

Australian Native Plants Society (Australia) Inc



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Newsletter No. 92 – August 2012

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GSG Vic Programme 2012

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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. After the massive rains at the end of 2010 and the start of 2011 the conditions are perfect for large scale replanting of the collection. Offers of assistance would be most welcome.

Friday, 29 September to Monday, 1 October

SUBJECT: Spring Grevillea Crawl

FRI ARVO: Meet at Neil and Wendy Marriott's Panrock Ridge, 693 Panrock Reservoir Rd, Stawell for welcome and wander around the gardens. Dinner; Bring a meal to share.

SATURDAY: Full day in Grampians searching for *Grevillea alpina* forms as well as other Grevilleas. Dinner BYO BBQ at Marriott's.

SUNDAY: Continue in Grampians if needed as well as Ironbark Ranges, Black Range etc. Dinner at the National Hotel Stawell.

NB. if we get to see all the Grampians popns early, we may head to Pyrenees/ Central Vic on Sunday.

MONDAY: AM – Pyrenees Ranges forms of *Grevillea alpina* at Amphitheatre, Avoca, Moonambel etc. PM central Vic Porcupine Ridge, Blackwood Range etc

**Please contact Neil at neilm@netconnect.com.au or on 5356 2404 if you wish to attend. There is plenty of room to pitch a tent or park your van.

GSG NSW Programme 2012

For more details contact **Peter Olde 02 4659 6598**.

Special thanks to the Queensland chapter for this edition of the newsletter. New South Wales members, please note deadlines on back page for the following newsletter.

GSG SE Qld Programme 2012

Morning tea at 9.30am, meetings commence at 10.00am. For more information contact **Bryson Easton** on (07) 3121 4480 or 0402242180.

Sunday, 26 August

This meeting has been cancelled as many members have another function to attend over the weekend.

The October 2012 meeting – has been replaced by a joint excursion through SEQ & northern NSW commencing on Wednesday, 7 November 2012. GSG members planning to attend are asked to contact Jan Glazebrook & Dennis Cox on Ph (07) 5546 8590 for full details closer to this event. See also page 3 for more details.

Sunday, 25 November

VENUE: Home of Robyn Wieck
Lot 4 Ajuga Court, Brookvale Park Oakey

PHONE: (07) 4691 2940

SUBJECT: A tour through Robyn's garden

Sunday, 24 February 2013

VENUE: 10 Patrick St, Lowood, Qld

PHONE: (07) 5426 1690

SUBJECT: TBA

Inside this issue:

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- Our Grevillea collection
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Our winter newsletter has been produced by the Queensland chapter again (their second). Congratulations to them and many thanks for their work. The newsletter is a little late because of problems with corrupt internet software obstructing the outflow of my emails and sending the articles to Belinda. I apologise for that.

I have recently received the final index up to Newsletter 91. Tony Cavanagh undertook the major part of the work. Both Tony and Bernie Shanahan have assiduously worked on this project for over a year and have finally reached their goal. What an achievement it is. People interested in receiving a copy should email me. It will be updated and digitally published anyway as part of the 100th newsletter edition in 2015. It runs to 55 A4 pages according to Tony so it may have to be issued on a CD in lieu of hard copy. Alternatively it will be available as a download. As part of this project I have gathered a complete list of Grevillea references similar to that available online for Hakea, compiled by Robyn Barker in South Australia. This and other useful information is available online at http://www.flora.sa.gov.au/lucid_keys/Hakea/index.shtml. This is an excellent website for botanists interested in Hakea or Grevillea for that matter.

Australian Plants – the study group has committed to producing two issues of the journal Australian

Plants in the coming year or so. Members are invited to contribute articles, or update old ones that have been published in the newsletter but not in Australian Plants. Do I have any takers?

The Autumn Plant Sale saw a wonderful array of nurseries and individuals selling native plants as well as heartening support from members of the Study Group. An incredible rain event early during the week meant that parking was restricted and threatening weather was a deterrent on the days. Attendance was reasonable though less than in recent years. Special thanks to those who provided their services to the Study Group including Angus Stewart, Don Burke, John & Sue Knight, Neil & Wendy Marriott, David Shiells, Ian Evans, Martin Rigg & Diana Leggatt. David and Martin also donated some very interesting plants which they also helped sell. These events bring together a great bunch of nurserymen and enthusiasts. Enthusiasm for native plants does seem to be on a decline here in Sydney and the collectors sadly seem to have disappeared altogether. Special thanks also to Gordon and Carol Meiklejohn, Bernie Shanahan, John and Barbara Nevin. My apologies if I have left you out.

There are some very interesting activities coming up, organised by Queensland and Victoria. Why not try and come along.

Jan Glazebrook & Dennis Cox

Grevillea trip – SEQ and Northern NSW

DAY ONE

Wednesday, 7th November

At 8.30am we will meet at the Information and Visitor Centre in Boonah.

Depart for base of Mt Greville where we will see *Grevillea linsmithii*.

Back on to Cunningham Hwy through Warwick to Pozieres Rd at Cottonvale, where we will see *Grevillea scortechinii*.

Lunch stop at Stanthorpe at park on Wallangara Rd. Proceed to Basket Swamp. Here we will see *Grevillea acanthifolia* subsp *stenomera*.

Accommodation for the night will be at Mole River Station near Tenterfield.

DAY TWO

Thursday, 8th November

After a look around the nursery we will drive through Torrington NP. Here we will see *Grevillea viridiflava*.

We should arrive at Gibraltar Range NP in time to do a short walk before making camp. Accommodation for 6 people has been booked at Gibraltar House. There is camping in the park at Mulligans Camp area. Here we will see *Grevillea rhizomatosa*, *Grevillea acerata*, *Grevillea acanthifolia* and *Grevillea mollis* and other wonderful plants.

DAY THREE

Friday, 9th November

A full day spent in the Gibraltar Range NP.

Accommodation will be as for day 2.

DAY FOUR

Saturday, 10th November

We will descend the range on to the coastal plain. Here we will look for *Grevillea banyabba* near Banyabba and *Grevillea masonii*.

From here we will return home.

A Grevillea Crawl in South East Queensland's Wallum 2009

It was a very early start for a winter morning – 8am at Freshwater National Park, Deception Bay, meeting members of the Grevillea Study Group for a “Grevillea Crawl”. It would be a rather fast crawl over the day as several south east Queensland coastal Grevillea species were checked out in their various locations between Brisbane and Tin Can Bay. The name *Grevillea leiophylla* has been used until recently for all the small pink/mauve spider flowered species which we now know as the following: *G. leiophylla*, *Grevillea humilis* ssp, *Grevillea lucens* and *Grevillea reptans*. Over the years of heathland rambling, we've noticed differences, and it is good now to have them separated into individual species.

At Freshwater National Park *G. leiophylla* was easily found, but there was disappointment when none were in flower. Ahead of time, we went on to the morning tea stop at Matthew Flinders Picnic Area, north of Beerburum at Tibrogargan Creek. *G. leiophylla* grows nearby by the creek, but the area is too overgrown to access.

The next location was the Wallum Study Group's favourite place, the Beerwah Scientific Area 1, which we'd checked out on the previous Sunday. Under the Study Group's Activity Permit, we were able to drive in, and no sooner were we through the gate than people were off in all direction! Talk about kids loose in a lolly shop! The Scientific Area is an absolute treasure and flowers were starting their spring display. I managed to get them all to the first patch of *G. humilis* ssp *lucens* which were just in flower. A cloudy sky didn't allow us to see the under-leaf shimmer which identifies this species ie “lucens”. As for all the other flowers, anything that was in decent bloom was recorded on camera but we had to keep moving and I did want to show these visitors some of the Beerwah Wallum. We managed that as well as a walk to another area of the resident Grevillea, keeping close to our timetable.

Beerwah township was our next stop, to collect a gate key from the library and car pool before heading off to a tiny hill just west of the town. On Rupari or Tower Hill there are two large towers/tanks for the town water supply, reached via a gravel road with a locked gate. The botanical wonders of this hill are typical of many of the Glass House Mountains with similar species to the more distant Wild Horse Mountain.

Grevillea hodgei was our target here, soon seen as there were many plants in flower, with brushes rich cream in colour. Immediately to the south west we could see the two Coochin Hills which originally gave their name to this Grevillea. In company with it were several plants found only on these hills of the Glass House Mountains: *Calytrix tetragona*, *Acacia hubbardiana*, *Eucalyptus curtisii*, *Leptospermum microcarpum*, *Cryptandra amara*, *Leucopogon juniperinum*, *Triplarina (Baeckea) volcania*, *Hovea linearis*, *Ziera minutiflora*, lots of *Leptospermum luehmannii* (restricted to these hills), *Commersonia* sp., *Lasiopetalum* sp., *Serengia (Keraudrenia) hillii* - mauve and white - and probably a few we missed. Our gratitude must go to John Birbeck from the Sunshine Coast Regional Council who organised the gate key, without which access would have been much more difficult.

Only a little behind schedule, we lunched at Ewen Maddock Dam along the Mooloolah Connection Road. Then the Grevillea Study Group people were away to Tin Can Bay to seek out the third species of the little pink *G. reptans*, a long leaved form. This was found at what is known at the bay as “The Wallum”, a remnant of the original Scribbly Gum flowering understory of that area.

The whole day was a total success, with the absence of flowers on the *G. leiophylla*s at Freshwater National Park the only let down. For me, it was a great pleasure to be involved and gives our Wallum Study Group's work some credibility. I believe that wherever possible and useful our Study Groups should combine their “crawls” and “rambles” where there are plants common to both. Of course with the Wallum Study Group covering so many genera it has much in common with several other Study Groups. On this particular day we saw the differences between the three small pink Grevilleas and I was able to do something I love to do – show off the Beerwah Scientific Area 1. As for a “Grevillea Crawl”, some of that Study Group's people were down very low to the ground at one stage. I wonder if I'll use one of these photos in my next newsletter!

Grevillea Study Group (SEQ) 2011/12 report

The Grevillea Study Group (SEQ) continues to meet six times a year, with an average attendance of 16 members per meeting plus one or two visitors.

In November 2010 an offer to Chair our meetings from Bryson Easton was gratefully accepted. Bryson's Grevillea knowledge and expertise has added the level of input from the Chair which was lost when Merv Hodge could no longer carry on that role.

As our more senior members downsize their homes or their health prevents them from attending meetings some of our previous meeting venues disappear so new venues develop. This has resulted in occasionally travelling further to meetings, while it does add a new dimension to the group meetings it also makes it harder for some members to attend.

In the 2011/12 period, GSG members and friends who have opened their gardens to us first time are Bev and Bill Weir of Chandler; Peter Macqueen of Kleinton; and Chris and Ross Reddick of Capalaba. Visiting new gardens has shown that, for most of us, our garden is a unique and fascinating showcase of the gardener's favourite plants and personality. Thank you all for sharing your passion for your garden, and of course Grevilleas, with the rest of us.

Another first time visit occurred in April 2011 when the meeting was held at the Gondwana Nursery, Barker's Vale, NSW. While this is a wholesale Nursery the owner's, Joy & Gahan Gilfedder, were happy to host our group, taking us through their Nursery showing all work areas and finally the amazing array of grevilleas which they produce for market.

The meetings discussion topics have been quite varied. "The Affect of Summer (wet or dry) on Grevilleas" has been reviewed annually during the long drought that SEQ experienced. 2011 was a very different story, with the January 2011 floods and a return to normal summer "wet" in 2012, many members reported that some Grevilleas that had survived the drought years succumbed in the wetter summers. In general discussion some members wondered if

this was because the heavy rainfall had caused trace elements to be leached from the soil; and if pruning the flush of soft new growth would lessen the demands on the plant sufficiently to prevent its demise. Everyone left the meeting knowing that many others were experiencing the same problem, and had some different ideas to work on to try to prevent further losses.

In June 2011 the meeting was held at the Mt Coot-tha Botanic Gardens followed by a stroll through the Grevillea garden. It was pleasing to see that replanting in the Grevillea garden was progressing and that the plants donated by GSG (SEQ) were thriving. Following this garden visit Bryson Easton and a small contingent of members meet with Brian Cooney (the Gardens Supervisor) at Mt Coot-tha to discuss their needs and the continuance of this program.

The problems that Mt Coot-tha Botanic Gardens experiences in obtaining Grevillea species to grow has highlighted this issue to the GSG and raised the possibility that our members might focus on trying to propagate some of the species from their own gardens before they all disappear.

At the November 2011 meeting Jan Glazebrook & Denis Cox conducted a practical "Grafting Workshop" at their property in Logan Village. If GSG (SEQ) is going to succeed in propagating some species having members that are able to graft seems essential. Not everyone's efforts were successful, but that was not the fault of the instructors who made it all look so easy, maybe some of us just need more practice! Jan and Denis are part of a "SGAP Propagation Group" that all SGAP members are invited to attend.

Our February 2012 meeting was back at the very popular venue, Mt Clunie and the home of Fran & Jim Standing. Unfortunately there had been very wet, wet weather with flooding in some areas in the days prior to this meeting so there was not the usual number of overnight guests and attendance on the day was down compared to previous Mt Clunie visits. However, nothing daunted those who did stay overnight enjoyed

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the very convivial company in an absolutely idyllic setting. Amazingly the rain ceased on the Sunday so those present enjoyed Fran & Jim's garden tour and took full advantage of Fran's invitation to "take cuttings of anything you want". The garden looked fantastic, and Glen Leiper, a visitor to the meeting, even found orchids in the rainforest. Words are inadequate to describe this garden, it has to be seen and experienced to be appreciated.

The April 2012 meeting was at the home of Chris & Ross Reddick, where members were treated to another very interesting garden of mainly enhanced bushland. Kerry Rathie addressed the group on "DNA". Most members present were not aware of the latest concepts and research being conducted on DNA so Kerry's address was very interesting. It is understood that Kerry will submit the address notes to Peter Olde for publication in the Grevillea Study Group Newsletter.

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)

or by post to
Grevillea Study Group,
32 Blanche St Oatley, NSW 2223

Kerry Rathie

A few notes on DNA

In the last decade, and particularly the last five years, scientific knowledge of plant, animal and microbe genetics has increased more than in the previous 2000 years. This has been mainly in the details, and the invention of automated chemical analysing machines} as very few core concepts have altered much since I was a Uni student. I was still at school in the 1950's when Watson and Crick, with a bit of info-cribbing from Rosalind Wilkins? worked out the double helix nature of DNA. It had been suspected that DNA somehow stored the information content of genes, but the new model explained how DNA passed the instructions of how to 'build' a protein (or whatever) to the ribosome 'factories', via RNA messenger molecules which bound to the DNA. The DNA set the RNA message as its components decreed the RNA components, as one nucleic acid bound to the DNA template of the other.

The genetic code of today, in 99.99% of organisms, consists of 'letters' which are made up of amino-acid triplets. Changing anyone of the 3 amino acids usually produces a new 'letter', but not always as there is some redundancy.

It is now virtually certain the earliest genetic information was not carried by DNA, as it needs complex enzymes etc. to read and edit it. The earliest code is probably long extinct, and was replaced by an RNA one, which was itself superseded by the more chemically stable DNA one. Some recently discovered DNA viruses (viruses can be DNA or RNA) carry genes for RNA to DNA transcription (message conversion) in the form of DNA coding, and are therefore living fossils. Gene-sequencing has recently shown surprising (e.g., human genes in plants) genes in virtually all organisms, and the simplest explanation is that from the dawn of life, some 4200 million years ago (mya), until about 700 mya, genes were regularly swapped between ancestors of the members of what we now regard as the separate Kingdoms of life: Archaea, bacteria, viruses, fungi, plants and animals.

In higher plants and animals, the usable genetic information is carried in packets called 'exons', which are separated by random-seeming

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packets of non-coding 'introns'. It is now known that many introns contain modifier information like 'turn on only in kidney cells' or 'turn off in acid conditions' or 'produce product fast/slowly', which can apply to one or many genes. Viruses and bacteria almost always lack introns, as their small genomes lack the storage space, and their simple lifestyles presumably don't need modifiers.

The enzymes which read DNA don't always do it the same way. A sequence 'ABCDEFGG' may be read as is, or as 'CDEI or even 'GFEA'.

All higher organisms have been colonised by bacteria, which were once free-living and may have been eaten by our remote ancestors, and somehow survived. The most important are mitochondrial which are the energy factories in all higher organisms, and chloroplasts, which are confined mainly to plants, and where photosynthesis takes place. Both types of organelles have their own DNA genes, which are transmitted by parent to child by the uneven process of cytoplasmic splitting, unlike the precise transfer of genes in the cell nucleus. Sometimes a 'child' misses out on most or all of the chloroplasts; if it gets none, non-viable chlorotic seedlings result. The genes in both types of organelles tend to be more prone to mutations than nuclear genes, as bacteria did not evolve error-checking mechanisms as efficient and complex as those of higher organisms. It is strongly suspected that this is the fundamental cause of most natural aging in animals, as more and more mitochondria get disabled.

Taxonomy, or the science of classifying living things, is based on 'origin by descent', which reduces to genes and where they came from. For animals this is fairly clear cut. They don't swap chloroplasts, and almost never form new animals with more than the 2n (one from each parent) set of chromosomes. Plants can swap chloroplasts via, e.g., grafting or sap sucking insects. And it is not uncommon for two fairly-unrelated plants to cross, giving an embryo which is inviable due to non-matching genes. Sometimes a viable seed is produced due to chromosome doubling; AA x BB to AABB. Bread wheat is AABBDD, with 3 ancestral genomes, still also extant as rare grasses. A polyploid plant often does not need all its 'new' chromosomes, and over time may lose some or all, or may move some 'new' genes to a different chromosome. It is thought that over 70% of higher plants have taken part

in fusion with another species ~ do-it-yourself genetic engineering. Losses of chromosomes make it hard to be certain, when the polyploidy event lies far in the past.

Chloroplast genes were widely used in early 'DNA taxonomy, being variable and easy to type, and still are those most commonly looked at. In a few cases this has led to errors as chloroplast genes can pass between species, so nowadays taxonomists usually look at some nuclear genes as well. A gene really crucial to plant survival is often not very useful to taxonomy, as it may have to produce a protein of a very specific shape in order to function, and any change is fatal. Genes for things like haemoglobin are stable over millennia, and the genes for photosynthesis were stable over billions of years, as far as we can tell. All cells of an organism contain the full gene set; but not all are turned on in anyone tissue. Many are turned off by adding a methyl molecule to part of the DNA; 'methylation'. This, in humans, can happen during pregnancy, and the baby is 'imprinted'. Nutritional and stress factors can play a part, as in the altered sex ratios in World War 2. Sometimes the effect lasts for more than one generation. In plants, similar effects can be caused by drought or nutrition. Animal embryos have some genetic effects set to zero at or soon after conception, like telomere length. Telomeres are 'counting' code at the end of chromosomes, and a piece gets snipped off by an enzyme each time the cell divides. Once they are used up it is bad news. In theory, telomerase enzymes can 'grow' them again, and medical science is looking at ways to do this. Plant cells lack telomeres (tell Richard Tompkins) and are immortal barring other factors. Also set around conception is gender, and a whole raft of genes are typically turned off, usually by methylation, in the homogametic sex (XX females in man), partly to avoid gene overdoses.

Plants quite widely apart in ancestry can sometimes graft quite well on to each other, as the grafting process does not involve the 'fussier reproduction genes. But not always. Not all grevilleas are graft-compatible, and in eucalypts, there are a large number of exclusive groups which will only accept grafts from a fellow group member.

Knowing taxonomic relationships allows us to estimate if loss of a species could be irreversible,

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or easily re-created by crossing. And species with little genetic variation, like Wollemi pine, are usually more prone to extinction if the habitat changes. Knowing the DNA allows us to alter any of a plant's characteristics, at least in theory. If we want a sky-blue *Grevillea* Ned Kelly, we can create a DNA strand with a blue gene from plant A, and fire it into the grevillea on a gold particle, or (these days) via a tame bacterium or virus. But will it go to the right spot (you can add code for the right flanking genes to raise your odds there), and/or dodge all those gene modifiers, or lodge among nonsense DNA in introns 1

The argument that we shouldn't fiddle with Nature runs against human nature ~ we are the species that interferes ~ and ignores the countless tricks Nature tries by itself, unaided. We can however expect many of our plans not to work out as expected, partly due to Murphy's Law and partly because evolution has had millions of years in which to get its act together. We are not so lucky.

Being able to read DNA fast and easily has brought countless fascinating facts to light. The Chinese have had to abandon their theory of slow evolution from Homo, erectus in Asia. They came out of Africa in the last 150000 years or so like the rest of us. And we now know, only in the last couple of years, that most Caucasians have up to 7% of Neanderthal genes, and many Melanesians (and Micronesians 1) up to 20% of Denisovian genes. This Denisovian genome was read from a finger bone in a cave in Siberia. Some early trekkers from Africa are now known to have gone extinct without passing genes onto modern humans. Ditto re the 50000 years ago Mungo Lakes people in Australia, and the 'hobbits' from Flores in Indonesia. It is also known that 2 early Asian domestications of wild rice failed as the rice strains went extinct. And findings of definite long-separated species of animals that were not obvious on morphology alone include a 'new' elephant in Africa, a separate Kiwi in New Zealand, on one of the two main islands, lots of ultra-local rock wallabies in north Qld., etc., etc. I suspect many grasses will be split up once they are sequenced. And ancient Polynesian chicken bones in S. America mean the Americas may well not have been first settled via Bering Strait, although the Inuit did come from nearby Asia.

We live in interesting times.

STOP PRESS.

DNA news items since mid-April 2012.

It has long been known that in theory gene data could be encoded in molecules other than DNA and RNA, if suitable enzymes could be found (or created) to copy the genes from one molecule to another. A team at the MRC Lab of Molecular Biology at Cambridge has just announced this for 6 XNAs (xeno-nucleic acids) with different sugars than DNA, and in some cases 'completely different molecules'. Some of these systems may actually be the gene-carriers on other planets, but DNA probably has an unbeatable head start on earth.

Progress in genetic engineering of photosynthesis is roaring ahead on several fronts. Nitrous oxide emissions from farm soils account for 6 % of global greenhouse emissions. A gene for the enzyme alanine aminotransferase, 'involved in the production of proteins and originally isolated from barley' is already being used by the firm Arcadia to boost oilseed rape yields by a third using current fertiliser rates, or to get the normal yield with only a third of the fertiliser. Other companies are racing to do similar things in other crops. Arcadia is using a thale cress gene to produce salt-tolerant lucerne (already commercial), and rice, cotton, tomatoes and canola. Drought-tolerant maize is very close to general release, as maize has no close 'weedy' relatives the GM genes could flow to, unlike rice, where this consideration is a major problem.

Progress in improving greatly the photosynthesis mechanism in plants in general is also highly promising, and I reviewed it briefly in an article, 'Beneficial genetic modifications', in the June 2011 Qld SGAP 'Bulletin', pp 31-34. Efforts to make fuel cells and other non-plant devices that 'do' photosynthesis efficiently are also progressing steadily, although my money is on the 'tweaked' plants. Early models used expensive platinum as a catalyst, but nickel works even better in some applications, and many other chemicals are under test for the oxygen-producing catalyst. And serious buckets of money are being thrown at the problem by several California firms. They are guessing that total success lies 15 years away. Of course, major success, like fusion power, makes a cheap 'hydrogen economy' totally feasible, solving transport and energy problems and neutralising most of the fears of the global alarmist brigade.

Grevillea acanthifolia* subsp. *stenomera

In October 2012 members of the ANPSA Fern Study Group (Qld) had a Fern excursion to the Tenterfield region. Pushing through knee high prickly vegetation to get to the ferns at Basket Swamp in Boonoo Boonoo NP we suddenly realised the prickly vegetation was a quite vast area of, what we believe to be, *Grevillea acanthifolia* which we thought was subsp. *stenomera*. What an amazing sight!



The GSG SEQ excursion in November is expected to visit this site and either confirm or amend this identification.

Peter Olde

Western Australia's endangered Grevilleas

Under the Wildlife Conservation Act, the Minister for the Environment may declare species of protected flora to be **Rare Flora** if they are considered to be in danger of extinction, rare or otherwise in need of special protection. Such species are referred to as Threatened Flora, and receive special management attention.

There are also three categories of **Priority Flora** defined to cover poorly known species. The categories are arranged to give an indication of the priority for undertaking further surveys based on the number of known sites, and the degree of threat to those populations. A fourth category of priority flora is included for those species that have been adequately surveyed and are considered to be rare but not currently threatened. Special consideration should be given to the management of these species.

Declared Rare Flora – Presumed Extinct: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations

have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

Declared Rare Flora – Extant: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee. (= *Threatened Flora* = *Endangered* + *Vulnerable*)

Priority One – Poorly Known: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or

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the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Two – Poorly Known: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey

Priority Three – Poorly Known: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey

Priority Four – Rare: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.

Reference. Smith, M.G. (2010). *Declared Rare and Priority Flora List for Western Australia, 25 March 2010*. Dept of Environment and Conservation. Como, W.A.

<i>Grevillea acropogon</i> Makinson	R
<i>Grevillea adenotricha</i> McGill.	4
<i>Grevillea althoferorum</i> Olde & Marriott subsp. <i>althoferorum</i>	R
<i>Grevillea althoferorum</i> subsp. <i>fragilis</i> Olde & Marriott	R
<i>Grevillea aneura</i> McGill.	4
<i>Grevillea annulifera</i> F.Muell.	3
<i>Grevillea asparagoides</i> Meisn.	3
<i>Grevillea aspera</i> R.Br.	1
<i>Grevillea asteriscosa</i> Diels	4
<i>Grevillea batrachioides</i> McGill.	R
<i>Grevillea baxteri</i> R.Br.	4
<i>Grevillea biformis</i> subsp. <i>cymbiformis</i> Olde & Marriott	3
<i>Grevillea bipinnatifida</i> subsp. <i>pagna</i> Cranfield	1
<i>Grevillea brachystylis</i> subsp. <i>australis</i> Keighery	R
<i>Grevillea brachystylis</i> Meisn. subsp. <i>brachystylis</i>	3
<i>Grevillea brachystylis</i> subsp. Busselton (G.J. Keighery s.n. 28/8/1985)	R
<i>Grevillea brachystylis</i> subsp. <i>grandis</i> Keighery	R
<i>Grevillea bracteosa</i> Meisn. subsp. <i>bracteosa</i>	R
<i>Grevillea bracteosa</i> subsp. <i>howatharra</i> Olde & Marriott	R
<i>Grevillea bronwenae</i> Keighery	2

<i>Grevillea calcicola</i> A.S.George	3
<i>Grevillea calliantha</i> Makinson & Olde	R
<i>Grevillea candicans</i> C.A.Gardner	3
<i>Grevillea candolleana</i> Meisn.	2
<i>Grevillea christineae</i> McGill.	R
<i>Grevillea coccinea</i> subsp. <i>lanata</i> Olde & Marriott	3
<i>Grevillea corrugata</i> Olde & Marriott	R
<i>Grevillea costata</i> A.S.George	3
<i>Grevillea crowleyae</i> Olde & Marriott	2
<i>Grevillea curviloba</i> McGill. subsp. <i>curviloba</i>	R
<i>Grevillea curviloba</i> subsp. <i>incurva</i> Olde & Marriott	R
<i>Grevillea delta</i> (McGill.) Olde & Marriott	2
<i>Grevillea dissecta</i> (McGill.) Olde & Marriott	4
<i>Grevillea donaldiana</i> Kenneally	2
<i>Grevillea drummondii</i> Meisn.	4
<i>Grevillea dryandroides</i> C.A.Gardner subsp. <i>dryandroides</i>	R
<i>Grevillea dryandroides</i> subsp. <i>hirsuta</i> Olde & Marriott	R
<i>Grevillea elongata</i> Olde & Marriott	R
<i>Grevillea endlicheriana</i> subsp. Wongan Hills (G.J. Keighery 15351)	2
<i>Grevillea erectiloba</i> F.Muell.	4
<i>Grevillea erinacea</i> Meisn.	3
<i>Grevillea eriobotrya</i> F.Muell.	3
<i>Grevillea evanescens</i> Olde & Marriott	1
<i>Grevillea florida</i> (McGill.) Makinson	3
<i>Grevillea fulgens</i> C.A.Gardner	3
<i>Grevillea fuscolutea</i> Keighery	R
<i>Grevillea georgeana</i> McGill.	3
<i>Grevillea globosa</i> C.A.Gardner	3
<i>Grevillea granulosa</i> McGill.	3
<i>Grevillea haplantha</i> subsp. <i>recedens</i> Olde & Marriott	3
<i>Grevillea hirtella</i> (Benth.) Olde & Marriott	3
<i>Grevillea hislopii</i> Olde & Marriott	2
<i>Grevillea humifusa</i> Olde & Marriott	R
<i>Grevillea inconspicua</i> Diels	4
<i>Grevillea infundibularis</i> A.S.George	3
<i>Grevillea insignis</i> subsp. <i>elliottii</i> Olde & Marriott	3
<i>Grevillea involuocrata</i> A.S.George	R
<i>Grevillea kenneallyi</i> McGill.	2
<i>Grevillea kirkalocka</i> Olde & Marriott	1
<i>Grevillea latifolia</i> C.A.Gardner	2
<i>Grevillea leptopoda</i> McGill.	3
<i>Grevillea lissopleura</i> McGill.	1
<i>Grevillea lullfitzii</i> McGill.	1
<i>Grevillea maccutcheonii</i> Keighery & Cranfield	R
<i>Grevillea manglesioides</i> subsp. <i>ferricola</i> Keighery	2
<i>Grevillea marriottii</i> Olde	1
<i>Grevillea maxwellii</i> McGill.	R
<i>Grevillea metamorpha</i> Makinson	1
<i>Grevillea miniata</i> W.Fitzg.	4
<i>Grevillea minutiflora</i> McGill.	1
<i>Grevillea murex</i> McGill.	R
<i>Grevillea newbeyi</i> McGill.	3
<i>Grevillea nivea</i> Olde & Marriott	2
<i>Grevillea olivacea</i> A.S.George	4

continued >

<i>Grevillea papillosa</i> (McGill.) Olde & Marriott	3	<i>Grevillea</i> sp. Toodyay West	2
<i>Grevillea phanerophlebia</i> Diels	R	(F. Hort et al. 3296)	
<i>Grevillea phillipsiana</i> McGill.	1	<i>Grevillea</i> sp. Trayning	1
<i>Grevillea pilosa</i> subsp. <i>redacta</i> Olde & Marriott	3	(W. Johnston WJ 071)	
<i>Grevillea pimeleoides</i> W.Fitzg.	4	<i>Grevillea squiresiae</i> Olde & Marriott	1
<i>Grevillea pinifolia</i> Meisn.	1	<i>Grevillea stenogyne</i> (Benth) Makinson	R
<i>Grevillea prominens</i> Olde & Marriott	2	<i>Grevillea stenomera</i> F.Muell.	2
<i>Grevillea prostrata</i> C.A.Gardner & A.S.George	4	<i>Grevillea stenostachya</i> C.A.Gardner	3
<i>Grevillea psilantha</i> McGill.	2	<i>Grevillea subterlineata</i> Makinson	3
<i>Grevillea punctata</i> Olde & Marriott	3	<i>Grevillea subtiliflora</i> McGill.	3
<i>Grevillea pythara</i> Olde & Marriott	R	<i>Grevillea sulcata</i> Olde & Marriott	1
<i>Grevillea rara</i> Olde & Marriott	R	<i>Grevillea synapheae</i> subsp. A Flora of Australia	1
<i>Grevillea ripicola</i> A.S.George	4	(S.D. Hopper 6333)	
<i>Grevillea rogersoniana</i> C.A.Gardner	3	<i>Grevillea synapheae</i> subsp. <i>minyulo</i> Makinson	1
<i>Grevillea rosieri</i> McGill.	2	<i>Grevillea tenuiloba</i> C.A.Gardner	3
<i>Grevillea roycei</i> McGill.	3	<i>Grevillea tetrapleura</i> McGill.	4
<i>Grevillea rudis</i> Meisn.	4	<i>Grevillea thelemanniana</i> Endl.	4
<i>Grevillea saccata</i> Benth.	4	<i>Grevillea thelemanniana</i> subsp. Coojarloo	1
<i>Grevillea scabrida</i> C.A.Gardner	3	(B.J. Keighery 28 B)	
<i>Grevillea scapigera</i> A.S.George	R	<i>Grevillea thyrsoides</i> subsp. <i>pustulata</i>	3
<i>Grevillea secunda</i> McGill.	4	Olde & Marriott	
<i>Grevillea</i> sp. Harrismith	1	<i>Grevillea thyrsoides</i> Meisn. subsp. <i>thyrsoides</i>	3
(G.J. Keighery & N. Gibson 7094)		<i>Grevillea triloba</i> Meisn.	3
<i>Grevillea</i> sp. Ocean Reef	1	<i>Grevillea uniformis</i> (McGill.) Olde & Marriott	3
(D. Pike Joon 4)			
<i>Grevillea</i> sp. Stirling Range	2		
(D.J. McGillivray 3488 & A.S. George)			

Neil Marriott

***Grevillea nudiflora* sp nov – Fitzgerald National Park**

A number of years ago Nathan McQuoid, former ranger at Fitzgerald National Park and now botanical and environmental consultant, discovered a discrete population of what appears to be a new subspecies of *Grevillea nudiflora*. This was in an isolated area of the national park at the foot of Mid Mount Barren. The plants are small, ground-hugging and have quite broad (c10 mm), thick and fleshy leaves, and showy bright red flowers on long leafless branches up to several metres from the foliage. Material from these plants has been grown by me at Panrock Ridge now for over 7 years, during which time it has proven to be extremely hardy to drought, cold, wet and even fire, with the plants appearing to be too fleshy to ignite despite hundreds of plants around them exploding into flames when bushfires roared over our hill in 2005. Material from my plants has now been widely distributed amongst growers in the Grevillea Study Group.



Grevillea nudiflora subsp nov Mid Mount Barren
Photo Nathan McQuoid

continued >

On a recent return trip to the site, Nathan has discovered a number of beautiful natural hybrids between this new taxon and *Grevillea infundibularis*. They look absolutely amazing as can be seen in the accompanying photos. Further along the coast, the typical 'curly-leaf' Fitzgerald River form of *Grevillea nudiflora* occurs, yet Nathan has not found any evidence of any intergrading of the two forms, despite them being within flying range of birds that could readily cross-pollinate them. To me this indicates that the new taxon is reproductively isolated and therefore may even be a new species in its own right.

In our living *Grevillea* collection at Panrock Ridge I have over 7 distinct clones of *Grevillea nudiflora* from a range of sites along the south coast of WA. Examination of these has confirmed at least 8 clear characters that readily separate *Grevillea nudiflora* 'subsp *nudiflora*' from *Grevillea nudiflora* subsp *nov*. This includes a dense appressed white indumentum on the lower leaf surface of subsp *nudiflora* compared with subsp *nov* –Mid Mt Barren that is glabrous on the lower surface. I will confirm these characters with specimens in the Perth Herbarium later this year and will be publishing this as a new subspecies for Western Australia in a revision of this species.



Grevillea nudiflora subsp *nov* x *G infundibularis* Mid Mount Barren
Photo Nathan McQuoid



Grevillea infundibularis x *G nudiflora* subsp *nov* Mid Mount Barren
Photo Nathan McQuoid

Peter Olde

Grevillea rust

McAlpine (1906) drew attention to the oddity that two of Australia's largest plant families, the Myrtaceae and Proteaceae, were virtually devoid of rust pathogens. Over a century later only *Puccinia cygnorum* R.G. Shivas & J. Walker and *Uredo xanthostemonis* J. Walker were the only rusts described on Australian Myrtaceae (Shivas and Walker 1994; Walker 1983), while there has been only one addition, *Puccinia finschiae* Cummins from Papua New Guinea, to the rusts on Proteaceae. Only two rusts, *Uredo angiosperma* Thu"m. and *P. finschiae*, have been reported on hosts in the Proteaceae. *U. angiosperma* occurs on *Hakea prostrata* R.Br. and *H. oleifolia* (Smith) R.Br. in Western Australia and *P. finschiae* is known only from the type material on *Finschia chloroxantha* Diels in Papua New Guinea (Cummins 1961). In a recent paper, A.R. McTaggart & R.G. Shivas describe a new rust on the Proteaceae, *Puccinia grevilleae* sp. nov. from northern Australia. The

description of the *Grevillea* rust was from leaves of *Grevillea mimosoides* collected in 1990 at Gelaro, S of Almaden, Queensland. All rusts of Proteaceae described to date occur on genera of the Grevilleoideae: Hakeinae. Being mostly native, the effect and spread of the rust has not proved as potentially devastating or virulent as the introduced Myrtle rust, *Uredo rangellii*.

We have heard a great deal in recent times about Myrtle rust, a rust or fungal pathogen native to South America but widespread also now in the United States and Mexico and probably other areas such as Colombia. Its arrival in Australia was heralded by its recognised appearance on a commercial plant production property on the New South Wales Central Coast in April 2010. It may have arrived up to two years earlier because

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its synonymous identification in nearby forests suggests that it had not previously been recognised. Its rapid presence up and down the east coast from New South Wales into Queensland and now on 30 sites in Victoria may be more associated with recognition than with rapid spread. However, the latter modality is the most likely reason for its presence in Victoria. If so, it is unstoppable and will surely spread to all areas of Australia. It affects a large range of host genera including *Acmena*, *Agonis*, *Backhousia*, *Callistemon*, *Chamelaucium*, *Corymbia*, *Eucalyptus*, *Gossia* [*Austromyrtus*], *Lenwebbia*, *Leptospermum*, *Lophomyrtus*, *Melaleuca*, *Rhodamnia*, *Rhodomyrtus*, *Syncarpia*, *Syzygium*, *Tristania*, *Uromyrtus* and *Xanthostemon*. Genera and species vary in their response and resistance but note the high number of rainforest genera and the widespread genus, *Eucalyptus*.

The disease mainly affects soft new growth, causing blistering, curling, discoloration and distortion followed by a yellow sporulation involving microscopic spores on the branchlets or infected areas that are easily carried by wind, clothing, or on any goods shipped around the world. The main routes of spread are infected nursery plants and as spores on infested clothing and equipment. In my experience, healthy adult plants will grow through the infection which will, however, reappear seasonally, usually towards the end of summer into autumn. Ultimately it is hoped that plants will develop resistance but in the meantime, it could potentially devastate natural systems, commercial plantations, home gardens and horticultural enterprises. The rust gradually debilitates healthy adult plants, attacking new growth, inhibiting flowering and destroying or malforming seedlings. Some eucalypts are more seriously attacked than others. Some forestry species reportedly bifurcate under the influence of the rust, ruining them for the purpose (N. Marriott, pers. comm.). Regenerating eucalypts in large areas of Royal National Park around Audley have been affected, according to Nathan Kirkwood, a Shire resident. Nathan has observed however that it does not appear to attack species with glaucous or waxy leaves, including *Eucalyptus caesia*, *E. macrocarpa*, *E. tetraptera*, *E. preissiana* or *E. orbifolia*, nor local *Corymbia* species, though the jury is still out on this genus. As far as the WA mallees go here in Sydney and along the east coast generally, what the myrtle rust does not get, the scale does. Many melaleucas are immune, including the beautiful *Melaleuca nematophylla* from W.A. but *M. quinquenervia* is badly affected.

Acroscopic hairs also act to protect some species. However, *Syzygium jambos*, an exotic, had to be removed after the whole plant turned yellow.

Rusts can often be confused with Leaf Scorch, a disease that affects horticultural cultivars such as *Grevillea* 'Robyn Gordon' and related cultivars in very wet or humid weather. Plants with this condition have discoloured blistered leaves turning grey with reddish hues and sometimes black spots that look like rust but there is no sporulation phase. The cure here is to cut back and encourage healthy new growth. However, to cut back plants affected by Myrtle Rust opens the new growth to immediate attack and infection, hastening the demise of the whole plant. Treatments recommended by the Australian Government, Pesticides and Veterinary Medicines Authority (http://www.dpi.qld.gov.au/4790_20154.htm) are spraying with Mancozeb, Triforine or Copper oxychloride. In addition, fungicides containing chlorothalonil, which have label instructions relating to treatment of 'rust' diseases on ornamentals, may be suitable for use in the management of myrtle rust.

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Vale Heather Clarke (nee Anderson) 1937–2011

It is with great sadness that I inform members of the Grevillea Study Group of the passing of Heather Clarke. I'm sure most members would remember Heather and her intense enthusiasm for the genus Grevillea which began by chance after she was given plants by David Ponman of Wallsend Nursery.

Heather's driving passion was the Grevillea Garden, conceived and developed by her very early in the evolution of the Hunter Region Botanic Garden of which she was a foundation member. It was the first theme garden and Heather worked voluntarily from 1986, cultivating and propagating grevilleas, sourcing plants or cuttings and haunting nurseries. Eventually ill health forced her to reconsider her commitment in 1999.

Heather was a trained nurse and later became a qualified horticulturalist through Charlestown TAFE. Although she was interested in many plants she felt there was a need to display this significant genus of Australian plants both as horticultural subjects and as an educational tool to allow the extent of the genus to be more noticed by the general public.

Heather made a truly significant contribution to this garden and set about building her knowledge of the genus with such enthusiasm and dedication she soon became very knowledgeable about things Grevillea and often travelled long distances to obtain material, plants and information. Over time the collection of grevilleas at HRBG became one of significance due to Heather's enthusiasm and at one time contained a large portion of the known species of Grevillea from around Australia.

Heathers' enthusiasm and dedication were much appreciated by all those that visited and enjoyed the collection and she will be greatly missed by all those that worked with her at the gardens and those that shared her love of the genus Grevillea.

Heather spent the last two years of her life bedridden and in a great deal of pain with cancer on the spine. Before Heather was hospitalised her husband Ray was diagnosed with Alzheimer's and eventually he was placed in a nursing home. He didn't know Heather but she would still visit and support him until she herself was incapacitated. Ray was also a volunteer at the gardens before he became ill and did a lot to help Heather and create signage for garden beds. It was a source of great sadness for Heather that she wasn't able to continue visiting Ray.

She retained an interest in the gardens and Grevillea to the end. There were a number of people that visited her regularly and told her of events at the gardens and took pics where possible.

There is a plaque in the Grevillea Garden at HRBG in honour of her memory and contribution.

I got on well with Heather (not all could cope with her abrupt manner) and I was amazed at her enthusiasm and the dedication she applied to anything she did. Heather did not always cope very well with other board members when she felt they were stopping her from pursuing her dream, nor with the formality of being a director.

I very rarely saw Heather without a smile on her face, even towards the end when someone would give her flowers or I'd show her some recent photos of the gardens and we would discuss recent events....even then she had some very definite ideas about what we "should be doing".

The illness she suffered was cruel. She was in constant discomfort from spinal abscesses and pain from the cancer and was completely bed ridden for the last year at least.

True to form though she stirred the nurses up endlessly and complained bitterly at the slightest tardiness on their part in attending to her needs.

Heather was heavily involved in the church where her funeral service was held and it was easy to see the esteem with which the minister and other parishioners held her. It was a full Anglican service with all the appropriate responses from the congregation.



Vale Heather Clarke (nee Anderson) 1937–2011

Our Grevillea collection

It was in 1984 that I found the Society for Growing Australian Plants in Queensland. I have had a passion for native plants from a young age, being more interested in the tiny blue bells and fringe lilies among the grass, than the gaudy exotic garden plants, but it wasn't until a year after joining that I fell in love with Grevilleas. The plant that won my heart was a *Grevillea aurea* at Merv Hodge's place. I had never seen anything like it. We joined the Grevillea Study Group and what a new world of plants opened to us.

In 1991 we travelled to WA and had 11 weeks of seeking out as many grevilleas as we could. Armed with a collector's permit, we were able to send back to Brisbane many species that weren't in cultivation here. A friend, Brent Vieritz, sat up late at night grafting material we sent to him. From this trip, we were able to introduce forty new species to our garden. At the height of our collection, we had 320 different species and subspecies growing in our grevillea plot.

One interesting plant we chanced upon in WA was a hybrid between *Grevillea paradoxa* and *Grevillea petrophiloides*. It was growing about 40 cm from the edge of the bitumen on a road near the town of Wubin. We had seen lots of both parents, but not usually together. At this spot, their range overlapped and this hybrid was the result. We called it *Grevillea "Wubin Wand"*. It is in limited cultivation as it requires grafting.

Over the last 20 years, due to drought, floods, cold and heat, our collection has declined and we have not been able to replace many of the species. Many hybrids have resulted from growing so many species in a confined area. The most notable is *Grevillea "Peaches and Cream"*, a cross between an orange-flowered *Grevillea bipinnatifida* and a cream-flowered form of a procumbent *Grevillea banksii*. We have had many crosses between species in the old *Grevillea thelemanniana* group and crosses between *Grevillea longistyla* and *Grevillea johnsonii* as well as *Grevillea longistyla* and *Grevillea venusta* have also occurred. A hybrid we really like is one between *Grevillea "Billy Bonkers"* and *Grevillea "Thorny Devil"*. This orange-red flowering plant grows to about 80 cm tall and is always flowering – a good small garden plant.

Although interest in grevilleas is still strong, the time will come when we have to move to a smaller garden, and I envisage the collection will disappear. The point I want to make is that gardens come and go and cultivation is not a secure way to protect a species. The only way is to protect them where they grow in the wild. Here they can reproduce naturally and not hybridise as they do in gardens.

Illawarra Grevillea Park

OPEN DAYS 2012

September 1st, 2nd, 8th, 9th

Opening hrs are 10am – 4pm

Location

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

Admission

\$5 adults, children accompanied by adults are free

Barbeque and picnic facilities available

email info@grevilleapark.org or visit www.grevilleapark.org

Grevillea stock: The need to know

Members attending our Grevillea Study Group (SEQ) meetings frequently express their concern that the grafted grevilleas available in nurseries do not specify the species used for the grafting stock. Failing to provide this information to the purchaser has caused some frustration to our members, especially as grafted plants are usually purchased because the scion will not grow on its own roots in the area where the purchaser intends to grow the plant but neither will some of the stocks used in grafting.

It is acknowledged that there are two perspectives to consider on this issue:

1. knowing the stock used is very important to gardeners purchasing plants, especially those who live in areas where some of the commonly used stock species cannot be successfully grown; and
2. some commercial "grafters" might prefer to keep their grafting techniques and species used confidential.

To overcome this problem, and keep both purchasers and grafters happy, it is suggested that wherever possible the nurseries ensure that the plant labels identify the grafting stock used; or where the "grafter" prefers not to identify the species used as the grafting stock then the plant label should give very explicit details of the growing environment required by that stock.

Seed Bank

Matt Hurst

37 Heydon Ave, Wagga Wagga 2650 NSW
Phone (02) 6925 1273

Please include a stamped self addressed envelope.

\$1.50 + s.a.e.

<i>Grevillea aurea</i>	<i>Grevillea monticola</i>
<i>Grevillea baileyana</i>	<i>Grevillea nana</i>
<i>Grevillea banksia alba</i> prostrate	ssp <i>abbreviata</i>
<i>Grevillea biternata</i>	<i>Grevillea newbeyi</i>
<i>Grevillea</i> <i>candelabroides</i>	<i>Grevillea nudiflora</i>
<i>Grevillea crithmifolia</i>	<i>Grevillea occidentalis</i>
<i>Grevillea drummondii</i>	<i>Grevillea paniculata</i>
<i>Grevillea decora</i>	<i>Grevillea paradoxa</i> (ltd)
<i>Grevillea decurrens</i>	<i>Grevillea polybotrya</i>
<i>Grevillea eriobotrya</i>	<i>Grevillea pteridifolia</i>
<i>Grevillea eriostachya</i>	<i>Grevillea pulchella</i>
<i>Grevillea excelsior</i>	<i>Grevillea quercifolia</i>
<i>Grevillea floribunda</i> ex Coonabarabran	<i>Grevillea refracta</i>
<i>Grevillea glauca</i>	<i>Grevillea ramosissima</i>
<i>Grevillea johnsonii</i> (ltd)	<i>Grevillea stenobotrya</i>
<i>Grevillea juncifolia</i>	<i>Grevillea striata</i> (ltd)
<i>Grevillea leucopteris</i>	<i>Grevillea superba</i>
<i>Grevillea longistyla</i>	<i>Grevillea synapheae</i>
<i>Grevillea magnifica</i>	<i>Grevillea teretifolia</i>
<i>Grevillea magnifica</i> ssp <i>magnifica</i>	<i>Grevillea tetragonoloba</i>
<i>Grevillea manglesii</i>	<i>Grevillea triloba</i>
ssp <i>manglesii</i> (ltd)	<i>Grevillea triternata</i>
	<i>Grevillea vestita</i>
	<i>Grevillea wickamii</i>
	ssp <i>aprica</i>
	<i>Grevillea wilsonii</i>

Free + s.a.e.

<i>Grevillea banksii</i> – grey leaf form	<i>Grevillea longistyla</i>
<i>Grevillea banksii</i> – red tree form	<i>Grevillea mimosoides</i>
<i>Grevillea banksii</i> – red prostrate	<i>Grevillea</i> 'Moonlight'
<i>Grevillea Bon Accord</i>	<i>Grevillea</i> 'Moonlight x Ivanhoe'?
<i>Grevillea caleyi</i>	<i>Grevillea occidentalis</i>
<i>Grevillea crithmifolia</i>	<i>Grevillea plurijuga</i>
<i>Grevillea decora</i>	<i>Grevillea pteridifolia</i>
<i>Grevillea didymobotrya</i>	<i>Grevillea robusta</i>
<i>Grevillea diversifolia</i> ssp <i>subtersericata</i>	<i>Grevillea</i> 'Sandra Gordon'
<i>Grevillea eriostachya</i>	<i>Grevillea superba</i>
<i>Grevillea floribunda</i>	<i>Grevillea synapheae</i>
<i>Grevillea goodii</i> subsp <i>goodii</i>	<i>Grevillea tripartita</i> ssp <i>macrostylis</i>
<i>Grevillea johnsonii</i>	<i>Grevillea vestita</i>
<i>Grevillea johnsonii</i> 'Orange'	<i>Grevillea wilsonii</i>
<i>Grevillea leucopteris</i>	

Please note: seed from hybrid -substitute -cultivated plants does not necessarily come true to type.

Fresh stocks of garden seed are desperately needed as most species are almost out of seed. Can members asking for seed please give an alternative list in case some species are no longer in stock. It is preferred if requests are sent with a small padded post pack. It costs less to send at approx \$1.50 per letter than padding an envelope at \$2.00 each or more so the seed will survive the trip down the sorting rollers. It's a good idea to send extra stamps with requests as extra postage is usually needed to be paid with almost every request. Leftover stamps would be sent back with your seed.

Financial Report – August 2012

Income

Subscriptions	\$602.00
Interest	25.71
	<hr/>
	\$627.71

Expenditure

Newsletter publishing	\$270.00
Printing	427.05
Postage	153.50
Transfer to cheque account	1,200.00
Bank fees	5.00
	<hr/>
	\$2,180.40

Amount in interest bearing deposit till 28/8/2012
\$27,985.06

Balance in current account 27/7/2012
\$1,496.46

Balance in business cheque account 1/2/2012
\$1,155.68

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Email Group

This email group was begun by John and Ruth Sparrow from Queensland. Free membership.

To subscribe, go to groups.yahoo.com and register, using the cyber-form provided. You must provide a user name and password as well as your email address to enable continuing access to the site which houses all emails and discussions to date.

You will receive a confirming email back and then you are able to access the site wherein you can select the groups to which you would like to subscribe. In this case search for 'grevilleas' and then subscribe.

Following this you will receive the latest emails regularly in your email to which you can respond. This is a good way to encourage new growers and those interested in the genus.

Postmessage: grevilleas@yahoogroups.com

Subscribe: grevilleas-subscribe@yahoo.com

Unsubscribe: grevilleas-unsubscribe@yahoo.com

List owner: grevilleas-owner@yahoo.com

URL to this page: <http://groups.yahoo.com/group/grevilleas>

Online Contact

1. President's email address
peter.olde@exemail.com.au
2. The email group
grevilleas@yahoogroups.com
3. URL for Grevillea Study Group website
<http://asgap.org.au/grevSG/index.html>

Deadline for articles for the next newsletter is 30 September 2012, please send your articles to peter.olde@exemail.com.au before this date.

If a cross appears in the box, your subscription is due.

Please send to the Treasurer, Christine Guthrie, 32 Blanche Street, Oatley 2223.

Please make all cheques payable to the Grevillea Study Group.

2011 2012

If a cross appears in both boxes this will be your last newsletter.

Membership fees

The annual subscription is \$10 per year or \$40 for 5 years. If you choose to receive the newsletter by email there will be a 50% discount ie membership will be \$5 per year – \$20 for 5 yrs. I would encourage everyone to take advantage of the savings by paying for 5 years, and choosing email. Overseas membership \$20 if posted.