Association of Societies for Growing Australian Plants

GREVILLEA STUDY GROUP

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Newsletter No. 83 – July 2009

Newsletter No. 83

GSG VIC Programme 2009

*For more details contact **Neil Marriott** (Vic Leader), on (03) 5356 2404 or 0458 177 989, or email neilmarriott@westnet.com.au.*

Despite extensive effort on behalf of Max McDowall to get members along to Vic Chapter excursions, there has been a very disappointing response. As a result Max has decided to resign from this role and we have decided to put the Vic chapter into recess until further notice.

Special thanks to the S.E. Queensland chapter for this edition of the newsletter. Please note deadlines on back page for the following newsletter.

Please Note: Change of Address
The post office box we had for a number of years has now been cancelled. Please forward all correspondence for the Treasurer and Newsletter Editor to 32 Blanche Street OATLEY NSW 2223. Apologies to anyone who had mail returned to them by the post office.

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GSG S.E. QLD Programme 2009

*Morning tea at 9.30am, meetings commence at 10.00am. For more information contact **Noreen Baxter** on (07) 3202 5008 or **Beverley Leggett** on (07) 3870 8517.*

Sunday, 30 August

Venue: Merv. & Olwyn Hodge,
81-81 Loganview Rd, Logan Reserve, 4133

Phone: (07) 5546 3322

Subject: Growing Grevilleas from cuttings

Sunday, 25 October

Venue: Fran & Jim Standing,
Mt. Clunie Cabins, Mt. Clunie Road,
Woodenbong, NSW 2476

Phone: (07) 4666 5118

Subject: Pests, Diseases and Solutions

Sunday, 29 November

Venue: Denis Cox & Jan Glazebrook,
87 Daintree Dr. Logan Village, 4207

Phone: (07) 5546 8590

Subject: Growing Grevilleas from seed

Sunday, 28 February 2010

Venue: Bev & Bill Weir,
151 Warriewood St., Chandler, 4151

Phone: (07) 3245 4537

Subject: Pruning & General Maintenance

Sunday, 18 April 2010

(Note date – 25th is ANZAC Day so meeting brought forward one week)

Venue: Laylee Purchase,
41 Rocklyn Street, Toowoomba, 4350

Phone: (07) 4630 2211

Subject: Grevilleas of the Canning Stock Route

Max McDowall (see footnote)

Pronunciation of Grevillea Names Part 2

We continue with the series of articles on the Reformed academic Latin pronunciation of Grevillea Names for those who wish to know or use them. I am not here concerned with all of the anglicised pronunciations of Latin words and derivatives used in everyday speech. I also recognise that some botanical names (listed with an asterisc *) which are based on the same roots or prefixes as familiar English words, will often tend to be pronounced analogously.

The pronunciation of Latin long ***e*** is similar to the English pronunciation of **e** as in r**e**in, or to the Italian latt**e** or the French pass**é**. Short English **e** and Latin ***e*** are pronounced identically.as in 'g**e**t'.

The mispronunciation of Latin ***e*** as the English long **E** is confusing since **E** has the same sound as Latin ***i.*** The confusion is compounded when the sound **E** is also wrongly used for the Latin diphthongs ***ae*** and ***oe*** and other vowel sequences. Unlike English, Latin and European vowels do not change in pronunciation before ***r*****;** the English '**er**' sound does not occur in Latin, so ***-er, -ir*** and ***-ur*** should be differentiated and pronounced with their individual simple vowel sounds plus the consonant ***r***.

In the Grevillea book, *erectiloba, eremophila, erinacea, eriobotrya, eriostachya, eryngioides, erythroclada, heliosperma, pterosperma*, *pteridifola* and many other obvious examples, which I need not list here, conform to this rule.

Examples which should also conform: *annulifera, armigera, asteriscosa, aurea, coccinea, coriacea, decurrens, depauperata, diversifolia*, elongata, fuscolutea, helicosperrma, lanigera, lavandulacea, olivacea, sericea, stenomera, phanerophlebia, pilulifera, pinaster, refracta, repens, scapigera, sericea, subtilineata, sericea, superba*, xiphoidea.* New Grevillea Names since 1995: *bracteosa, cheilocarpa, imberbis, nivea*, *(juniperina) subsp. metaxa and subsp. trinervis**,

(Note: *The* silly practice of fusing final ***-cea*** and ***-ceae*** in botanical names into a single syllable pronounced '**sea**' supposedly by analogy with English words like Portsea has no support in either system nor in The Grevillea Book. I mean, we don't say 'Grevillee', 'Hakee', or 'Pime-lee nivee'. Examples frequently thus mispronounced: *coriacea, erinacea, lavandulacea, olivacea*, *Proteaceae, sericea*).

Whether silent or not in a surname ending in **e** following a consonant, that **e** in the derived species name should always be sounded, and pronounced as a Latin ***e*** rather than as an English **E**. Examples: *beadleana, candolleana,* (*diffus) subsp. constablei, georgeana, hodgei, lawrenceana, oldei, roycei*. However, internal silent **e** in the surname should remain silent in the Latin epithet. Examples*: byrnesii, manglesii, manglesioides.*

Latin ***i*** is a simple short or long vowel as in f**i**t, mart**i**n**i,** tax**i,** , and the familiar endings of personal names and other English diminutives -**i**a, -**i**na and -**i**ta (see above). It is never pronounced like the long English diphthong **I** as in n**I**ne**.** Examples (excluding obvious ones): *alpina**, *adenotricha, dimorpha*, diversifolia*, minutiflora*, petrophiloides, pimeleoides, pinaster, pinifolia, (pauciflora subsp.) psilantha* (p not silent)*, psilophylla*, *rhizomatosa*, spinosa, spinosissima, striata, trifida*, triloba**, *tripartita*, triternata*, variifolia*, *xiphoidea.* New Names: *(juniperina) subsp. amphitricha, (diffusa) subsp. maritima, dilatata**, *divaricata, irrasa subsp didymochiton.*

Some people are puzzled about the origin and the pronunciation of the ***-ii*** ending of species names. Under the Botanical Code, (but not the Zoological Code) Latinised surnames of males are formed by adding the ***-i-us*** after a final consonant, or just ***-us*** after a final vowel or **y**. So the first ***i*** is just a link vowel between the surname and the masculine ending.

To form the genitive (possessive) case the final ***-us*** is replaced by ***-i***. Thus Brown is Latinised to ***browni-us*** which in the genitive (possessive) case becomes ***browni-i*** (Brown's).

These genitive endings of male personal species names ending in ***-ii,*** and ***-yi,*** as well as the ***-ii-*** within compound descriptive names should be sounded like the **ii** in sk**ii**ng, not **E-I** as in anglicised Latin and as used in the Grevillea Book, nor condensed to a single vowel sound as commonly heard, although not sanctioned in published systems of anglicised Latin.

Examples: *aspleniifolia*, *banksii, behrii, blackallii, caleyi, cirsiifolia, drummondii, gillivrayi, goodii, hockingsii, huegellii, jephcottii, johnsonii, kenneallyi, linsmithii, lullfitzii, makinsonii, manglesii, masonii, maxwellii, newbeyi, raybrownii, scortechinii, shiressii, variifolia, wickhamii, wilkinsonii, williamsonii, willisii, wilsonii.*

Surnames of males ending in **-er** are treated as if they were already Latin nouns like *puer* (= boy), genitive -- *puer-i,* or like *Alexand-er* -- genitive *Alexand-ri,* the final ***i*** being pronounced as a Latin ***i***, not **I**. Examples*: baueri, baxteri, dryandri, forsteri, fosteri, meisneri, rosieri, walteri.*

Footnote: In my submitted manuscript of Part 1 for Newsletter 82, I omitted to include my name as author and the article was inadvertently and wrongly ascribed, during compilation, to Peter Olde instead of to Max McDowall in the published version distributed to members.

Peter Olde

Grevillea christineae

Ever since the name *Grevillea christineae* was first published it has given orthographers a headache. The name was first given in 1986 in honour of Christine Cornish, an herbarium technician who assisted Don McGillivray with researching his huge monograph and revision of the genus Grevillea. The 1986 publication was by way of a brief, self-published paper on the part of the author validating his new names. The name was there published as *Grevillea christiniae*. However, in the 1993 full manuscript revision, this was corrected to *Grevillea christinae*, a spelling followed by Olde & Marriott (1995) and Bob Makinson (2000).

In a recent online list of threatened flora of Australia, the name is given as *Grevillea christineae* (http://en.wikipedia.org/wiki/List_of_threatened_flora_of_Australia) which impelled me to further search. A quick search of the APNI (Australian Plant Name Index) Website reveals the following comment dating from CHAH (2005) Australian Plant Census:-

'Various orthographic variants of this name have been used: "*G. christiniae*", "*G. christinae*". The ICBN Rec. 60C.1 (a), mandated by Art. 60.11, specifies that the correct orthography is *G. christineae*.'

Discussion with Dr Peter Wilson at Royal Botanic Gardens revealed that the correct orthography has liberally exercised the minds of those charged with correct implementation. The rules for latinisation of Christian Names are much less clear than for those dealing with surnames. If a classical Latin version of the name had been available then this should be the basis of latinisation. In this case, one might look to the name Christina. This name is clearly post classical in that its meaning, 'follower of Christ', suggests it arose following establishment of the Christian religion, which did not really get legs until AD 100. However, the name Christine is not precisely that of Christina even if it has a common origin. Both names are used today and are clearly distinguished. Therefore to latinise the name Christine, one cannot use as its basis the word Christina, since it is the basis of the name Christina. One has to make a new latinisation, Christinea and therefore christineae is the correct orthography.

In 2007, Fred Hort reported a new location for this rare species, known only from three locations previously.

On 24/07/2007, at 4:56 PM, Fred and Jean wrote:

Hello Peter

Mike Hislop WAHERB had a good look at this one from Bells Rapids, Upper Swan and despite its unusual growth habit confirms it to be G. christineae R. Tomorrow environmental reps from the Swan Shire and the Dept of Environment and Conservation Perth Hills District are visiting the site to ensure that the population survives. This is a new rare plant inclusion for both the Swan Shire and DEC Swan Region.

I am pleased with their speedy response particularly since the site is vulnerable - adjacent to a popular picnic/sight-seeing spot on the Swan/Avon River.

We will probably GPS each of the 27 plants and record this for DEC.

We will encourage DEC to get a team of mountain goats to help search for more on the steep slopes in the area.

Take care, Fred

Neil R Marriott

Study Group Display at ANPS Biennial Conference Geelong

As part of the conference (from 26 September 2009), Study Groups are encouraged to put on a static display of potted plants, cut flowers, posters and brochures for the benefit of the hundreds of attendees at the week long conference.

As our leader Peter Olde cannot make it to the conference, I will be putting on a display on behalf of the Grevillea Study Group. It would be greatly appreciated if members, particularly those from Victoria could bring flowering specimens, either in tubs or cut flowers immediately plunged into buckets of water. I will be setting up the display before the conference but members can drop off specimens at any time, making sure that flowering tubs are labelled and have the owners name on them (contact Neil for details on where to drop flowering specimens – see page 1 for contact details).

Let us make this display a real show stopper to show the great beauty of our fantastic Grevilleas! Thanks, and see you at the conference where I will be presenting a talk on my work on landscaping and drought-proofing the gardens at Dunkeld at the foot of the Grampians.

Vic GSG Field trip itinerary

Proposed Itinerary for GSG Field Trip 20th -23/24th November 2009: including New & Revised Species of the *Grevillea Victoriae* Group*.

Leader: Neil Marriott *neilmarriott@westnet.com.au (phone 03 5356 2404 or 0458 177 989). Please register an expression of interest with Neil by September 30th to receive an updated itinerary by EMAIL, or see October NL. (Note: Cold weather gear and good footwear will be essential.)*

Friday afternoon and early Saturday morning: Garden Visit to the home of Martin Rigg and Diana Leggat (02 6027 0636 & 0419 922 389) at Yackandandah (camping space available – local overnight accommodation may need to be booked well ahead).

Saturday: Mt Benambra (*Grevillea callichlaena**) near Mitta Mitta, and Omeo region (*Grevillea neurophylla, Grevillea lanigera* and *Grevillea willisii*). Possibly camp overnight near Tambo River along Bindi Road, south of Omeo.

Sunday: Hells Gate, Brumby Point, Mt Tambo (*Grevillea brevifolia**) then south to Tambo Crossing and Mt Elizabeth (*Grevillea polychroma**).

Monday and Tuesday: Benambra-Corryong road (*Grevillea neurophylla*), Mt Sassafras (*Grevillea victoriae* subsp. *nivalis**). Victorian participants can returning home Monday via Corryong and Murray Valley Hwy (*Grevillea polybractea*, etc.). New South Wales participants can return home via The Alpine Way (*G. victoriae* subsp *nivalis** near Thredbo etc.) and Bemboka State Forest east of Bega (*Grevillea bemboka**, *Epacris impressa*).

References: Vic Roads Map (Edition 7 now available). Victoria's Alpine Area (CF&L or DSE); The High Country Victoria (Hema): Rooftops' Adventure Map Series; Topographic Maps Bega 1:250,000 or 1:100,000.

* V. Stajsic and W.M. Molyneux, Taxonomic studies in the *Grevillea victoriae* F. Muell. species complex I Muelleria 22: 19-76 (2005).

Illawarra Grevillea Park – Open days 2009

July, Sat 18 & Sun 19 and July, Sat 25 & Sun 26
September, Sat 26 & Sun 27 and October, Sat 3 & Sun 4

Location – The Park is located at the rear of Bulli Showground, Princess Highway, Bulli. (Turn at the Woonona-Bulli Sports Club)

Admission – $5 adults, children accompanied by adults are free

Opening hours – the park is open from 10am to 4pm.

For more information email info@grevilleapark.org

Field trip report

Noreen Baxter

Grevillea Study Group (SE QLD) visit to Mount Clunie

On Sunday 26 October 2008, the Grevillea Study Group (SEQ) held its meeting at Mount Clunie near Woodenbong, NSW, which is about two hours drive south west of Brisbane. The property is owned by Jim and Fran Standing who are members of the group and who hosted the meeting. The eighteen members and three visitors who attended found the garden extremely interesting and thoroughly enjoyed wandering around it. The garden, which covers about 2½ acres was magnificent, every part was thoughtfully planned to complement the mountain scenery and is a true bird heaven. The GSG felt very privileged to have Fran and Jim share it with us.

The property, which borders the World Heritage listed Mount Clunie National Park, was purchased by Jim's Father in 1952 to provide timber for the local sawmill. Fran and Jim moved onto the property about 15 years ago and started transforming the house and surrounding cleared land into the home and splendid garden that we visited. The house has a wide, continuous verandah on three sides, and is surrounded by extensive garden beds on all sides. There is an extremely well planned vegetable garden in the north west corner of the garden. Over the Mount Clunie side of the hill at the back of the house, completely out of sight from the house, are two holiday cabins.

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The drive into the property separates the developing rainforest on the west and the panoramic "front garden" to the south of the house. The garden beds are all defined by rock borders, and large boulders have been used to develop some raised beds. All the rocks have been sourced locally, in fact the largest have been relocated from within the property – Jim has an intimate knowledge of each rock!

The west side of the house has been planted with tall shrubs and a rainforest garden to protect the house from the winds that blow continuously for six weeks each year.

The front garden facing Mount Clunie Road contains two large ponds in addition to the garden beds. One garden bed runs along the front fence curving up around the large pond, at the south east corner of the garden. The pond at the front of the house is completely surrounded by garden beds; this pond contained a large number of Australian tadpoles (not cane toads!!).

From the verandah on the east side of the house Mount Lindesay can be seen in the distance. Here the garden consists of expansive lawn areas, interspersed with some specimen plantings, spreading from the front pond to the newest garden beds that are being established with grafted banksias from Western Australia plus other plants.

The north east corner, and currently back boundary of the house garden is bounded by an electric fence to stop the cows from pruning the garden. The entire garden is surrounded by a netting fence to keep the wallabies out.

Looking north from the back verandah plants graduate up in height from ground covers in the foreground to taller plants at the back. This draws one's eyes up the slope and there above the tallest plants the garden appears to flow seamlessly into the rainforest on Mount Clunie in the background. This garden bed completely conceals the huge garage and workshop at the back of the house.

What is growing in the garden? Just about everything you could imagine. The topic of the day was "Grevilleas that grow within 200k of Brisbane" and it seemed that most of those discussed were waiting to be viewed in the garden; many of the plants are now self seeding. The garden contains over 220 different Grevilleas.

In addition, there was an unbelievable number and variety of Scaevolea, Anigozanthus, Melaleuca, Eucalyptus and Hibiscus species. Also there were Persoonia, Banksia, Westringia, Hovea, Eremophila and many, many more – just too many to remember. The list seemed endless – no wonder Fran maintains a computerised list.

It was not only the variety of plants that was noteworthy, but also the growth habits which were amazing. Despite the fact nothing is watered everything looked so healthy and huge. It was like a land of giants. In particular there was a ground cover *Banksia integrifolia* that was about 1m high with a spread of about 4m x 2m; a Westringia that looked almost 2m high with a diameter of 4m; and the most amazing was a pinky red paper daisy that had grown tall enough to get its head above the 3m high shrubs it decided to grow amid!

With such a wealth of native plants the bird life is prolific – creating a "birdos" paradise. Another feature mentioned earlier was the vegetable garden: this was totally enclosed in fine mesh especially designed to allow the native bees to move in and out from the vegetable garden and their hive, which was located in the enclosed area, while keeping out any European bees, moths and large birds such as the Satin Bowerbirds which like to dine on the vegetables, however the Superb Blue Wrens and White browed Scrub wrens can move in and out under the gate and help to keep down insect pests.

This is a garden well worth a visit by anyone interested in any Australian plants, birds, bushwalking or nature in any form. Accommodation is available on the property: further information can be found at www.mountcluniecabins.com.au.

A number of members chose to drive up the day before the meeting so on Saturday night those present enjoyed socialising and relaxing over a communal dinner. Sunday morning at 6.30 a.m. the group, led by Jim, did a quick walk into Mount Clunie NP which was so interesting that it was tempting to forget the meeting and keep enjoying the bush.

Many thanks to Fran and Jim for being such gracious and interesting hosts. The garden is a credit to you both and everyone who visited it took home new ideas and wonderful visual images to enjoy in quiet moments.

Noreen Baxter

Grevillea Study Group (SE Qld) Report

The Grevillea Study Group (SE Qld) has continued to meet regularly in 2008. Each meeting has been hosted by a member at their home. In addition to the topic for that meeting members have enjoyed a guided tour through the hosts' garden. This adds enormously to the interest and knowledge of those attending the meetings.

29 June, 2008

This meeting was hosted by Jan Glazebrook and Denis Cox at Logan Village. The topic for the day was "Growing Grevilleas on their own roots." As Jan, Denis and others had recently returned from the Grevillea sale organised by GSG Leader, Peter Olde, in NSW there were lots of new treasures to show members. Then Jan led members in an enthusiastic discussion of the topic. Members reported good success in growing some species on their own roots in the area where they lived. After the meeting, Jan and Denis led members on tour of the garden which was scheduled to be one of the "ABC Open Gardens" in August and was to be featured on the ABC "Gardening Australia" programme. (Note: The TV coverage was very well done and showed the beautiful native plants in the best possible way. The "Open Garden" weekend was a great success and everyone who attended must have been impressed.)

31 August, 2008

This meeting was hosted by Tim Powe at Ipswich. The topic for the day was "Manipulated and natural hybrids". Some of the members showed the flowers of hybrids that had been found in their garden. It would seem that *Grevillea banksii* is particularly promiscuous. Merle Gynther showed their "Horse paddock" Grevillea which appears to be hybrid of *G. banksii*. Everyone joined in the topic discussion, and Bryson Easton provided an interesting insight into how he, and others, "manipulate" hybrids – that was fascinating and extremely interesting. After the meeting Tim led those present on a tour of his garden. The garden abounded with Eremophilas, Correas, Croweas and Acacias in addition to many Grevilleas interspersed with some wonderful Australian animal artworks.

20-21 September, 2008

This was the SGAP Flower Show at Mount Coot-tha at which the GSG mounted a display of Grevillea flowers.

26 October, 2008

This meeting was hosted by Fran and Jim Standing at Mount Clunie, Woodenbong. The topic for the day was "Grevilleas that grow within 200k of Brisbane". Denis Cox had researched this topic and prepared a list, with copies for everyone, of all the Grevilleas he had found that fitted this criterion. The list proved invaluable in the discussion that followed under the guidance of Denis. After the meeting Fran and Jim led everyone on a tour of their garden, which has been described in the attached article.

The final meeting for 2008 will be on Sunday 30 November at the home of Merv and Olwyn Hodge. The topic for the day will be "Grafting" – which was held over from the April meeting at Helidon.

GSG SE Qld certainly has some very talented members and the gardens that have been visited have been thoughtfully and creatively planned individual creations that display Australian plants in a manner that highlights their true beauty. Their labour of love is truly appreciated by the other members and on their behalf I thank everyone who has hosted, and will in the future host, our meetings.

Direct deposits can be made into the Grevillea Study Group account

BSB 112-879
Account Number 016526630
(St George Bank).

Please notifiy the Treasurer of transfer by email (**bruce.moffatt@tpg.com.au**)

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

John Beasley

Grevillea decora

I was researching this grevillea on the internet this afternoon – only 1 hit – which was in your interesting newsletter.

I note that you are asking for further information on this species.

I have spent the past 2-3 years working on a compact guide to the plants of Cape York. In my travels I stumbled on this plant, somewhat to my surprise, probably about 1 km from where the type specimen is located near Split Rock south of Laura. My first assumption was that I had found a new location for *Grevillea glossadenia*, but I quickly found the entry in the Flora of Australia for *Grevillea decora* ssp. *telfordii*.

Grevillea decora* subsp *telfordii

I was passing this area again a few weeks ago and stopped and took photos of the plant in flower.

If you would like any information I can provide on what I have seen of the plant, including photos, I am happy to assist. It certainly grows to over 2m, as you suggest, though I doubt any I saw were much over 3-4m.

I'm not sure I have either the time or inclination to join the association, though I wish you well.

Grevillea decora* ssp *telfordii

Ann and Peter Radke

We were travelling around the Laura area (southern Cape York Peninsula) on the weekend, and decided to check out the population of *Grevillea decora* located about 25km south of the township. We have been following this population for over thirty years now, particularly since it is so close to the road and hence a bit precarious. Despite searching, we've never found another population in the area.

In the last couple of years, a new bitumen road has been built which now goes to the west of the plants, so if you want to find them you have to find the old road (which is now badly washed out and not really accessible any more). Anyway, we can report that the population is alive and well and looking quite good... not surprising since it is no longer covered in dust from the road.

I remember an article in the Grevillea Study Group Newsletter a few months ago about this population, and differences from 'standard' *G. decora*, but I can't remember the details.

Nevertheless, our observations are:

1. Differences from Subsp. *decora*:

- Smaller flower heads
- Pale pink flowers (as opposed to bright maroon as in standard *G. decora*)
- Upper surface of leaf green (as opposed to grey-blue in standard *G. decora*)
- Foliage has some resemblance to *Grevillea glossadenia*
- Pants are smaller (average 2 – 2.5m) and more open than *G. decora* (av 3m)

2. Similarities to Subsp. *decora*:

- Similar form
- Small population of only about 20-30 plants (didn't count them). You often find small populations of subsp. *decora* in odd spots like this.

Katherine Downs, National Herbarium of NSW

Grevilleas in the Top End

In September 2007, the annual symposium of the Australian Systematic Botany Society was held in Darwin. Having never been to the Northern Territory and sensing an opportunity not to be missed, Gillian Towler and I, both Curators at the National Herbarium of NSW, hatched a plan to attend. We needed to make our application for travel funding too good to refuse: step 1 was the added opportunity to take part in training workshops (Botanical Latin for Gill and Bryophyte Identification for me); and step 2 was to find out if plant material was needed from the Northern Territory for current research projects. Without hesitation, Dr Peter Weston put up his hand for samples of *Grevillea rubicunda* and *Grevillea dunlopii,* and our travel proposal was up and running!

Grevillea rubicunda and *G. dunlopii* form a distinctive group of two species within the genus Grevillea and are interesting both biologically and biogeographically. Anatomically, they have a nectary consisting of four separate erect lobes, a feature which is not seen elsewhere in Grevillea except as an occasional aberration in single flowers. They are also distinguished by their sessile basioscopic flowers and buds crowded at the apex of very long floral rachises which in some cases seem to elongate after bud formation (Fl. Aust. 17A 2000). They are both uncommon species, endemic to western Arnhem Land and the Kakadu escarpment.

Based on these anatomical differences, Don McGillivray excluded *Grevillea rubicunda* from the genus Grevillea entirely, believing it to be an undescribed genus within the family Proteaceae. A closely related species, *Grevillea* sp. aff. *rubicunda* was later recognised by Olde and Marriott and formally named *Grevillea dunlopii* by Bob Makinson in 2000, in honour of the former Director of the Northern Territory Herbarium, Clyde Dunlop, who collected what is now the Type specimen.

The two species have no obvious close relatives within Grevillea, which raises intriguing questions for taxonomists. Are their shared features an old character within the genus or a more recently developed character? Are these species at the bottom of the family tree or the top? Are they in the genus Grevillea at all? In order to answer these questions, a study is currently being undertaken to develop a phylogeny of Grevillea – that is, to determine the evolutionary relationships between the species and try to reconstruct the family tree. Anatomical features have only been able to tell us so much, so this study is comparing characters at a genetic level using particular segments of DNA.

Our first step in preparing for fieldwork, was to study existing collections of *G. dunlopii* and *G. rubicunda* held at the NSW Herbarium and make a list of known localities. This was an interesting task in itself, since localities such as 'Kakadu' on older specimens are not very helpful! Peter Olde was the first to break the news that we would need a helicopter to reach the escarpment sites. The western Arnhem Land plateau is a rugged and remote area of sandstone, rising hundreds of metres above the surrounding plains. Helicopters don't come cheaply at around $800 per hour and state government funding being what it is, this was going to be a difficult matter. Peter generously offered to contribute funds on behalf of the Grevillea Study Group towards hiring a helicopter. We also began the process of applying to traditional owners and the NT government for permission to collect.

After months of serious planning, we finally stepped off the plane in Darwin to 32 degrees at midnight – our first introduction to the tropical north of Australia. The symposium and workshops gave us a chance to acclimatise to tropical conditions before heading off to begin fieldwork in Kakadu National Park. Our learning curve was steep and fast – September-October marks the end of the dry season and the start of the 'build-up' to the wet. After months of baking heat and no rain, many plants have retreated into the soil to wait as seeds or underground storage organs for the wet season. Traditional owners were busy burning off dry vegetation on the floodplains. For some our non-*Grevillea* species, we found the race was on to visit sites before they were completely blackened.

Our helicopter day dawned bright and smoky – lightning strikes had started wildfires in Arnhem Land. We began early to beat the heat (38 degrees in the Jabiru area, plus a few more degrees once up on the sandstone plateau). Our pilot was on call to National Parks and so flew off to help with fire-fighting in-between dropping us at one location and taking us to the next. The Kakadu stone country is truly amazing: remote, wild, extreme, ancient and beautiful. We had a range of four sites in the course of the morning – open sandstone pavement areas, shallow dry gorges cut into the surrounding plateau, steep black rocky hillsides and sparse woodland by

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remnant bogs. We saw many Grevilleas living in this environment – plenty of tall *G. pteridifolia* dominating the burnt sites; silvery *G. formosa* spreading across sandstone too hot to walk on; *G. dryandrii* with its sticky fruits, growing lushly in deeper protected soils around rock outcrops; *G. pungens* with striking red and black flowers. We scoured the areas as best we could in the time available – really you need to camp up there for a week. And how different it must be once the rains come! Ultimately, *G. rubicunda* and *G. dunlopii* both eluded us on this day, which raises interesting questions about population dynamics and the effects of fire. We did find other species of interest and began to get our eye in for the sandstone vegetation and NT flora – so very different to the southern vegetation we are used to. The flight itself was absolutely superb as we flew over a landscape created on a massive geomorphological scale: dry river beds of white sand winding across lowland hills and floodplains, the eroding plateau creating pinnacles, gorges, chasms and outliers, plus a bird's-eye view of the open-cut uranium mining operations at Ranger.

If time and money had allowed, Jim Jim Falls was but a short flight further south along the edge of the plateau. Later that week, we drove the 60 km corrugated road in from the Kakadu Highway and made the climb up on foot. What a day! The temperature was in the high 40s, the humidity almost unbearable and the heat off the rocks extreme – this was a real physical challenge. At this time of the year, there was no water coming off the falls – just a few stagnant pools in the massive gouged creek channel at the top. In yet another extreme landscape, we were thrilled to finally come across *G. rubicunda* alive and well in a good-sized population not far from the main channel. It is a very attractive small shrub, with finely-divided foliage and long flowering stems. In flower and early fruit, it really is a very distinct Grevillea. We made our collections and, conserving our last drops of water, headed back down the escarpment.

We made further searches for *G. dunlopii* on foot around the base of the escarpment in northern Kakadu, but with no luck. I suspect that both the long dry season and recent high intensity fires had affected plants in these areas. The wet season may well see them sprouting again from seed.

Samples of leaf material for DNA extraction were sent off to researchers and are currently being analysed. We are keen to see if the results will reveal where *G. rubicunda* fits into the Grevillea family tree. Gill and I heartily thank the Grevillea Study Group for contributing funds to this field work.

Merv. Hodge

Seasonal Trivia

Often, the starting dates that are regarded as the beginning of the seasons are: 1st September for Spring, 1st December for Summer, 1st March for Autumn and 1st June for Winter – but are these correct?

Before going any further I'd like to review other seasonal terms. Whilst a day is 24 hours, I have used the term 'day' loosely in place of daylight, i.e. sunrise to sunset.

Equinox is the time that there is equal day and night when the sun is above the Equator. This happens twice per year.

The Equinox prior to the beginning of Autumn is called the Autumnal Equinox and the one prior to the beginning of Spring is called the Vernal Equinox. The longest day of the year is known as the Summer Solstice and the shortest day of the year is known as the Winter Solstice. Give or take a day or so, these occur on the following dates in the Southern Hemisphere:

Vernal Equinox	21st September
Autumnal Equinox	21st March
Summer Solstice	21st December
Winter Solstice	21st June

The seasons (according to the Oxford Dictionary) are actually as follows, in my own words:

Summer is from the Summer Solstice to the Autumnal Equinox (21st December to 21st March);

Autumn is from the Autumnal Equinox to the Winter Solstice (21st March to 21st June);

Winter is from the Winter Solstice to the Vernal Equinox (21st June to 21st September);

Spring is from the Vernal Equinox to the Summer Solstice (21st September to 21st December).

Sorry folks, but that long awaited start of Spring does not commence until about 21st September and

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not 1st September as is usually stated. However, some of us will still regard the commencement of Spring (or the other seasons), depending on what is happening with the plants and birds in our area.

Temperatures will roughly follow the seasons but will be affected by various other influences such as latitude, coastal, inland and elevation. The actual day length will vary with latitude to the degree that the sun doesn't set at the south pole during Summer. One only has to travel to Victoria from any part of S.E. Qld to experience the long twilights experienced there. However, mid-winter is quite the opposite – we have a longer day length than further south.

In the Northern Hemisphere the exact opposite seasons are experienced at the same time.

Horticulture

Setyadjit[AB], D.E. Irving[AC], D.C. Joyce[A] and D.H. Simons[A]

Cut flowers

Vase treatments containing gibberellic acid do not increase longevity of cut *Grevillea* 'Sylvia' inflorescences

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[B] Indonesian Agriculture Postharvest Technology Research Institute, JL. Ragunan 29A, Pasarminggu, Jak-Sel, Indonesia.

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Abstract

The longevity of *Grevillea* 'Sylvia' inflorescences can be very short and is influenced by exposure to ethylene. Gibberellic acid has the potential to delay senescence in some cut flowers by acting as an anti-ethylene treatment. Gibberellic acid was therefore applied to *Grevillea* 'Sylvia' inflorescences in vase solutions to determine its effects on longevity. Treatments with gibberellic acid did not prolong the longevity of inflorescences or influence 1-aminocyclopropane-1-carboxylic acid concentrations. Treatments at high gibberellic acid concentrations enhanced flower abscission and we therefore conclude that vase-applied gibberellic acid treatments are not suitable for extending the longevity of cut *Grevillea* 'Sylvia' inflorescences.

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Daryl C. Joyce, Sarah A. Meara, Suzan E. Hetherington, Peter Jones

Cut flowers

Effects of cold storage on cut *Grevillea* 'Sylvia' inflorescences

Abstract

Grevillea 'Sylvia' is a novel cut flower of sub-tropical to tropical origin. Cut inflorescences were dry-stored at 0, 5 or 10°C for 3, 6, 9 or 12 days. Inflorescences stored at 0°C for 3 or 6 days maintained a post-storage vase life of 7 days, which was similar to that of non-stored (control) inflorescences. There was no evidence of chilling injury even after 12 days at 0°C. Stems stored at 5 or 10°C for periods of 9 or 12 days suffered significant loss in vase life. Shortened longevity was associated with increased levels of flower and perianth abscission. Respiration rates of inflorescences stored at 0, 5, 10 or 22°C fell markedly with decreasing temperature. Temperature quotients (Q[10]) estimated for 0-5°C, 5-10°C or 10-22°C intervals were 2.1, 3.8 and 3.4, respectively. Inflorescences stored dry at 0°C for 6, 12 or 18 days maintained vase lives about 1 day longer than those stored wet. Vase lives after 6, 12 or 18 days dry storage were 8, 6 and 4 days, respectively. To simulate non-refrigerated export by aircraft, inflorescences were held wet or dry for 2 days at 22°C. Vase life of stored inflorescences was shortened by 1 day compared to non-stored control inflorescences. There was no difference in inflorescence vase life between wet versus dry transport simulation.

Revue / Journal Title

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Merv. Hodge

Blue metal crusher dust as a source of calcium

Whilst attending the Grevillea Study Group plant sale at Peter Olde's home last April, I was one of a panel answering questions from an audience of interested people attending the sale.

The questions were random and not all specifically on grevilleas. The idea was put forward that blue metal (basalt) crusher dust was a source of calcium. From my following comments it will be obvious that I have doubts about this but unfortunately I did not have the opportunity to talk about other known and proven sources available and their effects on pH. I take this opportunity to put forward my ideas, supported by those of two other well-respected members of SGAP (see my note at the end of this article).

For over 10 years, up until 12 months ago, part of my experience in the nursery industry was working on weekends in a busy retail native plant specialist nursery, advising customers as well as running my own production nursery (mainly grafting) during the week. I heard many misconceptions people had about plants and products. From time to time blue metal crusher dust was mentioned, usually as a source of trace elements. I do not recall calcium being mentioned. I asked one customer if he had tried it and of course he said no but he had heard about it.

When customers wanted something to break up clay I would avoid lime or dolomite because of their potential to change the pH towards alkaline, but recommended gypsum because it has little effect on pH and is a source of soluble calcium. I have not seen blue metal crusher dust available in retail nurseries or garden centres as a source of calcium or trace elements. I feel sure that if it had any potential for this purpose it would have been capitalised on long ago. It has been confined to landscape supplies for various uses such as bedding below pavers and this is where I believe it should stay.

If claims for trace elements and/or calcium are to be believed, have any controlled tests been carried out and published. If so please tell me where it can be sourced and put to the test by others to confirm its accuracy. It should also include dosage rates and effect on pH. If not, then one must regard it with healthy scepticism.

If there are proven trials carried out with good results please let members know or we risk perpetuating a myth and it is not in the Society's best interest to go down that track. I would also like to know if it was applied straight to soil or used in potting mix, in which case the calcium may have already been there. Was the raw blue metal crusher dust tested before it was used? In other words how was it determined that any claimed calcium came from the crusher dust. It has been suggested to me that blue metal crusher dust claimed calcium content may vary from one source to another. If this is correct, surely this non-uniformity alone is a good enough reason not to recommend it.

I may seem to be unnecessarily 'rocking the boat' but if these claims cannot be confirmed and it is only hearsay, I think that the Society is in danger of losing credibility, particularly if people find that it has a detrimental effect. Members and the public may not remember who said it but I would bet that they will remember that they heard it at the plant sale. I will repeat that there are known sources of soluble calcium currently available with recommended usage rates, so why use something unproven.

Meanwhile I remain sceptical but am willing to listen to a good and proven argument. However I'd like to bet that we never see it on sale as a source of calcium or trace elements in nurseries or garden centres.

After writing this article I sought the opinions of two other SGAP members. David Hockings, a retired Horticultural Adviser with 40 years experience in the DPI Qld and Don Loch, a retired Agronomist, also with 40 years experience in the DPI Qld (he is also a Grevillea Study Group member). Both supported my article as well as doing extra research on the subject. With Don's approval, I have reproduced his email on the subject as well his more detailed comments on my article.

Don's email to me: "You are certainly on the right track with your article. There is little or no legislative control on soil fertility and soil amendment products (unlike the situation with pesticides), and so these come with the full suite of myths, gross inaccuracies and unadulterated snake oil. I've put some detailed information together for you in the attached document to explain the technical background to the issues you are addressing. Feel free to borrow anything that you feel could add emphasis to what you already have."

Comments on Merv's GSG article
By Don Loch

There are two main issues to be considered: the elements that crusher dust might contain, and

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how (and when) they might become available to plants. Essentially, the key questions that should be asked when considering what benefit any soil amendment will provide are: "What nutrients (or other benefits like balancing acidity and alkalinity) does the material contain?", "How much of the nutrient does it contain?", and "How soluble will this material be in my soil?".

Soil is derived from rocks via natural decomposition processes (weathering), and the mineral composition of soil and the rock from which it is derived are very similar. However, while rocks contain both macronutrients (mainly N, P, K, Ca, Mg) and micronutrients (trace elements), these are not in an "available" form that the plant can use. Even after the mined rock is crushed into small pieces of rock and dust, the availability of the nutrients it contains will barely change. Instead, the rock needs to be broken down by natural soil-forming processes so that the minerals in it can be made available to plants, and this takes a considerable length of time to happen. Certainly, the nutrients locked up in rock will not be available to plants in the short term when applied as crusher dust. Even in a humid climate, the weathering process leading to soil formation (and nutrient availability) is more likely to be measured in human lifetimes rather than in days, weeks or even years.

Among other factors, the availability of different nutrients in a soil is influenced by the pH (which measures the acidity or alkalinity of the soil). One analysis of crushed basalt quoted in at least a couple of places on the internet shows a pH of 9.1, which is highly alkaline. (The pH of other sources and types of rock may vary considerably from this.) The analytical results for other elements in that crushed basalt example show total amounts of each element, not the available amounts.

Lime (calcium carbonate – CaCo3) is another (special) kind of rock dust used to increase pH and is also applied on occasions as a source of calcium. Its solubility decreases approximately 100-fold with each increase of one pH unit, so that by pH 7.0 the solubility of lime is so low as to be negligible (see the figure below, on which the y-axis has been plotted on a log scale). For a soil with a pH of 8.0, solid calcite will be in equilibrium with carbon dioxide in the soil and with Ca in the soil solution, such that if you add more lime, nothing will happen. By way of comparison, the solubility of gypsum remains constant as pH changes, and so its solubility line is horizontal.

Rock phosphate, another form of crushed rock, contains both calcium and phosphorus, but is most commonly applied to soil to supply phosphorus (rather than calcium). As with lime, the solubility of rock phosphate is pH dependent. But in this case, above about pH 5.5 (which is roughly what you get on the poor forest soils around Brisbane), the solubility of rock phosphate becomes too low to supply the phosphorus requirements of agricultural crops. In acid soils, however, rock phosphate can be used effectively.

Pure calcium carbonate contains 40% Ca. Agricultural lime, however, may also contain some magnesium (Mg) carbonate, oxide or hydroxide. Dolomite or dolomitic limestone is a special form of lime containing at least 8% Mg in the form of magnesium carbonate. Gypsum contains 22% Ca and 17.5% S, although these concentrations can vary slightly with source.

The principal role of calcium in the plant is to stabilise cell membrane and cell wall components – the outside of the "living" part of the cell. Inside the cell, the concentration of calcium is VERY low, and the plant expends a lot of energy to ensure that this condition is maintained. Uptake of calcium is almost exclusively through the cell walls of young cells, with transport through the plant via the xylem (the "plumbing" system that moves water from the roots to the leaves). Calcium is required at the growing tips of the plant, and without a continuous supply of calcium the growing tip will die. For shoot tips, it is moved up from the roots by the xylem. For root tips, the calcium must be in the soil solution where the root is growing. The symptoms of calcium deficiency are very apparent. Nevertheless, Ca deficiencies are relatively uncommon in practice (or rather the supply of Ca is usually adequate for plant needs), except on very acid soils where competition from aluminium and manganese can displace Ca from the cell membranes and cell walls to induce calcium deficiency.

Always remember that many Grevilleas and other native plants that we grow come from agriculturally poor soils deficient in one or more nutrients (or in some cases perhaps with levels of certain nutrients that might prove toxic to conventional crop plants). So why do we somehow feel obliged to create a good agricultural soil to grow them on? Certain species at least MAY grow somewhat better on a more fertile soil, but then the increased competition from other plants in that more benign environment might also prove too much for them.

And if you do want a fertiliser, then buy one. It will end up much cheaper in terms of available nutrients than buying crusher dust!

Norm McCarthy, Toowoomba SE Qld Study Group

As a long-term member of S.G.A.P. and likewise Grevillea study with Merv Hodge in its earliest days, I have grown and grafted plants of note. My previous garden of one acre in Toowoomba boasted approximately 100 grevilleas. Some were grafted latterly. However most were cuttings of many species as well as some repetitions.

Some four years ago we moved to a smaller property thus leaving our thriving garden with regret. However in a lesser garden we have engendered quite a new approach, which includes of course, many Grevilleas 30 in fact. Not bad for a small block with many other native plans and some exotics.

A relatively recent addition has been *Grevillea* "Peaches and Cream". What a wonderful non-stop flowering shrub 2mx 2m. This evolved as a seedling self-sown, a white *Grevillea banksii* while the other parent a low growing pink flowering *Grevillea bipinnatifida* was growing alongside. This incredible cultivar occurred in the garden of Dennis Cox and Jan Glazebrook of Logan Village in S.E. Queensland.

The leaf is similar to Robyn Gordon in general terms and for that matter also *G. bipinnatifida* naturally enough. Plant is compact and dense and approximately 2mx 2m and fast growing. Flowering is constant year round but stems are somewhat short for cutting presentation.

The floral appendages are terminal and greatly resemble *G. bipinnatifida* in shape, perhaps slightly shorter but occur in multiples terminally as to provide constant blooms producing copious nectar. Colour is peach pink at base, tapering to cream tips of equal lengths at the apex. Usually there are three brushes together and they are larger in spring. Length of brush 10 to 15cm wide at base with form of *G. bipinnatifida*. Stamens are 5cm long and pollen presenter pink. I have counted 8 species of honeyeaters and 5 species of parrots and is the best bird attracter I have ever seen.

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.

Grevillea armigera	*Grevillea monticola*
Grevillea aurea	*Grevillea nudiflora*
Grevillea baileyana	*Grevillea paniculata*
Grevillea candelabroides	*Grevillea petrophiloides*
Grevillea drummondii	*Grevillea polybotrya*
Grevillea excelsior	*Grevillea pulchella*
Grevillea decora	*Grevillea refracta*
Grevillea floribunda	*Grevillea superba*
Grevillea glauca	*Grevillea teretifolia*
Grevillea johnsonii	*Grevillea tetragonoloba*
Grevillea leucopteris	*Grevillea triloba*
Grevillea longistyla	*Grevillea wickamii* ssp
Grevillea magnifica ssp	*aprica*
magnifica	*Grevillea wilsonii*

Free + s.a.e.

Grevillea banksii	*Grevillea leucopteris*
– grey leaf form	*Grevillea longistyla*
Grevillea banksii	*Grevillea* 'Moonlight'
– red tree form	*Grevillea* 'Moonlight x
Grevillea banksii	Ivanhoe'?
– red prostrate	*Grevillea petrophiloides*
Grevillea Bon Accord	*Grevillea plurijuga*
Grevillea caleyi	*Grevillea robusta*
Grevillea floribunda	*Grevillea* 'Sandra Gordon'
– ex The Rock NSW	*Grevillea superba*
Grevillea johnsonii	*Grevillea treueriana*
Grevillea johnsonii 'Orange'	*Grevillea wilkinsonii*

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

Fresh stocks of garden seed are desparately 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 – February 2009

Income

Subscriptions	$941.00
Donations	10.00
Interest	65.90
Seeds	11.00
	$1,017.90

Expenditure

Newsletter publishing	$180.00
Seeds	371.03
Postage	136.45
Bank fees	5.00
Stationery	29.25
	$692.48

Amount in Interest Bearing Deposit till 5/10/09
$24,002.34

Balance in Current Account 1/7/09
$9,161.05

Balance in Business Cheque Account 1/7/09
$10,462.95

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Curator of Seed Bank
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Phone (02) 6925 1273

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

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http://users.bigpond.net.au/macarthuraps/grevillea%20study%20group.html

Deadline for articles for the next newsletter is 30 September 2009, please send your articles to peter.olde@exemail.com.au before this date.

If a cross appears in the box, your subscription of $5.00 is due.

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

Please make all cheques payable to the Grevillea Study Group.

2008	2009

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

Change in Membership Fees

GSG fees haven't increased for over 20 years. There's not too many things you can say that about! At present our newsletter costs are and have been for some time much greater than our income. We are also planning to add more colour to the newsletter using digital images, which will cost us more for priniting. From January 2010, the annual subscription will increase to $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 remains at $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 – it would certainly make my job easier! Christine Guthrie