

AUSTRALIAN NATIVE PLANTS SOCIETY (AUSTRALIA) INC

# GREVILLEA STUDY GROUP

NEWSLETTER NO. 118 – FEBRUARY 2021

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### GSG NSW Programme 2021

Leader: **Peter Olde**, p 0432 110 463 | e [peter.olde@exemail.com.au](mailto:peter.olde@exemail.com.au)

For details about the NSW chapter please contact Peter, contact via email is preferred.

#### Sunday, 28 March 2021 (you must register with Peter Olde)

**VENUE:** Home of Phil and Catriona Trickett, 663E Little Forest Road., Little Forest NSW 2538

**PHONE:** 0409 789 567 or 02 4456 4775

**TOPIC:** Grevillea news and plant table, Phil Vaughan to demonstrate his method of cutting grafting followed by garden visit.

#### Sunday, 30 May 2021 (you must register with Peter Olde)

**VENUE:** Home of Peter and Margaret Olde, 140 Russell Lane Oakdale 2570

**PHONE:** 04 3211 0463

**TOPIC:** Plants sales, Phil Vaughan to demonstrate his method of cutting grafting followed by garden visit.

#### Sunday, 24 July 2021

**VENUE:** Meet 9 am at Windsor

**TOPIC:** Trip along the Putty Road from Windsor to Putty and nearby. Chris Cheetham has new locations.

### GSG Vic Programme 2020

Leader: **Neil Marriott**, 693 Panrock Reservoir Rd, Stawell, Vic. 3380

p 03 5356 2404 or 0458 177 989 | e [neil@whitegumsaustralia.com](mailto:neil@whitegumsaustralia.com)

Contact Neil for queries about program for the year. Any members who would like to visit the official collection, obtain cutting material or seed, assist in its maintenance, and stay in our cottage for a few days are invited to contact Neil.

### GSG SE Qld Programme 2021

We gather at 09:30 for shared morning tea and a meeting at 10:00. We usually have a BYO lunch about midday. Visitors are always welcome. For more info or to check venues etc please contact: **Ross Reddick** on 0405 510 459 or **Denis Cox** on (07) 5546 8590 as changes can occur.

#### Sunday, 28 February 2021

**VENUE:** Home of Lorelei & Matt Bartowski, 89 Glencoe-Yalangur Road, Glencoe (Near Kingsthorpe, via Toowoomba)

**TOPIC:** New Grevillea cultivars in the nursery trade

#### Sunday, 18 April 2020 (in lieu of 25 April, ANZAC day)

**VENUE:** Home of Helen Howard, 180 Tweed Coast Road, Cudgen

(Note 105km & 1hr 05min from my place, BYO midge repellent)

**TOPIC:** New Grevillea species

#### Sunday, 27 June 2021

**VENUE:** Pete's Hobby Nursery, 10 Patrick Street, Lowood.

**TOPIC:** Nursery and Rail Trail excursion

## A FEW WORDS FROM PETER

Peter Olde, NSW

The destruction of a significant number of endangered *Grevillea scortechinii* plants at Thulimbah, Queensland, no doubt to pave the way for some development or other (though this is unclear as I write), underlines the precarious situation of so many of our defenceless plants and animals. They rely on the goodwill, dedication and caring of only a few usually unpaid conservationists to monitor and keep track of them. Congratulations to the Stanthorpe Rare Wildflower Consortium who first raised the matter. I am not a believer in conservation by cultivation. It is a last resort. Plants need the habitat in which they evolved and the habitat needs them. Destruction happens too often, even when plants are 'protected' by their status. In the 1980–1990s similar problems occurred around Sydney for *Grevillea caleyi*, now much reduced in numbers after their habitat became part of the urban development of northern Sydney and their home became part of people's homesites. I personally know of several plants destroyed for a hotel development, secretly, hush hush, finger to nose, wink wink. I do not have an answer to this problem but only know it will get worse if caring people do and say nothing. I do not know the outcome of the destruction of the *G. scortechinii* deaths but would appreciate any more recent reports.

Although we held a planning meeting for the NSW chapter to hold activities in 2021, the re-emergence of COVID in various places continues to make the plans unreliable. We had planned to hold at meeting at the Australian Botanic Garden, Mt Annan in February but the situation was so fluid that I did not even ask permission. Cancel culture. The December meeting was poorly attended and basically was unable to give me much direction in this planning so I am faced with some ad hoc decisions for the future. I am not good at this. I wish I could just be a patron and let someone else run the Group. Lastminute.com is my middle name. However, I have asked Phil and Catriona Trickett for permission to hold a meeting at their home in March and I know attendees would enjoy it.

However, it will be subject to weather and space. I doubt that more than 20 will attend but who knows? Please advise if you will be attending. Be prepared for last minute changes and if you wish to convert to being an active member, you need to give me your email and contact details. I have bought some interesting plants for the meeting which we will discuss at the time. We need a keen programme officer for this group.

Things are happening on the taxonomic front. I have started publishing new species and will continue over the next 12 months. I note a recent paper in which 10 species have been recognised in New Caledonia instead of just three. I fully support this. I will prepare something for the next newsletter. However, one immediate change concerns the identity of *Grevillea exul*. The plant in widespread cultivation is now *Grevillea rubiginosa*. I saw the real *G. exul* at the home of Robert Brown in Nicholson, Victoria a few years ago but am unsure where he got it.

The release of new hybrid cultivars continues apace. I note *Grevillea* 'Watermelon Ice' now on the market and has been PBR by Gondwana Nursery. The hyperbole never ends. Flowers twice the size of the presumed parent, *Grevillea* 'Coconut Ice', which I believe is infertile, seems too incredible to be true. Apparently, this arose spontaneously at the home of Jan and Denis Cox. Hopefully they can tell us more in the next newsletter. There is another beauty from Illawarra Grevillea Park, *Grevillea* 'Bulli Envy', similar to *G. 'Cooroora Cascade'*. Hopefully we will get more on that soon. It has an interesting history of the spontaneous kind.

### Volunteering at Oakdale

The Grevillea Study Group gardens and collection require considerable maintenance. We are looking to see whether any members would be interested in volunteering here at Oakdale one day a week or any lesser period. We meet and work here every Monday. If you are interested in participating, drop me a line or call 0432 110 463.



### Illawarra Grevillea Park

NEXT OPEN DAYS – AUTUMN 2021

**Saturday 1 May, Sunday 2 May**  
**Saturday 8 May, Sunday 9 May**

Opening hrs are 10am – 4pm

#### Location

The Park is located at the rear of Bulli Showground,  
Princess Highway, Bulli.

#### Admission

\$7 adults, children with adults are free

email [Illawarragrevilleapark@gmail.com](mailto:Illawarragrevilleapark@gmail.com) or  
visit [Illawarragrevilleapark.com.au](http://Illawarragrevilleapark.com.au)

## NSW ACTIVITIES FOR 2021

Peter Olde, NSW

**Sunday, 28 March 11am**

You must register with Peter Olde.

This event is free. Approximately 3 hours south of Sydney. Sydneysiders should leave home around 7 am to allow for a break.

Home of Phil and Catriona Trickett, 663E Little Forest Road., Little Forest NSW 2538. You leave the highway heading west on Little Forest Road, just north of Milton, you will need to drive a considerable distance almost to the end. Just before Little Forest Rd ends, turn left into Coral Tree Lane which is marked by a number of letter boxes at the corner. 663E is approximately 100 m on the right along this private lane. You cannot miss the native garden. Bring your own cup, morning tea, lunch, and chair. Hot water supplied.

0409 789 567 or 02 4456 4775

Bring a plant for the raffle and something in flower for the plant table.

**Programme**

- Grevillea news
- Plant table.
- Phil will demonstrate his method of cutting grafting. The demonstration will be followed by a garden visit which includes many Proteaceae especially Banksia, Isopogon, Grevillea, Petrophile, Hakea
- Plants for sale will be available from Jonathon and Olga with 10% to the Study Group
- I will also be bringing plants and material for the plant table.

**• Sunday, 30 May 9am**

You must register with Peter Olde.

This event is free

Home of Peter and Margaret Olde, 140 Russell Lane Oakdale 2570

04 3211 0463

**Programme**

- 9 a.m. Sale of plants. Phil Vaughan will be bringing a truck load of grafted plants for sale from Victoria. Payment direct to Vaughans to cover fuel costs etc. Please direct advance orders through me.
- 11 A.M. Phil will demonstrate his method of grafting. The demonstration will be followed by a garden visit. Plants for sale will also be available from Jonathon and Olga with 10% to the Study Group. I will also have some plants.
- Please bring plants for the raffle.

**Sunday, 24 July**

Meet 9 am at Windsor

Trip along the Putty Road from Windsor to Putty and nearby. Chris Cheetham has new locations. More details by email and next newsletter.

**Sunday, 29 September**

Details to be advised.

**Sunday, 23 October**

Details to be advised.

**Sunday, 20 November**

Details to be advised.

## NSW GSG MEETING REPORT

John Knight, NSW

**Grafting Grevilleas**

The August GSG meeting, conducted by James Indsto, featured grafting using a budding technique. Following on from that, for the October meeting at Oakdale, Peter arranged for Euan Mills, propagator at Mt. Annan Botanic Garden, to discuss cutting grafts.

As Euan pointed out, this technique is ideal where cuttings have been collected from wild populations, and you don't have any ready, suitable stocks for grafting the collected material onto.

**Stock Material:**

Plants to be used as stock need to address 3 criteria.

1. Be hardy in your garden conditions, that is, grow healthily without too much need for watering or soil amelioration.

2. Cuttings must strike readily and reliably.

3. 3Be long term compatible with the scion material which will be grafted.

It was noted that most grafting of Grevilleas has in the past used *Grevillea robusta* as stock, and for many species this has proved successful, but over time signs of incompatibility have emerged in some plants. Signs of incompatibility might show as the stock growing away below the graft, with little growth of the scion, the scion although appearing to grow, shows little vigour, being unthrifty and with dieback of new growth, or the graft failing to grow on at all.

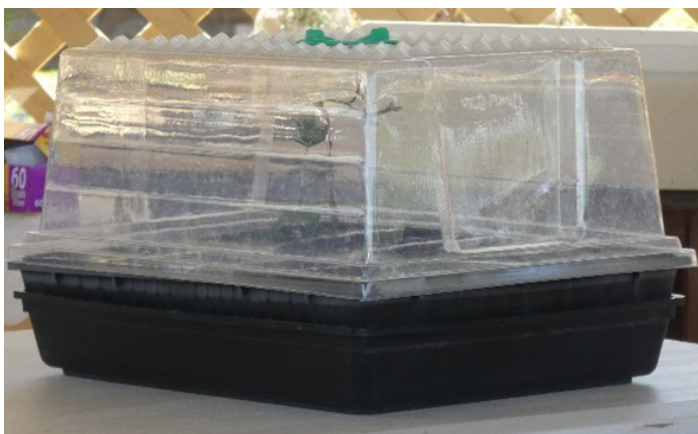
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Euan noted that we should try a range of plants hardy in our conditions, to see what might be achievable with the more difficult species. While he mainly used *Grevillea* 'x *semperflorens*' and *G.* 'Carrington Cross', (*G. rivularis* x *G. acanthifolia*), in the past success has been achieved with *G.* 'Poorinda Royal Mantle', and some other Poorinda hybrids.

*G. x semperflorens* is a very hardy shrub which grows well in a variety of soils, strikes quickly from cuttings over much of the year, and is thought to be Phytophthora resistant. As a garden plant, it flowers prolifically throughout much of the year, and is a magnet for both birds and bees. It has proved a reliable stock for many species which have demonstrated incompatibility on *G. robusta*. *G.* 'Carrington Cross' also strikes well from cuttings, making it a good candidate as a stock for many grafts. It has also proved adaptable and reliable as a garden plant, which adds to its appeal as a stock for grafting. Like its parents, *G. rivularis* and *G. acanthifolia*, it can get to a large size, but accepts pruning well to maintain it within bounds.

#### Set up:

A simple garden propagator with a polycarbonate hood houses a tray which holds a number of 30mm coir peat plugs, with preformed holes in place. The tray is held within a second tray with a solid base, which holds a small amount of water to aid with increasing the humidity within the propagator. At Mt Annan, the propagator is held within the glasshouse for convenience, but this is not necessary for success. What is important for the hobby propagator, is that the unit is placed in a sheltered situation out of full sun. A shade house with 50 - 70% shade is suitable, or a protected eastern aspect, for example under the shade of trees.



#### Preparing stock cuttings:

Selected pieces are cut into suitable sized sections, each with a minimum of 4 nodes or buds, and these are dropped into a bucket containing a dilute solution of ESI-Root liquid hormone, at dunking strength of approximately 10mm to 4 litres of water. Here they remain until readied for

the scion. There was some discussion as to the rates of ESI-Root used, and Euan pointed out that too strong a hormone solution has proved to be disadvantageous in getting some cuttings to root. At Mt. Annan they generally prepare all the cuttings first, leaving them dunked in the dilute solution, and then, after the scion is attached, again treat the cutting by dipping the base into Clonex Green, 1500ppm. This hormone gel is rated for herbaceous and softwood cuttings, but is the preferred treatment for grafts. Over time it has been noted that some species strike better with a lower rate of hormone treatment, or in fact no hormone treatment at all. Success is generally similar where hormones are used or not, with species that do respond to hormone treatment tending to root more quickly, and maybe also produce an initial more dense root system, although untreated cuttings will match this over a few weeks.

Some species have proved totally unsuccessful when hormones are applied, with the cutting bases dying back, and callusing required for the cutting to produce roots not appearing. It is possible that the species we have been trying to strike without results might be tried without any hormone use, and just maybe we may have more positive results.

There was quite some discussion on this point, and Euan, whilst not committing to a definitive response, did mention that he has done quite a deal of propagation trials with a range of plants in the Proteaceae family, and can say under his conditions that very low to nil hormone use has produced good results in species which failed to respond to the usual hormone treatments such as Clonex Purple (3000ppm) and Clonex Red (8000ppm). This is particularly so for many Banksia and Persoonia species. He noted also that with Persoonia it is important not to remove the growing tips, as the cuttings can die back quickly when the tips are removed. Whilst at Mt. Annan bottom heat is available for their propagation, Euan said that this was not necessary to get good results, although when used it does promote quicker rooting of cuttings.

Material selection is critical when grafting, for both the rootstock and the scion. It must be healthy, vigorous and pest free. Hygiene is also very important, with a clean workspace, clean and sharp tools. Using a spray bottle containing a 70% solution of Methylated spirits, the table is cleaned often during a grafting session, and tools are sprayed between each cutting to ensure no disease is transferred between material. All cuttings and scions are treated with bleach prior to preparation. Euan suggests that 4% bleach, which is a common concentration in household bleach, is suitable to sterilise the pieces. In a 10 litre bucket, 100ml of bleach is added and mixed through. Plant pieces are soaked in this for 2 minutes, then removed and rinsed with fresh water before commencing grafting.

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### Grafting examples:

Euan suggested that the top wedge graft is most suitable for many species, and is generally easiest and simple for novice propagators to undertake. Using *G. 'Carrington Cross'* as stock, a piece of *G. leptobotrys* as scion was grafted. The cutting was prepared first, selecting a firm young shoot with 4 nodes. The bottom 2 leaves are removed, as is the top leaf, leaving just 1 leaf and its attendant bud in place to provide energy for the cutting to strike. Secateurs are used to make a straight cut above the top bud, then a razor blade is used to slice down the centre of the cutting, about 20mm deep. The cutting is now set aside whilst the scion is prepared.



Cutting into the stock, using a razor blade. Note that the blade has been broken in half for ease of use, and safety



When mis-matched stock/scion material is used, the scion is inserted into the cleft of the stock on just one side, to ensure alignment of the cambium

Euan prefers to use a retractable knife cutter to make the wedge, and recommended an OLFA knife with 9mm blades. This is a quality Japanese tool with excellent stainless steel blades which remain ultra sharp, is more comfortable to use and stays sharper than a scalpel.

Select a scion piece of a similar diameter to the stock, with 4 nodes, or more if the leaves are close together. All but the top leaf is removed, and a wedge of a similar length to the cleft cut in the stock, is prepared, with the cut commencing at about the lower bud level. Both sides are trimmed equally so that a sharp wedge results with equal cambium on each edge. This wedge is then inserted into the stock, to about bud level, or just below. The top of the wedge should remain just above the cleft to avoid benching, where the graft sections meet, to avoid the stock swelling out, which would produce a weaker graft union long term. At this point ensure that the cambium layers of both stock and scion are aligned.

Euan noted that different plant species can have differing bark thickness, and it is the cambium layer below the bark that is critical to be lined up. The cambium can be observed by looking at the cross section of both the stock and scion.

Laboratory film (Parafilm) is used to bind the graft. This is self-adhesive, stretches readily without breaking, and will break down over time, which means it is not necessary to remove from the graft in the future. The tape is cut into small pieces, about 50mm long and 6 - 8mm wide. Tape is wound below the graft, and gradually stretched and wound around the graft, finishing above the graft, giving a waterproof and tight join at the union of the graft. Any excess tape is broken off and discarded. The cutting base is trimmed again giving a fresh cut, dipped in hormone gel if required, and then set into a coir peat plug in the propagator, and the hood is put in place to keep the fresh graft turgid.

The process looked quite simple, but for those new to grafting, appeared daunting. Euan suggests a good exercise for newbies is to practice cutting wedges on any material, and slicing stock cuts as well to gain some proficiency, before attempting to graft. It is imperative that cuts and wedges are clean, straight and accurate.

A second demonstration using *G. semperflorens* as a stock illustrated difficulties in matching graft material perfectly. *G. semperflorens* strikes readily, but is more difficult to prepare as it has thin stems. Stock used had 6 nodes, with the 2 lower leaves removed, the 2 middle leaves remain attached, and the 2 top ones removed. The cut into the stock reaches to the second bud level, but is quite difficult to achieve due to the thinness of the stem, so be careful. Slow and steady.

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As scion, Euan selected a piece of *G. lanigera* hybrid, which grafts well but presents a couple of issues. It has many closely spaced leaves which need to be removed carefully to avoid tearing the soft bark. It is rare that similar diameter material can be found, so the scion will actually be wider than the stock, which could cause problems in matching the cambium. With such material as *G. lanigera* a few leaves can be left on. The graft is set similarly to the previous *G. 'Carrington Cross'/G. leptobotrys*, with particular attention paid to matching as much cambium as possible.

#### Some general points when selecting grafting candidates:

Euan has available to him over 30 years of grafting tests performed at Mt. Annan, and is able to access this information before attempting any new processes. This information is of course not available to the general public, but some pertinent comments offered some clues to help our grafting success.

For many years *G. robusta* has been the go to stock for all grafting. It is however far too vigorous for many plants which we might care to graft. It is very successful for the many large-flowered Queensland Grevilleas which are popular for their long flowering and ease of growth. Despite the premise that apical dominance (that is the scion should determine the growth of a grafted plant, and limit the development of the stock to suit the scion) is expected, many examples of incompatibility have been noted over the years.

Selecting stock which are evolutionally closely related to scion material is a good start. Therefore, the spider-flowered *G. semperflorens* should be suitable to graft other spider-flowered species, such as *G. alpina* forms. This might be good starting point for new grafters. Similarly, the toothbrush flowered *G. 'Carrington Cross'* should be successful with other toothbrush flowered species. Of course, proving these hypotheses is up to Study Group members individually, as we each have varied conditions. What would be useful is that everyone has a go at grafting, and then report through this newsletter their results, so that all the knowledge we hold, and gain, is not lost to posterity.



Completed graft prior to taping.  
Note that the wedge sits proud  
of the stock

## SE QLD GSG MEETING REPORT

John Knight, NSW

### At the home of Adrian & Gail Wockner, Highfields – Sunday 29 November 2020

**Attendance:** about 40 people, from as far away as Bargara, Gympie, Gold Coast & Brisbane and 6 apologies were received.

**Raffle:** As there were lots of grafted specimens in the raffle, tickets were set at \$1 each.

**Record of Last Meeting:** The October meeting minutes were circulated on 11<sup>th</sup> November.

**Business arising:** Denis to ask P Olde for list of new G species - Peter sent spreadsheet. Denis to decipher in time for April meeting.

**Financial Report:** Treasurer, Bev Weir - closing bank balance - \$1557.19

**Discussion topic:** dumped it on Adrian to discuss his pruning regime, as he had mentioned to me that he had begun pruning when they received some good rain; it is now drastically dry!

**ADRIAN**— Pruning: Grevilleas enjoy being pruned, and he prunes all year round & dead-heads, facilitating more flowering and avoiding sooty mould by letting the sun into

the bush;

Fertilising: only fertilise those plants in pots;

Standards in pots: re-pot those on their own roots, cut away old roots, re-pot, trim top foliage and water well;

Watering: only new/young planted-out specimens, and continue to water potted specimens;

New plants: dig suitable hole, fill with water and leave 24 hours to drain, add blood and bone in hole, add plant, water at roots only;

Growing in clay: *G. Pink Surprise* and *G. Sandra Gordon* do OK in clay.

**Show & Tell:** Laylee brought a *G. trueriana* 'X'. Could it be *G. 'Tirari'*, a cross between *G. trueriana* and *G. 'Long John'*!?

**Garden tour:** Being a very hot day, garden touring was only tackled by a few.

**Close Meeting:** 11:25 am. Due to the large crowd, there were many small discussion groups, some growing material being harvested, and short sojourns into the garden to inspect the plantings & also the quirky garden ornaments.

Thanks Gail & Adrian.

REMOVAL OF *GREVILLEA SCORTECHINI*

Ben Smee in The Guardian, 22 Oct 2020

Queensland investigates suspected clearing of critically endangered black grevillea. Some 300 out of just 1,449 mature plants removed, conservationists say.



Critically endangered black grevillea  
Photograph: Stanthorpe Rare Wildflower Consortium

Queensland environment authorities say they are investigating the suspected illegal clearing of a “significant portion” of a critically endangered plant species in the state’s Granite Belt region. The plant, black grevillea, was listed as “critically endangered” by the Queensland government last year after a submission from a local conservation group. The known world population of the plant is 1,449 mature plants. The group that championed the listing, the Stanthorpe Rare Wildflower Consortium, last week discovered an estimated 300 plants cleared at two sites.

In a statement, the state Department of Environment and Science said it was in the early stages of an investigation but that a significant portion of this species’ population had been impacted, and plants had been destroyed at two important sites at Thulimbah, near the Queensland-New South Wales border. The department said it expected to have a better idea of the extent of the damage later this week. Under the Queensland Nature Conservation Act, a person convicted of taking protected plants without authorisation could be fined \$400,350 or sentenced to two years in prison.

The secretary of the Stanthorpe Rare Wildflower Consortium, Liz Bourne, said members of the group had discovered the damage last week. The group called for authorities to take strong enforcement action. “We estimate in total something like 300 plants have been destroyed, or 20% of the existing population,” Bourne said. “One section of this council road reserve has been completely cleared. We immediately alerted the Southern Downs regional council, who have issued a stop-work order on construction until further investigations can be undertaken.”

Bourne said the black grevillea was unique to the Granite Belt and survived in only a few, highly fragmented sites; on road and rail reserves and private properties. The plant was “a beautiful sprawling shrub” with holly-shaped leaves and black flowers. “Although it has been listed as a threatened species under both the state and federal conservation legislation for more than 20 years, it has never had a recovery plan nor been the focus of a conservation program or regular monitoring,” Bourne said.

The conservation group compiled a “very detailed nomination” to the state last year, seeking to have the plant’s listing raised to endangered, including conducting extensive surveys across the Granite Belt. The road where plants were destroyed had the highest numbers of any location. Queensland gazetted the “critically endangered” listing in August. The federal government is yet to raise its own “vulnerable” listing. Bourne said the group had been lobbying the council for bushland management officers to monitor development that could impact the species but had not been able to obtain funding. “This listing shows just how threatened it is and this recent destruction highlights what can happen to an endangered species if conservation legislation and proper processes are ignored,” Bourne said.

Footnote from Neil Marriott:

### Illegal Clearing of *Grevillea microstegia*

About the same time here in the Grampians in Victoria, another rare and endangered grevillea, the Mount Cassell *Grevillea microstegia* was also under attack, this time by a law breaking landowner. The landowner in question owns a large block of bushland adjoining Grampians National Park near the foot of Mt Cassell. The roadside adjoining the private land was illegally cleared of every tree, grass and shrub, including at least 20% of the entire population of this rare and localised grevillea. The illegal clearing was immediately photographed and reported to the local Shire officials as well as the Department of Environment. Sadly, neither authority has done a thing to prosecute the landowner. One wonders why we have environmental laws such as the EPBC Act which supposedly protect such rare plants, when the government authorities are totally reluctant to enforce them. No wonder our beautiful Australian plants are disappearing from the wild at an alarming rate. This is why it is so important for groups such as ours to grow as many of these rare plants in our gardens! There are now more *G. squiresiae* growing under cultivation than occur naturally in the wild, due to the illegal clearing of their type location and the new location discovered by one of our members several years ago!!

## RANKING THE CONSERVATION STATUS OF PROTEACEAE WORLDWIDE FROM 'KWONGAN MATTERS', DECEMBER 2019

Greg Keighery, WA

In its global quest to improve and update the Red Book of endangered species ([www.iucnredlist.org](http://www.iucnredlist.org)) the International Union for the Conservation of Nature (IUCN) decided that the listing process needed to refocus away from Mammals and other large charismatic vertebrates. For example the current list of the 100 most threatened species worldwide has 60 vertebrates on it. Also it has been noted that the previous lists have focussed on the Northern Hemisphere. This despite the fact that of the original 25 listed biodiversity hotspots of the world, 11 are entirely in the Southern Hemisphere, six are partly and only two are in Europe and North America. The Southern Hemisphere also contains severe developmental pressures from burgeoning populations, increasing exploitation of resources and loss of habitat and these are threatening many of these areas of high diversity. This concentration of diversity and threat is even higher for flowering plants with many families and a great diversity of species in South America, Southern Africa and Australasia. To begin a long process of addressing these issues, with funding from the Toyota Motor Company the widespread and diverse family the Proteaceae was chosen as an example. The Proteaceae are present in all southern hemisphere continents and is a well-defined and natural family. The family comprises 79 genera and over 1800 species. America has eight genera and 84 species ranging from Mexico to Argentina, with the greatest diversity in the Andes and eastern Brazil. South Africa has 17 genera with 382 species, some extend to Ethiopia but the centre of diversity is the Cape Province of South Africa. Australia has 49 genera and over 1200 species, with the highest diversity (over 800 species) in southern Western Australia. Currently worldwide the IUCN has only 27 species of Proteaceae listed as threatened with one *Stenocarpus dumbeensis* from New Caledonia thought to be extinct.

The Proteaceae of all their major regions of diversity are relatively well known and have been subject to recent taxonomic study. Australia has had the Family treated recently in three volumes of the Flora of Australia (Flora of Australia, 1995, 2000a & b). The largest genus *Grevillea* also has had a major field guide published in three volumes (Olde and Marriott, 1995) has been of continuing taxonomic interest with many new species being described by Peter Olde and colleagues. The genus *Dryandra* also has a recent major field guide (Cavanagh and Pieroni, 2007). The Proteaceae were an ideal group to undertake a worldwide ranking and having a relatively recent current taxonomy is obviously a major prerequisite to undertaking this ranking exercise.

### History of Conservation listing of members of the Proteaceae in Western Australia

In Western Australia the first attempt to list the rare species of Proteaceae was by Neville Marchant and myself (Marchant and Keighery, 1979). We checked over 200,000 herbarium collections at the Western Australian Herbarium to list all species with less than 5 collections. This being the standard measure at that time which should have meant the species were rare. We included all segregated taxa (including for the first time many with manuscript names which are now the phrase named taxa) and compiled a list of over 2,000 taxa. In the Proteaceae, for example, there were 134 species listed, including 27 that were potentially rare and 107 that were poorly known. Several of the potentially rare were listed as declared rare flora by the Government of Western Australia, when this became possible. Fast forward forty years and by 2019, in Western Australia there are 366 Proteaceae taxa that are conservation listed; 289 Priority listed (Priority 1 to 4) and 77 (25 of these are subspecies) legally protected as Declared Rare Flora. However, there has never been a systematic review of the conservation status of all members of the family since 1979.

*Grevillea* sp. Coojarloo (B.J. Keighery 28 B) Considered part of *Grevillea thelemanniana*, these populations were separated as a different subspecies by Bronwen and myself, due to their narrow divided inrolled leaves and occupying a disjunct geographic range. This necessitated a reconsideration of the status of the species since it had been downgraded from Endangered. Subsequent genetic studies by Tanya Hevroy for her PhD showed these populations were disjunct at the species level and more closely allied to the coastal *Grevillea preissii*. This is probably due to the narrow divided leaves rather than the lobed to entire leaves of true *Grevillea thelemaniana*. *Grevillea thelemaniana* is once again declared rare (Critically Endangered) and restricted to the Brixton Street wetlands. A similar ranking was reached by the IUCN process. However, resources to name these species complexes is generally lacking despite the obvious need.

*Grevillea christineae*, a rare, well defined species. This species is restricted to a series of road verges north of Moora probably the result of clearing of its habitat, which is sandy loams for agriculture. The species is a low spreading shrub with white flowers in small terminal heads. It is declared rare in Western Australia and ranks as critically endangered. The species was named in 1986 in the first major revision of the genus after Bentham in 1870.

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## The IUCN Ranking Workshops

The IUCN global assessment system is laid out in the second edition of the IUCN Red List Categories and Criteria Version 3.1 and is available from their website. It is intended to be an easily and widely understood system for classifying species at risk of global extinction. Basically it ranks species under loss of habitat, loss of populations and threats, such as disease, poaching, illegal harvest etc. Species are ranked in nine categories; Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct. The IUCN held three workshops in Australia, two in Perth and one in Melbourne, attended by about 20 experts and IUCN facilitators. The recent revisionary studies also meant that the relevant experts were available to review the list. Having said that, it was startling to see how mature the experts were (including me).

Nearly all the taxonomic experts were retired and all the ecologists who have studied the family in Western Australia were also. Personally, I thought this said a lot about Australia's real position on STEM education and research, i.e. lots of talk but little action to maintain/replace biological expertise in such a biodiverse continent. Equally disturbing was the Victorian Government's decision to only allow their solitary conservation botanist to attend if paid as a consultant! So a vote of thanks to the dedicated scientists employed, retired and unpaid who volunteered the many long and intense hours to complete the first pass.

Some observations on the process: Apart from the IUCN reps, I was the only expert to attend all three Australian workshops held in Perth and Melbourne. Others were held at Capetown (South Africa) and in Brazil. The IUCN for this assessment will only operate at the species level. This led to some intense discussion as in Western Australia (and Australia) many distinctive sub specific entities are listed as threatened, not the species. Some participants were concerned that this decision could lead to "taxonomic inflation" where every minor variant is raised to species level ensuring that its conservation status is ranked! Although this has happened to some charismatic groups such as the big cats, Primates (both from genetic studies showing populations especially of insular forms are distinctive from the mainland, but perhaps not more than forms or subspecies) and Orchids (mainly in often minor morphological characters, e.g., flower colour). In Europe, Pilon and Chase (2007) noted that there are three times the number of described Orchids than the number generally accepted and that "recognition of numerous and poorly circumscribed Orchid taxa is a serious obstacle to conservation because rare poorly defined species may be prioritised over for conservation over taxonomically

"good" species". This inflation potentially devalues the entire process and creates potential and correct backlash to protecting biological diversity. However, most agreed, as Godray et al., (2004) noted, that species conservation requires two kinds of taxonomic solution: 1 A practical rule to standardise the species units included in the lists 2 An approach to the units chosen for conservation planning which recognises dynamic nature of natural systems and differences from the units in the listing process that result.

Participants felt that the Proteaceae of Australia had not approached this level of knowledge (hopefully the comments under many of the species illustrated here will demonstrate this) and that most new species and subspecies were the result of improved resolution of species complexes in the field and herbarium and in some cases collection of completely new taxa. Participants all agreed that this effort should be encouraged as it will result in better lists in the future. Some Issues Raised in the Workshops Issues which were always present was the considerable lack of knowledge of the ecology and biology of individual members of the Australian Proteaceae. This lack of data included response to fire, including variability within widespread species, response to disease (especially Phytophthora) and longevity of plants.

I kept notes to follow up on any issues that came up during the workshops and this small sample below of the queries on 10 WA species, which arose in discussions in the Grevillea group led by Peter Olde gives some insight on the great variety of these issues. *Grevillea florida*: listed as P3 in Western Australia, thought to be only on road verges, no reserves. The group thought that it needs reassessment, seed collection, and perhaps reservation perhaps via offsets for Perth– Darwin Highway. *Grevillea incurva*: why is this species not Declared Rare Flora (DRF) in Western Australia? *Grevillea intricata*: why is this not Priority listed in Western Australia? *Grevillea lullfitzii*: why is this species not DRF in Western Australia? *Grevillea metamorpha* desperately needs survey (count plant numbers, habitat quality, dieback susceptibility, seed collection and fire response) to ascertain current status. *Grevillea minutiflora*: listed as P1 in Western Australia, Only on road verges, surveyed 2007, needs resurvey. *Grevillea obtusifolia*: Sue Patrick collected this species at Canning Dam in 1992. Is this record of a planted individual? *Grevillea pimelioides*: the ID of PERTH specimen 882956 needs checking and verification, as it is not in the known range or habitat. *Grevillea pinifolia*: listed as P1 in Western Australia. It needs to be resurveyed, as it only occurs within road verges (IUCN listed as Critically Endangered). *Grevillea roycei*: listed as P3 in Western Australia, widespread in Northern Wheatbelt, but many populations cleared, listed as IUCN vulnerable. The simplest way to illustrate a range of these issues is a series of Case Studies (relevant to Grevillea NM).

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**Case Study 2:** Phrase Named Species - *Grevillea* sp. Gillingarra (R.Cranfield 4087) Furthermore, it seems that the IUCN listing may not encompass phrase named species, which in Western Australia are some of the most threatened e.g.: *Grevillea* sp. Gillingarra known from one roadside population which was partially destroyed during repair works after a dam burst on adjacent private property. This species is part of the *Grevillea thelemaniana* complex, allied to *Grevillea preissii*. Plants are tall erect shrubs to 2 metres single stemmed at base, killed by fire. No data on longevity but assumed to be 2030 years (this was adopted as the standard age for fire killed species). Currently only known from one road/rail verge population along a creek line south of Moora. Highly disjunct from other members of the complex and on an unusual soil type. Presumed to have had a very small area of occupancy and now an extremely small extent of occupancy (a single population) of 2535 plants. Response to *Phytophthora* unknown, but climatically on the margins of high impact of the disease. Ranked as Critically Endangered in Western Australia.

**Case Study 4:** Status of *Grevillea tenuiloba* C.A. Gardner This beautiful species is listed as Priority 3 in Western Australia. When it was ranked there were 42 herbarium collections, between Dandaragan, Wongan Hills and Jibberding. However, the collection from Dandaragan is probably erroneous making the Area of Occupancy (AOO) much smaller than mapped. The populations from Wongan Hills and Jibberding are apparently extinct, leaving only a few north of Morawa. Plants grow in open *Melaleuca* shrub land in shallow rocky granite soils. Pollinated by honeyeaters, regenerating from seed. The species is in an area that has been extensively cleared and the habitat was preferentially cleared. It is now present in a few small reserves. Most of the collections are old and with extensive loss of area of occupancy the species ranked as endangered.



*Grevillea tenuiloba* - Canna Reserve. Photo by N Marriott

**Case Study 5:** Status of *Grevillea stenogyne* (Benth.) Mackinson *Grevillea stenogyne* described in 2000 as a segregate of the *Grevillea acrobotrya*, the only authenticated collection according to the species describer, Bob Mackinson, is the type made by Drummond in the 1840's. A closely related collection made by Alex George and Don McGillivray near Eneabba was noted by Bob Mackinson to be potentially this species but differs in having a more pronounced stylar swelling and a more conical pollen presenter. A similar plant has been collected from west of Eneabba. The species is ranked as Priority 1 in Western Australia, however, under the IUCN categorisation it ranks either as critically endangered or presumed extinct. The species like many others requires urgent survey, examination by taxonomic experts in the genus to resolve the species limits and relationships.

### Conclusions

A major outcome of the workshops would appear that many of our local Proteaceae of restricted distribution (especially centred on the Wheatbelt) or in the high impact areas of *Phytophthora* will be listed as endangered by the IUCN process. Currently most of these are priority listed in Western Australia, with no legal standing. This increase should not be surprising when one considers that if any large charismatic animal, e.g. Koalas, Cockatoos or Echidnas had suffered over a 70% reduction in range and/or individuals in the past 3 generations, the clamour for increased protection and resourcing would be considerable. This is indeed the fate of many of our restricted range Proteaceae, who are slowly fading away in small reserves and road verges facing disease, lack of pollinators, weed competition with little attention or resources, perhaps being out of sight of the east coast. The other outcome was the obvious need for better data on the biology and ecology of most of our Proteaceae and making this data available to the wider public. This includes more accurate maps in AVH/ALA, these were invariably erroneous and need substantial revisions by the working group. Australia and Western Australia are moving to use the IUCN system for ranking our endangered animals, plants, fungi and ecological communities. This may result in more of our endemic plant's at the species level being listed as endangered. However, listing is but a first step, increased resources must follow. Finally, the workshops were efficiently organised and showed what can be achieved with tight deadlines, a small budget and a dedicated group with very divergent skill sets converging on a problem.

A NEW POPULATION OF *GREVILLEA VICTORIAE* SSP *IVALIS* FOR VICTORIA

Neil Marriott, Vic

Jeremy Tscharke, one of our most enthusiastic newer members from East Gippsland discovered a new population of *G. victoriae* ssp *nivalis* for Victoria in 2018, while wading in the rapidly flowing Big River near Kangaroo Track at Glen Wills in Mt Wills Historic Area. Jeremy was busy fly fishing, but as a Ranger with Parks Victoria and as a native plant enthusiast, he was ever on the lookout for strange and unusual plants.



*G. victoriae* ssp *nivalis* in late flower at Big River – Photo N Marriott

But finding a new grevillea for Victoria? Not quite, but he was justifiably over the moon about this discovery! While wading and casting upstream he came upon a population of strange grevilleas that he did not recognise for the region. Jeremy was wise enough to collect fresh material as well as photographs. Jeremy sent the pictures to me and I forwarded these on to Peter Olde. We both agreed that the new grevillea looked very much like *G. victoriae* ssp *nivalis*, but this taxa has only been recorded for the Snowy Mountains region in NSW and the continuation of the Snowy Mountains in Victoria on Mts Gibbo, Pinnabar and Sassafras in the high country of NE Victoria. Jeremy is a keen and talented grevillea grafter, and soon had plants of the new grevillea propagated.

Late last year we were holidaying in East Gippsland, and Jeremy and I made a trip back to Glen Wills to try and relocate this new population. As mentioned, Jeremy was well upstream in waders, so upon arrival at Big River, Jeremy began unloading a pair for himself as well as a pair for me. While he was doing this, I wandered down to get a better look at this wild flowing alpine river.

The banks dropped away steeply and were clothed in dense riparian vegetation. While scrambling down the bank, I could not believe my eyes, but there was the new grevillea, right below where we had parked the car –and no wading up the river needed!



Jeremy Tscharke at the new population of *G. victoriae* ssp *nivalis*

The grevilleas were growing on steep alluvial cliff banks of the river, in and just above riparian zone in sedimentary sandy gravelly loam. The sub-alpine overstorey consisted of what looked like Swamp Gum *Eucalyptus.ovata*? as well as Snow Gum *Eucalyptus pauciflora* and Black Sally *Eucalyptus stellulata*. Mid storey was dominated by Blackwood *Acacia melanoxylon* and River Lomatia *Lomatia myricoides*.

The grevilleas were approximately 2.5m x 2.5m shrubs, and at this site we recorded six plants but no seedlings. They were only seen growing on the east side of the river on a steep cliff face overlying granite outcrops in the river. It is interesting that this subspecies can grow in sub-alpine woodland as well as alpine communities, whereas *G. victoriae* ssp *victoriae* is only found in alpine woodland. Congratulations to Jeremy for this important extension of the range of this lovely grevillea into Victoria, and for introducing this population into cultivation. Material was collected and pressed for submission to the Victorian State Herbarium.

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Habitat of the new population of *G. victoriae* ssp *nivalis*. N Marriott

### New Location for *Grevillea polychroma* in Victoria

*Grevillea polychroma* is a rare and localised species from East Gippsland, so it was great news to hear that a new location near Swifts Creek has recently been discovered. Members of the Friends of Cranbourne Botanic Gardens, with assistance from Parks Victoria Ranger Jeremy Tscharke are now planning on propagating numbers of plants from these Swifts Creek plants to ensure their survival under Cranbourne's 'Care for the Rare' program which is working with regional botanic gardens in Victoria and supplying them with young rare and endangered plants to grow in their gardens. WAMA Botanic Gardens is part of this Care for the Rare program, so will hopefully obtain some plants shortly of this new population.

## TAXONOMY

### PROGRESS REPORT ON THE LUCID KEY FOR GREVILLEA

Mark Noake

Work on the LUCID key for *Grevillea* is progressing steadily.

Around 80 entities (species) have been entered into the key to date, each taking around half an hour to process. Subspecies are entered as separate species to allow for any future renaming.

Each species is entered using morphological data from the original descriptions as found in *The Grevillea Book*. As you might expect, botanists are not the most popular people in my study at the moment. It would seem that they have as many words describing hairs on leaves as certain northern tribes have for snow. I'm sure the nuances are valuable.

Nonetheless, data entry is progressing steadily with some 53 features rated against 2014 states. Features are things like "leaf margins", states might be "entire", "refracted" or "revolute".

Entries are then checked to ensure that they reflect data contained in the "Distinguishing Features" sections of *The Grevillea Book*, then compared to the key found in the same publication.

Relying so heavily on data from *The Grevillea Book* at this stage provides reliable, structured content for the project. Other sources will be referenced as the key develops.

At this point the key is way too complex for general consumption but development will be iterative, with the number of states being a particular area for consolidation. It won't take a huge amount of work to combine quite a few states into one, thus reducing the number of choices for the user and simplifying the key.

It might even be worthwhile producing different versions of the key with perhaps a complex version for people well versed in botanical terminology with a simpler version for general consumption.

The LUCID Key software allows for images and descriptive data to be linked to various features thereby providing visual clues to assist the user. We'll be looking for good quality illustrations to enrich the key as it develops.

## VALE GEOFF GOADBY (1925–2020)

Beth McRobert, Qld

It was said to me recently that often it seems you don't know much about a person until that person dies. Thus it was with the late GSG Study Group member Geoff Goadby, in two ways. It was many years after the death of his grandfather, Colonel Bede Theodoric Goadby, that Geoff learnt that he had been a significant person in the botanical and natural history fields in Perth, having sent many specimens to Kew Gardens. His grandfather's personal flora collection is held in the Western Australia Herbarium and he is mentioned in *The Grevillea Book* Volume 1 as having collected the type specimens for *Grevillea glaucina* and *G. lactucifolia*. Maybe the love of our flora and natural environment was in Geoff's genes.

It was at the farewell for Geoff that we were told much more of his younger adventurous life, stories of which Geoff would also keep Western Suburbs Branch members enthralled at various meetings but of course we didn't know the half of it. At his farewell, we learnt that he was a frequent crew member on the yacht *Norseman* and was on it when it won the Brisbane to Gladstone yacht race on four of the five occasions it entered the race. His influence on the rock climbing community in south-east Queensland is told in the book *The Living Rock* by Michael Meadows. We knew of the camps on top of places where such things would not be permitted these days and we were told of how his innovativeness was put to good effect in his work at the University of Queensland and as a pioneer in the world of scuba diving in Queensland.

The articles on Geoff Goadby in the Queensland Region *Bulletins* of September 2003 and on the occasion of his Life Membership award in December 2005 gave information on the great extent of his involvement in the activities of the Society for Growing Australian Plants (Queensland Region) (now trading as Native Plants Queensland) in the years, from his joining in 1978, to 2005. Geoff continued his activities (his last appointment was Historian/Archivist) until the onset of a mysterious, and for a long time undiagnosed, illness curtailed his abilities to contribute, but it did not curb his interest.

Though frail, with the support of his wife Merle, he attended the Flower Shows until a couple of years ago, and enjoyed the interactions with friends on those occasions as well as appreciating the displays. Reading of those activities cannot fully do justice to Geoff's personality. His creativeness and energy were obvious. Some particular instances that stand out were the massive 'waterfall' and then the mobile created from a bicycle wheel which were used in displays in succeeding years. Erection and dismantling of displays occurred with many laughs at all times, and we all held our breath as he balanced on a precarious ladder to install a spotlight for our Brookfield displays.

Going the extra mile in so many ways was part of Geoff's contribution to SGAP Queensland Region, not only always ready to offer to help, but giving help as it was seen to be needed - he did it and didn't just offer. Going the extra mile often included extra trips to their home to gather items that were missing from the equipment needed for display set up. Because of where they lived, these trips involved quite some distance at times. Geoff and Merle would host meetings at their home, and there we had the opportunity of meeting Arthur, their aged but much loved horse.

Geoff and Merle were regular attendees at GSG Study Group Meetings and excursions, and as a keen photographer, he provided studies for the rest of us who took advantage of some of the positions he adopted to take photographs. Then there were all the other trips they did (they attended most Australia-wide native plant gatherings over the years) and Western Suburbs

Branch members remember his struggling into his long unused wetsuit so that he and late member Robert Ellis could rescue waterlily bulbs from the lagoons at Myall Park. He also gave an older relative's hoop pine ironing board, to be transformed into the beautiful Western Suburbs sign that is used at our displays.

His energy was also accompanied by his quick wit and what has been described as a quirky sense of humour. Laughter wasn't far away when Geoff was nearby. He put his innovativeness and energy to great effect by creating and installing an unremovable, and possibly vandal-proof, plaque to mark the first planting by Western Suburbs members for the rainforest gully at the Sherwood Arboretum and arranged with an Arboretum neighbour for storage of our hose and reel, to facilitate watering the plants.

So many memories, such a unique person. Those of us who knew him were privileged. Thank you, Geoff for sharing with us. Rest in peace now.

## VALE KERRY RATHIE (1940–2020)

Denis Cox, Qld

Kerry was born in June 1940 in western Queensland and spent his early days on a sheep and cattle property near Blackall. He went to a boarding school in Sydney and attended Sydney University. He did an Agricultural Science degree & then continued on studying animal Genetics, completing a PhD. His mother and grandmother fostered an early interest in plants and his father got him interested in native trees.

Following a stint as a University lecturer, he married and moved to a Finley, NSW, where cattle genetics was his main interest. As he did not want his children to go to boarding school, the family moved to Greenbank, south of Brisbane. He worked with livestock breeding in the DPI, and kept up his interest in native plants, including orchids, cycads, brachychitons and grevilleas, running a nursery called Rathie's Rare Plants.

He joined Native Plants Queensland (then SGAP) and the local Logan River Branch in 1984. He was involved in plant shows, workshops and plant sales, and was a great contributor at meetings, with his extensive knowledge. He also wrote many articles for the Queensland newsletter, and was a co-author of "Mangroves to Mountains" a field guide to the native plants of South-east Queensland.

Later years saw his health fade so he moved to Toowoomba where the family lives, and a much smaller garden. As his heart began to fail, less travel was the result but he became a member of Toowoomba Branch NPQ. Here he was able to spread more information to the local members.

He passed away on the 18 March 2020 as the virus threw the country into another dimension.



## NEW MEMBERS

**Ian Peak, Gold Coast, Qld**

I recently joined NPQ, specifically so I could join the GSG. I have a smallish suburban block on the northern Gold Coast, which I'm slowly filling with Grevillea species, cultivars, and hybrids (mostly grafted). I've already met or spoken with some of the local Grevillea growers (Richard Tomkin, Chris Nicholic, Helen Howard and Alan Lee), and am keen to become member of the GSG to further my knowledge and understanding of this diverse and fascinating genus. I'm looking forward to connecting with more Grevillea-philes.

I'm a scientist (not a botanist) so have been enjoying looking through the Makinson 2000 Flora of Australia, the many GSG newsletters (as well as whatever new species descriptions I've been able to track down in the literature). Although still learning the botanical descriptors, I'm learning!

My latest reading matter has been the molecular analyses of Mast el AmJBot 2015 (and Peter's comments on GSG on it). A discussion for another time perhaps, but might those analyses and phylogenies provide ideas for interstocks for some of the more recalcitrant to graft species?

**Kerry Churchill, Tasmania**

I'm a bee keeper who is experimenting with different plants for bees and one very good variety is *Grevillea sericea*. I've also now become increasingly interested in grevilleas, and growing and propagating them. I've tried everything to get Volume 1 of The Grevillea Book but have had no luck. I'm hoping the study group may be able to help source the book, possibly even all 3 books.

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**Erica Nash, Kenthurst, NSW**

I live at Kenthurst in NW Sydney on a 5 acre mostly bush block. In the bush we have red spider grevilleas and I have introduced a Honey Gem Grevillea but it has had a bit of a battle with the Swamp Wallabies which come and devour any new shoots which appear! I have placed a large chicken wire cage around it to act as a bit of a deterrent and tried to improve the soils and keep the water up to it. Not all the block is bush, in the top half we have lawn but we do grow other grevilleas, More Honey Gem and Moonlight, Lollipop and Golden Lyre. Honey Gems are small trees and much loved by all the Rainbow Lorikeets and Australian Miners.

With the Golden Lyre, last season I collected the seed and managed to propagate two plants which grew to approx. 15cm high but they dampened off which was disappointing and was probably due to the fact I overwatered them. I don't have a glass house but just keep the plants in a mini

glass house- actually a Bunnings plastic storage box which comes with a lid!

Grevilleas are beautiful and there are so many varieties too! When I have a spare moment, I would like to go and visit the Grevillea Garden in southern Sydney. Last year I enrolled at TAFE at Wentworth Falls to finish a Horticultural Course. It was a great course but hampered somewhat by COVID-19 and all the rules regarding social distancing meant that we did not get a lot of prac time as much as I had hoped. So a fair bit of my practice has occurred at home. I plan to have another go with collecting the seeds from the Golden Lyre as it has just come into flower again- they are beautiful!

Interests would have to be in propagating grevilleas and just learning about the variety of Grevilleas and growing conditions etc. Also talking and meeting and seeing what others are growing. I look forward to reading some of the back issues.

**ID PLEASE****From Peter Vaughan, Charlestown NSW:**

I am growing the first Grevillea under the name *G. masonii* (photo 1), however The Wetland Centre is selling the second one under the same name (photo 2). The last photo (photo 3) looks more like a form of *G. montana* to me. Can you help us?

**From Peter Olde:**

None of them are *G. masonii*. Yours could be *G. hockingsii*. Wetland is *G. guthrieana*.

You offered to do a study of *G. montana* some time ago. What happened? There is some information in newsletter No. 117. I have found two taxa in *G. montana*. The most common form is lignotuberous. The erect silvery shrubs at/near Rothbury on Putty Road are seed-obligate.

**From Peter Vaughan:**

Yes, mine is *G. hockingsii*, I knew it was named after one of the northern experts. That teaches not to do my homework before I email you. I will have to get your books out again for bedtime reading. I will let the Wetlands know the correct name for theirs. thanks for that.

Over the past 10-15 years I have developed a new surgical technique for lengthening the lower jaw. Since then I have been travelling extensively lecturing about it. I regularly have two or three overseas trips a year. That was while I was working full time, and for the past three years I am also the Associate Professor of Orthodontics at James Cook Uni, in Cairns. That requires me up there every 4 or 5 weeks, for a week at a time. They pay all costs and a reasonable wage, so I enjoy it. It is getting a bit onerous at this stage, but this year I have finally cut my clinical work in

Newcastle down to 3 days a week. I am 67 and I still cannot retire as I have to keep the practice going until my son can take over in 4 or 5 years. You can understand I haven't had much spare time. Working three days a week now is absolutely wonderful and I cannot wait until I retire.

I am actually pleased about the COVID restrictions, I am spending much more time at home. I have stopped doing the lecture circuit, it was too much work and the gloss had worn off. Karen and I expect to hardly travel overseas from now on. We have a son who lives in America, we will visit him occasionally (once they get rid of Trump), but that should do us. We prefer our son come to visit us. He works for Apple, he is in charge of Apple training, so it is a great job. If you want me to search for anything in the Cairns region I can also do that. I have done a lot of bushwalking up there, including to the top of Mt Bartle Frere from both the east and west. The Grevilleas up there are wonderful, but I have not noticed any variation.

I am still very interested in *G. montana*, but I had trouble growing them from cutting so my collection failed to expand. I am only now getting back into my garden and the bush. I am currently planning to get the Wetlands cultivators to grow any cuttings I collect.

I am happy to go searching for material of *G. montana*, or other Grevilleas, for you. I have done a fair bit of bushwalking in the Hunter Valley. I haven't noticed much variation. There is a form near Broke, it grows just over a metre high. The plants at Pokolbin appear to be the same, but I haven't found a plant over 500mm in height and it is normally smaller. Interestingly the Pokolbin plants are

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growing in clay, and the Broke plants are growing in sandy gullies. I will attach a photo of the Pokolbin form I have growing in my garden.

**From Peter Olde:**

I am currently looking at *G. parviflora* in the Newcastle LGA if you are interested in participating.

**From Peter Vaughan:**

I would enjoy getting out looking for *G. parviflora* and learning more about them. Just let me know what dates you are looking at. I am also doing a lot of bush regeneration these days. One of my sons is very motivated and we have improved our 40 acre block removing lots of lantana and Camphor laurel. My earlier email will give people a smile, that is always good, I look forward to reading it in the newsletter. I enjoyed reading the recent newsletter. Well done to everyone involved.



Photo 1 – *Grevillea hockingsii*



Photo 2 – *Grevillea guthrieana*



Photo 3 – *Grevillea hockingsii*

## UPDATE ON GREVILLEA ARENARIA IN MORUYA

Mark Noake

I'm writing to report back on an inspection of the small population of *G. arenaria* just west of the intersection between the Araluen Road and Larrys Mt Road at Moruya.

Carolyn and I found all visible plants dead. The plants were not visibly damaged by fire and it appeared that they would not have been affected by radiant heat. There was no sign that the area had been sprayed. Our summation was that the plants had probably been wiped out by drought.

Their structure was intact as were their leaves, they were simply dried out. Persoonias in the area were recovering with fresh shoots prominent.

We found no seedlings had germinated to date but we're hopeful that current rain might get something happening. Here's hoping!

### Update 12 July 2020

Today Carolyn and I revisited the site of *G. arenaria* on Araluen Road near Larrys Mt Road.

We reaffirmed our belief that the area was neither sprayed nor burnt. The good news is that Carolyn spotted many

seedlings growing strongly at the site.

We also drove almost the full length of Maulbrooks Road to Mogo. All previous sites for *G. arenaria* had been denuded by obviously very hot fires or, in some cases, bulldozers. Not one mature plant was in evidence but they were regenerating prolifically from seeds. The new plants were very healthy.

I love the newsletters, they are so well done and very informative. Keep up the good work, even the back copies are extremely useful. Our local president referred to an earlier article in the GSG newsletter about magnesium and pH affecting Grevillea growth. We're currently working towards lowering our pH around our *G. longecornuta* and *G. speciosa* from Bucketty. The leaves on our plants are suffering in a similar way to that mentioned in the article and we found that our pH was 6+!

### Footnote from Peter Olde

At the moment the plant referred to above is called *G. arenaria*. I am proposing to call it *G. effusa*.



## THE LIVING COLLECTION

Neil Marriott, Stawell Vic

Following a very mild and reasonably wet year in 2020, the Living Collection has had one of its best flowering seasons in years. Even though we finished up having below average rains, we got a good autumn break, a dry mild winter then a good wet spring. As a result, the extensive autumn and winter plantings have largely established very well. We now have an extremely mild and cool summer with big rains followed by cool cloudy days –not good for grafting, but wonderful for the garden!

We have had a lot of members contacting us for grafting and cutting material. This we happily provide, so long as the propagators are happy to give us in return new plants or species that we only have the one specimen under cultivation for the Living collection. In this way we are ensuring the spread of rare and uncommon species in the Living Collection while at the same time adding to our overall collection.

We are most grateful for the very kind donations from Bernie Shanahan, Barry Teague, Richard Tomkin, Dave Binch, Simon Gilliland, Jeremy Tscharke, Robert Brown and Cranbourne Botanic Gardens. Our list of species, subspecies and distinct clones and forms continues to grow steadily, but it is so important for large collections to be held by other members or associates. It is wonderful to hear, for example, that Cranbourne Botanic Gardens is now establishing an extensive collection of Victorian grevilleas, and their staff visited us recently to obtain a large amount of propagation material from our living collection. Let me know if you are interested in establishing a collection such as this and we will happily help you out with propagation material.

We have also established an extensive collection of the very closely related Hakea genus. Over this summer I have potted up hundreds of seedlings of mostly uncommon or rare species. If any members are after specific species feel free to contact me.

**Working Bee**

Due to COVID threats there will be no official working bee this year. However any members who are interested in coming up for a few days to help out in the Grevillea Gardens are most welcome, with lots of beds for you! We are planning on several trips into the Grampians, as well as nursery visits to break up the garden work, so give me a call if you can help us out! We have a lot of new Grevilleas to plant out so many hands make light work!

**Robert Brown Collection**

Readers will remember that I featured Robert and Norma Browns beautiful native garden in the newsletter a couple of years ago.

It is with great sadness that I have to report that due to declining health, Robert and Norma now have to sell their beautiful property at Nicholson in East Gippsland. Before the property goes on the market with real estate agents, they are keen to see if any members may be interested! The property is 3.5 acres and there are 300 plus Grevillea species, 12kms from Bairnsdale and close access to Nicholson River. It has a 4 bedroom/2 bathroom brick house, shed/workroom with toilet/shower/kitchen facilities which could be extra accommodation/income; hothouse, of course, and all beautifully landscaped by Rob and Norma. Phone Norma on 0457 136 723 if interested. It would be sad to see this valuable collection pass into the hands of someone not interested in Grevillea!

**WAMA Botanic Gardens Grampians Endemic Garden**

WAMA stands for Wildlife Art Museum of Australia and is located on a beautiful 40 acre property at the foot of the Grampians Ranges just outside Halls Gap in western Victoria. Wendy and I are part of the Site Development Team, responsible for the development of Australian native botanic gardens surrounding the museum and wetlands. In 2019 we were successful in obtaining an \$85,000 grant to establish a garden that aims to hold all Grampians endemic plant species of which there are about 80 recognised and new taxa. This includes the following Grevillea species and subspecies: *Grevillea alpina* 'ssp alpina', *G. confertifolia* including a probable new prostrate taxa, *G. dimorpha* including a possible new taxa, *G. gariwerdensis*, *G. micrantha* 'ssp gramps', *G. microstegia* and *G. williamsonii*. We will also be including in this garden endemic clones of other species, including prostrate and other endemic forms of *G. aquifolium* and dwarf suckering forms of *G. lavandulacea* from Billywing Swamp in the west of the Grampians.

This will be the first botanic garden that will have a very large and hopefully complete collection of Grampians endemic plants. We are now busy propagating hundreds of plants for this garden, and have also been donated a large and valuable collection of Grampians endemic plants from Cranbourne Botanic Gardens, part of the Royal Botanic Gardens of Melbourne. We have many clones of nearly every endemic Grevillea, many of which have never been cultivated previously. The site is on deep sandy alluvial outwash and is perfect for growing Australian native plants, so next time you are in the Grampians region contact me and I will take you to see the garden, which at present is still not open to the general public.

## COMPATIBILITY OF ROOTSTOCKS FOR GREVILLEA

Neil Marriott, Vic

There has been much written and thousands of hours of experimenting to develop good reliable rootstocks for grafting Grevilleas onto. By far, the leading light in all this trialling has been *G. robusta* Silky Oak. This has proven to be a very tough and reliable rootstock for a huge range of species across most of Australia. But sadly, *G. robusta* has quite a few Grevillea species with which it is not compatible. The option for these species is either to use another rootstock, or to use *G. robusta* with an interstock between the desired species and the rootstock.

As well as immediate incompatibility, in which the scion material either fails to graft, or dies shortly after the union has taken, there is the problem of long term incompatibility. This shows itself as unhealthy sick plants that gradually succumb and die, to others that can drop dead or drop off at the union after a year or two, sometimes even longer.

A grevillea that poses this problem for us in the southern states is *G. leptobotrys*, which either fails to take, or drops off after a year or less. However discussions with Richard Tomkin from Queensland reveal that he always uses *G. robusta* for this species, and has no compatibility problems with it. Last year I obtained three new clones of *G. leptobotrys* from Richard, grafted straight onto *G. robusta* and so far they are growing very strongly and happily. The question remains however, will these survive and thrive for us, or drop dead in a year of two?

Another species we have trouble with here in the south is our local *G. floripendula*. This species is rapidly heading towards extinction due to climate change, combined with far too frequent “controlled burns” by government authorities. As a result we are very keen to re-establish a collection of all the different clones of this species in our living collection. Sadly, like *G. leptobotrys*, it also appears to dislike *G. robusta*, either failing to take, or dropping dead within a year of grafting. Again, I obtained a grafted plant from Richard, and again, was surprised to see that it was also grafted straight onto *G. robusta*. The plant grew superbly for around 9 months, however it recently dropped dead, while other species of grafted plants all around it continue to thrive. This confirms to me that there are definitely compatibility problems with this species on *G. robusta*.

This raises the question –are some species compatible with *G. robusta* when growing in warm, moist conditions such as coastal NSW and Qld, but struggle to survive or die when grown in southern climates with cold wet winters and hot dry summers? Certainly *G. robusta* grows well in these southern conditions, however this is not necessarily the case when a grafted plant with species that may not be fully compatible? This is something we need to work out, or are we expecting too much of just one rootstock??



Dead *G. floripendula* grafted on *G. robusta* – Photo N Marriott

Talking recently with Peter Olde, he told me that he and Mt Annan Botanic Gardens have had exceptional success with *G. x semperflorens* as a rootstock. This is a hybrid bred in the 1920's by a British lady who was a member of the Royal Society, London. It is presumed to be a cross between *G. preissii* (but identified as *G. thelemanniiana*) and *G. juniperina*. As a result of this crossing of an Eastern species with a Western species, it is proving to have excellent compatibility properties as well as hybrid vigour. It seems that this is a grevillea we should be all trialling for our own gardens and regions. *G. x semperflorens* is exceptionally hardy, readily propagated by cuttings and long lived –all the traits we want for a good Grevillea rootstock! Let's give it a try and help us improve our success rate with a big range of beautiful grevilleas!

YELLOW FLOWERED *GREVILLEA ROSMARINIFOLIA*

Judy Clark, England

Several years ago I wrote to you about a pale lemon yellow-flowered grevillea growing in my garden in the UK that I thought might be a form of *G. rosmarinifolia*. You confirmed that it was, but added that you were revising *G. rosmarinifolia* and my plant might be a species not currently recognised.

Recently a friend to whom I had given a cutting asked me if I thought the plant might be the cultivar *G. 'Limelight'*. It could fit the description on the ACRA website, but there's not really enough to go on in the description or the photos.

In GSG 106 (page 5) Neil Marriot, describing a *Grevillea Crawl*, in central Victoria, noted that they had seen the extremely rare Whipstick form of *G. rosmarinifolia* ssp *glabella*, and that he thought that this was where the cultivar *G. 'Limelight'* came from.

This has left me wondering what I should call my yellow-flowered grevillea. Has it got a new name yet? Is it going to get one? I attach some photos - a close up of the flowers and a couple of the plant to try and show it's form. It grows a bit every which-way, but I do prune it.

You might be interested to know that I bought my plant from a garden centre near Granville in Normandy, France, at least 8 years ago. It came with the name *Grevillea gracillis alba* and I've seen it offered in French nurseries (online) named as *G. juniperina alba*.

There is a nursery on the Isle of Man which sells a plant named *Grevillea gracillis 'Alba'*; there's no photo but I expect is the same taxon.

I would be very grateful for any help you can offer.

**From Peter Olde:**

I believe the form you have arose in north-eastern Victoria and is a species not currently recognised. It has glabrous leaves, unlike *G. rosmarinifolia* s.str. which has a densely sericeous leaf under surface (and a rough upper surface). The cultivar *G. 'Limelight'* is very similar to the plant you are growing but it arose in the Whipstick Mallee of central Victoria. It is a lignotuberous shrub with very fine shorter leaves than the plant you are growing. It also has a strongly erect habit. Publication of my work on *G. rosmarinifolia* is on my immediate publication horizon, by which I mean next year.

I hope this helps.

## SEED CURATOR UPDATE #3

Jeremy Tscharke

Its fair to say that things have been very quiet on the seed bank front.

Seed viability trials have yielded very poor results – and resulted in many batches of old seed being discarded. We are now critically low on most species (true to type) but have a moderate amount of garden collected seed remaining (unfortunately – I must assume that plants grown from this will not be true to type).

If you have access to and are willing to part with ethically collected wild type seed, we would be glad to catalogue for the use of other members.

I have now secured a library flip file drawer for our seed bank – and when COVID restrictions ease and I can return to my office, I will store this in the department seed refrigerator.

If you have fresh seed that you wish to contribute to the seed bank, please collect, AND CLEAN the seed and label as follows:

- Species (common name and botanical)
- Location collected – if garden – please state this
- Date collected
- Name of collector.
- Seed weight (if you can)

Place the seed in a brown paper bag (ensuring its dry) and tape up both ends to ensure it cannot escape.

Post it to:

Jeremy Tscharke  
PO Box 521  
Bairnsdale VIC 3875

Please see page 11 of GSG newsletter 117 for the full seed list.



## A special weekend



ASGAP Grevillea Study Group  
Attn: Mr Peter Olde,

I want to invite you and your club members to a very special event being held on the weekend of the 6th and 7th March.

Five magnificent gardens will be opening in Little Hartley and surrounds. These gardens only open on limited occasions each year but this year they have decided to have a joint weekend to give you the opportunity to experience them all:

- [Hartvale](#)
- [Hillandale Gardens](#)
- [Highfield Gardens](#)
- [Wild Meadows](#)
- [Gory'u Japanese Gardens](#)

I am not sure whether it's the soil, the climate or the passion of the garden owners (or all of the above!) but something incredible is going on, with this area becoming a focal point for open gardens. You'll just have to go there to see for yourself - depending upon where you live it may be a day trip or you could stay in the region for a terrific weekend.

I do hope you get a chance to see these gardens.  
Warm regards, Andrew Mowat

**Income**

Plant sales (NSW)	111.20
Donations	25.00
Interest	0.78

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**Total income** **\$361.98**

**Expenditure**

Newsletter publishing	\$270.00
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**Total expenditure** **\$270.00**

**Bank account details**

Balance in current account  
20/02/2021 **\$3,759.26**

**DONATIONS**

The newsletter is now free but groups are encouraged to make an annual donation. Individual donations are always welcome. Direct deposits can be made into the Grevillea Study Group account.

**BSB: 112-879**

**Account Number: 016526630**  
(St George Bank)

Please notify the Treasurer of transfer by email  
([bruce.moffatt@tpg.com.au](mailto:bruce.moffatt@tpg.com.au))

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**2. URL for Grevillea Study Group website**

<http://anpsa.org.au/grevSG/>

To be notified of the latest newsletter, email recipients must be registered. Please ensure your email address is registered and up to date and any changes are advised to Christine Guthrie at [bruce.moffatt@tpg.com.au](mailto:bruce.moffatt@tpg.com.au)