

# *Botanic Magazine*

*Volume 7*

Official publication of the Friends of the Royal Botanic Gardens, Melbourne Inc.





Sir Rupert Hamer cutting the cake at the Friends' garden party celebrating the sesquicentenary.



Photo D. Ironmonger

The Friends purchased two paintings from the Botanical Illustrators 1996 exhibition and presented them to the RBG State Botanical Collection. They were Medlars by Dianne Emery and the delicate Orange Blossom Orchid by Helene Wild.



Photo D. Ironmonger

The wife of the newly-appointed Governor, Lady Gobbo (centre) and the wives of two previous Governors, Mrs Lesley McGarvie (left) and Mrs Jean McCaughey, attended a Friends' function in May to hear Marguerite Hancock talk about Governors' wives in the 19th century.



Photo L. Corneil



Two internationally-recognised Australian botanical illustrators, Margaret Stones and Anita Barley met at a Friends' function in October.

**FRONT COVER:  
EXOTIC PLANTS**

Oil on canvas by  
Anne Marie Graham



The Old Observatory building, which has seen better days, had three weeks of glory last winter as Sotheby's Decorator Show House. It shone with imaginative outdoor lighting, landscaping and sumptuous interior decoration. A substantial sum was donated to the Gardens.



## BOTANIC MAGAZINE

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# WHO MAKES OUR GARDENS GROW?

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Administers bequest to finance many Gardens projects, especially at RBG Cranbourne

# The Next 150 Years Begin

## \* STOP PRESS

On 19 June the Government announced an allocation of \$2 million from the Community Support Fund for the Observatory Gate Project.

Heather Ironmonger reviews developments at the Royal Botanic Gardens, Melbourne

Photo J Burness



The lakes created by the damming of Wylies Creek are attracting new wildlife to Cranbourne

**'Our 150th anniversary celebrations are over; the most important 150 years are still to come', declares RBG Director Dr Philip Moors. Such is the time-scale of botanic gardens!**

And as Dr Moors is fond of reminding us, RBG Cranbourne is now at the same stage of development as the Melbourne Gardens were when William Guilfoyle began weaving his landscape magic in the 1870s. Within the next few months the gardens at Cranbourne will come of age, in administrative terms, by becoming a separate Division; an Assistant Director (Cranbourne Gardens) will be appointed.

Earthworks are just about to begin for the Australian Garden which will occupy 25 ha at Cranbourne; the first stage is expected to open to the public in 2002. Designers Taylor and Cullity Pty Ltd with Paul Thompson have treated the former sand mine as a canvas on which to create a stunning display of Australian plants. It

will add a horticultural element to a bushland experience, with sculpture and art works deepening the impact. Lakes, billabongs, marshes, green forest and arid plains will create patterns of form and texture to convey the diversity and character of our native flora and landscape. Paul has put together a plant list of 900 species, and a collecting program will begin in West Australia in October. Plant propagation is being undertaken by Cranbourne staff.

A survey of 500 local residents undertaken in December 1996 indicated strong support for the future development of the Gardens, both as open space for their community and as a future tourist attraction. More than three quarters said they would support more public money being allocated to the Gardens, but about 8 per cent consistently opposed the project.

A recent development has elevated Cranbourne's importance; it is to house the

Australian Research Centre for Urban Ecology (ARCUE), being established to study the long-term management of remnants of natural habitats in urban areas. These will become increasingly threatened, and increasingly valuable, as suburbia encroaches. Information about such ecosystems is needed to conserve them, and ARCUE will disseminate its research results nationally and internationally.

The Baker Foundation has committed a most generous grant over the next five years to establish this major new centre. Philip Moors believes the grant represents an outstanding achievement for us, and will open up a new research area of fundamental importance to the community in the 21st century. RBG Cranbourne will house the main facilities, and about 200 ha of its areas of natural vegetation will serve as research sites. The National Herbarium of Victoria and the School of Botany at the University of Melbourne will have close links with the centre, which will be the only one of its type in Australia and one of very few in the world. It will balance academic research with community education and commissioned projects. The position of Director has been advertised and should be filled about July, with its Director being a member of the RBG Corporate Management Group.

Back at South Yarra, the ambitious expansion and building plans for the Observatory site await the finalising of the funding. Some \$4.3 million is confirmed, and applications for the balance are being assessed. The first







*Historic buildings will be restored and put to new uses when the Observatory Gate development is undertaken. The Lodge in the foreground will become the Friends' Office*

expansion for more than 60 years, it will add 3.5 ha - 10 per cent - to the land open to visitors at the South Yarra site, presenting educational facilities both indoor and outdoor, exhibition space and additional visitor services.

Meanwhile, the spotlight has fallen on the 200-page draft Master Plan presented for public comment in May, which maps out priorities for the next 30 years. RBG Landscape Planner Sandra Beckwith and colleagues have addressed such issues as the conservation of the historic landscape design; principles guiding rejuvenation of garden beds; upgrading of infrastructure such as paths, drainage, toilets, works areas and path lighting; and renewal of the ageing tree

canopy. The plan will prevent ad hoc developments driven by short-term pressures. The Director believes no other major botanic garden in Australia has produced a Master Plan. It's a 'living' document that will be reviewed at least every five years, to ensure that inevitable change is directed within an agreed vision. Sponsorship will be sought to implement the Plan.

The Living Collections policy is an important part of the Master Plan. When a count was made, it was discovered that there were 101 'collections'. It has been decided to focus on just 35 of these, and to manage them very well. Some will be moved - for instance, the species roses will be relocated to a more open sunny position. Collections will

be enhanced and problems redressed; over time each Collection will be interpreted. The long-planned New Caledonian Collection is going ahead, with many plants propagated from collections made in New Caledonia by Alistair Watt from the Otway Ridge Arboretum. Its design and initial planting are planned to commence later this year in the bed next to E Gate Lodge.



*Terry Smyth collecting plants in Na Pa Hai, China*

The Gardens' Southern Chinese Collection is growing in stature and importance, largely due to the expertise and dedication of Terry Smyth, who has been its curator for seven years. Terry was invited to join two collecting expeditions in Yunnan Province between September and November 1996. Led by noted NSW plant breeder Bob Cherry and hosted by the Kunming Institute of Botany, the parties travelled more than 9000 km in 50 days by minibus, foot and pony. As scientists, they gained access to areas still closed to foreigners. Sometimes conditions were terrifying, as they negotiated overhead forest walks on flimsy swing bridges, or encountered green vipers, for instance. The trip was often arduous, with a punishing work load, but always fascinating.



*The use of photographs on the new signs is an innovation; it remains to be seen how the images will weather*



Terry collected live material from 64 plants, seeds of more than 200 species and about 140 specimens which she dried for herbarium storage. Seeds have been distributed to a number of botanic gardens and plant specialists. Unfortunately fumigation destroyed some material, but other plants are growing well in the Gardens nursery. They'll be put into the beds over the next two planting seasons. Terry's growing knowledge of the Chinese flora, and her international contacts, developed over three trips, are of immense value to the Gardens.

There's another Living Collection, not planned by the Gardens, that's proving increasingly difficult to deal with. The Grey-headed Flying Foxes continue to multiply and are causing serious damage to trees in the Fern Gully. Action to disperse them to other trees was initiated last year, but had to



*Flying Foxes, uninvited guests, make their presence felt in the Gardens*

be postponed during the summer and autumn breeding season of the bats. It's a high priority for the newly-appointed Manager of Arboriculture, Dean Simonsen, and the external reference panel of scientists advising on reducing the numbers by non-harmful methods.

Three trees were removed recently: a large Moreton Bay fig that keeled over in the February heat wave; a golden poplar from the Caledonian bed; and a split pinoak near G Gate. The loss of the fig has opened up quite a useful space, which is being planted with lush sub-tropical vegetation in Guilfoyle's 'South Seas' style. Ceremonial additions included a rare West Himalayan elm, *Ulmus wallichiana*, planted by the Director between the azalea and camellia beds, to mark the sesquicentenary.

The huge amount of work devoted in recent years to establishing the RBG computerised plant database is paying off in many ways. When fire blight was discovered in the Gardens in May, the few susceptible species could be quickly located on the database and isolated.

The database is linked with the nursery, signmaking workshop, CAD mapping system and so on, making information recording and retrieval very efficient. It can tell us that in the Gardens at South Yarra we have more than 43,000 individual plants (51,000 including those in the nursery), covering 12,079 species from 2318 genera in 263 families. To gild the lily, the Friends are donating a Global Positioning System (GPS) that will also be linked with the database. It is capable of identifying within half a metre the position of any plant, and will eliminate the laborious and less accurate methods of measuring and hand drawing maps. It will be especially valuable for surveying at Cranbourne.

Richard Barley, Assistant Director, Gardens Division, says it has been essential to look continuously at more efficient ways of working. In these days of down-sizing, the Gardens has been extremely fortunate to retain staff numbers - in fact two new outdoors positions have been created - an extra arborist and another gardener (or horticultural technician, as the position is correctly named). And Cranbourne is now up to 14 staff, where there were only five, five years ago.

Outdoor entertainment attracted about 65,000 people to the Gardens between December and March. It provides approximately 10 per cent of RBG's revenue. Last summer's dry weather was perfect, with barely a cancellation during the



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season. There were three shows, including the 11th year of *Wind in the Willows*, Moonlight Cinema for the second time, and concerts. As well, there were school holiday programs blessed with the return of Fairy Clare, and music for Sundays Live.

The Gardens attract a steady stream of overseas visitors. Staff have strengthened links with Tourism Victoria, and are looking to develop a package - a guided tour with a meal, for instance - to sell to tourist operators.

The Gardens are not only popular for weddings and as a background for wedding photographs; they've recently been used for a Children's Fashion Festival with a catwalk on Eastern Lawn, for a *Burke's Backyard Dog Road Test* featuring 25 Mastiffs (all kept on short leads while in the Gardens!), for *Healthy, Wealthy and Wise*, and for a sequence for the film *The Ripper*. Vault Theatre Company will present *Camille* in the round in Mueller Hall between August and October.

Gardens House holds great appeal for corporate events and private parties. It was even

chosen last year for a wake for a former rock star.

The commercial use of the Gardens provides essential revenue, and is carefully managed to avoid compromising the horticulture in any way. Wonderful as they are for recreation, it is the horticultural excellence, the education programs and the scientific aspects that set the Gardens above a 'park' and earn the title 'botanic'.

Education programs are second only to the plants themselves in terms of growth: 25,000 young people participated in 1996, an increase of 6000 on the previous year, and a ten-fold increase since 1992. From activities for pre-schoolers to professional development for teachers, this outstanding program uses the Gardens as an outdoor classroom. The enthusiastic delivery of activity-based programs makes a visit memorable for young people.

The most recently-introduced topics relate to endangered plant species, rainforests, and the inter-relationship between plants and animals, adding to art, dinosaurs, Aboriginal resources and gardening skills.

Mindful of the Mueller connection, German language teachers have collaborated with the Gardens education service to produce a special package called *Bäume, Büsche, Blumen*. An Indonesian program is being developed this year along similar lines.

Currently the Schools program is run by two teachers seconded from the Department of Education together with another on a short-term contract and 15 sessional teachers trained at the RBG. The Gardens has, for the first time, just employed a teacher for Cranbourne on a one-year contract.

A staff group led by Rod Dunstan is developing a Home Page for the education service which will help teachers prepare for, or complement, a visit, and is working with others on a general Website for the Gardens as a whole. Rod has been awarded a Churchill Fellowship and will spend three months in the UK and US later this year.



Concerts, holiday programs and education activities attract visitors to the Gardens





Pacific Dunlop Fellow Dr Andrew Douglas with Research Manager Dr Tim Entwisle and (right) Dr Tom May

In the National Herbarium of Victoria, the first Pacific Dunlop Fellow, Dr Andrew Douglas, has just completed his term and is returning to the US. (It is hoped that a second Fellowship will be filled in 1998.) But it's a two-way traffic. Dr Jim Grimes, who spent three months at the RBG in 1996 as the first Mueller Fellow, has been appointed to the Senior Botanist vacancy and is expected back in Melbourne about July. A highly-qualified systematic botanist from New York Botanical Garden, Jim will continue his work on *Acacia* in particular, and legumes in general.

Another special short-term visitor last year was Christina Flann, the inaugural Jim Willis Student. Christina spent the university summer vacation at the Herbarium, and has returned at least once a week since then as a volunteer. She has written a paper for *Muelleria* and contributed an account of *Bracteantha* to Volume 4 of the *Flora of Victoria*.

The scientific side of RBG activities gained international recognition last spring through the highly successful Commemorative Conference. It addressed the diversity and impact of 19th century science,



focusing on the life, times and legacy of Ferdinand von Mueller, and considered the future of research into systematic botany. About 300 people attended, and one regular conference-goer from overseas declared it the most useful and best-organised conference he'd ever attended, and said 'What's more, it was fun!' The participation of the Victorian Governor, Commonwealth and State Ministers, the Chancellor of the University of Melbourne, and the Director of RBG Kew, Sir Ghilleen Prance, served to indicate the importance of this event.

In February, Herbarium staff celebrated an achievement - the logging of the 100,000th species record on the MELISR database. This has been accomplished in six years, but 'the task is just being nibbled at' is the resigned acknowledgment of the massive size of the collections - over one million specimens.

Although the hot dry summer pleased many people, it deprived mycologist Dr Tom May of his usual supply of raw materials. Tom is developing a Fungimap for Victoria, with the enthusiastic help of many amateur collectors in the field. This project, supported by the Gardens and the Field Naturalists Club of Victoria, has been funded by the Myer Foundation. On a more academic level, Tom has contributed a major chapter on the History of Taxonomic Mycology in Australia in *Fungi of Australia* and the first part of his checklist covering all species of macrofungi in Australia was published in May. This is one of the Herbarium's most active research areas, and one which makes information accessible to the public.

The world's first colour guide to algae will be published in June. *Freshwater Algae in Australia* presents the work of RBG Research Manager Dr Tim Entwisle, together with Jason Sonneman and Simon Lewis. Last year, Tim found three new species and a new location for a very rare alga in south-west Tasmania. *Australian Geographic* nominated Tim and

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RBG Senior Botanist Dr Neville Walsh to take part in an expedition to Bathurst Harbour. An account of this trip appeared in the April-June 1997 issue of the magazine.

A number of Herbarium staff have won external financial support for their research, including conservation geneticist Liz James, whose field is expanding to encompass grasslands. Rob Cross received substantial funds from the Stanley Smith Foundation in the US for the purchase of equipment. He is developing micropropagation techniques for horticultural plants that are difficult to reproduce by conventional methods.

Dr Moors believes that the RBG is fortunate to have been able to keep permanent staff numbers fairly constant, in contrast to most government institutions, although there has been some change in the mix of staff skills.



*Specimens of the giant waterlily Victoria amazonica were obtained from Cairns as a 1996 special, and were planted in Nymphaea Lake and a glasshouse. The outdoor ones did not survive*

External funding and short-term contracts have supported staff increases from time to time.

The Gardens has generated about 15 per cent of its recurrent budget to supplement

Government funding, and has also won the invaluable support of successive Ministers.

Last year the Gardens was able to use sponsored advertising, such as the *Herald Sun* wrap-around for Foundation Day, to promote special events, with excellent results.

Another example was a targeted advertising campaign for the Annemieke Mein exhibition, which drew record crowds to Mueller Hall and meant profitable spin-off business for the adjacent Gardens Shop. Such popular events introduce people to the shop who become repeat customers. Shop Co-ordinator Jenny Yunghanns has also noticed that the new signage within the Gardens has drawn more people into the shop. This innovative system, elegant and informative without being too intrusive, has been entered for the Australian Design Awards.

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**Ask us**



PLP064





*The sight of high-rise buildings, regarded by some as an intrusion, underlines the value of the Gardens' tranquillity so close to the city*



Photo J. Hoysted

Encompassing everything from large directional information boards to interpretive messages using colour photographs and small plant labels, the system has been developed by designer Brian Sadgrove and Visitor Programs staff. The wording on the metal signs is computer-generated in the Gardens' sign shop by Maggie McNamara, and can be updated inexpensively. The signs are being gradually introduced around the Gardens; the Rainforest Walk is a good place to appreciate them.

The Rainforest Walk is also a good area in which to sample the new audio guide (although it can be your companion throughout a complete circuit of the Gardens). Introduced last year, it is believed to be the first such guide in any botanic garden in the world, and can be hired from the Gardens Shop.

Technology in another form was introduced to the Gardens in May, with infra-red beams counting people at two entrances. Supplemented by some manual counters and a mathematical model on the computer, this monitoring system will produce accurate attendance records for the first time. Visitor figures can be useful in many ways including for the framing of sponsorship proposals, for placement of signs, and for planning the Observatory Gate development.

RBG Marketing Manager Jane Wing expected a quiet year after the 1996 media 'honeymoon' was over. She's been delighted that hardly a week passes without a TV crew wanting to come in, and that the high media profile achieved for the sesquicentenary is being sustained.



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# Memories of Mueller

By Sara Maroske

Sara Maroske is one of the Editors on the Mueller Correspondence Project. She has just started a PhD on Mueller, looking in particular at his influence on the Australian landscape. The first volume of Mueller correspondence will be available by subscription later this year.



In October 1996 Australia and Germany jointly issued a stamp to commemorate the 100th anniversary of the death of Baron von Mueller. It incorporates an illustration of Tasmanian blue gum, a species he disseminated internationally and adopted for his coat of arms.

*Helichrysum bracteatum* - strawflowers



*I would like you to picture a little boy aged about five years old, lying on his parents' bed. He is a weak child, not yet walking. He is also an intelligent child, curious about the world around him, circumscribed though it is. He can see, suspended from the ceiling, bundles of everlastings. They are known in German as Strohblumen, which literally translates as strawflowers.*

The boy, of course, is Ferdinand Mueller. Probably he has rickets, which was not an uncommon childhood illness in the north of Germany at the time. It was caused by poor nutrition and characterised by emaciation and a softening of the bones. One of the treatments recommended in the nineteenth century was to restrain the child from walking so that the bones would not become deformed.

We know this curious but important fact about Mueller because he mentioned it in a letter to George Bentham, a botanist at the Royal Botanic Gardens, Kew. Mueller

and Bentham were co-operating to produce the *Flora of*

Australia and had reached the section on everlastings. The subject revived for Mueller memories of his childhood.

He recalled that the *Strohblumen* above his parents' bed were made up of two species, *Helichrysum stoechas* and *Helichrysum bracteatum*. The first is a Mediterranean species but *H. bracteatum* is Australian. It was brought into cultivation in Europe by Joseph Banks where it became a popular exotic and was bred in a variety of colours. The flowers captivated the young Mueller and, when he was well enough to walk, inspired him to seek out other flowers in gardens and fields. When I first found this story I was struck by its symbolism. It was as though the *Strohblumen* had appeared to the young Mueller like a vision of his future. He was not only to become a botanist but also he was to make an outstanding contribution to the elucidation of Australia's flora.

Biographies can sometimes make their subjects' lives seem to be more orderly and directed than they really were. I am wary about doing that to Mueller but his life really does seem to have been extraordinarily purposeful. He was one of those unique individuals who knew exactly what he wanted to do with his life from a very young age.

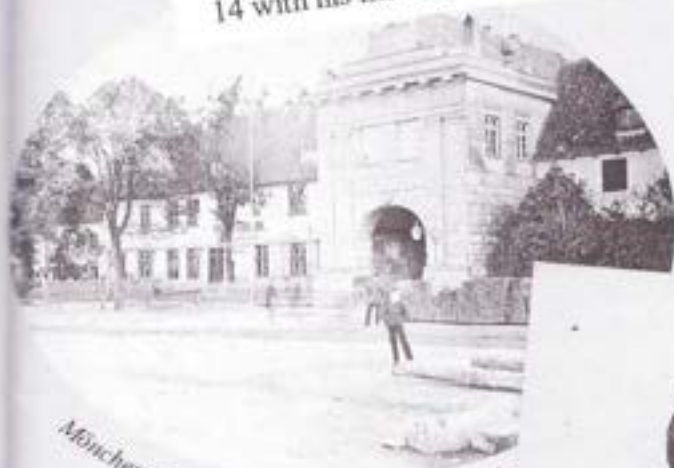


Mueller was born in the port city of Rostock in the German state of Mecklenburg on 30 June 1825. His father Friedrich was a customs official and the family lived in one of the city gates called the Mönchentor. Ferdinand was one of eight children, only four of whom survived infancy. In 1835 Friedrich died of tuberculosis; Mueller was ten years old at the time.

The death of his father brought Mueller's life in Rostock to a close because the family had to vacate the Mönchentor for the next customs official. Mueller's mother moved with her four surviving children to Tönning, on the mouth of the Eider River in Schleswig-Holstein, where her parents lived.

It seems that Mueller's mother was not without means because she was able to buy a lease to run a ferry across the Eider River. The family lived in the ferry house or *farhaus*, which was also a kind of pub. In Mueller's day Tönning had an important role as a sea port. In 1783 the Eider River was extended by a canal so that shipping traffic could run from near Kiel on the Baltic Sea to Tönning on the North Sea and beyond. Mueller's mother would have had a prosperous business.

Just when life may have seemed to be settling down for Mueller it became clear that his mother had tuberculosis and could not be expected to live much longer. She must have been quite a remarkable woman. She had run her own business since her husband's death and now was careful to make provision for her children. Mueller was to be an apprentice in a pharmacy in the nearby town of Husum. He started at Easter 1840 at the age of 14 with his mother having died only a few days earlier.



*Mönchentor, Mueller's birthplace at Rostock*



*Ferdinand Mueller at the age of 18. His father died when he was 10, his mother when he was 14, and a sister when he was 20 - all victims of tuberculosis*

The political situation in Schleswig-Holstein, where Mueller lived after his father's death, was quite complex because, although it was under the Danish crown, Holstein and parts of Schleswig were German-speaking and felt closer to the German states than to Denmark. Unlike many Schleswig-Holsteiners, Mueller does not seem to have had strong views on this subject.

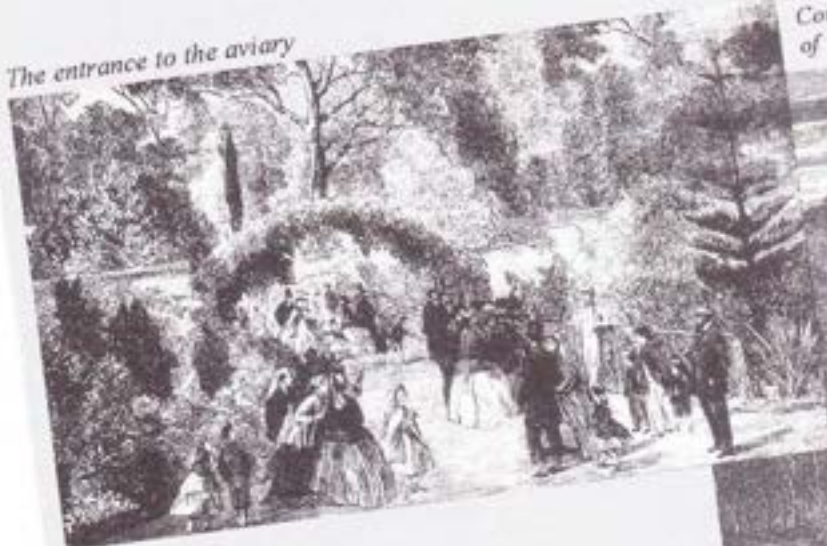
In later life he quite happily spoke of himself as half-Scandinavian, but German was his native tongue and some of his relatives later fought with the Prussians against the Danes. As an adult, Mueller could write in German, English and Latin, and he could probably read French as well. He had had some lessons in French and English as a schoolboy, but his later fluency in these languages, and Latin, was largely due to his own independent studies.

When people ask me what was Mueller's nationality I am inclined to say that he was Australian. Mueller was naturalised in South Australia in 1849 and also in Victoria in 1857 and he spent nearly 50 of his 71 years in Australia. Non-British residents in Australia had to be naturalised before they could buy land on a permanent basis. After Mueller was naturalised in South Australia he bought a number of small plots, and seems to have invested in land in Victoria as well.

If Mueller was asked about his nationality he would probably have called himself a loyal British subject. But interestingly I don't think I have ever seen him referred to as British.



The entrance to the aviary



Both images from the Illustrated Sydney News,  
October 1867  
Courtesy La Trobe Picture Collection, State Library  
of Victoria



Mueller's waterjet, drawn  
by G. Grasse (note the  
Director's Residence top  
right)

Pharmacy was a very practical choice for the orphaned Mueller. In exchange for an apprenticeship fee he would be taught the trade of pharmacy and provided with board and lodging. After four years he would be able to sit the state exam in pharmacy and then be ready to start his own business in what was a very respectable and potentially lucrative career.

In Mueller's day a knowledge of plants was an important part of pharmacy and apprentices were required to make a herbarium. Mueller took up the task with enthusiasm and soon acquired specimens well in excess of what was necessary; many of these are now part of the collections at the National Herbarium of Victoria.

Mueller toured far and wide in search of new and interesting specimens. As a young man he seems to have overcome his childhood disability and learned to walk with a vengeance. Unlike much of Europe, the country around Husum was botanically very rich. Mueller explored it as far west as the islands of Föhr and Sylt, as far south as the city of Hamburg, as far east as Heiligenhafen on the Baltic coast, and as far north as the Flensburg Fjord.

By the end of 1843 he had finished a manuscript on the flowering plants of the Husum district. Within two years he had updated it to cover the entire south-west part of Schleswig. This he submitted as a thesis to the University of Kiel in 1846 and he was made a Doctor of Philosophy the following year. He was twenty-two. In the meantime Mueller had also become a qualified pharmacist but botany was his passion and he only wanted an opportunity to make it his vocation.

In 1845 Mueller's oldest sister Iwanne died of tuberculosis and by the following year it was clear that his sister Bertha had the disease as well. In Mueller's day people believed that tuberculosis was a hereditary condition but that it could be treated by a sea voyage. Mueller decided to take his two surviving sisters, Bertha and Clara, to South Australia. Later in life he said he chose this destination because it was popular with other Germans. His unstated reason for this choice was the attraction of the Australian flora. He was going to the home of his *Strohblumen*.





When Mueller became Director of the Melbourne Botanic Garden in 1857 his appointment was not controversial, but by 1873 when he was removed from this office Mueller had become a very controversial figure. His critics claimed that he was devoid of taste and an inept manager. His supporters praised his scientific talents and generosity. Because Mueller's opponents won the day their rather pejorative view of his style has tended to colour the history of the Gardens. Mueller is accused of being a pupil of the German school of garden design by straight lines.

Maps of the Botanic Garden from Mueller's day show that he did indeed use straight lines for paths and avenues but whether or not that use was excessive rather depended on your point of view. To a mainly British public tutored in the picturesque styles of English parks and gardens Mueller could not help but offend. To fellow Germans in Australia Mueller's touch seemed to be remarkably free of what they remembered as rigid about garden designs in Germany.

In 1859 a German language newspaper, the *Melbournner Deutsche Zeitung*, claimed that as a garden designer Mueller had an expert hand.

It is like making a bouquet of flowers; profusion and mistaken choice of colours spoil the attraction, while a correct combination of colours and an aesthetic touch for arrangement increase the original beauty of the individual within the whole. This is what Dr Müller has realised for the Melbourne Gardens, and this despite his great learning which could easily have led him to a strictly symmetrical presentation of the genera, etc. as in many botanical gardens.

The baroque style was still followed in many formal gardens in Mueller's day. It celebrates human control over nature, intending nothing to look natural so that all unevenness and asymmetry in nature is removed or forced into regular patterns. A gardener in the baroque style felt no shame in the use of straight lines.

Mueller's opportunities to see formal gardens like Schönbrunn in Vienna as a young man in Germany were limited because they were private places and not open to the public. Mueller was knighted many times by the royal families of Europe and was raised to the nobility in 1871 when he was made a Baron by the King of Württemberg. But these honours only came his way after he was settled in Australia and was not in a position to pay calls on royal benefactors in Europe. Statues were a great feature of formal or ornamental gardens in central Europe. Mueller would have liked to have statues in the Melbourne Garden but did not because he could not afford them. The closest he came to such ornaments was a stand of guns captured from the Russians in the Crimea. They were surrounded by a barricade designed to thwart cavalry charges. These guns are now situated in front of the Victoria Barracks in St Kilda Road.

The aviary at the Melbourne Garden contained a number of Mueller's attempts to introduce ornaments into his garden design. The aviary itself was a plain structure but it was reached by crossing over an iron bridge which Mueller himself thought was a fine structure, and by passing through a small bower.

Mueller also had a jet or geyser at the Melbourne Gardens which he named as one of his proudest achievements there. Unfortunately a lack of water meant that he could not run the fountain very often and by the end of his directorship he could not afford to run it at all. Some critics wished he hadn't even bothered to run it. The geyser projected out of an artificial island in the lagoon in part made up of tin drums painted brown to look like rocks. Apparently the sound of water falling on the tin drums could be rather disconcerting.



If all that Mueller got out of Europe's gardens was a few shabby ornaments then his achievements at Melbourne would seem rather poor, but the strongest and most successful influence on his work did not come from Europe's *ornamental* gardens but from its *botanic* gardens.

Mueller saw at least two scientific botanic gardens during his time in Germany: at the University of Kiel where he was a student and a state garden owned by the city of Hamburg. There is nothing quite like European botanic gardens in Australia; they are self-consciously scientific institutions, often attached to a botanical institute or university, or they are state-owned gardens that were originally funded by wealthy families.

The purpose of a plant geography section is to enable visitors to learn the names of plants in different countries, including their own. Mueller had a similar educative aim at Melbourne and was careful not only to plant exotics but also examples of the local flora so that people could learn the names of what grew around them. To him, a botanic garden was a place where natural species could be displayed - not the fruits of human ingenuity in plant breeding.

Mueller's gardens were often criticised for being messy. This was at least in part because he did not have enough staff and equipment to keep them in order but I wonder if at least in some cases the mess was because he was attempting to create areas like the European meadows, where the apparent neglect was deliberate. Grassy areas cut every two or three weeks contain about 20 species but in meadows which are cut two or three times a year the species count is nearly 400 and a succession of wildflowers can be observed. Meadows also provide shelter for small animals like squirrels and moles which are also a feature of European botanic gardens.

The key educational feature of botanic gardens in Mueller's time was a system garden, which displays plants in a way that reveals how closely or distantly they are related. Thus you will find banksias next to grevilleas because both genera are in the Proteaceae family. Mueller's system garden was laid out near the Director's residence, now known as Gardens House. System gardens are often quite plain in appearance and Mueller's was definitely characterised by straight lines. It was one of the features that his successor at the Gardens, William Guilfoyle, was quick to get rid of. There are very few functional system gardens left in Australia, which is, I think, a great pity.

Photo courtesy  
the Armstrong  
Collection



*In the RBG sesquicentenary exhibition of sculpture, this work by Richard Thomas - a steel 'garden bed' with blackberries - evoked one of Mueller's less glorious legacies, his alleged distribution of blackberry seeds around the countryside*

*Mueller's tomb in St Kilda Cemetery*





While Mueller's garden had much in common with European botanic gardens, it was also different. Once settled in Australia, Mueller looked to the Royal Botanic Gardens at Kew as the epitome of what a botanic garden should be. Kew was a scientific botanic garden but it was also a centre for economic botany. As the British Empire expanded, settlers in new lands needed to learn how to feed and clothe themselves and botanic gardens were established in part to help them to find out which plants would enable them to do that. Mueller developed a number of experimental plots in Melbourne. For instance he established a pinetum to test which pine trees were the best producers of timber and shelter in local conditions. In taking up the idea of test plantations Mueller showed that he was capable of adapting to the needs of his adopted country. The difficulty for Mueller was that 'needs do not always equate with wants' and some local people would have been happier if he had stuck to trying to recreate a baroque garden.

Mueller was not a deeply religious man but he did continue to practise as a Lutheran in Australia. It is interesting to note that his fellow Director and countryman at the Adelaide Botanic Gardens, Richard Schomburgk, converted from Lutheranism to Anglicanism and in part thereby became more successfully established in mainstream Australian society.

Although Mueller's grave appears to be in a Jewish section of the St Kilda Cemetery, he was not Jewish. It seems that when he was buried his grave was in a section classified 'other'. In the mainly Anglican and Catholic Melbourne of the last century that category included Lutheran.



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# GREEN GOLD:

## THE RICHES OF BARON FERDINAND VON MUELLER

Anglo-European scientific savants in the nineteenth century enjoyed the power and the prestige of wealth. Their capital was both real and symbolic, inherited and earned. Naturalists like Charles Darwin and Joseph Hooker amassed professional credit in the form of publications, titles, offices and honours; they both enriched and gained from priceless natural history collections kept in gardens, herbaria and museums. Ferdinand Mueller had no such advantages when he landed in Australia in 1847. A sad and sickly German, he had only his Protestant upbringing and a chemist's botany to draw on as he faced an open continent. His main source of capital was the vast and largely unknown Australian flora. In a prodigious display of energy he transformed it into massive international credit through a host of descriptive and systematic publications; at the same time he enriched the emerging nation by collecting its floral treasures and advertising their economic worth. He died materially poor but professionally rich, and his legacy of symbolic capital - publications, plants and prestige - underwrote the global status of Australian science.

*This is an excerpt from a brilliant address delivered at the RBG Commemorative Conference in September 1996 by Dr James Moore, Reader in the History of Science at the Open University, UK. It will be published with other Conference papers in Historical Records of Australian Science in July.*

In 1896 Joseph Hooker, former Director of the Royal Botanic Gardens, Kew, was called on by the Royal Society to write the obituary notice of Baron Ferdinand von Mueller. An *éloge* in the Society's *Proceedings* was an art form, demanding frankness and finesse. Panegyrics and warts-and-all portraits were unacceptable; discretion was of the essence. The trick was to trace the contours of a career, mark the peaks and mask the troughs, without falsifying or offending. And leave those who knew the genre to read between the lines.

Hooker's notice was a gem. He had never met Mueller, but for 40 years the government botanist of Victoria had made a huge impression, bombarding Kew with big plants, fat manuscripts and turgid letters. How deep an impression may be judged from Hooker's opening remark, that Mueller 'stood in the foremost rank of the scientific men of the southern hemisphere'. This was conspicuously modest, cutting the cloth to fit the man rather, but then tributes followed to Mueller's 'great intrepidity as an explorer', his 'astonishing powers of work', his 'magnificent collections' and his 'phenomenal' enterprise in sending seeds 'all over the world'. Presently, Hooker's tongue went back in cheek; he pronounced the 'descriptive portions' of Mueller's greatest monographs - the *Fragmenta*, the *Eucalyptographia*, the *Salsolaceous Plants*, the *Acaciae*, the *Myoporineae*, and the *Plants of Victoria* - to 'rival the best of those of European botanical works'. Everyone knew, of course, that the systematic portions suffered, and Hooker continued in the same vein, glossing Mueller's two greatest grievances. Consigned in 1861 to assist Bentham in writing the *Flora Australiensis*, he

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nevertheless 'generously offered' all his plants and aided 'loyally' by correspondence; deprived in 1873 of the directorship of the Melbourne Botanic Gardens, he still enjoyed 'great consideration and liberality' in being retained as government botanist, 'with residence, undiminished salary, herbarium, library and laboratory'.

Hooker ended coyly, pointing up a paradox: 'Baron Mueller' derived 'innocent gratification' from his 'multitudinous titles, and the decorations with which he delighted to adorn himself', yet he was 'generous to a fault, devoting the whole of his savings from his official salary to science, charities and good works'. Such a man, selfless yet self-obsessed, had - Hooker winked - 'striking personalities'.

Other obituarists were less discreet. Never mind the generosity, forget 'innocent gratification': Mueller's 'inordinate craving for ... admiration' had caused havoc for his colleagues. It led him to publish in 'all sorts' of inaccessible 'places and languages', and to 'indulge in vagaries in botanical nomenclature' that were 'simply deplorable and damaging' to his reputation. Tough language this, coming in *Nature* from a Kew man who had worked with Bentham on the *Flora*, but it was not the worst: the anonymous *Gardeners' Chronicle*

obituarist was damning. He himself had corresponded with Mueller for 'nearly forty years', receiving on average 'two or three' and occasionally 'even seven and nine' letters a week. All were marred by the same 'inborn egotism' that tainted the rest of Mueller's work. For instance, 'he needlessly added to the synonymy of Australian plants by simultaneously publishing many of them under two generic names, so that whichever view one might take of generic limits, his name would still stand as the authority!'. And he took other liberties, such as lumping together numerous species and even distinct genera with a rashness 'incomprehensible, considering his vast experience'. Yet this was Australia's 'greatest botanist', and the writer confessed that Mueller had done 'more than any other single individual for the advancement of science in the southern hemisphere'.

Mixed judgements like this were rife. An 'indefatigable' collector, yes: a scientific statesman, of course. But Mueller himself was a martinet. Prickly and petulant, he played the despot to man and beast, overworking colleagues as he overloaded pack-horses, brandishing carrot and stick, demanding from all the same commitment, energy and discipline that he extorted from himself. For years he browbeat Bentham, an old man struggling to keep up with the *Flora* and still finish the *Genera Plantarum* before he died. A reputed 'workaholic', Bentham somehow won the race against time by describing five species a day, up to forty a week, for fifteen years. Mueller meanwhile blazed ahead, oblivious. During the Gregory expedition in the 1850s he once paused to describe 30 eucalypt species 'on the spot', and he kept up the blistering pace, firing off manuscripts everywhere along with carping letters to Kew. Bentham sometimes became so distressed that Hooker had to intercede.

What provoked Bentham most was the taxonomic gerrymandering. Quiet, cautious and sensitive,

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with one foot in the grave, he finally snapped in 1882 on perusing Mueller's *Systematic Census of Australian Plants*, with its fulsome dedication to himself, Joseph Hooker and Alphonse de Candolle. The work was 'not only absolutely useless, but worse than useless', Bentham exploded at Mueller.

Bentham's frankness backfired. His pleas further entrenched Mueller in his 'preferable systematic sequences of orders', with generic and specific limits drawn according to his own 'original observations'. He avenged himself in the enlarged *Second Systematic Census* by dropping Bentham from the dedication.

As a botanical bookkeeper Mueller played fast and loose. He resisted discipline from the centre, the *imperium*, the world bank from which he constantly sought credit. In the cycle of accumulation he was a cuckoo in Kew's nest, a taxonomic fifth-columnist, subverting order as well as orders. Colleagues saw this clearly - perhaps too clearly - but what are we now to make of it? How shall we understand this maverick on the margin, flouting the rules? The English obituarists hardly help by ascribing Mueller's behaviour to 'inborn egotism' or a pair of 'personalities'. This confuses his public attitude with his prodigious

aptitude and begs the real question: Why *did* Mueller carry on like a man possessed, a perpetual motion machine for collecting, describing, publishing and dashing off peremptory letters? What drove him for forty years? What made his sixteen-hour days tick? Was there just glory to be gained? To suggest he carried on as he did because he was the sort of man who carried on that way is vapid. It sheds no light on the social forces that shaped his character and his career.

Today we are better informed. We know that Mueller was not 'robbed' of the *Flora*, as sympathisers have alleged. Joseph Hooker declared him to be the best man for the job - 'nobody else can do it all' - provided that he would work from Kew and use the key European reference collections. His inability or refusal to move to the centre was his own loss. It also appears that the issues surrounding Mueller's removal from the Botanic Gardens' directorship were not so clear-cut as his critics have assumed. Economic as well as aesthetic motives figured in the decision to make the gardens, under Guilfoyle, more user-friendly to the public. Indeed, we now have a better overall picture of Mueller's role in the 'reward systems' of contemporary science.

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