

GSG Victoria Chapter

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VIC Programme 2005

Sunday, 11 September

Тіме: 10.30am

Newsletter No. 71

- SUBJECT: Garden visits in Melbourne Eltham area Yarra Yarra District Group members will also be invited to attend. The planned itinerary has had to be reconsidered and will be advised by EMAIL or surface mail to local members in the next few weeks.
- **Рноме:** Max McDowall on (03) 9850 3411

Friday, 28 October – Tuesday, 1 November

- SUBJECT: Grevillea crawl through western Victoria to South Australia.
- See page 4 for further details.

GSG QLD Programme 2005

Sunday, 26 June

VENUE: Home of Denis Cox & Jan Glazebrook, 87 Daintree Dr, Logan Village, 4207 PHONE: (07) 5546 8590 SUBJECT: Propagation by seed Sunday, 28 August

- VENUE: Home of Merv. & Olwyn Hodge,
- 81-89 Loganview Rd, Logan Reserve, 4133 Рноме: (07) 5546 3322
- **SUBJECT:** Propagation by grafting

Sunday, 30 October

VENUE: Home of John & Pat Morse, 10 Smiths Rd, Wights Mountain, 4520
PHONE: (07) 3289 1431
SUBJECT: Survey of grevilleas still in members' gardens in S.E. Qld.

Morning Tea at 9.30am - meetings commence at 10am.

For further information and directions contact Merv. Hodge, PO Box 381, Waterford, Qld. 4133. Phone/fax: (07) 5546 3322or Email: mervhodge@quicknet.com.au Newsletter No. 71 – June 2005

GSG NSW Programme 2005

For more details contact Peter Olde 02 4659 6598

Sunday, 26 June

- VENUE: Bushwalk Darkes Forest
- TIME: Meet 1.00pm at the corner of Old Princes Highway and Darkes Forest Rd.
- **DETAILS:** There are at least 4 species of Grevillea to be seen on this walk. This is part of the ongoing search for *Grev. caleyi/macleayana* recorded by Nathan Kirkwood in this area.

Sunday, 31 July

- VENUE: Bushwalk Blue Mountains NP.
- TIME: Meet 1.00pm at Mulgoa Park, Mulgoa Rd. Mulgoa.
- **DETAILS:** From here we will drive west along ? Mayfair Rd (signposted to NP) to the eastern side of the National Park. Along the way we will see a form of ? *G. sericea* and other species. Park at the end of the road in car park. Short walk to spectacular scenery over the Hawkesbury-Nepean and to see *Grevillea phylicoides* (not previously recorded from this location).

Saturday, 27 August

- VENUE: Home of Alex & Dorothy Robertson 3 Ormonde Rd., East Lindfield, off Crana Ave. Please note that Ormonde Rd. is a broken road that traverses a valley. To get to No.3 you need to turn off Crana Ave to the right at bottom of hill.
- Рноме: 9416 7570
- TIME: 9.30am for 10.00am start.
- SUBJECT: Garden Visit. Many Grevilleas in cultivation. Over 200 Rainforest species. Report on the Plant Sale.

September – No meeting.

Sale of remaining plants at Mt Penang.

October - Field Trip, organised by Vic Chapter.

Sunday, 27 November

SUBJECT: Christmas Party and Garden visit.

VENUE: The Oldes, 140 Russell Lane Oakdale.

Рноме: 4659 6598

- TIME: 9.30am for 10.00am start.
- more details next newsletter

I was staggered recently when I opened a page on the web. Its URL was www.flowercouncil.org, the website of the Flower Council of Holland. Under Novelties 2004, I found a reference to new cultivars and hybrids that I did not know (see article p.13 this Newsletter) G. 'Misty Red', G. 'Yovel'. I have some information on G. 'Misty Red' but G. 'Yovel', the fourth most popular cultivar sold at the Dutch Flower Auctions is a mystery. The number of blooms of G. 'Misty Red' being sold was amazing. It certainly shows the value of research. We are not that far behind but we sure are missing out on something.

I recently joined a walk organised by the Fern Study Group along Mooney Mooney creek near Gosford, New South Wales. Ostensibly this was to show support for my wife's interest in 21 ferns that had been collected previously on this walk. However, the walkers also envisaged passing Grevillea shiressii and I was keen to see it again. I had been there nearly 20 years ago with the late Pat Akkersdyk. It is an interesting and relatively easy walk for which I have compiled a flora list in memory of Pat, that indefatigable and inspirational list maker. Pat was famous for walking on a given track, compiling a list of plants seen on the way, and writing it down for others to use. Sutherland Group has a list of all Pat's lists. A list of lists if you like.

Grevillea shiressii is still going strong in the deep depositional alluvium beside the creek, within the floodzone surely, but rarely as robustly as plants seen in cultivation. Most plants had main stems less than 20cm wide and were relatively spindly, single-stemmed plants. Some were in flower (May 22). The Grevillea SG will do a walk here next year. Also seen were a few plants of *Grevillea linearifolia*.

While in the area, I took the opportunity to call on Don McGillivray who lives at Point Clare. It is 20 years since Don retired from the NSW Herbarium because of the effects of Parkinson's Disease which continues to ravage and torture this wonderful man. His wife and carer, June, welcomed us in and we spent a memorable few hours in the company of the great man whose mind is still as alert and keen as ever. Don showed me the Engler medal and letter, written from Hungary where it was presented *in absentia*, for the most significant taxonomic monograph published in 1993. Never has so deserving a recipient been so appropriately acknowledged. I regularly use the work in my own research and have the greatest admiration for its contents and author. Don turns 70 on 26 August 2005.

Neil and I are currently working on a new book, the title of which is still undecided, but the contents will reflect a treatment of the Hybrid Grevilleas. It is interesting, to me at least, that while much attention is focussed on rare wild species, deservedly so, many hybrids once popular and widely grown have quietly and unexpectedly slipped into extinction. I have compiled a list of plants that we can no longer find in gardens around us. Can any of you help? If so, please let us know.

I am currently experiencing email problems since my ISP provider of ten years or so sold out to a company in Toowoomba. The domain name australians.com was not included in the sale and the owners have decided to shut it down. The service provided by the new provider is vastly inferior and I doubt that I will be there long. My current temporary email address is petero@bb.com.au but may have to alter shortly. Neil Marriot's email address is neilm@netconnect.com.au.

We are currently compiling a list of hybrids that no longer appear in the nursery trade lists and are not known to us in the gardens we visit. Perhaps you have one of them. Let us know if you would like to help. We will probably ask you for a flowering specimen at some stage. List next newsletter.

Cas Liber reports a new occurence of *Grevillea shiressii*

Cas was in Pearl Beach staying with family friends and a woman 2 doors up discovered *G. shiressii* on her property about 100m inland from the beach on a creek margin. Apparently a specimen has gone off to the herbarium.

Activity report

Autumn Plant Sale Report

Well, the plant sale is over once again. In the face of falling attendances, occasioned no doubt by the drought and general apathy, we achieved a near record turn-over and profit. We have had crowds of nearly 4000 at the sale in the past. This year numbers were down to 700 approx on the Saturday and about 1000 on the Sunday but sales were way up.

The majority of attendees were relatively local (between Liverpool and Picton) which represents an important and new demographic of native plant growers. Although people came from as far as Glen Innes and Dubbo, the event is not being strongly supported by people in the Greater Sydney Region. This is sad as it is a great day with very interesting and unusual high quality plants for sale.

I love the camaraderie and special atmosphere of these events. You can chat to notable people like Merv Hodge, Ray Brown, David Shiells or Neil Marriott from whom so much can be learnt, or the other nurserymen including Phil Keane, Mark Ross, Peter Ollerenshaw, Brian Roach, Pip Gibian, Bernie Kocur, Bruce Higgs, Sandra Parkinson, Anthony O'Halloran who are everready to give advice or talk about plants. The support of these people is greatly appreciated by the Study Group. And of course MacArthur, Menai and Sutherland Groups have such a terrific bunch of people and always support the event with many volunteers, displays and plants they have grown themselves - the true spirit of Australian Plant growers in my opinion.

A number of nurseries no longer support the event. I find it puzzling, even insulting, that they do not even bother to answer the invitation to participate. This in spite of the fact that all the work is done by volunteers who receive no money at all, who are there to raise money for research and to support the aims of the study group and and Australian plants generally. I know where I will spend my nursery dollar in future and where I definitely will not.

The event was supported by Angus Stewart and Don Burke, both of whom gave their time freely and addressed the people. Don gave a very controversial talk on the Sunday which drew some criticism. I do not agree with everything he says but I sure support his right to say it. The on-line catalogue was very successful also and generated much interest, resulting in purchases of plants far in excess of what was expected. I still have about \$2000 worth of plants left over if anyone is interested in doing a deal. The display of memorabilia mounted by Ray Brown on the Flinders expedition and contemporaneous explorers, including the French, was outstanding and a real credit to his individual enthusiasm and capacity.

I would like to pay special homage to Gordon Meiklejohn, Bruce Wallace and Hessel & Dot Saunders, Christine Guthrie and partner, Bruce, Ken & Elaine Arnold, Tony Henderson, Beth and Ken Forbes, Kyril Taylor, personal friends, all members of the SG who supported the event by manning the stalls, all members of the Australian Plant Society especially Sutherland and MacArthur groups who assisted or bought plants.

This year I spent a considerable amount of personal effort (2 months) on the event. The SG is now the principal supplier of plants and we sourced them from a wide range of wholesale nurseries, bringing them in from near and far. The event achieved a profit of approximately \$10 000 and the money has been earmarked for DNA research into the relationship between Hakea and Grevillea. This research will be conducted through the Royal Botanic Gardens, Peter Weston supervising. An amount of \$5000 has already been earmarked to get things under way. This is cutting edge taxonomic reseaarch and the Study Group is proud to make such an important contribution to an area of work receiving poor Government support at present.

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Taxonomy

Friday, 28 Oct – Tuesday, 1 November

Proposed Itinerary Grevillea Crawl

We will be travelling through western Victoria to South Australia collecting *Grevillea lavandulacea* – several distinct forms including a rare suckering, white flowered form, *G. ilicifolia*, *G. angustiloba* ssp *angustiloba* and ssp *wirregaensis*. We will also be visiting several SA Study Group members gardens at Coonalpyn and near Murray Bridge. Also planned is a visit to Brenton Tuckers nursery and extensive gardens near Murray Bridge. We will be camping out either in the bush or nearby caravan parks. BYO everything including food and drinks for at least 4 days as there will be little opportunity to shop on the way. There will be a slide evening at Coonalpyn so bring any pics etc along to share. This will be a great opportunity for members from Victoria, SA and NSW to get together and share in the finding of some wonderful plants in beautiful bushland.

Registration is essential – contact Max McDowell, Neil Marriott or Peter Olde.

James Indstoe

Preliminary DNA Research

I sampled some Grevillea tissue for DNA extraction and analysis back at the end of July. This material was desiccated with silica gel and I've just now got around to looking at it. I tried the Qiagen DNeasy plant DNA kit with 20 mg (~1 sq. cm of leaf in total) of young vs. mature leaf vs. some flower buds and vs. some open flowers. I expected the flower buds etc. to give the best results, but surprising these were very poor. I got low yields of DNA from leaf samples, totalling usually about 1 microgram. It didn't seem to make much difference whether the leaves were young or mature. I find that I get about 20 times this amount of DNA from a similar amount of orchid leaf! I tried to amplify this DNA with ITS PCR and found it amplified OK – but with a much weaker product than is normal with orchid DNA (perhaps again about 1/20th as much product). I also get an artifact band of about 250 bp and would need to do a gel slice extraction to get a clean product band. To summarise, it appears that I should be successful in getting ITS sequence data and will try a couple of samples to check. I'll also try AFLP.

Low DNA yields appear to be the norm for Grevillea. Apart from this and the artifact band mentioned above, I don't expect too many problems – it does make me realise how easy orchids are to analyse by comparison though!

June 2005

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Grevillea diffusa subsp. constablei Makinson

Formal recognition has recently been accorded to one of the loveliest forms in the *Grevillea diffusa* complex. In Flora of Australia (2000: 499) Bob Makinson has in one step described this previously unnamed new taxon and honoured a prolific collector of Australian plants (Ernest F. Constable 1903-1986). Constable was the official collector of plants and seeds for the National Herbarium of New South Wales and the Royal Botanic Gardens, Sydney for over twenty years roughly between 1950-1970 and collected at least two New South Wales type specimens in Grevillea.

History: Grevillea diffusa is closely allied with Greviillea sericea and Grevillea linearifolia and has long been regarded as a complex species with many, morphologically different, geographically disjunct populations showing close affinity, mainly through inflorescence and flower structure. Beadle, Evans & Carolin (Flora of the Sydney Region) treated the complex as comprising one species, G. capitellata, having 5 elements. The first element comprised populations in the Bulli Tops region to the south of Sydney. The second was a widespread population, north of Bulli through to the Menai-Liverpool area. Two elements were noted in the Royal National Park to Helensburgh area and a fifth element was recorded from an area to the south of Gosford, around Mt White. Grevillea evansiana, outside the Sydney region but clearly related, was also accepted as distinct in the NSW botanical community.

McGillivray(1986 & 1993) realised through his valuable work on typification that at least one of the five elements, the most widespread, had previously been described as *Grevillea diffusa* and that this name had priority over *G. capitellata* under the rules of botanical nomenclature. He regarded the five elements of Beadle et al. as being really two. He gave formal recognition to the northern element, describing it and naming it *Grevillea diffusa* subsp. *filipendula*. He treated the remaining 4 elements as populations of *G. diffusa* subsp. *diffusa*, of which *G. capitellata* was only a synonym and sunk. The related species, *G. evansiana*, was treated as a third subspecies of *G. diffusa*.

Olde & Marriott (1994-1995) recognised *G. capitellata* and *G. evansiana* as distinct from *G. diffusa* and reinstated them both as species. *G. evansiana* is seen as distinguished by its generally broader leaves with granules on the veins. *G. capitellata* is distinguished by a stout peduncle and longer leaves bearing on their undersurface a shaggy two-state indumentum of long black hairs and often shorter white or

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of long black hairs and often shorter white or creamy brown hairs. McGillivray (1993) observed these differences but did not consider the characters sufficiently strong to warrant separate recognition.

The remaining four elements of *G. capitellata* sensu Beadle et al. were treated informally as three elements of *G. diffusa* by Olde & Marriott, accepting the McGillivray classification of two subspecies, subsp. diffusa, comprising three elements, and subsp. *filipendula* the remaining element. *Grevillea diffusa* subsp. *diffusa* was seen as being an unresolved complex of three elements.

Current Taxonomy

In Flora of Australia Vol. 17A (2000) and in the revised edition of the Flora of New South Wales Volume 2 (2002) Bob Makinson has reviewed the group and clearly made a very close study of all the elements. Additional useful characters have been employed to separate the taxa which can be clearly accessed from the Key to Species. Makinson has accepted both G. capitellata and G. evansiana at specific rank. He has divided G. diffusa into three subspecies by delimiting a new subspecies, subsp. constablei, from the subsp. diffusa complex. Subsp. diffusa is now more narrowly defined, comprising only the element occurring in the Menai-Liverpool area. Subsp. filipendula McGill. has been retained.

Subsp. *constablei* comprises two elements sensu Beadle. The distribution of this subspecies is cited as being from Waterfall to Helensburgh, and the Georges River. The Type was collected c. 2.4 km from Waterfall on E side of line on 2 July 1950 by T.M. Whaite. It is distinguished by its taller habit, angular branchlets (either glabrous or silky), its longer leaves (4.5–7(–10)cm long, and its longer, silky peduncles. It was named for Ernest F. Constable, former plant and seed collector for the National Herbarium of New South Wales and Royal Botanic Gardens, Sydney.

In the area from which the type was collected, subsp. constablei has blackish-maroon flowers condensed into a tight globose head. Its inflorescences are most similar to *G. evansiana* except that the leaves do not have conspicuous granules on the veins and they are much longer and narrower as well. It is an attractive plant mainly found in wet sclerophyl forest that grows up to 2m in height. It often has weeping branches and is one of the few grevilleas suited to a shady situation. It has pistils around 6mm long. Subsp. *constablei* is unknown in cultivation.

In the eastern part of its distribution (Grays Point to Audley), subsp. constablei has pistils 13–13.5mm long and much looser inflorescence with dark red flowers. I do propose that this element be formally recognised soon, though further research is required. There is some intergradation along geographic boundaries where taxa meet (e.g. track to Lake Eckersley, Heathcote NP).

The following descriptions, using common characters, will assist people to distinguish the various related species and subspecies.

Grevillea capitellata

Habit: Low, clumping or mounding, or spreading flat and prostrate. Branchlets: brownish, angular, ribbed, tomentose to villous. New growth rusty brown. Leaves: 2-9cm long. 2-8mm wide; narrow-elliptic to oblonglanceolate; apex acute; undersurface 2-state with an underlying indumentum of shorter appressed to ascending creamy or white hairs and long black spreading hairs, margin vertically refracted; intramarginal veins smooth or with scattered granules. Conflorescence simple, densely globose, erect; peduncles 3-5mm long, terete, stout (c. 1-1.5mm thick), villous. Flowers dark maroon; perianth limb pale brown or with scattered rusty hairs, tomentose to villous; pistil 10-12mm long, minutely hairy in the apical 1-3mm only.

Grevillea diffusa subsp. constablei

Habit: An open shrub 1 to 2m, often with weeping branches. Branchlets: white or greenish-white, angular, ridged, glabrous or silky, rarely with some short ascending hairs intermixed. New growth not seen. Leaves: 4.5-7(10)cm long, 2.5-4(-7)mm wide; narrowelliptic to sublinear, apex acute; undersurface appressed, silky; margin smoothly recurved to irregularly revolute; intramarginal veins smooth or with scattered granules. Conflorescence simple or more usually branched, (typical element) densely globose, or (element 2) openly spider-like, often pendulous; peduncles 10-15mm long, angular, slender (0.6-1mm thick), usually flexuous, silky to almost glabrous. Flowers (typical element) dark maroon, element 2 (red); perianth limb pale brown, appressedsilky; pistil (typical element) 6-6.5mm long, (elment 2) 13–13.5mm long with minute hairs in the apical 1-4mm. Nectary 0.2-0.6mm high.

Grevillea diffusa subsp. diffusa

Habit: Low, clumping or mounding shrub.

Branchlets: white or greenish-white, round to elliptic in cross-section, silky. New growth pale green. Leaves: 1.5–4.5(–5.5)cm long, 2–4mm wide, elliptic; apex obtuse to acute; undersurface silky; margin flat to smoothly and shortly recurved; intramarginal veins usually with scattered granules, or smooth. Conflorescence usually simple, densely globose, erect; peduncles 0.2–10mm long, subterete, slender (0.8–1mm thick), appressed silky. Flowers dark maroon to reddish-maroon; perianth limb pale brown, appressed-silky; pistil 6–11mm long, with minute hairs in the apical 1mm. Nectary 0.2–0.6mm high.



Propagation

Grevillea diffusa subsp. filipendula

Habit: Low, spreading shrub, or sometimes erect to 1m. Branchlets: reddish, angular, ridged, glabrous or with scattered appressed hairs. New growth pale green. Leaves: 5–15cm long, 2–4mm wide, linear; apex acute; undersurface glabrous to sparsely silky; margin vertically refracted; intramarginal veins smooth. Conflorescence usually branched, openly spider-like, pendulous on long peduncles; peduncles 15–40mm long, glabrous, angular, filamentous (0.4–0.6mm thick), glabrous, usually flexuous. Flowers red to pinkish-red; perianth limb pale brown, appressed silky; pistil 6–11mm long, minutely hairy in the apical half. Nectary 0.2–0.6mm high.

Grevillea evansiana

Habit: Low, clumping or mounding shrub. Branchlets: white or greenish-white, angular to round, with a short indumentum of appressed to ascending hairs. Leaves: 2.5–6cm long, 3–10mm wide, elliptic to obovate or sometimes sublinear; apex acute to obtuse; undersurface silky; margin sharply and shortly refracted; intramarginal veins smooth. Conflorescence simple, densely globose, erect but often on pendulous branchlets; peduncles 0.5–15mm long, silky, subterete, stout (1–1.2mm thick). Flowers dark maroon, rarely white; perianth limb rusty, villous; pistil 9–10mm long, minutely hairy in the apical 1–3mm. Nectary 0.6–0.9mm high.

Grevillea oldei

Habit: Diffuse shrub often spreading or sprawling, sometimes erect. Branchlets: red, angular, villous, with hairs spreading up to 1.5mm long. New growth not seen. Leaves: 0.5-3.5cm long, (1.5-)3-6mm wide, narrow-ovate to subtriangular, apex acute; undersurface loosely villous; margin shortly but angularly refracted; intramarginal veins sparsely granular. Conflorescence simple or rarely 2-branched, openly spider-like, pendulous; peduncles (0-)2-5.5cm long, with spreading hairs, angular, wiry (0.3-0.6mm thick). Flowers red; perianth limb brownish, villous with some glandular hairs; pistil 9.5-15(-15.5)mm long, with scattered hairs over most of its length. Nectary 0.3-0.5mm high.

Peter Olde

At our March meeting Nathan Kirkwood spoke of his research into grafting Proteaceae. He began by outlining the general theory underpinning his work, namely that grafted plants perform better on some rootstocks than others. Nothing new in this but imagine that when a suitable species rootstock is found after testing a range of possible species, an extensive research of the most suitable form of this species is then conducted, using clones from different provenances, using hundreds of seedlings from plants that might be growing in difficult conditions to search out the best and hardiest and therefore the most suitable for a majority of growers. You begin to understand the scope of Nathan 's work. Plants grafted onto the selected rootstock are then tested against all kinds of potential damage, disease and harm. All this until a suitable rootstock has been decided. Imagine then that you cannot confine your research to one difficult species but your interest is in all the Proteaceae including all the banksias, grevilleas, hakeas,

isopogons, petrophiles and waratahs. Nathan believes in the need to maximise rootstock hardiness by selecting plants for rootstocks from populations that are hardy, or grow in difficult conditions, or conditions that meet the needs of likely growers. To illustrate this -Nathan spoke about a Banksia serrata rootstock selection that he had found growing on clay. Although species might graft readily one to another, the best compatibility is achieved by selecting from among the successful rootstocks the very best plant for a particular species. In this respect testing might be needed for thousands of plants and only the best is then clonally reproduced for use with a particular scion.

Being a person somewhat challenged for income Nathan has made use of recycling and innovation. For tubes, Nathan uses 21mm white poly pipe cut to c. 15cm lengths. Poly pipe is cheap, strong and can be reused endlessly. A

piece of florist foam is placed in the bottom. This is first stamped from an oasis foam block by another piece of sharpened 21mm pipe so that size matches. The tubes do not stand by themselves and need to be packed into a tray for mutual support. Bakers bread trays are ideal and hold a large number. Potting mix is then introduced to the tube and the seedling sown or potted up. Nathan 's potting mix comprises a combination of commercial low phosphorus potting mix, polystyrene foam and expanded clay (used in hydroponics). This is a very open mix. The seedlings are then allowed to grow on ready for use as rootstocks or scions.

Grafting is done in a converted garden shed. The walls are insulated with old polystyrene packing case sides. Nathan has a developed a low humidity environment for his grafts, most of which are executed in late winter to spring. He finds late summer is too humid and contributes to too many losses from fungal/bacterial attacks. A dehumidifier stands in the middle of the shed and an air conditioner is mounted in the side. A temperature lower than 20 deg C is necessary but on average he thinks that 17-18 deg is ideal. Circulating fans and thermometer complete the equipment. Scions are first cleaned by dunking in a solution of dettol and listerine cut 70/30 with water. They dry with a slight powder on the surface which continues to protect them from fungi and bacterial rots.

Cotyledon grafts are used. Using a Wilshire double-sided razor blade (difficult to buy nowadays) scions are trimmed to a V below the cotyledon if using a seedling (banksia), or anywhere on the stem if using a cutting. Young, semi-hard wood is preferred for scions. The top is first cut off, above the cotyledon for scion seedlings, and trimmed to a V. Nathan has devised his own unique system for achieving this. A cut 0.5-1cm deep is then made down the middle of the rootstock. The two pieces (scion and rootstock) are then attached by inserting the scion into the cut rootstock. The graft union is wrapped with nescofilm and sprayed with Steriprune. (Pressure packs can be purchased in garden outlets). This is a tar-like substance which seals over the graft. If leaves have been trimmed or leaves taken off the scion, this area is also treated with Steriprune. At present Nathan applies the steriliser by hand and brush which

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is very tedious. The tubed graft is then placed on a shelf over which grow lights have been installed – at a height approximately 30cm above the top of the grafts Bright NEC globes are just as good, Nathan claims. They have a better and longer life and are much cheaper. The graft should take in less than 3 weeks if it is going to succeed. There are three shelves one above the other along one side of the shed. No natural light is used, no mist, no humidity. Good success has been achieved using this method.

Interstocks are also being trialled for difficult species, for which no outstanding single rootstock can be found.

Nathan is also developing an interest in plant hybridisation and breeding, which topic he took a few moments to outline. He then proceeded to show a few of the developed hybrids growing in his garden. These are recorded here for historical reasons. *Grevillea* 'Robyn Gordon ' was induced to set seed by starving the plant and treating it very harshly.

G. Robyn Gordon x Moonlight. G. Winparra Gold x G. fililoba, Isopogon formosus 'bred up '. Telopea 'Wirrimbirra White' x T.'Braidwood Brilliant' Telopea 'Wirrimbirra White' x (T.'Shady Lady' x)

Some interesting banksias that were grafted successfully were

Banksia rosserae grafted on B. serrata

- B. tricuspis/integrifola
- B. hookeriana/integrifolia
- B. praemorsa/integrifolia
- B. media/integrifolia
- B. speciosa/integrifolia
- B. grandis/integrifolia
- B. baueri/speciosa

All hakeas grow easily on *Hakea salicifolia*. Grevilleas can also be grafted successfully onto some forms of this rootstock. Hakeas can be grafted on to *Grevillea robusta*.

Tropical grevilleas grafted easily onto *G. banksii*, including all tropical cultivars – *G.* Kimberley Gold, *G. miniata*, *G. wickhamii* ssp. *cratista*, *Boronia serrulata* was recently grafted on *B. clavata*.

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Western Australia Grevillea research trip August – September 2003

Part 2 – continued from newsletter 70

After the exultation of finally finding Grevillea merceri ms we were due for a let down, and we had it with the next elusive Grevillea we had to search for on our itinerary. Yet another new species unearthed while sorting through the herbarium specimens of the Manglesia group! The plant in question was collected anonymously at Kojoneerup - on the north side of the valley. Kojoneerup is a location on the southern edge of the Stirling Ranges. Without any more accurate collection data its rediscovery would be rather chancy to say the least. However when we arrived at the property known today as Kojoneerup we were dismayed to find that nearly all the countryside had been cleared. We spent the day searching along the southern edge of the National Park as well as scouring every roadside and remnant bushland patch in the area but to no avail. Hopefully this new species will still occur somewhere in the district awaiting discovery in the future! Readers are encouraged to keep a sharp eye out for ANY white flowered grevillea they may find growing in the district.

The Gondwana Link Project

Wendy and I work for the Trust for Nature and Greening Australia in Victoria, protecting and restoring remnant bushland. As a result Keith Bradby had promised to take us to see the latest property acquisition and restoration works linked with the amazingly ambitious and farsighted Gondwana Link project. Gondwana Link aims to reconnect through property purchase, conservation covenants and restoration works the biological links that once connected the Fitzgerald River National Park and the south coast with the large blocks of crown land inland from Jerramungup and continuing into the deserts of inland Australia!

Their latest purchase through the Australian Bush Heritage Fund was a beautiful large area of mallee and woodland north-east of Jerramungup. This is an amazing area that should never have been opened up for agriculture – it is dotted with spectacular red and orange spongelite breakaways, deep sandy valleys, granite outcrops, rocky streams and heavy clay mallee patches. Fortunately much of

Neil Marriott

it remains uncleared and as a result is being progressively purchased and the cleared areas revegetated. On the property we visited Jack Mercer had just completed the direct seeding of several hundred hectares with indigenous seed – so diverse is the area that the seed mix contained over 30 species of Eucalypt alone!!

After a superb picnic lunch under a grove of Sheokes we headed off for a wander through the property, eyes peeled for new grevilleas! We didn't find any but there is no doubt that when thorough flora surveys are carried out numerous new and rare plants of all genera will be found. The property protects extensive areas of Sheoke and Blackbutt woodland communities that have been all but wiped out elsewhere for agriculture. As result we found lots of beautiful small herbaceous and ephemeral species several of which are quite rare. On a soon to be purchased nearby spongelite breakaway we found masses of unusual shrubs including beautiful deeply divided leaved forms of Grevillea pectinata, fiery red flowered forms of Grevillea huegelii, a most unusual dense low pale yellow flowered acacia and numerous attractive low mallees and banksias.

A very rare hakea

Continuing east we met up with a friend in Ravensthorpe who is a botanical consultant like myself. On a recent survey to the east of Ravensthorpe for a proposed limestone mine, Tim Nolan had discovered a lone specimen of the extremely rare Hakea acuminata. This is a species that is unknown in cultivation and one that I was keen to find for Paul Kennedy and others in the Hakea Study Group. After an interesting walk through a wonderful area of low to tall heathland with scattered eucalypts, we came upon the big old specimen of Hakea acuminata - it had finished flowering but was still a most attractive plant with large, broad grey-green patterned leaves with a tapering (acuminate) point, contrasting with the bright green immature fruits. Half of the plant had been broken by the fencing contractor so we rescued a number of fruits from this section. The remaining plant is in a precarious position if the proposed mine proceeds – I hope it doesn't as the area is rich in beautiful and unusual shrubs including numerous dryandra, verticordia and banksia. Who says that the West's bushland is now secure!!

The "Lake King Grevillea"

Another new grevillea that Peter and I "discovered" whilst checking through the specimens at Perth was a large flowered plant collected near Lake King and identified as *Grevillea* sp aff *hookeriana*. We had searched in vain for the species along the Biddy Camm Rd the year before but there did not appear to be any remnant bushland near the site recorded for the collection.

Following our success with the discovery of *Grevillea merceri ms*, Wendy and I decided to instead try and find the property owner on whose land the specimen was collected.

After much detective work we eventually contacted a Mrs Nell Silver - amazingly she could still remember the unusual grevillea and so we headed out to her farm to see her. Nell turned out to be a wonderful lady who has a deep love of her local flora and despite her collecting the specimen many years ago was able to take us straight to the plant. It turned out to a single large old specimen along a fenceline where it will be destroyed as soon as the fence is replaced! Examination of the plant revealed it to possibly be a most beautiful hybrid, probably between Grevillea excelsior and Grevillea cagiana both of which occurred in the area. It had deeply divided fine green foliage and large, very showy orange flowers set amongst the outer foliage.

Although the original collection stated that the plant was common at the site, only the one plant could be found despite a thorough search of the bushland remnants in the area. Sadly, cutting material sent back to Mt Annan Botanic Gardens and to Merv Hodge failed to be propagated. This is a pity as this beautiful grevillea which Nell is keen to call the "Lake King Grevillea" is gravely threatened and would be a spectacular plant under cultivation.

East to Esperance

Leaving Lake King we intended to head down to Esperance via the Cascades Rd – put in illegally by local farmers as a shortcut through a magnificent wilderness area to the east of Lake King. Unfortunately there had recently been heavy rains and the road was damaged and only open to 4WD's. Instead we headed down the beautiful Nindilbillup Rd. This is one of the most beautiful roads in the region, with a wealth of interesting plants and few of the weeds and roadside vandalism by council workers that have destroyed most of the West's floral heritage.

We had not gone far when we came upon a distinct form of Grevillea patentiloba that clearly warrants recognition as a new subspecies. It had foliage that is uniformly intermediate between G. patentiloba ssp patentiloba and G. patentiloba ssp platypoda and the plants made nice rounded small shrubs less than a metre high. A little further on we came upon a wonderful population of Grevillea pectinata growing in white sandy clay – interestingly this grevillea may also warrant recognition as a new subspecies. The plants had most attractive entire leaves and were observed to be reproducing strongly by suckers as well as by seed in a section of the population where a fire had recently gone through. They were growing in damp mallee/melaleuca woodland with Grevillea decipiens, a species that always favours these wet, clayey areas. Specimens were collected before we continued on to the Ravensthorpe-Esperance Rd.

Continuing south along this wonderful road, we came to Moolyal Creek – here we found a wealth of plants growing in tall mallee, including a form of *Grevillea anethifolia*, an unusual form of *Grevillea acuaria*, the new subspecies *Grevillea patentiloba* again, *Grevillea oligantha*, *Grevillea teretifolia*, as well as beautiful specimens of *Banksia media*, *Hakea lissocarpha* and *Hakea corymbosa*.



Stopping for a cuppa in a sandy *Banksia speciosa* scrub area not far along the highway we found attractive low shrubs of *Grevillea concinna* ssp lemanniana growing to little more than 20 cm high with massed small red toothbrush flowers. At the same site we also found the beautiful *Conostylis vaginata* with its curious stilted growth habit and showy orange-yellow flowers.

East to Cape Arid National Park

After restocking supplies in Esperance we headed out east to the magnificent wilderness of Cape Arid National Park -this is a vast area with few tracks and even fewer tourists. The area is dominated by extensive areas of heathland, interspersed with patches of taller mallee, granite outcrops, massive granite hills, dense coastal scrubs and swampy tracts. The main camping area is at Thomas River where there are a limited number of small clearings in the coastal scrub where you can squeeze in your tent or van. We got a site overlooking the spectacular white sandy bay with the most azure blue water you could ever see. To make the picture complete there was even a Southern Right Whale with her baby slowly gliding back and forth in the shallows for several days!

Way back in the early days of settlement of Western Australia a plant was collected at Thomas River by George Maxwell and sent to Baron Von Mueller in Melbourne. Strangely Mueller never described this as a new species. Our research showed that it clearly warrants recognition as a new taxon and it will be described in our upcoming paper. We had hoped to relocate the species before we published and so Wendy and I set aside four days to track it down. However despite walking for kilometres along what seemed every hill, outcrop, headland and heathland we failed to relocate this elusive grevillea. We consoled ourselves that it MUST be in an isolated location as it has never been recollected in the 150 years since it was first discovered!!

However we saw some magnificent scenery and plants in the process including the widespread *Grevillea concinna* ssp *lemanniana*, *G. nudiflora* and *G. pauciflora* ssp *psilophylla*. The last is a very free flowering and showy grevillea that really should be raised to the rank of species. We found it growing in wet sandy soils on the edges of swamps where it made a fiery red flowered display on shrubs up to 1.6 m high. Unfortunately this grevillea is still not known in cultivation.

Other highlights were the distinct low and extremely fine leafed form of *Grevillea plurijuga* with prostrate flowering stems radiating out from the bush-this is yet another taxon that clearly warrants recognition as a new subspecies. Sadly with Western Australia's terrible lack of funding for their herbarium, there is no-one doing this sort of research, and there is just too much for Peter and I to do – we don't even get paid for the huge amount of work we do. Fortunately the Grevillea Study Group has assisted us with our travel expenses for the last few trips.

Another amazing grevillea that we found was a distinct form of Grevillea baxteri possibly warranting recognition as a new subspecies. Instead of the normal large spreading habit of this species as it occurs to the north and east of Esperance, the form we found way out further east in Cape Arid National Park at locations such as at the Diamonds was extremely tall and narrow with no strong lateral branching at all. As a result the plants stood well above the surrounding plains and as I watched flocks of honeyeaters travelling through would alight on them, feed briefly on their showy orange-red flowers before continuing on their way. Clearly this tall habit had evolved as a strategy to encourage cross-pollination by honeyeaters in a region where the typical bushy habit would not stand out as a beacon for birds that are not permanent residents but are always just migrating through. This may possibly be explained by the very dry climate and lack of water out in this region compared to the more favourable conditions back around Esperance. It is quite fascinating to see evolution in action such as this – something that desk botanists sitting in their comfortable armchairs never pick up from just looking at dried specimens.

On the road home

The highway from Esperance to Norseman goes through some most interesting vegetation changes, quickly leaving the relatively reliable coastal zone, then into the sub-coastal semi-arid and finally into the dry goldfields region. As a result there are many interesting plants to be found as you travel along this road. *Grevillea baxteri* is common in the coastal sands in tall scrubs for about 30 km north of Esperance, growing as a large spreading shrub to around 3 x 4m.

Leaving the coastal sands the highway travels through a region of heavy white sandy clay. This is dominated by stands of tall mallees with a rich mixed understorey dominated by melaleucas. Here we found the beautiful *Grevillea superba* with its strongly erect habit and flower racemes on long canes above the foliage. Also common here were *Grevillea huegelii* – comb leaf form, *Grevillea oligantha* – narrow leaf form, *Grevillea pectinata* – entire leaf form and in a nearby gravel pit we found a fine-leaved shrubby form of *Grevillea nudiflora* with deep red flowers.

Just north of Grass Patch we found *Grevillea* superba and *Grevillea plurijuga*. *G. plurijuga* can be readily separated from *G. superba* by its strongly arching, rounded habit, flowering racemes rarely erect above the foliage but with some always arching down from the bush to run along the ground or on old wood within the bush. Finding the two species growing together surely puts paid to the argument that they are the same species!

Soon the vegetation changed as we entered the Goldfields region with its dry stony soils and distinct woodlands dominated by the beautiful Salmon Gum *Eucalyptus salmonophloia*, as well as a multitude of other eucalypts. The understorey here is generally sparse, with scattered shrubs in some areas and with a more continuous cover in more open or gravely sites.

Heading east from Norseman we had just one more white flowered grevillea to find at Mt Norcott. Careful searching located a bush track heading south-west to this obscure mountain 28 km east of Norseman. Near the intersection with the highway we found a beautiful dense rounded form of *Grevillea acuaria* with rigid patent leaves and wholly red flowers. In the same area we found *Eremophila interstans*, *E scoparia* and an attractive white flowered olearia. As we neared Mt Norcott we came upon a sudden change in soils and vegetation. The appearance of spinifex grass made us keep our eyes out for grevilleas and sure enough, we almost immediatly found our first *Grevillea anethifolia* in massed full flower. We continued on and arriving at the base of the small but steep "mountain" we came upon a whole field of this beautifully perfumed grevillea. Clambering up the rocky slope we found numerous showy shrubs most notable of which was a rich burgundy Hop Bush *Dodonaea* sp. We collected specimens of the grevillea and set up camp, ready for the long drive back east across the Nullarbor.

Our trip was almost at an end – we had found many of the grevilleas we had searched for, although several still await our rediscovery. But the West is a vast state still hiding a multitude of new plants – it will take many decades before we come anywhere near the recording of all of its species! In concluding, I would like to thank the Grevillea Study Group for their ongoing assistance with our travelling expenses.



The Grevillea Book, Vol. 3 (N.Marriott)

Peter Olde

Grevillea 'Misty Red'

Date: 12/01/2004

Anyone looking for something extra special this Christmas, would be wise to look for Grevillea 'Misty Red': a deep pink, nearly red, exotic flower.

Grevillea is a close relative of Banksia and Protea. All of the varieties have feathery, graygreen foliage, which implies the plant's other name of 'silver oak'. *Grevillea* 'Misty Red' is a crossbred hybrid of *G. banksii*, which has already been the source of many other attractive hybrids including the yellowish-pink 'Misty Pink'.

It is one of the most popular domestic shrubs in Australia. This is not really surprising, since each exotic bloom is uniquely shaped and incredibly colorful. In addition, many Grevillea varieties also attract birds that feed on nectar.

Although the actual flowers of *Grevillea* 'Misty Red' (vbn code 22220) are fairly small, they are formed in clusters. The dark pink, nearly red inflorescence looks a little like a brush and makes a decorative addition to Christmas arrangements and bouquets. The sturdy stems, which are on average 24 to 28 inches long, have an excellent vase life of two weeks.

Israeli growers have supplied them to the Dutch flower and plant auctions since October 2003. During that year a total of 79,000 stems were sold and this year already 255,000 stems have been sold. The product is available from September through April.



Family

Grevillea is a member of the Proteaceae family.

Top 8 cultivars

'Spiderman' 'Ivanhoe Bronze' 'Misty Red' 'Yovel' asplenifolia 'Misty Pink' 'Honey Gem' 'Cal Gem'

Tips for care

Diagonally cut the stems and place them in warm water containing special cut flower food for shrubs.

These cut flowers should not be exposed to temperatures lower than 36 to 50° F. The flower is sensitive to cold and black discoloration can occur as a result of cold exposure.

Explanation of name

This cut flower was named after Ch. Fr. Greville, one of the founding fathers of the Royal Horticultural Society in London. He was responsible for introducing a number of exotic plants to England.

Most important colors

Yellow/orange and pink/red are the most important shades of color.

Additional information

Currently work is underway on the development of a white as well as a champagne colored variety. A longer vase life and new colors are key to the future development of this plant.

Brian Roach

Brian's Bobby Dazzlers

Grevillea nivea - sort of!

There was a time when I shunned grafted plants. It seemed like cheating to me.

Additionally, in operating a very small native plant nursery I was always conscious of potentially having to say that a particular plant in my garden wasn't propagated by me because it was grafted; so I didn't grow grafted ones. Since common sense prevailed however, grafted plants and particularly Grevilleas have been given a proud home. Having just drooled over my Grevillea nivea (as I thought it was) while taking the included photograph, I'm fortified in this belated decision to dabble with grafted plants. What a Bobby Dazzler this one is! In deciding to write about it, I rushed to consult 'The Grevillea Book', that marvellous 3 volume compendium of all things Grevillea; so I thought. No Grevillea nivea! I checked the label that was on the plant when I bought it about a year ago at Mt.Annan. Grevillea Scarlet King! Neil Marriott, a co-author of 'The Grevillea Book' recommended the plant to me and said it was actually Grevillea nivea. Would I doubt him?

A quick consultation with the other author revealed that it still awaits official description under that name having appeared in their book under *Grevillea tetragonoloba* – form b. It hails from the south-western corner of W.A. near Bremer Bay.

In the meantime, if you want to get one, look for *Grevillea* Scarlet King. It's a wonderful plant with the most vibrant red I've ever seen in a flower colour. It contrasts spectacularly with the deeply divided grey foliage. It seems to have flowers most of the year. I'm told it will grow to around 2.5m by about the same width if left unpruned and according to the label it has 'Extreme tolerance to wet and dry soils'. What more could you want?



Andrew Allanson

Rosemary Grevillea – The shrub wandering away from home

This is quite an attractive shrub and is sold in many nurseries across Australia. Rosemary grevillea (*Grevillea rosmarinifolia*) is native to Victoria and a small part of New South Wales, where it occurs at a moderate altitude, on rocky sites or in areas with shallow soils.

The book, Native Trees and Shrubs of South-Eastern Australia by Leon Costermans, describes "stiff, narrow and needle-pointed" leaves that are "green above and paler beneath, (with) margins usually rolled under."

In South Australia, this species is usually between one and two metres in height and is very dense. It is often grown as a hedge type plant, but many Bushcarers are now finding this plant occurring on their sites – as a weed.

Yes – it is a weed!

For many people, a plant that is native to Australia being regarded as a weed is difficult to understand. The fact is, this species does not occur naturally in South Australia. The introduced rosemary grevillea is cross breeding with the local lavender grevillea and degrading its genetic viability. Hence, conservationists are very concerned that the lavender grevillea will eventually become locally extinct.

The removal of rosemary grevillea is via the usual cut and swab method. Always work from the best bush outwards.

Check before removing it

Before doing any work on this weed, make sure that it isn't the local lavender grevillea. Always have the plant identified by an expert and if necessary take a cutting of it and use this to compare with the local species of lavender grevillea.

Seed Bank

Matt Hurst 13 Urana Street, Wagga Wagga 2650 NSW Phone (02) 6925 1273 Please include a stamped self addressed envelope.

\$1.50 + s.a.e.

G. banksii tree	phanerophlebia rivularis
barklvana	rohusta
Caloundra Gem	scortechinii
endlicheriana	stenobotrya
johnsonii	Superba
juncifolia	thelemanniana
leucopteris	triloba
<i>linearfolia</i> white	trifida
longifolia	venusta
longistyla	White Wings
petrophiloides	

Free + s.a.e.

candelabroides chrvsophea crithmifolis decora delta dryandri ssp endlicheriana eriobotrya flexuosa floribunda georgeana glauca qoodii huegelii leucopteris moniticola paniculata

petrophiloides pilulifera plurijuga upright polybotrya pterosperma SA pterosperma WA pteridifolia pulchella pyramidalis quercifolia refracta robusta serciea stenobotrya teretifolia wilkonsonii

Is there still an interest in having a seed bank?

Most of the seed in the seed bank is now three years old at least and some dates back to the early nineties. An injection of new seed from as many members as possible is needed. Interest in the seed bank has been very low – only two enquiries in the last twelve months. If members want the seed bank to continue some new seed should be purchased but what do members want?

Illawarra Grevillea Park OPEN DAYS 2005

July, Sat 23 & Sun 24 July, Sat 30 & Sun 31 September, Sat 24 & Sun 25 October, Sat 1 & Sun 2

Each year the Park is open on the last full weekend in April, first weekend of May, last two full weekends in July, last weekend in September and first weekend in October.

Location

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

Admission

\$4 adults, children accompanied by adults are free.

Barbeque and picnis facilities available Bring your lunch and make it a family day!

Special openings for groups Special openings for tour groups (such as bus tours by Garden Clubs) can be arranged

The park is open from 10am to 4pm. For more information email at

grevil2@grevilleapark.org

Angus Stewart to launch the release of "Bulli Beauty"

The July opening will see the release of *G*. "Bulli Beauty" into the nursery market. The official release will be performed by well-known horticulturist, commentator and author Angus Stewart at 2pm on Saturday 23rd July.

"Bulli Beauty" has been propagated from a seedling that germinated in the Park. It has fern-like dense foliage and bears beautiful pink toothbrush like flowers.

Purchasing the plant helps raise money for the park (which is a non-profit organisation).

Financial Report - June 2005

Income

Subscriptions	\$440.00
Interest	0.15
Donations	25.00
	\$485.15
Expenditure	
Newsletter Publishing	\$210.00
Postage	154.70
Printing	135.50
Stationery	15.95
Post Box	56.00
	¢570.45

\$572.15

\$10,441.89 in Interest Bearing Deposit till July 2005.

Balance in Current Account as at 06/06/05 is \$6,348.64

Balance in Business Cheque Account as at 26/05/05 is \$19,858.60

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Ray Brown 29 Gwythir Avenue, Bulli 2516 Phone (02) 4284 9216

Curator of Seed Bank

Matt Hurst 13 Urana Street, Wagga Wagga 2650 NSW 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

Online Contact

1. President's temporary email address

petero@bb.com.au

2. The email group grevilleas@yahoogroups.com

3. URL for Grevillea Study Group website

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

Deadline for articles for the next newsletter is 30 September 2005, please send your articles to petero@bb.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, PO Box 275, Penshurst 2222. Please make all cheques payable to the Grevillea Study Group.



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