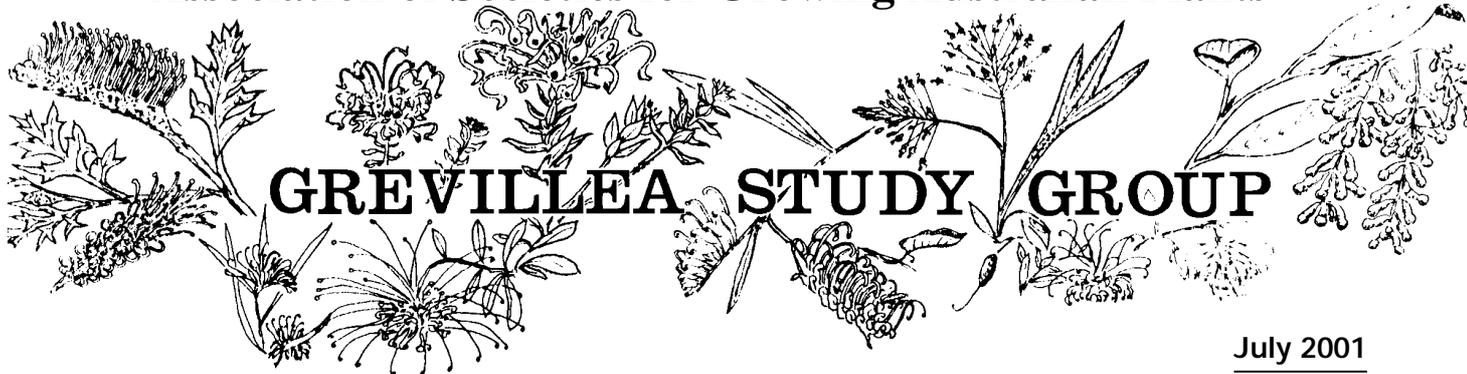


Association of Societies for Growing Australian Plants



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July 2001

Newsletter N° 59

Programme of Events in NSW 2001

Due to circumstances beyond my control, we have had to alter the programme. Particular attention should be paid to the change to Don Burke's garden visit.

Any member of the Australian Plant Society is invited to attend any the activities of the Grevillea Study Group during the coming year. Please advise your intentions to the Leader Peter Olde by phone on 9543 2242, by fax on 9541 0796 or by email to petero@australians.com.

There will be plants for sale and a plant raffle at each meeting.

July 22, 9:30am

Outing to Georges River (near Wedderburn). Meet outside the gates Mt Annan Botanic Garden

Leader Bruce Wallace

Sat - Sunday, August 4-5.

Garden visit and field trip

Meet 9am at visitors centre Hunter Region Botanic Garden

Saturday: Hunter Region Botanic Garden and local gardens.

Sunday: Two wildflower farms on the Central Coast.

Sun October 14, 1pm

Venue Don Burke, 4 Farm Road, Kenthurst

Subject New Grevillea Hybrids

Visit to Don Burke's Hawkesbury Sandstone Garden featuring new hybrids. Limited numbers. You must book with Peter Olde 9543 2242 if you wish to be on this outing.

Fri Nov 2 - Mon Nov 5, Field Trip

Wagga and Riverina District

Sunday Feb 11, 2002 9.30am

Venue: Grevillea Park, Bulli

Subject: The Art of Pruning Grevilleas

Speaker: Ray Brown

Sat - Sun April 21-22, 2002

Autumn Plant Sale

Victoria Chapter Excursions

NOTE: REVISED INSTRUCTIONS and NEW ITINERARY !!

Participants please contact Max McDowall 9850 3411 by previous Sunday to receive further details of itinerary, etc., and to organise plant and cutting swaps.

Sunday July 29th

Venue Darley Park, Greendale garden of Don & Jean Weybury (phone 5368 7337), O'Briens Crossing and Gordon.

Meet from 9.30 a.m. (optionally) at Darley Park, Bacchus Marsh (Melway 217 J8) departing 10.15 a.m. or at 10.30 at "Heathwood" Lot 6 Hastings Rd Greendale (Melways Key Map A) Turn north at Blackwood Turnoff near St Annes Winery, drive 4 km from centre of freeway overpass proceeding into the 80 kph zone at an S bend and turn right into Hastings Road. Lot 6 ("Heathwood") is at 0.6 km on the left (look for APS logo).

We will start at 10.30 a.m. for a short meeting, plant exchange/purchase, a tour of Don's and Jean's garden and arboretum and lunch followed by an excursion to O'Briens Crossing in Lerderderg Gorge. Then we proceed up the freeway to Gordon first (hopefully) to visit a GSG member's garden then John Clarke's "Lovers Leap Nursery" and finally to view some large isolated plants of *Grevillea steiglitziana* further south.

Sunday-Monday 26th & 27th August

Venue Rushworth Forest.

Sunday, departing about 2.p.m from the Kennedy Arboretum at Strathmerton, we shall proceed direct to Rushworth for a quick preview 3.30 - 5.15 p.m.

Monday, departing 8.30 a.m. Shepparton from the Peppermill Hotel-Motel Quarterly Meeting venue.

Boronia Study Group Members and Shepparton District Group Members are also invited to participate. See *G. alpina* and *G. rosmarinifolia*, *Baeckea ramosissima*, *Boronia anemonifolia*, *Crowea exalata*, *Phebalium obcordatum* etc. The acacias for which the area is famous should be at their best.

November

Participate in Riverina Field Trip organised by NSW Chapter.

INSIDE...

Queensland Activity Programme and Activity reports, Need for frost loving Hybrid Grevilleas, Translocation of Grevilleas in Western Australia, Review of the Promotive Effects of Smoke on Seed Dormancy, Propagation by Seed, Grevillea "Claire Dee" the "Robyn Gordon" of the West, News in Brief, Financial Report

ACTIVITY REPORTS

Queensland Activity Report - March 2001-07-03

The Morse residence at Wight's Mountain was the venue for our March meeting. Members attending the ASGAP Conference in 1999 will remember visiting this garden on one of the bus trips. Situated in the beautiful Samford Valley, a short drive from Brisbane, the Morse garden reflects the artistic aptitude of Patricia and John's meticulous attention to detail. Featuring a wide selection of *Grevillea* species and hybrids, along with other native flora, this garden was a very attractive setting for our meeting.

Before addressing our subject for the day - a discussion on new hybrids and their registration, Merv Hodge, our leader, reminded us of his intention to trial the effect of smoke treated vermiculite on the germination of *Grevillea* seeds. Does it work? How does it work? Several members will conduct experiments to compare the results of germination with and without vermiculite and report back in due course.

Bryson Easton then shared with us the joys and woes he experienced firstly in producing a successful hybrid, "Simply Sarah", and the ensuing registration process. Bryson stressed that unless a hybrid is significantly different in appearance from others, it is not worthwhile going through the registration process which can be lengthy and expensive.

For the plant to be commercially successful, it must be adaptable to different soil and weather conditions and be easy to propagate. Following registration and before commercial release the development of an eye-catching label can not only produce royalties but ultimately attract buyers when the plant finally appears in nurseries.

The meeting closed with the usual popular raffle whereby very lucky members can go home with a lovely grafted *Grevillea*, whilst other lucky ticket holders can choose from a range of desirable *Grevillea*s growing on their own roots.

Queensland Activity Report - May 2001

On Sunday 27 May, 25 members met at the home of Jan Glazebrook and Denis Cox situated at Logan Village approximately 30 kilometres south-west of Brisbane.

The property sits on a sandstone ridge dotted with huge rock formations. Subject of the day was "New *Grevillea* Species", but first some items of general business were raised by our leader Merv Hodge, most importantly our involvement in the forthcoming annual Spring Flower Show to be held at Mt Gravatt Showgrounds 8-9th September. With only one meeting before the flower show, it was essential that ground plans be laid.

Gwen and Ray Norris then announced their garden will be open as part of the Open Garden Scheme on 9-10th June. For anyone who has not seen this beautiful native garden - it is a must!

The subject of the day followed. This had been ably researched by Jan, using as source material "Flora of Australia Volume 17A". Jan led us through the separation of 18 species of describing in detail the background of each. Due to the high number of name changes affecting *Grevillea victoriae* a separate study was considered worthwhile at a later date.

Before closing, Merv entertained us with his drainage experiment designed to prove the benefits of deep containers over shallow ones. He certainly had an uphill battle to prove his point thanks to some very eager audience participation.

A highlight of the day is always the raffle, when we benefit from the generosity of members whose donations of plants allow us to have many and varied choice of prizes.

SGAP (QLD REGION) INC. - *Grevillea* Study Group

Morning tea at 9.30 am, meetings commence at 10.00 am. For more information contact Merv Hodge (07) 5546 3322.

SUNDAY 29 JULY

Venue Home of Bernard & Rona Wilson, 120 Avalon Road, Sheldon 4157 (UBD Map 204 C19)

Phone (07) 3206 3399

Subject *Grevillea*s suitable for containers.

SUNDAY 28 OCTOBER

Venue Home of Gordon & Maria Reynolds, Keys Road, Hampton 4350

Phone (07) 4697 9107

Subject *Grevillea*s for frosty conditions.

SUNDAY 25 NOVEMBER

Venue Home of Fred & Joy McKew, 50 Culgoa Crescent, Logan Village 4207 (UBD Map 303 H7)

Phone (07) 5546 8171

Subject Smoke and vermiculite effects.

SUNDAY 27 JANUARY 2002

Venue Home of Kerry & Annabel Rathie, 5 Salston Road, Greenbank 4124 (UBD Map 278 A5 or Map 277 R5)

Phone (07) 3200 0268

Subject *Grevillea*s suitable for heavy soils.

SUNDAY 31 MARCH 2002

Venue Home of Ian & Carolyn Waldron, 183 Clydesdale Road, Jimboomba 4280 (UBD Map 330 Q1)

Phone (07) 5546 9494

Subject Subject to be decided.

For detailed directions to venues please phone the host of the meeting.

HORTICULTURE

Hybrid Grevilleas

by Egon Demuth, P O Box 110, Albion Park, NSW 2527

The last Study Group newsletter No 58 described a number of hybrid Grevilleas - useful information for a reference. Conclusions as to past poor and unsuitable species representation for popular horticulture have certainly been borne out.

The cultivation of magnificent and highly desirable hybrids of tropical or semi-tropical background continues as a problem in areas of recurring frost. Resulting failures can be a turn off to something hardier, while frost discerns little difference with grafted plants.

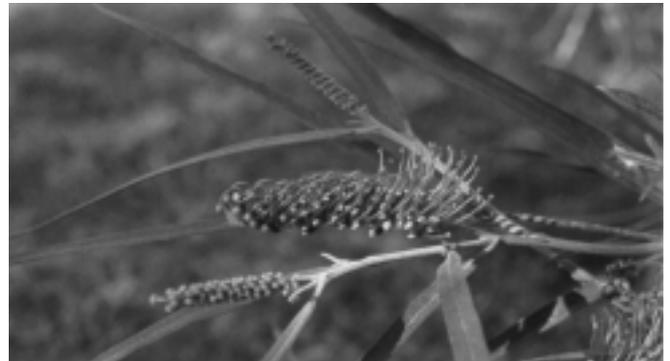
Quoted temperatures as in the newsletter can be very misleading as readings depend on where they were taken. For such readings to be worth taking into consideration they must give the minimum occurring temperature at exposed ground level. If the moist ground has been frozen hard or there is any sign of ice then the temperature had to be at least -4° Celsius, the temperature at which water forms into ice, with 0° C being the melting point.

While coastal suburbia may be well served with spectacular tropical or subtropical hybrid Grevilleas, such choice and range of spectacular species is not yet available for cooler frost prone situations that have to be content with the less spectacular.

If Grevilleas are to achieve wider horticultural popularity away from the coastal suburbia then more emphasis on breeding must be placed on other than tropical or semi-tropical stock. One advantage of such a move could well see wider applications than presently experienced.

My experience with Grevilleas on the Southern Highlands with about 30 frosts during the winter period has certainly sorted out the popular species. The most successful have proven to be NSW species. While not as spectacular in flower, *Grevillea longifolia* and *G. asplenifolia* are very much appreciated by nectar feeding birds and by myself as the best Grevillea representation available for the local area.

A spontaneously appearing prostrate Grevillea hybrid with one of the above as a parent that seems to differ from other prostrate species has now survived many a winter with a vigorous spread of over 4 metres. I have cuttings of this hybrid available.



Grevillea asplenifolia Flowers & foliage, in cultivation
(The Grevillea Book Vol 2 Peter Olde & Neil Marriott)

While coastal suburbia may be well served with spectacular tropical or subtropical hybrid Grevilleas, such choice and range of spectacular species is not yet available for cooler frost prone situations ...



Grevillea longifolia. Close up of inflorescence
The Grevillea Book Vol 2 Peter Olde & Neil Marriott

Translocation of Grevilleas in Western Australia

The Western Australian Department of Conservation and Land Management has developed a comprehensive ex situ conservation program to address loss of genetic diversity and potential extinction of populations in the wild.

In 1992, a long term seed storage facility was established (the Threatened Flora Seed Centre) to store seeds from rare and endangered flora. The ultimate purpose of this storage is to store genetic diversity of taxa and to enable reintroduction in the wild. Translocation trials using *G. scapigera* have seen this beautiful species reintroduced in the Corrigin area. Now translocation trials for four endangered species, including *G. calliantha*, have begun.

G. calliantha (right) The Grevillea Book Volume 2



PROPAGATION

Review of the Promotive Effects of Smoke on Seed Dormancy

P. Olde

Until very recently there was a view that *Grevillea* seed was like wattle seed in that the seed coat delayed water penetrating to the embryo. All you needed to do to achieve germination was to remove the seed coat and let the water into the embryo and bingo! the radicle would spring forth and soon thereafter the seedling leaves or cotyledons would emerge to feed the new roots. Right ! and Wrong!! Studies recently published by E. Charles Morris (E.C. Morris 2000) from the University of Western Sydney have yielded some surprising results about seed germination of *Grevillea*.

It has been generally known for many years that fire plays a very important role in the germination of seed and in the regeneration of bushland. Indeed, as early as 1935, Levyns reported germination of seed of a wide variety of heath species after fire. Keeley et al. (1985) showed a similar effect in the Californian chaparral.

Defining which aspect of the fire was the most important or even crucial to germination was somewhat problematic. Was it heat, or the ash-bed, or the minerals leached into the soil, the simple lack of competition, ethylene? Was it the age of the seed or something to do with the seed coat? Well, perhaps in some measure all of these and more. For many plants that maintain a soil seed bank in fire-prone environments, the greatest germination of seeds is limited to the immediate post-fire period. Seed germination in the inter-fire period may be very low, notwithstanding abundant annual seed deposit into the soil. For some, this low germination rate may be attributed to dormancy which requires some fire-related signal to be broken.

Keeley et al. (1985) suggest that seeds are not dormant but may be chemically or otherwise inhibited by post-fire environmental conditions once the vegetation has been re-established.

The ground-breaking news that smoke or smoke-derived extracts could have an amazing effect on breaking dormancy and increasing seed germination of many species was first discovered by J.H. de Lange, a Ph.D student, and C. Boucher in South Africa. They demonstrated it using the rare and difficult *Audouinia capitata* (Bruniaceae), a threatened fynbos species from South Africa as well as 12 other fynbos species and species from other countries.

The results of their experimentation were indisputably convincing and promoted further wide research that confirmed the results experimentally in the Australian context.

Shauna Roche et al. (1994) first reported amazing success using smoke to germinate seed of Australian plants. In 1995, Kingsley Dixon et al. reported considerable success using the method to revegetate mining sites in Western Australia with difficult and stubborn endemic species natural to the area of operation. Roche, Dixon et al (1997) reported success with four Western Australian species. Even in species without obvious need of fire such as the humble lettuce (Drewes et. al. 1995) and celery (Thomas and van Staden 1995) seed germination was improved using smoke.

In respect of *Grevillea*, Dixon (1995) reported success with *G. wilsonii*. Morris (2000) demonstrated it with seven east Australian species, *G. buxifolia* ssp. *buxifolia*, *G. diffusa* ssp. *filipendula*, *G. juniperina*, *G. linearifolia*, *G. mucronulata*, *G. sericea* ssp. *sericea*, and *G. speciosa*. Smoke however appears to be only one of a number of fire-related germination cues in *Grevillea*. Roche & al. (1997) have confirmed that the age of seed in 181 Australian species greatly affects viability, with decline over one year ranging be-

tween 10-80%. When fresh seed was used almost 70% of species responded positively to smoke whether applied prior to or after sowing. Only 10% of species achieved optimum germination with seed ageing alone but when smoke was applied as a treatment after soil storage, 60% of species responded positively. Experiments also showed that for some sensitive species high concentrations of smoke may even be inhibitory.

In 1995, two schools of thought emerged on the effects of heat. Auld & Tozer showed that germination largely occurs in the first year after fire and that heat was not the signal that induced germination. Edwards & Whelan on the other hand detected a slight germination increase in *G. macleayana* after subjecting the seed to short heat exposure and to scarification. They postulated that *Grevillea* seeds were dormant due to a hard seed coat and that this was only broken by scarification or cracking after heat exposure.

The germination response of seven east Australian *Grevillea* species was tested by E.C. Morris after exposure to smoke, heat and scarification and to all of these in varying combinations. At the same time, Edwards & Whelan's hypothesis was tested using different and more species. All three germination treatments when administered singly increased germination; smoke increased germination in all seven species, heat in four and scarification in a different four. Smoke and heat treatments combined led to the highest germination response in four species whereas heat and scarification combined decreased germination rates in three species. Germination stimuli have been shown to be additive in effect.

It was found that treated *Grevillea* seed consistently germinated after 12 days with most germination occurring between days 30-40, after which the germination rate declined until day 60. Germination of the control group (no treatments) was low, ranging from 0 to a maximum of 20%. Seed treated with smoke tended to germinate quicker than seed sown after other treatments. The effect of smoke exposure on germination of all seven species was highly significant.

Seed to be treated with heat exposure were placed on a petri dish in a fan-forced oven heated to 80°C for ten minutes. Heat treatment increased germination relative to controls by about 10-13% in *G. buxifolia* and *G. diffusa* and up to four-times more in *G. juniperina*, *G. sericea*, *G. speciosa* and *G. mucronulata* showed no increase in germination response after heat. Recent studies by Tieu (in press) have shown that longer exposure to higher temperatures (3 hrs at 100°C) led to release of dormancy.

Scarification (slicing through the seed coat to the embryo along one side using a scalpel) as a treatment in itself greatly increased germination in *G. mucronulata* and *G. juniperina* and only slightly in two other species.

When combined with a heat treatment, only seed of *G. buxifolia* increased in germination above the unheated sample. Scarification of smoked seed significantly increased germination in all three species that received the test compared to seed that had been smoked only. Scarification of smoked and heated seed did not significantly increase germination in any species and actually depressed germination in two species, significantly in *G. speciosa*.

Perhaps the most surprising result of Morris's research was that *Grevillea* seeds **even with their seed coat on** take up water 'like blotting paper' and just as easily lose it back to the environment

PROPAGATION (cont.)

when conditions dry out. Morris showed that “when allowed to imbibe, water uptake of all seven *Grevillea* seeds was rapid; scarification of the seed had little effect on the amount of water taken up ... The speed of water uptake and loss in the *Grevillea* seeds, if repeated in the soil, would mean that the moisture content of seeds of these species would fluctuate as soil moisture fluctuated. This entrainment of the seeds into the soil moisture regime can be contrasted with the water retention characteristics of e.g. *Banksia hookeriana*, a species in which water uptake is rapid, but water loss is much slower due to water retention by the testa (Lamont & Milberg 1997)”

This finding overturns the hypothesis of Edwards and Whelan and de-facto almost all unpublished opinion on the seed-coat/dormancy issue among amateur propagators. Depending on weather and soil conditions, water continually penetrates the seed coat to the embryo and moves back out. *Grevillea* seed coats do not repel water like *Acacia* seeds and therefore improved germination resulting from removal and/or scarification of the coat is doing more than just allowing moisture penetration to the embryo. So why do they not germinate with the seed coat on? It has been shown experimentally and widely reported that when the seed coat is removed, *Grevillea* seed germinates readily (Langkamp 1987, Olde & Marriott 1994, Morris 2000). However, since the seed coat is not preventing water uptake, what are the signals that initiate germination and what is the function of the seed coat?

One model suggests that the seed coat contains inhibitors. Another proposes that the seed coat acts simply as a mechanical barrier that prevents elongation of the radicle or prevents the exit of inhibitors contained in the embryo, thus facilitating irregular germination and ultimately enhancing species survival. A third model suggests that the seed coat restricts gas exchange, such as oxygen uptake.

However, the seed coat itself or the seed coat in combination with the embryo does contain germination inhibitors.

Morris, Tieu & Dixon (2000) have investigated the role of the seed coat in seed dormancy using two *Grevillea* species. Most of the models proposed for *Grevillea* do not affect dormancy. However, the seed coat itself or the seed coat in combination with the embryo does contain germination inhibitors. Slight embryo dormancy was demonstrated for *Grevillea wilsonii* but this was easily overcome with smoke cues. Incorporation of smoke water in the germination medium also increased germination of *G. wilsonii*.

The conclusion that smoke can stimulate germination in *Grevillea* seed is indisputable, having been confirmed in a number of published experiments using a range of eastern and western species in both *Grevillea* and other families and genera. There is also plenty of unpublished evidence among amateur propagators. The identity of the active ingredient in smoke and the way the smoke cue acts within the seed is uncertain. Perhaps it doesn't matter greatly. Smoke produced from burning any woody vegetative material is sufficient. It is very complex containing thousands of chemicals in almost infinite combinations.

Evidence for the role of heat in stimulating germination is mixed and results are inconclusive. Some species are affected not at all (e.g. *G. sericea*, *G. mucronulata*, *G. buxifolia*); some are affected some of the time (Auld & Tozer achieved 60% germination of *G. linearifolia* after heat treatment; Morris achieved 13%). Perhaps

the method and temperatures used need to be altered. However inconclusive, heat treatment can produce an increased germination response in some species.

The mechanism by which scarification/removal of the seed coat increased germination in unsmoked seed needs further explanation since the coat is not involved in excluding moisture.

The results ... suggest that there are multiple germination cues and that the stimulatory effects of the cues could be independent and additive or interactive

The results of Morris's work suggest that there are multiple germination cues and that the stimulatory effects of the cues could be independent and additive or interactive. There may be a small, non-dormant fraction of seeds in the soil bank that germinate readily and quickly. Scarification or breakage of the seed coat over time could induce a further small fraction to break dormancy. Clearly the fire-related signals of heat and smoke, especially in combination, break dormancy in a large proportion of seeds, thus contributing to the post-fire flush of germination.

Bibliography:

Auld T.D. & Tozer M. (1995) Patterns in emergence of *Acacia* and *Grevillea* seedlings after fire. *Proc. Linn. Soc of NSW* 115:5-15.

de Lange J.H. & Boucher C. (1990) Autecological studies on *Audouinia capitata* (Bruniaceae). Plant-derived smoke as a seed germination cue. *S. Afr. J. Bot* 56 (6): 700-703.

Dixon K.W., Roche S., Pate J.S. (1995) The promotive effect of smoke derived from burnt native vegetation on seed germination of Western Australian plants. *Oecologia* 101: 185-192.

Drewes F.E., Smith M.T. & van Staden J. (1995). The effect of a plant-derived smoke extract on the germination of light-sensitive lettuce seed. *Plant Growth Regulation* 16:205-209.

Edwards W. & Whelan R. (1995) The size, distribution and germination requirements of the soil-stored seed-bank of *Grevillea barklyana* (Proteaceae). *Aust. Journ. Ecology* 20: 548-555.

Keeley J.E et al (1985) Role of allelopathy, heat and charred wood in the germination of chaparral herbs and suffrutescents, *Journal of Ecology* 73: 445-458.

Kullman (198-) Seed Germination Records of Western Australian Plants, *Kings Park Research Notes* No. 7.

Lamont B & Milberg P. (1997) Removal of the testa during germination or establishment increases germinant mortality, decay and water loss. *Seed Science Research* 7:245-252.

Langkamp P (1987) Germination of Australian native plant seed. Inkata Press, Sydney. Levyns M.R. (1935) Germination in some South African seeds. *Journ. S. Afr. Bot.* 1:161-170.

Morris E.C. (2000) Germination response of seven east Australian *Grevillea* species (Proteaceae) to smoke, heat exposure and scarification. *Aust. J. Bot* 48:179-189.

Morris E.C., Tieu A & Dixon KW (2000) Seed Coat Dormancy in Two Species of *Grevillea* (Proteaceae) *Ann. Bot.* 86:771-775

Olde P.M. & Marriott N.R. (1994-95) The *Grevillea* Book Vols 1—3, Kangaroo Press, Kenthurst.

Roche S., Dixon K., & Pate J. (1994) Smoke - a new process for germinating Australian plants. *Australian Horticulture* 91(9):46-48.

Roche S., Koch J.M., Dixon K.W. (1997) Smoke enhanced seed germination for mine rehabilitation in the southwest of Western Australia. *Restoration Ecology* 5:191-203

Roche S., Dixon K.W. & Pate J.S. (1997) Seed ageing and smoke: partner cues in the amelioration of seed dormancy in selected Australian native species. *Aust Journ. Bot.* 45:783-815

Thomas T. & van Staden J. (1995) Dormancy break of celery (*Apium graveolens* L.) seeds by plant derived smoke extract. *Plant Growth Regulation* 17:195-196.

Tieu Anle, Dixon K.W., Sivasithampan K., Plummer J., & Sieler I. (1999) Germination of Four Species of Native Western Australian Plants using Plant-derived Smoke. *Aust. J. Bot.* 47:207-219



IN THE GARDEN



Grevillea 'Claire Dee' - the Robyn Gordon of the West

P. Olde

Grevillea 'Claire Dee' is a hybrid that I would once have overlooked as being too similar to other marketed plants. It was introduced around 1980 by Zanthorrea Nursery, Kalamunda, W.A. who still continue to grow and sell it. It was named after Claire Denise Hooper, daughter of the proprietors of Zanthorrea Nursery, and was sent for registration to ACRA who rejected it as being too similar to G. 'Mason's Hybrid' (Alec Hooper pers. comm.).

It first arose as a seedling on the property of Graham Chapman, who then lived at 82 Hardy Rd., Glenn Forest, W.A. its putative parentage is *G. banksii* (red) x *G. bipinnatifida*, both species being cultivated on the property at the time. Although G. 'Claire Dee' has slightly paler and larger flowers than G. 'Robyn Gordon', it nonetheless more closely resembles that cultivar than it does G. 'Mason's Hybrid'. Other comparative features are greater vigour, brighter foliage, larger size, and stronger disease resistance.

G. 'Mason's Hybrid' was introduced to horticulture soon after G. 'Robyn Gordon' in the late 1970's. Soon after Joe & Hazel Mason sold Kentlyn Native Nursery where it was developed and grew in the display gardens. The plant was then marketed under the name G. 'Kentlyn'. Ultimately it was registered with ACRA in 1980 by Joe Mason. From about this time, as a marketing exercise, it was also promoted and marketed by Don Burke and others under the trading name G. 'Ned Kelly' but they are all one and the same plant.

G. 'Mason's Hybrid' differs from both G. 'Robyn Gordon' and G. 'Claire Dee' in having the younger flowers greenish-yellow-apricot. These age quickly to a light orange when the style springs free at anthesis, ultimately ageing to a deeper orange-red. The inflorescence is thus multi-coloured with the youngest apical flowers adding a brightness to the inflorescence as it ages. Don Burke was also responsible for introducing material of G. 'Claire Dee' to eastern Australia but it did not become popular and is now grown in only a few gardens. This is a pity because it certainly has merit in its own right. It is widely grown around Perth airport. You can see a plant growing at the Grevillea Park, near Sydney.

Grevillea 'Claire Dee' grows strongly and easily from cuttings taken of semi-firm wood in spring to autumn. It rapidly grows to about 3 m whereas G. 'Robyn Gordon' rarely exceeds 1-1.5 m even after 3-4 years, though sometimes growing taller with extreme age or when grown in shade. G. 'Claire Dee' makes a large colourful screen with year-round flowering. Not only are the individual flowers slightly larger than for G. 'Robyn Gordon' but the whole inflorescence is larger and slightly more lax. Foliage remains bright green rather than turning quickly dark green like G. 'Robyn Gordon'. This can be used to achieve a different landscape effect. It can be pruned to ankle-height if necessary and will re-shoot vigorously.

PROPAGATION (cont)

PROPAGATION BY SEED

Neil R. Marriott

For many years it has been known that *Grevillea* seeds are highly unreliable and erratic in their germination. Sometimes seed germinates well, but often it is very poor or comes up over several (often many) months.

I have been growing grevilleas by seed for many years now, and have finally developed a process that gives almost 100% success. I do not use any fungicides as they are too dangerous. However you can use them if you wish, but by sticking to the following steps you should not need to:

1. Peel a few of the seed to check their condition - healthy seed should be pure white or creamy white in colour. If seed is yellow or brownish it normally means the seed is old and/or not viable.
2. Soak seed in a jar of warm water for approx. 24 hours. Tap down any seed that initially floats. Seed that refuses to sink are not viable and should be discarded.
3. After 24 hrs add the required amount of REGEN 2000 Smoked Water concentrate, per the instruct'ions on bottle. NB There are numerous other brands of smoked water concentrate around that should be as good.
4. Soak for a further 12 hours.
5. Prepare sterilised seed trays - pour with boiling water.
6. Make sterile seed mix; 3 parts Perlite to 1 part sieved peat moss. Moisten with clean tap water and firm and level into trays till they are just over HALF to two thirds full.
7. Sow soaked and smoked seed THINLY over seed mix. Then cover seed with at least 1 cm (or about half an inch) of the same mix. Water in well. I have discovered that *Grevillea* seed germinates far better when sown deeply in the mix.
8. Place seed trays OUTSIDE in a sunny site and WELL OFF THE GROUND. e.g. on an old table etc.
9. Check moisture level of mix and water - normally this means daily watering. NEVER allow to dry out or all your seed will be lost.
10. I find mid to late spring to be the best time to sow seed in Victoria. This allows seedlings to be potted up and well established by next autumn. However autumn sowing gives as good results, but many seedlings can be lost through first winter if they are not well developed by the time the cold weather arrives.

Most species of *Grevillea* have an inbuilt dormancy factor which prevents them from germinating when night minimum temperatures rise above c. 15°C.

NEWS IN BRIEF

Grevilleas on Show

By Dot Gallagher, Cambewarra NSW

Our Nowra Group gave a prize at the Nowra Show for "A Vase of Grevilleas". My entry won - easy, as only four vases were entered! Sections 13-28 were for Champion of "all cut flowers other than roses" and my Grevilleas won that prize. This attracted a lot of interest. My vase contained *Grevillea* "Majestic", "Moonlight", "Misty Pink" and "Superb". *G. "Superb"* wilted but the others went on to a friend's house afterwards.

The afternoon that I took them in, the pavilion was buzzing with people brandishing vases of everything (as well as pots, arrangements etc) and as I walked through them literally all heads turned and people said "Aren't they LOVELY!" And I voted against our group even doing this!

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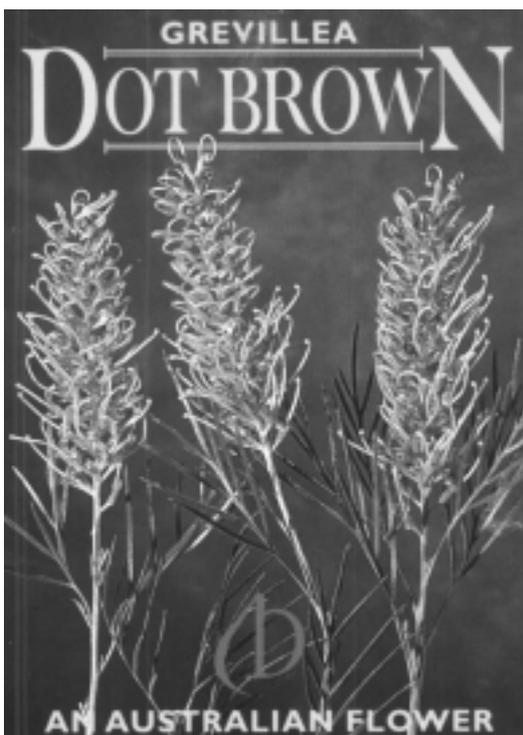
Grevillea "Dot Brown"

By Peter Olde

cv. 'Dot Brown' (*G. banksii* red x *G. pteridifolia*).

The more recent hybrids introduced to horticulture is *Grevillea* cv. 'Dot Brown'. I have never seen this plant in flower because it has literally been unavailable in local nurseries to my knowledge. However, recently I managed to pick up a plant at Tim's Garden Centre, Mt Annan. This plant has been registered under PBR legislation which has acted as a disincentive to its widespread usage and propagation because propagators are unwilling to pay the fee associated with propagating it. The plant was bred by Ena Duggan of Caboolture, just north of Brisbane who has a large collection of Grevilleas.

Grevillea cv. 'Dot Brown' has long bronze flower spikes that reportedly look spectacular in horticulture and in floral arrangements. It is a compact shrub 1.5-2 m high. It was named after a friend and fellow-member and former secretary of the Society for Growing Plants, Queensland'



Grevillea "Dot Brown"

by Ena Duggan (Breeder), Caboolture, Qld

I would like to correct the misunderstanding about the size and colour of *Grevillea* "Dot Brown". The size it grows to is 2m x 2m at the very most. The colour of the flowers is rusty red with old gold styles. How anyone can get (and I quote) "greyish red" from a red/orange cross I have yet to understand. *G. "Dot Brown"* does not have a rampant root system so it needs care ie water, until established. It does not respond well to too much fertiliser. The original is at least 15 years old and still thrives in my garden.

* * * * *

Grevillea "Pearlight"

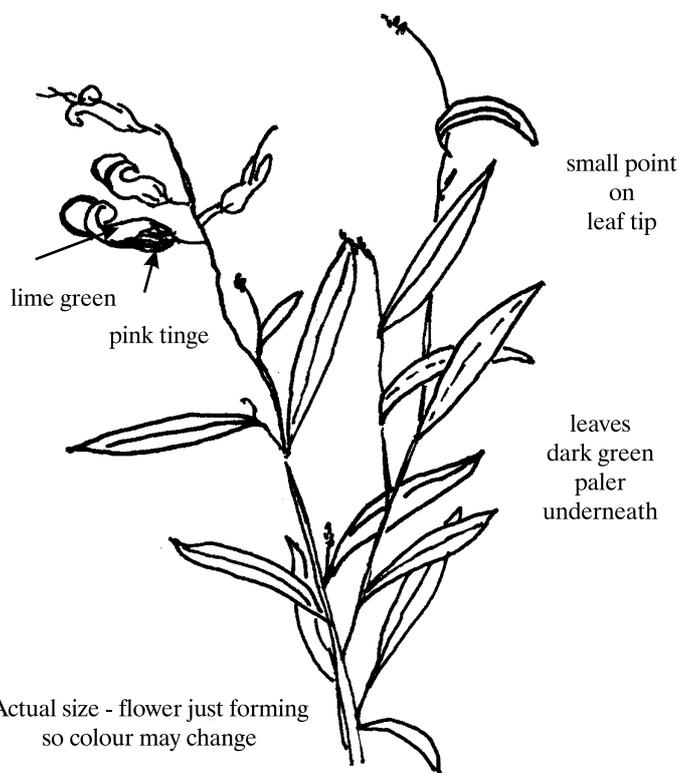
by Merv Holland, Lyttelton, NZ

Newsletter 58 asks does anyone grow *Grevillea* "Pearlight"? I have a plant labelled *G. "Pearlight"*.

I received cuttings of about 50 different Grevilleas 15 or so years ago from Peter Olde's garden. As long as there was no mix up with labels in transport and the growing on period, my plant should be what it ought to be!

The plant is still healthy and I enclose a rough sketch of it. It is just colouring up with its first flower of the season so colour may alter as it matures. The plant is mat forming, about 1m across x 150mm high. If needed I can send cuttings over but it would be better if any study group members visiting Christchurch could take cuttings back.

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Actual size - flower just forming so colour may change

Grevillea "Pearlight"
Cutting from Peter Olde's garden 15 years ago
Plant forms a mat .15m x 1m across

NEWS IN BRIEF

Floral Emblem of Merriwa

Grevillea johnsonii has been adopted as the Floral Emblem of Merriwa Shire, New South Wales. This species is localised in several areas of the Merriwa, notably at Mount Kerrabee where it grows over the old railway line below the cliffs.

Hurstville City Council has *Grevillea sericea* as their emblem.

Do any other shires or cities have a Grevillea as their floral emblem?



Grevillea johnsonii flowers and foliage
The Grevillea Book Volume 2
Peter Olde and Neil Marriott

STILL IN BUSINESS

Some time last year, we mentioned to a Study Group member that we were going out of 8" pots.

Due to some misguided gossip, it now appears we have gone out of business!

We are still expanding, we are still grafting and we are still hybridising and we are still here!

Richard Tomkin
Changers Green Nursery
Gin Gin

Articles for the Newsletter

Articles for the newsletter can be emailed to save time on retyping. Please email direct to Alison Bailey who compiles the newsletter. Her email address is canoehcc@ozemail.com.au.

OFFICE BEARERS

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FINANCIAL REPORT

Income	JULY 2001	Expenditure	
Subscriptions	\$637.58	Newsletter Publishing	320.00
Donations	25.00	Postage	144.10
Interest	2.16	Plant Sale Expenses	12,139.48
Plant Sales	15,966.07	Repair to GSG Fax	93.50
		Bank Charges	13.27
	\$16,630.81		\$12,710.35

\$10,441.89 in Interest Bearing Deposit for 6 months

Balance in Current Account as at 22/6/01 \$10,889.35

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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, PO Box 275, Penshurst 2222. Please make all cheques payable to the Grevillea Study Group.

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