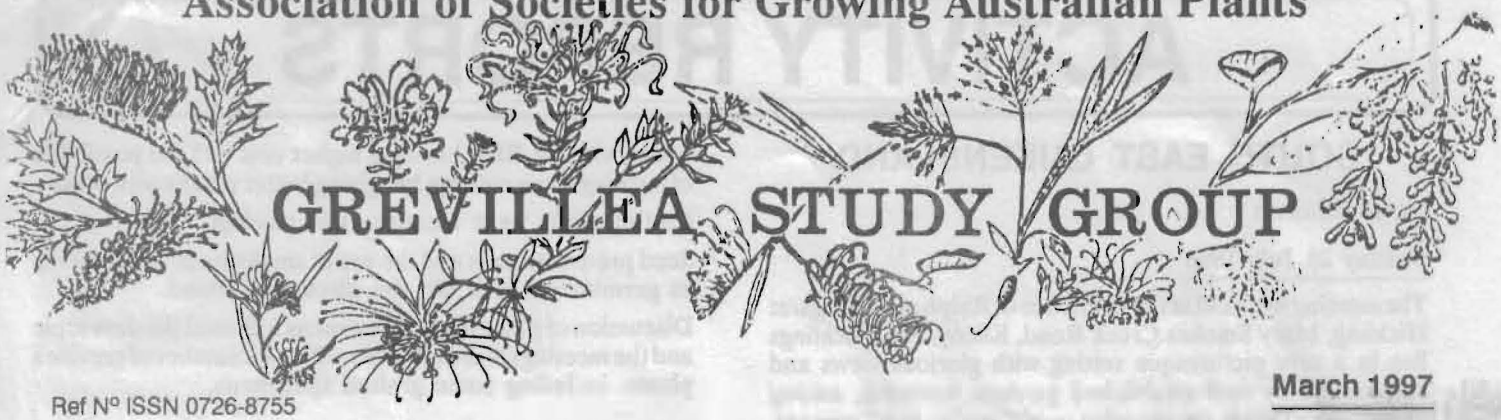
Association of Societies for Growing Australian Plants



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March 1997

Newsletter Nº 46

S.E. Qld Group Meetings for 1997

All meetings commence at 9.30 am unless otherwise notified. Further information contact Merv Hodge on (07) 5546 3322.

Sunday 25 May

Venue: Home of Merv & Olwyn Hodge, 81-89 Loganview Road, Logan Reserve 4133

Phone: (07) 3374 2178 Graham Nosworthy's number?

Subject: The joys of running a small production nursery. Techniques, including propagation, potting, watering and spraying.

Sunday 27 July

Venue: Home of Heather Knowles, "Newerah", Lot 2, Ebenezer Road, Rosewood 4340

Phone: (07) 5464 1333

Subject: Growing Grevilleas in difficult conditions.

Sunday 24 August

(Note: date change as last Sunday is affected by SGAP activities)

Venue: Ron & Elaine Jell, 3 Fryar Court, Clear Mountain 4500

Phone: (07) 3298 5396

Subject: Gardening on steep slopes.

Sunday 26 October

Venue: Home of Ray & Gwen Norris, 3 Timbertop Court, Capalaba 4157

Phone: (07) 3206 4226

Subject: Techniques of constructing and maintaining a large garden.

Sunday 30 November

Venue: Home of John & Pat Morse, 10 Smiths Road, Wights Mountain 4520

Phone: (07) 32891431

Subject: A review of mulches for grevilleas and planting techniques.

Sunday 25 January 1998

Venue: Home of John & Irene Story, 17 Trafalgar Street, Toowoomba 4350

Phone: (076) 364 325

Subject: Maintaining a large Grevillea collection.

NSW Group Activities for 1997

Sunday 20 April 9.30 am

Venue: Grevillea Park, Bulli

Subject: Tour of The Grevillea Park, see the new plantings and enjoy a different flowering season. Over lunch we will examine the annual programme and discuss the field trip and ways to better future trips. Bring specimens for identification. After lunch we will assist to man the gate or otherwise assist as the Park will be open to the public.

Sunday 18 May 9.30 am

Venue: Ken & Elaine Arnold, 19 Shorland Avenue, Jannali 2226

Subject: Identification using keys.

Sunday 28 July 9.30 am

Venue: Peter & Margaret Olde, 138 Fowler Road, Illawong 2234

Subject: Grafting workshop. A large number of Grevillea hybrids which have regenerated from seed should be flowering for the first time.

August:

Sydney Wildflower Exhibition

Saturday 20 & Sunday 21 Sept:

Weekend along the Putty Road.

4-6 October:

Long Weekend Grevillea Crawl

24-30 October:

South Coast Field Trip

Sunday 16 November

Venue: to be advised

Subject: Propagation by cutting.

INSIDE

ACTIVITY REPORTS

SOUTH EAST QUEENSLAND

by Ian Waldron

Sunday 28 July 1996

The meeting was held at the residence of Ralph and Margaret Hickling, Mary Smokes Creek Road, Kilcoy. The Hicklings live in a very picturesque setting with glorious views and surrounded by well established gardens featuring, among other native plants, an abundance of grevilleas. All present, 30 members, were suitably impressed by the variety, size and flowering of the gardens.

Subject for the day was **"Propagation Techniques"** and as usual was introduced by our local leader, Merv Hodge, and then thrown open for general discussion under a variety of related topics.

The various conditions used for propagation are the main dictating force behind the make-up of the propagation medium. General discussion came to the opinion that sand in a mix can be detrimental as it tends to keep the medium too wet and favours the introduction of pathogens. Mediums containing sand tend to promote the formation of very fine roots. The grade of sand recommend for propagation mixes in the various texts varies.

Light mixes don't damage the root system as much as heavy mixes containing sand at potting on. The relative merits of **Perlite** and **Vermiculite** were discussed as was the possibility of using *"Oasis"* as a propagation medium. As an example of a propagation mix the Bunyaville Forestry Department nursery uses a 20 % peat, 80 % Vermiculite mixture.

No matter what the mix consists of, the **pH** of the mix should generally be neutral to slightly acidic. 6 - 6.5 and the mix should be adjusted to the optimum growth even without knowing the pH level.

Discussion on the various types of peat substitutes found that *Coco-peat* was the slowest of all peats and peat substitutes to promote rooting of cuttings and that while no rotting of this medium has been found, the possibility is that in time, as part of a potting mix, it will degrade dramatically.

Watering systems are important with any propagation method but any form of overhead system can promote the introduction of pathogens. A capillary systems will overcome this but if the system uses recycled water without any treatment between uses the same problems are there. The operating system of misters and associated systems of watering were explained to the meeting. With any watering system the mix used must be compatible with the system of watering and adjusted to the preferences of the propagator and the type of cutting etc. being propagated.

The various types of pots used for propagation were discussed and individual preferences noted.

The time of taking cuttings was found to vary according to climate, the type of cutting and the variety of plant being propagated.

The use of hormone preparations for cuttings and the various types of such preparations was talked about. *"Clonex"* preparation is one of the main ones being used and this comes in three different strengths as standard preparations; **GREEN**, 1500 ppm; **PURPLE**, 3000 ppm; and **RED**, 8000 ppm. The **PURPLE** preparation seems to be the best all-round with the **RED** having a higher cost and the possibility of burning some cuttings but giving better results with others.

Cutting-grafts were mentioned in passing.

Seed pre-treatments and the use of smoke pads and smoking as germination aids did the discussion round.

Discussion of plant/flower specimens followed the days topic and the meeting closed after the raffle of a number of grevillea plants, including some grafted specimens.

Sunday 25 August 1996

22 members and 4 visitors turned out for this meeting held at the home of Di and Max Stormer, Coles Creek Road at Cooran, just South of Gympie.

The main subject for discussion was *"Fertilisers"* and this followed a delightful wander around the Stormer's well laid out gardens set on a hillside in a captivating rural setting.

As usual with this group, the meeting was conducted on a general discussion basis with Merv Hodge redirecting the meeting back to the subject when necessary. Topics covered at this meeting basically were as follows:

"Osmocote+" 9 month is a reasonably safe fertiliser for grevilleas.

Pure *Blood and Bone* can be used mixed into the top of the soil at planting together with a slow release fertiliser.

"Sierra Blend Nurseryman's Mix" has extra iron, low phosphorous plus a fast release component. This can cause problems, probably through the fast release component. Merv has been caught.

Generally, **BE CAREFUL** when using any new product.

Depending on the soil, *"Sulphate of Ammonia"* does not cause problems with grevilleas. Hakeas, however, hate it.

Nitrogen draw-down can be a problem with any potting mix containing decomposed sawdust.

The symptoms of iron, nitrogen and magnesium deficiencies were discussed and treatments passed on as was the warning that iron can tie up phosphorous and conversely phosphorous can also tie up iron causing deficiency symptoms.

If unsure of the deficiency, a fertiliser containing ALL the trace elements, such as *"Aquasol"* and *"Thrive"*, is a good fertiliser when used with caution. A foliar spray will show results within a few days of use. Half strength use is a good first option until the results have been tested.

"Nutricote" has a polymer coating whereas *"Osmocote"* has a soy based coating, but both work in the same way by leaching of the fertiliser through the coating by osmosis. The coating forms cracks according to the temperature, the higher the temperature the wider the crack. Both fertilisers are colour coded according to the designed temperature range, and hence designed life of the fertiliser.

All potting mixes should be covered to avoid contamination. **Weed Mat** is good, allowing moisture to penetrate. Clear plastic sheeting will cause some sterilisation by solarisation.

"Zeolite" is supposed to absorb excess fertiliser and so act as a fertiliser itself. This can be purchased as *"Kitty Litter"*.

The texture of the soil affects the inherent soil fertility.

"Tropic" can be used as a general fertiliser for in-ground grevilleas, but again use with caution.

ACTIVITY REPORTS (cont)

SOUTH EAST QUEENSLAND *(cont)*

by Lorna Murray

27 October 1996

For the meeting this month we enjoyed the hospitality of Rex and Dawn James at Highfields near Toowoomba, when 38 members travelled there. The mixed garden of 1 acre includes many grevilleas, and others are held in pots awaiting planting when weather conditions are more suitable. The soil is naturally red clay loam and drainage has been improved in built-up beds where necessary.

The talk for the meeting was given by Peter Beal, Principal Horticulturalist, Redlands Research Station, Department of Primary Industries, the topic being *"Hybridisation and PBR"*.

Peter discussed in detail the steps which need to be taken to obtain successful hybrids in a breeding program. He considered the production of F1 hybrids which are used for commercial types in a variety of crops, and then the greater range of characters which are obtained in the F2 generation. Recurrent backcrossing can then be used to select for a particular desirable characteristic in the hybrid.

The barriers to hybrid production were discussed, and the need to understand the floral biology of the plant, particularly if crossing plants not so closely related. Barriers include climatic differences, different time of flowering, incompatibility between embryo and endosperm, etc. If the hybrid is infertile the chromosome number can be doubled. In grevilleas selection could be made for a range of colours or better vase life for example.

Emphasis was placed on the importance of accurate records at all stages of the process, including information about initial bagging, emasculation of the plant if used, time of collection of pollen, pollination, time of day and conditions at the time, number of attempts, number of seeds produced, number of hybrids obtained. It was suggested that, to understand if there are barriers, a significant population size such as 100 to 200 crosses is needed. If there are failures it is necessary to check back on records to determine the reason.

The **Plant Breeder's Rights** (PBR) scheme was outlined and the reciprocal arrangements with the European group explained. The stages considered in registration for PBR were:

- Planning application
- Provisional protection for 24 months so you can conduct trials to check that the plant is distinct, uniform, and stable, the DUS trial.
- Follow up application needing a complete description by an accredited qualified person. DNA profiles can be provided but are not essential.
- Examination by a technical person from the PBR office, when the trial is inspected in detail, checks made with botanists if required and a herbarium specimen stored.

There are mechanisms to prosecute for infringements of the legislation but it comes back to the breeder to take action.

In general business mention was made of problems with fungi growing on a bark type potting mix and some phosphorus toxicity occurring in the same mix with a new fertiliser. A trial of *G. intricata* on 3 different rootstocks was shown and a specimen of *G. maccutcheoni* was displayed.

24 November 1996

Another meeting was held at the property of Fred and Joy McKew at Logan Village. The McKews have been planting the garden on their 2 acre block for almost 3 years and are now growing at least 50 grevillea species, including many grafted ones, as well as many other native plants. The garden is watered in extended dry periods by water from the dam, and was progressing well in spite of the very dry weather conditions in the area in the last few years. The block has some large eucalypt trees still standing. Plants added to the garden have mostly been grown from seed, with some obtained from SGAP meetings.

The gathering of 48 members and 12 visitors was very pleased to welcome Study Group Leader Peter Olde to one of the regular meetings in S E Queensland. Peter addressed the group, firstly on directions which he considered should be taken by the Study Group in the future. He considers that attention needs to be given to the relative success of growing species in areas where they have not previously been able to be grown. Grafting on ***G robusta*** has been used extensively, but this has often lead to plants showing early senescence and not looking good horticultural specimens. This could lead to a quick loss of interest in these plants.

G robusta is readily available, but it may be too vigorous, pushing steadily growing species into too rapid growth rates, leading to plants with large bowls and a twiggy top. It is necessary that we consider the relationships of species and look at what should be used as the rootstock. The use of hardy but less vigorous species or hybrids needs to be considered, such as *G "Coastal Glow"* and *G banksii*. It is important that we get the more difficult species such as ***G quercifolia*** and ***G batrachioides*** growing well, and that such plants which were obtained with difficulty are not lost to cultivation.

A common problem with grafts of many species on *G robusta* is the tendency of shoots from the rootstock, and this does not occur in the same way with some other rootstocks. Repeated shoot formation can be prevented by wrapping the part with silver foil or painting with a tar mixture to exclude light, but this is time-consuming.

Peter then gave a talk on the association between the early botanical collections and the history of Australia, particularly during the first 50 years after Cook's voyage along the east coast of the continent. He emphasised the difficulties and dangers faced and the courage, (or sheer madness?), of the early explorers and the botanists who accompanied them. Many names now associated with the epithets of various plant species were included in the discussion. Thankyou, Peter, for a very interesting talk on this rather different topic.

Merv Hodge reported the results of preliminary trials with grafting on to a variety of different rootstocks. In particular, grafts of *G formosa* on to *G barklyana* hybrid, *G "Coastal Glow"*, *G "Forest Rambler"* and *G "Splendour"* were displayed. Some of the trials were done with cutting grafts, but for ***G "Coastal Glow"*** it was more satisfactory to put roots on the cutting first before grafting. Use of these hybrids seemed to prevent the formation of shoots below the scion.

Dates for meetings in 1997 were discussed and the usual raffle of mainly grafted plants was held before the meeting closed.

ACTIVITY REPORTS (cont)

NSW – The Great Grevillea Safari or *Grevillea linearifolia*, what art thou?

by Ken Arnold

Friday 25 October 1996. Day 1, 7.00 am.
The morning was bright and cool as 10 brave grevillea lovers gathered at Macquarie Park, Windsor (well almost 10 - a Persoonia Person came along as well to add a little variety). We proceeded up the Putty Road, visiting various sites along the way. Our first search of the day, to confirm a CBG collection of ***G. linearifolia*** just north of the turn-off to Glossodia proved unhappy as we could not find it, despite being in good bushland. However, ***G. mucronulata*** (Cumberland Form) and ***G. buxifolia* ssp *phylicoides*** were seen growing here.

The same for the next search at 65 km N of Windsor and near Wollemi Creek where previous collections were also unable to be confirmed. We proposed to do another full day search in this area because of its proximity to Sydney. Just north of the turn-off to Putty we came upon ***G. buxifolia* ssp. *ecorniculata*** which was flowering well.

At this same site the Persoonia Person found a new form of ***G. mucronulata*** but a Grevillea Person, much to the embarrassment of the Persoonia Person, had to point out that it was a Persoonia (***P. hirsuta***). The most magnificent form of flannel flower, growing tall as a small man and with huge inflorescences, was also admired here. A little further on, the group came to a halt in mid-highway after an observant passenger spied ***G. montana***. This was duly admired, a few flowers hiding among the foliage examined and some fruits and specimens collected.

At Heddon Greta, where we finally stopped for lunch, Ray Brown took us into a small piece of urban bushland to examine a tiny pink-flowered form of ***G. linearifolia*** (or is it ***G. parviflora***)?

From here we went directly to the **Hunter Region Botanic Gardens** where the Grevillea gardens are undergoing some redevelopment. Gone are the magnificent hybrids which added so much colour. A magnificent specimen of ***G. magnifica* ssp. *magnifica*** was growing on its own roots in sand. It was at least 3m high by 2m wide. Heather Clarke guided the group around in the late afternoon but had strong competition from the Hexham Grey mosquitos which landed in force and were not to be brushed off lightly.

From here the group sallied forth to Salt Ash, the site of a heath form of ***G. linearifolia*** which had finished flowering. This magnificent form comes in white or pink and I'm told its a beauty.

On to Medowie, where a white-flowered forest form of ***G. linearifolia***, quite different to the previous form, was found. After Peter Olde extracted his vehicle from a boggy roadside, we all went off to spend the night at the hospitable abode of Col and Beryl Tyndall.

Saturday 26 October. Day 2.
Early morning was spent looking over the Tyndall garden grevilleas, some of which were suffering mite damage and water stress because of the competition with local trees. The safari set off at 10 am for Booral where ***G. guthrieana*** was found. Much of the original bushland had been recently cleared off by council bulldozers, notwithstanding its declared rare status. However, these conditions seemed to

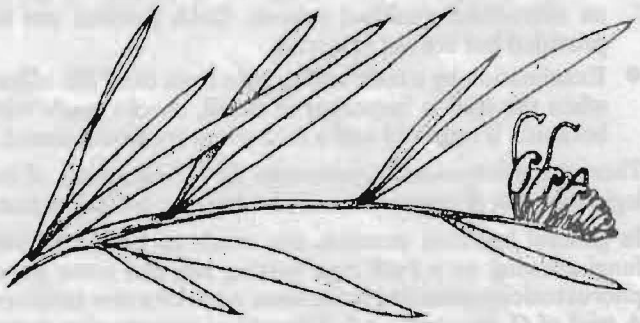
G. linearifolia Torrington form in natural habitat

favour ***G. guthrieana*** which was regenerating from seed in abundance. From here to just south of Taree, where a roadside population of ***G. linearifolia*** was examined. This population was quite distinct, bearing long peduncles.

Lunch was savoured among a roadside population of ***G. granulifera*** near Mt George. This beautiful form, with its upright habit and beautiful flowers was continuously being sought out by honeyeaters. It was good to see regeneration of this rare species taking place on the adjacent farmland.

From here to Kippara SF where we searched in vain for ***G. linsmithii***. Many hours were lost here but unfortunately our directions were not good enough. So much time was lost and so great the distance travelled that we decided to spend the night in Grafton.

Sunday 27 October. Day 3.
We all met at 7 am at Maclean and then proceeded across the river to Laurence, sadly without Heather who apparently managed to get lost whilst purchasing petrol. Here we located ***G. masonii*** growing beside the road where a small population was protected by NPWS anti-mower posts. However, a little further along on the mown verge, numerous plants were attempting to regenerate but were being continuously slashed down.



Grevillea linearifolia
Australian Native Plants, Wrigley & Fagg

ACTIVITY REPORTS (cont)

From here we drove on to the Fortis Creek area where *G. bunyabba* was located along a bush trail. The beautiful yellow and red flowers were a marvellous sight.

Dave Mason then joined us and guided us to the Whiporie SF for a look at *G. quadricauda*, growing in deep sand beside the creek.

Our next stop at Angourie reminded us of the dangers to flora that residential development poses. A beautiful broad-leaved form of *G. linearifolia* was revisited, collected probably for the last time and admired. The "For Sale" signs bode ill for its future. This population was in good flower, mostly white but a few pink-flowered plants too.

Peter Olde took off on his own for a short side venture into Bundjalung NP, where he found beautiful pink-flowered form of *G. linearifolia* growing in low, moist heath near the camping ground. This form was abundant and the flowers very tiny. The night was spent at Dave Mason's.

Monday 28 October. Day 4.
A delicious bacon and eggs breakfast was laid on by the hospitable Dave and Eva Mason and had the exhausted party lingering over his magnificent grevillea garden where numerous species are grown to perfection. The garden was effectively a sandhill mulched with sawdust. An orange-flowered form of *G. johnsonii*, probably a hybrid, was greatly admired.

From here we travelled to Tabulam, where a Franciscan brother, Bro Howard had discovered another local form of *G. linearifolia*. This form is almost certainly a distinct species, having longer pistils and pedicels in combination. It occurs in heavy loam inland from previous collections and was suckering lightly in the roadside bushland.

Our next stop (lunch) was the beautiful Girraween NP where another distinct form (?species) of *G. linearifolia* was located. This form has yellow flowers and is the same as the one we came upon later in the day near Torrington. Here, for the first time I saw *Stenanthemum scortechinii* growing in the wild, in sand.

A quick trip under the guidance of Dot and Hessell Saunders followed to Stanthorpe where a beautiful population of *G. scortechinii* **ssp.** *scortechinii* was located in full flower. The black flowers of this subspecies were dripping with nectar and are individually larger and more abundant than those of **ssp.** *sarmentosa* which we examined in the fading light the next day. At Torrington we came upon a beautiful red form of *G. juniperina*, suckering in the meadow and being gnawed by local livestock.

We spent a long time looking around this beautiful area but could not relocate an area previously visited by Ray Brown and Peter Olde where a beautiful Prostanthera grows. We spent the night in Glen Innes.

Tuesday 30 October. Day 5.
We set off bright and early towards Gibraltar Range NP. Not far along the main road (c. 20 km) the safari came to an abrupt halt to examine a magnificent form of *G. juniperina* with very broad, pale green leaves and brilliant red flowers. It was suckering abundantly in low flat country before the range started to rise up. Our first stop was to admire *G. acanthifolia* **ssp.** *stenomera* which was growing in low heath at the top of the range. Its beautiful pink flowers were displayed abundantly and were eagerly sought by honey-eaters. A little further along we came upon *G. acerata* with its interesting grey flowers, closely resembling its southern cousin *G. buxifolia*, but with its flowers turned the other way round. We turned off the Gwydir Highway on to Mulligans Hut track and parked at its end, surrounded by *G. rhizomatosa* which was not in flower. This low-growing grevillea was not particularly attractive but had interesting round leaves.

A long bush walk from here was enlivened by a large carpet snake parked across the track as we headed back from Dandahra Falls. Here, the newly described *G. mollis* was growing beside the track. This is a really beautiful area and well worth a couple of days. *G. mollis* is a soft-foliaged grevillea with bright red flowers and pink-tipped new growth.

From here the party headed back inland towards Tingha. We headed along the road to Copeton Dam and on this one road alone found three different Grevillea species; *G. juniperina* (with very broad leaves again only this time with yellow flowers); *G. triternata* (broad leaf form); and *G. floribunda* **ssp.** *floribunda* (fine form). We spent considerable time loafing about this area and overlooking the dam. A number of other interesting species were also seen here, particularly a new, undescribed species formerly included in *Homoranthus flavescens*, which was cascading in yellow profusion over the granite rocks.

Late afternoon found us in the Backwater area, where more *G. juniperina* was found and the critically endangered *G. scortechinii* **ssp.** *sarmentosa*. The habitat of this species is being rapidly cleared off. For what? A few cows grazing the poor sandy soils which support a profusion and diversity of wildflowers seldom encountered elsewhere in the district. One got the feeling the area was aptly named. We spent the night at Guyra.

Wednesday 31 October. Day 6.
We decided to head home before wives and family put out a police search. We encountered *G. granulifera* at Wollomombi Falls, a low, clumping plant growing over the cliff line at the look out. Not in flower and very different in habitat and form to the Mt George population. 22 km east of the Wollomombi turn-off on the Newell Highway we crossed Sandy Creek, where a silver-leaved population of *G. juniperina* was flourishing. This population had apricot/pink-red flowers and the leaves were much smaller than the more northerly plants collected the day previously.

At Oakey Creek, yet another population of *G. acanthifolia* **ssp.** *stenomera* flowering its head off but far to the south of the Gibraltar Range, though still in high country.

Our final stop was 20 km west of Scone towards Bunnan where a form of *G. linearifolia* was reported to be growing. However, this turned out to be *G. sericea* **ssp.** *sericea*, a beautiful suckering form with attractive pink flowers.

This was a memorable trip, hectic and fast-paced at times but taking us places we would not otherwise have seen. The variation in plants still included in *G. linearifolia* was most revealing. Hopefully, something will come of it. Parts of the journey need to be re-examined more closely and this will be done in October this year. Unfortunately, we missed *G. beadleana*. However, this will be the basis of (and excuse for) another trip. Thank you to all the participants and to your good humour.

IN THE WILD

Grevillea maccutcheonii (Proteaceae), a new rare Grevillea from Western Australia

by G.J. Keighery and R.J. Cranfield
From Nuytsia 11(1): 33-36 (1996)

This new species (***Grevillea maccutcheonii***) is critically endangered, being known from only 27 plants in the wild and is legally protected as Declared Rare Flora under the Western Australian Wildlife Protection Act.

G. maccutcheonii is an erect, spreading, densely branched, domed shrub to 2m high and 2 m wide, not lignotuberous or suckering. The immature leaves are entire or with a single apical lobe. Mature leaves are sessile, pandurate, 12-33 mm long, 6-22 mm wide, with a central sinus, base stem-clasping, amplexicaule, rigid, glabrous, with a distinct white margin with 3 lobes.

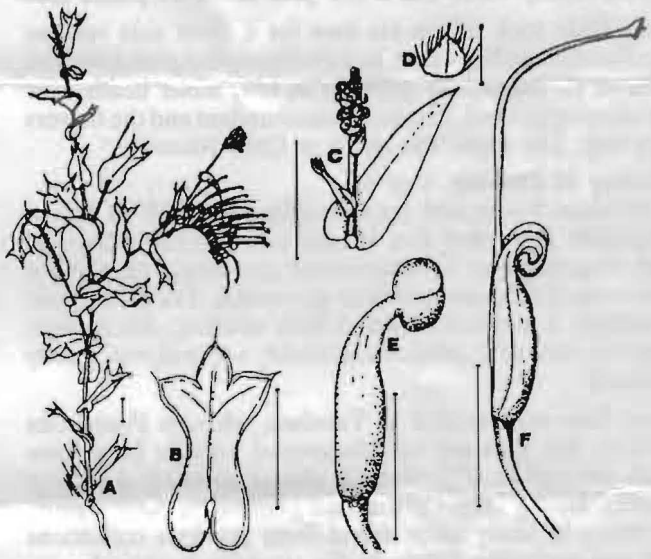
The flowers are reddish green and have been recorded between May and December, with peak flowering July to November. Mature fruits can be found in April and May.

This species is known only from a small area near the base of the Whicher Range, south-east of Busselton, Western Australia on the interface between the Swan Coastal Plain and the Whicher Scarp. It occurs on shallow red sandy clay soils over ironstone.

The name ***G. maccutcheonii*** honours Grahame McCutcheon who has considerably aided the knowledge and conservation of the flora of the Busselton to Augusta area. It is fitting that this attractive and rare species confined to the area he knows so well bear his name.

This new species is related to ***G. manglesioides, G. diversifolia*** and ***G. papillosa*** but differs in having panduriform, rigid stem-clasping leaves and larger flowers (pistil 20-24 mm long vs 6-11 mm in all other members of the species complex).

Grevillea maccutcheonii A - flowering stem, B - mature leaf, C - inflorescence at early bud stage, D - bract, E - bud, F - mature flower, ***(Nuytsia 11 (1): 33-36 (1996)***



Scale bar A,B,C,E & F = 10mm, D = 1mm.
All from *Keighery* 13786

PROPAGATION

Grevillea robusta as a Rootstock

By Denis Cox, Logan Village, Qld

At a recent Grevillea Study Group S.E. Qld branch meeting, a question was asked in passing that set me thinking. It was something along the lines of **"Why put a 10 year plant on a 100 year rootstock?"** (referring to the use of *Grevillea robusta* as a rootstock for grafting).

Well, I would counter with the question **"What's wrong with putting a 10 year plant on a 100 year rootstock?"** At least you know with a fair degree of certainty that the rootstock will still be there in ten years.

G. robusta has proved a good rootstock for a large number of Grevilleas and a reasonable rootstock for an even larger number, at least in S.E. Qld.

Admittedly, some species are definitely not compatible and some are only marginally compatible. (I hope I haven't just invented the concept of marginal compatibility).

A good deal of work is still needed to find the ideal rootstock for each species and I believe it will be many years before this work is completed.

We are just at the very start of one of the most interesting periods in the development of native plants in general and Grevilleas in particular.

One thing is certain – there will never be found one single rootstock which will suit all species of Grevillea, so while we are looking for the right one for each, why not keep on using the humble Silky Oak for the ones that grow well on it.

It meets all of the requirements of a good rootstock – it is hardy in a wide range of conditions, it is easy to obtain and is compatible with a wide range of species.

If we reject ***G. robusta*** because not all species will graft onto it or because it lives too long, then I believe we risk "throwing the baby out with the bath water".

PROPAGATION

MORE ON GRAFTED GREVILLEAS

by Merv. Hodge 17/11/96

I noted on the article by Gordon Brooks, "Grevilleas in Castle Hill" (GSG Newsletter No. 45) that we had similar problems, – ie. trying to establish grevilleas on sandstone soil. I agree that ***Grevillea robusta*** is not the perfect rootstock for grafted plants on impoverished sandstone soils. This became evident to me when I found that some of my customers grew their grafted plants much better than I did and with no more attention.

I have also found that ***G. robusta*** is less than ideal for some species for other reasons – eg. bottle-necked grafts, poor growth even under the best conditions, weak unions, complete failure of the section, and continuous production of growths below the graft. SCION

The latter is really a major problem in that some normally reliable scion/rootstock combinations occasionally produce a growth below the rootstock which can quickly take over. Consequently, if the grower is not vigilant, a potentially large tree will replace a small shrub. This ability to produce growth from epicormic buds is not restricted to ***G. robusta***. I found that ***G. banksii*** and its hybrids eg. ***G.* 'Moonlight'** and others do the same.

Intergrafts can be used to overcome incompatibility but the problem of shooting below the graft still exists. Intergrafts are easy enough to do but it means that there is twice the chance of failure and they take longer to do. Consider that if you are grafting 200 plants, then 400 grafts must be done - not a good commercial decision if there are other ways of overcoming the problem.

Intergrafts make good sense for incompatible scions on standards where you are virtually restricted to ***G. robusta*** or ***G. baileyana*** for a rootstock with a long, straight trunk. Intergrafts may be the best choice for other genera such as banksias where there is a limited choice of reliable rootstocks and they are not compatible to most scions.

In the case of grevilleas, with so many species and hybrids, the most obvious answer is alternative rootstocks and more than one will be required. These could be selected under two categories - regional rootstocks and universal rootstocks. The latter is a little tongue-in-cheek because there will always be someone who can't grow it. However, the same applies to ***G. robusta*** as well.

Why have we been obsessed with ***G. robusta***? It is regarded as long-lived and reliable over a wide area of Australia. We have been attaching 10 year scions to 100 year rootstocks and, let's face it, ***G. robusta*** is not always the best option and we have not fully explored the alternatives. Why not select other grevilleas with a known reliability, relatively long life expectancy and better compatibility.

I have always preferred seedlings but some cutting grown plants have plenty of vigour and I have found them to be up to the task. Seedlings have the possibility of varying in compatibility from plant to plant, but cutting grown rootstocks from a particular clone will be uniformly compatible to scions from any particular clone.

I selected about 14 possible universal rootstocks and sought opinions on them from experienced growers and nurserymen from Victoria to S.E. Qld. It is always worth investigating a plant when it is said that you could not kill it by running a truck over it . I short-listed them to 4 according to the following specifications:

1. They must be reliable over a wide range of conditions;
2. They must be easy to propagate;
3. They must be compatible;
4. They must be vigorous;
5. They must not try to take over from the scion, ie. they should not produce lateral growths.

G. robusta, ***G. banksii*** and ***G. banksii*** hybrids, eg. ***G.* 'Moonlight'**, ***G.* 'Honey Gem'** and so on, tend to produce numerous lateral growths from epicormic buds below the graft union after their initial removal. In some cases they will have to be removed a number of times before plants go out for sale. Many settle down once the plant is fully established and some will give no trouble at all to the customer. However, the possibility is always there and an unwary grower may find that a vigorous, potentially large tree is taking over from a small shrub.

Specification number "5" is quite important if it can be achieved and gives any rootstock with that characteristic an advantage over ***G. robusta*** ie. it should not produce any growths below the graft once the initial growths have been removed.

I found that 3 of the 4 selected hybrids produced roots in 2 to 4 weeks and the other in 4 to 8 weeks. This seemed to make cutting grafts attractive. There were mixed results – according to compatibility. Most compatible scion/rootstock combinations graft within 2 weeks. In some cases the roots are produced in 2 to 4 weeks.

I have potted up the best of them, complete with successful graft and roots, from tubes to 140 mm pots within 4 weeks from the time of doing the cutting graft (in both summer and mid-winter). However, some of the same combinations still had not produced roots at 8 weeks.

I have tried cutting grafts on a number of other genera, including kunzeas, eremophilas, hakeas, isopogons and banksias and have achieved varying degrees of initial success with all – but only small numbers were tried.

The cutting grafts for all genera were done in the same way – a simple splice graft bound with Nescofilm. The union is above the level of the cutting medium.

For all the genera, normally the graft takes first, usually within 2 weeks, then roots are produced later, varying from days to weeks.

This system is still subject to incompatibility which can cause failure at a later date. All cutting grafts were done in fog with bottom heat. The Mummy method of preventing dehydration of the scion was not used, but it would probably work where fog or mist were not used.

The rooting of some cuttings appears to be delayed for cutting grafts but in other cases it seems to make no difference. *(Continued over page)*

PROPAGATION *(cont.)*

The **disadvantages** of cutting grafts are:

1. Although the graft takes, the cutting may fail;
2. If the rootstock does not produce roots quickly the scion may deteriorate through being in fog or mist for too long;
3. There seems to be too much variation of rooting time for particular combinations of scion/rootstock;
4. The successful plants are slower to grow on after potting up than grafts made onto plants with an established root system, particularly *G. robusta*;
5. A fair amount of skill is required to do the graft;
6. More time is required from time of graft to time of sale.

The **advantages** of cutting grafts are:

1. Easier handling, ie. no handling of potted plants which is very significant when large numbers are involved;
2. It is easier to keep hands and material sterile by not handling pots and trays whilst grafting numbers of plants;
3. Larger numbers of grafts are possible for any given time;
4. Less space is required in fog or on bench to graft onto a cutting than to graft onto an already rooted plant (seedling or cutting grown). Rootstocks may have required up to three months bench space and maintenance before the graft was carried out, however this has the advantage of more vigour once the graft has taken.

I grafted ***G. intricata*** onto three different rootstocks within two days. One was grafted onto ***G. robusta*** and this did show a significantly better growth than the other two. Assessment of the results was hampered by a bad load of potting mix, however, it did show that ***G. robusta*** handled this problem best. From the time of grafting to the time of sale ***G. robusta*** seedlings seem the best choice, however there is about a three month growing period after sowing the seed.

Selection of alternative rootstock/scion combinations can be assisted by consulting Olde & Marriott's ***The Grevillea Book Volume 1***. It lists groups of closely related plants. Selection of a rootstock from the same group as the scion increases the possibility of compatibility. It helps to know the lineage of hybrids to determine the best rootstock for any particular scion.

Whilst the above is useful, I have found that there are some surprising combinations that have taken very well and they were not in the same group.

There is good reason to continue to use ***G. robusta*** where it has not caused any problems, but alternative rootstocks will probably be preferred where there are advantages to use them.

The four rootstocks that I have selected are ***G.* 'Coastal Glow'**, ***G. barklyana*** (hybrid) cultivar name unknown, ***G.* 'Forest Rambler'** and ***G.* 'Splendour'**. The latter had not been used for grafting at the time of writing, but has a good reputation and I have found it to strike roots readily.

Others tried were ***G. banksii, G. baileyana, G. venusta, G.* 'Royal Mantle'**, ***G.* 'Robyn Gordon'**, ***G.* 'Moonlight'**, ***G.* 'Honey Gem'**, ***G.* 'Kay Williams'**, ***G.* 'Superb'**, and ***G.* 'Orange Marmalade'**.

Modification to the "Side Graft"

by Richard Tomkin, Changers Green Nursery, Gin Gin

A year late but here is the promised modification to the "side graft" method which was printed in March 1996. Why change it? Pleating at the top of the graft where the sizes changed caused a few problems plus there was an inherent weakness at the top of the graft for a month or two while the tissues melded and healed. So... change one part of the method and fix 2 problems with the addition of a "short leg" on the other side to the usual scion placement.

Method:

1. Decide where and at what height you want to graft.
2. Cut away from the rootstock bud you are leaving at a **steep** acute upward angle.
3. Remove 2 or 3 leaves and buds below this exposing approx. 7.5 cm of bare rootstock.
4. Rotate rootstock 180° so that the top bud and first cut is away from you.
5. Prepare scion of 7.5 cm or more, leaving 2 or more buds on the bottom 5 cm.

A. For scions with a width up to the width of the rootstock.

Memorise the width of the scion and cut away a long slither from the rootstock to that width about 5 cm long. Holding the top of the scion cut toward the base and along the heart (maximum width) ending by cutting through to the far side. Compare the cut area for length ensuring that the scion is cut 10-15 mm shorter than the wound on the rootstock. Cut/split the scion up the centre for 15-20 mm. Manoeuvre the "short leg" over to the far side away from the main wound and align the "long leg". Wrap.

B. For scions wider than the rootstock.

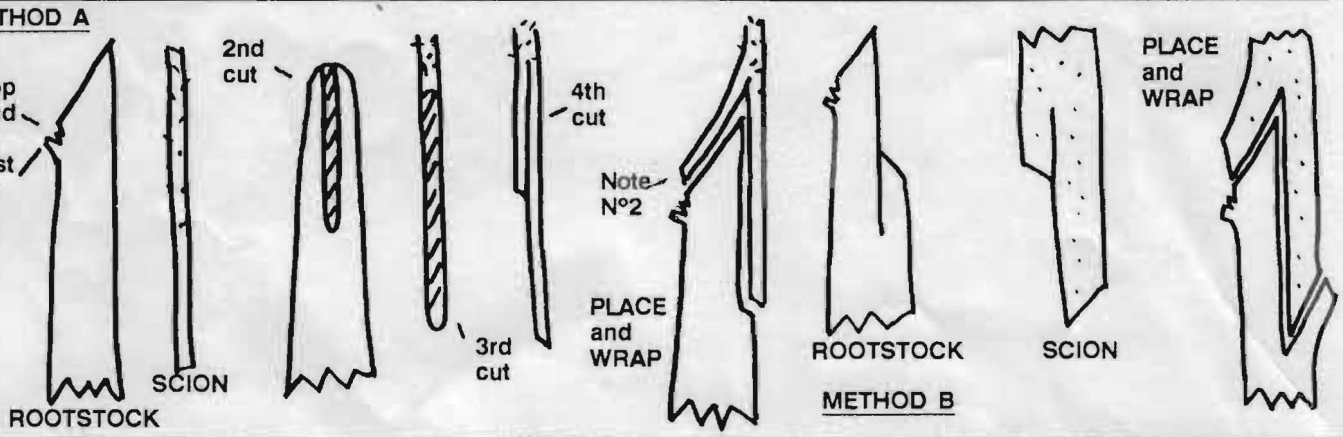
Perform the same method only in reverse. Cut the rootstock up and along the heart (maximum width) then cut **down** into the rootstock a further 15-20 mm. Sculpture the scion cut to match the rootstock and add an upward cut as in method A. Manoeuvre as in Fig. B 2. Wrap.

Notes:

1. The insertion of the scion into the bottom of the wound in method B **could** be adapted to method A for greater strength but for speed etc. it does not - at this stage - seem necessary.
2. The "shorter leg" must – in method A – reach right across the first cut down to just above the rootstock bud.
3. While all of this may seem complicated, new, and for some people unnecessary, the resulting union is **very** strong and is, in our opinion, far more reliable than previous methods. I would be only too happy to hear from anyone who has tried the "side graft" and now the "side saddle".

PROPAGATION *(cont).*

METHOD A



A less significant character distinguishing *G. maccutcheonii*, is that all ages of vegetative and floral organs are glabrous, with the exception of the margins of the floral bracts.

Seed Bank

by Judy Smith

The seed bank has gone international! I sent some seed to Germany via Ray Brown and the internet - very exciting!

Any donations of seed help to make a better seed bank for everyone to benefit. Thank you to our only donors this year – Bill Lovett and Ian Mitchell.

To obtain free seed please send a self-addressed envelope with a 70 cent stamp to Judy Smith, 15 Cromdale Street, Mortdale 2223.

FREE SEED

G. aspleniifolia
banksii red (grey leaf shrub form)
barklyana ssp. macleayana
endlicherana
johnsonii
juniperina (red upright)
longistyla
petrophiloides
rivularis
thelemanniana
triloba
venusta

CUTTING EXCHANGE

Cutting material is available to financial members only from Dave Mason, Box 94 Coraki 2471.

Hundreds of species available!

Please contact me, I may have the plant you require. The cost is $6.50, payable with order, which covers the cost of packing and return via Express Post.

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Cuttings Exchange: Dave Mason, Box 94, Coraki, 2471. (066) 83 2583

FINANCIAL REPORT

MARCH 1997

Income		Expenditure	
Subscriptions	$165.00	Newsletter Expenses	200.00
Donations	5.00	Postage	116.55
Seeds	10.00	Donation to Grevillea Park	200.00
Interest	2.00	Sydney Wildflower Exhibition	158.00
		Bank Costs	7.20
	$182.00		$681.75
Balance on Hand 3.3.97		**$436.83**	

* *

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.

1996	1997
	X