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JULY 1989

NEWSLETTER NO. 23

I wonder if members in other states are as water-logged as we are in the eastern states. Sydney has already had its annual rainfall in just 6 months and everything is very soggy!

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In our garden, we have raised garden beds — done by digging out paths and piling up the beds either side with this soil along with other soil. We can really see the wisdom of doing this right now as the paths are very soggy but the garden beds are draining very well. We have had very few deaths through all this rain, although the plants seem to be dying to see some sunshine.

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In this issue, we finally have some information on grafting, some rare and endangered Grevilleas and a new subspecies described.

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ACTIVITIES

NEWS in BRIEF

SATURDAY, JULY 22nd, 10.00 am.

The last working bee was washed out, so we will try again! Meet at Ray Brown's nursery at 29 Gwythir Avenue, Bulli - phone(042) 849216. There is some cataloguing of the collection to be done and some labouring to be done in the park itself. Bring some tools and your lunch, or just yourself if you can only stay a short time.

Neil Marriott is coming to Sydney that week, so if he can tear himself away from the finishing touches to the Grevillea Book, we should be able to meet with him at the working bee.

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SEPTEMBER 21st - 24th

NSW Wildflower Exhibition to be held in conjunction at the Royal Botanic Gardens, Sydney as part of "Spring in the Gardens". We need helpers for a display for the Grevillea Study Group — ph Peter (02)543 2242 if you are able to help in some way.

Ian Mitchell from Ringwood, Victoria, confirms that *G. johnsonii* grafted on to *G. robusta* rootstock is very successful. He has an orange flowered form which has been on *G. robusta* for 12-15 years and is a small tree about 5m high, flowering heavily in October - November.

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John Benson, a botanist with National Parks and Wildlife Service, has just discovered a second population of *Grevillea beadleana* west of Tenterfield. The only previously known location was in Guy Fawkes National Park, also discovered by officers of N.P.W.S. in 1982. Unfortunately, this second population is threatened by land clearing.

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The Greville Park Update

Ray Brown reports that work is proceeding well at the Grevillea Park.

At present the fence line is being cleared by Community Service labour and fortunately this labour should continue for quite a while yet.

A bricklayer is at present making pillars for the main gates and road materials are being delivered to the site. Negotiations are underway with B.H.P. for paving bricks and fence construction should take place this month.

If all goes well, there should be some planting done in spring.

All enquiries about the Grevillea Park or membership to the park should be directed to Ray Brown, 29 Gwythir Avenue, Bulli 2516.

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IN THE WILD

Three threatened *Grevilleas* are discussed here — one endangered, one rare and one probably extinct — sad news indeed!

On the positive side, there has been a new subspecies of *Grevillea acanthifolia* described.

Grevillea caleyii — Still Under Threat

The plight of *G. caleyii* has just been made public by Don Burke on his widely viewed television programme "Burke's Backyard".

G. caleyii is a rare and endangered plant with less than 1,000 plants protected in a National Park in the north of Sydney.

We reported in our newsletter No. 14 about *G. caleyii*. It occurs in a few scattered stands along Mona Vale Road on laterite and had been threatened by road widening. As a response to pressure from various sources, the DMR changed its plans in order to save a large proportion of the population, whereas the original plans would have destroyed 70 - 80% of the plants.

Don Burke drew our attention to a new threat to *G. caleyii* by proposed construction of a T.A.F.E. college in Belrose. David Jackson, a project architect from the Public Works Department, was interviewed. He explained that the plants were distributed on the ridge top near Forest Way and at this stage no buildings or site development were proposed for that area. The project architect suggested that a permanent conservation zone could be applied to the ridge top.

The Minister for Education has said that the college will go ahead, catering for about 10,000 students. The population of *G. caleyii* would be put under enormous pressure if these plans go ahead.

Don also interviewed Bob Makinson from the Royal Botanic Gardens who explained that a study had been done in the early 80's on the occurrence and rarity of *G. caleyii*. He explained that no-one appeared to be propagating or distributing the plant, and he believes that it has been proved that the only way to really preserve a plant is in its natural habitat.

It was found that not one local nursery was propagating *G. caleyii*. It is claimed that it is difficult to propagate in a glasshouse under a mist spray, which is common practice for cuttings in nurseries. The hairs on the leaves of the plant under mist cause the cuttings to rot off. A simple solution would be to turn the mist off for these cuttings!

The other method of propagation for this plant - its seeds - also has its problems. The plant produces relatively small numbers of large seeds which, in the wild, prove to be fine eating for some insects and birds. As a result, only a few seedlings emerge and these are often on disturbed ground e.g. the car park of the Bahai temple, where their future is precarious to say the least.

The future certainly looks grim for *G. caleyii*, but thanks to Don's programme, a lot more people will now be aware of the threat to its existence and maybe something will be done.

NEWS in BRIEF

One of our members, N. Badenoch, runs a nursery in South Australia, with quite a few *Grevilleas* in stock. If you want to call in and see them. The address is Landstyles Nursery, 1342 North East Rd, Tea Tree Gully, 5091.

A Tribute to Harvey Shaw

by Merv Hodge

It is with deep regret that we record the death of Harvey Shaw on 22nd May 1989.

Harvey was a retired farmer and one of the pioneers of the Sunnybank district. He coupled his farming skills with his love of native plants and became well known locally and interstate for his success in grafting.

Successful grafts achieved by him include Eucalypts, Prostantheras, Eremophilas, Banksias, Chamaelaucium, Kunzeas, Oreocallis, Hakeas and *Grevilleas*. Whilst he had some failures, he did not give up easily and tried a number of different methods in attempting to perfect his technique.

He introduced a number of us to grafting skills and we became infected with this passions to join two plants together to improve the performance of species which would otherwise fail in our local environment.

In his later years, Harvey married Pat Turnbull and the couple's home became a popular meeting place for many native plant enthusiasts.

Recently they were nominated for Honorary Life Membership of S.G.A.P. Qld. Region Inc. Sadly the formalities were not completed before his sudden death and Harvey was not aware of the nomination. This is the highest honour that S.G.A.P. can bestow on its members and it is an indication of the high esteem in which Harvey was held by his peers.

We extend our deepest sympathy to pat and his family. He will be sadly missed by all of us.

Grevillea rosmarinifolia "Lara Form"

The following is an article by Trevor Pescott which appeared in the Geelong Advertiser on May 4, 1989.

Believed extinct in its natural environment — the Lara grevillea.

Until a few months ago, a remnant of the original basalt plains flora existed on the railway reserve mid-way between Lara and Little River.

Recent works carried out by V/Line have devastated it.

The loss of the vegetation is bad enough, but among the plants destroyed were the last three survivors of a small grevillea that is now almost certainly extinct in its natural state.

It is usually referred to as a dwarf form of *Grevillea rosmarinifolia*, but botanist Geoff Carr is firmly of the opinion that based on some features of the leaves and flowers, it should be classed as a distinct species.

The rosemary grevillea is the needle-leaved, red-flowered shrub that has become very popular in suburban gardens, and its natural range was once described as most of Victoria and New South Wales.

But recent taxonomic studies have shown most, if not all, of the Victorian plants in the Brisbane Ranges, which is now called *Grevillea glabella*, and that plant extends to Hurstville, Eltham and up into the Wimmera.

In the Brisbane Ranges, it often hybridises with two other natives, the golden and the Steiglitz grevilleas, the latter being a rare plant confined to these ranges.

But the Lara grevillea has been left as a form of *rosmarinifolia* and regardless of the species, it is an extremely interesting plant.

It is the only grevillea found on the basalt plains, indeed it is only one of two plants in the entire proteaceae family that includes hakeas, lomatiis, isopogons as well as



IN THE WILD

banksias and grevilleas, to grow on the basalt soils (the other is the silver banksia.)

The presence of this little vegetation remnant has been known and its importance recognised for many years. In 1976, more than 20 grevillea plants existed there as well as several species of orchid including the rare brittle greenhood, and a whole suite of other basalt plains plants.

When the final recommendations for the Land Conservation Council studies of public land in the Melbourne region were published in January 1977, the site was specifically recorded as: "S11 That the Victorian Railways continue to maintain native vegetation beside the railway line in the following localities: (a) about five km north-east of Lara. This area supports a valuable remnant of the original grassland vegetation, including the rare brittle greenhood, the uncommon swamp diuris, and several other orchid species, as well as unusual forms of rosemary grevillea and silver banksia."

But late that year, construction works were undertaken that decimated the vegetation, dumping clay and boulders over much of it.

The Victorian Railways was alerted to this by the Geelong Field Naturalists Club and in February 1978, its response to this was published in my "By Field and Lane" column in the *Geelong Advertiser* as follows: "So when it was realised that the area where the plants occur was covered with a layer of clay and rocks, an appeal was made to the local railway engineer to have the area cleared, so that when the plants began to grow, after the first autumn rains, they would be clear of impediments.

"This was immediately agreed to, and, it is anticipated, that the overburden will be spent by early March.

"The co-operation was spontaneous and generous and welcomed by the conservationists who know the area.

"Only one task remains - the Field Naturalists Club will contact the estates officer for the Railways Department and request permanent fencing of the area. It is a small site, but one of extreme interest to botanists and conservationists."

I am not sure if the over-burden was removed, but it certainly was not fenced, and perhaps it was assumed that this contact combined with the LCC recommendations, would ensure its safety in the future...but it wasn't.

Recent works have now destroyed the area completely, and those of us who appreciate such rare places are disappointed and angry.

As Geoff Carr put it: "The alarming thing is that there is not assurance that this sort of destruction will not occur again - there appears to be no co-ordination at all between V/Line and Conservation, Forests and Lands officers."

I couldn't agree more. The area was so well known that many of us took for granted that Conservation, Forests and Lands, which has undertaken extensive studies into the ecological values of roadside and rail reserve vegetation, should also accept blame for making such assumptions.

There is one faint glimmer of hope in the sad story of the grevillea *rosmarinifolia* - dwarf Lara form. It has been propagated by a number of people, and the Shire of Corio nursery staff, local native plants specialists and garden club members had undertaken to grow the plant in a range of sites before the latest disaster.

The plant may have been saved from extinction in that way, but even that does not replace it in the natural environment where for thousands of years it has survived the ravages of the hostile environment that the basalt plains provides for its flora.

Grevillea renwickiana - Rare but not Endangered

In Newsletter No.21, our leader Peter, expressed concern about *G. renwickiana* in the Braidwood-Nerriga area. He noted that the road sides, where this *Grevillea* had been growing, had been cleared and scraped, with most plants being destroyed. Peter wondered who was supposed to be looking after our rare flora.

This expression of disappointment prompted a response from John Benson, Resources Officer (Botanist), from National Parks and Wildlife Service.

John Benson informs us that in response to land clearing in the Nerriga area, the NPWS commissioned a survey of *G. renwickiana* in 1985 by Ian Garven, a botanist from Canberra.

Two sites were known to contain populations of the *Grevillea* and, when surveyed, both sites were found to have been severely disturbed in recent times from factors such as grading, tilling, burning and grazing.

Part of one of these sites had been cleared for pine planting, with the remaining plants competing with pasture grasses in the road boundary, which as Peter observed, were subsequently cleared during road re-alignment /widening.

During the process of this survey a new location was found, containing upwards of 10,000 individuals within the boundary of Morton National Park. Fortunately this reasonably assures the viable long term existence of this population, as little interference had occurred here. This discovery changes the threat status of this species from endangered to rare.

Thank you to John Benson for keeping us informed on the plight of *G. renwickiana*. It's good to know what the authorities are doing about at least some of our threatened flora.

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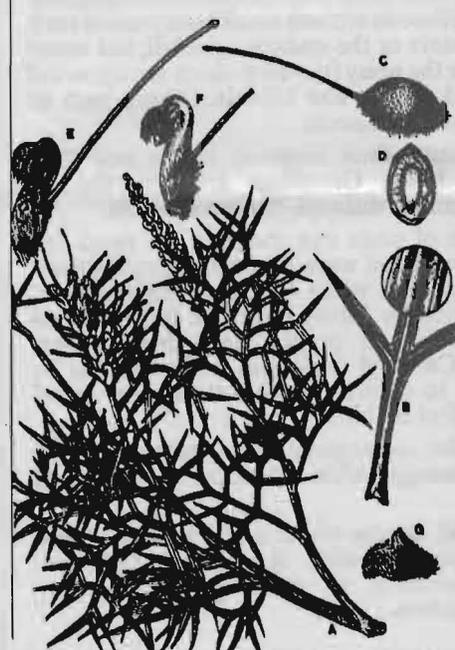
Grevillea acanthifolia ssp. paludosa

It was reported in Newsletter No.17 that David Albrecht from Melbourne herbarium had discovered a new subspecies of *G. acanthifolia* at Mt. Wog Wog. This new subspecies of *G. acanthifolia ssp. paludosa* has now been described and illustrated by R. Makinson and D. Albrecht.

G. acanthifolia ssp. paludosa is known by only 41 plants on Nalbaugh plateau (which extends from Mt. Wog Wog to White Rock Mountain) in Nalbaugh National Park. It is situated 45 km inland from Eden in south-east N.S.W. It is located in a swampy heath community.

This new subspecies differs from the other subspecies (*ssp. stenomera* & *ssp. acanthifolia*) in that it is an erect cone-like pollen presenter, and there are foliar differences, *ssp. paludosa* being more hairy and taller growing (up to 3m high).

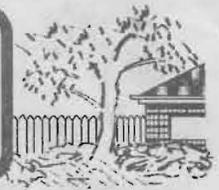
G. acanthifolia ssp. paludosa is strongly reminiscent of the closely related *Grev. rivularis* in its habit and leaf shape, and in the fact that both grow in swampy areas. It differs however, in that *G. rivularis* is almost glabrous.



Grevillea acanthifolia ssp. paludosa. A - Flowering branch x 0.4, B - Undersurface of leaf and (inset) showing distribution of hairs, C - Mature fruit, D - Inner face of mature seed, E - Mature flower, F - Section through mature flower, G - Floral bract. Drawn from holotype



IN YOUR GARDEN



THE CULTURE OF GREVILLEAS IN SUBTROPICAL DISTRICTS

by Merv Hodge

This talk was presented at a recent seminar at the Botanic Gardens at Gladstone. Grevilleas were named after Charles F. Greville, a Vice President of the Royal Society and a Patron of Botanists.

They are members of the Proteaceae family, which includes Hakeas, Telopeas, Macadamias, Banksias, Proteas (of course) and many other genera. There are about 250 species, which may be further divided into sub-species and forms. This makes it one of the larger genera, only behind Acacias and Eucalypts. Most are endemic to Australia, but a few occur off-shore in New Guinea, New Caledonia and Indonesia.

Most species are found in isolated pockets and not as extensive populations. Many are on the rare and endangered list.

Individual habitats are found throughout Australia and include deserts, sub-alpine regions, swamps, rainforests, coastal headlands and open forests.

Two-thirds or more of Australia is desert and, as might be expected, many, if not most, Grevillea species are found in low rainfall areas, particularly in the southwest of Western Australia. This is one of the reasons why we find most of them difficult to grow in our humid, relatively high summer rainfall districts.

The habits of Grevilleas include completely prostrate plants, small shrubs, medium shrubs, large shrubs, small trees and large trees. Some produce insignificant flowers but many are spectacular if grown under suitable conditions. The flower spikes vary in shape, size and colour. The shapes are described as spider flowers, toothbrush flowers and cylindrical, bottlebrush-shaped spikes. The flower colours include white, pink, mauve, yellow, gold, black, green and grey. Those producing white flowers are frequently highly perfumed.

In one case at least, the odour is not as pleasant as one might hope. I refer to *Grevillea leucopertus* which is sometimes referred to as *Grevillea* "old socks" because of the distinctive odour of the ageing flowers.

Grevilleas attract a large range of birds, small mammals and insects to the nectar and pollen. Generally, different species attract either large or small birds with specific bill shapes. For example, *Grevillea floribunda* attracts small honeyeaters such as the brown honeyeaters or the eastern spinebill, but never the rainbow lorikeet or the noisy friar bird which are attracted to the larger flowered species and hybrids. Others, such as *Grevillea triloba* only attract insects.

Because of their beauty, their range of habits and their capacity to attract birds, Grevilleas are regarded as desirable, albeit sometimes difficult, garden subjects.

They have their share of pests and diseases, but these can be controlled in conventional ways. Looper caterpillars are common on Grevilleas and when found on larger plants, are generally controlled by birds. Frequent inspection of small plants is desirable to prevent excessive damage. Insecticides such as Carbaryl or Diazinon should only be used as a last resort to control these pests as they could have a detrimental effect on bird life.

Scale insects, with the consequent sooty mould can be controlled with half strength white oil mixed with Carbaryl or Diazinon.

Psyllids are very small insects which cause bud drop and these can be controlled with Rogor or Lebaycid. Generally, it is preferable to avoid growing species susceptible to this problem.

Use all sprays when the plants are in bud and not in flower because of the possible effect on wildlife.

Leaf diseases can be minimized by selecting suitable species or hybrids. Trial and error may be necessary to determine this for your area. It is also desirable in humid areas not to crowd the plant, but allow a free flow of air around it. It is most important to keep the plant free of competition from weeds and grass. If these are allowed to grow up through the foliage of Grevilleas, it can help to keep foliage wet and encourage fungal diseases. This will result in unsightly foliage and leaf drop. In extreme cases, plants can die. Complete elimination of grass and weeds beyond the outer edges of the plant is most desirable.

Avoid digging around Grevilleas because they produce some surface roots and damage to these can introduce root diseases which will probably mean an early death.

Mulches can be successful in controlling grass and weed competition.

Pruning may be necessary to rejuvenate straggly plants. Severe pruning is very beneficial to some plants but it may be fatal to others. If you are not sure of your plant, do not cut back into old wood, i.e. below wood that is carrying foliage. *Grevillea "Robyn Gordon"* and *Grevillea "Superb"* are among those known to benefit from severe pruning.

Be careful of your selection of fertilizers. Use only fertilizers with a Phosphorus ratio of less than 4 on the N.P.K. scale and only apply at half recommended strength to be on the safe side. If the plant is chlorotic, try a mix of iron chelates and sulphate of ammonia at the rate of a level teaspoon of iron chelates and a level dessertspoon of sulphate of ammonia to a ten litre bucket of water. Water the ground well before applying the solution.

Grevilleas generally respond well to supplementary watering in dry periods although many will survive prolonged dry spells. Watering is unnecessary when regular rain occurs.

Good drainage is essential for all species and hybrids particularly when prolonged periods of rain are received. Badly drained, low lying areas, particularly in heavy soils, may be difficult, if not impossible, to grow Grevilleas.

Grafted plants may provide the answer for some problems, at least. The rootstocks of such plants need to be disease resistant and easily grown in your locality. *Grevillea robusta* (Silky Oak) is the species most used for rootstocks.

Grafting will only overcome problems of root diseases. It will do little to assist problems of leaf diseases or poor flowering because of climatic conditions. Some southern species flower poorly or not at all because of our lack of cold winters.

Grafting can produce a more vigorous and ultimately larger plant than one on its own roots, but do not worry, it will not ultimately grow to a small shrub at the top of a tall trunk. In fact, the graft will always remain about the same distance from the ground. You may have a rather broad trunk below the graft, tapering noticeably at the graft to produce a curious bottle shape.

The size of the shrub or tree produced above the graft will limit the ultimate size of the Silky Oak rootstock. In most cases, the graft will be hidden from view by the shrub itself.

Some of the larger species may show little or no difference in trunk diameter between rootstock and scion. These could include *Grevillea heliosperma*, *G. pteridifolia*, *G. hilliana* and *G. goodii* ssp *decora*.

IN YOUR GARDEN (Cont)

In coastal subtropical districts I would recommend grafting as the best method of propagation if you wish to have a chance of successfully growing a range of *Grevillea* species. A number of well-known cultivar hybrids may be successful without grafting, however, if they are not reliable then try grafting them onto *Grevillea robusta*.

Other propagation methods include seed, cuttings and tissue culture.

Seed collected from wild populations can generally reproduce the species reliably. Garden collections could be suspect as hybrids sometimes occur where a number of different species and hybrids are grown in close proximity.

Seed generally germinate erratically and, if patience is not one of your characteristics and germination is slow, then treatment with hot water can be tried. Drop the seed into hot (not boiling) water from your hot water tap for a couple of minutes. Try a small number first to perfect your system. Sow the seed in an open seed-raising mix, with a sprinkling of coarse sand or fine gravel barely covering the seed. Sow individual seed into 75mm (3") tubes. Keep the tubes out of the reach of snails, slugs, ants and mice which will feed on the seed or the young seedlings.

Use seed propagation to produce seedlings of rootstocks and scion material and graft them together when they are large enough to handle.

Grafted plants may be produced by any method you prefer, i.e. wedge, whip or approach grafts.

In subtropical districts (Coff's Harbour to Rockhampton), if you wish to try species which are not grafted and stand the best chance of survival and good flowering, I would suggest: *Grevillea robusta*, *G. banksii* (in one of its forms), *G. venusta*, *G. pteridifolia* (in one of its forms), *G. glauca*, *G. striata*, *G. whiteana*, *G. baileyana* and *G. hilliana*. On open, very well-drained sites, try *G. dryandrii*, *G. formosa*, *G. heliosperma*, *G. decurrens*, *G. angulata*, *G. mimosoides*, *G. sessilis*, *G. goodii* ssp. *decora*, *G. wickhamii* and *G. agrifolia*.

Hybrids worth trying are *G. "Robyn Gordon"*, *G. "Superb"*, *G. "Royal Mantle"*, *G. "Starfire"*, *G. "Honey Gem"*, *G. "Boongala Spinebill"*, *G. "Pink Surprise"*, *G. "Misty Pink"* and *G. "Majestic"*. The latter is worth considering for cut flowers.

If you want to have the best chance to grow *Grevilleas*, then it is worth keeping it in mind when purchasing your block of land. Select a block which is well elevated and well-drained and possibly on sandstone or granite outcrop.

Your success will depend on your dedication, your selection of the right plants, and your planting site - then luck will have little to do with it.

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NEWS in BRIEF

Peter Lang from Mildura reports that he is attempting to build up numbers of *Grevillea treueriana*, a rare dryland species from Mt. Finke, S.A. He has planted some in gardens around Mildura, so it will be interesting to see how they go.

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Norm McCarthy from Toowoomba has a garden on an acre block of red volcanic loam with natives of all sorts, including some 70 odd *Grevilleas*. Recently he has become interested in grafting and has successfully grafted *G. quercifolia* and *G. alpina*.

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IN YOUR GARDEN (Cont)

Grevilleas in Dubbo

Malcolm Hunt of Dubbo, NSW is growing the following *Grevilleas*. His garden has red, sandy soil with a medium clay sub-soil.

Those *Grevilleas* doing well are :-

G. aquifolium

G. asplenifolia

G. audreyae

G. jephcottii

G. longifolia

G. obtusifolia

G. steiglitziana

G. victoriae

Some of the more troublesome species are:-

G. banksii some problems with borers when the plant is older

G. caleyii no luck, doesn't seem to like the long hot summer

G. lavandulacea slow grower, some problems with black smut

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Grevilleas Survive Cyclone

Bev Watson from Mackay, Qld sends this report - I am glad it is not only NSW that is getting water-logged.

Hope everyone in Sydney fared as well in the "big" wet as we did here through Cyclone Aivu. We had some losses due to the heavy winds (some gusts clocked at over 120km per hour) and torrential rain but some surprising survivors! Naturally enough, *Grevilleas* grown from seed fared better than those grown from cuttings. At the April General Meeting of the Mackay Branch of SGAP, a number of hybrids were reported to have blown over and only one seedling grown plant was lost. Unfortunately, this was a highly prized *G. glossadenia*. The species that took the full force of the storm in my garden was the so called *G. stenomera* pink form. I say so called because I read in one of the back copies of the Study Group's Newsletter that the plant sold through the nursery trade is really a hybrid. Hybrid or not, cutting grown or not, it is really tough stuff, growing up here nearer to 3 metres than the 1.5 metres touted on the label.

My only loss was *G. thelemanniana* ssp. *pinaster*. I was not really surprised as 400 mm rain in less than a fortnight was too much for me let alone a West Australian!

The surprise survivor in my garden is *G. diminuta*. I bought the plant not knowing that it came from the Brindabella Ranges in ACT. If I had known I would have had second thoughts. However, while it thrived on all the rain I'll just have to wait and see how it copes with our warm winters.

Also, could anyone tell me the parents of *G. "Forest Rambler"*. This plant grows magnificently for me and I would like to try to grow the parent species.

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PROPAGATION

Grafting Native Plants

by Merv Hodge

This article is extracted from a talk given by Merv at the 1988 Bill Tulloch Memorial Lecture.

Since joining the Society in 1960, I have grown or attempted to grow many *Grevillea* species. I found that many died in a short time, some without flowering.

Our original property had clay near the soil surface, causing poor drainage and resulting in the loss of many plants from root diseases. Our present property is on a sandstone ridge and gives fewer problems. However, there are some losses or poor performers and there is still a need for better results. Grafting overcomes most problems relating to root rots.

Some years ago I was very fortunate in meeting Harvey Shaw, a retired farmer who used his knowledge to graft a small number of *Banksias* and *Eucalypts*. When I met him he was shifting his attention to *Prostantheras* and later to *Eremophilas*.

It was inevitable after a close association with me that he eventually gave some attention to *Grevilleas*. It was equally inevitable that I would become interested in grafting to the extent that I now rarely propagate plants by any other method.

Harvey and his wife Pat have become the source of many rare and unusual plants in this part of the world. Between them they have provided a large range of plants, particularly grafted *Grevilleas*.

Harvey succeeded in grafting *Eucalypts* onto local *Eucalypt* rootstocks. Similarly, he achieved some success with some Western Australian *Banksias* onto *Banksia integrifolia*. These were difficult and he mainly used approach grafting. Some of his earlier successes are still around and performing quite well. He later grafted *Prostantheras* onto the more reliable *Westringia fruticosa* rootstocks. Most of these did not flower well in our climate - one notable exception was *Prostanthera magnifica*.

He successfully grafted many *Eremophilas* onto *Myoporums*, but sadly most did not appreciate our humid climate, although I still proudly grow two of these - *Eremophila latrobbii* and *E. nivea*.

He has succeeded in grafting *Chamelaucium unicum* (Geraldton Wax) onto three different rootstocks, i.e. *Baeckea virgata*, *Leptospermum flavescens* and *Kunzea flavescens*. Other notable achievements are *Telopea speciosissima* onto *Oreocallis wickhamii*; *Oreocallis pinnata* onto *O. wickhamii*; *Hibbertia miniata* and *H. stellaris* onto *H. scandens*. Considering the stem thickness of *H. stellaris*, grafting it onto anything is astounding. Most of these have been done in small quantities because of the difficulty in grafting or because of the difficulty in obtaining good scion material.

He has grafted a handful of *Hakeas* onto *H. salicifolia* but his latest venture has been into *Grevilleas*. With assistance and prompting from Pat, he has now grafted over one hundred and fifty different *Grevillea* species onto *G. robusta*.

Harvey uses fairly soft green tips for scions, grafted onto similarly soft green tips of the rootstocks. He uses a wedge graft and covers the grafted material with a small plastic bag which is sealed just below the graft. He uses those small self-sealing bags with built in "zippers". The graft is sealed with *Nescofilm*, a self-sealing, moisture proof thermoplastic film (I obtained that information from the carton). It has the advantage of breaking down in sunlight, which means that it does not have to be removed after the graft has taken.

The plastic bags have to be removed after the graft has taken. This is indicated by the growth of the scion. The removal is gradual, by opening it a little more each day to allow the plant to acclimatise to the outside atmosphere. Plants are left in a shadehouse during the operation and are placed outside after the bag has been removed and they are hardened off.

I followed Harvey's lead for some time, but after a few years, I started to experiment with different methods and different scions and rootstocks.

I noticed that sometimes buds bound over with plastic tape, grew and burst through the tape. I reasoned that, if all the foliage was removed from the scion and the whole scion was wrapped in a single layer of tape, then the buds might grow through the tape. This would eliminate the need for the plastic bag and the plant might adjust itself to the outside atmosphere.

The first successful plant used in the trial was a northern unnamed *Brachychiton* species grafted onto *B. acerifolius*. It burst through the tape in about two weeks and never looked back.

The method is best in a shadehouse for potted plants, but I have been successful with many in the full sun in winter. One trial in March this year was carried out in full sun on a self-sown *Grevillea banksii* seedling growing in the ground. I grafted *G. bipinnatifida* onto it and left it to the "elements". It burst through in about two weeks and has a much faster growth rate than any others I have done.

As a comparison, on the same day I grafted another piece of *G. bipinnatifida* onto *G. robusta* and it was watered daily in the shadehouse and provided with the appropriate fertiliser. The field graft outstripped it in growth and flowering and is now setting seed. The other plant is about one third its size and has not flowered yet.

I vary the system sometimes by leaving a couple of leaves on the tip of the scion. These are lightly bound or not bound at all. All three variations appear to succeed equally well, depending on the scion material.

The *Nescofilm* is fairly expensive but comes in a roll 40 metres long and 10 cm wide. From this I cut strips about 1 cm by 10 cm and use one strip per graft. I found that it was difficult to manipulate the strip, so I wound onto one end of a 65 mm nail.

I then hold the nail and wind the tape onto the graft and up the scion. This gives me better control. I generally wind two layers of tape over the graft and a single layer over the scion so as to give the buds a "sporting chance" of breaking free. I stretch the tape lightly so as to weaken it to assist the buds. It is best not to tape over buds which have already started to grow. These have some difficulty in breaking the tape.

I use a whip graft because it is quicker and gives a good match of cambium layers. It is most desirable that the diameter of the scion and root stock are the same for better matching of cambiums.

The only difficulty is in holding the scion and rootstock together while starting the tape but, with a little practice, this can be mastered. Be prepared for losses but persist because you will improve with experience.

Some of the successful grafts I have done using this method are:

scion	onto rootstock
<i>G. formosa</i>	<i>G. robusta</i>
<i>G. leucoptervis</i>	
"	<i>G. banksii</i>

<i>G. petrophiloides</i>	<i>G. robusta</i>
<i>G. decurrens</i>	"
<i>G. striata</i>	"
<i>G. wickhamii</i>	"
<i>G. mimosoides</i>	"
<i>G. longistyla</i>	"
<i>G. scapigera</i>	"
"	<i>G. banksii</i>
<i>G. dryandrii</i>	<i>G. robusta</i>
<i>G. stenobotrya</i>	"
<i>G. bipinnatifida</i>	"
"	<i>G. banksii</i>
"	<i>G. "Ivanoe"</i>
<i>G. pteridifolia (prostrate)</i>	<i>G. robusta</i>
"	<i>G. banksii</i>
<i>G. quercifolia</i>	<i>G. robusta</i>
<i>G. vestita</i>	<i>G. banksii</i>
<i>G. bracteosa</i>	<i>G. "Ivanhoe"</i>
<i>Baeckea "Winter Pink"</i>	<i>Kunzea flavescens</i>
<i>Hakea multilineata</i>	<i>Hakea salicifolia</i>
<i>H. francisiana</i>	<i>G. robusta</i>
<i>H. cristata</i>	"
"	<i>Hakea salicifolia</i>
<i>H. crassinerva</i>	"
<i>H. petiolaris</i>	"
<i>H. victoria</i>	"
<i>H. corymbosa</i>	"
<i>H. roei</i>	"
<i>Scaevola striata</i>	<i>Scaevola calendulacea</i>

There are others under way and they include some interesting intergeneric grafts. I do not expect that all will take, but they are worth trying. Some may take initially and may fail because of incompatibility later. I expect that most of those above, as well as others not included, will succeed.

The Hakeas grafted to *Grevillea robusta* included above show initial success and consequently I have, at the time of writing, grafted most of the other Hakea species above onto *Grevillea robusta* and am waiting to see the result. My reason for using *G. robusta* is that it is more reliable than *Hakea salicifolia* as a rootstock albeit that *G. robusta* is more distantly related, making compatibility less likely.

My method should be useful for cutting grafts but I have not tried them yet. When there is too much foliage to remove or where there are no dormant buds on the scion, I still use Harvey's method. Both methods get good results and each has its own advantages.

I have grafted other interesting plants using the bag method, including *Kunzea affinis* and *K. pulchella* onto *K. flavescens* and *Hakea myrtooides* onto *H. salicifolia*.

Some plants revert back to juvenile foliage when the scion produces its first leaves. Recently I noticed that scions removed from the same plant. (*Grevillea leucoptera*) produced juvenile foliage on one grafted plant and adult on another. Scions taken from plants which normally produce lignotubers sometimes produce lignotubers immediately above the graft.

If vigorous rootstocks are selected the result can be a vigorous grafted plant, possibly larger than might have been expected of the same plant on its own rootstock. The use of a rootstock which is potentially much larger than the scion plant may produce a curious bottle shape on the trunk at the union. In most cases this will be covered by the branches and foliage and so will not be seen.

The graft will always stay about the same height from the ground, so have no fear about the ultimate height of the grafted plant. For example, a shrub *Grevillea* grafted onto

G. robusta is not going to mature into a small shrub on top of a 20 metre trunk.

Grafting has increased the range of good plants which can now be satisfactorily grown in this climate and there are many more to come. Each climatic region will have to select its own reliable rootstocks and conduct its own trials into the performance of each species.

The initial results of grafted plants are certainly encouraging but it will be some years before we will be able to judge their full potential. I am of the opinion that if plants grow well for ten years, it will have been worthwhile.

Trip Report

WESTERN AUSTRALIA 1988

Part 2

by Peter Olde

QUEEN VICTORIA SPRING.

Promptly at 7 a.m., our Ranger arrived at Zanthus. This swarthy man with jet-black skin, smiling white teeth and regged independence bore the unlikely name of Richard Brooks. During the day, our admiration for this man was to increase by the hour. Directly north of Zanthus, the track passed through dense, unpolluted bushland. Richard, who was leading in his own vehicle, kept stopping and pointing out Grevilleas. First, *G. juncifolia*, then *G. plurijuga*, *G. sarissa* subsp. *anfractifolia* and finally, *G. acacioides*. Shortly we arrived at the old Cundee Mission - now deserted, almost an entire ghost town, sheet iron dangling down, abandoned cars, smashed windows, rubbish everywhere. Sad to reflect on the work and effort given for its creation and left as if it was worthless. We drove on.

We came upon Pontoon Creek, a salty lake, over which the road passed. Richard told us of other similar creeks nearby, in which, as a child, he used to dive and swim. So dense with salt were they that it was impossible to sink. *G. pterosperma* was prominent in this area, along with *G. acuaria*, which here had stiff, dagger-like foliage and deep red flowers.

Just north of Pontoon Creek, we struck another patch of *G. sarissa*. This looked like subsp. *rectitepala* which is typified allegedly by its erect perianth. This feature was not so obvious to us, although the leaves were different and it subsequently transpired that this served to identify the subspecies for us. While the rest of us took photographs, Merv roamed around the and returned with leaves of an unusual Grevillea species. Show us where you found it, we enthused. Its strange how familiar a place seems when you're there but blends into the surroundings when you have to go back. Eventually, Richard, with a spot of foot-tracking, found the plant, which turned out to be a juvenile of *G. sarissa* subsp. *rectitepala*.

Our main search was for *G. secunda*. We headed north, passing through extensive patches of *G. juncifolia*. During one stop, we noticed Richard who took to roaming around the area during photography sessions, picking the flowers and putting them in his mouth. This reminded me that, during my research, I had learned that Aborigines used this species to quench their thirst. Suddenly, Richard was the centre of attention. "Have a try", he urged. By now, everyone, anxious to savour this new culinary delight, was busily plucking off flowers and stuffing them into the mouth. "Very dry", I thought. "Not much nectar because its so dry.", Richard observed. "Funny taste", said Merv, spitting out a flower full of ants. "You get used to it", commented Richard.

More tasty details from this eventful trip in the next newsletter.....

SEED BANK

A special thanks to the few who supply most of our seeds; H. Saunders, Ian Mitchell and Ian Orrell.

The address of our seed bank officer is c/- Owens Rd, Martinsville 2265. Please make all cheques etc payable to the Grevillea Study Group.

Free seed for Active Members

50c for Passive Members

G. asplenifolia

G. banksii

G. banksii alba

G. eriostachya

G. glauca

G. integrifolia

G. leucopteris

G. obliquistigma

G. phaneroplebia

G. polybotrya

G. pteridifolia

G. pteridifolia "upright"

G. pterosperma

G. pulchella

G. sessilis

G. stenobotrya

G. stenomera

G. venusta

G. whiteana

Seed for 50c.

G. sp. aff. angulata

G. sp. aff. angulata orange

G. annulifera

G. aquifolium

G. asplenifolia

G. banksii Fosteri Red

G. banksii Tree Form Red

G. barklyana

G. benthamiana Ferguson River

G. candelabroides

G. crithmifolia

G. crithmifolia prostrate

G. decurrens

G. endlicherana

G. eriostachya

G. eriostachya ssp excelsior

G. glabrata

G. glossadenia

G. hookeriana

G. juncifolia

G. leucopteris

G. monticola

G. obliquistigma

G. petrophiloides

G. pinaster

G. pteridifolia

G. pteridifolia prostrate

G. pteridifolia Qld tree form

G. pterosperma

G. refracta

G. robusta

G. stenobotrya

G. striata

G. synapheae

G. triloba

G. venusta

FINANCIAL REPORT

JULY 1989

<u>Income</u>	
Subscriptions	\$498.00
Seeds	38.00
	\$536.00

<u>Expenditure</u>	
Newsletter Expenses	158.40
Postage	96.32
Stationery	21.70
	\$276.42
Balance on Hand 1.789	\$492.23

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* * * * *

If a cross appears in the box, your subscription of \$5.00 is due. Please send to the Treasurer, Christine Guthrie, 32 Blanche Street, Oatley 2223. Please make all cheques payable to the Grevillea Study Group.

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