush. Hybridisers have tinkered with it and now there are quite a few very robust but rather lacklustre hybrids around. Those in the know can only just discern its presence and soon they will be forgotten in favour of something else with more pizzazz.

Might I hazard a guess that, unless hybridisers sit up and take notice, little charmers like *saxafragoïdes* will drown in the genetic soup that we are making with our random hybridising. I make it quite clear that I have no quarrel with the random approach – it has produced some stunning hybrids that deserve the attention they receive. But what about all the fascinating adaptations that vireyas have made over the centuries, the zygomorphic flowers, the taxus-like foliage? Are they to lose out to hybrids that are as big, beautiful and as bland as 'Miss Universe'?

When I was recently in NZ, everywhere I went I saw a hybrid made by Os Blumhardt of Whangarei from (*laetum* × *zoelleri*) × *saxafragoïdes*. The plants were extremely compact and totally covered in flowers, in trusses of two to three glowing flowers held horizontally on their vertical stalks. Quite

brehtaking in its unique style. Everything about this fascinating hybrid spoke of its pollen parent, but the vigour and the size of the other two species that combined to make the seed parent infused vigour and increased size. When I asked Os about his intentions in making this hybrid he answered candidly that when he received the saxafragoides pollen he simply headed for the ripest stigma around. I asked him if he would have liked a different outcome and he replied that he would have preferred a lower, smaller plant. In other words he was saying that he would have liked his hybrid to be more like the target species, or to be more precise: he was implying that saxafragoides could have been treated with more respect.

You might think that I am suggesting that we should be making pseudo species by invigorating a species without changing its personality in any radical way, and maybe I am. I have tried to control the results of my own hybridising by keeping the species involved as parents of a hybrid to two. I have found that if the two are too divergent in their characteristics the results can be pleasing, but they do nothing for the preservation of diversity. They simply add to the thousands already out there. For instance I crossed *loranthiflorum* with *lochiae* and produced a very floriferous, dense plant with hot pink tubes and a good perfume, but it tells you neither of *lochiae* nor *loranthiflorum*. *R. loranthiflorum* has drawbacks as a garden plant in that it takes too long to flower and then does only one flush a year. So in hindsight it could have been combined with another scented tubular white, of which there are a number.

It might sound as though I am advocating some kind of stuffy elitist rules for hybridising, but when you look at a photo gallery of species and compare it with the same number of hybrids, you might be inclined to agree that the adrenalin rush you get from the species is far greater. This must be because genuine, radical diversity is always more exciting. One has only to see Os Blumhardt's 'Saxon Glow' to be convinced. So the desire for variety and the desire to preserve as purely as possible what's out there in the bush are not necessarily conflicting aims. Wouldn't we all love to grow lowii in our back yard? – but few will succeed, so why not at least grow a domesticated version of it? ❀

Sylvia was introduced to vireyas in the early 1980s by Lou Searle, after he retired to live not far from the farm on the New South Wales North Coast where she lives. Sylvia was operating a fern propagation nursery and decided to take up vireyas, buying her start-up stock from Graham Snell.

With experience, she came to the idea of breeding vireyas specifically for a subtropical climate and started a breeding program in 1991, with gardener-friendliness as its aim. The scope of the project is modest but it's been quite successful. Aside from the sales of her plants in Queensland and NSW, large numbers of her hybrids are now growing in a garden in northern Thailand, which has a comparable climate to northern NSW. In 1997 John Kenyon at Te Puna in NZ also imported some of her hybrids, and these appear to be holding their own quite well amongst their NZ cousins.

Two Historic Gardens of the Adelaide Hills

BILL VOIGT

The area most suited to the growing of rhododendrons in South Australia is on the higher slopes of the Mount Lofty Ranges, east of the city of Adelaide. Here there is acid soil and an annual rainfall of 45 inches, although there is still often a long summer drought.

Two of the first gardens in the Adelaide Hills to be extensively planted with rhododendrons were Beechwood and St Vigeans.

St Vigeans was built for Edward Stirling, who was later knighted. It is situated on the cool east-facing slope of the ridge above the present township of Stirling, well known for its lush gardens and autumnal displays of foliage and berries. Most of the original rhododendrons for the garden were imported from Waterer's nursery in England. The most favourable site for the plants was on the lower section,

where water was available from a spring. This section is now a separate property known as Lower St Vigeans, where a restaurant has now been established. Patrons can relax in a beautiful setting, surrounded by possibly some of the largest and oldest rhododendrons in South Australia. There are meandering paths beneath giant specimens of 'Joseph Whitworth', (the original intense maroon, late form, not the lighter, earlier-flowering plant sold in most nurseries as 'Joseph Whitworth' today), 'Mr J.G. Millais', 'Michael Waterer', 'Mrs William Agnew', and of course 'Mrs E.C. Stirling' (seen on our front cover last year), named after Mrs Stirling by Waterers. This rhododendron is still very popular in the Stirling district because of its historical significance, and perhaps every Stirling garden should have it as a feature shrub.

The present garden of St Vigeans is reduced to two acres, and in it is to be found probably the largest and oldest *Gordonia axillaris* in the state. There are



St Vigeans, Stirling.

BILL VOIGT

also towering conifers and cabbage trees (*Cordyline australis*) but sad to say, only a couple of the original rhododendrons, and it is the intention of the present owner to replant almost the entire garden with rhododendrons, using especially 'Mrs E.C. Stirling' (as seen on the cover of our last issue) and the Whibley Hybrids.

David Whibley was a gardener for the Stirlings, and it was while he was thus employed that he developed a love for the rhododendrons, and worked long and hard at hybridizing. He produced many late flowering, hardy varieties, which were suited to the harsher conditions of late Spring and Summer in South Australia. A good number of his hybrids were named after members of the Stirling family, e.g. 'Sir Edward Stirling', 'Mary Stirling' and 'Lady Stirling'.

The beautiful stone terraces in the garden at StVigeans lend themselves to development into wonderful rhododendron walks. Something to look forward to is the future St Vigeans, which will be a rhododendron garden featuring many Stirling-raised hybrids.

As in most gardens more than a century old, some trees have passed their "use-by" date and need to be replaced, but in every garden there are always removals and replacements needed, as ongoing maintenance.

Beechwood is now jointly managed by the Mount Lofty Botanical Gardens, and the Fletcher family, who own and occupy the beautiful Mount Lofty stone house, situated in the garden. This garden also contains some very large, old rhododendrons, which differ from those at St Vigeans. Most of the original plants come from the Gill nursery in England, and are generally varieties with a more-open and loose truss of flowers. They are hybrids with a parentage from the Fortunei-Decorum species. The collection then contains various varieties from the Loderi and Naomi groups, e.g. Loderi 'Sir Edmund', 'Naomi Hope' etc. Later additions also include hybrids from the Ponticum and Arboreum groups, with typical lighter, more upright trusses. Typical of these are 'Sappho', 'Pink Pearl', 'White Pearl', 'Nobleanum' and 'Donald Waterer'. Many new plantings have been made, so there are now well in excess of one hundred varieties.

The deciduous azaleas were at first housed under brush shelters, but as the plants grew, the shelters deteriorated, and more overhead shade became available from established trees; these structures were removed.

Quite a number of the azaleas are Occidentale hybrids, and so are delightfully perfumed. A few older, evergreen azaleas remain, but at one period of its existence, when sheep were introduced, and the extensive rockery filled in and covered with turf, many smaller plants were lost. The rockery has been restored, and the old well, the source of water for the original garden when in its infancy, is still very much in evidence (although made secure so as to present no danger to visitors). Because the water supply was limited the first plants were

watered only when looking stressed, and doubtless only the hardiest survived.

The little creeks winding through the garden have been lined with stone, and now the local *Blechnum* and *Dicksonia Antarctica* have established themselves in the cracks, creating miniature fern gullies.

Special features of this garden, apart from the rhododendrons, are the groves of giant bamboos, hydrangea hedges, a fine specimen of a golden oak, *Cornus florida*, and a *Dacrydium*, the New Zealand 'Rimu' tree.

Taking pride of place on the eastern side of the house, stands a majestic conservatory, once located at Urrbrae in Adelaide, where it housed a swimming pool. It is now a popular spot for weddings and special events.

A wonderful area planted with heritage roses welcomes the visitor entering from the carpark in St Wilfrid's Drive.

American visitors were awed by the cabbage trees, and the huge rhododendrons.

Beechwood is a place to visit in Autumn for the colourful foliage, Spring for the rhododendrons and roses, and early Summer to see the lovely hydrangeas.

The future seems bright too, for St Vigeans, and when established, maybe this garden will be featured in the Open Garden Scheme. ❀

Bill Voigt is a retired school master with an extensive knowledge of plants and gardening. He has a remarkable memory for all plants and, especially, he can name rhododendrons readily from their flowers and general appearance. He is a former President of the Society's South Australian Branch.

Beechwood, Stirling



BILL VOIGT



The October 2000 International Rhododendrons Down Under Conference

BARRY STAGOLL

Attendees at our October 2000 international conference “Rhododendrons Down Under”, held at Linley Estate Conference Centre in Kilsyth, Victoria (with visits to various gardens and locations in the Dandenong Ranges), have been generous in expressing their enjoyment of this event. The information (and entertainment) provided by our speakers during the indoor proceedings rated highly, and the reactions of attendees to the other components of the programme, including most importantly the tours of the National Rhododendron Gardens and the other garden visits, were most complimentary.

The total number registered for at least one conference component was 140 persons. Included were seven from NZ, eight from UK and 13 from USA, along with 13 from NSW, eight from Tasmania, six from South Australia and two from Queensland. For many of our international visitors it was their first time in Australia. It was also particularly pleasing to have with us a total of 23 professional Gardens staff from around Australia (13 from Parks Victoria, three from the Royal Botanic Gardens Melbourne, four from Mount Lofty Botanic Garden and three from Mount Tomah Botanic Garden).

The most attended component was the Dinner with 112 present. The Friday morning tours of the National Rhododendron Gardens attracted 96 (84 continued for the afternoon proceedings) and 101 attended the daytime sessions on the Saturday.

The official opening took place at the National Rhododendron Gardens, where Jen Lilburn, Regional Manager, Melbourne Metropolitan, Parks Victoria, and Lesley Eaton, Victorian Branch President each welcomed attendees. Our friends in the New Zealand Rhododendron Association sent greetings and wished us a successful event – for the first time in 2000 we co-ordinated our event timings and co-promoted them, including via the internet.

Our rhodo-loving “kanga” logo for the conference got plenty of outings, before and during the event, and appeared on most of the stationery items we created. And, in a wry allusion to the popularity of roses vis-a-vis rhododendrons, attendees assembled for the indoor sessions to the strains of “I didn’t promise you a Rose Garden!”

Conference speakers

The principal themes selected for emphasis in the proceedings were vireyas and Australian-raised hybrids, with supporting themes including: management approaches for botanic gardens and the “media image” of rhododendrons. We were elated to have a very strong field of speakers and discussion panel members accept a role in the conference.

In the first of three segments titled “Vireyas – from rainforest to garden”, Graham Smith, Director, Pukeiti Rhododendron Trust, NZ, gave a most informative and superbly illustrated talk, concentrating on their origins, their value as garden plants including terrestrial and epiphytic subjects, and highlighting individual beauties (both species and hybrids) and magnificent conservatory and bush house displays, as used at Pukeiti. Later, Dr Ross MacDonald, co-proprietor of Rosemont Nursery, Victoria, discussed successes and problems in handling, presenting and merchandising *Vireya* rhododendrons in the retail nursery trade to the present, and commented on challenges and expectations for their future. And Dr George Argent of the Edinburgh Royal Botanic Garden presented an illustrated discussion of “New species and new problems in the taxonomy of *Vireya*” – a comprehensive update on the advanced state of work to refine the botanical ordering of the *Vireya* species established by Sleumer, incorporating accounts of many collecting expeditions. George provided descriptions of a large number of interesting species, explaining the key distinguishing characteristics employed to decide and separate distinct species.

Peter and Patricia Cox of Glendoick Nursery, Scotland presented a fascinating and colourful discussion of many collecting trips; many regions where rhododendrons originate in the wild; many and varied species introduced into cultivation; and the marvellous contributions the genetic material of these species have made to the development of new hybrid plants for the garden, which they titled “The most influential species introduced in the 20th Century – their present and possible future impact in gardens.” Peter had considered the suitability of many of these species as parents for hybrids likely to succeed well in Australia, and his judgements were particularly interesting in light of the later discussion of Australian hybridizing.

On the subject of Australian hybridizers and their creations, old and (particularly) newer hybrids were described, illustrated and discussed, led by Australian hybridizers Jack O’Shannassy from Victoria and Hilary O’Rourke from Burnie, Tasmania (Asiatics), and Graham Snell from Queensland and Sylvia Saperstein from northern New South Wales (*Vireyas*). They discussed their own work and potential future directions for Australian hybridizing endeavours.

In the session on “Developments in management approaches for large botanic collections” Richard Barley, Divisional Director Melbourne Gardens, Royal Botanic Gardens, opened by discussing the purpose of plant collections,

the development of an appropriate “collections policy” for a particular collection, the application of information management tools, and the translation of “policy” into collections management “plans” and “actions.” Fred Whitney, representing the Rhododendron Species Foundation, Washington USA, Graham Smith and George Argent then joined a panel discussion, which developed some of the key aspects, such as conservation priorities; the use of modern technology and the importance of keeping focus on technology as a tool rather than an end in itself; maintaining currency, consistency and balance in a collections policy statement; the importance of people involved with collections and their training; and accessibility of information for all those interested in collections and their purposes. (James Brincat, Curator, Dandenong Ranges Gardens, ParksVictoria, was to have joined the panel also, but unfortunately was ill on the day).

“Why don’t Rhododendrons get a better press?” was devised as a discussion between a panel of writers and presenters from the “horticultural media” and the audience, on the subject of rhododendrons and their treatment in the media. Jane Edmanson, TV and radio gardening presenter, writer and gardens tours guide, and Dr Peter Valder (OAM), in his capacity as author and TV presenter on botanical and horticultural subjects, spoke for and about the media. (Richard Francis, Editor of *The Rhododendron* and a freelance researcher, writer and media consultant, was to have joined but had to withdraw due to work commitments). This was one of the sessions I moderated, and I felt that we had quite a lot of fun with it, as well as getting a few beefs with the media into the open and nailing a few serious truths on the subject – although we didn’t resolve any easy remedies for the problems covered.

In other segments Walter Lobbezoo of ParksVictoria, a key member of the National Rhododendron Gardens team at Olinda, supported by Graham Smith, presented intensely practical advice on identifying and managing disease and pest problems in plants of the rhododendron genus; and Sue Wells, formerly of the Royal Botanic Garden Hobart, presented and explained a stimulating set of ideas and examples of landscaping using plants of the *Rhododendron* family, and suitable companion plants. Sue was followed by Ken Gillanders of Woodbank Nursery, Longley, Tasmania, who illustrated and described many highly attractive trees and other plants to consider incorporating in gardens planted with rhododendrons, including a large number of very attractive Australian plants.

Australian Rhododendron Registrar Graeme Eaton discussed the International Rhododendron Register ... the history, its compilation, means of accessing the information, its uses, and the way in which the registration information for Australian hybrids is collected and recorded for submission.

At the Conference Dinner a most amusing and enlightening after-dinner speech: “Rhododendrons – a survival guide” was delivered by Dr Peter

Valder, a Life Member of the Society. At its conclusion, Peter was bestowed with the Society's Medal, for his many contributions to the advancement of rhododendrons, by outgoing National President Mr Neil Jordan.

Others who contributed to a successful conference

As well as our speakers, we had very generous cooperation from Parks Victoria, Ferny Creek Horticultural Society (who hosted a lunch, complete with a full floral display at their clubrooms after a tour of their Garden), RBG Melbourne, Karwarra Native Plants Garden, the owners of the private gardens we visited, and good service from all providers including Linley Estate, our coach operators, Healesville Sanctuary, Eyton Winery, the Puffing Billy Railway, and Alan Betteridge of Garden Street Books. And we also appreciated very much financial support from our sponsors – Boulters Olinda Nurseries, Garden City Plastics, Grow Better Garden Products, Neutrog Organic Fertilisers, Olinda Nurseries, Propine Nursery Supplies, and Spotswood Potting Media.

Our hosts for the scheduled private garden visits on Mount Dandenong (Cheryl and Geoff Grant, Marisha and Richard Jackson, Hanno and Barbara Weisert, Lesley and Graeme Eaton, Marcia and Simon Begg) did us proud with their hospitality and the presentation of their fine gardens. Thanks were due also to Bill and Joan Taylor, Alan and Valerie Kepert, and Jack and Marion Morris, who all shared with Gay and I the offering of further garden visits after the conference to attendees who weren't already "over-exposed" to gardens.

Graeme and Lesley Eaton, Rodney Boulter, and Gay earned deserved thanks for their participation in the conference organising sub-committee. Graeme also co-led one of the NRG tours, shared the chairing and accepted a presenting role, prepared namecards, assembled attendees' folders, and arranged projection equipment. Lesley also co-led an NRG tour, arranged other garden visits, and provided the rhododendron table centrepieces for the Dinner (at which, as Victorian President, she was host). Rodney represented the commercial nursery view in our preparations. And Gay was heavily involved in assisting me in my role as convenor including contributions to all the on-site meetings we had with supporting groups, arranging services, excursions, and menus.

In the final lead-up to the event and at the event itself, help from Ken Cathie was much appreciated in preparing content for the folders, and Ken in company with Bill Taylor, Alan Walker, Wal Lobbezoo, and Vin Hurley also shared the main work of planning and leading the NRG tours which produce such good results and appreciative reactions from participants. Attendees were given the choice of three different formal guided tours: Species, including big leafed species, in the Gardens; the main collections of hybrids in the Gardens, particularly focussing on the Australian-raised hybrids, and an inspection of the Kurume Bowl

landscaping feature, followed by a viewing of the plantings of deciduous azaleas, and then vireyas. I've been on a lot of "conducted tours" of gardens, but never has any been as intensively planned and comprehensively explained as these ones.

Ken Cathie also took responsibility for the Dutch auction at Linley Estate, whilst Elizabeth Xipell and Marcia Begg were good enough to spend hours at the venue providing a very much appreciated "meet and greet" service for visitors staying there. Marcia also assisted in her capacity as a voluntary guide during our Healesville Sanctuary excursion. And Marcia and Simon stepped in to tape the main proceedings at Linley so we had the basis for preparing to publish the proceedings.

We were also well served by members who agreed to host visiting speakers in their homes. Aside from those on the Conference sub-committee, Alan and Gwen Walker and Marcia and Simon Begg also were hosts. (Murray and Bev McAlister and Ron and Marina Moodycliffe stood ready as hosts, but in the event we had no takers for extra places). ❀

Footnote It's hoped that the conference proceedings will soon be published and available for distribution to those who attended the main proceedings. Copies will be offered for purchase to those who weren't there.

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Highlights of the 2000 International Rhododendrons Down Under Conference

BARRY STAGOLL

We were privileged to experience a series of excellent presentations and discussion panels at our October 2000 conference in Melbourne. Some of the highlights ...

Graham Smith, as our opening speaker on the theme of vireyas – from rainforest to garden, presented his views on displaying vireyas in cultivation in a most entertaining and enthusiastic address. He included many fine illustrations of choice species and hybrid vireyas, and most interesting illustrations of various stages in the life of the house at Pukeiti in which vireyas are displayed year round to great effect. His slides of species in the wild were accompanied by many interesting anecdotes about the circumstances in which they were found, and enlightening details about their native growing situations.

Graham was keen to make the point that we should not be blinkered in our choices for companion plants for vireyas and how we display vireyas. His message was “think beyond the square”, using only the basic guidelines for ideal cultivation conditions for the “base crop”: vireya rhododendrons, and then work everything around them. The display itself should be enhanced by the collection of companion plants and an all year attraction should be a goal. To this end bulbs, herbaceous plants, climbers, succulents, epiphytes, orchids and other shrubs should all be included to give maximum effect and value for the occupied space. He was, of course, talking about displays that are to be viewed by the public, because they have to draw people to see the vireya collection. But in his view there is no need for non-public displays or collections to be mono-generic either.

Peter Cox, assisted by his wife Patricia, presented on The most influential rhododendron species introduced in the 20th century and their past and possible future impact on gardens. During the presentation, 51 species of rhododendron were mentioned and their significance to Twentieth Century hybridizing discussed. Towards its conclusion, Peter put forward the view that four species introduced relatively recently to horticulture promise to make an important contribution to the creation of interesting new hybrids, in this passage:

“ ... Lastly, a few very promising, very new introductions.

R. ochraceum I believe has yet to flower in cultivation, only having been introduced in 1995. From S Sichuan, NE Yunnan, it seems easy to grow. It is related to *strigillosum*.

R. platypodum was only introduced last year from SE Sichuan. It has astonishingly thick leaves resembling orbiculare in shape.

R. sinofalconeri comes from south Yunnan and north Vietnam, so may have heat resistance.

R. seinghkuense has been in cultivation since 1931, but has been very rare and only represented by one clone which we saved from being lost to cultivation. It was re-introduced in 1997 with much more attractive foliage with golden hairs on leaves and stems.

There is something in excess of 70 new taxa that have been introduced since 1950, excluding vireyas and azaleas, and more are coming in every year. So there is much to look forward to in the rhododendron world, both from new taxa and the great potential still to be made in hybridisation ...”

We have included Peter’s illustrations of *ochraceum*, *sinofalconeri*, and *seinghkuense* in our colour pages. In the absence of a good illustration of *platypodum* he provided one of *valentinianum* as a substitute.

George Argent instanced and discussed over 50 vireya species in his comprehensive discussion of the state of researches into a refined botanical classification of vireyas, New species and new problems in the taxonomy of Vireya, also covering a number of very new and interesting discoveries.

He commented on the background to this work:

“...A lot of people think that taxonomy is all about describing new species. As a matter of fact, we’re “sinking” just about as many of the vireyas now as we’re describing. The number is remaining remarkably static at the present time. And in understanding relationships, I think this is bound to happen. Describing new species is also not the “be-all-and-end-all” in the sense that when you describe a new species, you very often have very limited material. It’s the start of the process of understanding biology. We want to know as much as we possibly can about the species, their inter-relations, how they vary, and all sorts of things ...

They’re an extraordinarily varied group, the three hundred or so species that we’ve got. And, to a large extent, this is very much because they’ve exploited pollinators in a way that other rhododendrons – other groups of plants even – perhaps haven’t ...

Professor Sleumer in his classic account for *Flora Malaysiana*, which came out in 1956, had divided the vireyas into seven subsections ... Essentially what he did (which is what most taxonomists do) was to take out the most distinctive groups first. So if you look at the numbers in those groups, you'll see ... "Subsection Vireya" ... has 139 species, and all the others are very much smaller numbers. This essentially means that this was the "junk-heap" where everything was put together, and the other groups were very much better defined ... Essentially, he then divided the Subsection Vireya into two groups on leaf size – not a very natural approach to classification. So I've been looking at the rhododendrons, and trying to improve on this situation, over quite a long period of time ...

Having the benefit of a large living collection in Edinburgh, as well as doing quite a lot of field work, it's very nice to try and look at as many different characters as possible. (For instance) one of the things that struck me, and I realised that I wasn't the first person to observe it by any means, was that (in some of the vireyas) before the fruit splits an outer layer of skin peels off ... Also flower-bud characteristics I also found very useful in that it was very obvious that buds were very different from one species to another, and from one group to another ...

And when I looked at the scales I wanted to divide them ...

Professor Sleumer had four types, although there's a lot of variation. I divided the scales essentially into two – those that had small centres, and those that had larger centres. And this was the situation I presented for the (1988) Wollongong Conference – essentially dividing Vireya into two. You could do that on looking at the scales; the fruits that had an outer layer that peeled before they split against those that didn't; and the indumentum on the edge of those bracts – the typical scale-type as against simple white hairs...

Siphonovireya, exemplified by *R. hertzogii*, didn't fit this pattern. I hadn't observed all these things by the time of Wollongong and one of the groups where I hadn't observed sufficient of the fruits or the flowerbuds were the Siphonovireyas. Then we had only *R. hertzogii*, which combines essentially a Siphonovireya type corolla with a Pseudovireya type scale. But it has other characteristics which set them off. This is true of the two species we know – *R. hertzogii* and *R. inundatum*. So this didn't fit. The outer skin of the fruit peeled, but it was otherwise like Pseudovireya. The other one which was a bit of an oddity was *R. santapau*, collected on one of Peter Cox's expeditions, and just about the most northwestern of the vireya species. It's got very short flowers characteristic of the group I would like to term as the "mainland" vireyas ... and when I first came across *R. taiwanianum* I didn't want to include it in

Vireya at all ... But of course from having criticised Sleumer for having used a combination of flower shape and scales in defining his sub-sections – I thought he ought to be able to do it entirely on scales – I’m thrown back if I want to divide this group on to flower shape as there’s not much else to use. In fact *R. santapau* is the exception amongst the “bracts groups as it has incompletely-glabrous bracts, and so from that point of view you can’t group it with anything else ...

So we ended up, fairly recently, with Vireya divided into three sections. I kept the Siphonovireya separate. But (very similar to the grouping at the time of Wollongong) I grouped by correlation of the indumentum on the bracts; the fruits; and the scale types. So I divided Sleumer’s model basically into three rather than two and otherwise kept his series reasonably intact ...”

Graham, Peter and George all shared some hair-raising experiences from their plant collecting expeditions. Just like the famous collectors from the past!

In her talk, *Creating Garden Landscapes with Rhododendrons*, Sue Wells dealt with the particulars of creating “your own rhododendron parkland” in southern Tasmania, inspired by the great gardens of other parts. As she observed ...

“There’s no soil – or what there is thin and hungry, or heavy and gluggy. And this lovely land of ours – it’s all stacked up on end – up and down – and you, too, can have your own private precipice. There’s plenty of wind from the Roaring Forties, and as you go higher up the slopes of our Mount Wellington there’s frost and freezing winds – and even the occasional dump of snow.”

The damage often wrought to gardens by the Australian possum also got a mention. With enticing illustrations, covering seven magnificent gardens in and around Hobart, she recounted how rhododendron lovers in Hobart have “tackled and overcome the shortcomings, and in so doing, transformed the challenge into a triumph.” Many successfully combine southern hemisphere flora with rhododendrons and other ornamental plants from the northern hemisphere. Those who were there for the talk should certainly be inspired to think hard about visiting Hobart to see these magnificent gardens when our October 2002 annual gathering for the Society’s Annual General Meeting takes place there.

Ken Gillanders rounded out this session by sharing his extensive knowledge of companion trees and plants to grow with rhododendrons, describing a selection of over 40 recommendations from the flora of Australia and other parts of the Southern Hemisphere. One group of flowering trees he cited as highly recommended were the eucryphias (the Australian species enjoy the common name of leatherwood). Perhaps somewhat controversially for Australian gardeners, Ken described eucalypts as a native plant which he ...

... “would never recommend to anyone to grow with their rhododendrons. They are extremely hungry plants. It is alright for a year or two until you start watering and fertilizing the rhododendrons and then in come the eucalypt roots. They may grow on poor soils but they love a little nourishment and moisture and they can be a great competitor.”

A great many fine Australian hybrids received mention in the conference sessions dealing with this important aspect of rhododendrons in Australia, including numbers of recent origin. Some of these are mentioned in the separate illustrated article in this issue by Graeme Eaton – who chaired the two sessions on hybridizing in Australia.

In his opening commentary for the session on Developments in management approaches for large botanic collections, Richard Barley pointed up the responsibility of botanic gardens to reflect “the growing global awareness of the need to take more positive and definitive action to conserve the world’s plant diversity”. He commented on the then recently-published International Agenda for Conservation in Botanic Gardens, and its prescription of a formula for botanic gardens worldwide to act positively to conserve flora. It placed particular stress on such things as the need for individual botanic gardens to primarily conserve the floras of their own area, otherwise there’s a huge danger of everyone following their own interests, and ...

... in fact letting things on their own doorsteps just “slip through the cracks”, and species diversity being lost. So conservation is more and more a key role, and particularly within botanic gardens plants collections, and you’ll find that this is where a lot more of their resources are going to be directed.

Clearly there are other roles, or other things that can be built on that conservation role – the collections may have ornamental value, or research value of another sort; they can have educational programmes built on them that talk about a range of things. What we’re moving away from is that notion that was particularly popular during the 1800s – a little akin to stamp collecting – where we wanted “one of these” and then “one of these”, and so forth.

While collecting a range of different taxa is important, from the viewpoint of ensuring all that biodiversity is being actively conserved, it's not simply enough any more just to have the biggest, fattest "stamp album" for botanic gardens. Slightly different, perhaps, from private collectors where often for their own reasons that may be exactly what they wish to do.

Richard went on to discuss, amongst other things, the development of explicit "collections policies" and their role in recording main priorities for collections and establishing a framework within which gardens can plan their collections.

In the panel session, Why don't rhododendrons get a better press, the somewhat limited exposure of rhododendrons compared with some other favoured plants was pointed up by reference to the disparity in numbers of books and television stories featuring rhododendrons with those to do with roses. Well over 80 rose titles were listed in the current stock of a major bookseller, compared with five on rhododendrons in general, two on vireyas, and one or two on azaleas. There were also plenty on camellias, and many more books about weeds than there were about rhododendrons! As to TV, the researchers at the national TV gardening program Gardening Australia went back over the previous five or six years to find that there had been 45 segments screened on roses; 17 on rhododendrons; and about 16 on camellias.

The question was asked: is this due to self-fulfilling efforts of the media, including the publishing houses and the electronic media, or might it be a valid reflection of them thinking their market out and getting it right, because the customers don't really want to hear too much about rhododendrons by comparison with what they want to hear about other groups?

With strong audience participation, the consensus reached in the session stopped short of laying most of the blame on the media, acknowledging that rhododendron enthusiasts and nurseries could do far more to educate gardeners about rhododendrons and assist them with information about selection of plants and their cultural needs, and also to promote them more effectively and widely. And concentration on promoting plants of a size and type best suited to the typical smaller garden of today was also a strong theme in the discussion.

In his session, Rhododendron Health Check, Walter Lobbezoo cited the Rhododendron Lace Bug as one of the biggest problems in the National Rhododendron Gardens, Olinda (also a widespread problem affecting most members' gardens). He elucidated ...

‘Because it is a public garden we have a lot of problems with its control ... We can normally get away with one spraying to control the insect for the season. However, we have had four years of drought and the dry weather has meant that we have had to spray fairly early in the season and because we have only a small number of staff we have not been able to get back for a second spray. Hence there is quite a lot of damage and in fact, now is probably a good time to go round and map some of the damage and the damaged plants that have occurred. ‘Rubicon’ is often a target. ‘Cilpinense’ is another good indicator plant. It always seems to have yellow foliage unless it is regularly sprayed. When it comes to chemical control we are not permitted to use the schedule 7 herbicides which are the most toxic. We have to use fairly low toxicity chemicals. Cultural control is also possible. The Kurume Bowl is normally cut immediately after flowering. This reduces any egg infestations. However, this year was the first time that we have had any infestation even after clipping. The damage is most prevalent in the northern end of the garden which is fully exposed, while in the southern end the damage is quite minimal and tolerable. The thing to do is to plant more shade trees at the northern end to control it to some extent.’

Walter also talked about the adoption of “integrated pest management” as a strategy. Amongst other ramifications, this has meant an exhaustive look at chemicals formerly used for control, at culture control, and generally often just putting up with a low grade of damage to the appearance of plants.

Peter Valder in his after-dinner talk gave a fascinating review of the very privileged world of rhododendrons in Britain in the period before and after the Second World War, and his personal introduction to rhododendrons at a different level altogether.

He followed with an often-hilarious account of his experiences in actually getting to see shows at the Royal Horticultural Society in Britain, and to visit many of the famous rhododendron gardens and meet some of their famous and privileged owners, after being awarded a scholarship in 1954 to study there. As he put it ...

‘We have to be grateful to all these people, of course, for actually having got all these plants that they got and introduced, and enabling us eventually to decide which of them were really worth persisting with.’

Award of the Society's Medal to Peter Valder

It was a high point of the Conference when Peter, already a Life Member of the Society of some years standing, was the first recipient for many years of the Society's Medal, with the presentation taking place at the Conference Dinner. His contribution to the rhododendron and his support for the Society has been most extensive and enthusiastic over many years. A fuller account of his record and achievements follows ...

Peter Valder graduated BScAgr from the University of Sydney with first class honours and the University Medal before going on to Cambridge to study for his PhD. On his return he worked for some years as a plant pathologist with the NSW Department of Agriculture before joining the School of Biological Sciences of The University of Sydney as a mycologist.

Brought up in the bush, his interest in the Australian flora had been stimulated by local amateur botanists. Thus he was pleased to become involved in the teaching of general botany in addition to his mycological work. He has also been an office bearer of the Linnean Society of NSW and of the Australian Institute of Agricultural Science. As well as this he has drifted into the popularising of Australian botany and horticulture, making appearances on television, the ABC Science show and Science Bookshop, writing for magazines and addressing meetings of organisations interested in plants and gardens.

He both wrote and narrated the film 'A Curious and Diverse Flora', first shown at the 1981 International Botanical Congress held in Sydney. In 1984 he undertook a lecture tour of universities and botanic gardens in Canada and the United States, speaking about the Australian flora. He thus has had considerable experience in making known the extraordinary flora of this isolated continent.

As well as this he took a great interest in his family's garden, Nooroo, Mount Wilson, NSW, which became one of Australia's most admired gardens. This property was established in 1880 and was bought by his grandfather in 1917. His father lived there from the time of his return from the first world war until his death in 1976, since when Peter Valder shared with his mother the responsibility of maintaining the property until its sale in 1992.

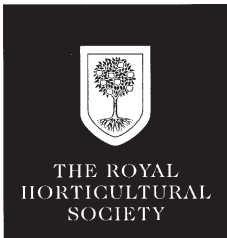
His interest in gardening has taken him to Indonesia, Malaya, Thailand, Laos, Burma and China looking for plants suitable for the Australian climate. In addition he has visited gardens in Britain, North America, France, Italy, Spain, China, Japan and Korea, accumulating photographs with which to illustrate his lectures and writings.

In 1995 he wrote the first book in any European language about the genus *Wisteria*, resolving many of the nomenclatural problems associated with the

species and cultivars, having visited North America, China and Japan to carry out the necessary research. His latest book deals with the garden plants of China.

Peter is a Life Member of the Australian Rhododendron Society.

In recognition of his gifts of plants to and voluntary work for the Royal Botanic Gardens, Sydney, he was made their first Honorary Horticultural Associate in 1995, and in 1996 was awarded the Medal of the Order of Australia in recognition of his contribution to botany and horticulture in this country. 🌸



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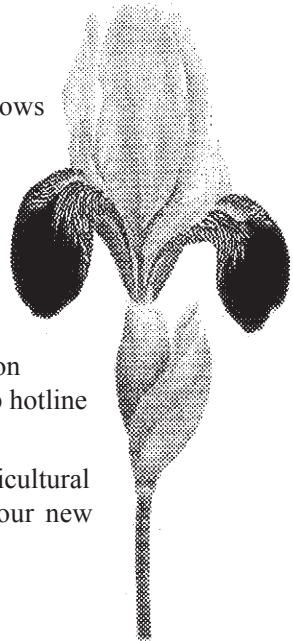
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Australian Hybrids

GRAEME EATON, AUSTRALIAN RHODODENDRON REGISTRAR

Where did they begin?

Probably like for most countries, the origin of hybridizing is clouded in the past. Early settlers in Australia, like New Zealand, wanted plants from their motherland to remind them of home. Therefore rhododendrons were brought in shiploads to ornament the new gardens in these southern lands. I have some information about rhododendrons in Victoria, but since both New South Wales and Tasmanian history predates Victorian history, rhododendrons also should predate those in Victoria. Unfortunately, I do not have this information. In Victoria there are records about rhododendrons around about the late 1850s which is about the time of the goldrush era. John Rule, Victoria Nursery in Richmond and Thomas Adcock, nurserymen of Geelong, both listed rhododendrons and azaleas in their catalogues of 1857. The popularity of rhododendrons in Victoria developed slowly, probably as much due to the lack of available stock as to the uncertainty about their suitability for Victorian conditions. The lack of reliable water was probably another factor slowing down the acceptance of rhododendrons in Melbourne. The Yan Yean Reservoir went into service in 1858. In his 1857 catalogue John Rule lists *R. arboreum* and *R. arboreum* 'Album' as well as several unnamed species and hybrids.

Baron Von Mueller, the government botanist and director of the Melbourne Botanical Garden, meticulously recorded plants he found in his field trips, but he also meticulously recorded, in 1858, rhododendrons that had been acquired for the Melbourne Botanical Garden. Mueller's interest in plants was more for their value as food or medicine or other such commercial uses rather than as ornamental plants. The aspect of plants as ornaments did not feature very highly on his priorities. Despite this, rhododendrons were added to the Botanic Garden collection.

William Guilfoyle, who replaced Von Mueller, also recorded, in 1883, both species and hybrids which were in the collection at the Melbourne Botanical Garden.

Whether any of these early introductions of rhododendrons to the Botanic Garden survived is not known. The present records of rhododendrons in the Melbourne Botanic Garden do not show the origin of the plants. If they did survive they would be very large and venerable plants now.

I'm sure some rhododendrons found their way into private gardens at the time, and gardeners being what they are, I'm sure also that it didn't take long for experimental hybridizing to take place. In 1867 *The Australasian* had an article entitled *Our Favourite Flower – The Indian Rhododendrons* which stated "It cannot be doubted that the rhododendron is the prince of ornamental evergreen shrubs. And it may be added that if the amateur has a turn for observation and experiment, there is scarcely any province of hybridising so full of promise and enjoyment."

The article went on: "The time was when if a gardener proposed planting rhododendrons he was thought to be fit for the Yarra Bend; but thanks to the perseverance and skill of our best practicals and amateurs, that time has passed away, and we now have the pleasure of seeing the rhododendrons growing and flowering freely in our shrubbery borders."

In 1857 *The Horticultural Society of Victoria* had obviously introduced a class for rhododendrons. Messrs Scott and Sons of Royal Nurseries, Hawthorn were awarded first prize for six distinct varieties, though the entry was criticised for "old and badly furnished plants". Thomas Lang of Ballarat won second prize though some plants were "wanting vigour of growth and symmetry".

Clearly rhododendrons were becoming more popular. In *Garden Memoranda on Lilies and Lily Culture and Rhododendrons* (*The Australasian*, 21 November 1874) it was said of rhododendrons, "There is no reason why such sites as Dandenong Road and Caulfield should not become as famous as the Knap Hill Nurseries of Messrs Waterer for all kinds of peat loving plants..." a rather optimistic view when we look back now at those areas.

An enterprising nursery of the time was Thomas Lang and Co (Later Lang, Rennie and Co.). In their catalogue in 1865 there were 31 varieties of rhododendrons, in 1868 and in 1872 98 varieties. *The Australasian* of 5 December 1874 has an article on Lang's rhododendrons. Lang's had a small nursery in Collins Street and showed the rhododendrons in the fernery, some 21 varieties being named. Most interesting, however, is the fact that one of them 'W.J. Grieg', was a hybrid of Lang's own raising. Lang also raised another hybrid that attracted attention. This was named 'Bella Wilfer'. He must have been the first hybridiser of rhododendrons in Victoria, if not Australia. The same article makes the point that compared to England: "rhododendron growing has not yet attained even moderately large proportions in Victoria."

The situation began to change, particularly as wealthy Melbourne citizens established summer houses on Mount Macedon from the late 1870s on.

In Melbourne in 1877 James Scott listed more than 80 rhododendrons and Law Somner and Co., who had taken over the nursery established at Cremorne by Thomas Lang, inherited a very large stock of rhododendrons with the nursery. John Smith's nursery at Riddell's Creek had also begun to market them.

Taylor and Sangster, a nursery long established in Toorak, came on the scene as a major grower of rhododendrons. The nursery had been very prominent in the prized lists of horticultural shows in Melbourne, and a branch nursery had been established on Mount Macedon in 1876. It has been claimed that this was with the encouragement of Von Mueller and Guilfoyle. A catalogue of 1887 shows that they had 120 varieties of rhododendrons.

The only private garden for which a fairly extensive plant list survives is that of Charles Ryan of Derwent Heights, Mount Macedon. Charles Ryan went to the Mount in 1873, but unlike most of the wealthy folk who only had summer residences there, he lived there permanently and developed a garden that was renowned. He must have had an extraordinary variety of rhododendrons for he tells us in an article that the lake, which had been transformed from a swamp, was a “fitting foreground for hundreds of rhododendrons”. Many of the varieties were obviously imported by Mr Ryan.

Around the turn of the century the Dandenongs became the centre for growing rhododendrons and nurseryman William Chandler and his sons Bert and John were notable. Some of their early rhododendrons came from G.J. Coles as well as Taylor and Sangster.

The International Rhododendron Register appeared in 1958, but hybridizing obviously took place both by nurserymen and amateurs before that date. Unfortunately I do not have records of these early hybrids. No doubt some of them are the unknown hybrids found in our older gardens. There may be references to these in correspondence and older publications and I would appreciate any of these being drawn to my attention.

While the register picked up some of the early hybrids which appeared prior to 1958, it concentrated mainly on the ones known in England.

The 1958 register did not include any Australian registered hybrids. Initially the Australian Rhododendron Society provided its own registration certificates and the first of these was for an Alf Bramley hybrid of *R. racemosum* × *R. ciliatum*, ‘Viscount Linley’, registered in March 1962. (I saw this one in a nursery under the name ‘Viscious Linley’. It certainly didn’t look viscious to me.) In all there were 91 certificates issued, the last one dated November 1977.

These 91 were the first Australian hybrids to be forwarded to the central registry at Wisley for registration.

At present there are over 700 registered Australian hybrids. In the almost forty years of hybridizing we have had several significant hybridizers. Initially they were nurserymen – Alf Bramley, Arnold Teese, Victor Boulter, Karel Van de Ven, Keith Marsh, George Langley, J. Marty, Don Dossier, Donald Stanton and Arthur Howells.

In later years the amateur hybridizers have predominated – Jack

O'Shannassy, Noel Sullivan and Frank Waghorn, along with ex nurserymen Don Dossier and Karel Van de Ven. However in the vireya field the nurserymen are still significant – Graham Snell and Don Stanton, with amateurs such as Brian Clancy, John Rouse and Bob Withers also doing significant hybridizing in the vireya field.

Why the need for Australian hybrids?

In most Northern Hemisphere rhododendron growing areas, late frosts damaged the flowers and new growth of the earlier flowering rhododendrons, so the popular rhododendrons in those areas were the later flowering varieties.

These were the first varieties imported into Australia, but when these were transposed to the Australian conditions, late frosts were not the problem in most of the areas, but the searing heat in late spring and summer was. The life of the late blooms was drastically shortened by the severe heat and hot winds. Therefore Australian hybridizers aimed to produce earlier flowering rhododendrons, so that the flowering was completed before the chance of hot spells occurred.

Our Hybridizers

In this article there is not space to talk about all our hybridizers or all of their hybrids. I have therefore just mentioned a few and listed some of the hybrids they have created, and in some cases given a brief description. However, I have not touched on the azalea or vireya hybridizers. There is plenty of scope for further articles on this topic.

The late Alf Bramley

Alf was the first president of the Rhododendron Society and a nurseryman. There are 11 rhododendrons of his breeding registered. He concentrated mainly on good garden plants which flowered in the early part of the season.

'Alf Bramley' (*R. nuttallii* var. *stellatum* × 'Kallistos' × *R. dalhousiae*) 1969 A good white perfumed trumpet shaped flower.

'Florence Mann' (*R. augustinii* × 'Blue Admiral') 1963. As could be expected by the parentage, this plant has lovely vibrant blue flowers on a well-shaped shrub. In a survey I did of Australian hybrids, it was the most widely grown and popular Australian hybrid, coping with quite a diversity of conditions.

'Ross Maud' ('Fusilier' × 'Unique') 1975. A vibrant, deep, glowing pink which covers itself with flowers even at an early age.

'Kallista' (Unknown parentage, but probably *R. nuttallii* × *R. lindleyi*) However which way round is unknown) 1999. I have yet to see a bad plant of this cross.

It has lovely large, strongly perfumed, trumpet shaped flowers, and lovely foliage. **'Sady'** ('Cornubia' × *R. arboreum*) 1963. This is, like its parent 'Cornubia', a tall growing, early red, but is not readily available nowadays. It is too large for the smaller garden and takes a long time to flower in a pot.

'Southern Cloud' (*R. lindleyi* × *R. nuttallii*) would be more popular if it was readily available. Its flowers are even better than 'Kallista'.

The late Victor Boulter, and Frank Boulter

Victor and his son Frank, as nurserymen, were involved in hybridising and registered 51 hybrids. Victor saw the necessity of producing compact, early flowering rhododendrons, with good flower trusses, to better suit our particular climatic conditions. Again, because there was a commercial outlet, many have been widely available and therefore are well known. Unfortunately omissions in recording parentage means that in many cases the parentage is unknown.

'Redman' (unknown parentage) 1996. An outstanding red flower on a well shaped compact bush.

'Boulter's Robyn' ('Van Nes Sensation' × 'Marion') 1997. Frilly, lilac-pink flowers smother this plant in early spring.

'Candle Gleam' ('Denise' × 'Chrysomanicum') 1984. An early, low, spreading bush with cream flowers which light up the garden in late winter to early spring.

'Margaret Mack' ('Marion' × 'Annie Endtz') 1964. Well known and widely distributed. Bright pink flowers.

'Heather Boulter' (Unknown × 'Chrysomanicum') 1984. A well-shaped, small growing shrub which flowers prolifically, covering itself with lemon flowers.

'Denise' ('Winter Favourite' × 'Chrysomanicum') 1971. A long-time favourite with apricot flowers. Flowers very early in the season. Unfortunately it is also popular with the azalea lacebug.

'Murraba' ('Marion' × 'Purple Splendour') 1971. An unusual colour – pink with mauve overtones. It is proving to be very popular.

'Kalimna' ('Edith Boulter' × 'Unknown Warrior') 1971. Another outstanding pink hybrid.

Arnold Teese

Arnold also was a nurseryman, although I think it could be said that he has now virtually retired and has left the running of his nursery to his sons. 'Anne Teese' is one of his best known hybrids.

'Anne Teese' (*R. ciliicalyx* × *R. formosum*) 1968. This plant in full flower is worth a place in any garden. Pink flowers with a slight perfume.

'Bronze Wing' (unknown parentage) 1981. Delicate pink flowers with a bonus of shiny bronze foliage in early spring.

‘Pink Silk’ (‘Cilpinense’ F²) 1981. A dwarf with pink flowers which unfortunately is also loved by the azalea lacebug.

Frank Waghorn

Frank was the previous registrar and an amateur hybridiser. He has 11 hybrids registered with more on trial at the Rhododendron Gardens in Olinda.

‘Dunloe Tasha’ (*R. veitchianum* × *R. veitchianum*) 1991. Large white flowers with a pink flush cover a medium sized shrub.

‘Waghorn’s Burgundy Sensation’ (‘Van Nes Sensation’ × ‘Burgundy’) 1997. Has huge flowers which could rival those of the ‘Lem’s Walloper’.

Karel Van de Ven

Karel did most of his hybridising as a nurseryman when he owned and ran the Olinda Nursery. Since his retirement he cannot stop hybridising and has continued to register his hybrids. His 70 hybrids include many which are well known as they have had a commercial outlet. In his time he had many breakthroughs in regard to colour. He has been interested in producing free flowering plants with large trusses, flowering at their best at rhododendron show time (Cup Weekend in Victoria).

‘Snow Peak’ (‘Morio’ × ‘Mrs E.C. Stirling’) 1988. A strong growing plant with large conical white flowers and a purple throat.

‘Freckle Pink’ (‘Marion’ × ‘Midnight’) 1984. Has beautiful ruffled, speckled flowers and has been used extensively by Karel as a parent.

‘Midnight’ (‘Cup Day’ × ‘Purple Splendour’) 1978. Large magenta-rose flowers with a prominent black eye. This is one of our Australian hybrids which has reached both the USA and England.

‘Thrills’ (‘Freckle Pink’ × ‘Apricot Gold’) 1997.

‘Tilly Aston’ (‘Apricot Gold’ × ‘Lem’s Cameo’) 1997. Recently released on the market, it has a compact, well-formed truss of sunset colours.

‘Tristan Esposito’ (‘Freckle Pink’ × ‘Apricot Gold’) 1996.

‘White Flare’ (*R. yakushmanum* × ‘Purple Splendour’) 1987. A very compact, free-flowering plant with white flowers and a yellow blotch.

‘Yako’ (*R. yakushmanum* × *R. eriogynum*) 1997.

Don Dosser

Don was also a nurseryman who initially had his nursery at Warburton in Victoria and then moved to Tasmania, where he is still hybridising and registering plants. His 76 registrations include deciduous azaleas, evergreen azaleas and elepidotes. He is continuing to produce many lovely hybrids and it is a pity that, since he ceased being a nurseryman, many are not more readily available.

'Alexander's Lockington' ('Lockington Pride' × 'Coronation Day') 1990.

'Bryan H. Tonkin' ('Lockington Pride' × 'Loderi Titan') 1997.

'Lockington Gold' ('Crest' × unnamed yellow seedling) 1988.

'Mia' ('Tortoiseshell Wonder' × 'Loder's White') 1999.

'Miss B.L. Jones' ('Samantha Sawers' × 'Ross Maud') 1997.

'Marg Sawers' ('Morio' × Mrs E.C. Stirling') 1978.

Probably his best known are 'Elissa', 'Marg Sawers', 'Samantha Sawers', 'Redgate', 'Nanie Garret', and 'Aunty Annie'. Unfortunately some of his recent registrations which are large, lovely trusses have 'Loderi Titan' as a parent and therefore are not likely to be easy to propagate and may never be commercial.

The late Noel Sullivan

Noel, an amateur hybridiser, was until his death, producing most interesting hybrids. He believed indiscriminate crosses produced 'nothings', and with this in mind he put a lot of thought into his own breeding program. He studied what others had attempted, took careful notes of what he saw in various seed lists and attempted to work out what other hybridisers were trying to achieve.. To Noel, breeding a new rhododendron was like baking a cake – percentages must be observed. He noted dominant and recessive traits. He aimed to raise better shaped shrubs with good foliage, and eye-catching flowers. Some interesting hybrids were the result of his 'elephant × mouse' theory. He crossed 'Bambi' with *R. macabeanum*. Unfortunately, Noel's untimely death has meant an end to the many promising lines of hybridizing which Noel was pursuing. We will have to hope that one of his close friends and associates, Hilary O'Rourke, is able to continue with some of them.

Jack O'Shannassy

Jack is another of our amateur hybridisers who has concentrated on creating hardy, early flowering rhododendrons for the harder growing environments found away from 'The Hills' areas, which have proved to have such ideal growing conditions. He used an early flowering form of *R. arboreum* as a parent, and has created, and is still creating, many lovely hybrids which are also good garden plants. Jack is also working on hybridizing the *R. maddenianum* species which do so well in so many areas of Australia where frosts are not a problem.

'Donvale Beauty' (*R. yakushmanum* × 'Gwilt King') 1992.

'Donvale Gem' [(*R. yakushmanum* × *R. arboreum*) × *R. arboreum*] 1990.

'Donvale Glory' ('Elizabeth' × *R. arboreum*) 1991.

'Donvale Pearl' (*R. yakushmanum* × *R. arboreum* seedling) 1983.

'Donvale Pink Drift' ('Crossbill' × *R. scabrifolium* var. *piciferum*) 1984.

'Donvale Ruby' ('Lamplighter' × *R. arboreum*) 1984.

- 'Donvale Cheer'** ['Marion' × (*R. yakushmanum* × *R. arboreum*)] 1997.
'Donvale Ruffles' ['Marion' × (*R. yakushmanum* × *R. arboreum*)] 1997.

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Major botanical art award for vireya series by Australian painter

BARRY STAGOLL

Hearing from Dr John Rouse that Anne O'Connor had achieved a Royal Horticultural Society UK award for a series of botanical illustrations of vireyas, I contacted Anne to ask her about the award and the background. Anne is a recently-joined member of the Society, mainly to get the bulletins and hear about the activities. She lives in Mornington, Victoria – a “bit too far away to attend Friday night Victorian Branch meetings, except in very special circumstances”.

Here's the story in Anne's own words:

“Thank you for your interest in my paintings. I think it would be a great privilege to have them mentioned in *The Rhododendron*, and I am very grateful to Dr Rouse for his comments. He has been quite an inspiration to me and I've visited his garden several times.

My award was an RHS Gold Medal at the London Flower Show of October 31–November 1, 2000. The medal was awarded for a series of eight Vireyas which I painted specially for the purpose of entering that Show. It is required that you have eight paintings that follow a theme to be eligible for one of their highly prized Gold Medals. Those I showed were: *R. konori*, *R. christiana*, *R. lochia*, *R. macgregoriae*, *R. laetum*, *R. luraluense*, *R. 'Robert Bates'* and *R. 'Just Peachy'*. It was a great surprise and thrill when two paintings, *R. konori* and *R. 'Robert Bates'*, were purchased by the RHS's Lindley Library, and two others, *R. lochia* and *R. christiana*, were purchased by Dr Shirley Sherwood for her world-famous Shirley Sherwood Botanical Art Collection.

I began the paintings four years earlier after a visit to the Vireya Valley Nursery which sold me some of their precious species for the task. Gradually I've become quite obsessed and now have 41 different vireyas in my garden, most of them waiting for their portraits to be done. I've continued to paint vireyas and am currently doing the fourteenth, *R. 'Highland White Jade'* which is just so classically beautiful and rewards me with its beautiful perfume as I paint. Others I have done are: *R. zoelleri*, *R. 'Arthur's Choice'*, *R. 'Niugini Firebird'*, *R. herzogii* and *R. javanicum*.

Naturally my main interest is in the plant and the painting rather than the gardening aspect. But I'm learning now to propagate them and to give them all the care they need. I'm very fortunate that Dr Rouse gave me some pieces of his special *R. loranthiflorum* 'Sri Chinmoy', which I've very

successfully managed to strike eight new babies from which I hope to paint when they're old enough.

Because botanical painting needs to be accurate in all botanical details I have had a fascinating time researching them and studying their different features under the microscope. In most of the paintings I try to show something of these in dissections at the bottom, e.g. the unusual pollen granules bound with cobwebby thread into long strands that unravel from the tops of the tube-shaped anthers. I was amazed when I found that some of the scales that are special to vireyas are almost identical (microscopically) in shape and design to their opened seedpod. These are some of the wonderful and repetitious patterns to be found in nature when we look closely.

Two of my vireya paintings, *R. luralense* and *R. 'Just Peachy'*, are currently in the US and will be shown in the 10th International Exhibition of Botanical Art and Illustration. This is held every three or four years by the Hunt Institute for Botanical Documentation in Pittsburgh and it's a very exciting privilege to be selected for it. The exhibition is listed on their website and will be open from October 28, 2001 till February 28, 2002.

I have been doing botanical art for seven years now and attend the Botanical Art School of Melbourne with Jenny Phillips, one of Australia's top botanical artists who also conducts masterclasses in London, South Africa, Sydney and the USA. It was Jenny who encouraged me to try for a Gold Medal and who suggested that I talk with Dr Rouse, so I owe her a great deal." ❀



Don Dosser, Man of Maples

FAIRIE NIELSEN

Some eight years ago a noted Victorian nurseryman and gardener put his house on the market, dug up and potted his most precious and prized plants, hired two large semi-trailers and moved to Tasmania.

His once quiet county retreat had become a popular place to build and he found himself within the town boundary. The roads, the rates, particularly the water rates, and closer settlement and all the frustrations of suburban living, drove him to look further afield.

He was looking for land where he could grow his prize rhododendrons and maples and not become hemmed in. Where the climate was cold enough for colour in his maples, and where most of the temperate plants would thrive. It needed to be within his budget, but most of all it must have a creek and a waterfall. It took him eighteen months to find the right place. He looked on the north west coast, at Scottsdale, and in the Derwent Valley where he worked for a year while designing and laying out a large garden and where his maples rested for a year – still in their containers.

He finally came to Wilmot and, while staying with a friend, it was pointed out to him that there was a small block of steep land for sale just down the road which has been on the market for some years but had not attracted any buyers. Totally overgrown, with magnificent blackberries, silver wattles, fireweed and ferns, but best of all he could hear, but not see, a waterfall! It was a very steep block with wonderful blackwoods and wattles, lay facing east, and the soil, the little there was to be seen, was friable and suitable for what he wanted. He spent the day scrambling through the rubbish, found the waterfall and a wonderful small stream with some deep pools, established the boundary lines, and contacted the estate agent. The deed was done and Don Dosser, “Man of Maples”, came to Wilmot, bringing with him his knowledge, his vision, and his skills, plus two semi-trailer loads of trees and shrubs including his famous ‘Lockington’ strain of rhododendrons.

Don Dosser was born in Australia, one of seven children, and went to work at the age of thirteen in a factory specialising in wooden door and window frames. Those early skills stood him in good stead throughout his life. His mother was a florist for forty years and her interest in flowers must have kindled Don’s interest in gardening, because he went to work in a nursery learning the business from the ground up. It was while he was working for Karl Van De Ven that his skills in propagation and grafting, especially with rhododendrons, were developed. He purchased an acre of land at East Warburton, built himself an A-frame house, established a garden and nursery, and from there developed

his 'Lockington' strain of rhododendrons. He chose the name 'Lockington' being the name of a village in Yorkshire – the home of his great-grandfather. His father named his farm in Victoria likewise, and Don too has kept the name both at his old home in Warburton and here in Tasmania.

Like all those who start from scratch, Don first had to build himself a house, a garage, a shed, a potting and propagation area, connect the power, build a road in, put up fences, and a thousand other odd jobs before he could start on his garden.

The site is steep so retaining walls had to be built with stone, paths established, fencing erected, and the native wild life had to be dealt with. Finally those much travelled plants came out of their containers and into the good Wilmot soil.

The maples, so loved by Don, are flourishing, beautiful in the spring and stunning in the autumn. He tells me has 200 large weeping maples, some forty years old, and 130 others. He considered them, especially the Japanese *Acer palmatum*, ideal as companions to rhododendrons and azaleas. The very fern-like leaf is perfect for just the right amount of shade. Don suggests we try growing some of our Japanese maples on a single stem so that small azaleas and other ground covers may benefit from the filtered sunlight.

'Lockington Gem' and 'Warburton Pygmy' are two of Don's registered maples, both natural bonsai types, still only 13 cm after 13 years. From all shades of green in summer through to autumn, when the maples are stunning in their range from red to orange, burgundy coral and all the shades in between, Don's maples make a fiery impact on the rather sombre native bush which surrounds his 14 acres of garden. One last brilliant display of colour before winter sets in.

Don has 300 rhododendrons, a great many are his own 'Lockington' crosses, and 50 odd azaleas. His first cross was done in 1964 and registered in 1974 with the Royal Horticultural Society in England.

Don's many maples have now, we hope, reached their final resting place. In the high country of Wilmot with its 55 in rainfall, the cool climate and good soil, they are responding to their environment. As Don Dosser walks round his garden on his grassed terraces, accompanied by his two spaniels, two cats and five hens, he is probably planning further improvements. But for the moment, with the sound of the waterfall always with him and the last rays of autumn sunshine touching the fiery red of the maples, it is enough.

So Don Dosser, "Man of Maples", we salute you! ❁

Fairie Nielsen is Patron of the Emu Valley Rhododendron Society Inc. and Secretary of the Garden Board, and is not only a keen supporter of the Emu Valley Rhododendron Garden but a tireless worker.

The “Rouse House”

BARRY STAGOLL

A few years ago, Victorian Branch Life Member Dr John Rouse and his wife Clare hosted a visit to their Toorak garden by a group of Branch members, primarily to enjoy an inspection of John’s marvellous collection of vireyas.

However, whilst we were there John also showed us many facets of his experimentation over the years with equipment intended to assist in the propagation and culture of rhododendrons and other valuable ornamental plants kept in climatic conditions far removed from those of their native environments.

I particular it was fascinating when he pointed out and commented on a number of enclosures, and equipment installed in them, designed to create artificially conditions conducive to optimal success in propagating and growing on plants. I remember thinking that many of us could enjoy more success, and less frustration, with our efforts in these aspects of our working with plants if we had a better feel for how such equipment could be used. Even better if we could master the important principles involved well enough to build equipment to suit our own particular requirements.

Some time later, on a visit to South Australia, we were shown propagating equipment in the Mount Lofty Botanic Gardens nursery area which, it was explained, was constructed using John’s concepts.

Even more intriguing, on the other side of the world, we discovered when George Argent was kind enough to provide a guided tour of the glasshouses at the Royal Botanic Gardens in Edinburgh that John’s ideas had been used there too. George referred to their propagating enclosures as “Rouse Houses” (see the accompanying photo of an Edinburgh “Rouse House”).

He’s no longer propagating plants himself, but I thought it would be interesting to ask John what he decided were paramount considerations in building the “ideal” propagating enclosure, and what practices in general did he consider most important for successful propagating?

Early in his experimentation with propagating methods John resolved that the prime things to provide for reliable rooting of cuttings were “bottom heat”, “cool middles”, and “misted tops”. They also needed a good amount of (diffused) light, and a further helpful addition was an artificial source to extend the light to about 15 hours in winter (he decided ordinary household fluorescent lamps were just as effective as the much more expensive special horticultural lamps). One problem was that he found you couldn’t buy a really reliable thermostat, although they were expensive. They weren’t very good at

controlling the temperature precisely, and they didn't last. Heating cables were also subject to deterioration. However, the temperature would stay more even if the tray was kept well-filled with tubes of propagating medium. He found bottom heat of 20–21° C was ideal for vireyas. Auto-misting was a necessary investment, about two to three mistings a day being adequate.

John found that a quite small space was satisfactory – a box 2 to 3 feet square was perfectly adequate. But all the various propagating boxes he constructed worked best if they were located inside a glasshouse, with the air in the house acting as a “buffer” for them, and minimising the temperature and humidity variations. The “glasshouse” worked best with one of the diffusing plastic materials in the roof rather than glass. To keep the environment well-ventilated, to ensure the air was being exchanged regularly with outside air, the glasshouse had a circulating fan operating constantly, and automatic venting was an advantage. In the hot, dry part of the year, an evaporative cooler was a very useful additional piece of equipment.

Commenting that sophisticated modern propagating environments now use computerized control systems, John opined that his were operated by “mechanical computers” consisting of the banks of timers and electrical relays he put together to control the various pieces of equipment.

Using pots without bottoms on them, and sitting them directly on a bed of sand which distributed the heat from the heating cable, he could lift individual pots and easily observe the formation of roots. His favoured rooting medium consisted of sand and vermiculite. He obtained best results by peeling bark off each side of his cuttings to the cambium and using liquid rather than powdered hormone applications.

The propagating boxes themselves were glassed on the top and sides, accommodated the heating trays in the base and fluorescent lamp fittings in the top, and access was provided by doors in the sides. They were not constructed so as to be airtight, to allow a flow of air from the surrounding glasshouse. To minimize fungal problems and generally attend to hygiene, they received a thorough cleaning at least twice a year.

On inspecting the Edinburgh photograph, John modestly commented that the construction of their box was “much better than anything I built”. And he would have found it so much more convenient to have had sufficient room in his home glasshouse to have been able to access his propagating boxes from more than one side.

But there's no doubting that his fame in the rhododendron field does not rely solely on his voluminous and ground-breaking research work on the plants themselves, and its wide publication (including, we're proud to say, many contributions to past volumes of *The Rhododendron*). ❀

Hybridizing vs. genetic engineering ... is there a difference?

MICHAEL HAMMER

So what is genetic engineering all about? To understand that we need to go back and take a quick look at how living things work. Think for a moment of the vast number of different substances that a living organism has to make. All the materials going to make up the structure of the organism; the material that makes up hair, the pigment that colours it blond or brown or black. The material in an animal that makes up muscles, skin, internal organs. The material in a plant making up wood, leaves, flowers and roots. What about the substances needed to make the organism function, the thousands of enzymes and hormones? Materials such as saliva, bile, insulin and various growth hormones.

There are many, many tens of thousands of different substances a living organism has to make if it is to live, grow and reproduce. How does all this happen? How can an organism such as ourselves manufacture such a vast array of different substances? It turns out that living organisms have evolved a very efficient way of handling that problem. To understand how lets look for a moment at an analogy.

In written language we use a vast array of different words to describe different things. Nouns to describe objects, verbs to describe actions, adjectives and adverbs to qualify those meanings. We could use a different symbol for each one of those words but that would make learning a language exceptionally difficult. Imagine trying to memorise a different symbol for each word! 10,000 or more of them! Instead we use a “construction set” approach. We use a set of only 26 building blocks, which we call letters, and string these letters together in various orders to make up our words. Surprising as it may seem, living things have evolved an exactly similar solution to the problem of making all the different substances needed for life.

Living things make up the substances they need by stringing together building blocks in a long chain. These building blocks, the equivalent of letters in English, are called amino acids and there are 20 of them. They are the same in all living things from the simplest virus, to the most complex mammal. There is only one alphabet of life on Earth.

The substances formed by this process are called proteins – the molecules of life.

Yunnan in the Spring – see page 56.



SCOTT FOUISTER

R. roxianum.

Field of *R. racemosum*.



SCOTT FOUISTER

Australian Hybrids – see page 26.



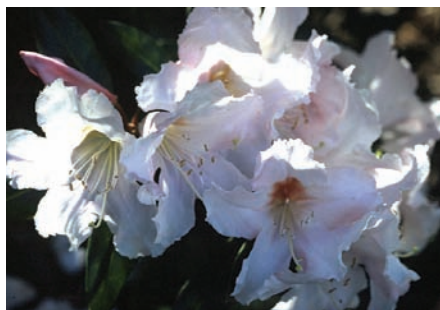
'Boulter's Rosalie'



'Donvale Ruffles'



'Donvale Apricot'



'Dunloe Tasha'



'Freckle Pink'



'Snow Peak'



'Tilly Aston'



'Kallista'



'Lockington Pride'



'Tristan Esposito'



'Florence Mann'



'Mrs B.L. Jones'



Above The botanical art of Anne O'Connor: *R.* 'Just Peachy', left, and *R. laetum*, right. See page 34.

Below The "Rouse Box", the propagating enclosure described on page 38.



Proteins – the molecules of life

Our bodies are made up mostly of proteins. Structural proteins form our muscles, our skin, our hair and our internal organs while most of the life processes inside our bodies are carried out by other proteins which we call enzymes and hormones.

The color of our eyes, hair and skin, the shape of our face and body, our height and many, many other attributes are all controlled by interactions of proteins. The same in plants – the growth habit, height, shape of the leaf and flower, and their color are all controlled by proteins.

All living things are based on proteins. That may seem strange at first sight. After all, a tree is mostly wood, and wood is largely cellulose – which is not a protein. Even the leaves are largely cellulose. That is true. Plants use mainly cellulose for their support structures, whereas animals tend to use bone and muscle fibers (proteins) for their support structures. However, the processes that allow a tree to live, to grow, to manufacture cellulose and other materials from sunlight, water and carbon dioxide are all controlled by proteins.

In English we use relatively few letters per word, usually less than 10 or so. Even so, we can make up many thousands of different words from these relatively small number of letters. By contrast, when living things string amino acids together to form proteins they can use up to several thousand amino acids for one protein. The number of different proteins than can be made up from these 20 building blocks is essentially infinite, and living things make a very large number of different proteins. The simplest single cell bacterium makes use of about 500 different proteins. Our bodies use a hundred thousand or more different proteins, each with its own function.

Defining a living organism amounts to defining the proteins making up that organism and defining where within the organism each protein is used.

When we eat some protein such as a piece of steak or some soy beans, our body does not use these proteins directly. Those proteins were relevant to the needs of the organism they came from. They are foreign to our bodies and more likely to be disruptive than useful inside our bodies. Instead our digestive system breaks up these “foreign” proteins into their individual amino acid building blocks. The amino acids are then transported to our cells where they are re-assembled into new proteins according to the needs of our body.

This, by the way, explains one reason why some drugs such as insulin – used to treat diabetes – have to be injected. Insulin is a protein, and if it was taken orally the digestive system would break it down into its component amino acids rather than absorbing the protein itself.

Where do amino acids come from?

The amino acids that are used to make proteins also have to come from somewhere, and ultimately these are also made by living things. Since plants do not normally eat other living things they must have the ability to make all 20 amino acids out of simpler substances – water, carbon dioxide and various chemicals supplied by fertilizers. By the way, all amino acids contain nitrogen and that is why plants require nitrogen to grow.

Animals on the other hand can either make the amino acids within their body or rely on acquiring them through what they eat. In the case of humans, for example, we have the ability to make 11 different amino acids within our bodies but need to get the other nine from what we eat. These nine are often called essential amino acids because it is essential we get them in our diet. The absence of even one of these 20 makes it impossible to manufacture many proteins with extremely serious repercussions on our health.

Stringing amino acids together to form proteins

As we said earlier, a protein consists of a long chain of amino acids strung together in a specific sequence. Imagine this sequence forms like a long piece of string. Once formed it “folds up” just like a long piece of string can be crumpled up into a tangled ball. Unlike a crumpled ball of string, however, the way a protein folds or crumples is very specific and depends on the amino acid sequence. It is the folded shape which gives a protein its properties within the body. This stringing together of amino acids to build proteins occurs within special structures called ribosomes inside the cells of living organisms.

But how does the ribosome know what sequence of amino acids to use to make a specific protein? Somewhere there must be a set of instructions which defines the sequence for each individual protein. Of course there is and many of you have probably already guessed what it is – DNA.

What is DNA?

DNA stands for deoxyribonucleic acid and it is a large complex molecule found in the nuclei of living cells. DNA is often described as storing our genetic heritage or defining how our body is to be assembled and function. This sounds very complicated and is not really very specific. There is a much simpler and more specific definition.

The DNA of a living organism is simply a coded version of the amino acid sequence used to build each and every protein used by that organism.

The entire genetic code of an organism is broken up first into chromosomes meaning simply “coloured bodies”. This name was coined by the person who first discovered them. He stained a cell with dye and noted that tiny objects in

the nucleus absorbed the dye and became visible as colored objects inside the cell. Each chromosome is a single very long molecule of DNA. It consists of a large number of genes strung together one after the other. Each gene defines the amino acid sequence for a single protein.

What is the structure of DNA?

DNA consists firstly of a strong backbone like a piece of string or rope. At regular intervals along this backbone there are points where small molecules usually called bases are attached. Imagine a ladder cut in half lengthwise through the rungs. The runner on the side is the backbone and the half rungs sticking out from it are the attached bases. Only four possible bases are permitted, Guanine (G) Cytosine (C) Thymine (T) and Adenine (A). The detail of each of these bases is unimportant for our purposes here as indeed is the structure of the backbone. To understand in broad terms how DNA functions within the living organism it is quite adequate to think of DNA as a string along which there are active sites with each site occupied by one of four possible bases.

Most if not all of you will have heard of DNA referred to as a double helix. What is all that about? Well it turns out that the free end of each base (the part opposite where the base is attached to the backbone) can attach to a second base, but only one specific base which we can call the complement. A can only bond to T, T can only bond to A, C can only bond to G and G can only bond to C. If we have a second piece of DNA with the exact complementary base sequence, i.e. wherever the first strand has a T we put an A in the second, wherever the first strand has a C we put a G in the second and so on the two strands will bond together base to base. An example of 2 complementary sequences would be:

AACGTCGATCCGGACA
TTGCAGCTAGGCCTGT

In our previous ladder example, if the half rungs are complements of each other at every location, the two half ladders can bond together to form a structure like a full ladder. These two half ladders do not just join together. Once joined, the backbones twist round each other forming 2 interlocked spirals. Imagine a ladder made of rubber; now take hold of each end and twist the ladder into a spiral or helix. That is the double helix structure.

So, is this of any significance? Yes, in living things, a single strand of DNA can automatically attract the complementary bases already attached to small pieces of backbone and thus grow the complementary strand. Like forming parts from a mould, each strand forms the template required to define the other strand. When a cell divides, special enzymes (proteins) split the double

helix into two separate strands. Each strand then grows the complementary strand to form two copies of the full DNA double helix. In short, the double helix structure allows DNA to form a self replicating molecule.

How does DNA define the amino acid sequence in a protein?

Earlier, I commented that DNA provides a coded version of the amino acid sequence. To understand the link between a string of bases and a sequence of amino acids it is necessary to understand what I meant by the term “coded”. That is most easily explained by example. Our alphabet consists of 26 symbols (we call them letters) plus some other symbols such as punctuation marks. Sometimes it is not convenient to use the symbols themselves and in these cases we represent these symbols by something else, usually numbers. Thus we could use 1 for A, 2 for B up to 26 for Z and then say 27 for space, 28 for comma, 29 full stop and so on. This is an example of a code. Using this code we can represent text as a series of numbers and this is exactly what is done inside a computer or when sending an e-mail letter. Of course it is necessary to know when each number starts and ends. For example, does 11 mean two 1's i.e.: AA or does it mean eleven i.e.: K. One commonly used way to resolve this potential confusion is make every number the same length for example, in this case 2 digits long. Then AA codes to 0101 while K codes to 11. Using this code the sentence “hi, my name is michael.” Codes to “0809282713252714011305270919271309030801051229”. Try it and see, take each pair of numbers starting from the beginning and see what letter the pair corresponds to.

The coding used by DNA is in fact quite similar to this. If we look at a single base there are 4 possibilities A, T, C, G. Taking 2 bases together gives us 4×4 possibilities i.e. 16 possible values AA, AT, AC, AG, TA, TT, TC, TG and so on. Taking 3 bases together gives us $4 \times 4 \times 4$ possibilities i.e. 64 possibilities. Living organisms ‘read’ DNA in groups of 3 bases which we call codons. Each codon specifies 1 amino acid and the sequence of codons specifies the amino acid sequence of the protein. Each codon has 64 possible values, which is more than the number of amino acids and punctuation codes. The decoding structure used by living things does not make unused codes illegal, instead it translates several different codon values to mean the same amino acid. For example:

AAA and AAG both mean the amino acid phenylalanine
 GAA or GAG or GAT or GAC all mean the amino acid leucine
 ATT or ATC or ACT all mean end of the protein
 and so on

Sexual reproduction

Within a genus, there is often more than one possible gene for each possible attribute. For example, there may be several alternative genes controlling eye colour. One gene results in blue eyes, an alternative results in green eyes, a third, brown eyes and so on. Biologists call these alleles. Different mixes of these alternative genes within a population gives rise to individual differences within that population.

Living things have within their cells at least two copies of every gene – one copy inherited from the father and one from the mother. Animals usually have only two copies but in plants it is reasonably common to have more than two copies. Two copies is termed diploid, three copies is called triploid, four copies is called tetraploid and so on. These two – or more – copies may be the same or may be different from each other. Where different, both copies may contribute to the observed characteristic of the organism, or one gene may dominate over the other in controlling the observed characteristic.

During sexual reproduction, one copy of each gene from each parent is randomly selected to make up the full gene complement of the offspring. The result is a new individual with a random mix of the genes from both parents. This process increases the diversity within the population and spreads genes throughout the population.

Hybridizing

Hybridizing makes use of the fact that offspring inherit attributes from both parents. We select two parents which between them have a range of attributes we desire to be combined in the offspring and we mate them together. The hope is that at least some of the offspring will by chance inherit the desired attributes from both parents.

Hybridizing involves forming new combinations of genes from within the existing gene pool of that species or genus. It is not specific to a specific portion of the overall DNA. Indeed, all genes within the organism's DNA are potentially affected. The outcome is also a very hit and miss affair. We don't know whether the desired combination will occur and we certainly don't know which particular offspring will be the one we want. Which is why hybridizers usually raise many offspring from a particular hybridization and select the best. All we have done is to better the odds by intelligent selection of the parents.

It is important to realise that hybridizing cannot create new genes which do not already exist in the population. It only creates new combinations of existing genes. The overall gene pool of the genus is not altered. For example; if there is no gene in the rose family which confers blue color to flowers, then no amount of hybridizing can ever form a blue rose. This explains the interest in finding new plants in the wild. A new plant may have some

unique genes not previously existing in the gene pool. Hybridizing can then incorporate those genes into new combinations with desirable outcomes.

Genetic engineering

In genetic engineering we select a specific gene from one organism (ie: a particular segment of DNA from the overall genome). We use a chemical process to cut out the piece of DNA that defines the gene from that organism's DNA and then we splice the extracted fragment into the DNA of the target organism.

This is totally different from hybridization. We are not re-shuffling existing genes or creating new combinations of existing genes. We are specifically and predictably adding a new gene to the genetic makeup of the target organism. In all probability the added gene will have come from a different genus and will be new to the genus of the target organism. It is important to appreciate that this new gene need not be present in all cells of the organism to which it has been added. It could be just present in a particular group of cells say within one organ. A very important issue is whether the new gene is present in the reproductive cells – the sperm and egg cells. If it is, then any sexual reproduction involving that target organism can pass on the new gene and the new gene will then be present in all cells of the offspring. This can lead to the new gene spreading throughout the entire genus of which the target organism is a part.

Interestingly, adding a gene to an organism does not guarantee that we have changed the physical organism. Every cell in an organism contains all the genes for that organism. Yet each cell only translates a few of those genes into proteins. A liver cell generates a different suite of proteins than, say, a muscle cell, even though both contain the same DNA. What controls which proteins a particular cell manufactures? We don't yet understand that in detail. However, if the new gene is to make a change to the organism it is essential that at least some cells manufacture the protein coded for by the new gene. This is called gene expression and ensuring it is often a more difficult task than just adding the new gene.

All living things use the same genetic code in the same way. This means we can take a gene from *any* living thing and splice it into *any other* living thing. For example, it could be a gene from a fish spliced into the genome of a tree or a gene from a grass spliced into an elephant or a gene from a human being spliced into a bacterium.

In theory we are not even limited to genes occurring in nature. Once we acquire the necessary skill (we have not done so yet) we could devise new proteins not currently found in living things but with interesting attributes. Our earlier discussion suggests how the amino acid sequence can be translated back into the corresponding DNA sequence, and once the sequence is known the DNA can readily be fabricated – DNA fabrication machines are readily

available today. This fabricated DNA can then be spliced into the target plant or animal of our choice.

Clearly this is a much more powerful and capable technique than is hybridizing. It gives us unprecedented ability to change living things in our environment. Along with this power, however, comes increased risk and danger. One thing we need to keep very carefully in mind is that once a new gene is introduced into a population, conventional sexual reproduction will spread that gene throughout the population. It's rather like releasing rabbits into Australia. The process is essentially irreversible.

In summary, hybridization creates new arrangements of existing genes within a genus. Genetic engineering introduces new genes into a genus.

Risks and benefits

There are a huge number of possible goals of genetic engineering. For ease of discussion, it is useful to classify these into groups. One possible classification into five groups is shown below. While arbitrary, it does give some idea of the breadth of genetic engineering applications.

1. One may be primarily interested in producing a new protein. The organism involved is really just a biological factory for its production. A good example of this is the production of human insulin by splicing the appropriate human gene into yeast cells. The organism can be tightly quarantined and only the protein produced is brought into the wider environment. Barring accident, spread of the new gene into the genus of the organism can be avoided. The proteins produced are usually (but not necessarily) drugs of some sort and as such have potentially large impact on human or animal health.

2. The goal may be to make a genetic change within one specific organism to correct a genetic defect or undesirable trait. The most likely goal would be disease control in humans. Immunisation programs, although not examples of genetic engineering, give an idea of the overall concept. Targets could be elimination/cure of diseases such as cystic fibrosis or cancer or diabetes. If the modification affected the sperm or egg cells produced, it could be passed on through offspring. In many cases however these cells are not affected and thus the change cannot spread through sexual reproduction.

3. The third reason is where one is interested in "improving" a variety or strain in some way. Of course the word "improving" is very open to interpretation. What one person considers an improvement someone else may consider to be disadvantageous. An example of this is the proposed modification of cereal grains so that they produce vitamin A to combat malnutrition in Africa. Another example would be the modification of a crop to increase yield. Producing a large enough population of the new variety usually requires transmission of the new gene through sexual reproduction (not always – for example navel oranges were

a chance mutation spread via vegetative propagation) and thus, as the modified organism moves out into the wider environment, sooner or later the new gene will spread throughout the genus. A more worrying example of the same type would be “improving” the human genome say to improve intelligence.

4. The fourth reason is to make a variety or strain easier or cheaper to produce. An example of this is the genetic engineering of cotton so that it produces a substance toxic to insects. Another example is the modification of soy or wheat so that it produces an enzyme which breaks up glyphosate. The ability to destroy glyphosate makes the plant immune to glyphosate herbicides such as Roundup. Again, population increase though sexual reproduction is the likely goal leading to spread of the new gene throughout the genus.

5. The fifth reason is purely financial gain. An example is the development of a grain which will grow but produce only sterile seed. The goal is to force the farmer to buy new grain each year. The mechanism used to induce sterility must have some degree of latency, otherwise the modified grain would not grow even in the first year. Depending on the way this latency is engineered in and the trigger mechanism employed, it may be possible for the mutation to spread in latent form through the genus. In this case, of course, the implications would be catastrophic in that an environmental trigger could activate the sterility gene rendering a substantial fraction of the genus sterile.

No progress is totally immune from risk. Even banning progress also carries significant risk. For example, would we be thankful today if legislators in the 1950s had banned development of antibiotics? What needs to be weighed is the relative benefit versus the nature and severity of the danger and, most importantly, find ways to control the risk without negating the possible benefits as well. As we move down the above list, the benefits clearly diminish and the risks increase. Few people would seek to ban the production of human insulin by genetic engineering techniques. It has revolutionized the lives of diabetics around the world. Few people suffering from a genetic disease or who are at risk or even whose children (born or unborn) are at risk would argue against potential new genetic engineering based cures. At the other extreme there are probably few people who would condone modification of grains to induce sterility. The extremes are easy to decide. It is the middle ground which is the most perplexing. Most of the social debate about genetic engineering at present centres on items 3 and 4 above.

A not so obvious risk

A topic very much in the popular press is the progressive loss of biodiversity through actions such as land clearing and biological competition with humans and introduced species of plants and animals. In fact, loss of diversity though human actions is far more widespread and far more insidious than that.

We are losing much of our planet's cultural diversity through competitive pressure of western culture exported through films, music, business dealings and just through contact with western culture.

Multinational fast food chains have huge competitive advantages through their economies of scale and advertising budgets. That competitive pressure is driving small cafes with diverse range cuisine offerings out of existence. The result for us is a loss of diversity and choice when we eat out.

We are losing diversity in manufactured goods through actions such as consolidation of business into fewer, larger companies, globalisation of business, copying of competitive product offerings and rationalisation of product offerings.

Coming back to the plant and animal kingdom, loss of diversity is not limited to wild species. We are also losing diversity in "domesticated" species through a focus on higher efficiency. The consolidation of plant retailing into a few large businesses focussed heavily (almost exclusively) on efficiency and profit, has resulted in a significant reduction in the variety of each genus stocked. In the case of rhododendrons for example it is often reduced to just one or two of each dominant colour. This is then reflected back up the supply chain through growers and hybridizers. The customer base of enthusiasts interested in more than the "generic" offering and prepared to make the extra effort to obtain them becomes too small and too geographically sparse to sustain a business and so the diversity is progressively lost.

The same thing applies to crops. Which farmer can economically afford to grow a grain yielding say 6 tonnes to the hectare when there is an improved variety which yields 10 tonnes to the hectare? Where is the profit in developing a new strain which is different but only yields say 8 tonnes to the hectare? The economic issues are very obvious and personal. The risks are more diffuse, less personal and thus more easily ignored (someone else will supply the diversity). They are none the less there and range from aesthetic implications such as the opportunity to experience new subtleties of form, colour, aroma and taste to issues such as possible disease pandemics in monocultures, soil nutrient depletion (this happened through the introduction of high yield cereals into Third World countries with very traumatic consequences) and nutritional deficiencies which often follow as a consequence of reliance on a very narrow range of foods.

So how is this relevant to genetic engineering? Well, in the past, the loss of diversity was limited by the genus barrier. Extensive hybridizing coupled with competitive pressures could reduce us to say one variety of wheat, but at least there were still alternative cereals such as rice, oats, barley, corn, soy. Genetic engineering crosses that genus barrier. It raises the possibility for example of one generic cereal. Yields may be increased, but with what price in terms of loss of diversity and susceptibility to disease? ❀

The Vireya Story

BRIAN CLANCY

In the past, vireyas were known as “East Indian Rhododendrons” when they were first collected in 1824, as “Javanicums” when *R. javanicum* was figured in the Botanical Magazine in 1847, and as “Malesians” when Dr Sleumer’s monumental work was published in English in 1966. The name “Vireya” had been given by Blume to what he thought was a new genus and the name was published in 1826 in honour of the French pharmacist Julian Joseph Virey. This is the valid name for this Section of the genus *Rhododendron*.

Vireya rhododendrons have the biggest flowers in the genus *Rhododendron* and are very showy and outstandingly beautiful. They have brilliantly coloured flowers varying from pure white, intense red and especially orange and yellow shades. Some are bi-coloured and many are fragrantly scented. Their hybrids especially are easily grown and flower prolifically when their few cultural requirements are met. Essentially they must be protected from frosts but the good news is that they are being grown to perfection and enjoyment of gardeners in every State of Australia.

Vireyas also include the smallest and dwarfest rhododendrons in the world; some growing no more than 10 cm high. Although they grow in the tropics these dwarf species are found at high mountainous areas which are often covered in snow, ice and experience continuously wet conditions. The dwarf species are difficult to grow as they cannot tolerate dryness and prolonged heat. However, hybrids have been produced with these species that are easy to grow and flower. These dwarf hybrids are very compact growers up to half a metre high, with many shoots coming from the base. Mature plants bloom for two to three months.

The modern classification of the genus *Rhododendron* consists of some 600 species; of these just over 300 are vireya species. The vireya species native to Papua New Guinea number 81, Irian Jaya 100, Sulawesi 28, Sumatra 25, Borneo 47, Malaysia 12, the Philippines 19, Malaku 8, Java 8. Lesser Sunda Islands 4, Mainland Asia 13, Taiwan 1, whilst Australia has two species: *R. lochiaie* and *R. notiale*.

R. lochiaie was described by Baron von Mueller in *The Victorian Naturalist* for March, 1887 (the spelling of this species was corrected by the RHS London in 1980 to the feminine gender: *R. lochiaie*). This species has been found on Mount Finnigan, Thornton Peak, Mount Spurgeon, Edmonton, Mount Windsor Tableland, Mount Bellenden Ker and Mount Bartle Frere in Northern Queensland. *R. notiale* has been found on Mount Bellenden Ker and the Malbon Thompson Range. Both species have the same colour corollas of deep red to pinkish red. *R. notiale* was determined as a separate species in 1996. The main differences are that *R. lochiaie* has a straight corolla with anthers dispersed around

the throat while *R. notiale* has a curved corolla with anthers clustered in the upper part of the corolla throat. Both Australian species are closely related to *R. comparabile* which is found on Mount Riu in the Milne Bay area of Eastern New Guinea.

The flowering of vireyas in cultivation started in England with the flowering of *R. javanicum* in 1847. *R. jasminiflorum* first flowered in England in 1849 and was exhibited at the Royal Horticultural Society's first show of the year 1850. Soon after *R. brookeanum* flowered. From five species hundreds of hybrids were produced before 1880 to be grown in ornate conservatories and glasshouses of the gentry. The year-round flowering of the Veitch hybrids was demonstrated by exhibiting a tray of cut blooms at every fortnightly meeting of the RHS, London, during 1897.

The near total eclipse of vireyas in England came with the economic disruption of the First World War. The vaulted conservatories, vast glasshouses with a heavy tax on each pane of glass, the cost of labour and the heat used for their cultivation became too luxurious for even the very rich. The outbreak of the Second World War ensured that both heat and human energy went into higher priorities.

Although *R. lochiaie* was discovered in 1887, it was not introduced into cultivation until 1939. In Australia, it was featured in the national gardening magazine *Your Garden* of May 1951. In 1952, *R. lochiaie* was the centre of attraction at Garden Week, Melbourne, where it was given an Award of Merit by the Nurserymen and Seedmen's Association. Then, in Melbourne in March 1955, huge numbers of seedling plants of *R. lochiaie* were sold growing in sandy loam in four inch pots at five shillings each in Coles Chain Stores, Melbourne.

The first New Guinea vireya species distributed by the Australian Rhododendron Society was *R. christianaie* which was raised from seed sent by Reverend Canon Cruttwell, an Anglican Missionary in September 1959. Canon Cruttwell had collected this seed between 2,000 and 5,000 ft, on cliffs and steep places in the Daga area, PNG. The seed was germinated by the Foundation President of the Society, Mr Alf Bramley. The seedling plants, three to four inches high were distributed to Members of the Society, both in Australia and overseas, in May 1961. Resulting from the distribution of *R. christianaie*, I wrote to German Botanist, Dr Herman Sleumer and from his very last collection in the field in New Guinea in February 1962, he sent me seed of vireya species *R. afakianum*, *asperum*, *erosipetalum*, *konori*, *laetum*, *inconspicuum*, *macgregoriae*, *phaeopeplum*, *zoelleri* and four non-vireya species.

R. christianaie first flowered in Australia in October 1963 and pollen from six plants of *R. lochiaie* was used to obtain hybrid seed. Early in 1966, two-year-old plants of this cross, together with plants of the hybrid *R. macgregoriae* × *R.*

lochiae, were distributed to members of the Society. The first generation hybrids were far more vigorous and easier to grow than the species.

R. laetum first flowered in Australia in 1966. Fortunately for myself, I was able to produce a plant in flower at the Annual Rhododendron Show held at Olinda on Melbourne Cup Weekend in November 1966. This exhibit won for me Best plant in the Show and the Award of Merit. The pure golden truss of *R. laetum* was the centre of attraction and the most photographed flower in the show. It was also featured in two national magazines.

The publication in English in the Netherlands in 1966 of Professor Dr Herman Sleumer's monumental work, *An account of Rhododendron in Malesia*, startled the horticultural and botanical worlds with descriptions of 96 new species of vireya rhododendron. Dr Sleumer increased this figure with descriptions of nine additional new species in 1973. Since then other botanists have determined some 20 new vireya species.

Needless to add, rhododendron societies and enthusiasts are still endeavouring to assimilate and absorb the huge impact of all these new species; most, however, have not yet realized the huge potential of vireyas which can provide flowers every week of the year in moderate climates such as experienced in Australia.

In his *An account of Rhododendron in Malesia*, Dr Sleumer produced an ordered identification of vireya species in a system that encompasses all the world's rhododendrons. Their relationships are clarified and the whole genus shifts into a new perspective in classification, distribution and development of lasting significance. The book is illustrated with 35 photographs of species in the wild and ten photographs of the main types of scale on the undersurface of leaves as used in the key to the subsection of Rhododendron Section Vireya. Of particular interest to enthusiasts are line drawings of 25 species illustrating habit, flower, ovary and style, stigma, fruit and seed.

Michael Black first collected vireyas in PNG in 1965. From the time he arrived at Lae in April until he left in June, he had dug up and despatched to the UK three lots of live plants with the soil attached; the third consignment contained 200 plants. He again visited PNG in 1968 and 1,000 live plants with soil attached were transported in tea chests and wooden boxes to the UK, many arriving within six days of leaving New Guinea. Notwithstanding, most of these plants were lost. Probably the worst disaster was encountered at the Royal Botanic Gardens, Edinburgh, where two glasshouses were devastated with infection by fungi adhering to the roots.

Lou Searle spent his working life-time in PNG employed by the Department of Agriculture. As Manager, Pyrethrum Project, he was stationed at Kundiawa, which is in the centre of the New Guinea Highlands with the Eastern Highlands on one side, the Western Highlands on the other and in between the Southern

Highlands stretching down to the Gulf of Papua. This position placed him in the centre of the most exciting rhododendron area of PNG. In his continuous travels he became a prodigious collector of vireyas. In time, the long driveway to his home in Kundiawa was lined on either side with magnificent vireyas. In 1974, prior to returning to Australia Lou Searle sent several large consignments of plant material to the Society at Olinda. Most of this material was delayed in the 'great mail strike' at the Melbourne Airport for up to 16 weeks, after which it was given to me to propagate. At the end of nine months continuous effort, I had produced 437 cutting-grown plants and 133 seedling plants with new growth ready for quarantine inspection. These plants included some 100 species including the magnificent *R. searleanum*, *pleianthum*, *maius*, *konori* etc. Before leaving PNG, Lou Searle sent his entire collection of plants to the Lae herbarium. Unfortunately, the herbarium did not have anyone with skill to care for the vireyas and the entire and irreplaceable collection was lost.

The vireyas in the glasshouse at the National Rhododendron Gardens, Olinda, were maintained by Arthur Headlam and myself for seven years in the 1970s. We were given approval by the Committee to take over their maintenance when the vireyas had degenerated due to a ban on watering and the lack of skilled attention. Over 100 persons attended the first publicised working bee and another 80 to 90 attended the second working bee and five of these joined the Society. With the use of fern logs, reporting, weekly watering and fortnightly foliar feeding most of the vireyas responded immediately but some 50 other plants had to be given extended attention outside the glasshouse. During the period, I provided 416 additional plants of vireyas including 20 ten-year-old plants of *R. lochiaie*. From then on vireya flowers were on display every week of the year; all visitors, especially Japanese and German visitors, were able to see flowers of our native *R. lochiaie*. This flower display of vireyas became popular with the general public; many of whom paid the admission fee to walk through the glasshouse and then leave the garden.

What is generally not known is that I regenerated some 50 vireya plants outdoors in the creek area. One of these was the famous *R. zoelleri* 'Michael Black', which was located outdoors in the creek area for five years before being returned to the glasshouse in superb condition with 33 flower buds.

Without any doubt, vireyas do not need glasshouse conditions and grow best outdoors under the moderate climatic conditions experienced throughout Australia. In actual fact, they are being grown this way to perfection in every State. Under Australian conditions they do not need artificial heat to grow but they do need regular watering. Where they are planted in gardens and not regularly watered the growth and flowers are less than second rate compared with what can be achieved. To substantiate this statement, it should be noted

that I have been growing vireyas since 1955. I have my own glasshouse with heated beds, misting and artificial lighting. During the period from autumn to spring each year when Daylight Saving Time does not operate, the daylight is extended to 18 hours with Tru-Lite® Powertwist fluorescent tubes and this enables the vireyas to double in size over the six months. Currently, in my twilight years, I flower in excess of 150 new vireya hybrids every year. I maintain that this 46 years practical experience has given me a proven knowledge in the cultivation and flowering of vireyas.

Good news for vireyas is the fact that after years of neglect there, a Vireya House is now proposed for the National Rhododendron Gardens, Olinda. Properly managed and supervised, the proposed Vireya House has enormous potential to become a drawcard for visitors to the Gardens and a tourist attraction for Victoria. The main purpose is to provide a display house where the vireya blooms will last in good condition for one month and provide the equivalent of an annual vireya show every week of the year at Olinda. In this day and era, the general public demand everything in a convenient package. It is essential, therefore, that the house must be user friendly with a good atmosphere, paths, seats and protection from the cold winds that can be experienced at Olinda. If these ideal conditions are provided, the Vireya House will become a meeting place for visitors and members to see and discuss the merits of the magnificent blooms. This involvement will generate interest and enthusiasm in the genus *Rhododendron* and help to ensure that the Vireya House becomes a national showcase for half the genus. ❀

Vireyas in Botanic Gardens Volunteers Required

At national level in the Society, we're hoping to make a real start soon on a project aimed at encouraging more Australian public botanic gardens to grow and display vireyas.

National Council would be grateful to any members prepared to volunteer to assist this project with their time, expertise with vireyas, and potentially access to suitable plants which might acclimatize successfully to particular gardens with a range of climatic conditions, including those in northern locations.

Please contact the Secretary if you'd like to get involved.

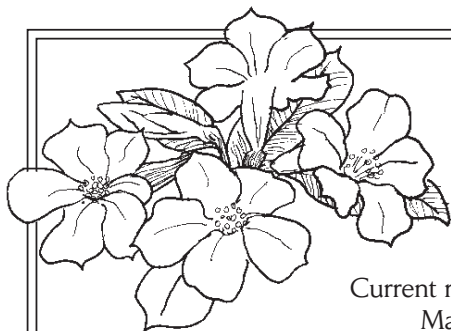
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Yunnan in the spring ...what an experience!

SCOTT FOUBISTER

I am a Level 5 Horticulturist at the Mount Lofty Botanic Garden. This is an account of what I can only describe as a plant lover's dream coming true.

It was during the Autumn of 1998 and I was happily gardening the slopes of the Rhododendron Gully, at Mount Lofty Botanic Garden, when out of the blue my Manager, John Schutz, presented me with a unique opportunity. He said, "Scotty, how would you like to go to China?" Without any hesitation I said "yes". The next thing I knew I was on my way to be a part of a botanical expedition through the province of Yunnan in China. "Oh my God, I can't believe this", I thought.

The group began to form as we all arrived in humid Hong Kong. They included our famous leader, Bob Cherry; his friend Graham Oke; Jim Cane from the Royal Tasmanian Botanic Gardens, Hobart; Pat Mavromatis, Sue Wells and her daughter Penny from Tasmania; Ken and Lesley Gillanders from Woodbank Nursery, Tasmania; John Matthew a member of the Friends of the Sydney Botanic Gardens, and myself. After flying with Dragonair, we arrived in Kunming to be greeted by our Chinese guides, Chang and Lu, and our drivers, Chen and Zhu. Upon gathering for the group's first Chinese meal and drinks we were treated with a complete overview of the adventure which was about to unfold. The journey begins.

After making it out of chaotic Kunming we headed for the never-ending mountains and rice fields. The roads are rough and ready, and lined with *Populus yunnanense* or Tasmanian blue gums.

After passing through industrial Chuxiong and being fumed out, we arrived at the Zi-Xia mountain villa set amongst *Pinus*, *Calocedrus* and *Castenopsis* forest. After settling with some fantastic food, we botanised the valleys and found many beautiful ferns, gentians, *Pieris*, *Indigofera* and a large sweep of *Primula purpurescens* along the creek line. The excitement begins. On the way to our next town we stopped at a monastery and saw a 700-year old *Ginkgo* and an equally old *Magnolia delavayi*.

We travelled to Dali along the old Dali Road which was pot-holed and very tarry. There were putt-putts, trucks and bikes everywhere. It seemed as though the road rules were based on organised chaos; but it worked (as I experienced, having sat at the front of the bus). On arriving in Xiao Gang (a new port of Dali) we settled in to the Red Camellia Hotel. The next day we took a cruise

on Lake Erhai on the “Rhododendron Boat” followed by some shopping in the fascinating Dali markets.

Our first real challenge was to climb the Chang Shan and see some real rhododendron forest. Dali was at its base and so we drove up to 3,000 m, and along the way saw many beautiful *Deutzia* and *Philadelphus*. Once at our stop we hiked to the summit. The vegetation changed into *Picea* and *Abies* forest among the more rugged mountainous outcrops. We came across large pink and white trusses of *R. cephalatum* and the bright sulphur yellow flowers of *R. lacteum*.

Also prominent were the red *R. neriiflorum* plants with drifts of clumping bamboo everywhere. At 3,500 m we came across snow, and found flowering primulas. As we approached the exposed highlands we saw four different species of dwarf rhododendrons from groundcovers to one metre. At the summit we were at 4,095 m and the weather “snapped” to instant cold and high winds. Our first true taste of “Rhody heaven” was unbelievable. We continued to botanise the lower slopes the next day, finding *Rodgersia*, *Iris*, lilliums and *Arisema*. After a final dabble in the markets, we headed for Jianchuan with a stop-over at the Shibao-Shan temple where we found rhododendrons, *Buddleja* and *Lyonia* in full flower.

Upon arriving at the Jianchuan Guest House we flicked out the bed bugs and had a well deserved drink. Our next destination was the 99 Dragons National Park. The hillsides started with *R. decorum*; with hedges of pink roses around the villages.

On arrival at the Park we were dazzled by a hillside full of purple *R. russatum* with a colourful array of local washing draped over them, out to dry. From here we headed up the mountain by foot into conifer forest dripping with lichen. First we came across the white, purple throated *R. rex* ssp. *fictolacteum*, and then a bit further up the white, under-felted tubes of *R. roxianum*. All over the hillsides there were mixtures of pink, white and green until we came to the valley floors. Here there were bog conditions, housing stands of *R. hippophaeoides* in their purple glory. On our way back we came across forests of *Lithocarpus* laden with a huge diversity of understorey plants.

Upon leaving the next day we drove over roads covered in wheat and rice sheaths which were threshed by passing vehicles. Our destination was Zhongdian which involved passing by the muddy Yhang Zhi River and the famous Tiger Leaping Gorge. As the land plateaued out at 3,000 m we passed through fields of pink *R. racemosum* dotted with grazing zhong – a cross between a yak and a cow. We arrived in the newly re-built Zhongdian and settled in at the Bita Hotel. Our first stop was the Napa Hai monastery which contained many beautiful wall paintings and statues of Buddha. We went beyond the boggy

plains to explore further and found yellow *Daphne*, pink *Incarvillea*, dwarf blue *Iris*, big red *Euphorbia* and patches of red and yellow paeonies. The next day we travelled past many Tibetan like villages, showing prominent food drying racks as we headed to Lake Bita. We walked through ancient *Larix* forests covered in lichen and botanised around the lake to find *Androsace*, *Chesneya* and *Bergenia* in flower. Day three included a mystery trip into the hills where we were rewarded with lots of understorey plants including *Gentian*, *Iris*, *Mandrago*, *Primula* and the fascinating *Sinopodyphyllum*. That night a few of us indulged in some dancing at a local night club, which was great fun.

We headed back down the mountain the next day travelling parallel with the river. Our destination was the famous city of Lijang at the foot of the Yulong Range. We stayed in an authentic hotel with wood carved balconies and bonsai filled courtyards. We met up with a South African group. All enjoyed a fascinating and culture-rich meal with long spouted tea pots filling our herbed tea cups. Our first adventure was to head into the Yulong mountains where the peaks were still capped with snow. Along the way there were the tall, daisy like flowers of *Ligularia* down to the ground and hovering purple, white and yellow of roscoes. We arrived at the Black Water River to be greeted by drifts of candelabrum *Primula*. As we walked up the river the beauty was inspiring with many beautiful orchids, ferns and mosses. After luncheon we travelled down the White Water River to be amazed by more orchids, pleonies and dwarf *Iris*. On returning to Lijang we visited the Yifeng Temple which is home to the famous Ten Thousand Flower *Camellia reticulata*. Next was a visit to an untouched temple and time spent with a wonderful old monk. Then we all walked the cobbled streets of Lijang looking for bargains while Bob successfully hunted out the famous Lijang Climber, *Rosa giganteum*. On the last night, after a table tennis challenge, the 'party group' found another night club and danced the night away.

On to our next town as we had one big journey ahead, albeit with a little more heat and humidity. After we arrived at Huapin, we botanised the surrounding mountains. The best finds were a translucent yellow-green snake and a grey dragon with a fluorescent green head. Animals were not in abundance, so they were a nice surprise.

Finally we headed off destined for the last great adventure. We travelled through Ducow which was an industrial town full of iron foundries and steel works all pumping out loads of pollution. Slowly we entered farming land again and started climbing the mountains. Along the way we saw an ancient soil forest as we headed to Wuding, high on the crest and surrounded by lush valleys. The next day we headed for the final magical place – Jiaozi Shan. The trip was slow and we saw many rice fields and vegetable fields lined with plastic



SCOTT FOLBERGER

The author with *R. rex* ssp. *fictolacteum*.

covered rows for as far as the eye can see. Finally we arrived at a clearing on the top of the mountain and were greeted by a village of people and their horses. Next we were out of the bus and sitting on a pack horse, then being led up a steep track by our guides who were wearing grass fibre rain jackets. As we went up the clouds rolled in and the sun went down. I was in heaven. A couple of hours later we arrived in a fairy tale village where we warmed up by the fire and rested.

The next morning we awoke to be greeted by a magical view of a giant valley running into the distance with a huge escarpment on the other side. As the mist lifted there were endless forests of giant rhododendrons dripping with lichen and the ground was a carpet of moss covered in spent

petals. There were beautiful streams and waterfalls set among *Abies gorgeii* with its horizontal limbs looking like “Lego” trees. Once on the top of the escarpment there were plateaus abounding with many tarns (lakes) surrounded by dwarfed rhododendrons. There were fields of clumping grasses sprouting patches of *Fritillaria* in flower. We made it to the summit on the plateau which was 4,200 m. I sat and felt very inspired and connected to the natural world. The views took in masses of white and pink flowering rhododendrons among the coniferous rocky outcrops. This place was truly a rhododendron paradise and I felt very lucky to be there.

Unfortunately, this was the last adventure and so we headed back to Kunming to end the journey. On the way back we all reflected on how wonderful the plants were, and how special the Chinese landscape is. I met some great people and experienced many facets of Chinese culture and custom. I must conclude by saying that the experience has made me a better person and more informed, with a passion for horticulture. As I sat in the plane back to Australia and remembered all the experiences of the trip, I began to think of what I could bring back to Mount Lofty. My China trip is as vivid to me today as when I went in 1998. I’m very grateful to my generous sponsors and my Manager, John Schutz. ❀

Rhododendrons on a windswept hill

JOHN TOOTH

Bracken Lane, Fern Tree sounds an idyllic rural retreat – and so it has turned out to be. We were immediately attracted to the area when a change of job in 1984 caused us to move from Devonport to Hobart. 400 metres up Mount Wellington, the mountain overlooking Hobart, with bush tracks from our back door and just 10 minutes drive to the city centre, sounded just too good to be true. And then we heard of its reputation as a good area for rhododendrons and we could not live anywhere else.

We were fortunate to find one of the few houses with glorious views overlooking Hobart, with a garden on a steep Northern slope – which doubled the planting area. It seemed ideal and so we moved in, bringing 130 rhododendrons of various sizes from our large garden in Devonport. However, we had not fully appreciated three quite considerable disadvantages of the garden site – the strength of the wind, the lack of soil, and the number and sheer cunning of the local possum population.

As pilots who have flown in New Guinea will tell you, mountains cause a down-draft on the lee side. Our house is on the east side of Mount Wellington and there is a tendency for people to think that we would get some shelter from the prevailing northwest and southwest winds. Unfortunately they are very wrong. The northwesterly in particular fairly howls down the side of the mountain, and so we soon learnt the absolute necessity of staking rhododendrons after they had been moved. More of this anon.

The soil, or rather the lack of it, was puzzling. This was partially cleared forest area and from the size of the remaining trees one would have expected some good topsoil. But there was no such luxury; rock predominated and we had to learn that in Bracken Lane you gardened with a crowbar and not a spade. A local told me that before the 1967 bushfire disaster there was good soil but at that time the big trees burnt for many weeks, then fell and uprooted, leaving the soil at the mercy of the heavy rains that fell soon afterwards. The result was that most of our topsoil was washed down into the estuary.

The lack of soil, the amount of rock – both surface and buried – and the steepness of the slope all influenced our design. Having painfully levered to the surface the large buried rocks, we drag or roll them down the hill to the site of the next terrace wall. With crowbar and wedges we build retaining walls of perhaps a metre high. Then the bottom half of the created trough is filled with rubble and the top with our planting mix. Fortunately for us we met up with Bob and Betty Lovell, who told us of their success in growing

rhododendrons in nothing but rotted pine bark and added manure. We hastened to do the same and this was not a big problem, due to the availability of pine bark from the local paper mill. We think it helps to add one part in four or five of soil, when we can find some on our rocky hillside, but often we have to resort to pine bark only. Pine bark, or a soil/pine bark mixture, over rubble behind a retaining wall makes a perfectly drained growing medium – and the rhododendrons thrive in it.

And then there were the possums. We had occasionally met up with these creatures on the northwest coast of Tasmania but they troubled us little. In Bracken Lane we are on the edge of the forest and we have the impression that they queue up to get amongst our deciduous trees. We have always loved maples, and to a lesser extent birches, as companions to our rhododendrons. We soon learnt that possums like deciduous trees with about the same preferences as we have. Maples, in particular, are their delight and I have spent much time in the the last 15 years trying to defend them against possum attack. Our boundary is too difficult for an electric fence at possum nose height. Trapping them was, and is, an option but it is certainly not infallible, as the number and the cunning of the tribe is too great. We tried spraying the plants with a solution of quaiar chips but no sooner did we do this than there came another ‘shower around the mountain’ (as our weather forecaster puts it) and the quaiar was off again. Then we heard that possums did not like the smell of moth balls so we tied these in portions of panty hose and attached them to our maples. It seemed to work for a while but then, after a night of disastrous damage, I went out the next evening to find a possum actually eating the moth ball/pantyhose combination.

Eventually, I have come to the conclusion that the only reasonably sure defence is to prevent them climbing up the tree. I use stiff but flexible, clear plastic sheeting, which is more attractive than the wide metal bands one sees around telephone and electricity poles. Possums cannot get their claws into this but the tree must be sufficiently tall so that the animal cannot leap from the ground to the lowest branches. There are difficulties when planting a new maple; I now will not buy one which is less than two metres tall and then I coil around the trunk a 30 cm section of stiff plastic, bind it with a thin wire tie, drill a hole near the top of the coil and, using this hole, suspend it from the lowest branch. The fact that such a coil is hanging loose adds to its efficacy as possums like to climb on something fixed.

The wind is a special problem for us as we tend to move our rhododendrons around to obtain better colour patterns and, of course, to change their position when they get too big for the original planting sites. Two years ago we moved about 30 to a new section we had bought from our neighbour. This was a strip of

about an eighth of a hectare of deteriorated fire-damaged forest with giant trunks of eucalypts which had fallen after the 1967 fires. It is on a slope of about 45 degrees but the great attraction was that there was a small stream running through the block. It was quite an effort to burn out the fallen eucalypt trunks, remove the enormous stumps and then form areas for rhododendron plantings.

When that was completed it was not too great a task to drag the 30 rhododendrons which had outgrown their sites down to the new area. They were mostly plants of around two metres in height which meant a root ball of perhaps 130 cm diameter. The main problem was how to ensure they were not blown out of the ground by a northwesterly gale. After long experience of retrieving large, recently moved rhododendrons from the fire trail at the bottom of the block I have settled on a method of staking them which may bring howls of protest from purist gardeners. I buy lengths of old galvanised water pipe from the local tip shop and then hammer this metal stake through the root ball so that the plant is actually pinned to the side of the hill. This method has always succeeded where more conventional staking has failed and no plant has ever suffered from such maltreatment.

There is then the question of mulch. This is badly needed on our north-facing slope but there is the difficulty of the wind blowing it off. But for one factor bracken would undoubtedly be the best; it interlocks so that blackbirds cannot throw it off and if one uses bracken stems to pin down the fronds, neither can the wind shift it. However we are in a high fire danger area and although there is a reasonable chance that a bush fire would go over our rhododendrons, the possibility of a spark setting fire to bracken mulch is just too much of a risk. In our new area we tried gum bark for the first time and the results are quite encouraging. The bark interlocks and holds together so that it is neither blown off nor does it slide down the hill. Once watered it holds moisture well so that it is much less flammable than bracken which dries off so quickly.

We sometimes envy our friends at the rhododendron club who have gardens with good topsoil and some shelter from the spring winds. However one cannot have everything in this world and we would not trade our splendid views and access to such a wonderful mountain environment. It has also been an interesting challenge to find ways around the difficulties of our environment. ❁

John Tooth and his wife Barbara are members of the Southern Tasmanian Branch. They have been growing rhododendrons since 1976, starting with them in their large garden on the northwest coast of Tasmania and bringing some large plants with them when they moved to the environs of Hobart in 1984. John migrated from England in 1960 whilst Barbara comes from West Australia and both enjoy the unique ambience of Hobart and its much underrated climate.



Huts at Jiaozi-Shan

A Chinese Diary

EXCERPTS FROM SUE WELLS' DIARY, MAY 1998

Tales of the Plant Hunters of the nineteenth and early twentieth centuries always have me utterly absorbed, lost in the exploits and incredible feats of endurance these early explorers had to contend with. A vast array of the placid looking species and hybrids which gaze at us from our gardens only made it there because of these intrepid botanists. Battling heat, disease and unpleasing bugs and bigger beasts in monsoonal forests, dreadful blizzards in the icy alpine zones, non-arrival of vital provisions, still they kept on adding to their collections. They had to cope with capricious governments, were chased and occasionally murdered by suspicious Tibetan monks in the Himalayas – yet still the joy of finding some new and undreamed of treasure made all the privations worthwhile. And then there was still the journey home, when entire collections could be lost crossing a raging river, or ruined on the voyage back to Britain.

In 1998, an undreamed of opportunity found me part of an Australian botanical trip to Yunnan, in SW China. There were ten of us, six from Tasmania, travelling with leader Bob Cherry of Paradise Nursery, NSW. Under the auspices

of the Kunming Botanic Institute, our wanderings followed or crossed the routes of some of our earlier heroes – but there the comparisons had to stop. We had two small buses with two very competent Chinese drivers to transport us enormous distances, and kind Cheng and Liu from the Institute to attend our every need. All we had to do was sit back, or alight and botanize.

But everything is relative. And browsing through my diary recently I became caught up once again in one of our own little adventures. No Kingdon-Ward, Forrest or Wilson, me – just an ordinary Tasmanian utterly fascinated with the flora and culture of a different country, caught up in the unfolding of our own small dramas.

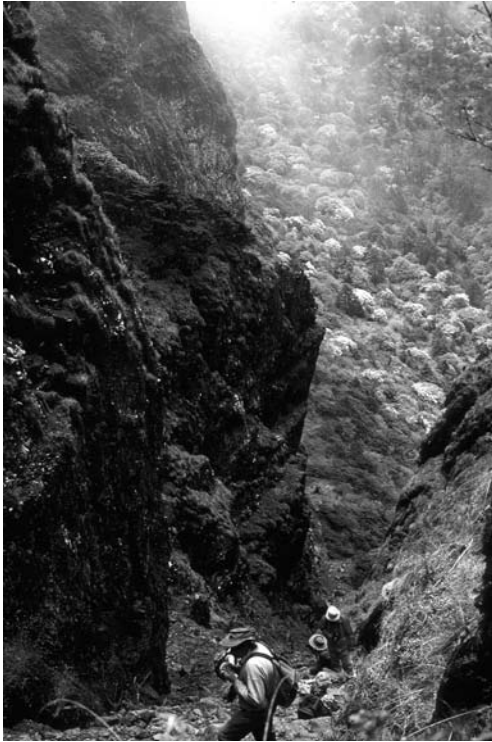
By the end of May we had been adventuring for over three weeks. Our teeth still rattled on the atrocious roads, the dizzy drops falling away from the narrow, unstable roads still gave several amongst us our daily quota of stress. Staring fixedly at the cliffs on the bank above didn't usually help much, as one became only too painfully aware of the huge boulders just poised there ... above. And Asian drivers do seem to get a kick out of overtaking on blind hairpin bends. We'd passed the occasional truck scrunched up into the cliff face – we never saw what happened if something went wrong on the other side of the road. And we firmly kept our sense of humour in our dealings with the Chinese toilet systems and the range of accommodation.

We were having the trip of a lifetime, and the botanizing was the cream on the cake. My diary takes over ...

Yunnan, Saturday 30th May. Wulong Shan What an amazing day! Interest, frustration, terror, confusion, and finally a two hour pony ride straight up, straight down, on and on, through the mist and the dark, until eventually the haven of our little home high in the *Abies/Rhododendron* forest

First the never-ending interest of the steep precipitous drives over endless mountain ranges, down gorges into the most intensive cultivation – rank on rank of terraced rice paddies and later valleys of endless rivers of plastic sheeting with endless tufts of tobacco plantings poking through.

Wasted nearly two hours by taking the wrong road, but finally transferred into our small mountain climbing bus with our day packs only, stuffed with enough of our worldly possessions for three nights, and began the 40 km ascent of Jiaozi-Shan to our mountain “resort”. We climbed and climbed, and the world dropped away from us, and for those of us cursed with over-active imaginations, huge nervousness set in. We had thought we were finally inured after three weeks of narrow, precipitous mountain roads, but this was the worst yet. And yet now and again the road would squeeze through a pass and behold! For a brief while there would be little terraced crops clinging for dear life to the mountainside.



Jiaozi-Shan, the start of the ascent.

Then it would be great airy space again, and thousands of feet below the shining plastic ribbons of tobacco plantings looked like ant-land.

Unaware that our progress had been observed from the tiny mountain farms, we finally arrived at the end of the road, at over 10,000 ft, and as the bus slowed down we were mobbed by a huge throng of pony owners, running alongside the bus shouting at us. We were totally unprepared, and quite overwhelmed, and were grabbed as we alighted. All we four ladies cared about at that point was a loo, and we fought our way towards the only wooden shanty that looked a possibility, too overwhelmed to care if the seething mob came with us or not. They did actually await at

the 'door' (it was the worst loo of the trip) but as we emerged each of us was grabbed and shown a pony by the most vocal. By this time it was 6.30 pm, the mist was swirling around us, night was about to fall and we knew that the path was steep and dangerous. Two or three of us had never ridden in our lives. It was the stuff of nightmares, and we were still weak with fright from the bus ride. John (75) had reached the end of his limits, and elected to return in the bus to the grotty village far below for the next three days. I stared at him in horror through the window of the bus as I realised he wasn't coming, but by then I was somehow mounted and clinging in desperation to the pommel, the pony's rump was being whacked and I was off, straight up and up into the murk, eyes firmly fixed on Lesley in the mist ahead. I could already see the headlines in the newspapers at home, "Lost Australians in Chinese Wilderness".

And then the exhilaration set in! I fell in love with the bouncy ride, with my pony, with my guide (who was never too far behind and came close in the really nasty bits); the mist became my friend because it hid all the fearsome drops from me; I learnt how to hang on (for dear life) to something on the

saddle behind me on the sharp drops; and on and on we went. My guide had a second pony with three packs on it, and both horses wanted to be the leader – so turn and turn about each horse would scramble off the track at a canter in an effort to overtake. Wow! Fear and exhilaration all mixed up, all the way. Halfway up we had to dismount and climb a ridge because it was too rough for the ponies – oh, blessed mist. Much of the way we could only see 10m or so ahead. Ken, Pat and Penny, somewhere ahead, got caught up in a heated altercation between Cheng and Liu and the pony guides over fees, but it smoothed out eventually. The last bit went steeply down and down – by now it was dark as well – and I felt like The Man From Snowy River, believe me. Mud, slippery rocks and slippery timber limbs across the track.

And then we were there, at our little collection of huts, and it could have been a palace with its welcoming lights and dark friendly faces (the generator hastily turned on as the first person appeared out of the mirk). Lesley and I dismounted (fell?) into the arms of our guides, I gave my pony a last grateful pat for getting me there in one piece, and our stiff and shaky fingers found their way round a wonderful cup of green China tea.

Penny, Pat and I are sharing a little wooden hut with en suite! A hole in the floor and tin basin on a bench – but luxury compared to what we were expecting. And nice Chinese meals, just two a day, 10 am and 5 pm.

Sunday, 31st May And here we are, perched on the side of a mountain, about 12,000 ft high, in the midst of towering cliffs, sheets of white, pink and yellow rhodos (*R. sikangense* var. *exquisetum*, *bureavii* with its magnificent russet indumentum, *calophytum*, *lacteum*) in *Abies georgei* forest; birds singing; stream bubbling by. Magic! Very hard beds ensured we didn't sleep in, but none of us suffered the slightest stiffness from our labours of yesterday. We were off down the valley to the stream below to botanize and fill in time before the 10 am breakfast. I must say you notice any climbing without any food inside you at this altitude.

We gathered in a beautiful grassy glade at the foot of the towering escarpment, surrounded by rhodos flowering their heads off. Purple cascades of *Bergenia purpurescens* made a blaze on a cliffside. The early morning mists swirled around the high escarpment above us, making the scenery even more dramatic. Several of us shouldered our day packs and started climbing up a funnel in the cliff face. A bit of a challenge for me, I just went up on all fours, clinging for dear life to any fingerhold, and not looking down. Just as well we'd adapted a bit to higher altitudes, because there's no way I could have kept going on the Cang Shan like that at the beginning of our trip. As it was my breath was coming in gasps, but I was absolutely determined to climb that

chute and get to the plateau at the top. What triumph when Penny met me to give a final hand and I popped out over the top! I felt a million dollars! And we had an absolutely magic day roaming over the plateau, at nearly 14,000 ft, mist coming and going, past beautiful little tarns and lakes, dropping to our knees over primulas, fritillarias, dwarf rhodos that we couldn't name, etc, etc. Fortunately we had a guide with us, so the mist and lack of obvious tracks were not a problem. We'd had to wait for him that morning, and he appeared dressed in thin shirt, wet sandshoes – and a smart stripey umbrella! Definitely added tone to our motley lot.

The plateau was an undulating landscape with rocky outcrops, and low mounds of windswept bushes of pink and white *R. sikangense* var. *exquisetum*, *R. bureavii*, an occasional taller *R. lacteum* crowded with its superb yellow blooms in the lee of a rocky cliff, and lone specimens of *Abies georgei* (a variant of *A. delavayi*?) standing sentinel, bare trunks topped by a pyramid of layered branches at their apex. At their feet, carpets of little mauve and purple rhodos, unknown to us, rolling off into the distance. And among them, infrequent enough to be exciting discoveries, were primulas, *Fritillaria cirrhosa*, *Diapensia bulleyana* with petite yellow bells like a miniature rhodo. Little clumps of tiny, tiny blue *Primula nanobella* clung to cracks in a beautiful ferny cliff face. As we crouched absorbed, lining cameras on to the fritillarias, feeling like the only people in the world, we became aware that we were being watched. Hill farmers, with cloaks of *Trachycarpus* palm fronds, had appeared from – where, for Heavens sake? – and were politely waiting for us to finish. We exchanged greetings, then they immediately got down to business, digging up the roots of every *Fritillaria* we had found, apparently a herbal remedy for coughs.

Wandered along the track in the evening to watch the sunset – layer on layer of distant silhouetted ranges receding into the pink sky, but most of the evening was spent sitting in the tiny communal hut with walls that bounced when you leant on them, with an open fire in a pit in the middle – no chimney or windows. We sat on small stools around the fire, rubbing our eyes and swapping stories. Very atmospheric.

Monday, 1st June Washing day! Every rhododendron bush and fence railing was covered with sheets, pillowslips, tablecloths, etc, etc!

In the afternoon several of us walked up through the forest. The mossy floor was a beautiful carpet of fallen pink and white rhodo flowers. We climbed up along the creek bed into a huge ravine, which ended abruptly with a blank cliff face over which a waterfall tumbled for over 100 feet, a bank of snow lying at the foot of the precipice. Rivers of *Bergenia purpureascens* sheeted down the steep sides, arisaemas hid in shady rocky crevices, and looking out from

the mouth of the gorge the ever present rhododendrons over the hillsides looked as though they had been coated with snow.

Tuesday, 2nd June The ponies and their owners turned up early, and sat round the firepit with a cuppa, sharing puffs of the huge metre-long, bubbling water-pipe. Well before breakfast, all rugged up and in pouring rain, it was up and off, clinging to the ponies, slithering and skidding up and up, down steep bits and down some more, dismounting and climbing down the ridge, and finally the last long and very steep and very muddy descent to the bus turning circle. The rain had stopped and now and again we caught stunning views of the ranges and cliffs. Looking down we could see the narrow, winding road far below us doing its serpentine loops, and our tiny bus toiling slowly up to meet us. But I was sorry when my ride ended, never mind if our fingers quivered for ages afterwards with the effort of hanging on, it was just such an exhilarating experience. We'd had everything shaken out of us, so that back on the bus there was no room left to cope with anything as boring as fearsome drops.

Halfway down we were stopped by a road gang about to blow up a bit of the road. But the fuse failed to set the explosion off, so after venturing out from their cover, the men conferred, shrugged and waved us through.

During lunch in the grotty village below two hours later, John was produced. He'd had a ball for three days! Zhu and Chen, our bus drivers, had found him the local school teacher who spoke some English, and he'd been a guest at the school and learnt all about village life. He was bursting with excitement about it all, and full of praise for the attentiveness of our two drivers, neither of whom spoke a word of English.

The rest of the day was a long, long drive back to Kunming, and a super banquet that night. A long day, and we all died at the end of it.

Seeing rhododendrons growing and flowering in their own surroundings is an unforgettable experience. Our trip to Yunnan will remain one of the highlights of my life. ❀

Sue Wells qualified B.Sc. and Dip. Hort. at the University of Tasmania. She is an amateur gardener with a great love for a wide variety of plants, and in the recent past has been establishing a new garden at a newly-built home near Hobart. She retired in 1999 from the role of Plant Records Officer with the Royal Tasmanian Botanical Gardens after 14 years there. She was responsible for setting up the Tasmanian Native Section in the Gardens, and became involved with the conservation of endangered species. This interest widened to include endangered species at both state and international level. She assisted with setting up the Chinese Section of wild-collected plants at the Gardens, and it was in this connection that she travelled to Yunnan.

Sue is a former president and secretary of the Southern Tasmanian Branch of the Society.

Promoting Rhododendrons ...South Australian Branch receives Award

ALLAN KERR GRANT

The Society's South Australian Branch, in association with the Mount Lofty Botanic Gardens, was honoured in October 2000 to receive an Award for a display at the very successful International Rose Festival held in Adelaide.

The outstanding display won first place in Category 2, the Australian Floral Pavilion (for exhibits other than those featuring roses). This was staged by Rod Wadham of Rubida Ridge Nursery. Rod is the Branch's Librarian.

Mounting and arranging the display of temperate climate rhododendrons, vireyas, and companion plants from the nursery required many days of hard work. In this, Rod was assisted greatly by members of the Branch, especially Daphne and Denis Chandler. The display attracted great interest from the public and produced many enquiries about rhododendrons. ❀



New Registrations 2000–2001

GRAEME EATON

The following is a listing of registrations submitted by the Australian Rhododendron Society Plant registrar, and approved by the Royal Horticultural Society during the year 2000/2001.

Colour numbers refer to the RHS Colour Chart. Accompanying colour names are taken from A Contribution Towards Standardization of Color Names in Horticulture, R.D. Huse and K.L. Kelly, edited D.H. Voss (ARS 1984).

Parents of plants are reported in the conventional order – seed parent × pollen parent.

Abbreviations used H hybridized by
G grown to first flower
S selected by
N named by
I introduced by
R registered by

‘Alpha Dawn’ Vireya hybrid of ‘Arthur’s Choice’ × ‘Gardenia Odyssey’ H (1994) & G (1997) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Dome shaped truss of 12–18 tubular funnel-shaped flowers, 43 × 75mm, with 5 smooth edged lobes. Colour: Buds Light greenish yellow (3C) open inside tube to Light greenish yellow (8B) with lobe edges Strong yellowish pink (43D), Outside Light greenish yellow (3C) with Strong pink (49A) lobe edges. Leaves elliptic, 110 × 50mm, smooth edged, matt, cuneate at base, acuminate at apex, brown scales when young and when mature not visible to the naked eye. Size 1.0m × 1.0m in 6 years. Flowers throughout the year.

‘Brianna Bell’ Vireya hybrid of [*R. zoelleri* × (*R. christiana*e × *R. konori*)] × ‘Gardenia Odyssey’ H (1994) & G (1997) Brian Clancy, N (2000) & R (2001) Geraldine Roelink. Open truss of 7–12 tubular campanulate, delicately scented flowers, 55 × 86mm, with 5 smooth edged lobes. Colour: Buds Brilliant orange (25C) open inside and out Brilliant orange (25C) in throat, Strong red (41B) at lobe edges. Leaves obovate to broadly elliptic, 85 × 50mm, smooth edged, matt, cuneate at base, apiculate at apex, brown scales when young, and when mature, only seen with a lens. Size 1.0m × 0.8m in 6 years. Flowers throughout the year.

‘Byron Bay’ Vireya hybrid of ‘Arthur’s Choice’ × ‘Gardenia Odyssey’ H (1994) & G (1997) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Flat open truss of 8 tubular campanulate, delicately scented flowers, 32 × 83mm, with 5 wavy edged lobes. Colour: Buds Light yellow (18B) open inside and out to Light yellow (18B) tube with petals suffused with Moderate reddish orange (41C) Leaves broadly elliptic, 83 × 51mm, smooth edged, matt, attenuate at base, apiculate at apex, scales not visible to the naked eye. Size 1.0m × 1.0m in 6 years. Flowers throughout the year.

- ‘Cailen Thomas’** Vireya hybrid of ‘Doctor Hermann Sleumer’ × ‘Zoe Elloise’. H (1990) & G (1995) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Open truss of 6–8 tubular campanulate flowers, 27 × 73mm, with 5 smooth edged lobes. Colour: Buds Light greenish yellow (8C) open inside and out to Vivid reddish orange (44B) lobe edges with tube Light greenish yellow (8B). Leaves elliptic to ovate, 85 × 51mm, smooth edged, glossy, rounded at base, acuminate at apex, scales not visible to the naked eye. Size 0.65m × 0.65m in 10 years. Flowers throughout the year.
- ‘Cilrose’** Elepidote hybrid of unknown origin. R (2001) Vin Hurley. Loose flat treuss of 3 funnel shaped flowers, 75 × 95mm, with 5 wavy edged lobes. Colour: Buds Strong purplish pink (62A) open inside to white with Light greenish yellow (5D) spotting on dorsal lobe and outside white with Light purplish pink (62C) blush on lobe midveins. Calyx 4–7 mm, Strong yellow green (144B). Leaves elliptic, 75 × 20mm, slightly decurved with a slight twist, glossy, cuneate at base, acuminate at apex, scales. Flowers October in Victoria.
- ‘Corazon’** Vireya hybrid of *R. konori* × *R. leucogigas*. H (1980) John Rouse, G (1986) Brian Clancy, N (1999) & R (2000) Geraldine Roelink. Open truss of 5–6 tubular campanulate, highly fragrant flowers, 52 × 120mm, with 7 wavy edged lobes. Colour: Buds Greenish white (155C) open inside and out to the same colour, with Strong red (45D) dots at intersection of petals. Calyx 1–2mm, Strong red (45D). Leaves elliptic to ovate, 156 × 84mm, smooth edged, matt, auriculate at base, obtuse at apex, scales copper to light green when young and dark green when mature. Size 0.8m × 0.95m in 10 years. Flowers autumn–spring.
- ‘Courtney’** Vireya hybrid of (*R. phaeocephalum* × *R. lochiaie*) × (*R. leucogigas* × *R. jasminiflorum*) H Stan Begg, G (1989), N (2000), R (2001) Russell Addison. Open flat truss of 8–10 tubular funnel (slightly curved – salverform) flowers, 65 × 47mm, with 5 slightly wavy edged lobes. Colour: Inside Greenish white (155C), outside Pale purplish pink (56D). Leaves broadly elliptic, 95 × 38–43mm, smooth edged, semi-glossy, scales. Flowers October–November Victoria.
- ‘Donvale Gold’** Lepidote hybrid of ‘California Gold’ × ‘Joy Ridge’ H (1992) Hilary O’Rourke, G (1998), N (2000) & R (2001) Jack O’Shannassy. Open flat truss of 4 funnel-shaped flowers, 70 × 80mm, with 5 wavy edged lobes. Colour: Buds Brilliant yellow green (154B) with Moderate red (47A) tips, open inside and out to Light greenish yellow (4C), with Vivid yellow (13A) heavy spotting on dorsal lobe with small extension into dorsal lobes on either side. Calyx 4mm, Moderate red (181B). Leaves broadly elliptic (oval), 70–75 × 35–39mm, slightly decurved, glossy, bullate, obtuse at base and apex, scales. Size 0.6m × 0.8m in 8 years. Flowers September–October Victoria.
- ‘Donvale Princess’** Elepidote hybrid of ‘Tortoiseshell Wonder’ × ‘Donvale Lady’ H (1994), G (1999), N (2000) & R (2001) Jack O’Shannassy. Loose ball-shaped truss of 15 funnel-shaped flowers, 75 × 110mm, with 7 wavy edged lobes. Colour: Buds Strong purplish red (60C) open inside to Strong purplish pink (63C) at lobe margins, shading to Pale purplish pink (62D) midlobes and throat. A prominent thin midvein to each lobe giving a ray effect. Outside Strong purplish pink (63C) at lobe edges, with midveins shading to Moderate purplish pink (62B). Calyx 2mm, Strong yellow green (144A). Leaves lanceolate, 175 × 55mm, upcurved, matt, truncate at base, acute at apex, no indumentum. Size 1.5m × 2.1m in 6 years. Flowers October–November Victoria.

- 'Donvale Sunshine'** Lepidote hybrid of *R. johnstoneanum* × *R. burmanicum*. H (1990), G (1996), N (2000) & R (2001) Jack O'Shannassy. Lax flat truss of 4–6 tubular funnel-shaped flowers, 50 × 53mm, with 5 wavy edged lobes. Colour: Buds Vivid yellow green (154A) open inside to Light yellow green (154D) and outside to Brilliant yellow green (154C) with a covering of very fine brown spots giving it a darker effect. Strong orange yellow (17A) blotch in throat on dorsal lobe. Leaves: Broadly elliptic, 40 – 48 × 18 – 24mm, smooth edged. Semi-glossy, attenuate at base, obtuse at apex, scales. Size 0.6m × 0.45m in 10 years. Flowers September–October Victoria.
- 'Great Coat'** Vireya hybrid of [*R. zoelleri* × (*R. christiana*e × *R. konori*)] × 'Gardenia Odyssey'. H (1994) & G (1997) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Open truss of 10–12 tubular campanulate flowers, 35 × 70mm, with 5 smooth edged lobes. Colour: Buds Light orange (28C) open inside tube to the same colour with Vivid reddish orange (43A) lobe edges, outside Vivid reddish orange (43A). Leaves obovate to broadly elliptic, 95 × 55mm, smooth edged, glossy. Attenuate at base, acuminate at apex, with scales not visible to the naked eye. Size 1.0m × 0.8m in 6 years. Flowers throughout the year.
- 'Josi'** Elepidote hybrid of 'Kimberly' × 'The Honourable Jean Marie de Montague'. H (1990), G (1998), N (2000) & R (2001) Don Dossier. Flat truss of 10 broadly funnel-shaped flowers, 50 × 75mm, with 6 wavy edged lobes. Colour: Buds Moderate purplish red (58A) open inside, Strong purplish red (58B) and Deep purplish red (59B) deep in throat, outside Strong purplish red (58B). Leaves ovate, 105 × 45mm, decurved, semi-glossy, obtuse to slightly cordate at base, obtuse at apex, no indumentum. Size 1.5m × 0.8m in 10 years. Flowers October–November Tasmania.
- 'Lesley Maloney'** Elepidote hybrid of 'Lockington Pride' × 'Cup Day'. H (1990), G (1998), N (2000) & R (2001) Don Dossier. Ball-shaped truss of 17 funnel-shaped, slightly perfumed flowers, 50 × 75mm, with 5 wavy edged lobes. Colour: Buds Deep purplish pink (66C) open inside and out to white with Deep purplish pink (66C) streaks and Strong purplish red (67A) spotting on all lobes. Leaves elliptic, 190 × 52mm, wavy, matt, obtuse at base and apex, no indumentum. Size 1.5m × 1.0m in 10 years. Flowers November Tasmania.
- 'Lockington Aurora'** Elepidote hybrid of 'Samantha Sawers' × 'Cup Day'. H (1992), G (2000), N (2000) & R (2001) Don Dossier. Ball-shaped truss of 14 funnel-shaped, flowers, 63 × 75mm with 5 wavy edged lobes. Colour: Buds Strong purplish red (63B) open inside Pale yellow (11C), with Strong purplish pink (67D) lobe edges and Strong purplish red (60D) spotting on 3 dorsal lobes, outside Pale yellow (11C) streaked Strong purplish pink (67D). Leaves broadly elliptic, 145 × 55mm, decurved, semi-glossy, obtuse at base and apex, no indumentum. Size 1.0m × 1.0m in 8 years. Flowers November Tasmania.
- 'Lockington Wonder'** Elepidote hybrid of 'Tortoiseshell Wonder' × 'Ross Maud'. H (1992), G (1998), N (2000) & R (2001) Don Dossier. Dome-shaped truss of 13 funnel-shaped flowers, 50 × 115mm with 6 wavy edged lobes. Colour: Buds Pale yellow (11C) but with slight Strong purplish pink (67D) markings, open inside Pale yellow (11C) and outside Pale yellow (11D). Leaves broadly elliptic, 165 × 60mm, decurved, semi-glossy, obtuse at base and apex with no indumentum. Size 1.5m × 1.0m in 8 years. Flowers November Tasmania.
- 'My Friend'** Vireya hybrid of *R. laetum* × 'Gardenia Odyssey'. H (1987) Graham Snell, G (1992) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Open truss of 8–14

tubular campanulate flowers, 45 × 90mm, with 5 smooth edged lobes. Colour: Buds Brilliant yellow (13C), open inside and out to the same colour. Leaves elliptic to broadly elliptic, 105 × 57mm, upcurved, matt, cuneate at base, acute to obtuse at apex, scales when young, Brownish orange (164A), and Moderate olive green (164A) when mature. Size 1.2m × 0.6m in 10 years. Flowers Autumn–Spring.

‘**Natasha Joy**’ Vireya hybrid of (*R. konori* × *R. zoelleri*) × *R. javanicum*. H (1986) & N (1990) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Dome-shaped truss of 10–14 tubular campanulate flowers, 35 × 58mm, with 5 smooth edged lobes. Colour: Buds Strong reddish orange (42C) open inside to Strong reddish orange (42C) at lobe edges and Light orange (29B) in tube, outside Strong reddish orange (42C). Leaves elliptic, 115 × 35mm, upcurved, glossy, cuneate at base, acute at apex, scales not discernible to the naked eye. Size 1.0m × 1.0m in 10 years. Flowers throughout the year.

‘**Sarah Swallow**’ Elepidote hybrid of ‘The Honourable Jean Marie de Montague’ × ‘Gili’. H (1993), G. (1998), N (2000) & R (2001) Don Dosser. Ball-shaped truss of 12 funnel-shaped flowers, 90 × 50mm, with 5 wavy edged lobes. Colour: Buds Strong purplish red (58B) open inside Strong purplish red (58B) streaked Very pale purple (69A) and with a slight Strong purplish red (58B) blotch, outside Strong purplish red (58B). Leaves broadly elliptic, 140 × 52mm, decurved, matt, obtuse at base and apex, no indumentum. Size 1.5m × 1.0m in 10 years. Flowers September Tasmania.

‘**Shiralee**’ Elepidote hybrid of ‘Judith Ellen’ × ‘Cup Day’. H (1994), G (1999), N (2000) & R (2001) Don Dosser. Dome-shaped truss of 17 funnel-shaped flowers, 75 × 126mm, with 5 wavy edged lobes. Colour: Buds Vivid red (57A) open inside and out Very purplish red (57C) with Moderate purplish red (58A) spotting on dorsal lobes. Leaves broadly elliptic, 185 × 65mm, decurved, matt, obtuse at base and apex, no indumentum. Size 1.5m × 0.8m in 6 years. Flowers October–November Tasmania.

‘**Strawberry Delight**’ Vireya hybrid of *R. zoelleri* ‘Island Sunset’ × (‘Doctor Hermann Sleumer × *R. javanicum*). H (1991) & G (1996) Brian Clancy, N (2000) & R (2000) Geraldine Roelink. Open truss of 5 tubular campanulate flowers, 32 × 85mm, with 5 smooth edged lobes. Colour: Buds Light yellow (10C) open inside and out to Brilliant yellow (10A) in tube and Deep yellowish pink (41D) at lobe edges, fading to Light yellow (10C). Leaves elliptic, 98 × 41mm, smooth edged, matt, attenuate at base, apiculate at apex, scales not visible to the naked eye. Size 0.8m × 0.6m in 8 years. Flowers throughout the year from an early age.

‘**Valerie June**’ Vireya hybrid of (*R. konori* × ‘Gardenia Oddysey’) × unnamed hybrid (Pink lobed with yellow throat). H (1992) Graham Price, G (1999), N (2000), & R (2001) Lionel Marshall. Lax open truss of 4–9 tubular funnel-shaped flowers, 64 × 57mm, with 5 smooth edged lobes. Colour: Buds Vivid yellow (14B) open inside and out to the same colour. Leaves obovate, 80 × 36mm, upcurved, glossy. Attenuate at base, obtuse at apex, scales. Size: 0.8m × 0.4m in 8 years. Flowers March & October–November Victoria.

The Australian Rhododendron Society Plant Registrar should be contacted, in the first instance, by persons seeking to register. Mr Graeme Eaton, 1386 Mount Dandenong Tourist Road, Mount Dandenong, Victoria 3767. Telephone (03) 9751 1105 or email eaton@hard.net.au

Annual Report 2000–2001

BARRY STAGOLL

The 2000 Annual General Meeting of the Australian Rhododendron Society was held on 14th October at the Linley conference Centre, Kilsyth, Victoria during the “Rhododendrons Down Under” Conference (which incorporated the Society’s Annual Weekend national gathering). As usual, the Society’s Committee (the National Council) met also during the gathering.

President, Mr Neil Jordan, chaired both meetings. His President’s Report delivered to the AGM was published in *The Rhododendron 2000*.

The AGM was advised that the National Council at its meeting had accepted Neil Jordan’s resignation as President after two terms to devote more time to other commitments and elected Vice-President Allan Kerr Grant as incoming President. Mrs Lesley Eaton was elected Vice-President, with the remaining officers on National Council also being confirmed in their existing roles. Neil Jordan continues to serve as Immediate Past President, replacing John Schutz in this capacity. John retains the role of Public Officer.

The full membership of National Council, to serve from the close of the AGM, as reported to the AGM comprised the following:

Officers

President	Allan Kerr Grant
Vice President	Lesley Eaton
Secretary	Barry Stagoll
Treasurer	Neil Webster
Librarian	Val Marshall
Technical Officer	Ken Gillanders
Registrar	Graeme Eaton
Immediate Past President	Neil Jordan
Public Officer	John Schutz

Branch Delegates to National Council:

Southern Tasmania	Barry Davidson Sue Wells
Emu Valley R.S.	Maurie Kupsch Ivan Johnson
South Australia	John Schutz Robert Hatcher
Victoria	Lesley Eaton John Quinn

The Society’s Financial Statements for the year ended 30th June 2000 were received and adopted (as published in the *The Rhododendron 2000*).

As usual, National Council held a second meeting during the year by teleconference (in April 2001). At this Meeting, Carole Quinn (Secretary of the Victorian Branch) was recognized as a Delegate for Victoria and Peter Waidrowski as a Delegate for South Australia. Also participating were Hazel Holmwood (as an observer for the group of New South Wales members organizing a new incorporated body which it is proposed

will affiliate with the Society as the “Australian Rhododendron Society New South Wales Branch Inc.”) and Rod Capon (Secretary of the South Australian Branch).

Aside from more routine matters, during the year National Council dealt with the following:

- further development of the national and Branch internet websites (internet users amongst the membership may have discovered that the pre-conference “Rhododendrons Down Under” pages on the national site were removed, being replaced by others reporting on the event, together with a new page promoting The Rhododendron; the Society’s pages now attract a regular flow of visitors)
- the progress of work towards the formation of a new New South Wales Branch – the National Council expressing its appreciation of the efforts of the organisers, including Hazel Holmwood, Eric Jordan, Michael Lopez and Clive Smith
- renewed the appointment of Richard Francis as Editor of the Journal (instituting a modest fee for his professional work on the publication, which eliminates substantial external costs for the Society) and re-endorsed the role of the Editorial Committee to foster, assemble and review material for publication
- a further review of the fee structure for applicants desiring to register hybrids, previously reviewed in April 2000, deciding that the fee should be \$5.00 for the first plant in any one batch submitted for registration and \$2.50 for any other plants submitted at the same time by the intending registrant
- arrangements for organized tours of the National Rhododendron Gardens, Mt Lofty BG and Emu Valley Rhododendron Garden to be offered in October 2001
- a recommitment to a project aimed at encouraging more Australian public botanic gardens to grow vireyas (also discussed in principle was an invitation to participate in a possible future project to offer a vireyas collection to a botanic garden abroad).

Paid membership numbers were stable during the year. It’s hoped that the internet presence will assist over time in encouraging new memberships (in addition to promoting rhododendrons generally, and offering an alternative, and cost-effective, supplementary way of communicating with existing members).

The financial outcome for the 2000/2001 year was satisfactory, despite the impact of the introduction of GST payments on outlays, of which the largest item (payment for printing of our annual Journal) occurred in the second half of the year after this tax commenced. The national accounts for the year, which appear elsewhere in this issue, disclose a surplus (increase in net assets) of \$581 (1999/2000 \$1,267) with most of the change being due to GST. The total of member’s levies paid to National Council from Branch subscriptions was the same as for the previous financial year (these do not incur GST).

National Council will hold its next meeting in the Adelaide Hills during the October 2001 “ARS Annual Weekend Event” hosted by the South Australian Branch. National Council hopes for another successful gathering, with a number of international participants expected to attend. Next year’s annual gathering will be held in Hobart.

The Annual General Meeting of the Society for 2001 will be held during dinner on the Saturday evening during the weekend (members have received formal notice of meeting, and their personal invitation to the weekend event, via their Branch newsletters). ❀

THE AUSTRALIAN RHODODENDRON SOCIETY INC.

Report by the Treasurer

I, Neil Gordon Webster, the Treasurer of the Australian Rhododendron Society Incorporated, do hereby state on behalf of the Society, that the accompanying financial statements present fairly the position of the Australian Rhododendron Society Incorporated as at 30th June 2001 and the results of its operations for the year ended 30th June 2001.



Neil Gordon Webster

Balance Sheet as at 30 June 2001

	1999-2000 \$	2000-2001 \$
Current Assets		
Cash		
ANZ (Current A/C)	6,879.70	7,235.76
Macquarie Bank (on-call Invest)	9,383.17	9,853.87
Secretary's Advance	200.00	200.00
	16,462.87	
17,289.63		
Book Stock (at valuation)	1,452.00	
1,452.00		
Total Current Assets	17,914.87	
18,741.63		
Non-Current Assets		
Library Note 7	2,000.00	
2,000.00		
Total Non-Current Assets	2,000.00	
2,000.00		
TOTAL ASSETS	19,914.87	
20,741.63		
Current Liabilities		
Accrued Expenses		
Teleconference	270.20	405.13
Secretary expenses	0.00	111.02
Audit Fees	300.00	300.00
Total Current Liabilities	570.20	
816.15		
NET ASSETS	19,344.67	
19,925.48		
ACCUMULATED FUNDS		
Balance at the beginning of the financial year	18,078.15	
19,344.67		
Increase in net Assets resulting from operations	1,266.52	
580.81		
Balance as at the end of Financial Year	19,344.67	
19,925.48		

Statement of Income & Expenditure as at 30 June 2001

	1999-2000	2000-2001
INCOME		
Membership Subscriptions Note 8	5,670.00	5,670.00
Advertising	375.00	448.00
Book Sales	0.00	0.00
Bank Interest	398.81	529.25
Other	0.00	0.00
Total Income	6,443.81	6,647.25
EXPENDITURE		
National Journal The Rhododendron	3,135.00	4,136.00
Travel Subsidies	904.73	471.07
Bank Charges	10.17	10.15
Secretary Expenses	349.19	433.09
Advertising	152.00	0.00
Cost of Book Sales	0.00	0.00
Telephone Conference	270.20	405.13
Book Sales	0.00	0.00
Membership Card Printing	0.00	336.00
Audit Fee	356.00	275.00
Miscellaneous (Audit Certificates)	0.00	0.00
Total Expenditure	5,177.29	6,066.44
Surplus for the year	1,266.52	580.81

Statement of Cash Flows as at 30 June 2001

	1999-2000	2000-2001
Cash Flows from Operating Activities		
Membership Subscriptions Note 8	5,670.00	5,670.00
Advertising	375.00	448.00
Book Sales	0.00	0.00
Bank Interest	398.81	529.25
Other	0.00	0.00
	6,443.81	6,647.25
Payments		
National Journal The Rhododendron	3,135.00	4,136.00
Travel Subsidies	904.73	471.07
Bank Charges	10.17	10.15
Secretary Expenses	395.79	322.07
Advertising	152.00	0.00
Telephone Conference	351.60	270.20
Library	0.00	0.00
Book Sales	0.00	0.00
Audit Fee	306.00	275.00
Membership Card Printing	0.00	336.00
	5,255.29	
5,820.49		
Net Cash Inflow from Operating Activities	1,188.52	
826.76		
Cash at the Beginning of the Financial Year	15,274.35	
16,462.87		
Cash at the end of the Financial Year	16,462.87	
17,289.63		
Represented by:		
Current Account (ANZ Bank)	6,879.70	7,235.76
Less Unpresented Cheques	0.00	0.00
Macquarie Investment (On-call)	9,383.17	7,235.76
Secretary Advance	200.00	9,853.87
200.00		
Treasurer Advance		0.00
0.00		
Total	16,462.87	
17,289.63		

Notes to and forming part of the Financial Statements
for the year ending 30th June 2001

Note 1. Summary of significant accounting policies.

Basis of Accounting.

This general purpose financial report has been drawn up in accordance with the requirements of the Associations Incorporation Act 1985 (South Australia) and the Rules of the Society.

The financial report has been prepared in accordance with applicable Australian Accounting Standards and other mandatory professional reporting requirements (Urgent Issues Group Consensus Views).

It has been prepared on the accrual basis under the convention of historical cost accounting, with the exception of certain non current assets which are at valuations determined by the society's National Council.

Additionally, interest is accounted for when received.

Note 2. Increment/Decrement in General Funds.

The increment/decrement for the year is arrived at after bringing into account all revenue and expenditure, but excludes all capital expenditure on fixed assets.

The balance of membership funds is invested in either interest bearing deposits with Macquarie Bank or with the ANZ Bank.

Note 3. Comparative figures.

Where necessary, amounts shown for the previous year are in accordance with the same classifications as used for the current year.

Note 6. General.

There are no contingent liabilities.

There were no commitments for capital spending or lease payments as at 30 June 2001.

No such commitments exist at the date of this report.

Note 7. The library.

Total value as at 30 June 2001 \$2000.00. The book stock is held as part of the library located at Olinda Victoria and is managed by ARS Victorian Branch.

Note 8. Membership Subscriptions.

The rate per head for subscription levy is as follows:

Year 2000-2001, \$15.00 per head.

For the year 2001-2002, the rate will be \$15.00 per head.

Note 9. Related Parties.

Officers and Delegates of the National Council of the Australian Rhododendron Society Incorporated, are not entitled to receive any benefit or remuneration for their services as Officers or Delegates, apart from reimbursement of a portion of travel expenses properly incurred, in accordance with the Act under which the ARS Inc is incorporated.

Note 11. Reconciliation of decrease in Net Assets Resulting from Operations to Net Cash Inflow from Operating Activities.	Inflow from
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Increase in Net Assets from Operations.	\$80.81
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Change in operating assets and liabilities.

Increase in Accrued Expenses	245.95
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Net Cash Inflow from Operating Activities	826.76
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Note 12. Financial Instruments as at 30 June 2001.

a) Terms, Conditions and Accounting Policies

Cash Cash deposits are stated at net realisable value. Interest is recognised in the Statement of Income and Expenditure when received. Cash is available on call and the interest rates at 30 June 2001 were:

ANZ – 0.00 to 0.05% Macquarie Bank 3.75%.

(ii) Financial Liabilities.

Accrued Expenses/Accrued Expenses are stated at nominal amount. Accrued Expenses are unsecured and not subject to interest charges.

Treasurer's Report

b) Interest Rate Risk

The Society's exposure to interest rate risks and the effective interest rates of assets and financial liabilities are as follows:

Financial Instrument	Floating interest Rate	Non Interest Bearing	Carrying Amount	Weighted Average Interest Rate
(i) Financial Assets.			\$7235.76	0%
Cash Macquarie		\$9853.87	\$9853.87	3.75%
Secretary's Advance		\$200.00	\$ 200.00	0%
(ii) Financial Liabilities.				
Accrued Expenses		\$816.15	816.15	
c) Net Fair Value				

The net fair value of a financial asset or a financial liability is the amount at which the asset could be exchanged or liability settled in a current transaction between willing parties. The aggregate net fair values of financial assets and liabilities as at balance date are as follows:

Financial Instrument	Carrying Amount	Net Fair Value
(i) Financial Assets.		
Cash	\$17289.63	
\$17289.63		
(ii) Financial Liabilities.		
Accrued Expenses	816.15	
\$816.15		

For Cash and Accrued Expenses – the carrying amount approximates fair value because of the short term to maturity.

17/9/2001

Comparative information relating to 1999–2000 is available from the Annual Report as at 30 June 2000, published in *The Rhododendron* Volume 40.

AUDIT REPORT TO THE MEMBERS OF THE AUSTRALIAN RHODODENDRON SOCIETY INC.

Scope

I have audited the financial statements of the Australian Rhododendron Society Inc. for the year ended 30th June 2001 comprising Statement of Income and Expenditure, Balance Sheet, Statement of Cash Flows, and notes to and forming part of the financial statements. The National Council is responsible for the preparation and presentation of the financial statements and the information contained therein. I have conducted an independent audit of the financial statements in order to express an opinion on them to the members of the Australian Rhododendron Society Inc.

My audit has been conducted in accordance with Australian Auditing Standards to provide reasonable assurance as to whether the financial statements are free of material misstatement. My procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial statements, and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly in accordance with Australian Accounting Standards and other mandatory professional reporting requirements (Urgent Issues Group Consensus Views) so as to present a view which is consistent with my understanding of the Society's financial position, the results of its operations and its cash flows.

As an audit procedure, it is not practicable to extend my examination of income beyond the accounting for amounts received and recorded in the books and records of the Australian Rhododendron Society Inc., and representations have also been received from National Council in relation to the carrying of the book stocks and library.

The financial statement audit opinion expressed in this report has been formed on the above basis.

Audit Opinion

In my opinion, subject to the above, the financial statements present fairly in accordance with applicable Accounting Standards and other mandatory reporting requirements, the Associations Incorporation Act 1985 (South Australia), and the Rules of the Society, the financial position of the Australian Rhododendron Society Inc., as at 30th June 2001 and the results of its operations and its cash flows for the year ended 30th June 2001.

R. J. Fowler
R. J. FOWLER & ASSOCIATES, FIMA, ACIS, MNIA
17th September 2001

The Australian Rhododendron Society Inc.

President	Dr Allan Kerr Grant
Vice-President	Mrs Lesley Eaton
Secretary	Mr Barry Stagoll, PO Box 21, Olinda, Victoria 3788 mirra@austarmetro.com.au
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SCOTT ROJUSTER

Above The rhododendron mountain – see *Yunnan in the Spring*, page 56.

Below Don Dosser's garden – see page 36.



FARIE NIELSEN



R. valentinianum



R. seingkuense

R. ochraceum

