AUSTRALASIAN PLANT SOCIETY
NEWSLETTER

PENTACHONDRA

ISSUE 40 MAY 2008



Telopea speciosissima
New SouthWales Waratah

AUSTRALASIAN PLANT SOCIETY

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May 2008

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Cover photos: *Telopea. speciosissima* in flower, mid March (front) and 9 days later (back)
Other photos: pages 7, 8, 19-22, 33 and34

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Telopea speciossisima
New South Wales Waratah

EDITORIAL

Judy Clark

Welcome to the May 2008 issue of Pentachondra. I hope you enjoy it.

I'd like to begin with a really big thank you to everyone who submitted material. Not only do members' contributions make the newsletter; this is also my first one as editor, so whatever else I had to worry about it wasn't having sufficient good articles to fill the pages.

As you will have noticed the seedlist is enclosed with this newsletter, whereas previously members have had to send away for it. So there's no excuse for not trying a few seeds in 2008. £3 for up to twenty packets of seeds represents tremendous value; after all you can pay more than that for a single packet from a commercial supplier. That the APS can offer such a benefit to members is down to the hard work of our seed manager, Richard Christmas, for which another big thank you.

The seedlist contains nearly 700 species, so there's plenty of scope, as Jeff Irons says about growing acacias (see page 13), to 'be adventurous' in your choices. Admittedly, while acacias should be easy following Jeff's instructions, some species can be harder to germinate, but don't let that put you off. How about a *Banksia* (see page 18) or a *Restio* (see page 17)? Perhaps the cover pictures showing Tim Darrington's *Telopea speciosissima* (grown from APS seed) flowering in his greenhouse will set you dreaming about Waratahs. The pink bracts make this a very rare specimen; normally *Telopea speciosissima* has red flowers.

If pictures don't inspire you to grow your own then maybe seeing a superior specimen in bloom will. Australasian species can be found in a surprisingly large number of gardens open to the public. I thought I knew quite a few of them, but both the Savill Gardens (see page 32) and the Joseph Banks Garden at Chester Zoo (see page 36) are new to me, while I've never visited Wakehurst Place (see page 30) in January. Nor have I ever been to Meon Orchard, one of the venues for APS meetings this year. Details of all three meetings can be found on pages 3-5.

As for what else is in this issue – well you'll have to read it to find out. The deadline for the next issue is 15th September 2008, and all contributions will be very welcome. But you don't need to wait till then; any time will do.

One thing that strikes me is that Pentachondra rarely contains book reviews. Do you have a favourite book that you would recommend to other members? Then why not tell them about it in Pentachondra? It doesn't have to be recently published.

Remember too that articles don't have to be technical, although if writing about your own garden, or a garden you have visited, information on location, soil and

climate is very helpful as it enables readers to judge whether they could grow the species you write about. Nor does material need to be lengthy; brief items, snippets of news, photographs and drawings (unlike Sue I can't draw well) will all be much appreciated. In short, all types of items are welcome. If something interests you enough to write about it than it's sure to be of interest to other APS members too.

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PERSPECTIVE

Keith Larkin

It's never the easiest of times when change needs to happen in any society, but I'm pleased to say that – assuming you get this issue of Pentachondra on time(!) – our recent changes have gone well. Jeremy taking over as Secretary has gone smoothly, and he has produced an attractive programme for the AGM and southern meeting. And Judy has also made a good start to taking over the editorship of Pentachondra. Thanks to them and all the others involved in achieving this – and thanks to Nicky and Sue who previously fulfilled these roles.

The good running of our society isn't just down to the officers' efforts, though. Doug Smith has helped with his contacts at Hillier's as well as opening his garden to us, and without such help our meetings are so much the poorer. No doubt there are other members who either know of a good place for us to hold a meeting or have a contact who might be able to help us. So if you can assist us in this way please do let us know – the committee doesn't know it all!

And thanks also to Mike Ashford for offering to host our Northern meeting. These meetings are one of our great strengths and it is to our credit that such a small group is able to hold them. If you would be prepared to host a meeting in the future then we would be

Treasurer's notes

The 2007 accounts show a satisfactory year, with some surplus. However subscriptions have fallen with our declining membership and if we were to drop another 30 or so members we would have to start drawing on our reserves each year, though these are very good at the moment. Seed purchase costs are considerably less this year, but this varies a lot each year depending on when seed arrives from Australia and New Zealand.

If you receive a polite but firm reminder with this newsletter you are one of quite a number who have still not paid their 2008 subscription. In past years you would not have received this issue of Pentachondra, but as it is out 20th anniversary we are being kind!

Tony Entwistle

delighted to hear from you. You **don't** have to be an expert to do this – it is to provide us with a focus for like minded members to gather and share experiences and so build our group and knowledge.

So if you can support one or both of these events then we would be pleased to see you – and the greatest thanks we can give to those who volunteer is to make the most of the opportunities they provide.

And we are always pleased to have offers for help in other ways – for instance if someone would like to take on our web site and improve it, or help in any other way then please do let us know. Our aim is to try to spread the workload among as many as sensibly possible.

We look forward to meeting as many of you as possible this year at the meetings.



APS MEETINGS

AGM
Saturday 7th June 2008

This year's AGM and members day will be held on Saturday 7th June at The Sir Harold Hillier Garden in Hampshire, preceded by a visit to Meon Orchard, where Doug and Linda Smith hold National Collections of Eucalyptus, Pseudopanax and Podocarpus.

APS Twentieth Anniversary

2008 is the our 20th anniversary. Our inaugural meeting was in June 1988 at Kew 2008 and I think there were 6 of us there. Undoubtedly Jeff Irons was the prime instigator. As he is not very well at the moment I am sure all members will join me in wishing him all the best for 2008 and the future.

Tony Entwistle

Meon Orchard opens under the National Garden Scheme, and contains many rare and unusual plants, quite apart from the collections mentioned above. The Sir Harold Hillier Garden holds the most extensive collection of woody plants in Britain, with over 12000 different species and varieties of trees and shrubs. So the day will provide more than enough to keep even the most plant-obsessed of us happy. We aim to have a plant sale/swap at some time – details to be confirmed - so members are encouraged to bring along any surplus plants and seed, and also any plants of interest they may want to show other members. We hope as many of you will attend as possible.

Arrangements

We will meet at Meon Orchard, where Doug and Linda will provide tea/coffee, and give us a tour of the garden. Please try and arrive between 10.30 am and

11.00 am, and take care when entering the garden not to allow the two (very friendly) dogs out! In the early afternoon we will move on to the Hillier Garden, where the Propagator, Barry Clarke, has kindly offered to guide us around the Australian plantings, and also stage a display of plants from his own collection of Melaleucas. We will hold the AGM while we are at Hillier's – this should be quite brief, so most of the day can be devoted to looking at and discussing plants! For those not wishing to bring their own food, there is a restaurant/cafeteria at Hillier's, and there should be plenty of tme to eat before our guided tour.

You can check out the Australasian species grown at Hillier's, and their location within the gardens, using the search facility on their website at www.hillier.hants.gov.uk/plant-collection.html.

As we are holding the AGM there admission to the Sir Harold Hillier Garden will be paid by the Society. To reduce our costs, we would like to arrange a group rate. So if you are intending to come, please let the Secretary, Jeremy Spon, know at least 10 days beforehand (see contact details inside the back cover of this newsletter). Note that members of the Friends of Kew are entitled to free admission, so please let the Secretary know if you belong.

Directions

Meon Orchard is near Wickham in Hampshire, which is 5 miles N of Fareham. From Wickham, take the A32 N for 1 ½ miles, turn L at the Roebuck Inn and continue for ½ mile. The Sir Harold Hillier Garden is in Ampfield, near Romsey. We will try and travel there as a group from Meon Orchard, but if for any reason you need detailed directions beforehand, these are available on the internet, or from the Secretary.

For those wishing to use public transport Judy Clark has offered a lift to and from the nearest railway station, Fareham. If anyone wants to take advantage of this offer, please get in touch with Judy direct (see contact details inside the back cover of this newsletter).

Southern Meeting Saturday 24th May 2008

This year's southern meeting will follow the same pattern as the 2007 meeting – a visit to a nursery in the morning, followed by a garden in the afternoon.

Graham Hutchins's County Park Nursery at Hornchurch in Essex (www.countyparknursery.co.uk) is renowned for its extensive range of species from mainland Australia, Tasmania and New Zealand, many grown from seed collected on plant hunting expeditions. We will meet there at 10.30 am and stay for a couple of hours or so, then travel the 13 miles to the RHS garden at Hyde Hall, Rettendon, to see their Australian and New Zealand garden. For those not wishing to bring their own food, there is a restaurant/ cafeteria at Hyde Hall.

As usual we aim to have a plant swap at some time so do bring surplus plants and/or seed. And please let Judy Clark know beforehand if you intend to come on this excursion (see contact details inside the back cover of this newsletter).

Directions

County Park Nursery is situated in Essex Gardens off Wingletye Lane in Hornchurch. From the M25 leave at junction 29 and take the A127 towards London for about 2 ½ miles. After passing the BP garage and the Palms Hotel (both on the right) take the next left into Wingletye Lane. After the petrol station turn left into Essex Gardens where you can park. Don't be alarmed to arrive at a parade of shops – the Nursery entrance is between the shops and the petrol station.

We will travel as a group from County Park Nursery to Hyde Hall but if for any reason you want directions beforehand these are available on the RHS website (www.rhs.org.uk). If you do not have the use of a car County Park Nursery is accessible by public transport from the London area (see County Park website or contact Judy for details). If coming from another direction please contact Judy who will try and arrange a lift.

Northern Meeting Saturday 5th July 2008

Mike Ashford would like to invite members of the society for a northern get-together at his home in Moor Monkton. The village is about seven miles northwest of York off the A59. Members should arrive about 11-00am for a cup of coffee and a stroll with fellow members around Mike and Isobel's garden which is opened under The National Garden Scheme. It is by no means all Australasian but we know there are so many things to be enthusiastic about horticulturally. After a light buffet lunch it is hoped we will have a chance to exchange information on successes and failures in propagating Australasian plants.

Please bring spare plants for exchange.

Please let Mike know if you intend to come to this meeting as it would be helpful to plan catering and if necessary to arrange for additional car parking and also to send you map. His contact details are: Mike Ashford, Barley Mow, East Lane, Moor Monkton, York YO26 8JA, tel. 01904 738384.



NEWS FROM HORSHAM

Jeff Layman

On 7th January this year I noticed that my *Clianthus puniceus* had some of its red flowers opening! It's on the SE-facing wall of the house (see photo page 7). I've had a couple of other plants in the same position over the past 8 years - one red, one white-

flowered - and neither has ever flowered this early in the year before. We have had milder winters (but I had a week of below zero nights around new year) so it seems the plants really are confused by last year's strange weather. As it turned out, this early flowering seems to have been a bit of a freak. It was not until almost the end of February, following sunny, but very cold, weather, that a couple more flowers appeared.

Another early flowerer has been *Sophora microphylla* "Sun King" (see photo page 7). This was also in flower at the end of February - around 6 or 8 weeks earlier than normal.

So far the *Banksia serrata* (photo page 20) I put outside last May seems to be okay and shows no sign of any frost damage. It has grown about 60 cm over the last 7 months, and is now about 220 cm high, but has retained its very narrow shape - not quite up to "Skyrocket" standard, but unusual for the often floppy banksias.

Of perhaps more interest are a couple of *B. occidentalis*, grown from seeds sown in 2004. Both formed flower buds last year (one has one about 3 cm long, the other has two about 4 cm long), even though neither plant is a metre tall. They are overwintering in a frost-free greenhouse. I hope that the buds will not abort over this winter! (For more on growing banksias see Tim Darrington's report on page 18. Ed.)

My three own-seed *Hakea clavata* (see 'Hakea Clavata', Pentachondra 39, December 2007) are growing well in the greenhouse (minimum 1°C). I will keep them frost-free for a couple of years, and then (gulp!) try one outside against a wall over winter if I can find room.



SEEDLING 'COT DEATHS'

Bob Foulds

I refer to Tony Entwistle's and Judy Clark's excellent articles in Pentachondra 39 (December 2007). Both these APS members give a wealth of information, and my own experience relates quite closely. However, I do seem to get better germination, as far as one can generalise, but as Tony says, 'frequent cot death' can happen after successful emergence.

Xanthorrhoea, *Chorizema*, *Hardenbergia* and some *Kennedia* species seem to germinate well in standard seed compost with extra grit or perlite to ensure good drainage, but all, subsequently and only too frequently, fail to survive. They produce 3 or 4 leaves, but soon go into a decline and become chlorotic, fail, and die. It seems that they translocate minerals needed for new leaves from the old leaves, until a final decline and death results.



***Clianthus puniceus*, early January 2008**
Common names include Kaka beak, Lobster claw and Parrot's bill



***Sophora microphylla* "Sun King"**



***Acacia verniciflua*, Varnish Wattle**



***Acacia baileyana*, Cootamundra Wattle**
St Leonards on Sea, East Sussex, 7 February 2008

This is exhibiting the classic symptoms of mineral deficiency,and often involves the inability of the plant to take up trace elements, or even major nutrients, from the compost. Supplements of sequestered trace elements and also iron have no effect. I have 'inoculated' my seedling compost with soil and root debris from my indestructible *Kennedia rubicunda*, which inhabits my cold greenhouse, hoping that its associated bacterial population may put matters right, but all to no avail.



Dusky Coral Pea, *Kennedia rubicunda*

My *Callistemon* seedlings are also prone to decline, but after a while, perhaps 3 to 4 weeks, they often rally and survive.

No doubt the more technically aware APS members will have an answer to this phenomenon. It is also worth pointing out that I have encountered the same problem after many attempts to grow different species of *Mutisia*. But this species, of course, is not an Australian native.

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SUCCESS WITH SEEDS – OR NOT?

Jeremy Spon

The article by Judy Clark ('Experience with seeds from the APS seed distribution scheme') in Pentachondra 39 (December 2007) really struck a chord with me, because over the years I have sown quite a lot of seed from the APS seedlist, and my experience has been much the same as Judy's – that by no means all of the seed germinates. Her question 'Is it me or is it the seeds?' is one I have asked as well!

Although my records are not as thorough as Judy's, I have kept details of what I have ordered from the seed list since 1998. There are too many items to set out in a table as Judy did, but I can summarise the figures as follows. Of 117 different packets of seed, I have had germination of 57, and of these 27 have given what I would class as 'good' results; that is, more than just one or two seedlings. This equates to a success rate of 49% in terms of seed-lots germinating at all. This is very similar to Judy's percentage, but with a bigger sample. So can any conclusions be drawn from these figures?

Well, the first point to make is that I certainly do not think that the fault necessarily lies with the seed. Looking back, I can see that I am doing better now than when I first started, which possibly reflects the benefit of experience. I have

succeeded with plants in the last couple of years which I failed with in earlier years. ('Success' in this context means germination. Like Judy, I find growing some plants on can be quite another challenge. *Hakea* species, at least the broad-leaved ones like *bucculenta*, *saligna*, and *laurina* can be difficult to overwinter, and I have an on-going problem with *Acacia* seedlings yellowing and dying off after they seem to have been successfully potted up.)

I can also see a possible pattern in my failures with the hardiest species, where I may have failed to provide a sufficient cold period after sowing, or where I kept the seed too uniformly warm. In recent years I have, like Judy, sown most of my seed in pots in an unheated greenhouse, whereas in the early years I used a heated propagator, which did not allow for any variation of temperature between day and night. The majority of the seed I have tried has been of species that I thought might prove hardy outdoors; by definition, these species come from areas in the wild which experience low night-time and winter temperatures, so the seed is likely to be adapted to such variations, rather than to constant warmth. (Looking at Judy's sowing times, I did wonder whether this might be a relevant factor, as my seeds seem to germinate less frequently in mid-summer; most come up in late spring/early summer, and one, *Isopogon latifolius*, in a genus with a reputation for being difficult, germinated in September when the night-time temperatures were starting to drop again.)

The bog method

This method is well known to normally be very successful with members of the Myrtaceae such as Bottlebrushes (*Callistemon*), Paperbarks (*Melaleuca*) and Tea trees (*Leptospermum*). It involves standing the pots in which the seeds are sown in a shallow tray of water, and keeping the water level topped up. The compost should be lime free and free draining. The seeds of the species mentioned above are small and probably need light in order to germinate so they should be sown on the surface of the compost and covered with Perlite which provides protection while letting the light through.

Judy Clark

Another problem which I have encountered in the past, and which simply requires greater care in looking after the pots of seed, is drying out. I probably tend to use pots which are a bit too small, as they dry out more quickly; the bog method (see box) is a big help here, provided you remember to keep the water level topped up!

Looking back at previous issues of Pentachondra, at the APS Propagation booklet, and books on cultivation, it is clear that there are a wide range of specific requirements for different seeds to germinate. It is therefore unlikely

that sowing all seeds in the same conditions, which it is tempting to do to save time and effort when growing a large number, is going to give equally good results for all. So some failures could be attributed to failure to provide exactly the right conditions.

Turning to germination percentages within seed-lots, I am less sure what is going on here, but on balance I suspect that low rates with some species suggests flaws in my growing methods – clearly the seed is basically viable, so perhaps I could get more seedlings with greater attention to detail. However, this is less of a problem, since even with the opportunity to swap or sell plants at APS meetings, there are only so many plants of one species that one needs!

Having said all this, there still remains the question of whether all the seed in the seedlist is of equally good quality. It is fair to say that the best results I have had over the years, with seed of all types, not just Australian plants, is with that which I have collected myself – either from the garden, or in the wild – and which is therefore fresh. It is not necessarily the case that older seed will not germinate, but it can certainly be slower or more difficult. It is interesting to note that a list of germination times compiled by the Victorian branch of the SGAP (as it then was) and printed in Tony Entwistle's Aussie Info Pack gives under a month for many genera, yet Jeff Irons recommends keeping pots of seed for 5 years before giving up!

Germination times

In my experience even relatively easy species don't always germinate quickly, so don't concede defeat too hastily. Two of the species that I reported in Pentachondra 39 as failing to germinate after 10 weeks or so have subsequently performed. *Hakea epiglottis* came up after 82 days, and more seedlings appeared in February 2008, while *Pelargonium littorale also* appeared in February 2008, a good 6 months after sowing. Plus, almost a year after sowing, *Prostanthera lasianthos* (from seed collected in February 2007 from my brother's property in the Otways in Victoria) seems to have germinated, but as I've never seen a seedling of it I will have to wait a bit to be certain it's that and not just a weed.

Judy Clark

I don't know how fresh the APS seed is, but I suppose it is possible that some may be quite old, or even not viable at all. Comparing my records with Judy's, and those given in earlier Pentachondras by Helen Beaufort-Murphy, might give some clues about this, if we had all sown the same seeds – but in fact we seldom did. If two people sow seed from the same batch, and one gets good germination and the other gets none, we can safely infer that one of the two people is doing something wrong. However, I can

only spot one such case in the lists given, *Calothamnus homalophyllus,* which Judy got to germinate, but I did not.

Conversely, if several people have sown the same seed, and none have had any germination, the possibility of the fault lying with the seed increases. What is needed is more data! I for instance would be interested to know if anyone in the last couple of years have got the following species to germinate: *Eucalyptus kybeanensis, E. perriniana, Oxylobium ellipticum, Pimelea spectabilis, Verticordia forrestii, Boronia citriodora,* and *Blandfordia punicea.* More generally, I wonder if there would be some benefit in collating records of seed sowing and germination from all members? I realise it can be embarrassing to admit to failures; no doubt the more experienced growers will be baffled by some of mine, as the plants in question are often described as easy. On the other hand, knowing that you are not the only one who doesn't get 100% germination can be quite reassuring.

One final point is worth making. Seed germination in specialist groups of plants, whether it be Australasian or alpine, is clearly a perennial subject of debate. There are so many variables, from seed quality, to composts, to temperature, light and watering regimes, that it can be very difficult to discern any patterns. In 1999, Dennis Rowlinson undertook a survey of APS members concerning propagation methods (see Pentachondra 23, December 1999) and the results on seed sowing were 'rather mixed and sometimes a little confused'. He found it difficult to draw any very firm conclusions, which I suppose is another way of saying that there is no magic one-size-fits-all solution (sadly, as I'm sure that is what we would all prefer!) But his observation that 'Members are propagating an extremely wide range of plants with success using a wide range of methods' should constantly be kept in mind. Failures can be frustrating, but for me at least, they are sufficiently outweighed by successes that I will keep trying.

Postscript

One aspect of seed-sowing that is mentioned from time to time in Pentachondra is the use of smoke to promote germination. This idea stems originally, I believe, from research at Kings Park in Perth, (see article by Tony Entwistle in Pentachondra 21, December 1998.) It has been further developed in South Africa at Kirstenbosch Botanic Garden. It has been found to be particularly effective with otherwise difficult to germinate seeds.

Whether it is necessary or helpful for easier species is less clear. I have tried it in a limited way, by making home-made 'smoke papers' (wet kitchen towel smoked over a bonfire!) but cannot report any noticeable effect. Nurseryman Graham Blunt (see item elsewhere 'Nursery Still Open!') was very dismissive of the whole idea when I asked him about it, maintaining that logic suggested it had to be ash, not smoke, that had an effect.

It would be interesting to hear from any members who have noticed any improvement in germination as a result of applying smoke, in whatever form.

One interesting finding from research elsewhere, which might be relevant, relates to the breaking of dormancy and promotion of flowering in South African bulbs. Many species (for example *Cyrtanthus, Brunsvigia* and *Amaryllis*) flower only after bush-fires in the wild. Attempts to mimic this for bulbs in cultivation, especially where they are grown for cut flowers, have involved burning piles of straw over the fields where they are grown, using specially constructed gas burners. Research showed that both smoke *and* heat were needed to get the full effect, so maybe the same is true for seeds. Certainly the same connection with bush fires exists in the wild, for example in Western Australia, although the clearing of ground and creation of temporary high nutrient levels via the resulting ash, which result in favourable conditions for seedling establishment, are also considered to be significant.

ADVENTUROUS ACACIAS

Jeff Irons

If the recent trend to warmer winters continues we shall be able to grow plants previously not considered possible. Acacias will be among those. The area in which I live is supposed to be mild, but even now the summer flowering *A. mearnsii* gets frosted. Yet 15 years ago Joan Humphrey's garden in the Lleyn Peninsula boasted a magnificent mature specimen. People living near the south coast have long been able to grow acacias that I could not contemplate. Species such as *baileyana* (see photo page 8), *cultriformis* and *pravissima* will grow outdoors for them whereas in Wirral they have always been indoor plants.

With the trend to warmer winters predicted to continue I've looked through the APS seedlist and selected some of the less well known wattles that are found in montane and sub-alpine areas for your consideration. Species such as *boormannii, calamifolia, kybeanensis* and *paradoxa* have been omitted because seed requests indicate that they are well known to APS members. The frosts of February 2008 showed that flowers depending on anthers and pollen for their colour stand up to frost much better than most of those with colourful petals. All of the species mentioned here can be kept small by hard pruning after flowering. In areas with alkaline soil they can be grown in containers.

A. suaveolens

This must come first in the list, simply because of its name, which means sweet smelling. (Its common name is Sweet-scented Wattle.) A small blue green shrub, which is intolerant of high

phosphorus levels in the soil, but is moderately lime tolerant, it occurs on sandy coastal heaths and woodlands, in Victoria , New South Wales and southern Queensland. Its ball shaped flower heads are seen in late winter and spring.

A. costiniana

This makes a small to tall spreading shrub, up to 2m high. In spring it has globular heads of bright yellow flowers. First described in 1975, this should be one of the hardier wattles, for it comes from the Tinderry Mountains of southern NSW at altitudes of 1200 to 1230m, in woodlands and on heaths, on granitic soils.

A. falcata

An open shrub, with sickle shaped phyllodes to 2.5m high, it blooms in early winter It comes from woods and forests in coastal parts of New South Wales. This indicates that some shelter will be needed. Its common name is Burra.

A. flocktoniae

A slender pendulous shrub or small tree about 2-4m. high, it is decorated with creamy white to yellow flowers in winter and early spring. A rare species, it is found in central NSW from north of Goulburn to the Warrumbungles, in forests and woods on sandy soils.

A. frigescens

This species comes from cool areas in the eastern highlands of Victoria. A tree 7 to 13m high, it has a similar appearance to the Blackwood Acacia, *A. melanoxylon*. Bright to pale yellow globular flowers are borne in spring.

A. floribunda

This has a graceful drooping habit and in spring is weighed down with long spikes of pale yellow to cream flowers. One of the less hardy species, it was first collected at Botany Bay. It is an understorey species, found near watercourses. generally about 2m high, it can make a small tree. It is moderately lime tolerant.



Gossamer Wattle, *Acacia floribunda*

A. montana

This species was so called because it inhabited the 'high land' near Liverpool Plains. In reality that means throughout central and southern NSW and Victoria, in places not very cold in winter; woodlands and mallee (it is known as Mallee Wattle), on clayey and loamy soils. A tall shrub, its bright yellow flowers appear in late winter. This is another moderately lime tolerant species.

A. myrtifolia

This is another late winter and spring blooming plant. Caroline

Langensiepen, who lives near Newark, reported that it grows well for her. A small erect shrub, 1 to 2m high, it has axillary heads of 2-4 flowers. Not unsurprisingly, the phyllodes resemble myrtle leaves and its common name is Myrtle Wattle.



Red-stemmed Wattle, *Acacia rubida*

A. nano-dealbata

The name of this species comes from the resemblance to a small *A. dealbata.* The two can be separated by the fact that *A. nano-dealbata* does not have a gland (visible as a lump) on the lowest portion of the leaf stalk, whereas *A. dealbata* does. Both species have glands all the way up the stalk, at the bases of the leaf pairs. It blooms in winter and spring. The height varies from 2 to 30m and plants can be kept small by heavy pruning after flowering.

A. phlebophylla

Although confined to the higher slopes of Victoria's Mount Buffalo area, on granitic soils, it has proved adaptable to a wide range of soils and conditions. An open shrub or twisted small tree of 3-6m it bears deep yellow flowers, widely scattered on their spikes, in spring

A. rubida

This species is found in the Blue Mountains, a location which rarely receives frosts below -4°C. Its preferred location is stream valleys and moist hillside clefts. A large shrub or small tree, it has phyllodes which are often reddish when young, but often also retains the juvenile leaves on lower branches. The globular heads of bright yellow flowers appear in late winter and spring and sometimes into summer. It grows on both sands and clays, often near watercourses, so should stand up well to our wet winters.

A. saliciformis

One of the more recently named wattles, it was first found on Colo Heights, and described in 1960. Since then it has been found as far away as Glen Davis, a cold area west of the Blue Mountains. An open pendulous shrub or small tree with silver to blue grey bark, it bears pale yellow flowers in autumn and winter. The young phyllodes are often reddish.

A. terminalis

The Sunshine Wattle is another Blue Mountains species, with leaves. Mindful of their dry winters, in the 1980's I tried growing it against a garage wall, but nights of -7° killed it. A shrub of 1-2m, it has been confused with the 20m high *A. elata.* The cream to deep yellow flowers are in large heads and appear from late winter to early summer. This species also occurs in Victoria and Tasmania.

Older gardening books call it *A. discolor* or *A. botrycephala.*

A. trinervata
An open, erect shrub that can be as much as 3m tall, its narrow phyllodes serve to identify it from all other species. Light yellow flowers appear in late summer and early winter.



Acacia uncinata

A. uncinata
This is a prickly thing, with hooked ends to its phyllodes, which are held horizontally. Up to 3.5m high, it can be erect or pendular. The yellow flowers appear in winter and early spring. In nature it is found from near Cooma (NSW) to southern Queensland, so some provenances should be quite cold tolerant.

A. verniciflua
A shrub 3-5m high, its shiny phyllodes look very much like willow leaves, but the absence of a central midrib gives the game away. The ball flowers appear in the leaf axils any time from late winter onwards (see photo page 8). Plants will bloom in their fourth year.

Germination of acacias

Acacias have a hard seed coat, which must be ruptured before germination can take place. The easiest way to do this is to place the seeds in a cup and pour boiling water over them, stand for 5 minutes, than add cold water and leave overnight. The seeds should have plumped up. It is important that the water used is boiling vigorously because the first contact with the seed cracks it open. Sow in an open lime free compost. Once germination starts the roots grow very quickly so transplant as soon as you see the leaves. Put into their final resting place when no more than 6 inches high. *A. terminalis* is heat sensitive and water at 60°C or less should be used.

Jeff Irons

A. blayana
Finally we come to *A. blayana.* When offered 6 seeds of this species, which makes a 60 ft tree, I jumped at the chance. It is found only along a short stretch of the Colo River in New South Wales, southwards from Sydney. Two of my 4 seedlings have been given to Ness Gardens and the other two to Logan Botanic Garden. Keep an eye out for them.

That's it for now. Be adventurous and do not simply stick to the old familiar names but when filling in your seed requests ask for some of the more unusual ones. If you want to collect seed grow at least two plants of a species and remember that species blooming at the same time should be at least 30 feet apart.

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AUSTRALASIAN RESTIOS

Phemie Rose

I have to start by confessing that I am a Restio addict. I have been growing Restios from seed and buying plants when and where available for the past 8 years. I now have 34 different species. 30 of which come from South Africa, 3 from Australia and 1 from New Zealand. I find it easy to source seeds from South Africa but far more difficult to source seeds from Australia and New Zealand.

The Restionaceae is a family of rush like plants largely from the southern hemisphere. They are valued for their great form and year round presence. Many of them make great cut foliage, with individual stems that can last for months in water. They have become popular in the florist cut foliage industry.

They are not easy to germinate. Best germination comes when seeds are treated with 'instant smoke' prior to planting, and when they experience a marked difference between day and night temperatures after they are sown. After germination I place the seed tray outside in a sunny, windy position. During their first year the seedlings look very different from the adult plants and have numerous finely branched sterile culms. In the second winter a new set of culms is made usually with the seedling morphology and the first year's growth dies back. Only in the third year do the plants reach the typical adult form.

All Restionaceae are dioecious (male and female flowers are borne on separate plants) and are wind pollinated. I am experimenting at the moment having planted a male *Elegia capensis* upwind of a female *Elegia capensis*, I have gathered the seed and will be sowing it shortly and hoping that it is viable! Given sun, lots of air movement (which is never a problem in our coastal garden) and lots of water Restios grow very fast. They prefer acid soil of low fertility and hate phosphorus. They also hate root disturbance and can sulk for 2 years or more if moved or worse still split!!!!!!!!

Identifying Restios is a nightmare as is their names.
The Australian Restios I am growing are *Baloskion australe* (was *Restio australis*), *Baloskion tetraphyllum* (was *Restio tetraphyllus*) and *Tremulina tremula* (was *Restio tremulus*). The names were changed as the taxonomists decided that the Australian Restionaceae family was totally different from their South African cousins. Certainly

the South African Restios I am growing on the whole are much larger and robust than the Australians I am growing, but then I only have a very small representation of the Australian plants. The sole New Zealand Restio I have is *Leptocarpus similis* and only one seed germinated so it is being carefully monitored.

I would love to try more Australasian Restios and would be very grateful for any information on seed sources in Australia and New Zealand.

If you do not have acid soil Restios can make stunning accent pot plants given the required sun, air movement and plenty of water. As they are fast growers they will need to be potted on frequently, but they look so good all year round unlike some other members of the grass family.

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GROWING BANKSIAS IN VIENNE, FRANCE

Tim Darrington

Report 28th February 2008

In December 2006, I wrote a progress report for Alex George, who is writing a new book about banksias after 'the Banksia Book' which is a must for anyone seriously interested in Banksias. In August 2007, I had the honour of meeting Alex in his home near Perth, by which time, back in France, my first *Banksia* (*spinulosa* ssp. *collina*) was coming into flower. This present report is an updated version, some 15 months later about the 12 species acquired prior to 2006, although at present I have seedlings of over 20 species.

We live in the Rhône valley, some 30km south of Lyon, where the winter can often bring prolonged periods with -8°C or -10°C every night for a week, and even as low as -12°C to -14°C on the odd night. Needless to say, no banksia could survive this unprotected. So in general, I grow them in containers or terracotta pots, and they all go into my poly-tunnel green house for the winter, where, since the installation of bubble wrap and a domestic VMC fan which draws in 'warmer' air (5°C to 8°C) from the basement of our house, the temperature never gets lower than -5°C. I should state that the winter 06/07 was incredibly mild, and that the winter 07/08 has also been mild, by local standards.

For successful banksia cultivation, the essential piece of information from my experience (and which does not appear clearly in any book I've read) is 'keep the pH well down'. As early as 2000, I tried to grow banksias planting them in peat or peat substitute based composts, avoiding phosphates like the plague, etc. and they all became chlorosed and died within 1 year or 18 months until I discovered (about 3 years ago) that our water is extremely basic (each m^3 of water brings the equivalent of 270g of calcium



Eucalyptus caesia* ssp. *magna
also known as Silver Princess



Banksia serrata



Banksia ericifolia



Banksia hookeriana



Banksia spinulosa* ssp. *collina



Hakea lissosperma



Eucalyptus pulchella
Port Logan, August 2006

carbonate). I have now 'solved' that problem by using collected rainwater (when it's available) or by injecting nitric acid into the water supply to bring the pH down to between pH 5 and pH 6 (when rainwater is not available andwhen on holiday). Now nearly all species have nice healthy green leaves and in just two seasons (18 months). B. spinulosa ssp. collina (the one which does not have spiny leaves) grew from being a scion 30cm high to become a well formed bush 1.60m high and that in a 11.5 litre container!

I should add that when I have seen *Banksia* species in European botanic gardens (in particular the excellent garden of southern hemisphere plants at Roscoff) they often look 'chlorosed'. In my opinion, if it's not too much phosphorous, then it may well be down to the pH!

As to potting mixes, I have through time experimented with various potting mixtures. I had experimented with a 50/50 peat/perlite mix but found that too much perlite tends to 'float' to the top. Since early 2005, my favourite mix has been 25% pouzzolane (0.5 to 1.2cm grade), 25% perlite and 50% peat substitute acidophile compost to which I add 5-10% soil from our garden. The garden soil is poor mica-schistic based granulely stuff which is fairly well draining and good for growing vines and stone fruit trees (cherries, apricots, peaches).

This has proved satisfactory for most things including banksias. I am currently experimenting by giving some of my banksias a good top dressing of well decomposed leaf mould, which I hold in place with some potting mix or a layer of acidified builders' sand (I wash the sand in a weak solution of nitric acid, and then rinse it before using it). I also feed lightly my Banksias with 'native garden' Osmocote from Australia which is N:P:K = 17 : 1.6 : 8.7 plus trace elements.

I have found that banksias, particularly those from Western Australia (WA) are sensitive to damping off at the young seedling stage, and particularly so in our unusually wet 2007 summer. The other factor which probably reduces the risk of fungal attack for more mature plants is that during winter they are watered sparingly using a micro-drip system (typically a plant in a 5.5 l container or a 25cm pot gets about 330 ml once a week).

Banksia ashbyi (WA)

(Seeds from Natseeds, Applecross, WA.)

In 2000, five seeds propagated in spring. Those left outside in what was a mild winter (-8°C) all died. One kept in basement in low light conditions in N. facing window made it through winter and was repotted in soil with added sawdust in spring 2001. It spent its second winter in our lounge (20°C constant, S. facing window) but had only 6 leaves in December 2001 and was looking chlorosed. It succumbed in spring 2002. I retried sowing this species in

February 2007 in the propagator, and this produced one seedling which is now in a 1 litre container and has several leaves that have browned off and died.

Banksia aemula (EA)

(Seeds from Australasian Plant Society UK)

From seed sown on 13th April 06 in propagator, one was up by 9th May when its transferred to the greenhouse. However it 'damped off' about 10 days later. I sowed a few more seeds immediately and one germinated and by December 2006 was 18cm high in a 2l container. It was repotted into a 5.5 l container in early May 2007 and now is a healthy looking plant about 50cm high.

Banksia baxteri (WA)

(Seeds from Australasian Plant Society, UK)

Seeds sown on 5th May 2003 with bottom heat (at least until mid June, I should think) gave two germinations by 24th September. One kept over winter in low light conditions in basement succumbed rapidly. One in double greenhouse survived winter well, but the following season (2004) became more and more chlorosed. I believe that I managed to save this plant during the 2005 season by radical pH reduction techniques (submerging container or flowerpot in weak nitric acid solution). In May 2007, I transplanted this plant into a 5.5 litre containter. In the autumn 2007, I cut the leader back to 50cm to encourage branching, as this species has an erect habit with distinctive Y shaped branching.

3 more seeds (new packet, same origin) were sown on 17th April 06 in propagator in basement, of which at least one germinated and survived to this day (one may have 'damped off' if I remember rightly). At present, it is still in a 2 litre container and I have cut it off at 25cm to encourage branching.

Finally Jeff Layman gave me a third seedling of *B. baxteri* in June 2006. It was looking slightly chlorosed. As soon as I got it home, I repotted it into a 13cm clay pot, in my now standard mix. By autumn it was looking healthier and by December 2006 and had grown to 17cm high. I repotted into a 17cm pot in March 2007, and by June 2007 it was 55cm high, its roots filled the pot, so I repotted it again into a 25cm pot with 3 or 4 cm of leaf-mould and it is now a single leader 140cm high.

Banksia blechnifolia (WA)

(Seeds from Australasian Plant Society, UK)

Seeds sown on 5th May 2003 with bottom heat (at least until mid June, I should think) gave two germinations by early October 03. At this stage one was transplanted into a 2l container and spent the winter in the greenhouse; the other remained in a yoghurt pot and spent the winter under double GH (frost free). By mid April 2004, both plants were yellowing, and the one still in yoghurt pot was transplanted into a 2l container. Very little growth was made by either specimen in the 2004

growing season and one spent winter in GH and the other in a very sheltered cold frame.

In mid April 2005 both were looking very chlorosed. I was beginning to suspect that the problem was maybe that the pH was too high so I gave one of them a good dose of sulphur chips. By March 2006 after another winter under the cold frame, this plant was looking much healthier, with nice buds. I repotted it into a 25cm clay pot, but judging by its roots it did not really need it. It also got a dressing of well decomposed leaf mould. By December 2006, it had ~20 leaves, its biggest leaf was 37 cm long and its horizontal extention is about 7cm. At present it still has a single 'leader' with a horizontal extention of 25 cm.

The second specimen was also saved by pH reducing action later in 2005 season. It remained in a 2l container, and by December 06, it was also looking much healthier, with ~15 leaves, the biggest leaf being 37cm long and its horizontal extension was about 13cm. I transplanted this second specimen to a 25cm terracotta pot in the summer 2007. I tried pinching out the tip to encourage branching of the unique ground level stem. Three branches have been produced but one is still dominant, giving a total horizontal extention of about 35 cm.

Banksia burdetti (WA)

(Seeds from WA Wildflower Seed Company Pty Ltd., Canning Bridge, WA.)

In 2000 and 2001, seeds propagated in spring never made it beyond 9 months: Chlorosis set in, they did not like either the winter low light conditions in a north facing window in basement or the -8°C suffered outside (2000) or in greenhouse (2001).

In early 2006, I received a new packet of seeds (same origin) so I retried this species. Of several seeds sown in early 2006 (in propagator I think) one germinated, and some 9 months later was a healthy looking plant some 12cm high in a 2l container. After spending winter 06-07 under the protection of my 'double greenhouse' (frost free), it was not looking too good by early June 07 so I repotted it into a 25cm terracotta pot. Now it is over 60cm and is looking fine with deep green leathery leaves with greyish undersides

Banksia canei (EA)

(Seeds from Australasian Plant Society, UK)

Seeds sown on 5th May 03 did not germinate until March or April the following year when two specimens were repotted into 2l containers and a third specimen into a 17cm clay pot.
They spent winter 2004/05 in greenhouse, double GH or under coldframe, one surviving 5.5°C in the greenhouse.

One spent the following winter (2005/06) in basement of our house in low light conditions. At end of March 06, it was 40cm high and was repotted into a 25cm clay pot. By the end of the 2006 season

(December) it was an open bush nearly 80cm high with rather flexible wood. This may be due to much of the season being spent in the greenhouse, rather than being out in the open. By the same date, the two other specimens were respectively 40cm high in a 17cm clay pot, and the other having more erect growth, was 80cm high in a 2l container. *Banksia canei* seemed to suffer much less from the effects of increasing pH than either *B. blechnifolia* or *B. baxteri*.

During the summer 07 the largest specimen was planted at the foot of a sheltered SW facing wall outside, where it can be covered with a plastic sheet on cold winter nights. Another specimen was planted in the ground inside the poly-tunnel greenhouse. Both seem to be doing well.

Banksia ericifolia (EA)

(Seeds from Florama, Jardin Botanique des Pyrénées Occidentales, 64160, St Jammes)
See photo page 20.

Seed sown 21st March 2005 germinated rapidly and 1 seedling was repotted into a 2l container in May 05. I tried to take cuttings in August/early Sept. 05: one cutting had struck by March 06. The original parent plant spent winter 05/06 in cold frame and by December 06 was 67cm high and was overwintered in GH. The cutting grew well too, attaining 52cm by December 06. Two more seeds were sown with smoke granules in propagator in mid February 2006. Both germinated and were transplanter into 0.4l containers in May 06.

In Autumn 2007, the original plant, which is now in a 5.5l container and 110cm high, started to produce two flowering spikes, which are at present still looking healthy but not yet fully open due to the onset of winter (see photo). I am eager to see what colour they take when in full bloom.

Banksia hookeriana (WA)

(Seeds from Thompson & Morgan, UK)
See photo page 21.

Seeds sown in February 2005 in propagator germinated well. The seedlings were transplanted into 2l containers or 17cm clay pots, and grew well but during autumn 05 I noticed a marked tendancy to dampen off and I lost several of the weaker growing plants in containers. I try to avoid overwatering, which is now easier since I installed for the 2006 growing season a 'spider' drip system which delivers water to each pot or container via individual dripper spikes.

The most vigorous specimen survived the winter 2005/06 in the greenhouse where it experienced -4°C. By December 06, this specimen was in a 25cm clay pot and was 60 cm high, with 4 rather droopy branches. I pruned back 2 of the four drooping branches in spring 2007. At present, it is 80cm tall and spending its third winter in the greenhouse and it looks as if a flower head is forming on the most vigorous (and non-pruned) branch (see photo). In spring 2007, I planted a specimen of *B. hookeriana* directly in the soil in

the green house and it seems to be doing well at the moment.

Banksia integrifolia (EA)

(Seeds from Florama, Jardin Botanique des Pyrénées Occidentales, 64160, St Jammes)

Of seed sown at end of March 06 in propagator, two germinated rapidly and were repotted into 2l containers in mid May 06. The subspecies looks to be most like *B. integrifolia var. integrifolia* by comparison with photos of leaves in Alex George's book. Both specimens spent winter 2006 in the greenhouse. By the end of winter 07/08 the largest plant is over 100 cm tall in a 5.5 l container.

Banksia marginata (EA)

(Seeds from Australasian Plant Society UK)

Seeds sown in February 2006 and spring 2007 in propagator have not germined.

Banksia serrata (EA)

(Seeds from Florama, Jardin Botanique des Pyrénées Occidentales, 64160, St Jammes)
See photo page 20.

Banksia serrata has an interesting growth pattern, it tends to produce conical shaped trunks and, when pruned, flowers not on main leaders but on lateral branches (see photo taken near Walpole, on south coast of WA). I have found this species easy and rapid to germinate, with 3 vigorous seedlings sown in March 2007 being repotted into either 2l containers or a 17cm clay pot in early May 05.

Even when young, this species suffers no harm from -4°C under the protection of the greenhouse. It is also amenable to spending winter inside in a heated lounge (20°C constant) and with its deep green foliage we decorated one specimen in a 25cm pot as a Christmas tree in December 2007.

This species is fast growing with a dominant and strong leader, attaining more than 1 metre in just 2 seasons, so requires pruning if it is to be kept in a domestic greenhouse. I have pruned back the leader(s) several times now, which tends to encourage sprouting from the lignotuber. I am experimenting between growing this species in containers, pots or the ground (inside greenhouse) but it seems to like equally these different conditions, but with no sign of flowering yet.

Banksia spinulosa ssp. collina (EA)

See photo page 21.

In March 2005, I brought a *Banksia spinulosa* scion, said to be 2 seasons old, from M. & Mme Railhet, nursery specialising in Proteaceae, 31790, Saint-Jory, France. This plant was in a 2 litre container and was immediately repotted into a 5.5 l container. 4 cuttings were taken on 19th August 2005, one of which had struck and was repotted on 21st February 2006.

The parent plant spent winter 05/06 in a south facing window in our lounge (20°C constant). By March 06, the original plant was 110cm tall and on advice from

Mme Railhet, I repotted again it into a 11.5l container and by December 2006, it was a well formed bush 1,60m high and it was spending a second winter in our lounge. During summer 2007, I planted this specimen in the ground in the greenhouse as it was getting too big to spend the winters in our lounge!

By December 2006, the cutting was 70cm tall, bigger than the original plant when brought, and it spent the mild winter 06/07 in the green house, where the temperature never got lower than -1°C.

This cutting, now in a 5.5 litre container, then produced one 20cm flowering spike with red hooked pistils (see photo) which was in full flower in September/October 07. This first rapid success was a great encouragement, since Alex George's Banksia book states '(*B. spinulosa*) takes up to 8 years from seed to flower'. After some confusion (the lignotuber of the original plant was buried) Alex himself identified this plant from photos as being ssp. *collina*.

In March 2006, I obtained some *Banksia spinulosa* ssp. *collina* seeds from Florama, Jardin Botanique des Pyrénées Occidentales, 64160, St Jammes, France. I sowed some immediately and one germinated rapidly. It was repotted in mid May into a 2l container. After one season this plant was a scion some 50cm tall, and in spring 07 it was transplanter into a 4 litre container and it is now 80 cm tall. It is remarquable how much paler the foliage of this plant is relative to the plants originating from Railhet nursery.

Conclusions

I have found Eastern Australian (EA) species easier to grow than Western Australian species because they tolerate the humidity of a poly-tunnel better. Western Australian species have a marked tendancy to damp off at the seedling stage. Equally I prefer to put Western Australian species into terracotta pots rather than plastic containers, whereas Eastern species seem to do just as well in containers as in pots.

Banksias have a reputation of being slow to flower, however my experience has shown that in cultivation, given the right conditions, in particular a well draining and low pH substrate, Banksias in pots can flower in as little as three seasons at 45° north. (*B. ericifolia* and *B. hookeriana* 3 seasons from seed, *B. spinulosa collina*, 2 seasons after cutting is taken). This should encourage an increased interest in Banksia cultivation, particularly in the milder parts of Western Europe.



CORREA "MANNII"

Jeff Irons

In her article about Australian plant species described in Paxton's 1840 publication (Pentachondra December 2007) Helen Beaufort-Murphy mentioned *Correa* x *harrisii*, stating that "Mannii" is a synonym. On and off these two

names have occupied my mind for a good 20 years.

They first came to my notice when in Volume 3 of the Encyclopaedia for Growing Australian Plants it was stated that they were synonyms. I knew that they were not! On taking up the matter with Rodger Elliot it turned out that his statement was made because he had seen the identical plant growing under both names at the Santa Cruz Arboretum in California.

After the 1984 Liverpool International Garden Exhibition many of the plants on the Australian stand were distributed among British botanic gardens. Among those given to Ness Gardens were the two correas "Harrisii" and "Mannii". Unfortunately one of them has since been lost. I have taken up the matter of their nature with both the Australian National Botanic Garden and the Correa Study Group. Neither can help, so the less than perfect memories of me and Paul Matthews (Curator Glasgow Botanic Gardens) are the only sources of information.



Correa "Mannii"

As far as we can recall the two hybrids have identical leaves and flowers but differ in habit. We think it likely that "Harrisii" is taller and narrower (up to 1.5m high) and "Manni" is lower and wider (to 1m x 1.5m). The parentage is believed to be *C. pulchella* x *reflexa*. "Mannii" is believed to have originated in 1928 in the Melbourne garden of Sir Fred Mann and Helen's quotation makes it seem that "Harrisii" may be a deliberate hybrid, for she wrote 'This hybrid by Mr. D. Beaton, gardener to Sq.

Xanthorrhoea preissii seedlings available

A trip to West Australia in August 2007 allowed me to buy some fresh *Xanthorrhoea preissii* seeds, which were then sown in January 2008. With smoke granule treatment these produced a very good germination rate, whereas older seed (3 years) treated the same way did not germinate at all, which confirms my previous experience with this species. I have just pricked out 9 seedlings (12th March). Assuming all survive, I have more than I need (or have space for) so they will be available this summer/autumn to the first 4 or 5 persons to contact me, for p & p and/or a small charity donation.
e-mail:
tim.darrington@wanadoo.fr

T. Kingsbury, was named for the person in whose collection it flowered'.

Whatever the name given, these two hybrids are well worth growing. At Ness Gardens they proved to be tender when grown outdoors and unable to survive winter minima below about -4°C. In that respect they are less cold tolerant that "Marian's Marvel" and "Federation Belle", which are therefore preferable.



AUSTRALASIAN PLANTS AT WAKEHURST PLACE, WEST SUSSEX

John Purse

Wakehurst Place is part of the Royal Botanic Gardens and is often called 'Kew in the country'. I visited Wakehurst on a fine winter day at the end of January 2008 and this proved to be a good opportunity to appreciate some of the evergreen Australasian trees and shrubs, which were well displayed amongst the many leafless deciduous species in the collections. In this article I will highlight some of the more interesting and spectacular species I saw.

Wakehurst Place is in the Weald approximately 20 miles north of Brighton, and centred around two valleys. The Australasian plants are in two areas, Coates Wood and the southern hemisphere garden, above the valleys at an elevation of around 100 metres. Soils are acid, and derived from underlying silts and sandstones. Annual rainfall is around 800mm – high for south-east England.

Coates Wood was incorporated into the gardens quite recently, and many specimens have been planted within the past five years, amongst standard oaks. The national collection of *Nothofagus* is held here, and the Australian and New Zealand species present (*N. cunninghamii*, *N. moorei* and *N. solandri*) are growing well.

Several species of *Eucalyptus* are planted in Coates Wood. These are mostly the common and familiar species, but there are two unusual ones. Two young specimens of White Peppermint, *E. pulchella* (photo page 22), planted in May 2004 are very healthy. This is a fairly tender species from lowland south-east Tasmania which has a dense canopy of thin and bright green willow-like leaves – very attractive and most unlike the eucalypts familiar to us in the UK. The real surprise for me was three specimens of the Grampians Stringybark, *E. alpina*, also planted in May 2004. Despite the latin name, this is reputed to be a rather frost-tender species. However, the specimens on Coates Wood can almost be described as rampant, though I suspect that they have become rather straggly from being sheltered by more dominant surrounding trees. All three

specimens have many of the distinctive warty flower buds, and on one specimen a few of these buds had swollen and very recently flowered.

Two other Tasmanian species that are rarely encountered in the British Isles are doing well as young specimens in Coates Wood: the Tasmanian Leatherwood, *Eucryphia lucida*, and the King Billy Pine, *Athrotaxis selaginoides.* The first of these species is the source of the distinctive and delicious Leatherwood honey. The latter species was prized for its straight-grained and durable timber, and consequently was heavily over-exploited; most of the remaining trees in Tasmania are now protected.

I had not expected to find any Australasian plants in flower in late January, and I was astonished to find two species of large woody shrubs with spectacular flowers. One was a single specimen of *Pseudopanax arboreus*, known as Five-finger or Puahou in New Zealand, absolutely covered in sweet-scented umbels. The other species was *Banksia integrifolia* ssp. *monticola.* I don't know the origin of this subspecies, but it is certainly very happy at Wakehurst; six specimens are each around 5 metres high and look very healthy. All had flowered very recently, and four of these still had several large pale-yellow flower-heads.

One other Australian species at Wakehurst deserves a mention: the southern hemisphere garden has a massive and very prominent Mountain Hakea or Mountain Needlewood (*Hakea lissosperma)* (photo page 22), resembling a huge green fuzzball. It is a striking feature, even when surrounded by many other exotic subjects. This species has a large altitudinal range in Australia, and provenances from high elevations are presumably quite hardy in much of Britain.

Wakehurst Place has much else of interest, and is an attractive and fascinating place to explore at any time of year. Its climate and soils are likely to be particularly favourable for many temperate Australasian species. Nevertheless, I came away with some of my pre-conceptions of what can be grown outdoors in southern Britain thoroughly challenged!

Postscript: *Eucalyptus caesia*

In issue 38 ('An update on Western Australian Eucalypts in Kent', May 2007) I wrote that one of my *Eucalyptus caesia* ssp. *magna* (also known as Silver Princess), growing in a polytunnel, was about to flower. That it did, to stunning effect as promised; see photo on page 19.

Book Sale

Jeff Irons is selling some of his books. A list can be obtained by sending him a SAE – his contact details can be found inside the back cover.

Plant Names

If you grow a little daffodil and its name is *Narcissus romieuxii* subsp. *albidus* var. *zaianicus* do you know what this means? Hortax have issued a leaflet 'Plant Names' which can be downloaded from www.hortax.org.uk. This is a most useful guide to the complexities of nomenclature and I have learnt a lot from it; for example, the correct definitions of subspecies, forma, variety, hybrid, grex, group, series and trade name. It is also helpful about the sorts of changes that we find so irritating, and why sometimes commonsense prevails over the rules of priority; for example why *Acacia* has been retained. If you find this too heavy going – and it can be – there is a shorter simpler version from the same source: 'The names of garden plants'.

Tony Entwistle

SAVILL GARDENS, WINDSOR GREAT PARK

Keith Larkin

Did you know where the largest collection of native New Zealand plants outside of that country can be found? No, neither did I! But it is here in the UK at the Savill Gardens, part of Windsor Great Park, so owned by The Royal Family. It started when the Queen visited New Zealand in 1986 where she was presented with the plants which were subsequently planted in the garden. As part of the changes for their new visitor centre – a story in itself with timber from the locality and many other features you would expect the Prince of Wales to promote – the NZ garden has been remodelled and re-planted and was re-opened in April 2007. Inevitably it still looks very immature after such a short time, but it does occupy quite a large area, and there are quite a lot of species – in some cases with quite a number of plants each – and it has been designed for visual appeal as well as being an important collection.

So if you are in the Windsor area you might like to call in and see how it is progressing, and maybe when it is a bit more mature we might organise a meeting there. Some further information can be found on their snappily named website: www.theroyallandscape.co.uk/landscape/savillgarden/the-new-zealand-garden.cfm.

Whilst you are there you might also like to visit the Valley Gardens which are close by adjacent to Virginia Water in Windsor Great Park. I don't think there is anything Aussie or NZ there, but it is very attractive, especially at Azalea/ Rhododendron time.

The grevillea flower



Before anthesis: the flower on the left is just starting to uncurl (*Grevillea juniperina*)



During anthesis: the loop that is the style is starting to uncurl (*Grevillea juniperina*)



After anthesis: the sticky pad (pollen presenter) can be seen at the top of the style, with the stamens attached to the perianth below. (*Grevillea juniperina*)



Grevillea "Canberra Gem", with flowers after anthesis

The photographs on this and the previous page illustrate Jeff Irons' article (page 35) about the flowers of grevilleas and how they are pollinated. Don't be put off by the technical terms; it is an absolutely fascinating process and technical terms are explained in the article. If you would like to know more about the botany of Australian plants I can recommend **Name that Flower: The Identification of Flowering Plants** by Ian Clarke and Helen Lee (Melbourne University Press, second edition, 2003).

Judy Clark

THE GREVILLEA FLOWER

Jeff Irons

A year or two ago a contributor to the journal of another society wrote that grevilleas have a strange flower that never opens fully. Although a keen gardener, willing to try unusual plants, the author was obviously not curious as to why the flowers did not open. He had not examined a flower and pulled it apart to see whether there was any sign of something (such as insect attack) that could account for the flowers not opening. Curious gardeners always want to widen their experience and one of the ways they do it is by pulling apart unfamiliar flowers to see what they are like. (If you don't have one to pull apart as you read what follows look at the photos on pages 33 and 34. Ed.)

If you do that to a *Grevillea* a new kind of flower opens up in front of you. The first thing you notice is that the curious bunched up thing with a lot of bits sticking out is actually a lot of flowers, close together on a stalk (or **rachis**). The flowers are arranged in pairs. Looking at such a **conflorescence** it can be seen that the flowers closer to the tip are closed and that, as they open, first a loop appears and then it sticks out of the flower. The 'loop' is the **style**, part of the female bits of the flower.

Pulling a single flower apart, it can be seen that whereas we are used to seeing **stamens** (the male bits comprising **anthers** on **filaments**) rising from the centre of a flower, the *Grevillea* has its stamens on the four **perianth** segments. Perianth is the botanists' name for the petal-like parts of the *Grevillea* flower, and unlike those of many flowers we are used to, they are not symmetrical.

As the style uncurls, it brushes against the stamens and pollen is transferred from them to the sticky pad on the tip of the style. The uncurling is called **anthesis** and the sticky pad is the **pollen presenter**. When a pollinator visits the plant and attempts to get nectar from the flower's base it removes the pollen from the presenter's tip. The pollen presenter then becomes sexually active. A sticky material comes up and covers its surface, so that the **stigma** at its centre can receive pollen from another flower, for transmission to the ovary.

This ingenious system prevents self-pollination. The flower can receive pollen either from another flower on a different shrub or one on the same shrub. Such pollination does not cause inbreeding and the amount of pollination from the same shrub varies between species. In some it can be as much as 40%.

Grevilleas have another method of ensuring survival. There should be two seeds in every fruit but quite often one aborts. This has the effect of concentrating nutrients in the one seed that develops, ensuring that it has a good chance of surviving after germination.

The Grevillea seed contains enough nutrients to last the seedling for a year.

When dissecting a *Grevillea* flower for examination you cannot help realising that there is a lot of nectar, for your hands get very sticky. It comes from the nectary, which is down near the bottom of the style. In the wild grevilleas can be pollinated by insects, birds or mammals. In Britain blue tits have realised that grevilleas offer a good source of energy containing food and I often see them clinging to a plant, trying to get at the nectar.

This kind of flower is not unique to grevilleas; examine an *Embothrium* and you will see the same kind of arrangement, for it is characteristic of the Proteaceae. So if you look at any species of *Banksia*, *Isopogogon* or *Lambertia*, or any of the other members of this family, you will see something similar. Knowing and finding out things like this adds to the interest of plants and gardening. There is always something new to learn.

THE JOSEPH BANKS GARDEN, CHESTER ZOO

Mark Sparrow

A number of buildings and meeting rooms at Chester Zoo have been named after famous naturalists and explorers. So when I was able to persuade the Director to name one of the Educational buildings in the Zoo after Sir Joseph Banks it gave me the ideal opportunity to plant up the exterior beds with plants associated with the great botanist.

I actually found it very difficult researching a suitable list of plants for the garden. I found various references and snippets of information and gradually pieced together a group of plants that I thought would be hardy enough in the North West of England. They are species (*although not the cultivars of course*) that were either collected or named by him, or named after him. The majority are from Australia and New Zealand and were planted out in the summer of 2006. Of the 32 taxa planted (see box on page 37) most survived the mild winter of 2006/2007, with the exception of *Callistemon viminalis, Brachyglottis repanda, Astelia banksii, Viola hederacea* and *Corynocarpus laevigata.* This winter 2007/2008 has been slightly more severe with night temperatures dropping to -5C during two periods; for a couple of weeks before Christmas and a similar spell in January/February. I'm happy to report that no serious damage seems to have occurred to the remaining plants although the tips of *Callistemon* 'Captain Cook' and *C.* 'Little John' have been singed quite badly.

I would be interested to know if anyone else has ever researched and planted a garden associated with Joseph Banks and if they ave can recommend some good

reference material on the subject. I also include a short biography for those who are not so familiar Banks' exploits.

Plant list for the Joseph Banks Garden

Astelia banksii
Banksia integrifolia
Banksia marginata
Berberis buxifolia
Brachyglottis repanda,
Callistemon 'Captain Cook'
Callistemon 'Little John'
Callistemon viminalis,
Clianthus puniceus
Coprosma lucida,
Corynocarpus laevigatus,
Dianella caerulea
Dianella nigra
Eriobotrya japonica
Grevillea 'Canberra Gem'
Hydrangea 'Joseph Banks'
Leptospermum scoparium,
Leptospermum scoparium 'Boscawenii'
Leptospermum scoparium 'Kiwi',
Libertia grandiflora
Olearia paniculata
Pernettya mucronata 'Bells Seedling'
Phormium tenax
Pittosporum tenuifolium,
Pseudopanax arboreus
Pseudopanax crassifolius
Pseudopanax lessonii
Rosa banksiae
Rosa banksiae 'Lutea'
Sophora microphylla
Sophora tetraptera
Viola hederacea.

Joseph Banks (1743 – 1820)
Banks came from a privileged background attending Eton and later Oxford University where he studied Botany. At the age of 21 he inherited his family estate and this enabled him to pursue his interest in botanical scientific discovery.

In 1768, aged 25, he set sail with Captain James Cook on the epic three year voyage which culminated in the discovery of Australia. The ship, *Endeavour*, measured only 32.0m long by 9.0m wide and was home to the 94 crew members, nine of whom were Banks' team. They sailed via South America and Cape Horn, stopping off in Tahiti, before reaching New Zealand. They spent the next six months circumnavigating the two main islands during which time Banks collected 360 species of plants. They then set off north where on 17th April 1770 they sighted Australia, eventually landing at Botany Bay. After many adventures, one of which involved the near sinking of the ship, Banks collected a further 331 plants. They had been away from England for two years and it was time to return home. When they docked in England on 10th July 1771 only 52 of the original 94 crew members had survived. The trip resulted in the collection of 1300 new species of plants.

Banks went on to set up Kew Gardens where he was appointed its first Director, and he also held the post of President of the Royal Society for 42 years until his death in 1820.

BITS AND PIECES

Cordyline Identification

A member wanted to know how to distinguish between *Cordyline australis* and *C. kaspar*. These two species are very similar and there is an overlap in leaf length, but while those of *C. australis* can be up to 6cm wide, those of *C. kaspar* can reach 7.5cm. In a nursery you need to look at the leaf base. That of *C. australis* is difficult to separate from the leaf, being flat and nearly as wide as the leaf itself, certainly over 3/4 of the width. *C. kaspar* has a short stalk which may be channeled. Mature plants of *C. kaspar* have a more slender appearance than those of *C. australis* and there are botanical differences in the flowers.

Jeff Irons

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Nursery Still Open!

In Pentachondra 38 (December 2006) in an article by John Purse ('An update on Western Australian Eucalypts in Kent',) there is a reference to Plantbase Nursery, in Lamberhurst, Kent, having closed. In fact, it is still open and has just moved from its original site at Lamberhurst Vineyard to another site tucked away down a country lane about a mile away. I visited at the end of April 2007, just after owner Graham Blunt had finished setting up the new location. It was a bit chaotic, but packed with rare and unusual plants, many from Australia, including various *Banksias* and *Melaleucas*, and many from South Africa. It is well worth a visit if you are in the area, but it might pay to ring beforehand (the number is 07967 601064) to check that Graham is going to be there, and to get directions, as it is quite tricky to find. Details are in The RHS Plantfinder.

Jeremy Spon

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Southern Hemisphere Botanics: A Fifish Garden

Jeff Irons sent information on APS member Ursula McHardy's fascinating sounding garden in Fife, Scotland.

Ursula used to work for the Frankfurt Palmengarten and has collected in Australia, New Zealand, and the extreme south of Chile. Her garden was started in 2004 and as a botanic garden it is unusual in that it aims to show vegetation patterns rather than just plant collections. Thus it illustrates, for example, tussock grasslands found in New Zealand; the type of vegetation found on Mount Wellington in Tasmania; fynbos from the Cape Peninsula in South Africa; and the southernmost part of the monkeypuzzle forests of Valdivia, Patagonia. There is also a mixed garden which combines species and hybrids from all over the world, a rock and water garden with a carnivore swamp and orchid beds, and a kitchen garden.

The garden is open on Sundays, Mondays and Tuesdays between 10 and 4, from Easter to October, and also offers plants for sale. It is accessed via a foot/cyle path and public parking is 15 minutes away. For further information on access, or anything else, phone 07786 404198 and leave a message.

The Gardener's Cottage, Shore Road, Crombie Point, Fife, Scotland, KY12 8LH.



National Garden Scheme
Sunday 10th August 11.00 – 6.00

Mike Ashford, an APS member, and his wife Isobel will again be opening their garden for the National Garden Scheme. The garden is open on Sunday 10th August from 11.00 to 6.00. The garden is in the village of Moor Monkton about seven miles NW of York off the A59. It will be well signed on the day with the NGS yellow signs. Mike would be pleased if any APS member visiting would make themselves known to him.



Exchange and Mart

Tony Entwistle has the following non- Australian seeds, surplus to his Tatton/Quinta List. If anyone would like some please send Tony a SAE (see contacts inside the back cover).

Abutilon vitifolium album – a good large flowered form
Betula utilis ex 'Knighthayes' – white/pink bark
Halimodendron halodendron
Piptanthus nepalensis
Carpinus turcenzinowii – a small neat hornbeam
Holodiscus discolor – star of the Quinta arboretum in late May when loaded with pendant white panicles of 'Spiraea'



Do you get the latest news by email?

If not, it may be because we don't have your current email address. If so, send a message to the webmaster (see contact details inside the back cover) asking to be included. Or it may be because your anti Spam filter is blocking the messages. I know it is outrageous that our innocuous messages can be so interpreted by these unintelligent facilities but it does happen!



Deadline for next issue: September 15

Contributions for issue 41 will be welcome anytime from now. Send your copy electronically or by post to the Newsletter Editor – contact details inside the back cover.



VALE: DENNIS ROWLINSON

Jeff Irons

It was with sadness that we learnt of the death of Dennis Rowlinson from mesothelioma, on December 5th. He was one of the earliest members of the APS and had been in the Society for about 17 years.

Dennis was always willing to pass his knowledge and experience on to others and his name will be familiar from his many contributions to the Newsletter. Northern members have a more intimate and personal knowledge of him from the meetings held at his house. There his wife Anne cheerily put up with the disruption caused by the plantaholics and made all welcome. Dennis' attractive garden was packed with Antipodean plants and visitors were always quietly instructed on how to grow, place and display them. His presence was felt in other ways too. Always willing to give an input, Dennis helped to set up, staff and take down the Society's two displays at the Tatton Park Flower Show. Many members of the public have good reason to thank Dennis for his answers to their plant problems.

A scientist by training, Dennis was a stickler for getting things right and would go to great lengths to ensure that identities were correct. I recall one occasion when a botanist employed by a major horticultural force had identified a plant for Dennis. Just to make sure, he told me what it was claimed to be. I ventured a little disquiet. That was enough to set Dennis off. After visiting over 1000 websites and e-mailing various authorities he was able to set his mind at rest – the initial identity was wrong.

A quiet and unassuming man, Dennis kept his health problems out of the public area and always made light of them. The Society mourns his passing and sends its condolences to Anne and his family.

Illustration acknowledgements
APS library: *Hakea lissosperma* p. 22; *Grevillea* "Canberra Gem" p. 34
Judy Clark: *Acacia baileyana*, p. 8; *Eucalyptus pulchella* p. 22; *Grevillea juniperina* flowers pp. 33 and 34.
Tim Darrington: *Telopea speciosissima*, front and back covers and *Banksia* species pp. 20 and 21
Sue Hyams: Line illustrations pp. 9, 14, 15, 16 and 30
Jeff Irons: *Acacia verniciflua*, p. 8
Jeff Layman: *Clianthus puniceus* and *Sophora microphylla* p.7
John Purse: *Eucalyptus caesia* p. 19