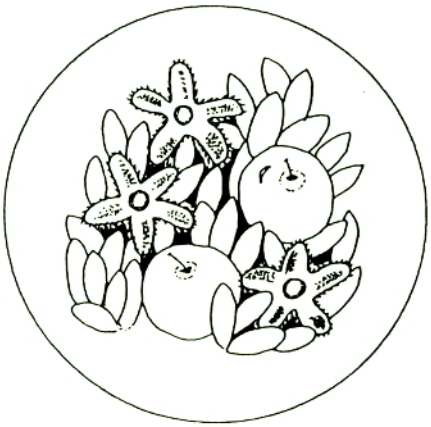
PENTACHONDRA

NEWSLETTER OF THE AUSTRALASIAN PLANT SOCIETY



ISSUE 25 DECEMBER 2000

AUSTRALASIAN PLANT SOCIETY

Newsletter No. 25
December 2000

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EDITORIAL

What a strange year its been. A mild, almost non-existent winter and a cool summer. I really can't remember sitting in the deckchair this summer without a cool wind blowing. And not a single night has been warm enough for a barbecue. An abundance of rain has made it paradise for slugs and snails.

DID YOU KNOW - Slugs have approximately 27,000 teeth. A cubic metre of garden will on average contain up to 200 slugs!

Thomas Naylor, a member from Leeds comments on the lack of Small Tortoiseshell butterflies this year although he has seen plenty of Red Admirals and Peacocks, a few Commas and Painted Ladies and his first ever Speckled Wood. I haven't seen such a variety of butterflies myself, but did notice that when the buddlieas starting blooming, there was a distinct lack of these nectar-sipping insects. It was well into August before the first visitors arrived, mainly Peacocks and Red Admirals.

SEED DISTRIBUTION 2000

In the five weeks between Good Friday and the Late Spring Bank Holiday, 969 packets of seed were sent out to 63 members. There were 72 substitutes. This number was high because the list included two species which had been ordered, but which did not arrive. The supplier was out of stock.

32 members received substitutes. All requests were posted within 24 hours of receipt.

The small proportion of members donating seed is a continuing disappointment. Over the years we have (for example) sent out many packets of *Diplarrena latifolia* and *Libertia pulchella* seed. Both species bloom in the 3rd or 4th year from seed, yet not a single recipient has ever given us seeds in return. What will happen when the elderly member who is the only donor dies? Please do make an effort to save and send us seeds, but only do so if you are sure that they have not hybridized. This could happen if you grow more than one species in the same genus and do not isolate them. Although clean seed is preferred we will accept uncleaned seed.

As is obvious from the preceding paragraph our seed list differs from those of other societies in that it has a high proportion of purchased seed. Unlike commercial importer/repackers we cannot get the economies which result from bulk purchases. Some seeds cost us 50 pence each. Nevertheless the Society's policy is to give generous packet quantities, and even the expensive species are sent out with four seeds in each packet. One third of the £3 fee is taken up by the glassine seed envelopes, the mailing envelope and postage. Our distribution compares favourably with those of other societies, which have all their seed donated by members, require them to provide a sae., yet still charge £2-3.

SEED DISTRIBUTION - ADDENDUM

We notice that a national seedfirm is selling *Myosotidium hortensia* "alba" seed at 66p a seed, plus postage. A member getting 20 packets in our seed distribution would have paid 4 pence a seed, including postage.

APS WEBSITE

Many thanks to Jeff Layman and David Gallacher for setting up the APS website, found under the address: anzplantsoc.org.uk. Since I am not on the internet, I have not seen the pages so can't comment on the content. Perhaps members could send in their comments for the next issue.

E-MAIL ADDRESSES

If you have an e-mail address that you would be happy for other members to use to contact you, let us know and it will be published with the next address list.

ALSO ON THE SUBJECT OF WEBSITES

Members can access the WA Calm plant database ('Florabase') free of charge for level 1 (which is probably sufficient for most). You will need to register at www.calm.wa.gov.au and will be given a user name and password.

PHYTOSANITARY CERTIFICATES ——A WARNING?

By Tony Entwistle

I have never previously had any trouble in getting seeds from Australia, but a recent small order was refused dispatch to the UK by the Australian Post Office because no phytosanitary certificate was attached. Now a certificate costs $AU65 (over £30) which is clearly prohibitive, and if this becomes standard will cause real problems.

Has any other member had similar difficulties?

MEMBERSHIP ANNUAL SUBSCRIPTIONS

Single member	£6.00
Household	£9.00

Membership subscriptions are due on January 1st 2001. Members who do not pay by direct debit are reminded that if payment is not received by the end of March, membership will be deemed to have terminated. No further reminders will be issued.

All subscriptions are due on January 1st. Please make cheque payable to Australasian Plant Society and send to Tony Entwistle, 'Ophrys', 113 Station Road, Delamere, Northwich, Cheshire, CW8 2HZ

THANK YOU

Thank you to all those members, and especially Jeff, who have sent in articles and snippets of news. Apologies for not contacting you on receipt of your article - lack of time again! Deadline for the May 2001 issue is March 31st. Articles can be sent on disk. Acceptable formats are Microsoft Word, RFT and TXT. Please send to Sue Hyams (address on inside of back cover).

BLANDFORDIA PUNICEA

By Dennis Rowlinson

Seed was received from the 1997/98 AGS seed distribution and sown in early January 1998 onto 'Fertile' cloth. Germination took place in two weeks and the chitted seed was put into a well-drained mix of John Innes and grit and allowed to grow to a bigger size.

'Fertile' is a horticultural mat, a layer of biodegradable material, with a special absorbent gel attached to the reverse. 'Fertile' can be obtained from :- Datesands Ltd, 67 Louisa Street, Openshaw, Manchester, M11 1AF. Tel. 0161 231 7676

In the early summer the seedlings were potted on into larger pots with a slightly richer mixture. Over the following months they were potted on as needed and then kept in my frost free greenhouse over winter. Over this period my snail population found them to be very tasty, and my total was reduced to one before I could stop them.



Blandfordia punicea
Tasmanian Christmas Bell
This herbaceous perennial is native to wet heaths, moors and hillsides from sea level to the sub-alps in Tasmania. Grass-like leaves upto 1m in length crowd themselves around the base of the stem. The bell-shaped flowers are red outside and yellow inside, each 3-5 cm long with 6 lobes, arranged in a terminal raceme of 5-12 flowers.

During the summer months of 1999 the remaining one was placed out onto my alpine table and potted on as needed. This was then placed in a cold frame for the winter and planted into a very well drained raised bulb bed in early March.

The plant flowered in April and gave a very impressive display - it had obviously read my Tasmanian Plant Guide, as it was exact in every way.

I consider this to be a real success story, which had a striking finish. It has set seed I think (still green yet); it won't be much but I will send it off to Jeff Irons for the distribution.

******

MORE NOTES FROM DENNIS'S GARDEN

Most of my few garden Australians gave a good show this year. Two of the Callistemons flowered for the first time and I am discovering their true identity. The two *Prostanthera cuneata* plants have continued to be a mass of white, though *P. cuneata* 'Alpine Gold' refuses to do anything other than slowly increase in size. Perhaps its sulking and needs a better position.

My various N.Z. clematis gave a good show along my side fence though not much seed was set. I should plant more females I suppose, but most of my seed germinated as male, as usual, and I don't like throwing them away. Will have to see how my *C.* 'Early Sensation' seedlings develop as I don't know if they act like the species and are male/female plants. Does anyone know?

Billardiera longiflora on the fence and arch has set some seed and looks fine with the fruit shining in the sun. I am growing another of the plants in a pot up a small frame and that looks quite good as well. There will be a few more seeds going into the distribution if only I can keep the snails off.



Gondwanaland-sur-Mer

By Einion Hughes

An exaggeration? Of course it is, but over the last few years the plantings in my garden have changed quite dramatically as I have introduced an increasing number of plants that originate in the Southern Hemisphere. I shall mention some of the successes and failures I've had with some Australasian plants, but it might be an idea for me to start by describing my garden's situation and character.

This garden is situated in the southern outskirts of Rhyl on the north-east coast of Wales. It's on the south side of a low hill of boulder-clay, some 9m above sea level, and about 3km from the open sea. Although the soil is basically clay it has been modified in both the front and back gardens. I dug the front garden liberally with peat when I first arrived here twelve years ago, and since then I have added copious amounts of grit, thereby improving the drainage and opening up the soil's structure. The back garden was largely covered over with concrete at first, and this has gradually been removed as time and finances allow. The soil underneath has been built up considerably with compost, peat, grit and sharp sand. I would say that these additives now probably account for some 60% of the growing medium.

The entire back garden is by now surrounded by a 2m high brick wall, which helps to increase both shelter and heat, and also helps to dry out what was in any case a rather dry garden. In addition, about half the garden consists of raised brick beds which all have large amounts of builders' rubble at their bases, thus ensuring near-perfect drainage. I am sure that together, the raised beds and brick walls are a crucial factor in some plants' ability to overwinter here successfully. The mean annual rainfall for this town is less than 660mm (26"), and in 1999 the temperature varied between a minimum of -3°C in January and a maximum of 26°C in July. Wind is also an important climatic factor: we have many windy days, with salt-bearing winds coming in off the sea. There are relatively few large trees and shrubs in the locality so I do not have as much shelter as I would like. Fortunately what trees there are shelter this garden from the east wind, and the bungalow itself shelters the back garden from the north.

My interest in Australasian plants is quite recent, so I only had 3 plants here when the last hard winter (95/96) occurred. They were *Acacia dealbata, Acacia retinodes* and a red-flowered callistemon whose name is lost, but which has been tentatively identified as being possibly *Callistemon subulatus*. That winter reduced the bottlebrush to about a third of its former size. It had flowered 3 years consecutively prior to that, but it took until 1999 to flower again, sparsely. In 2000 it covered itself in glory and was a mass of flowers.

A. dealbata had been about to flower for the second time at the end of '95. Some four metres in height, the winter killed it to the ground. In the late spring I cut it down to a metre stump, which I intended removing later that year. In the late autumn (like many gardeners I have a tendency to defer gardening chores!) I noticed that there were a few shoots growing from the roots and it has since made a very good recovery. It's now over 3m high, and loaded with developing flower buds as I write (September), so it should put on a terrific show in early 2001. Weather permitting.

Acacia retinodes was similarly cut to the ground. It was dug out and removed in the early summer of '96. Had I left it in situ a while longer, it might have recovered, but...

Everything else that's Australasian in this garden has been planted since the spring of 1996, which means that they haven't had to contend with any cold winters. I reckon that round these parts we only get a really bad winter every 15 or 16 years, which gives me about 12 years' grace. I intend to have a lot of fun with my plants in the meantime.

So what have I got here, then? Like some other members of this society, I have become inordinately fond of Correas. Apart from any questions of hardiness, I wonder why these shrubs are not far more often grown. Their production of flowers in the depth of winter, their evergreen leaves and their manageable size all point to them being the sort of plants to be seen in every other garden; which they manifestly are not. I started with an anonymous plant from a market stall, which may be a *Correa reflexa* form or hybrid. It is a rather sprawling, low-growing shrub, and its small greenish yellow-tipped red flowers are already in evidence in August, after which they just carry on and on. I then got another plant from Tim Longville, which was labelled *C.* x 'Mannii': this has since been identified by Jeff Irons as *C.* x 'Harrisii'. It's a superb plant, its deep red flowers lighting up this part of a border in the front garden all through the winter. As it's next to the drive, it's a welcome sight each time I leave or arrive home.

So far the most floriferous correa here has been 'Marian's Marvel'. It flowered all last winter, and its good-sized red and yellows were a cheering sight from the front room window. This year it was already developing buds by late July, and the first flower opened in late August. Currently a smaller plant but potentially even more beautiful in time, is *C. backhouseana*. I'm hoping it will eventually be like the almost-tree specimen that grows on the castle terrace at Logan. A few flowers adorned it last winter and I'm expecting a few more this winter. It didn't do the plant much good having a 1.5m South African wild cineraria collapsing and then sitting on it for weeks last winter.

Since grevilleas are plants that I find very appealing, both for foliage and for the colourful spidery flowers, I'm lucky that they seem to enjoy growing in this garden. My first plant was *Grevillea lanigera*, which I received a couple of years ago from Jeff. It flowered quite well last winter, and is already starting to flower again now. It's still a small plant, about 30cm across, and rather less than that in height. It seems to be a characteristic of some grevilleas that they start flaunting their blooms when still very small plants. This has also proved true here of *G.* 'Molonglo' and *G.* 'Olympic Flame'. The former produced it's yellow flowers when just 10cm tall and about the same across; 'Olympic Flame' was somewhat larger, and this has grown particularly strongly this year, and looks set to be a very striking occupant of the front garden in future years.

Grevillea lanigera - Woolly Grevillea
Greyish green, rounded hairy shrub. Leaves, 10-25mm long, are crowded and linear with rolled under margins. They are covered with soft hairs. The flowers are red or pink and cream curled tubes about 1cm long, arranged in small, terminal spidery clusters. Habitat - sandy or rocky sites and stream banks in coastal heaths, open forests, and sub alps from central NSW to eastern Vic.

A very different plant is *G. victoriae*, which has willow-like foliage. It's still small at present, a little over 30cm tall, and as it isn't one of the hardiest grevilleas I shall keep an eye on it. Another species that I don't have here yet, but would like to have, is *G. alpina*. There are many specimens of this at Portmeirion, and it evidently has a very long flowering period: it was flowering there last November, and flowering this August too. Possibly not in the top flight of garden shrubs, but attractive nonetheless

I have added considerably to my collection of bottlebrushes during the last three years. Tim gave me plants of *Callistemon pallidus* 'Lilac Form' and *C. sieberi* 'Pink Form' two years ago, and Dennis Rowlinson presented me with *C. rigidus* and *C. sieberi* last year, shortly after I acquired *C. viridiflorus* at Logan Botanic Garden. I've planted this in one of the damper areas of the garden, hoping to emulate its natural habitat. Also here, but in a very sharply drained raised bed, is *C. flavovirens*. It's not particularly hardy but has survived three (mild) winters with no ill effect. It has very silky, dark olive-green new growths which compensate for the fact that it has not yet flowered. Unlike grevilleas, most bottlebrushes seem to take their time before they start flowering. I also have some



Grevillea victoriae

Royal Grevillea is a rounded shrub with silky hairy branches. Leaves vary between narrow lanceolate to broadly elliptic with curved back margins, 3-11cm long and 7-40mm wide, often with whitish hairs below. Small pendulous terminal clusters of rusty red tubular flowers, each 10-16mm long with 4 curled back hairy petals adorn the shrub. Habitat - rocky sites above 1200m in NSW and Vic.

young seedlings of the red form of *C. pinifolius*, from APS seed. They were sown in '99, and are still in the original pot: I really must re-pot them.

Melaleucas are close relations of bottlebrushes, something especially apparent when they flower. The first arrival here was *M. squarrosa*, courtesy of Tim three years ago. It has since grown steadily and is now a good 2m in height, though less that 1m across: it has a markedly upright habit of growth. It flowered this year for the first time, producing creamy-white powder puffs in some profusion. The effect is pretty and charming, rather than spectacular.

The only other species that has flowered here to date is *M. hypericifolia*. This came as a very small plant from Paul Allanson's nursery and has flowered for the last two years. The flower heads are sizeable and a bright orange-red, so that it looks like most people's idea of a bottlebrush. It's gratifying to see blooms on a plant no more than 30cm high. The only disadvantage with this plant, in *my* opinion but possibly not in *yours*, is that it lives up to its specific name all too well: in leaf it really does look for all the world like a hypericum.

My experiences with other melaleuca species have been decidedly mixed. *M. wilsonii* and *M. capitata* seemed to settle in initially, but then expired. In the latter instance, the direct cause was almost certainly drought, although it might eventually have popped its clogs regardless. I have no idea why the former died, since it had survived one winter outdoors, and died during the following summer.

M. armillaris is growing away, although I would not be surprised if this, too, died on me one day. *M. linariifolia* is positively thriving, and has given me no grief so far. Photographs show a plant that's quite stunning in flower - a mass of white - I would love to see mine looking like that! I also have young seedlings (this year's seed-list) of *M. citrina* and *M. pustulata*. I have no immediate plants to risk *them* outdoors.

I have become inordinately fond of olearias over the last few years, as a result of which I have several (too many?) of them in the garden. The first arrival as I recall, was *Olearia lirata*, from Tim. This close relative of the far more widely grown *O. phlogopappa* has grown and grown, and is now over 2m high. I should trim it a bit to keep it within bounds, but as it is currently fully clothed in leaves down to the ground I am loathe to do so. It flowered this year for the first time, and was a mass of small white daisies for many weeks.

A more spectacular plant in flower is *O. cheesemanii* (formerly *O. rani*), which I got from Paul's nursery. Less than a metre high and across at the time, it was a sheet of brilliantly white flowers in May, with hardly any leaves visible. I first saw this in flower at Logan in May '99. The friend who was there with me made the interesting comment that he preferred the neighbouring libertia (also in flower), because the olearia had *too many* flowers.

Two other olearias flowered here this year for the first time: *O. phlogopappa* (a white-flowered form, and less than 30cm tall) and *O. erubescens*, which managed to produce a couple of small flower trusses despite being about 15cm high at the time. It's put on some growth since then, and the young leaves are pleasingly flushed with red.

O. 'Zennorensis' is a fine foliage plant with its narrow, serrated leaves, and I'm not too worried as to whether it flowers or not - it's a handsome sight all year round. The jury is still out on *O. odorata*, a deciduous species. It's easily overlooked, and although it may be a fine sight in flower (although other people's reports are not encouraging), I've yet to see any. In any case the flowers are valued more for their scent, it seems. Another scented species is *O. paniculata*, starting to flower for the first time as I write (September). They are *minute* - the tiniest flowers I've ever nearly not seen. Just as well I value this shrub for its fine, apple green undulating leaves. This can either be given its head and allowed to soar to over 9m, or can be trimmed regularly to a more manageable height. It can even be grown as a hedge, if so desired. I have yet to decide what size I'll let it reach.

Potentially one of *the* stars here in the near future will be *O. argophylla*. It's not, I'm reliably informed, the hardiest of olearias but it's doing all right outside so far. It has put on a lot of growth this year, and should be above head height within two years. The leaves have considerable presence: they have lightly toothed edges, are a good 10cm in length, and when young have a pale green upper surface which changes to a darker green as they age. But the lower surfaces are an entirely different story: it is a startling, silvery white, which is why I want to see this shrub taller than myself. I've given it the semi-shaded position that I'm told it prefers. How impressive it is in flower I don't know, but with such foliage, does it really matter?

I've been pleasantly surprised hitherto by my success with 3 species of banksia. No doubt the recent succession of mild winters, coupled with the fact that they are planted in a sharply drained raised bed, accounts for this. The largest plant at present is *B. ericifolia*. It certainly lives up to its name, and could easily be mistaken for a tree heath or slightly unusual rosemary. It's currently just over 1m high and I assume that, like a lot of banksias, it needs to achieve a considerable size before it flowers. On this species the cylindrical flower-spikes are a good bright orange. Let's hope that we have enough mild winters for me to see them.

Banksia marginata and *B. integrifolia* are both smaller at present. These two species have the interesting habit of growing in flushes, ie. they produce new shoots, then take a rest for a couple of months, and then produce further shoots. *B. integrifolia* does this twice a year with me, whilst *B. marginata* usually manages to produce three flushs. Is this the way they normally grow on their home territory, or is it an adaptation to the rigours of the Welsh weather? Earlier this summer I saw two much bigger specimens of *B. integrifolia* in mid-Wales, in two gardens a few kilometres apart. Nearly 3m high, they had reached that stage where the leaves were entire, as the botanical name suggests (they're deeply serrated on smaller, younger plants). The difference was that one plant, growing on a very steep slope, was thriving, whereas the other, planted on a small hillock but close to a stream, was in the last throes of dying. I suspect that the last, unusually wet winter may have been the cause, as this particular species needs particularly good drainage, even for a banksia. When they do eventually flower, both species have spikes of light yellow flowers.

Another member of the Proteaceae is *Lomatia myricoides*, which flowered very prettily here this summer, with lots of white spidery flowers: especially gratifying on what is still a small plant. *Hakea salicifolia* and *H. microcarpa* are in the same family. I just had to buy the latter after

seeing a well-grown specimen in full flower in Jeff's garden last year. The smell is superlative. I bought *H. salicifolia* at the Tatton Flower Show in '99: it was one of the display plants Paul had sent over for our society's stand. It has more than doubled in size this year, and is now over 2m tall. It can't be that far off producing its white flowers, can it? The wonderful thing about this plant is the emerging foliage. The normally green willow-like leaves are some 75mm long, and are a very noticeably plumy red shade when they first emerge. Since this shrub produces new leaves for most of the year, outside the winter months, it always looks from a distance as though it's flowering. A definite must-have!

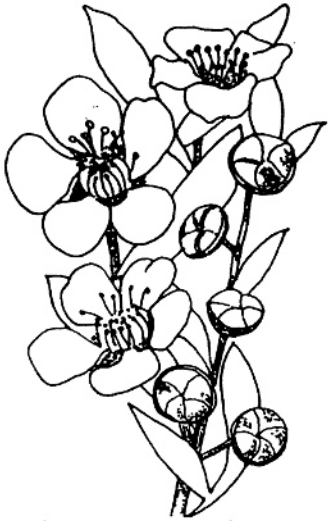
I have several of the Australasian broom-relatives here: *Chordospartium stevensonii*, *C. muritai*, *Notospartium torulosum* and *Carmichaelia odorata*. This last plant flowered here last year. Very pretty blue pea-like flowers they are, and although small they make up for it by their considerable numbers. Or at least they did last year. *This* year, for reasons that it has refused to divulge, it didn't even *try* to flower. The other three are still young un-flowered plants. Being leafless, they all look like so many dead sticks. *I* rather like them. *Some* people don't...

Also consistently looking seriously dead are members of the genus *Allocasuarina*. I bought two species, *A. littoralis* and *A. verticillata* from Greenway Gardens in Devon earlier this year. Although I have planted both of them in the ground, I am well aware that they are not terribly frost-resistant, so I shall be saddened but not surprised if I lose them. Also growing from this year's seed-list is *A. muellerana*, which germinated readily: the seedlings are currently about 10cm high. I must admit that these horsetail-lookalikes can be more accurately described as conversation pieces rather than beautiful, but I've always had something of a weakness for this type of plant. Our society's secretary is firmly of the opinion that allocasuarinas are strictly plants for weirdoes, and since he knows that I already have three species....

...let's move on to the genus *Leptospermum*. The only one to flower here so far is 'Silver Sheen', whose silvery leaves look good for 12 months for the year. The white flowers are quite pretty but hardly compete against the background foliage. I obtained *L. polyanthum* from Paul: it's not the happiest plant in the garden, although still in the land of the living. It *may* survive, but if not I won't lose any sleep over it. A couple of years ago Tim gave me a small plant of *L. grandiflorum*. This has now reached the one metre stage and looks healthy enough, although it seems rather less than happy about winter winds (it's in a pretty exposed spot near the front gate). Many of the leaves look tired, battered and burnt by the spring, but it produces plenty of new growth soon enough. Two others that I have received from Tim this year are *L. liversidgei* and *L. laevigatum*. The former has very small leaves even for a leptospermum. It's planted in the front garden and seems quite content with its lot, and although it hasn't increased much in height it is producing lots of new side shoots. The latter has the largest leaves of any species here at present and is still stuck in its pot. Which means that I'm still scratching my head about finding the right place for it! I've also acquired three species via our society's annual seed-list: *L. myrtifolium* in '99, and *L. morrisonii* and *L. nitidum* this year. Which brings me to an important point about the initial cultivation of the seedlings. Last year, once *L. myrtifolium* had germinated I put the seedlings outside, which is where they stayed until this spring. They survived but were *desperately* slow in growth. Since returning them to the conservatory, they

have grown much quicker. This year's seedlings have been kept under glass, and are already nearly matching last year's in size. One important lesson learnt!

Why is it that conifers from the Southern Hemisphere seem so much prettier than from our half of the globe? Not that there aren't some obvious exceptions, such as the Japanese Umbrella Pine, *Sciadopitys verticillata*, or that contender for the title of The World's Most Beautiful Plant, *Cupressus cashmeriana*. The genus *Podocarpus* occurs over a wide area, not only Australasia but also Africa, South America, China, Japan and some parts of the tropics. I have a plant of *P.* 'Young Rusty', which I obtained from Dorothy Haydock. The small, linear leaves are, as the name suggests, a rusty colour on first emerging, an attractive feature. I think I'm right in stating that this plant originated courtesy of Graham Hutchins, which suggests Australasian origins. This is more than can be said for the other three podocarps I have here: *P. salignus* from Chile, the Asiatic *P. macrophyllus* and the superlative *P. henkelii* from South Africa. This year was the first time for me to try growing conifers from seed. Apart from the South African *Widdringtonia nodiflora* I've also managed to germinate the Australian *Callistris rhomboidea*, from our seed-list. The former is apparently growable as a container plant; where I'll plant the callistris I've no idea.



Leptospermum nitidum

The Shiny Tea Tree is an erect spreading shrub with alternate, lanceolate dark green leaves 15-25mm long and 5-7mm wide. The flowers are white, 2-3 cm across with 5 separate spreading lobes around a green central disc surrounded by numerous stamens and 5 small red sepals. Habitat - rockery sites in mountains and open forests in southwestern Victoria and Tasmania.

Callitris rhomboidea

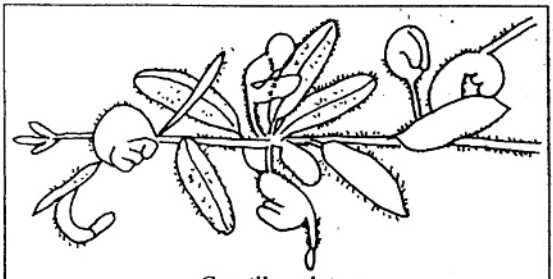
Port Jackson or Oyster Bay Pine

A tall bushy shrub or small tree, 2-6m high with a slender trunk and a bushy, columnar or conical crown with drooping branchlets. Mature leaves are dark green, occasionally covered with a silvery bloom, reduced to tiny scales 2-4mm long, arranged in alternating whorls of three. Fruits are globular cones, about 2cm across.

I do grow some non-woody Australasians as well *Orthrosanthus laxus* produces its blue flowers each year and *Dianella tasmanica* finally flowered freely this year and produced a good crop of its glamorous Royal Blue fruits. *Arthropodium cirratum*, which was a magnificent sight here last year, and from which I was able to send seed to the society's list, was totally decimated by slugs during the last, rather wet winter, and it is sadly no more. I also grow a few ferns and tree ferns but they, I feel, deserve an article all to their little selves.

Grevilleas

By Jeff Irons



Grevillea alpina

Low spreading shrub covered with downy hairs. Grey-green, ovate, soft leaves crowd the branches. Flowers, arranged in loose, terminal, spidery clusters, are yellow, orange and red to green and white, tubular with curled back lobes.

Last year's questionnaire revealed a demand for detailed information about the cultivation of grevilleas. This article, which is an extension of the information given in our germination notes, has been written in response to those requests.

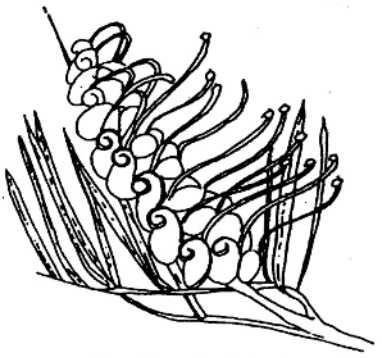
The first requirement is for acid soil. If your soil is very alkaline the only thing to do is to grow grevilleas in a raised bed, filled with suitable compost. Some Grevillea species do occur on alkaline soil, but they are not suitable for outdoor cultivation in this country. We do not have them in the APS seed list and as far as I know they cannot be bought from British nurseries. Slightly alkaline soil will need to have its pH lowered, so that it is slightly acid. The simplest way to achieve this is to sprinkle flowers of sulphur over the soil in the season before the one in which you intend to plant out *Grevillea*. One, or possibly two, handfuls per square metre will do. Rain will wash the sulphur into the soil, where it will react with the chemicals already there and convert calcium into (almost) insoluble gypsum. Evaporation of water will result in upward mobility of alkali through the soil, and the treatment will need repeating every few years. Very acid soils are just as unsuitable for most grevilleas. In this case you need to add lime. As a very rough guide, if your soil is such that hydrangeas produce flowers with that horrid purple colour, the soil is fine. The same applies if 'Altona' is blue flowered, but 'Mariesii Perfecta' (Blue Wave) is not. If "Blue Wave" is blue then it is desirable to raise the pH a little. If you can grow varieties that have pink flowers or, if "blue" ones have pink flowers, the soil is too alkaline.

The next essential is drainage. If it is very bad the simplest solution is to get a section of concrete sewer pipe, fill with compost, and grow your grevilleas in it. Otherwise you need to consider the standard solutions to drainage problems. Sandy soil presents a different problem. The best treatement is marling. If that is not possible dig in plenty of organic matter. *Grevillea laurifolium* often grows in pure acid sand, so it would be worth trying if added to our seed list. The problem with its cultivation will be that it comes from the Blue Mountains of NSW, where the cold winters are dry.

Before you begin planting check that the drainage is adequate by filling the planting hole with water. If it does not drain reasonably quickly further work is needed. As always, the hole should be wide and shallow, no deeper than the pot. Remove the plant from its pot. Ideally it should be

at the stage where the roots have just reached the pot's edge. If the plant is pot bound tease out the matted roots - something you should always do - cutting with a knife if necessary, and cut off any that have coiled round the pot. The aim should be to have an open root system that will spread out into the soil mixture. Don't waste money on a large plant. Small ones will establish much more quickly. Water in, and remember that watering will be needed throughout the first summer. You have to ensure that the plant is able to make new roots. It can do so only when the existing ones are functioning properly. To do that they need moist soil. You must water right up against the stem, so that the root ball is wettened. No fertilizer is needed. An organic mulch will help to keep the roots moist and encourage proteoid root formation. I use anything handy, shredding material, leaf mould, or compost made without the addition of lime.

There is evidence that in the wild seeds of some grevilleas are dragged away by ants, then germinate in their tunnels. The inference is that seeds of those species need darkness for germination to occur. However the four species that I have tried were successful in light, and the experimenters of the early 1800's thought that seed should be planted no more than 0.5cm deep. Seeds should be soaked overnight in cold water before they are sown. Before sowing try to peel off the skin. If that is not possible, file a nick in one side of each seed, sow shallowly, and cover with a thin layer of Perlite. The Perlite lets light through, yet keeps the compost surface moist. The species tried by me have all germinated within 6 weeks. The small amount of information I have about optimum germination conditions was all obtained for use when reclaiming land after mining. As such it relates mainly to warm climate species. Optimum temperatures quoted range between 15°C and 36°C. Australian authors say that germination of most species occurs within 3 months of sowing, and the Victorian experimenters found that seed which had not germinated by the onset of winter could be left until the following spring, provided that the pot did not freeze. My own experience is that



Grevillea hookerana

Red-Toothbrush Grevillea. Shrub upto 3m high with hairy branches. Leaves are 7-20cm long. Flowers are bright red curled tubes, arranged in one-sided spikes upto 8cm long.



Grevillea wilsonii

A spreading shrub with needle-like prickly leaves. The flowers are scarlet curled tubes, arranged in loose clusters at the ends of the branchlets.

germination always comes after a warm day. Cool days, when the greenhouse temperature is around 20°C, do not initiate germination. My seed is sown in a clear plastic container with a screw lid - actually a former glacé cherry pot. The most recent sowing was in May this year. Four seeds, collected in January 1996, were sown and all germinated by mid-June. Another 1996 collection had been sown in 1999 and it too gave 100% germination, so I believe that seeds do not have a particularly short life. As soon as germination occurs transfer each seed to a small pot filled with an open, slightly acid, mix. There is no need to add any fertilizer, because each seed contains sufficient nutrients to last it for a whole year. Growth will be rapid, and the seedlings should be transplanted as soon as roots are seen emerging from the bottom of the pot. My procedure is to put two of the seedlings (singly) into 11cm square pots (or 15cm round ones) and the third seedling goes into my greenhouse border. This ensures that there will be more than one plant from which to choose for flower quality and quantity. It also gives a degree of protection against loss because seedlings have damped off. The following year one of the two potted plants is put in the garden. This is done in late April or early May. If necessary the other is put into a larger pot. If the outdoor plant does not survive the winter I can try the remaining pot plant outdoors, and take cuttings from the specimen in the greenhouse border for eventual trial outside. Many grevilleas grow in soil which contains some clay, and some growers incorporate upto 10% of clay in their potting mix. I do not, even though it makes maintenance easier, but I do add dolomite at one teaspoonful to each 15cm pot. Each pot is given a couple or so crystals of a Chempak zero phosphorus fertilizer, and it is watered with a weak solution of Maxicrop. Further doses of Chempak are given as the season progresses.



Grevillea sericea
A low bushy shrub with silky hairs on leaves, flowers and branches. The leaves are narrowly ovate to linear, 1-6cm long with small pointed tips. Flowers are deep pink to white and tubular, arranged in dense, short, terminal, spidery-looking clusters.

Grevilleas from areas which have cold dry winters can be grown by grafting them onto a species which tolerates our wet winters.

The dreaded phosphorus toxicity worries many people. It is very specific, and as far as I know, does not affect any of the species grown in Britain. The signs are poor growth, coupled with leaves turning brown. The remedy is to remove the plant from its pot, place in a bucket of water, wash off all the compost, and re-pot in fresh phosphorus free compost.

Although this article is about growing grevilleas a caution about their purchase seems advisable. When buying plants do try to check whether the nursery really knows what it is selling. Be particularly suspicious of *G. thyrsoides*. This species comes from Western Australia, north of

Perth. It needs very good drainage, and in eastern Australia container cutlivation is recommended. I can't imagine it overwintering successfully here, even in Cornwall. There is a further reason for doubt. Burncoose and Southdown Nursery told me that the plant used to be sold as *G. rosmarinifolia* "Thrysoides" (yes, thry), and that the name was changed because the Plant Finder stated that it was incorrect. Drysdale Nursery obtained its specimen from Burncoose and Southdown. The one sided conflorescence (the botanical name for a group of *Grevillea* flowers) of this species has a long stalk. Flowers grow on it in succession and the stalk lengthens until eventually the flowers can be as much as 2m from the plant. Individual blooms have a greyish red colour, aging to dark red. The grey-green to grey leaves form a V shape on their stalk and new growth is deep red in colour.

Grevillea prostrata 'Aurea' is another doubtful name. I find it difficult to accept that a species which is described as being uniform, with pink and cream flowers, can have a yellow flowered variant. Making a guess, I believe that the plant being sold could be *G. juniperina* "Aurea". This is a low growing form of *G. juniperina* which comes from the same area as *Telopea mongaensis* and the famous *Eucalyptus recurva.*

I hope that all the relevant points have been covered. If you do have any queries, please ask.

CLIMBERS FOR THE CONSERVATORY

Purple is such a dominant colour that it can be difficult to fit in the garden. One solution is to use this eye catching hue in a cool greenhouse or a conservatory. *Hardenbergia violacea* and the better known *comptoniana* are both ideal plants for this use. Liking well drained acidic soils, they are tolerant of filtered sunshine and low light levels. They can be allowed to spread around under other plants, or left to twine up through them or, up a cane. In the very mildest parts of Britain *H. violacea* could even be tried outdoors, in sheltered spots. Both have pendent racemes of purple flowers over a long period from late winter to early summer. Nurserymen have selected various forms of *H. violacea*; 'Happy Wanderer' is a large flowered, vigorous, purple flowered selection which needs plenty of room. 'White Crystal' and 'Rosea' are self explanatory.

Purple of a different kind is found in *Billardiera longiflora*. Its spring flowers are not very conspicuous, but in late summer, autumn and winter the plant comes into its own, with a prominent display of large purple fruits. Naturally a forest dweller, the Climbing Appleberry can be grown outdoors in southern and western Britain, where its fruits hang till December, untouched by birds. In cooler places this twiner is ideal for prolonging the greenhouse display. *Billardiera longiflora* is also known as Mountain Blue Berry and Purple Apple Berry as well as Climbing Appleberry.

ADVERT

Flowers and Sites of Iran

A 15 day trip to see the major historic sites and some of the plants of this fascinating country. The tour will be accompanied by an English speaking Iranian botanist. Departure 26th April 2001, price £1800. Details from J. Irons, 74 Brimstage Road, HESWALL, Wirral, CH60 1XQ.

EUCALYPTUS FOR FOLIAGE

The species listed below are all recommended for their foliage. They make new juvenile foliage when coppiced.

	Foliage Colour	Foliage Shape	Optimum germination temp °C
albens	white	ovate orbicular	25
albida	silver white to grey	ovate-cordata	25
macrocarpa	white	broad ovate-elliptic ovate	20
tetragona	white	oblong-elliptic	25
cinerea	glaucous	orbicular	25
cordata	blue-grey to glaucous	cordate	20-25
crucis	grey-green to glaucous	orbicular	25
delegatensis	blue green or red	ovate-orbicular	20
gillii	glaucous	cordate	20
globulus	glaucous	ovate-elliptic	25
gunnii	grey green	orbicular-ovate	20-30
kruseana	glaucous grey-green	orbicular	20
loxophleba	grey-green	ovate	25
orbifolia	grey-green	orbicular	25
pulverulenta	silvery blue	orbicular	25
pruinosa	glaucous blue-green	ovate	30
socialis	green	elliptic-lanceolate	15

Eucalyptus alpina has foliage with a different attraction. Its juvenile leaves are enormous. A well grown plant will be a metre high by the time it is a year old, with apple-green leaves as large as 20cm x 15cm.

NAME CHANGES

Eucalyptus lansedowneana var (albo) purpurea is now **E. albopurpurea.**
Melaleuca filifolia - reverted to **M. nematophylla.**
Melaleuca smartiorum is to be **M. sapientes.**

Aussies in Ireland (plants, that is!)

By Keith Larkin

In September 2000, I had the opportunity to combine a business trip to Bangor, NI, with a few days holiday. It occurred to me that I could make a round trip, out say from Fishguard or Holyhead, and back via Stranraer, to take in some Irish Gardens – and surely there would be some Australasian plants to be seen.

Don't be fooled about the size of Ireland. Your road atlas, if it has Ireland in it at all, will probably have the whole Island on one page, distorting your sense of scale. Looking at some mileages, and taking advice from those who have experience of Irish roads, I came to the conclusion that I wouldn't be able to visit more than a small proportion of the attractions that I wanted to see in the five days before I had to be in Bangor. So I settled for going out from Holyhead to Dublin, visiting Mount Usher and Glasnevin in the Dublin area, before going up to Donegal in the North West for the scenery and Glenveagh, and onto Mount Stewart not far from Belfast. After carrying out my duties at Bangor, I then planned to go to Seaforde and Rowallane, before returning to Stranraer and visiting Logan.

Arrangements for going to Ireland aren't difficult. My car insurance already covered it, but make sure that your car recovery service does. No E111 for health services is needed, nor is a passport, although it is suggested you take it in case you need to identify yourself for any reason. Plastic cards work in their cash machines and are widely accepted, and with the Irish Punt at something like a 25% discount to the £ Sterling (one advantage of not being in the Euro), prices are reasonably good value at present. The ferry fares aren't cheap, but there are many special one, three and five day offers, making the return fare cheaper the shorter you stay (who really wants to make a day trip across the Irish sea?). If there doesn't seem to be a special fare which meets your needs, speak to the companies – I got a 10 day round the country return which enabled me to go out from Holyhead to Dublin, and back from Belfast to Stranraer, which wasn't mentioned on their Internet site, for a reasonable price.

My choice of gardens to visit was largely dictated by practicalities, as well as which caught my eye in the guide books, so don't take the following as a guide to what you should or shouldn't visit, just a taster of what can be found.

Almost without exception, all gardens had Callistemons, Tree Ferns, *Cordyline australis*, Eucalypts, Olearias, Eucryphias, Hoherias, Southern Beeches, *Podocarpus*, Grevilleas, Corokias, Leptospermums, Acacias, Pittosporums, etc, many of impressive size, so I will only mention what, with hindsight, seemed the more outstanding items (when you first see some of these plants you think they are amazing, only to find higher, broader, more floriferous examples at the next garden!). I hope that the editor and yourselves will also tolerate my mentioning some other interesting plants that I met, even if they are not Australasian (marked *).

Mount Usher

This is an easy drive about 30 miles south of Dublin (distances are often, but not always, signposted in Km in Ireland, but speed limits are in MPH!). Beware, the sign announcing the entrance is just after you've passed it if coming from the Dublin direction! The "Favourite Plants" guide book is useful for pointing out some of the more interesting plants, few of which are labeled with their name but have numbers which are included in the guide.

It is a very attractive garden, set on either side of a small river. If the ferry crossing didn't make you feel sea sick, then try the suspension footbridge across the river, which produced amazing sensations for me! And the Heron in the river is very friendly, as you would expect in this part of the world, allowing you to approach very closely before flying off.

.A *Pseudopanax ferox* about 3-4m high was an unusual sight, with a long totally bare trunk for 90% of its height, and a tight "lollypop" of foliage at the top – a staggering metamorphosis from the immature plants we usually see in England with their downward pointing lance shaped leaves along the trunk.

The front cover of the "Favourite Plants" booklet illustrates *Philesia magellanica* *, with striking magenta flowers – a smaller flowered relative of the Chilean Bellflower. Well worth trying to find in the woodland garden, although you will have to look quite hard and hope it is in flower, otherwise you will stand no chance!

There are a number of impressively sized Eucalypts, some of which have lost their usual peeling bark at their base, and have developed what looks like a more normal tree-like corky covering.

Glasnevin

This is the National Botanical Garden, and amazingly un-commercialised – there is no entrance charge, no car park, no café, and even the minimal visitor's guide takes some getting hold of. But don't think that it is not worth visiting - it is a wonderful garden of exceptional interest. Beware that the opening times of the glasshouses aren't what we would expect in England – early closing Thursdays, and not open all day at weekends.

The "Curvilinear range" glasshouse has recently been restored, and houses a number of interesting Australasian plants. *Banksia integrifolia* and *serrata*, which had flowered, and *dryandroides* and *ericifolia*, which didn't appear to have done so, were all in good condition. The alpine house had good specimens of *Aciphylla dieffenbachii* and *aurea*, *Microcachrys tetragona*, and *Ozothamnus coralloides* (two specimens, one labeled *Helichrysum coralloides* – hedging their bets on the latest re-classification?).

Outside, the legumes bed had many mature specimens of *Sophora*, and some of the broom-like Australasian plants. There was also a bed consisting almost solely of Australasian plants, but not labeled as such. The rockery had a *Richea scoparia* which had flowered.

Glenveagh
This is situated amongst some magnificent scenery in Donegal. If you have the luck of the Irish, as I did, and visit during National Culture Week, they let you in for free – and as a bonus you get a musical accompaniment as you walk round the garden! The gardens weren't quite as large as I had anticipated, and perhaps they didn't have quite such a wide range of the unusual, but nonetheless they are well worth visiting. Again, the guidebook is worth getting to point you at some of the plants of special interest – many of the unusual plants are mixed in with native trees, making them more difficult to pick out, and not many are labeled.

A group of *Pseudopanax crassifolius* had reached lollipop size, like the *P. ferox* at Mount Usher, but with less trunk and more head to the plants. I spent some time trying to find the *Michelia doltsopa* * - my 1.5m pot specimen wasn't a good guide to recognizing the 10m size plant there! A substantial *Meterosideros lucida* had obviously flowered well earlier in the year.

Mount Stewart
To the southeast of Belfast, the gardens guide book said this was the one not to miss, and I would totally agree. In addition to being very beautiful, it is full of the less common, more interesting plants. The guide book goes to great lengths to point you towards these, and many are labeled, but it did not mention the group of Banksias in the Mairi garden, one of which was labeled *Banksia marginata*.

The guide mentioned two *Phyllocladus* species, but I only found one, and that had substantial staking to keep it upright. *Tasmannia (Winteria) aromatica* was in use as a hedge, a *Metrosideros lucida* had flowered earlier in the season, and *Pseudowintera colorata* was also present.

Seaforde
This walled garden, which houses the national collection of Eucryphias, is open to the public, and whilst small, it is very pleasant. But an equal attraction is the nursery which has quite a wide selection of the more interesting and challenging plants of good quality and reasonably priced.

Rowallane
This is quite a large but informal garden. There are a number of Australasian plants in the area called the Paddock, the most striking being some *Olearia macrodonta* of gigantic proportions, with large gnarled trunks. There was also an *Acradenia frankliniae* against a wall. The walled garden also had a number of interesting plants.

Logan
Back across to Stranraer. This was my third visit here, and I will always call in if I am anywhere near it, since I like it so much. It's a pity that it is so remote from most of the country, but there are some other interesting gardens in South West Scotland, and the view from the Mull of Galloway (weather permitting!), is one of such remoteness and uniqueness, I think it makes a worthwhile trip.

It's difficult to know where to start, since although it is not a large garden, it is full of interesting plants. But the most remarkable Australasian plant to my mind is the gigantic *Metrosideros umbellata*, which again had obviously flowered well earlier in the year. And bedded out *Myosotidium hortensia* (Chatham Island forget-me-not) are not an everyday sight! Some *Clianthus puniceus* make a good display, having been trained up a wall.

And to cap it all, the plant sales include a number of these unusual plants, although the number has varied considerably from one visit to another (why do so few places with unusual plants never seem to have any available in their plants sales?)

When to visit?

If you can choose the time of year to visit these gardens, it must be difficult to know when to choose. Almost all Callistemons had finished when I visited, and Hoherias were all but finished. Most Eucryphias (some *) were just past their best, but *E. moorei* still had some time before its buds would be open.

Then there's the massed Rhododendrons in flower in late spring, the Embothriums * in early summer, ... Perhaps we should just emigrate to the other side – or would we hanker for the traditional English garden, then?

ARCHITECTURAL PLANTS

By Jeff Irons

An area highlighted by the responses to the 1999 questionnaire was a desire for articles about architectural plants. I did not know what they were, and after an extensive search still cannot get a definition. It all seems very strange. When not in flower *Mitraria coccinea* can easily be passed by, yet it is considered to be architectural, though the strikingly prominent *Syneilesis aconitifolia* is not! So I have decided that for the purposes of the article an architectural plant is one which makes its presence noticed from 12m or more away, even when in the shade. Anything which has to be kept under cover in the winter, then put outdoors in summer has been excluded. So have those species which need to be wrapped in a protective overcoat throughout the winter. *Astelia, Cordyline* and *Phormium* are so well known that I won't include them.

My first choice is the Tasmanian Huon Pine (*Lagarostrobos franklinii*). Though it has been around for 40 million years this slow growing conifer is strangely absent from our gardens. Its pendent branches droop vertically, giving the impression of a waterfall. This is one of those species whose cuttings will not make a new leader. In order for them to make a trunk, plants have to be trained up a stake for several years, untrained specimens just mound up. The lawn specimen at Logan shows that in cool places it can be grown in the open. Most of us need to remember that it is a plant of the cool temperate rain forest, and needs an atmosphere that is

constantly moist. This is an ideal subject for a cool shady place. Expect a height of 1 to 1.3m after 10 years.

Tasmanian Laurel (*Anopterus glandulosus*) is another rain forest plant, related to *Escallonia*. It has glossy, large, dark green leaves, and in late spring bears racemes of gorgeous cup shaped white flowers. Two forms can be bought; Gary Dunlop sells one which is pure white, and another which has pink buds that open to display flowers with a white interior. Later on the old leaves turn bright red before they drop off. Vegetatively propagated plants are slow to make growth and for a couple of years or so produce flowers but not new leaves. Add that to a generally slow rate of growth, and you have a plant that will take at least five years to make an impression in your garden. I would add that those five years are worth the wait. It needs acid soil and a cool, sheltered, moist spot.



Solanum laciniatum

'In the spring, I sowed several seeds of *Solanum laciniatum*; four germinated over several weeks. The first to germinate is now 1.5m tall and housed in the greenhouse. As Jeff states, the wind does tear the leaves very easily if it is stood outside. It's an incredibly vigorous grower, giving a sizeable plant within months. The main stem and branches are purple-tinged. The leaves are deeply pinnatisect, mid-green and upto 20cm long. All summer it has produced clusters of dark blue-purple flowers 5cm across. These are followed by ovoid fruit which start off green and gradually change to a bright orange.' (Sue)

It has to be said that the New Zealand *Jovellana sinclairi* is not as desirable as the Chilean *J. violacea*. Nevertheless it is still worth growing. This small shrub, less than a metre high needs both good drainage and a sheltered spot, with light shade. It has soft green leaves, coarsely toothed and slightly hairy. They attract attention as something different. *Calceolaria*-like flowers, spotted inside with purple, decorate it in summer.

Hebe isn't a name that springs readily to mind when thinking of structural plants, but *H. parviflora* var. *angustifolia* is worth your consideration. This fully hardy species grows to a height of about 1m and has narrow leaves about 40mm by 4mm. In a genus where most species are very much alike it always attracts attention. The white flowers appear in summer.

Where there is plenty of space solanums make an undeniable impact. A three year old plant will be about 3m high and wide, with large deeply cut leaves and coloured fruits in autumn. The two species *S. aviculare* and *S. laciniatum* are similar and only the enthusiast will want both. They have purplish potato flowers in summer, and hungry birds will ensure that their offspring appear all over your garden. In cold areas both need to be grown in a tub and overwintered under cover. They do not resist wind well, and in an open site will be torn to tatters.

Pseudopanax are grown for their juvenile foliage. You either like them or can't understand how anyone can! Undeniably different, the two most wanted species are *P. crassifolius* and *P. ferox*. Both have stiff downward pointing leaves, rather like arrow fletches. Excellent as a tub plant, they can be difficult to place elsewhere. Nurseries stock plants in a range of sizes from 0.3 to 2m tall. As they mature the leaves and form of the plants change to become more conventional. This will take a number of years.

The New Zealand "Pampas Grass", *Cortaderia richardii* is just as big as its South American counterpart, but flowers a month earlier. Depending on your attitude this either extends the season, or is a disadvantage.

Almost everyone wants the bi-pinnate leaved acacias and *A. dealbata* is one of the most popular. It is fine on the south coast, and in parts of London, but in supposedly mild Wirral I've never succeeded in getting it to survive a winter. The only parts of the peninsula where it will do so are very near to the coast. If you can grow it this is a tree that zooms upwards very quickly (to 30m). Like those of most acacias its flower buds form in autumn, and appear the following spring. *A. nano-dealbata* is a trifle hardier and only grows to 10m. Even so my 2 year old specimen is 3m high. I am writing this at the end of August; there is still 1 to 3 months of growing left this year. What height will it have reached by the end of November? Incidentally the plant is covered with flower buds. Other species worth consideration are *A. jonesii* (3m), *trachylophloia* (12m), *olsenii* (4-15m) and *mitchellii* (2m).

Eucalyptus alpina is not the hardiest of eucalypts, for it comes from the highest peaks of the Victorian Grampians. Being fairly close to the sea they are not very cold and, anyway peaks are not the coldest part of a mountain range, for cold air ponds down to the valley bottoms. Even if you cannot grow it outdoors this is a good patio pot plant. A well grown 18 month old specimen can be as much as 1.3m high and will have 5-10 pairs of apple green juvenile leaves. They can be as large as tea plates. The silvery-grey leaves of *E. pulverulenta* always make an impact, and this species rarely develops mature leaves. Unchecked it will reach 6-10m, but plants that get too large will respond to coppicing in spring.

From a distance *Hakea lissosperma* looks something like a pine, but close up the difference is unmistakeable. It will grow to be about 3m high and has white flowers in spring. Good years result in a sparse crop of curiously warty fruits.

Allocasuarinas have carried adaptation to harsh conditions to the limit. Their leaves are reduced to tiny scales (called leaf teeth), and the green branchlets resemble horsetail. They flower in late winter with tuft like highly coloured male and female flowers on separate plants. In my garden *A. distyla* was killed by the 1995-6 winter, and currently I am trying the not especially hardy *A. crassa*. Eventually the plants should reach 4m. The hardiest species is the 2m high *A. zephyrea*, from Tasmania's Central Plateau. So far my attempts to germinate APS seed have not been successful.

Dianella tasmanica could be considered as a spiky plant for a tub. Needing moist conditions it grows to about 1.3m and has insignificant flowers that are followed by blue berries. My own

seedlings died some months after they had been put into the garden as 3 year old plants. Largish pale green leaves are always desirable in winter, and *Griselinia littoralis* can provide them in abundance. More cold tolerant than the variegated forms, the straight species can be grown as a specimen or as a hedge. It could make a good tub plant too. If you live in a mild area and have space for a tree a *Plagianthus* could be your special treat. New Zealand authors state that *P. regius* will reach 6 to 8m after 20 years. Its leaves could be taken as being rather like those of a stinging nettle, but larger. The small white or greenish mallow flowers appear in early summer. Seedlings start off with a divaricating habit, but eventually develop into a straight trunked tree. As its name tells us *P. divaricatus* has branches which interlace, rather like some coprosmas. It is a shrub, not very hardy and less than 2m high, with yellowish flowers.

Superficially restios resemble grasses with feathery tops. They are much nicer, because they do not turn a horrid depressing brown colour in winter, but stay green. *R. (Baluskion) tetraphyllus* seems to have two kinds of stalk. Non-flowering ones arch over, while the flowering ones form an upright patch in the cenre of a clump. This species grows to a height of about 1.3m and likes moist soil. Indeed it will even grow in standing water. Mine have not been injured by -9°C.

Although some nurseries offer it, I have great misgivings about *Richea dracophylla*. This is a plant from wet forests at the lowest level to get snow in a Tasmanian winter. In the 1970's I tried a plant outside, and was surprised to find that it lasted for two winters before being killed by the third one. By then it had reached about 1m. If you are still not dissuaded then do try this tall epacrid. It has long curving leaves that reach out from a straight trunk. The ultimate height is about 2m. Showy racemes of creamy white flowers appear in summer. Seed germinates two years or more after sowing, and the tiny seedlings must never be allowed to dry out. The *Richea* to grow is *R. pandanifolia*. An inhabitant of open sub-alpine forests, it can be as much as 12m high, and unlike *R. dracophylla* often has a branched trunk. Unfortunately I've never been able to germinate seed. Its flowers can be pinkish or red.

Well, that is all for now. If you have an architectural plant that you think others should try, do write and tell Sue Hyams about it.

GERMINATING ACACIAS

Acacia is one of the most popular genera in the APS Seed List. Yet germination failure is quite common. Seeds vary tremendously in their viability and, for example, different batches of *A. baileyana* have been recorded as having as little as 2% or as much as 98% of viable seed. We cannot do anything about seed viability, but we can do our best to ensure that viable seed does germinate. Terry Tame is an Australian Acacia expert who grows many species at the Hunter Region Botanic Garden. The extract below is from an article he wrote in the Acacia Study Group Newsletter for July 1993.

"There seems to be a few misconceptions about germination. Firstly, after experimenting with several methods, I have settled on the following. For most seed I pour boiling water over the seed and let it stand for one or two days, (depending on how busy I am) and then place the seed between two pieces of blotting paper in the recesses of a plastic ice cube tray, place the tray in a plastic bag, turning the end over and putting all in a warm - even partly sunny position. I let the radicle of the germinated seed grow to about 10mm long before transferring to a 2" pot with a sandy, free draining mix.

This method allows me to control the germinating process somewhat better, I found the following generally apply:

- Seed that floats when the boiling water is poured over it - after trying to sink it = is either eaten, empty or infertile and should be removed.
- It is not necessary for the seed to swell. Some seed will swell markedly whilst some will soften and others remain hard.
- Seed that only softens and swells very little is just as likely to germinate as seed which swells considerably.
- Some seed will germinate quickly while others will remain dormant for sometime, but will eventually germinate.
- Seed that becomes mouldy is non-viable - it appears to deteriorate from the inside and is apparently damaged in some way - spores on the outside would normally be killed by the boiling water treatment.
- There appears to be a correct? Oxygen-moisture gradient which initiates germination as most seed batches will simultaneously germinate, particularly as the seed and blotting paper start to dry out. A certain wet period is required before this happens and this period may be indeterminable and may vary for a single batch of seed as more than one germination episode may occur.

My success rate is variable, from 100% to 0% but generally I think that I get better than 75% germination.

Old seed does not seem to germinate as well as relatively fresh seed. I say "relatively fresh" since seed taken straight from the pods which I have just matured does not respond very well at all. I find that a couple of months dormancy time is required. This would suggest that species flowering in the spring and setting seed in late November and December do not respond to early summer rains, since any subsequent hot, dry weather would kill the seedling, but rather delay germination to late summer rains (or even to late winter) thus allowing the seedling to become established before the following summer.

The seed that remains hard or softens and does not germinate readily may be induced to do so by subsequently nicking the side of the testa some time after the boiling water treatment. The frequently works, but occasionally the nicked seed will only swell, and does not germinate.

Finally, when planting the germinated seed, I very carefully remove the testa from the cotyledons as I find that many losses occur throuh drying out of the testa. Seed which is buried prior to germination does not generally suffer from this as moist soil keeps the seed coat soft. The seed of a few species (*A. pendula, suaveolens* etc) should not be treated with hot water."

SWIMMING AGAINST THE TIDE

Do you feel irritated every time a TV garden programme presenter pronounces the name Aloë as allo instead of alo-ee? Such pronunciations indicate the cavalier attitude of these highly paid people. The general viewing audience takes its cue from them, and they ought to make the effort to get things right. This little piece will help ensure that you don't make the same kind of faux pas. It gives the correct pronunciation of some plant names that are often spoken wrongly. Here we go:

Acacia	a-kay-sha	Because it comes from the Greek word akakis, meaning a 'sharp point'.
Acaena	a-see-na	
Callistemon	cally-STEE-mon	The vowel 'e' is long in Greek.
Cordyline	cord-il-I nee	There are two basic rules that except in a diphthong every vowel has to be pronounced, and that the stress is on the penultimate syllable.
Corokia	cor-o-KEE-a	The name follows the pronunciation of the Maori word korokio.
Helichrysum	hee-li-KRISS-u m	How could it be anything else? The name comes from helios (the sun-cf. Heliotrope) and chrysos (golden-cf. Chrysanthemum). In case you wonder why Helenium is different the reason is that it comes from Helen.
Nuytsia	Newt-see-a, though noit-see-a is acceptable	
Solanum	sol-AIN-um	
Sophora	soff-OR-a	

THE NEW ZEALAND KAURI TREE

The kauri tree, *Agathis australis*, is one of those New Zealand conifers not often seen in cultivation. The natural habitat of Kauri is the ranges of Northland, Auckland, Coromandel Peninsula, Bay of Plenty Hills to a southern line from Tauranga to Kawhia Harbour. It is estimated that before the arrival of people in the north, perhaps a thousand years ago, there may have been a million acres of Kauri. Now there are just 7455 hectares of mature trees while a further 60,000 hectares of forest is said to be 'regenerating'.

The exploitation of the Kauri forests and the mining of Kauri gum shaped the development of the Northland, Coromandel and Auckland regions. Kauri spars were sourced for sailing ships from the 1790's and ship builders and timber millers formed the first settlement in the region. Then came the Gumdiggers looking for buried resin and to bleed living trees for their gum. It is estimated that only 4% of the original forest remain.

The discovery of the Kauri was made by the French expedition of Marion du Fresne, whose two ships entered the Bay of Islands in May 1772. He had Kauris felled for ship masts and referred to the trees as 'Cedars with leaves of an olive'. It is thought however that when James Cook accompanied by Banks and Solander on an earlier expedition up the Thames River to examine *Dacrycarpus dacrydioides* forest that they must have passed within view of Kauri trees, however it was not mentioned in Solander's manuscripts.

Kauri is a highly valued timber and has great durability and is easily worked. It combines lightness with strength and durability, has firm, close and straight grain and is remarkably free from knots. The Maories used Kauri trunkwood for carvings, canoes and building, and many homes and Government buildings were clad in Kauri timber. Branchwood was used for mallets, weapons and one-piece spades. Timber was exported to Australia, Britain and North America for housing and furniture.

In records relating to the Waihou River (formally the River Thames) in March 1795, the brig Fancy returned to Sydney with the first cargo of spars from that locality. The crew spent 3 months gathering 200 trees from 60-140 feet in length.

The timber's value in shipbuilding was soon realised, and traders searched the northern coast of the North Island for supplies of spars. The milling of the Kauri forests began. By 1800, the northern Maories were felling the trees for trading with the whalers.

The Kauri gum industry began in the 1840's and continued to about 1910. The gum was used for varnishes and paints and later in the production of Linoleum. The burnt gum produced a black ash, which was mixed by the Maories with shark oil and used as a pigment for tattooing.

Seeds are carried in a round, woody cone 50-70mm in diameter, which disintegrates when ripe. The pollen cone is cylindrical and 25-40mm long. The name *Agathis* is Greek for a ball of string and that's exactly what the cones look like - a grey ball of string or, according to the Hawaiians, a tennis ball, for they call them Tennis-ball trees.

Seedlings germinate easily. Young trees develop a narrow conical crown of slender branches and the lower branches are shed as the tree grows in height. When mature, the tree changes form and develops a massive, heavily branches crown supported by a straight, branchless trunk sheathed in ash-grey bark. The bark flakes off, usually in a ripple pattern. The tree is long-lived and there are veterans as old as 1500 years. Fully grown Kauri reach 24-36 metres high and have a trunk 3 metres or more in diameter. The leaves, unusual for a conifer, are 38mm long and 12mm wide, also thick and leathery, and opposite They are normally olive-green, but in young trees often have a red tinge. A characteristic of old Kauri trees is the mound at the base of the

trunk, sometimes as much as 4.5m high, known as pukanu. It consists of reddish-brown humus originating from bark shed over several hundred years.

(Part of this article has been reprinted from The Conifer Society of Australia Newletter 19, the author being John Hawker.)

VEGETATIVE PROPAGATION

By Jeff Irons

Originally printed in the Epacris Study Group Newsletter No.9, March 2000

I wonder whether gardening has a patron saint? If it does not, then St. Augustine must be one of the more favoured contenders for the title. Although known as a persecuting bishop, he did have softer and more humane moments. In one of them he wrote "*Is there any more wonderful sight, any moment when man's reason is nearer to some sort of contact with the nature of the world than the sowing of seeds and the planting of cuttings? It is as if you could question the vital force in each root or bud on what it can do, what it cannot and why.*"

There can be very few gardeners of long standing who do not follow St. Augustine and plant their own cuttings. We tend to think that years of experience equates to quantity and quality of knowledge. That this is not so was bought home to me recently when an amateur gardener of my acquaintance commented that she always planted her cuttings as deeply as possible. My response caused her some surprise I said that cuttings should never be stuck in deeper than 1cm and that some plants needed to be stuck so shallowly that the cutting had to be supported! Quite plainly, the principles of vegetative propagation are not at all well understood.

In England (at least) the media personalities are to blame. They tell and show what to do, but never say why. Here I want to say why, and give a little of the what. The latter relates to my conditions and I realise that many Australians live in areas where sophisticated materials are not readily available. They should find it relatively easy to adapt things to their own conditions, using what it available.

Any piece removed from a plant is immediately put under stress, and to minimise that stress we need to make the strain as small as possible. In other words we apply the Hooke's Law learnt in schoolday science to our horticulture.

In practice this means doing everything possible to keep a cutting turgid. If it is not going to be struck immediately the cutting should be placed in a plastic bag, together with a few drops of water. When the cutting is put into the cutting medium it should be kept in as constant a temperature as possible. The reason is that when the temperature rises the cutting's leaves transpire. The lost water has to be replaced, and doing that puts a strain on the cutting. Winter is a good time to take cuttings, because it is easy to keep the temperature, and hence humidity in the propagator fairly steady. If a cutting can be kept turgid then the time of year at which it was

taken does not matter, for at some time during a 12 month period conditions must be suitable for rooting to take place.

The literature abounds with recipes for cutting mixes. The fact that there are so many is a good indication that the actual ingredients and composition are not very important!

In Britain one still hears people advising you to use clay pots for cuttings and to put them round the edge of the pot. A question asking "why?" might elicit the answer "*Because it works*". That isn't very satisfactory, and the thinking gardener will reason further. Clay pots are porous and water will diffuse from the body of the compost through the walls of the pot. So, close to the pot wall the compost is fairly dry, and it is under those conditions that the cutting roots. Eureka! We have the answer. What we need is a fairly open medium, so that the soil atmosphere is as similar as possible to the air. The portion of the stem in the medium must have an adequate supply of oxygen. It is necessary for respiration and root initiation.

The very wet, water retentive composts often used lead to waterlogging of the underground portion of the cutting. Fungal infection follows and the base of the cutting rots. The more deeply the cutting has been inserted the more likely it is that inadequate aeration will result in the cutting rotting. All reactions proceed more quickly at higher temperatures (schoolboy science again), so the higher the temperature the more likely it is that the cutting will rot.

An acid medium around pH 4.5-5.5 is usually preferable, but for a few species liming is required because the roots will not grow in the usual acid medium. An alternative technique, which I have used successfully, is to include Vermiculite in the cutting mix. Vermiculite is alkaline whereas Perlite is acid.

In order for a cutting to make roots it must use energy. That energy is obtained from light by the leaves. So we need to retain as many leaves as possible on the cutting. Moreover every time a leaf is removed a wound is made, and infection can enter through the wound. Since the young leaves on the softwood of our cuttings contain very little food, in theory the more light they are given the better they can photosynthesise the substances needed to make roots grow. However with high light levels the temperature rises and humidity falls. The cuttings wilt, the stomata close and photosynthesis ceases. So in practice a relatively low light level is best. Ideally it should be the maximum which can be given without inducing wilting.

It is tempting to take nice thick material for cuttings, but experiments have shown that the thinnest cuttings root more readily. Often they are the thin, spindly growth at the base of a plant. A little thought will indicate that such cuttings have less stem in proportion to the leaf area. Consequently less food is required to maintain respiration in the stem, and a greater proportion is available for plant growth. However thin cuttings rot more easily, so they need to be inserted shallowly. All should be inserted only as far as is necessary for them to stay upright.

Usually we take cuttings with the cut just below a node. At such spots the plant is growing vigorously, there are plenty of growth chemicals (auxins) because they are needed for production

of the new shoots. By cutting off at that point we ensure that the base of the cutting is at the spot most favourable for root production.

Most amateurs use a simple propagator and with them it is not very important to pot on cuttings as soon as they have rooted. Mist units tend to leach materials from the leaves, so rooted cuttings should be potted on as soon as they can be handled.

In general a nutrient poor potting mix is desirable. I use the same one that was used to strike the cuttings. Once again that schoolday science explains why. In a nutrient rich potting compost there will be a high osmotic pressure, and the poorly developed roots will be less able to absorb moisture, and so find it difficult to supply the young plant with enough water. Starting off with a nutrient poor potting compost helps the young plant to absorb water. It is very important not to pot the rooted cutting too deeply. The uppermost roots should be just below soil level. If necessary the cutting should be supported with a small stick. It is very difficult to make the rooted cutting self supporting, but doing so by deep planting is one of the commonest causes of failure at potting on.

A new development which both improves the 'take' of cuttings and avoids problems when potting on is the rock wool plug. Rock wool plugs ensure good aeration and even 'difficult' plants root well in them. Once rooted, cuttings can be potted without root disturbance and by putting the top of the plug at soil level the correct depth is ensured.

Equipment has not been mentioned in these notes. If attention is given to the points made even the simplest equipment will suffice. Good results are possible with nothing more elaborate than a flower pot and a cover made from a PET bottle with the base cut off.

GARDEN REPORT FROM LEEDS

By Thomas Naylor

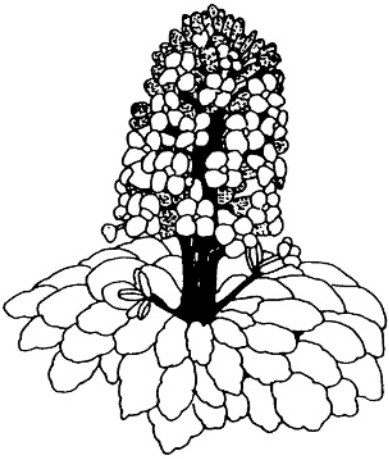
The winter of 1999/2000 was the sort of season in which *Banksia ericifolia* and *Corymbia ficifolia* survived with shelter from the prevailing winds and only a single layer of fleece as protection. The temperature dipped as low as -9°C on one occasion and below -5°C on only three other nights. In the autumn I planted out the seven Australian *Celmisia* plants grown from seed sown in 1997 from Jeff Irons' collection: all but one survived with no damage and the one failure was not due to the weather. At about the same time, in imitation of Greg Plenty, I planted out a *Hakea saligna* against a south facing wall: this too has survived. I did have a *Hakea saligna* in a more exposed spot which survived several winters before succumbing to that of 95/96. Other shrubs grown against walls were *Ozothamnus rosmarinifolius* and *Grevillea* 'Canberra Gem' (both South), *Clianthus puniceus* (West), and *Leptospermum scoparium* (East): the *Ozothamnus* was blown over in the Christmas Eve gales: the *Grevillea* flowered profusely in early spring and the *Clianthus* had a few flowers in May just before the *Leptospermum* came into bloom with its red and pink single flowers. With the onset of the slug season the *Clianthus* suffered badly from the depredations of marauding molluscs, both with and without shells. A

rare loss among the unprotected planted was a tree, *Eucalyptus viminalis*, blown down on the last day of January: its roots had never really anchored it firmly in the ground. Apart from this one loss the same old familiar gang of eucalypts sailed through the winter with hardly a scratch; to wit *E. cordata, coccifera, dalrympleana, glaucescens, globulus, gunnii, pauciflora* ssp. *niphophila, paliformis* and *perriniana.* One odd occurrence was that *E. cordata,* which normally flowers in late April / early May, had a succession of flowers from November to early April. *E. glaucescens* flowered at its normal time in summer. The only unprotected acacia, *Acacia mucronata* var. *longifolia,* grown from seed from Jeff Irons' plants, suffered only some browning of the tips of the phyllodes. *Callistemon pallidus*, rather surprisingly, died in late winter, though all the other Callistemons, *C. citrinus, linearis, pityoides* and *subulatus* were undamaged; but none of these flowered. *C. salignus*, which is younger than the other callistemons and in a pot (though I left it out all winter this year) did produce one solitary flower spike. Twice before I have failed with *C. salignus* from seed of unspecified provenance: I am hoping that this plant may prove to be of hardier stock. *Melaleuca squarrosa*, which has now reached a height of about 2.5m, was covered in cream-coloured flowers in early July. I have noticed that the flowers of this melaleuca seem to hold little attraction for bees. *Banksia oblongifolia* is now just over 1m tall which looks very healthy but after seven years in the garden it has still not reached the flowering stage. I am trying to keep references to slugs and snails to a minimum but they did eat all of this year's *Swainsona formosa* plants and most of my *Calomeria amaranthoides* and *Wahlenbergia* seedlings. Incidentally the leaves of the *Calomeria* do have a distinct feline scent.

NOTOTHLASPI ROSULATUM

The greywacke mountains east of the Southern Alps from Marlborough and eastern Nelson to North Otago have evolved a unique habitat in which several scree plants have evolved and survived. The rocks on these mountains disintegrate so rapidly that much of the slopes are nothing but scree consisting of stones mainly about 6cm long by 2cm broad. The upper layer is unstable due to its steepness and consequently large areas are apt to slide. But 30cm beneath this, the ground is more stable and there is a better growing medium of fine debris, sand, clay plus other materials. Another feature of the slope is the moisture content. Although relatively dry on the surface, the sub-strata at a few centimetres deep, is damp, and further down there is ice-cold water available to the plants. Plants growing in these conditions experience real extremes of weather : exposure to wind; intense heating of the stones and the subsequent strong radiation of heat and at times, very bright light; severe frost; evergreen species bear the weight of snow for more than four months. This environment is so specialised that 25 distinct species of plants occur here and nowhere else.

One of these plants is *Notothlaspi rosulatum* commonly known as the Penwiper Plant. This monocarpic herb forms a fleshy leaved rosette upto 8cm across. The young leaves are covered in hairs which lie close to the surface. The lower leaves are 4cm long and each layer becomes shorter giving the plant a conical appearance. The flowerhead, which rises from the centre of the rosette, may reach 25cm, and is smothered with fragrant cream flowers. They mature from the base upwards so that when the terminal ones are open the large flattened fruits are almost mature at the base.



Notothlaspi rosulatum

Germinating Notothlaspi rosulatum

A method that is successful is to sow the seed in the autumn, allowing the seed to experience the cold of winter and the subsequent warmth of spring. This usually breaks the dormancy and up pop the seedlings. A suitable seed mixture consists of equal parts peat, leaf mould and coarse sand - ie a medium with a high water-holding capacity as well as being well aerated. Use 9cm pots, fill to the rim with the mixture. Sow seed before compacting, then add 10mm stone chippings to the surface. This keeps the compost moist yet allows good drainage.

A good transplanting mix consists of rich loam, peat and a generous amount of chippings. Place a layer of sphagnum moss in the bottom of each pot - its water-holding capacity evens out the availability of moisture between waterings. Do not damage the seedling roots when transplanting. Even small seedlings have a large root system. The open seed compost should enable roots to be easily disentangled. Finally, topdress the transplanted seedling with chippings. Water the plant and place in the shade to allow it to recover from its shock. To develop properly, the root system needs to be kept cool, yet the top growth likes sunlight.

POTTING ON SEEDLINGS

(REF: MELALEUCA & ALLIED GENERA STUDY GROUP NEWSLETTER No.12 MAY 1996)

Colin Cornford has used the following method for transplanting seedlings and reckons he has had almost 100% transplant survival, regardless of seedling variety or size of seedling.

"The seedlings are washed out of the propagation mix in the communal tray in a container of water large enough to take the whole tray at once. The washing action is a gentle agitation of the tray in the water which gently and gradually washes the mix from around the roots.

If the roots of the seedlings are intertwined and will not separate easily without force sufficient to break the fine hairlike roots, a bundle of seedlings is selected which will separate from its fellows and then this is gently washed apart to individual seedling stage. At no stage should the roots be forced and never be allowed to dry out.

Once a bundle of seedlings has been separated they should be kept in water but separated one from another and potted on to individual tubes taking only the seedling required from the water.

The seedling is then suspended above the tube of mix with the roots hanging freely with the fingers at final mix level, or just above. Mix is then gently worked in around the roots to final level, at which stage the seedlings can be released from the fingers. A gentle tap on the base of the tube is all that is needed to settle the mix.

Once the seedling is in the tube, the tube should be placed in water upto the level of the top of the tube and allowed to soak. This will bed the seedling firmly within the mix. When the mix is thoroughly saturated remove the tube from the water and allow to drain.

Finally spray the seedling with fungicide and place in a protective position for up to a week, keeping the mix moist but not wet for the full period.

Although it may seem a tedious method of transplanting, it works. With a little practice and patience large numbers of seedlings can be handled in a relatively short period of time.

The basic theory behind this method is that if the hairlike roots are broken or torn, or allowed to dry out at any stage, transplant shock ensues and a high risk of death of the seedling is the consequence."

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lower stems and holding it in place with netting. Vulnerable evergeens are best protected by erecting a frame of bamboo canes around them and packing straw around the lower branches. In extremely cold weather cover the wigwam with polythene. Cordylines should have their leaves tied up to prevent water settling in the growing point and freezing.

The cold hardiness of plants varies. Roots generally cannot withstand the same degree of cold as aerial parts, and this can affect plants in containers. Young or newly planted plants tend to be more susceptible to cold. Cold also damages soft tissue which has yet to acclimatize to winter conditions; this usually happens to soft growth in autumn and during spring frost. Later unseasonal frosts are often the most damaging especially when they are after a prolonged period of mild winter weather.

Other damage or loss is due to disease. Plants stressed in winter become more susceptible to mainly fungal diseases, and more prevalent in still damp conditions.

The best known method of protecting half-hardy shrubs is to use the shelter of southfacing walls which get the most heat from the winter sun. Sunshine warms the wall and the ground immediately in front of it, trapping the heat and releasing it over several hours to keep the plants a few degrees warmer than those planted further away from the wall. Other advantages of house walls are that they gain warmth from the house and the soil close to the wall is well drained. Although south facing walls are the most useful, east and west walls also gain some heat. Even north walls are better than open aspects.

Shelter from cold winds blowing along the wall is vital. Walls provide little protection when winds blow along them, so windbreaks are needed. The most effective windbreaks are permeable. Evergreen hedges are a good example. Create temporary shelter by using evergreen prunings. Newly planted trees and shrubs are the most vulnerable - erect screens of netting or hessian. The intensity of frost is reduced under a canopy of evergreen trees and shrubs, providing useful shelter for smaller plants.

In severe winters plants grown on walls can be cut to the ground but as the bottom of a wall is the warmest spot, there is a good chance that tender plants will break again from soil level.

Greenhouses, frames and cloches all obviously protect from cold winds and keep plants warmer than in the open garden even when unheated. The bigger the greenhouse, frame or cloche the better it is. A small cloche encloses a small volume of air which warms up faster than a larger one in sunshine, but cools faster at night.

One specialised method of protection from cold involves the use of water. Commercial orchards spray water over trees at night to prevent frost damage to blossom. As the water freezes, heat is released. The amateur can use this method but ice should not be allowed to build up on the plants and damage them by its sheer weight.

Many alpines cannot tolerate winter wet and need the protection of a piece of glass or transparent plastic supported above the plant. Many silver leaved plants are similarly sensitive. In Victorian gardens, loosely plaited straw was wrapped around trunks and stems of fruit trees.

Factors affecting hardiness
1. Root environment
2. Microclimate
3. Provenance of seed
4. Nutrition of plants, especially with regard to potash
5. Efficient ripening of wood

References : RHS The Garden October 1989 & The Garden November 1995

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HONEY FOR THE FIRST AID BOX?

Researchers in New Zealand have discovered a new weapon against antibiotic-resistant bacteria. Honeys from New Zealand and Australia, manuka and jelly bush honey can tackle a range of bacteria, including E-coli, salmonella, and MRSA, the so-called hospital superbug. It is also an effective treatment for wounds. The honeys involved contain hydrogen peroxide, which breaks down into hydroxyl radicals, which are deadly to bacteria. Hydrogen peroxide has long been applied to wounds, but since it breaks down very quickly high doses have been needed, causing tissue damage. The hydrogen peroxide in honey is constantly recreated from glucose. There is also another ingredient involved whose chemical structure has yet to be worked out. This ingredient can penetrate 1cm of pork skin, fat and muscle overnight and does not easily degrade.

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MYOSOTIS EXPLANATA

By Sue Hyams

This New Zealand member of the forget-me-not family in naturally found on South Island, in subalpine to low alpine areas of the mountains near Arthur's Pass as well as streamside rocks, bluffs and rock outcrops.

Seed of this alpine was sown in February 1999 and germination occurred within weeks. Several seedlings were transplanted into a shallow container which has been permanently outside ever since. Others were repotted into individual pots and plunged into sand in the greenhouse. The wet winter wasn't kind to the outdoor container - many leaves rotted off but the plants survived.

The plants consist of single rosettes or several clumped together. The leaves are upto 7cm long and 2cm wide, and are covered with fine hairs. This summer, they flowered for the first time. Flowering stems upto 20cm long emerged from the leaf rosettes, producing racemes of white scented flowers.

EXCHANGE AND MART

Most of the members who responded to last year's questionnaire supported the idea of this in Pentachondra, so perhaps it could get started next May. The idea was that any members who had surplus seedlings, cuttings or young plants - not necessarily Australasian - could offer them to members. It would be upto the member whether these be offered free or at a nominated price, but even if free there would be a small charge for p&p. Exchange would be by agreement between members.

This would be entirely between members and would not involve the officials of the Society. Since quantities would likely be very small and demand unpredicable it would be best for the recipient following a request not to send any money until the plants were received.

Non-Australasian seeds could also be offered, but one would expect Australasian ones to be offered to Jeff for the seed list. Horticultural books, or in fact anything that may be of interest to other members can also be included.

To 'start the ball rolling' **Tony Entwistle** can offer the following. All free, but postage cost refund appreciated -

1. Seedlings of Lobelia (Rhynchopetalum series) deckenii v. keniensis (Mt Kenya, 3-4km) a 'dwarf' form of the species, but this is only relative as it attains 3m instead of 9m! Few only.

2. Seedlings of Eraglossis airoides (Argentina). Grass, pink 'smoky' plumes.

3. Lobelia bridgesii YP pink. (Chile). 1m.

4. Seedlings of Stipa arundinacea. (NZ) 1.5m. Pheasant's Tail grass.

5. Fresh seeds of Puya alpestris (Chile). Hand-pollinated outdoors in view of lack of humming-birds in Cheshire!

6. Seeds of Echium pininana (Tenereife). 3-4m. Lavender-blue monocarpic.

7. Seeds of Echium boissieri (S. Spain). 2-3m. Buff-pink monocarpic.

8. Seeds of Abutilon vitifolium album (Chile). Very good large flowered form.

Keith Larkin has surplus plant books for offer. About 20 Australian titles are available, plus some from South Africa, India etc, and a few other interesting plant books. Descriptive list from Keith, E-mail Keith.Larkin@Virgin.Net, or write to 35 Attfield Drive, Whetstone, Leicester, LE8 6ND - sae appreciated (DL size ideal). Spend the dark evenings seeing what the plants look like in habitat, fantasise about growing some of the more challenging beauties, plan to go and see them...

TRESCO REVISITED

By Tony Entwistle

A visit this October after three years was rewarding. There have been many improvements to the Garden, with plantings of many more Australian plants, notably Hakeas, Banksias and Restios.

The Mediterranean formal garden is now established with its olives, *Cistus*, rosemary and borders of Argyranthemums, Gazanias and Osteospermums.

The Eucalyptus field, started only some 8 years ago, has shown amazing growth. Only 3 years ago the seedlings were only 1-2m high, now there is a forest up to 30m or 20+ different species.

At this time of year most colour was provided by swathes of *Amaryllis belladonna*, but *Eucalyptus ficifolia* was in full bloom (I think I can now officially write this rather than *Corymbia* as we seem to have reverted to the status quo!), as were many Cape Ericas. *Protea cynaroides* was also in full splendour, better in fact than I saw at Kirstenbosch.

The pines planted to replace the shelter belt on the Atlantic side (the ancient ones destroyed in the 90s gales) are growing well; inland of them is a dense coppice of Acacias, Eucalypts, *Clethra arborea*, cypresses and an undergrowth of *Leptospermum* and *Correa*; in the clearings there are Pelargoniums, *Chrysocoma como-aurea*, and *Aristea ecklonii*. The occasional *Dicksonia* sticks out above the young pines.

Talking to the staff at Tresco, it emerged that they use Kirstenbosch smoke papers, with variable results; but they have also found hydrogen peroxide very diluted helpful for such seeds as Banksias. One of the gardeners opined that the poor germination with some seeds (he mentioned *Leucospermum* in particular) was due to the seed being harvested before it was fully mature; in nature it often stayed on the plant a long time before being shed.

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YOUR NEWSLETTER

You will notice that in this issue there are several articles reprinted from other plant societies newsletters. Since the number of members contributing news for Pentachondra is small, it is one way of 'padding out' an issue. Jeff Irons is a 'walking encyclopaedia' of plant knowledge, and although he is happy to write several articles per issue, we do need a broader input, and especially members own experiences at growing, or attempting to grow, Australasian plants. There's nothing more encouraging than reading a 'garden report' from a member living 50 miles away who is succeeding with something you thought was highly unlikely to survive outdoors. This is how I feel when I read reports of the plants in Thomas Naylor's and Greg Plenty's gardens in West Yorkshire. However small you think your piece of news is, send it to me:

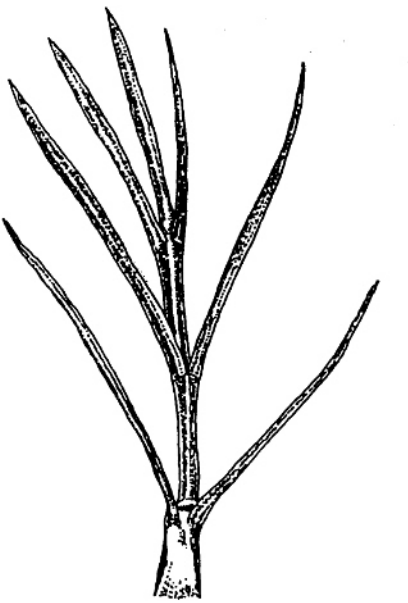
Sue Hyams, Applegarth, Knayton, Thirsk, N. Yorkshire, YO7 4AS.

ACIPHYLLA AUREA

Keith Larkin mentions seeing *Aciphylla aurea* growing in an alpine house when visiting Glasnevin.

The genus *Aciphylla* is one that gives New Zealand alpine regions their distinctive appearance. It is a genus of 40+ species, 1 endemic to Australia, 2 to the Chatham Islands and the rest are confined to N.Z. They are easily recognised by their pinnate to much divided leaves which are mainly rigid and have sharply-pointed tips. The leaves are usually basal. The dead leaves of these rosettes plants accumulate around the base protecting the basal portion of plant and keeping it moist. It is advisable to leave these dead leaves in situ.

Aciphylla aurea or Golden Spaniard is a plant of the drier hills and mountain regions. They prefer a well-drained soil having a long taproot. The drier the soil the most intense the golden foliage. The leaves are upto 70cm long; flower stems upto 1m. Male and female flowers are borne on separate plants.



Foliage of Aciphylla aurea

SCAEVOLA 'SAPHIRA'

By Jeff Irons

Have you noticed that *Scaevola* 'Saphira' is listed in the current Plant Finder?

Ness Gardens has been using it as a bedding plant. It is totally prostrate and has performed well this poor summer. At the moment (late September) it is covered with intense purple-blue (blue-purple?) flowers, making a patch about 45cm across. I shall be surprised if it survives the winter.

It is difficult to find unflowering material, but I've taken 3 cuttings. Let me know if you would like one. If so when to send it.

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