



Papyrus

No. 77. Winter 2022

NEWSLETTER OF THE FRIENDS OF BURNLEY GARDENS

In this issue:

President's report	1
From the Gardens by Sascha Andrusiak	4
The Burnley Guides by Judith Scurfield	6
Membership and Propagation Group by Cheryl Andrews	7
Andrea's plant of the month	8
Trees—a world view by Greg Moore	10
Burnley Graduate of the month	12
Providing better soil for Urban trees	16
Christmas in July	22



President's Report

Welcome to our Winter edition of *Papyrus* – with 'Winter' being the operative word!

In this edition we hear for the first time from our new director of Gardens, Sascha Andrusiak (please read on).

Dr. Greg Moore offers much food for thought on the subject of tree protection here in Australia compared to overseas practices, while Dr. Peter May explores aspects of growing trees in the city.

And there's lots more!

Our organisation has continued to thrive despite all the difficulties imposed by Covid. Our membership numbers continue to rise which is most heartening. We have started getting bookings again for guided tours. After a hiatus caused by Covid restrictions, our esteemed Propagation Group is set to resume activities under the energetic guidance of **Sascha Andrusiak**. A new approach to sales is being devised.

And speaking of Sascha, Andrew Smith's successor, we really look forward to officially welcoming her in person in her new full role as 'Burnley Gardens & Operations Officer, University of Melbourne'! Sascha has had quite a long connection with Burnley since graduating. In her work in the Nursery she has already proven herself behind the scenes to be an extremely helpful and willing contributor to FOBG fund-raising activities. We really look forward to working with her well into the future!

Despite obvious restraints, FOBG has defied the odds and staged a number of well-attended talks, both live and virtual this year.

The Committee has discussed at length the various options and merits of live talks, online talks and hybrid talks.

President's Report *continued*

We will continue to trial 'hybrid talks' (where members can choose to attend in person or online.) Our enthusiasm for these has always been tempered by the risk of technical glitches. We do believe that we now have far better facilities in the Hall than in the MB classrooms.

We share the concerns being expressed by many organisations about the *loss of community and social connection* since Covid started dominating our lives. Many book club members for instance are reporting a concerning attitude of "Well, why would you bother going out when you can join in discussions from the comfort of your own homes – especially in Winter?"

Social connection has undoubtedly been diminished by Covid, and the longer this continues, the less chance we have, in all organisations, of recruiting and involving new members, and of perhaps combatting loneliness in parts of our community.

To this end, we have decided that our forthcoming **Annual General Meeting**, followed by my own illustrated talk on '**Tradition & Innovation in Belgian Landscape Design**' will be an '**in person only**' event.

I really urge as many of you as possible to come along that evening to support the FOBG and enjoy a nice social supper as well! Please let me know if you would like to attend but are deterred by transport/safety issues. We will do our best to assist you.

Whilst we are currently taking our traditional July Winter break, the second half of this year promises to be both busy and interesting.

PLEASE MAKE A NOTE OF THE FOLLOWING DATES

Saturday 6 August:

Our annual '**Winter Pruning Workshop**' with Chris England from Merrywood Plants. Please refer to separate flyer which should hit your inbox soon.

Wednesday 24th August:

Our AGM at 6pm, followed by an illustrated talk '**Tradition & Innovation in Landscape Design in Belgium**', by myself, Sandra McMahon, as mentioned above.

Please try to come along and support FOBG this night.

President's Report *continued*

We really could do with a few more Committee members – could you consider stepping up?

I have just returned from Belgium and am feeling extremely enthusiastic about this topic.

I hope to see many of you there!

Thursday 15 September:

'Australian Annuals for Green Roof Use' & 'Spontaneous Plants on Roofs' - A stimulating double presentation by two of Burnley's current very talented team of Ph.D students, Zara Sareain & Dean Schrieke.

Wednesday 12 October:

The very knowledgeable 'Palm Lady', Jo Wilkins will talk about ***'Growing Palms in Melbourne'***.

Saturday 15th October:

A **Bird-spotting walk** led by Megan Griffith and friends from ***'Birding Victoria'***.
(Venue to be confirmed.)

Many of you will recall last year's fascinating 'Suburban Birding' presentation by Megan and Alan Crawford, along with Sonia Ross, whose inspiring video 'Some Birds of Nillumbik' is still available to members on our 'Members Only' section of the FOBG website. **(Password for members is: SecretGarden)**

Thursday 24 November

Professor John Rayner and Dr. Claire Farrell: 'Naturalistic Planting with Australian Plants'.

It goes without saying that this will be unmissable!

May I conclude by wishing you all joy as our days start to lengthen, and in the knowledge that this wintry season of rain and chilly temperatures will surely bring its rewards later in the year in our gardens!

Sandra McMahon

President FOBG

From the Gardens *by Sascha Andrusiak*



Burnley Graduate Profile No 18. June 2022 Sascha Andrusiak

Years at Burnley: (1999-Present)

Course studied: Diploma of Applied Science Horticulture (1999-2001), Bachelor of Applied Science Horticulture (2001-2003) Honours (2009).

Favourite subject: Ecology, Plant Propagation, Plant Science, Plant Identification.

Coming from a background of humanities at high school, and thoroughly intending to become the next Shakespeare (or at least a literature teacher) imagine my surprise when I decided that I wanted to be a horticultural scientist. Having avoided all science and maths at school, I went on to complete my courses here with Deans Honours. It was a lot of hard work, and many long nights of study, motivated in large part by the wonderful teaching specialists we had here at Burnley. They were my idols – I only ever dreamed I could be as amazing as they were!

Favourite plant:

Oh, that's like asking me to choose a favourite child... impossible! I'm prone to go through phases of adoration (read 'obsession') with a particular plant, or plant family, or plant grouping, absorbing everything I can about it and then moving on to the next obsession. I have a particular thing for rare orchids, wild roses, poppies, foxgloves, *Brugmansias* and *Euphorbias*. Now I have a thing for *Philodendrons* (aroid types) and *Alocasias* ... next month I may have moved on to the next plant, but I always remember what I've learned and stay fond of each plant I've ever loved!

I decided to go to Burnley because:

Plants and gardens had always been a way of life for me in my family, with my mother being an avid gardener.

Dear Friends, this edition of Papyrus marks one of the most significant events in the Gardens for quite some years—the appointment of a new manager/curator, Sascha Andrusiak, so it seemed appropriate that From the Gardens for Edition 77 should be Sascha's Graduate Profile

From the Gardens by Sascha Andrusiak *continued*

She bought me my first plant to care for at about age 3 (a *Hypoestes* with pink spotty leaves). It was a normal weekend to visit Ian Nichols in Cheltenham, (a young) Stephen Ryan in Macedon and many of the amazing growers and nurseries, many of whom are no longer around. My careers advice at High School was to become a childcare worker... so I enrolled in university and by the end of the first year I realised that if I looked after other people's children all day, every day, I would never have my own! (Bless early childhood educators!)

Not long after, I was living in a complex in Brunswick and the owners had allowed me to have free reign to create a garden in the courtyard. I spent every spare moment outside of work tending to my urban jungle and working very unenthusiastically in tele sales. One day they asked if I had ever considered horticulture as a career rather than just a hobby– I laughed and said, 'Surely no one will pay me to do what I love the most!' they told me that there was a whole university devoted to plants and gardens. I lost my mind – I had never even considered it. They bundled me into the car and drove me down to Burnley. I was in awe. I had found my tribe and then remembered, while standing in the field station, that I had been here before! At about age 12, my mum brought me to a garden show (Thank you Mum) I still remember being fascinated as I learned about worm farms and helping to save the environment. I remember buying seeds to sow and guides for companion planting on that day. I felt so excited and hopeful! It proves that Burnley can have a profound effect on those who experience all it has to offer the community!

Since I graduated from Burnley I have:

I have had a few outside jobs including running my own garden design business, but I always found myself drawn back to Burnley. It was clear I had found my Village. I continued to work casually in the Burnley Nursery during my studies and after. I made wonderful friends there with all the Nursery Staff including Nick, Alex, Jeremy, and Vince. Soon Alex suggested I work as a research assistant for Paul Gibson Roy and John Delpratt on their grassland seed production area and other great projects. After that I began working as a research assistant for a project on preservation of the rare terrestrial orchid *Caladenia tentaculata* and demonstrating for Magali Wright in Plant science. I was also a tutor for Stu Burns' Plant Identification class among other roles. In 2009 I did my honours on Biogeochemistry and Greenhouse gas exchange in Temperate Mangroves with Stephen Livesley here at Burnley, graduating with Deans Honours.

From the Gardens by Sascha Andrusiak *continued*

Eventually I applied for a secure job as Nursery technician in 2011, and for 10 years I cared for the nursery and our coursework teaching and research needs. I just left that role for my new role as the Burnley Gardens and Operations Officer, and I am loving it! What an honour, all these years later, to be charged with the care of this beautiful place that helped inspired me to love horticulture as a child.

The Burnley Guides Report by Judith Scurfield



The Burnley Guides continue to meet and walk round the Gardens, and were pleased recently to have a discussion about the Hilda Kirkhope rockery, with new Manager Sascha Andrusiak and one of the most experienced gardeners. It is very useful for us to learn more of the history of particular sections of the Gardens, and to hear of any plans for their improvement or replanting.

We have a few small groups who have booked to visit this Winter, and then two large groups coming in October as parts of major conferences - the Australian Botanic Gardens Volunteers Conference, hosted by the RBG, and the Herb Society of

Victoria's Australian Conference being held at Burnley.

Our numbers have not increased, unfortunately, and we would be pleased to welcome any new members who might like to learn more about Burnley, and eventually to join our team taking tours. If you are interested, please contact me at judithscurfield@yahoo.com.au

Would you like to learn more about the history and development of our beautiful heritage-listed Burnley Gardens, and then pass on your insights to visitors? If so, you might like to join our small bunch of friendly Guides, who take tours of the Gardens for small or large groups.

Informal training is given with more experienced Guides, and we meet regularly to discuss future programmes and new things we have been learning about Burnley Gardens. We also make occasional visits ourselves to notable gardens.

If you are interested, please contact Judith Scurfield on 0416237464 or email judithscurfield@yahoo.com.au

Membership and Propagation Group Report *by Cheryl Andrews*

Since the previous Papyrus Newsletter No 76 in Autumn 2022, our membership has increased to 224 members. I would like to extend a warm welcome to the 7 new members who have recently joined our group. Thanks to all our loyal members for their continuing support and involvement in our activities which are now a mix of face to face events and Zoom meetings.

There are a number of members whose membership was due for renewal on 1 July. So please renew to ensure you are kept informed of our ongoing activities into the new membership year.



I would also like to welcome Sascha Andrusiak who now in the role of Operations and Garden Manager at the Burnley Campus. Sascha has been working at Burnley Campus for many years in other roles, so is very knowledgeable, and is passionate about the gardens.

Members of the 20 Year Club

There are 3 more 20 Year members for the period from April – July 2002. They are Winonah Cunningham, Sandra McMahon, and Dr John Dwyer QC, Well done all, and thanks for your loyal support.

Propagation Group

The Propagation Group is meeting regularly again and I would like to welcome our 3 new members who are knowledgeable and enthusiastic about our activities. New members are always welcome to join. The only requirement is an interest in plants. An induction to the Nursery and training on propagation will be provided.

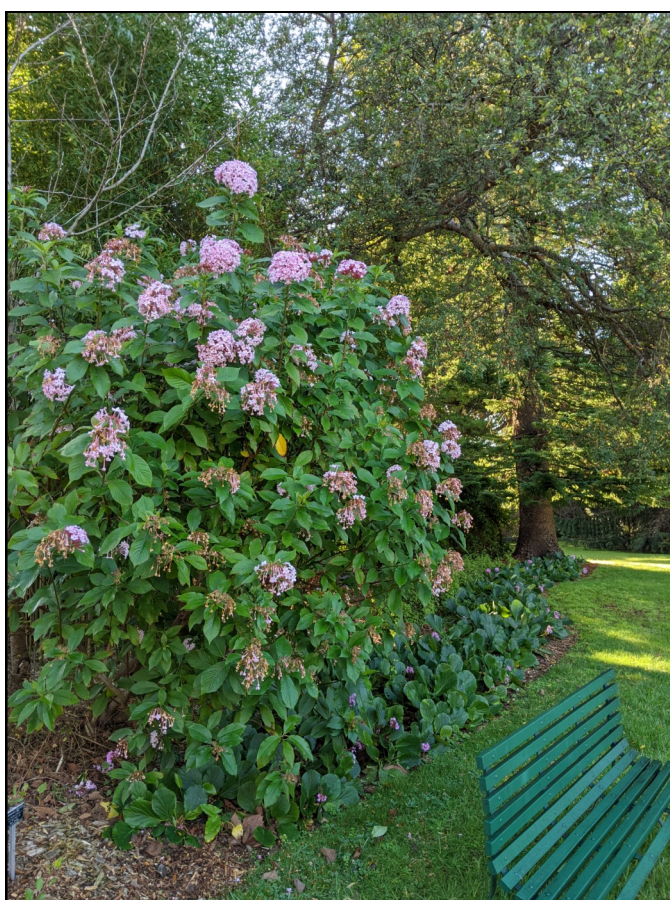
If you are interested please contact us via the Friends email: friends.burnley@gmail.com

Andrea's Plant of the Month

Those of you who receive this newsletter or follow our Facebook page <https://www.facebook.com/groups/FriendsBurnleyGardens> or Instagram posts <https://www.instagram.com/friendsofburnleygardens/> or look at our Website www.fobg.org.au/ will remember Andrew's Plant of the Week, I'm sure. How Andrew managed to produce notes on a plant in the Gardens every week I have no idea, but it was a mammoth effort. Such a hole to fill! So I asked our committee to write just a few notes on their favourite corner of the Gardens. Here is the first contribution, from secretary Andrea. We hope there will be more....

Luculia species - Winter perfume in the garden

On a recent walk around the gardens I happened upon several jewels which I hadn't noticed before. *Luculia gratissima* ["very pleasing"] and *Luculia pinceana* are in flower



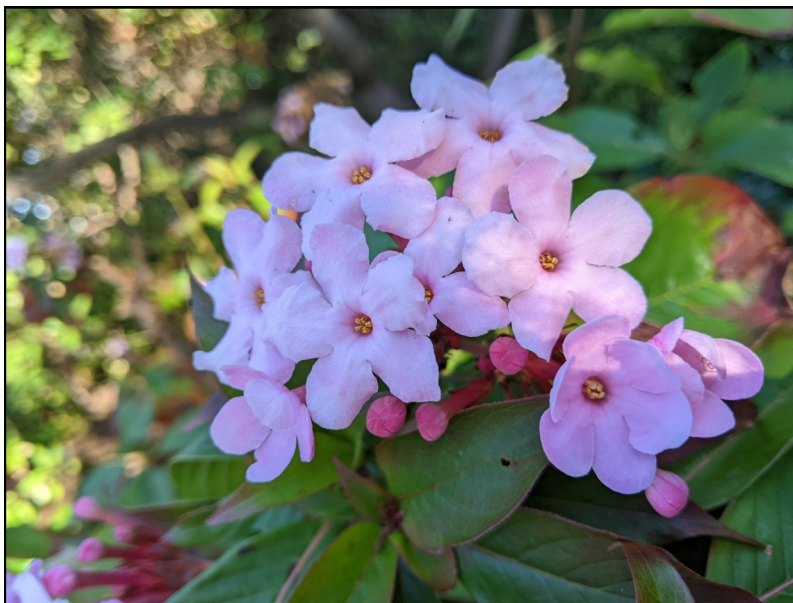
in early to mid-winter. Both are medium to tall shrubs whose height can be controlled in the suburban garden, and that really need regular trimming to keep them from becoming too open in form and keep flowering, as they flower on new wood. Tip pruning and shaping until late summer when buds begin to form will result in more dense clusters of flowers. The tubular flowers form a terminal cluster of 5 and can be white, pink or cream. They are from the Rubiaceae family, are mostly evergreen and are native to the cool mountainous regions of the Himalayas, from north India, Nepal, Assam, Tibet, China and Vietnam.

L.pinceana grows taller and has smaller, glossier and more leathery

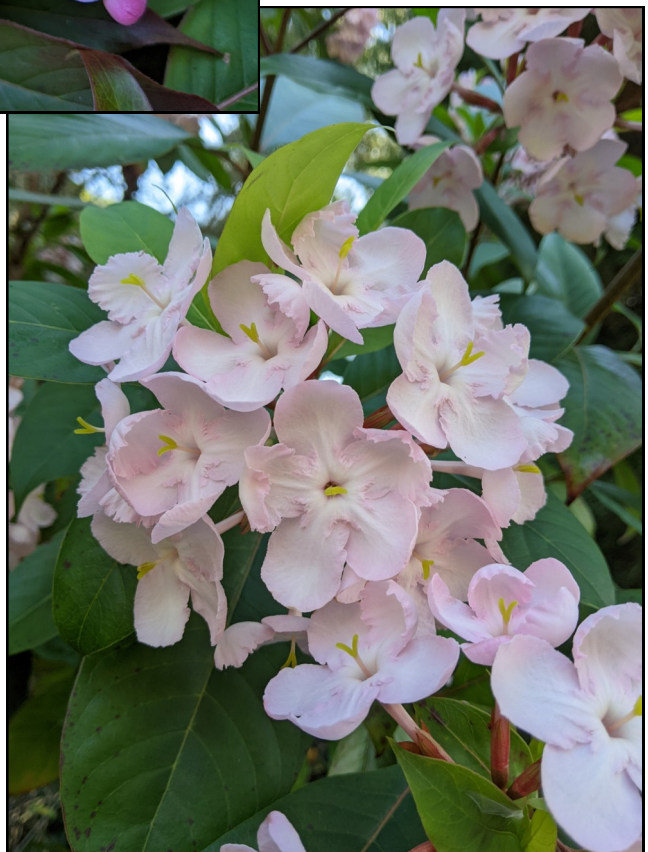
leaves while *L.gratissima* has the more spectacular perfume and flowers earlier.

Andrea's Plant of the Month

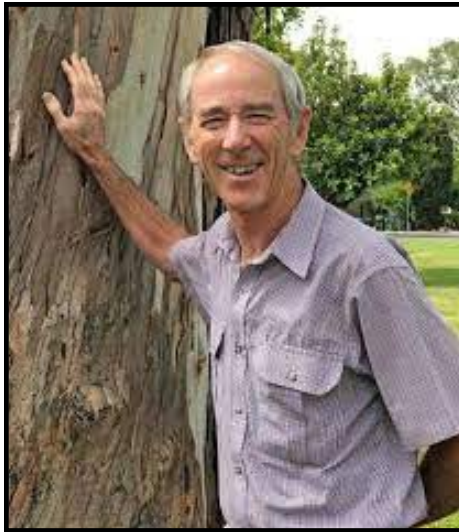
Both species can be seen in flower in the Burnley gardens from late June to late July. As a forest floor dweller they enjoy part shade and don't like being scorched by the sun during summer, even in southern Australia. They are acid-loving and like being moist but not wet. They are susceptible to *Phytophthora* and the flowers can be damaged by heavy rain and strong wind so a sheltered position is advisable. They are available from specialist nurseries and the Burnley Propagation Group hope to offer these for sale in the future.



Luculia gratissima (above) and *L. pinceana* (right)



Trees—a world view *by Greg Moore*



Where do we stand ?

After a Covid-imposed restriction of three years, I recently had the opportunity to travel overseas to visit family. While there I had the chance to reflect on how tree management in Australia compares with that of other countries. In the USA attitudes vary, but in many places there is a strong civic interest in the urban forest and the retention of a green local aesthetic. Away from the major central business districts, Industrial estates are often fringed or fronted by woodland green, and smaller businesses take a pride in the landscapes of their businesses, which is quite rare in Australia. Large

corporations often have fine professionally designed and constructed grounds at their US headquarters or European offices, but lack them in Australia. I wonder why?

The Champion Trees of the US are seen as precious natural and economic assets. They are the biggest and best of their species and local communities protect them as does State law. They attract large numbers of tourists, can literally put a place on the map and add to the local economy. Despite the efforts of the National Trust and its state-based Significant Tree Registers, no State in Australia lists let alone protects its significant trees. Individual trees and remnant vegetation may be afforded some protection, but the majority are vulnerable to damage and removal.

In the United Kingdom and parts of Western Europe, old trees and remnant forests and woodland are protected by state, county or national law. Tree protection orders (TPOs) are enforced and penalties for failure to comply can be massive. TPOs have been tried in Australia, but with the exception of some in New South Wales in earlier times have not been successful in wider use.

In Berlin, the urban forest is even aged and aging. The trees, nearly all of which were planted after World War 11 during which the city lost nearly all of its trees, are now 70-80 years old. They are highly valued not only for the ambience that they give to the city but for the environmental services that they provide such as shade, amelioration of wind and habitat and their benefits to human health. Neither these benefits nor the removal of trees are taken lightly.

In Australia, under-resourced local governments are the major protectors of trees in the urban forest, but they are often stymied and thwarted by State planning and development laws and regulations. These planning rules and frameworks provide little, if any, protection for trees and when councils try to protect trees on development sites they are often over-ruled by State planning or administrative tribunals.

Over the years, I have given many community groups *pro bono* advice on urban trees in their battles with State agencies, major utilities and even local councils. Often I have been before the Victorian Civil and Administrative Tribunal (VCAT) and occasionally a Heritage or Planning Panel. It is not a pleasant experience, especially when some high powered lawyer, often a QC or SC who is being paid thousands of dollars a day is trying to make you look foolish, trash your reputation and belittle your involvement; They go home with added wealth, and I go home having lost a few days of my life and paying my own expenses. There are a few observations to be made:

- How did we end up in a situation where a local community trying to defend a few trees ends up in a fight with a State agency, utility or council? Surely there is a better way?
- How can these institutions justify the cost of their legal teams when they come up against an unrepresented community group, I have been personally involved in cases where un-resourced community groups have been confronted by legal teams of 2 and 3 QCs and their 4-6 supporting solicitors.
- There is an issue of whether such a power and knowledge imbalance serves the interests of justice, the community or a proper outcome. Furthermore, the costs of such a situation are often exorbitant when compared to the economics of the tree or trees involved.
- How is it that a State agency such as Parks Victoria, or Development Victoria can spend a fortune on legal fees to fight a community group? These agencies are working on behalf of the community with whom they are now at war.
- The same can be said of major utilities that should be minimising their greenhouse gas emissions and carbon foot prints, but instead place no value on urban trees and then work to a lowest cost maintenance model.

Having made some of these observation, you may be looking for the silver lining to this situation, but I am not sure that there is one. One suggestion that I can make is that each Australian State should have a State Arborist, whose duties would be to value, advocate for and provide impartial advice on urban trees that are affected by urban development and infrastructure. There are relevant precedents in that there were once a Victorian Government Botanist, Entomologist and Plant Pathologist.

Another suggestion would be to place an agreed monetary value on all urban trees. This is done in many other parts of the world and in some European countries the valuing system and regulation is a routine part of lower court jurisdiction. Some of you may remember the Burnley or Thyer Methods of valuing amenity trees used in Australia, and which are used still. .

However, Arboriculture Australia has just released a new minimum industry standard (MIS) on valuing trees that might achieve Australia-wide application. Perhaps there is hope yet that trees will be appropriately valued!

Burnley Graduate Profile No. 17 May 2022: Teena Crawford**Years at Burnley:**

I studied full time for three years 1980 – 1982.

Course studied:

Diploma of Applied Science in Nursery Production and Management

Studying at Burnley College, part of Department of Agriculture. The three-year course, the best offered at the time, with classes commencing late January and finishing mid-December. There were more than 35 contact hours a week of lectures and practical classes. In addition, we all had a plot which we tended, growing vegetables, and flowers, with a written report due at the end of each semester.

Favourite subject:

We studied all sorts of subjects from surveying and engineering to botany and soil science. I enjoyed all the subjects for different reasons. Some because of the lecturers such as Greg Moore, who was knowledgeable and entertaining, making plant physiology fun.

Other subjects such as irrigation and engineering fascinated me. I had a strong interest in Business management, loving everything to do with profit, loss, accounts, and P&L statements.

It was probably plant ID I found the most challenging and fascinating. The Latin names did not make any sense to me initially but after studying for a while I began to master them. Even today I find them challenging at times to pronounce.

Favourite plant: Plants are my passion so I struggle to answer this question. It fascinates me how diverse the plant kingdom is. How plants are able to adapt to the most unusual places to grow. Plants are integral to humans on so many layers – food, shelter, enjoyment, cleaning our air, etc. It is a particularly good day when I learn about a new plant or see a plant used well in the landscape.I do have a fond spot for *Luculia grandiflora*.....

I decided to go to Burnley because:

My parents and grandparents had a nursery called Huntingdale Nursery. We lived at the back of the nursery and my grandparents lived at the front, with the nursery in between. My earliest memories are being among the plants and flowers, with my parents, grandparents, and the wonderful Italian gentlemen that used to help in the nursery after working in the factory all week.

Being a family business and seasonal crop, as young children we worked in the nursery, particularly during the busy times.

At high school I had aspirations of being a Statistician or Actuary but after doing work experience in an office in Melbourne CBD it became evident my passion was for a career in plants, gardens, horticulture, and small business.

Since I graduated from Burnley I have:

For the first five years after Burnley I worked in the family business growing Azaleas. Mono cropping meant all aspects of growing – growing media, environment, fertigation, pest and disease control was critical. If something was wrong the whole crop could be affected. Although I had spent most of my life working in the nursery during weekends and school holidays this gave me the opportunity to hone my growing skills.

In addition, the many hours spent learning botany was invaluable to be able to ID every Azalea variety by foliage alone, no flowers needed.

Following the closure of Huntingdale Nursery, I landed my dream job – Manager of Smith and Gordon Nursery. At the time I did not realise what I had stumbled into, but it was the start of an extraordinary learning journey for more than 32 years.



Left Smith and Gordon Nursery at NGIV Trade Day

Smith and Gordon Nursery was owned by two brothers, Rick and Ross Eckersley. Both allowed me to run the nursery, while supporting and mentoring me along the way. Rick exposed me to a greater world of landscape design, environmental issues, and life in general. Ross was the business mentor, often we would have long conversations about busi-

ness issues such as finance, capital works, and HR.

At Smith and Gordon, I was privileged to grow plants for the best Australian garden designers who created beautiful landscapes with our plants. Often, I would discuss with the designers' plant solutions for their projects, sometimes even meeting the designers onsite. This was invaluable to the evolution of Smith and Gordon's growing list of plants. I was lucky to see the most amazing gardens and landscapes.

Burnley Graduate Profile No. 17 May 2022: Teena Crawford

The other major part of the business was with retail nurseries. We grew for some of the best retail nurseries in Australia. All this added to the challenge of business and growing plants but in return I learnt a lot, and made many lifetime friends.

I have been fortunate to enjoy a long and varied horticultural career. My major part has been working in the wholesale nursery but along the way I got to experience and learn in many other areas.

I enjoyed some part time work in retail nurseries, where I could enjoy conversing, helping, and inspiring home gardeners. In between serving customers there was the opportunity to brush up on my plant knowledge such as understanding the intricacies between the numerous camellia varieties, learn about the latest tomato varieties, and the best plants for difficult garden areas such as water-logged soils, coastal exposure, or windy balconies.



A long stint co-hosting 'Smart Gardening' on 3AW radio on Saturday mornings with Rick Eckersley. The two-hour show was great fun, and we spent the time inspiring the listeners to garden, and respect and look after the environment. Plus answered many gardening questions on all manner of topics. From the radio gig I had the opportunity to do some writing with various publications, including The Age and Your Garden magazine. The radio work also led to a few other promotional opportunities. With my long tenure in the Industry, I spent four years on the NGIV Board which gave me a greater insight to the Horticultural Industry and the invaluable role plants and gardens, including private, public and the natural landscape, make to

society and make our cities liveable.

Another role I stumbled upon, but love doing, is working as a botanical guide on garden tours. Working for Botanica World Discoveries, I have been able to share my passion for plants, gardens, and the environment with guests on tours both in Australia and overseas. Writing this, it is just prior to returning, after several years, as a show garden judge for Melbourne International Flower and Garden Show, a voluntary position giving me the opportunity to support the Horticultural Industry which has been a huge part of my life. MIFGS is the 'standout' event showcasing our wonderful Industry. The judging process is fascinating and challenging but equally rewarding.

Smith and Gordon Nursery closed in 2019, after its Dingley production nursery was compulsorily acquired by Vic Roads to build the Mordialloc freeway. Since the closure I have worked as a horticultural consultant in my own business, *Teena Crawford Horticulture*. This enables me to utilise the knowledge and experience I have gained over the journey, and continue to gain, while inspiring my clients about plants, gardens, and the environment.

When not working professionally, I am absorbed in gardening at home (my last two home gardens)

My one regret working professionally is that after graduating from Burnley 40 years ago I still have so much to learn.....

Editor's note: *Teena Crawford is one of Burnley's most illustrious graduates. Although she was our Graduate of the month for May, and appeared on our website, <http://www.fobg.org.au/blog/burnley-graduate-of-the-month/> and our Facebook page, <https://www.facebook.com/groups/FriendsBurnleyGardens>, we decided to include her in this edition, in case you missed her, as not everyone keeps up with Social Media*

Attempting to provide better soil environments for urban trees *by Peter May*

Background

While not without challenges, it's relatively easy to grow trees in parks or grassy nature strips (amusingly called hell strips in some other parts of the world). Hopefully not too damaged soils, reasonable soil volumes and soil surfaces exposed to the atmosphere (for rainfall and gas exchange) mean that trees in these environments often have suitable growing



conditions (yes, I know that none of these are a given in the urban environment, but it's not a bad generalization). By contrast, trees in the more heavily urbanized parts of our cities often don't have this opportunity for unimpeded growth.

The traditional approach to tree planting in paved areas is the "tree pit", a hole cut in the paving into which the tree is dropped. Because paving requires a compacted subgrade to maintain the integrity of the paved surface, the levels of soil compaction involved usually result in a poor soil environment, limiting root growth and reducing tree health. One of the consequences of this approach is that we are usually left with a suite of "street tree" species that are capable of some acceptable level of performance under these sub-optimal conditions. Think plane, elm, and spotted gum in Melbourne, for instance. Each city has its population of "street trees". An issue arising here is that relying on a small number of species of trees renders the tree population vulnerable. An example is Dutch elm disease in the United States devastating streets of their plantings of American elm in the early 20th Century.

The challenge

Globally, the human population is becoming more urbanized. Population density in cities is increasing and there are concerns about how cities can be made better for their inhabitants (and not just their human inhabitants).

Attempting to provide better soil environments for urban trees *continued*

The role of vegetation in this provision is well documented, and the specific role of trees is also well publicized. I won't go into listing the contributions of trees to city "health" as others have done that. Suffice to say that generally, we want more trees in cities and we want them especially in the parts of cities where it is most difficult to grow them. That is the most densely populated, most heavily trafficked, most paved parts. And ideally, we would like to be able to do this by providing not just more trees, but a diverse population of trees. From what I've said above, using the conventional approach, we probably can't do that.

Possible solutions

Since probably the late 1980's (I'm prepared to be corrected on this, but the earliest-published source that documents approaches to tree planting in difficult locations that I know of is Phillip Craul's *Urban soils and landscape design* (1992)) researchers and practitioners have started investigating approaches that allow urban planners to provide hard surfaces for pedestrian and vehicle traffic, as well as providing soil environments that enhance urban tree growth. There are a few ways this can be done, and the rest of this article will explore those. None is totally suitable, and none is as good as planting a tree in an open grassy space without heavy traffic. Essentially, we can see two approaches. I propose to call these compaction avoidance methods and compaction tolerating methods.

Compaction avoidance methods

In these systems, the paving is supported above the soil surface. In essence, the soil is in a box, and the top of the box carries the paving. There are two version in use, cantilevered paving and structural support cells. Cantilevered paving is built in such a way that typically the pavement rests on a concrete slab and the concrete slab is supported on walls or piles that keeps it rigid. The space under the paving is filled with soil and the tree(s) are planted in cut-outs in the pavement. This approach has probably been used for a long time in one form or other. At present, this is probably the only approach that could be used, if the slab was strong enough, to support road traffic.

Attempting to provide better soil environments for urban trees *continued*



Lonsdale St Dandenong redevelopment. Cantilevered paving over a tree vault.

Structural support cells are rigid plastic frames (think large, strong milk crates). To use them, the root zone volume is excavated and then filled with the crates. These usually lock together and can be stacked. The crates are then filled with soil and the paving placed on top. The plastic grid holds up the pavement and prevents compactive forces being transferred to the soil volume. To my knowledge there are two competing commercial systems in the market place. These are called Silvacell® and Stratacell®. An internet search would provide information on these systems.

Attempting to provide better soil environments for urban trees *continued*



Stratacell installation in pedestrian precinct, Copenhagen.

Attempting to provide better soil environments for urban trees *continued*

Compaction avoidance systems

This approach uses soil or soil-like materials that can be directly compacted and then still allow basic soil functions like water penetration and gas exchange, and basic plant functions like root penetration. There are two approaches here as well, those being coarse uniform sand, and structural soil.

Coarse sand with little variation in particle size (usually 0.2-0.5 mm diameter) can be compacted to some extent and still be permeable to water and plant roots. Modern sports field construction (golf and bowling greens, any important football stadium) uses coarse sand to provide a solid base for grass growth that can't become excessively compacted by use, unlike the muddy football field of old. A similar approach can be used for trees. I first came across this approach in a system called The Amsterdam Tree Soil, described by Dutch soil specialist Els Couenberg in the first Landscape Below Ground proceedings (1994). While it has uses, it probably can't be used in areas where compaction will be very great.



Dodds St Southbank. Structural soil and permeable asphalt in parking bays

Attempting to provide better soil environments for urban trees *continued*

Structural soils are mixtures of stones (typically 20-40 mm diameter) and soil. A typical blend has soil volume as about 20% of stone volume. As with structural support cells, a trench is dug for the tree root zone and filled with the structural soil. This is compacted to a level to hold up the paving, the stones carrying the compacted load, and the soil being protected in the voids between the stones. The paving is placed on top. Most of the development and research on structural soils has done by a team at Cornell University lead by Professor Nina Bassuk. Again, an internet search (try UHI Cornell as a search term) will provide plenty of reading. This approach has been used around the world. City of Melbourne has several installations being evaluated. The most recent to my knowledge is in Dodds St. Southbank where is has been installed under the car parking bays with porous asphalt to provide tree root zones as well as storm water capture and remediation. Check it out next time you are at the Theatre or Recital Centre.

Conclusion

As I said above, none of these approaches is universally applicable, but it is interesting that we now have tools to address the unsuitability of much under-paving soil. Obviously, these approaches are all going to be more expensive than the old-fashioned tree pit approach, but if we want a larger, more diverse urban tree population, we have to recognize that this is a cost that's worth it.

Christmas in July — *Jill Kellow*

It is almost August, so a little too late to be thinking about Christmas in July, but perhaps you are still planning one, or would like to get ready very early for December! This edition's recipe comes from my family recipe book. I promise you will never taste a better Christmas pud! Translation on the next page.



The recipe note book of S E. Pulford (Granny Pulford). The oldest dated recipe in the book is dated 1868, but the pudding recipe is undated. The first recipe in the book is called "Half-Pay Pudding", and there is also one called Prince Albert Pudding. At the back of the book there are several pages of riddles.

Plum Pudding

1lb Valencia raisins, cut in half; 1lb currants sprinkle them with flour slightly to prevent them clinging together in lumps ~ 1lb beef suet ~ 1lb brown moist sugar freed from all lumps not the crystallised; 1lb finely grated breadcrumbs off a stale loaf ~ ¼ lb mixed candied peel; the rind of a fresh lemon cut thin so as not to touch the white skin, chopped very fine, a good pinch of salt; a dessertspoonful of spices, well pounded with a pestle in a mortar viz cloves, mace, whole allspice, and cinnamon (very little mace), and a half nutmeg grated, also a little ginger; one wineglassful of brandy; eight eggs and a little flour, not more than 6 or 7 moderate sized dessertspoonfuls; no milk as that would ruin the pudding.

The pudding is mixed thus: have a large pan or bowl, to give plenty of room for stirring, and place the five articles in pounds round it thus: raisins sugar, currants, suet, and breadcrumbs. If placed in this order the mixing is greatly facilitated. Stir them round from the centre until all are well mixed together, then add the candied peel cut up into small pieces, and sprinkled all over, then the fresh lemon peel and the mixed spice, stirring after each sprinkling, the spoonful of salt over all. Then break and take the specks out of four eggs, beat them separately. Sprinkle them in a state of froth over the mixture in the bowl & stir again. Now add four dessertspoonfuls of flour stirring it in, and then add the brandy. Always stir the ingredients as lightly as possible, lifting it and breaking any close heavy lumps. Cover the bowl over, and leave it in a cool place for a night. When required for use, beat the other four eggs and add two or three dessertspoonfuls of flour, judging when there is sufficient flour by the ingredients adhering together lightly and not in heavy lumps. (See over for hints and tips.)

Christmas Pudding Notes:

~ You can successfully use butter instead of suet. Avoid packaged suet, as it often has flour added, and that would change the proportions of the recipe.

~ I guessed a wineglassful of brandy by adding until it looked moist enough, not too much.

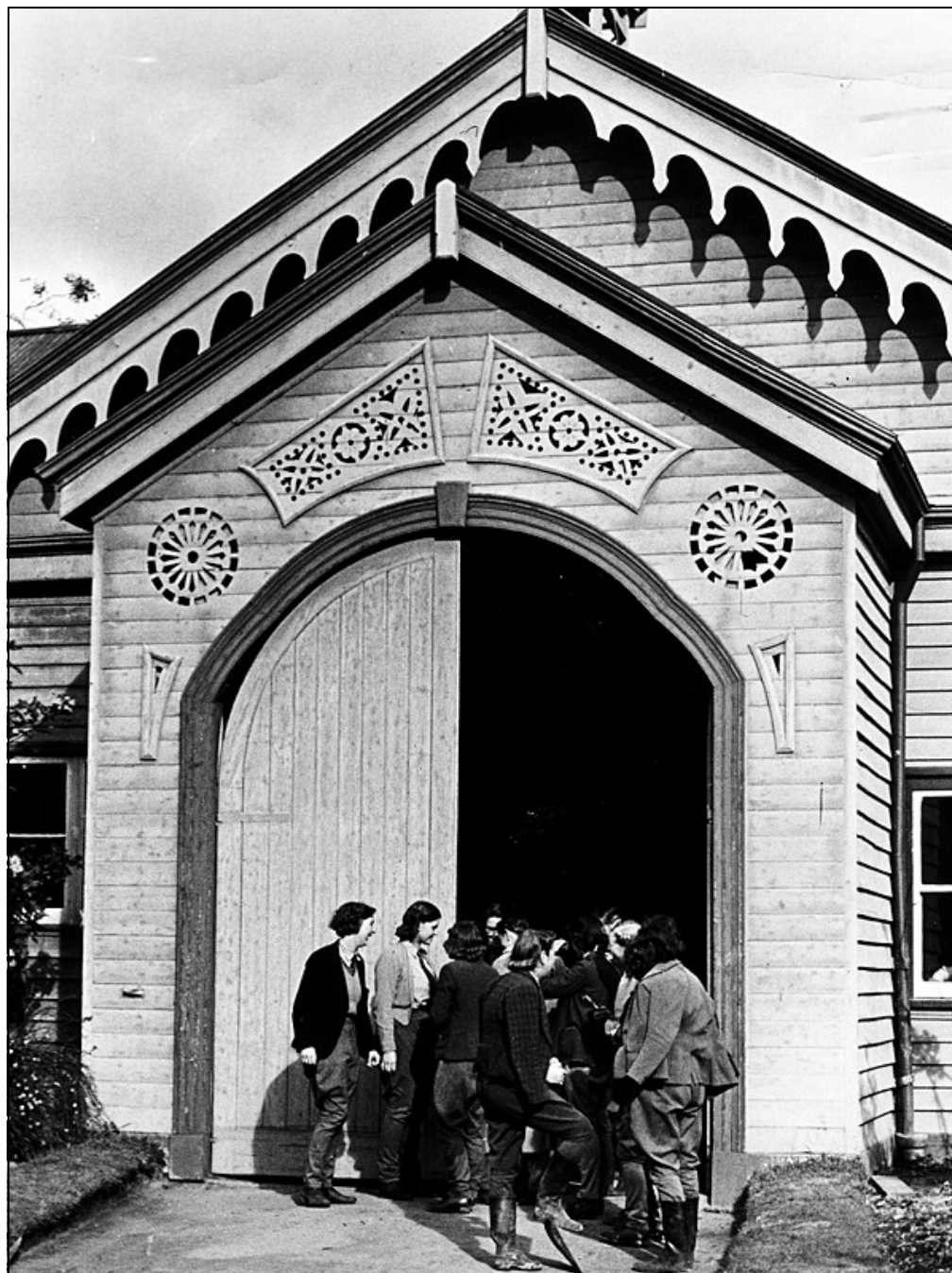
~ No cooking instructions are given. I always use a basin rather than a pudding cloth, being too scared to use a cloth. I line the bottom of the basin with a small piece of buttered aluminium foil to prevent sticking. You can make one huge pudding or some smaller ones. They need to be boiled for a long time. I give the large pudding at least six hours, then more on Christmas day.

~ I used to make my pudding on Cup Day so it would be well matured, but it can be made the day before it is needed.

~ Turn the pudding out, and pour over a spoonful or three of warmed brandy, then light. Carry to the table in flames. ~ Will keep in the fridge for at least a year, well wrapped.

A weed is a plant that has mastered every survival skill except for learning how to grow in rows.

<https://www.sungardening.co.uk/>



The Pavilion (nick-named "The Elephant House") - Burnley before the Main Building was built. Thanks to Jane Wilson for this image from the archives.

***NEWSLETTER
OF THE
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BURNLEY
GARDENS***

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