AUSTRALASIAN PLANT SOCIETY
NEWSLETTER

PENTACHONDRA

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Swamp lily, *Crinum pedunculatum*

AUSTRALASIAN PLANT SOCIETY

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Kangaroo paws, Royal Botanic Gardens Cranbourne, Melbourne

EDITORIAL:

Taking an optimistic view

Judy Clark

I visited Melbourne in January, primarily to see my family, but I found plenty of time to look at plants too. When I'm there I tend to forget about British weather and become optimistic about growing all sorts of glorious but tenderish plants in my garden in Hastings. Even the coldest UK December for more than a hundred years hasn't really tempered my optimism; surely we won't get a fourth hard winter in a row? After all it's not very long ago that a run of mild winters lulled us – well me at least – into thinking that warmer times could be here to stay. Similarly, Victorians had become very used to drought and heat waves but rain returned in 2010 and when I was in Melbourne the temperatures were akin to those of a good English summer rather than the 40 degrees plus of my visit in February 2009.

The front cover shows a plant that I saw at the Royal Botanic Gardens Cranbourne (on the outskirts of Melbourne), the swamp lily *Crinum pedunculatum*. *Crinum* is a mostly African genus but there are five species native to Australia. According to the factsheet on the ANPSA website (http://anpsa.org.au) this is an easy plant which tolerates frosts. That's tolerates frosts in the Australian sense, the odd cold night rather than a prolonged freeze, so one has to be in optimistic mode to think about trying it, but I would if I could get hold of it. The RHS Plant Finder last listed it in 1998. Have any APS members ever attempted to grow it?

At Cranbourne I was also very taken with *Olearia astroloba* (Marble daisy bush, photo, page 9). It is a rare Victorian endemic, found growing at 600m in East Gippsland near the headwaters of the Tambo river, and not described until 1989.

It grows in the Australian National Botanic Gardens in Canberra too and according to their website (www.anbg.gov.au) this silvery-grey leafed shrub makes a good (Australian) garden plant. It is reported to be easy to grow in the ground or in pots; to have a long flowering period; to respond well to pruning; and to resprout from the base. And, like the swamp lily, it is described as frost tolerant. If it is proved easy enough to propagate and not too tender, then to my mind it would be a super candidate for introducing to the UK and Europe. And if so, perhaps it could even be used to raise money to conserve Australian plants, on the model of the Wollemi Pine. The marble daisy bush may not have the latter's prehistoric credentials but in my view it would be much more attractive as a garden plant.

Olearias belong to the daisy family (Asteraceae) and other members of this family were also in flower when I was there. I remember from my childhood everlastings daisies in vases but I had forgotten how attractive they and other types

of daisies are. And of course with annual species there are no worries about dire winters. If all goes according to plan later this year my garden will feature the pink paper daisy *Rhodanthe chlorocephala* ssp. *rosea* and Swan river daisies (*Brachyscome iberidifolia*) in white, blue and purple. Both species are on the APS seedlist.

Yam daisies (*Microseris lanceolata*),*w*hose tuberous rootstock is edible and an important indigenous food, and various yellow and white everlastings or straw flowers were in flower when I caught up with former APS secretary Nicky Zanen. The annual everlasting *Xerochrysum bracteatum* (photo, page 9) is on the APS seedlist; it can be yellow or white. I saw *Brachyscome multifida* (Cut-leaved daisy) at the Royal Botanic Gardens Melbourne and a cultivar of it at Cranbourne (photo, page 10). And in the wild I saw the button everlasting *Helichrysum scorpioides* (photo, page 10), fireweed groundsel *Senecio linearifolius*, and scented groundsel *Senecio odoratus* (photo, page 19), all yellow-flowered and growing in the bush around my brother's property near Colac (south west Victoria). Fireweed groundsel is a particularly glorious yellow with contrasting bright green foliage; unfortunately I didn't take a photo of it. It and *H. scorpioides* are both grown in gardens.

The flannel flower (*Actinotus helianthi*; photo, page 19) looks a bit as if it could belong to the daisy family but is actually a member of the carrot family (Apiaceae). I saw these growing in a private garden belonging to Peg Mc Allister. Nicky took me to visit and I felt very privileged. Peg is an expert on small native plants and a co-author of **Collect and Grow that Seed**: **Small Australian Plants** (2009), a book based on many years of collective garden experience. Flannel flowers self sow in her garden. Their seed is on the APS list and smoke treatment is recommended. I am currently awaiting germination, or not as the case may be. And even an optimist like me realises that this species is one for a container.

I am more optimistic when it comes to kangaroo paws. I saw a swathe of flamboyant *Anigozanthus* cultivars full flower at Cranbourne (photo page 20). David Ware was very taken with them too; he took the close-up on the back cover. The past three UK winters have not been kind to kangaroo paws but *Anigozanthus flavidus* in my garden has survived them all, planted out against a low south-east facing wall. All the top growth was dead after last winter but it has responded to a warm April and resprouted well. In milder winters I've managed to keep some red cultivars going outside but the winter of 2009-10 did for them, though I've kept them going in my greenhouse.

In fact, for the UK overall, winter 2009-10 was colder than winter 2010-11, which was the second coldest winter since 1985/86. But the early and protracted cold spell December 2010 seems to have

been a critical factor if APS members' experiences, or rather their plants' experiences, are anything to go by. These experiences will obviously have been varied and some are reported on in this issue, starting on page 27. Hopefully the detail will help members, especially newer members, to judge what species are likely to thrive in their own gardens more or less regardless of winter weather, and what species they might have to be prepared to lose one day.

Jeff Irons' list of the plants that survived in his Wirral garden might help members to select their twenty packets from the seedlist. Almost all of them were grown from seed collected by Jeff, and he gave the surplus to the APS seedlist. Have you ever thought of donating to the seedlist, either spare purchased seed, or seed collected from Australasian plants flourishing in your garden? Due to genetic variation plants of the same species vary in how suited they are to UK conditions. So if a plant is flourishing in your garden then it's likely that its progeny will flourish in similar situations. Guidance on what, where, when and how to collect seed is provided in Jeff's article on page 11. It's quite detailed in order to cover a wide range of species but don't let that daunt you; have a go.

I'm always looking out for plants that don't seem to be grown much in the UK but could be. The genus *Weinmannia* comes into this category and no, I'd never heard of it either until I read Gary Dunlop's article (page 15). *Weinmannia* has both South American and New Zealand members, and he writes about the three that grow in temperate climates. Their story is fascinating and they should be more widely known.

The British Museum's Australia Landscape could be another source of ideas for your garden. Tim Darrington has already been to see it and describes the planting as "impressive" (page 7). Steve Ruddy from Kew Gardens was responsible for the display and if you come to the AGM on July 2nd (see page 4 for details) you will be able to hear about how it was put together as well as being shown Australian plants at Kew by an expert. Do come; it promises to be a really interesting and instructive day.

Finally, thanks to everyone who has contributed to this issue. Let's hope that the warm spring portends a warm summer, and that your Australasian plants do so well that you are eager to tell others and I am inundated with items for the next issue.



APS: CHANGES

Keith Larkin

Aubrey Wood

We were saddened to hear of the death of APS Treasurer Aubrey earlier this year. Aubrey had been a member for quite a number of years. He publicised our society through his nursery when selling

at plant events in the Midlands and supplied a number of Australian and New Zealand plants and seeds. Not many people who knew him realised that he was 79, especially when he was moving his stock at events! He took on the role of Treasurer in 2009. The Society sent its condolences to his family.

APS Committee

Acting treasurer

I am currently acting as treasurer and all communications regarding subscriptions and membership should be sent to Keith Larkin as detailed inside the back cover (and please NOT to the address on the renewal form enclosed with the December 2010 issue). As I took over in unplanned circumstances there may have been unintentional oversights; if you have any concerns please do get in touch.

The financial statement for the year 2010 will be available at the AGM and enclosed with the December 2011 issue of Pentachondra.

Suggested role changes

In our discussions following Aubrey's death we think it might be useful to rearrange the roles of the officials to some extent, and we will be discussing and deciding these at the AGM. The roles we propose are as follows:

- **Chairman, Pentachondra Editor and Seed Manager:** roles to remain as at present.
- **Treasurer and Membership Secretary:** combining the current role of treasurer with recording membership information and welcoming new members, and taking responsibility for the Agenda and Minutes of the AGM.
- **Meetings Secretary:** to organise and promote the Annual and Regional meetings that we hold.
- **General Enquiries Secretary:** to handle general enquiries from members and enquiries from non members about membership, plants etc.

We would be really pleased for more members to become involved and the allocation of responsibilities can always be changed to enable people to help our society in ways that they feel able to. If you have any views on these proposals and/or would like to help us with running our society then please contact Keith Larkin as soon as possible. All committee positions are open to any currently paid up member of the society.



APS MEETINGS

2011 AGM and Members meeting

Kew Gardens, Saturday 2nd July

As previously announced, this year's members' meeting and AGM will be held at the Royal Botanic Gardens Kew on Saturday 2nd July, starting at 10.30am. Steve Ruddy, who is Head of the Garden Development Unit and has been responsible for the display of Australian plants in the forecourt of the British Museum , has kindly

offered to host our visit. After refreshments and introductions Steve will give us a short presentation on the creation of the British Museum display, and then take us to look at some of the main plantings of Australian plants at Kew. The AGM will be held after this, probably after a break for lunch (members to provide their own.)

Normal admission charges to Kew will apply but because it is the AGM the Society will cover the cost of entry for those members who have to pay. In order to reduce the cost to the APS as much as possible we would be very grateful if everyone who qualifies for free entry, either as a member of the Friends of Kew or similar organisations, brings their relevant membership cards. We will qualify for a discounted group rate if more than 10 people have to pay for entry so please would everyone try and be at the Victoria entrance gate no later than 10.10 am (and preferably before) so that we can all enter as a group. The Victoria Gate is on Kew Road opposite the end of Lichfield Road which leads to Kew Gardens underground station (on the District Line).

The meeting will be held in a conference room in the Orangery. If anyone arrives late, or qualifies for free entry and does not want to wait for the rest of the group, they should make their way direct to the Orangery (a five minute walk from the Victoria Gate). If on the day it seems likely that unexpected delays will prevent you from arriving on time please ring 07909 088198 so that we know to expect you later.

For details of where the Orangery is in the Gardens, and for details of travel to Kew, parking, and so on please go to the Kew website, www.kew.org. The website includes a map but it is not that easy to find. The full address is www.kew.org/ucm/groups/public/documents/document/ppcont_008324.pdf.

This promises to be a very interesting day with an opportunity to meet, and discuss Australian plants with, a Kew staff member who is both knowledgeable and enthusiastic about them, so we hope as many members as possible will make the effort to come. If you intend to come please let APS secretary Jeremy Spon (details inside the back cover) know beforehand, so that he will be able to contact you should there be any unanticipated changes of plan. He can also provide further details if wanted.

Regional Meetings

Organising regional meetings was proving something of a challenge until Amanda Kershaw stepped in to suggest that members might like to join her and Dennis on their July visits to Ventnor Botanic Garden and Logan Botanic Garden.

A visit to Ventnor Botanic Garden on the Isle of Wight on Sunday 3rd July, has been prompted by the news that this garden, which amongst other features boasts splendid displays of Australian

and New Zealand plants, faces cuts in its funding, possibly very severe cuts (see page 8). For the moment the Garden is open 10am to 5pm seven days a week, entry is free, and information about the plantings can be found at www.botanic.co.uk/.

Ventnor is not the easiest place to get to but it can be done in a day if you don't start from too far away. Amanda and Dennis plan to catch the 10am ferry from Portsmouth to Fishbourne, a 40 minute crossing. From there it should take about half an hour to get to the Garden. Catching the 9pm ferry back to Portsmouth should give time for a great look around. Editor Judy Clark will be on the same outward ferry but returning earlier (6.30 ferry). It may be possible to arrange to car share.

The visit to Logan Botanic Garden is planned for Saturday 16th July. An outpost of the Royal Botanic Garden Edinburgh, Logan is situated almost at the south western tip of Scotland in the Rhins of Galloway, 14 miles south of Stranraer. The area is warmed by the Gulf Stream enabling all sorts of exotic plants to flourish, and around 50% of the plantings are from the southern hemisphere. (For more information go to www.rbge.org.uk/the-gardens/logan.)

Logan is open from 10am to 5pm. Admission is £5 (concessions £4) plus £1 for the guided tour which Amanda has arranged for APS members. Members could also take the opportunity to visit the neighbouring Logan House Gardens (open 9am - 6pm, £3 admission), which amongst many other interesting specimens, contains the biggest Woolly Tea-tree (*Leptospermum lanigerum*) in the UK.

If you are interested in either excursion please contact Amanda, sooner rather than later, at sandboxtree@talktalk.net or on 0151 6397611. Early contact is particularly important in the case of the Logan visit so that the most convenient time can be arranged for the guided tour.



APS NEWS

2011 Seedlist

Seeds can be ordered using the form enclosed with this newsletter. For £4 you get up to twenty packets of seed which represents tremendous value. That the APS can offer such a benefit to members is down to the hard work of seed manager, Richard Christmas for which we are all very grateful. In turn Richard would be grateful if seeds could be ordered by 30th June.

The seed on the seedlist comes from various sources, with most purchased but some supplied by APS members who have saved seed from plants grown from APS seed in the first place, or from seed of other known origin. Seed from members is welcome as long as it is correctly named and details concerning its origin and when and where it was collected are included.

Subscription renewal

If you receive a polite but firm reminder with this newsletter you are one of a number who have not yet paid their 2011 subscription. If you have paid between the editor receiving the membership list and the publication of this newsletter then please ignore the reminder. And if you have not paid please send your subscription to acting treasurer Keith Larkin at the address inside the back cover of this issue. Members with a UK bank account can pay by standing order, and overseas members can pay using PayPal (contact Keith for details).

Membership

The Society would like to extend a warm welcome to new members John Baxendale, Miss PM Smith and, from the USA, Steve Nunn.

Back issues

Newer members may be interested in purchasing back issues of Pentachondra. We have a small stock of recent back issues (40 to 45) and it may be possible to provide copies of earlier issues. Anyone interested should contact the editor direct (details inside back cover).

Pentachondra contributions

The deadline for the next issue is **30th October 2011** but any time before that will do. Contributions should be sent direct to the editor (contact details inside the back cover). Articles can be submitted electronically or as hard copy; if the latter, typed please, to avoid errors creeping in. Photos and drawings should be submitted electronically, preferably in separate files from articles and not compressed before sending (don't worry about large files). Photos and drawings are very welcome as items in their own right, as long as there is a caption.

You could write about your own garden, a favourite plant , cultivation or propagation tips, a garden or nursery that you have visited, a favourite book; in short, any topic that has something to do with Australasian plants. Short items are as welcome as longer ones. If you have any doubts, or questions, contact the Editor before putting pen to paper.



BRITISH MUSEUM AUSTRALIAN SEASON

Australia Landscape, a 'down under garden' as one newspaper described it, is already open on the British Museum forecourt where it will stay until16th October 2011. APS member Tim Darrington has already been to visit:

"Quite an impressive planting, which has been in for about three weeks according to the man doing the watering, who also said there'd been some cold nights. Some large

coastal banksias and some larger eucalypts were suffering from the recent move. In flower I was particularly pleased to see *Hakea epiglottis*. Also in flower were *Alyogyne huegeli*, *Grevillea* 'Robyn Gordon', a *Leptospermum scoparium* double pink cultivar and five or six Geraldton Wax plants (*Chamelaucium uncinatum*) which were so low and rounded, I was asking myself if dwarfing hormones had been used! Globally this is a good collection for a relatively small planting, and in a few weeks time the callistemons will burst forth."

This display it is accompanied by two other exhibitions, both free, and both opening on May 26. **Out of Australia: prints and drawings from Sidney Nolan to Rover Thomas** (Room 90) will feature work from all the major Australian artists of the last 70 years. On show in **Baskets and belonging: Indigenous Australian histories** (Room 91) will be many handcrafted baskets, both historic and contemporary, made from local materials by indigenous Australians.

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VENTNOR BOTANIC GARDEN

Jeremy Spon

Members will no doubt remember previous items in Pentachondra about Ventnor Botanic Garden, most recently in issue 43 (December 2009). The Garden has an amazing collection of plants, many too tender to be grown outside anywhere else in Britain except the most favoured areas of Cornwall, and Tresco on the Scilly Isles. It is particularly strong in the areas of Australian and New Zealand plants, and also features some of the most dramatic and original landscaping carried out in any British garden in recent years. So members should be alarmed to hear that the Garden faces losing much, if not all, its funding from the Isle of Wight Council. The final decision has yet to be made, but the Garden is certainly going to fall victim to the cuts which the Council, like all others across the country, is about to make. Some paid staff will be made redundant, and the Council, which owns the Garden, intends to hand over responsibility for it to some sort of charitable trust.

The consequences of this for the Garden are uncertain, but they could be devastating. At worst it could deteriorate into a simple public open space, with the nationally important plant collections being lost through lack of maintenance. There is limited scope for anyone not living on the island to influence the Council's decisions but one way in which members could show their support for the Garden is to join the Ventnor Botanic Garden Friends Society. Quite apart from providing financial support for the ongoing maintenance of the Garden, the Friends Society has a valuable role in demonstrating, through the size of its membership, how much people both on the Isle of Wight, and on the mainland, value the Botanic Garden. So anyone who does care



Marble daisy bush, *Olearia astroloba*
RBG Cranbourne, Melbourne



Everlasting daisy
Xerochrysum bracteatum



***Brachyscome* 'Breakoday'**
RBG Cranbourne, Melbourne



Button everlasting, *Helichrysum scorpioides*

about the future of the Garden should consider joining the Friends. More details are available on the Friends website, www.botanicfriends.org.uk, or you can write to the Friends c/o Ventnor Botanic Garden, Undercliff Drive, Ventnor, Isle of Wight PO38 1UL. The telephone number for enquiries is 01983 855397. (And one added incentive to join is that Friends get a very good seedlist with unusual items collected from the Garden!)

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SEED COLLECTION AND CLEANING

Jeff Irons

If you get the APS seed list you will probably have noticed that one of the abbreviations used to provide information about the seed and the plant that it will grow up to be is a lower case 'z'. This means that the seed comes from a garden grown plant from seed of known wild origin. But all too few APS members donate seed, although seed collected from plants that were originally grown from APS seed or other known origin is always very welcome. However, such seed does need to be correctly named, and viable; after all no-one likes finding that the seed requested from a list either does not germinate or is not what it was expected to be. These notes are intended to help prospective donors by explaining the procedures to be followed to ensure as far as possible that no annoying surprises await recipients of their seed.

What to collect from and what to call it

If your plants have been grown from APS seed or another trustworthy origin then their progeny should come true, provided that the following caveats are observed.

Only label seed collected from a particular plant as that plant if you are sure that it will come true to type. Plants are like people and just as children are different from their parents, so named varieties or cultivars of a species will give offspring that are different from them. The offspring are the species, **not** the named selection. If collected such seeds should be labelled **only** with the species name and **not** with both that and the variety name. (The only exception to this is that if it is known that the offspring will be very close to the parent, then the seeds may be labelled "ex----".) A good example here is the genus *Grevillea*, where seeds of cultivars rarely come true.

Plants with variegated or striped leaves, where this feature has arisen because of a mutation in the growing tissue, will not breed true and seed collected from them should be given only their species name. For instance, the stripy leaved *Phormium cookianum* ssp. *hookeri* "Cream Delight" is a seedling from *Photmium cookianum* **ssp.** *hookeri* 'Tricolor' and both are what is called a chimaera. Seedlings from either of them will not be identical to the parent and most will have green leaves, though some will have white or striped leaves.

Plants that are hybrids are often infertile, in which case they will not produce any seed. What appear to be seed capsules will be found to be empty or to contain only aborted seeds, looking like little grains, perhaps even dust. But if hybrids do produce seed the plant that emerges will be different from the parent and should **not** be given the parent name.

Do not collect from a plant that has another species of the **same genus** growing nearby and **blooming at the same time**. The two may hybridize but there is no way of telling whether they have. Species of some genera hybridise more easily than others; *Grevillea* is a good example of a promiscuous species. As a rule be careful with wind pollinated plants, mostly grasses and trees. They can hybridize even when grown on opposite sides of a house. Insects too will visit plants growing some distance away from one another and cause cross pollination.

Some species are self incompatible and will not fertilize themselves. At least two specimens of such species are necessary for seed to be produced. Obviously their flowering periods need to overlap. Even when plants are self compatible, seed collected from single plants usually has lower viability and vigour than seed collected from plants that have outcrossed. Celmisias are an example of self incompatible species. It is possible to get them (and other daisies) to produce seed by rubbing a newly opened flower on a seedling against an older one on a different seedling. However this should be done only if there are no other celmisias open at the same time.

Where to collect
If possible do not collect seed from one plant growing in isolation. It is best to have at least three genetically different specimens of any shrubby species used for seed harvesting and ten of any forb (a herbaceous plant that is not a grass). The reason for this is that cross-pollination will have occurred and seeds from outcrossed plants tend to be much more vigorous than those from self pollinated plants. Similarly, you should always aim to collect a few seeds from each of several plants, rather a large amount from one plant.

When to collect
Collect only ripe seed. The fertility of larger seeds can be easily checked. If the seed is large enough, cut one in two, using a single edge razor blade, and examine it, using a hand lens if necessary. Infertile seed will be hollow or have a shrivelled seed inside. Viability of relatively quick germinating species which produce a lot of seed (such as many melaleucas) can be tested after collection by germinating a small sample.

Good knowledge of when to collect is gained with experience. Look to see whether there are brown or black seeds in the fruits. Usually this is when the fruit (a generic term for the part of the plant containing the seeds) appears to be ripe, but with some species

even green fruits have ripe seed in them. With some genera seed can be ripe and ready for collection quite soon after flowering. With others seed should be collected from older fruits (see box).

Collecting and extracting seed: specific methods

Banksia, *Isopogon*, *Petrophile*: Put under the grill, turning frequently.Banksia seeds and their separators drop out when ready, Isopogon also drop out. Petrophile disintegrate.

Dracophyllum: Collect the fruits and put in an envelope, seed drops out.

Leptospermum, *Kunzea*, *Melaleuca*: Collect fruits at least a year old and place in the sun. Fruits will open and shed seed. *Leptospermum obovatum* opens its fruits in late winter and can be collelcted at that stage.

Anopterus: Fruits ripen in late autumn. The seed does not store well and needs to be sown straight away in a moist well aerated medium. Live moss is ideal.

When collecting it is usually best to cut stalks rather than try to break them off. Place the cut material in an old envelope; large ones that open on the long side will be found easiest to use.

Some plants (for example *Pelargonium* and *Geranium* species) expel their seeds and the heads must either be covered with a paper bag or visited regularly for removal of seeds. Seeds found in pods will usually be immature if the pod is picked before it has opened, yet as soon as the pod opens, the seed falls out. Unless you can visit the plant daily and collect pods just as they begin to split, the pods need to be bagged before collection. An old tights leg is ideal for this job.

Daisies have fluffy seeds that have to be collected just before they blow away. If the flower is picked before the centre has loosened the seed will not be mature. Some daisies have very small 'parachutes' and a few have hooked spines, like those on *Acaena*.

Always collect as much seed as possible. It is easier to carry out a low extraction of seed from a large sample than a high one from a small sample.

Cleaning seed

After collection place the fruits on shelves, in trays if available, in a cool well ventilated place, and leave to finish ripening and drying out. Doing this in the house should be avoided for inevitably there will be insects in some of the seed heads. All seeds need a period of after ripening and there is no need to clean at the time of collection. Most species will not come to any harm from a few weeks of drying and after ripening.

Cleaning is also best carried out in a non domestic building and is another job that depends heavily on experience. Only that will indicate what techniques to use

with each species. The basic tools are: a sieve (a domestic flour sieve or colander will do); a flat sided glass or glazed earthenware (not plastic) container (a Petri dish is ideal); some **rough** paper or card, leather or other gloves with a rough surface (gardening gloves are ideal); and sheets of broadsheet newspaper.

Begin by opening out some newspaper and placing it on the table or bench. Ideally the table should be next to a wall, so that part of the paper can curve up against the wall. All operations are carried out on this, so that in the event of an accident nothing is lost and work can restart. At the end waste material can be tipped from it into a container, ready for transfer to a compost heap. The main steps involved in cleaning are extract, sieve, winnow.

Some seeds conveniently remove themselves from their fruits; *Melaleuca* for example. If the seeds haven't already fallen out in the collecting envelope just shake the fruits. The simplest way of extracting seeds from dry fruit is to place several between gloved hands and rub vigorously. This, which among others is the standard technique for 'daisies', may need repeating several times. Large samples can be treated by placing the stems on several sheets of newspaper and trampling them before separation. Some hard fruits may have to be opened using a rolling pin or even a hammer or pliers while some seeds, such as those of *Banksia*, may need to be removed physically from the fruit (see box, page 13). Abraded material is then sieved to separate seeds and chaff. Finally the seeds are winnowed. This is carried out by placing the extracted material into a Petri dish or other container and blowing across it, at the same time giving the dish a circular movement. This action removes fine chaff and infertile seed.

Some seeds can be cleaned by rolling them down a sheet of rough paper or card. Tap the underside of the card, while holding it at an angle, over a suitable receptacle. Hairs and fine chaff or farina stick to the surface and can be tapped off after the seed has been separated. A few passes will result in almost pure seed. Winnowing will not then be needed. Another technique useful for some species is to make a paper cone, place the seeds in it and agitate by tapping the side or shaking gently. Chaff rises to the top and can be removed physically.

In a few species the chaff is almost impossible to separate from the seed. Such species are packeted without cleaning, unless one is prepared to spend a long time laboriously separating the seed manually.

Fleshy fruits require different treatments and it is very much a case of finding out what is best for each species. Some seeds can be extracted from the moist fruit, washed if necessary, then dried. Other fruits need to be left to partly shrivel, when seeds can be extracted from the dryish fruit. Inevitably fruits do not dry at the same rate. When at the correct stage seeds can be pressed out

easily; too dry and they are difficult or almost impossible to remove, too wet and expression will be a messy task. The best course is to extract in stages, treating only those at the right stage of drying out. Some need to be left in a plastic bag until they are rotten. The whole mess is rubbed by hand in a bowl of water and the seeds removed by sieving and decanting followed by air drying.

Cleaned seed should be placed in a paper bag or envelope. Plastic 'sweats' and should be avoided. The seed should be stored in a cool airy place.

That's it! Good luck with your collection and cleaning. If you decide to donate, make sure you label seed packets clearly with the name of the plant and provide as much information as possible about when and where the seed was collected, and the source of the plant it was collected from. And thanks in advance you're your donation.



WEINMANNIA IN CULTIVATION

© Gary Dunlop

The genus *Weinmannia* was established by Linnaeus in 1759[1] when he named a new plant from a Caribbean island, *Weinmannia pinnata.* He named the genus after the German pharmacist and botanist, Johann Wilhelm Weinmann (1683-1741) who wrote **Phytanthoza Iconographia** which was highly regarded for the information and the quality of the 1,025 coloured illustrations. The genus was subsequently placed in a new family, Cunoniaceae, which was established by Robert Brown in 1805[2].

Most of the new genus and indeed most of the whole family are primarily to be found in tropical and subtropical regions of the world, and thus not widely grown in temperate climates. Only one genus in the family, *Eucryphia*, is generally regarded as reasonably hardy and widely grown in temperate regions. The distribution of *Weinmannia* and indeed the other genera in the family is widely considered to relate to Gondwanaland, and hence the evolution of the family has it origins in the Jurassic period, almost certainly before it split from South America[3].

The first reasonably hardy species in the genus to be published was *Weinmannia racemosa*, from the temperate climate in the south island of New Zealand. It was named by the son of Linnaeus in **Supplimentum Planatarum**, published in 1782, from a herbarium specimen collected on the newly promoted Commander Cook's second voyage around the world during which he revisited New Zealand, having previously circumnavigated and mapped it on his first voyage. The two botanists on this trip were the Prussian naturalists Johann Rheinhold Forster and his son Johann Georg Forster. It must have been the son who contacted Linaeus fil.

regarding the identity of this new tree, as he subsequently published it in his **Prodomus** in 1786. Father and son had jointly published some of the collections of the trip in **Characteres Generum Plantarum** in 1775-6.

However, another species had been previously collected from the north island of New Zealand by Joseph Banks and Daniel Solander, the assistant he employed, who acted as botanists on Lieutenant Cook's first voyage around the world. The herbarium specimen which they collected in 1769 was described in an unpublished manuscript in Bank's library, by Daniel Solander. Solander was a capable Swedish botanist and student of Linnaeus. He died at the early age of 49 of a brain hemorrhage in 1782, whilst still in the employ of Banks as secretary and librarian. For the last 10 years of his life he was also employed as Keeper of the Natural History Department of the British Museum. Solander's name and description of the new plant, *Weinmannia silvicola,* was eventually published by Alan Cunningham in 1839[4] along with other plants which the latter collected in the North Island of New Zealand in 1926.

The hardy species *Weinmannia trichosperma* was first described and published the Spanish botanist Antonio Cavanilles in 1801[5]. Whilst he gave no indication of who collected the new plant Luciano Barnardi indicates that the herbarium specimen was collected by Joseph Dombey, who accompanied Ruiz & Pavon on their expedition to Chile and Peru[6]. (The politics and convoluted circumstances of that expedition are briefly described by Alice Coates[7] and in a more understated scholarly way by F.A. Stafleu[8].**)** Apparently unaware that Cavanilles had described and published the plant, based on the Dombey herbarium specimen, Ruiz & Pavon published the same plant under the name *Weinmannia dentata* a year later[9].

The earliest record of any species of Weinmannia growing in the British Isles was *W. racemosa* in '*A list of plants hardy in the Gardens at Castlewellan in 1903*'**[10]** in the sheltered arboretum created by the Earl of Annesley, in the south of County Down. However, it was not included in the paper he gave to the RHS in July 1902[11] which was an overview of many of the fairly mature ornamental trees and shrubs growing there, but was by no means a comprehensive coverage. How long it survived is not known, but it was certainly not listed in a small catalogue of plants in the garden published in the 1970s.

The next published record of *Weinmannia* was the result of '*Meeting of the RHS Scientific Committee on 11th April 1917*', chaired by E A Bowles, which decided to conduct a survey of how many plants in the British Isles had fared after the previous very severe winter. The results were published in 1918[12]. Only two of the many gardens contacted and responded grew Weinmannia. *W. racemosa* was unaffected at

Rostrevor House, at the south-eastern extremity of County Down; the sheltered garden and very significant plant collection of Sir John Ross of Bladensburg, which was well known to leading botanists and plantsmen of the day. *W. silvicola* was recorded as been killed to the ground at Glasnevin Botanic garden in Dublin. Whether it recovered is not known. However, Glasnevin may have had the foresight to pass a duplicate of this tender plant to Tresco in 1914, where it was recorded as still growing at Monument Walk in 1985[13].

It was 1921 before there was any published reference to *Weinmannia trichosperma* being in cultivation. It was contained in a substantial list of South American plants introduced into cultivation, compiled by W.B.Turrill MSc, at the request of Mr W.G. E. Loder MA, F.L.S. F.R.H.S, but without giving any details were the plants were being grown or by whom[14]. It was probably compiled as an intended acquisition list for Mr Loder, who was an avid collector of plants. Six year later *W. trichosperma* gained an AM when a flowering branch was put up for award at the RHS by Mr G.W.Loder Esq., the year before he became president of the RHS[15].

In 1930, Edgar Thurston recorded *W. trichosperma* as growing at Lugdvan rectory and in the temperate house at Kew, but without further details. **[16]** Curiously he did not mention it growing at Lanarth. The year before, Frank Kingdon Ward, writing about a visit to Canon Arthur Boscawen's garden at Lugdan rectory in the summer of 1927, extolled the virtues of late flowering trees and shrubs from Australasia, and New Zealand in particular, but almost dismissively noted *W. silvicola* and *W. trichosperma* as being other interesting plants [17].

The first published record of a substantial tree of *W. trichosperma* is of one being 20ft (6.1 m) high in 1931 at the garden of P.D. Williams at Lanarth, albeit published only a decade later[18]. The origin of these early introductions does not seem to be known, but the tree at Lanarth, judging from its height, may have represented the first introduction of the plant into cultivation, prior to 1920. As Bishop Hunkin recorded in and article on Lanarth, P.D. Williams received plants from a wide circle of leading gardeners and plantsmen. The plant could well have come from Canon Arthur Boscawen. Curiously, Arnold-Forster only mentions *W. trichosperma* in the final chapter, *Uncommon, untried or tender shrubs*, with a brief description and rather dismissively refers to the New Zealand trees as 'other species, less attractive'[19].

The first record of *Weinmannia* being collected in the wild is by Harold Comber, on the second of his two Andes Expeditions in 1925-6 and 1926-7. He collected the seed (No.1060) at 3000ft (915m) on the Argentinean side of the border beside Lago (lake) Lolog, with an XX rating, XXX being the most garden worthy, and

no rating the least garden worthy. The accompanying note reads: *'Here only a narrow belt by the water's edge, 12'-25'high, but with big trunks. Slow growing and stunted, but shows no sign of being frozen. Should be hardy. Germinated'*[20]. The introductory note accompanying the collection data, written by Henry D. McLaren, notes that the seeds were identified by Kew from herbarium specimens of the plants collected, and that both RBG E and Kew were presented with a set of seeds by the Subscribers, who comprised many leading affluent gardeners of the day.

Not many examples of *Weinmannia* seem to have survived from this introduction, and only two possible plants might be from this collection, the current Champion tree in the British Isles[21] at Mount Stewart, Co Down (52ft (16m) x 12" (31cm) dia in 2003) and a potentially close rival, at Logan Botanic Garden on the Stranraer peninsula (45ft (14m) x 10" (24cm) dia. in 1979), though its tree would have been planted before RBG Edinburgh took over responsibility for it. The Mount Stewart specimen was first mentioned in print by Graham Stewart Thomas in 1950, when he saw it there growing beside the lake in full flower, at 25ft high[22].

Perhaps, surprisingly Bean only mentions two specimens, though does include a line drawing of the attractive fern-like foliage[23]. The first, a 12ft (3.5m) high specimen, at Wakehurst Place, which must have been a replacement for the plant which Gerald Loder, later elevated to become 1st Baron Wakehurst, got the AM for. (The current specimen growing there at 16ft (5m)[21] must be another replacement or else the plant has been remarkably slow growing for almost 30 years.) The second specimen mentioned by Bean was the champion tree (59 x3 ¾ ft girth in 1971) at Tregothnan in Cornwall, the estate and garden of Viscount Falmouth, which has been in the Boscawen family since 1344. That tree, now presumed lost, almost certainly came from Canon Boscawen, cousin of the then 7th Viscount, who was known to have supplied plants to the family estate.

What is surprising is that such an attractive tree as *W. trichosperma* is not more widely grown, despite being in cultivation in the British Isles for almost a century. The rarity of *W. silvicola* is not so difficult to explain as it comes from the north island of New Zealand. It is probably only on Tresco that it would survive for any length of time as it requires very mild temperate conditions. *W. racemosa*, again barely in cultivation, is certainly hardier, and it is puzzling as to why no examples of it were identified in cultivation in the recent survey by Owen Johnson[21].

It must be admitted that neither of the New Zealand species are as attractive in leaf as their South American relatives. The juvenile foliage of *W. silvicola* (locally called Tawhero) is pinnate but reduces to trifoliate and even simple leaves in maturity. The tiny white flowers are presented in



Scented groundsel
Senecio odoratus



Flannel flower
Actinotus helianthi
Peg McAllister's garden



Kangaroo paws at RBG Cranbourne, Melbourne



***Weinmannia racemosa* juvenile new growth**



Weinmannia racemosa, **foliage**

Weinmannia racemosa **small specimen**





***Weinmannia trichosperma* in flower**



***Weinmannia trichosperma*, new leaves**

racemes, clustered at the tips of the branches and the trees can vary in height from 20ft (6m) to 70ft (22m), and develop a trunk up to 3ft (90cm) in diameter[24].

The juvenile foliage of W. *racemosa* (locally called Kamahi) is simple or trifoliate, becoming simple in mature trees (photos pages 20and 21), which can reach a height of 90-100ft (28-30m) with a trunk up to 4ft (1.2m) in diameter. The slightly larger flowers are presented in longer racemes, but with fewer clustered at the tips of the branches [24]. The flowers of both trees are illustrated in several books on native plants or flora of New Zealand[25] as well as being easily found on various websites.

I have not been tempted to try growing *W. silvicola* for obvious reasons, but have grown *W. racemosa* for about 10 years. A small seedling about 8in (20cm) tall was planted out in rather dry, poor and fairly shallow soil over dolerite bedrock. It proved to be rather slow growing, which is perhaps not surprising given the conditions in which it was planted. However, it has survived and established itself, despite competition from several large eucalyptus species, which, I learnt rather too late, tended to reduce soil fertility. That should have been obvious, as eucalyptus leaves do not rot down easily. In the last couple of years the rate of growth has increased and, aided with a top dressing of horse manure last year, growth rate improved a little and the small tree has now reached 8ft (2.4m) high (photo page 21). How long it will take before starting to flower remains to be seen.

In contrast to the New Zealand tree, *W. trichosperma* (locally called Teniu, Maden or Medehue) does not have a different form of juvenile foliage. The small white flowers are similarly presented in short racemes, either singly in pairs or in groups of 3-4, though not at the tips of the branches; they normally occur either side of new leaf growth (photo page 22). Again it can reach 100ft (30m) tall, but so far rather less in cultivation. In Chile it occurs in two almost disjunct linear areas either side of the highest ranges of the Andes, approximately from almost 37º to 45 º south[26] (regions VII to XII). Plants from the coastal habitat including Chiloe island and further south on the mainland are likely to be less hardy as those growing at higher elevation inland along the border with Argentina.

The tree that I grow is now about 15 years or so old, and has reached about 20ft (6m) high, It is in slightly deeper and moister soil than its New Zealand cousin, though not necessarily more fertile. It is a seedling from the Mount Stewart plant, but unfortunately there is no specific reference in the sporadic garden notes to identify its provenance or date of acquisition. The Mount Stewart tree grows in a relatively open position beside the path close to the lake, and forms a neat narrow tapering spire, but unfortunately it is not possible to get a good photograph of it, without being able to walk on water. However the small pinnate

leaves really need close inspection to appreciate their intricacy. When flowering well, the flowers can give the impression of the tree being well dressed with a mass of short white candles, albeit rather drunkenly arrayed. The new foliage (photo page 22) makes a colourful contrast to the dark glossy green mature foliage and is echoed later by the seeds turning red, before ripening to brown. Its normal flowering period is in May, though in 2010 for the second time it has produced a second crop of a few flowers, in October and into November, though not so many as in 2008 when it previously provided an autumn flush of flowers, but without detracting from the display the following spring.

Whilst *W. trichosperma* is not especially showy it has an understated elegance which ensures that it should be more widely grown. It is not wide spreading so does not need a lot of space and could readily be planted instead of some conifers or other evergreen trees. However, it is only suitable for growing in the more westerly areas of the British Isles, where reasonable rainfall, and relatively high humidity usually prevail. It is probably best planted in moisture retentive soil, and can tolerate light shade. It can be raised quite easily from the fine seed which is best almost surface sown in close conditions to maintain a high humidity. Care should be taken to prick out the seedlings when still quite small and to pot in into relatively heavy potting mix to ensure the roots are not disturbed when potting on or planting out in its permanent position. Root disturbance of relatively small plants can prove fatal.

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Plant share anyone?

Living in Ireland I am unable to attend meetings or plant swaps. So I am wondering if anyone who has surplus plants, especially those native to west Australia, would be interested in contacting me. It would be possible to arange a collection point for plants, or use a courier. I sometimes get plants sent over from the UK via eBay so its not too complicated to arrange.Thanks for any help that anyone is able to offer.

Declan Murphy
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HUNTS FARM AND OTARI BUSH

Kathleen Longbottom

Doubtless after another cold winter more plant obituaries will be announced. In the previous winter, when various *Acacia pravissima* (Ovens Wattle) specimens were casualties in the area, mine at Hunts Farm near Canterbury survived and bloomed profusely (photo page 31). This year I thought it must go, but (in February) apart from a few brown branches it is still hanging on (but

see page 30) although quite a lot of the buds have gone, perhaps to the resident bullfinches! I think I must have got the seed from Waiouru, which is a fairly bleak place under the volcano Ruapehu in the centre of the North Island of New Zealand.

I have a large *Hoheria* (species unknown) which looks a bit blasted but is going to live. This also performs very well (photo page 31) and is much loved by bees. Some leptospermums have died and also a beautiful *Crinodendron* which partly survived the previous onslaught. Hebes have gone and the olearias, with the exception of *Olearia macrodonta*, are looking sad. I hope my divaricating *Corokia* is OK. I am particularly interested in these divaricating plants (see box), which gets me thinking about our visits to Wellington (New Zealand's capital city) of last December (2010) and September – October the previous year. Our daughter and family are living just up the road from Otari Bush. Otari Bush Botanic Garden and Wilton's Bush Reserve is the only botanic garden in New Zealand dedicated solely to native plants. The forest reserve is 100 hectares, and the plant collection covers five hectares. (For more information google 'Otari Bush'.)

On our first visit sophoras were blooming, and the native tui birds were swarming over the blooms. As my *A. pravissima* did not set seed I wondered if a specialist pollinator is required such as a tui; however this last season it did set seed. Like Judy Clark in her article in issue 45 (page 28) I have been thinking about the pollination of plants which are grown away from their original home but as the number is vast and most thrive here we probably have to thank bees for most things. Nature usually finds a way!

Divaricating shrubs

The term divaricating refers to a type of plant growth where branching is wide-angled, resulting in a three-dimensional criss-crossing of branches. Divarication is a feature of a relatively high number of New Zealand's endemic species, with a frequency in the flora of about 10%. However while divarication occurs in many plant families and genera it does not seem to be specific to any particular one.

As well as interlacing of branches New Zealand divaricates tend to share various other features such as thin wiry branches and small simple leaves. *Corokia cotoneaster* (Wire-netting bush), a yellow flowered species that I grow in my garden, is a typical divaricate. Another example in my garden is *Muehlenbeckia astonii* (photo page 32) which I have attempted to prune into an egg shape. Both these plants survived winter 2010-2011 in excellent condition.

Judy Clark

I will not go into more detail about Otari; but the more formal area contains about 1200 species, hybrids and cultivars. Each group of plants has a dedicated area. Marvelous!

I am afraid I have gone past the age where I worry about lots of Latin names, and I am not as erudite as some of our members. This article might inspire others less experienced to join us and write for Pentachondra. Enthusiasm is what is required!

❀❀❀❀❀❀❀❀❀❀❀❀❀❀

WINTER'S TALES: REPORTS FROM ENGLAND

East Sussex: Hastings

Judy Clark

Although I log temperatures and keep a note of the weather, I'm not very scientific about it and my records are patchy, not least because I often visit my family in Australia during the British winter. However I didn't miss the end of 2010. Between November 26th and December 27th I recorded two periods of severe (for Hastings) cold weather, the first lasting 15 days and the second 10 days. There were successive days when the overnight temperature was below zero in the garden (the minimum overnight temperature was about -6°C) and the daytime temperature barely rose above 0°C. During both periods snow came on top of ground frost. On the December 7th there was a spectacular hoar frost, something which is very rare on the coast though more common inland. On the same day I noted that ground in the colder part of the garden was frozen. In contrast January 2011, when I was out of the country, was apparently a lot warmer (relatively speaking) and, apart from a short period of Arctic north easterly winds in March, this warming trend has continued since then.

My impression is that the end of 2010 saw the most prolonged and intense period of cold in Hastings for some time. Winter 2009-10 saw cold periods too, in December, January and February, but these periods were shorter and temperatures were not as low, except for a short time before Christmas. Met Office records for Eastbourne, the nearest location for which I could find data, seem to confirm this. Eastbourne lies just along the coast to the west and is, if anything, probably slightly milder than Hastings. During November and December 2010, 21 air frost days were recorded for Eastbourne, with a mean minimum temperature for December (16 air frost days) of -0.5^0C. In winter 2009-10 January saw the lowest mean minimum temperature in Eastbourne, 0.8^0C, with 12 air frost days. There were also 12 in February and 9 in December.

The table on the next page documents the fate of some of the shrubs in my garden after each of the last two winters. None have been given any protection apart from mulching of young specimens. Overall, damage has been more extensive following last winter than after winter 2009-10, with, as might be expected, more of my established specimens being affected. I also expected to lose plants that had not been long in the

ground, and did (not all are listed in the table). But mint-bushes planted out in summer 2010 have not only come through but are flowering well, with *Prostanthera lasianthos* the only exception.

Hastings: after winters 2009-10 and 2010-11

Species	**date planted**	**after 2009-10**	**after 2010-11**
Acacia baileyana	2007, after several years in a pot	no damage; flowered as usual	dead branches in February; remainder flowered then whole plant died
Acacia melanoxylon	2002; pollarded 2008	no damage but did not flower	only a few leaves left unscorched; now sprouting from the trunk.
Acacia mucronata	2008	no damage	died-lack of water?
Acacia pravissima	2008 as 5-year old plant	no damage but few flowers	a little damage to stem tips; flowered but not profusely
Acradenia frankliniae	2007	no damage	no damage
Banksia marginata	2001	no damage	no damage
Bauera rubioides	2005	no damage	no damage
Bursaria spinosa	2009	no damage	minor damage to stem tips
Callistemon linearis	2008, as 5-year old plant	no damage	no damage
Callistemon pallidus	2005, as 4-year old plant	no damage	no damage
Callistemon pinifolius	2005	no damage	no damage
Callistemon pityoides	2003	no damage	no damage
Callistemon rigidus	2002	no damage	no damage
Callistemon subulatus	2002	no damage	no damage
Callistemon viridiflorus	2001	no damage	no damage
Cassinia aculeata	2008	some damage to stem tips	upper branches cut back considerably
Correa alba 'Starlight'	2008	no damage	no damage
Correa backhouseana	2006	no damage	no damage
Correa decumbens	2004	some damage to stem tips	cut back considerably with many dead branches but slowly recovering
Correa 'Marion's Marvel'	2009	no damage	some damage to stem tips but recovered well

Correa 'Mannii' (or is it *C.* 'Harrisii'?)	(1) 2008, more sheltered spot (2) 2009, more open position	both survived; more reddening of leaves with plant (2)	plant (1) damage to stem tips but recovered well plant (2) died
Dodonaea viscosa var. *purpurea*	2007	much cut back but recovered well, flowered	died
Hakea microcarpa	2008	no damage	no damage
Hakea sericea	2010	na	died
Leptospermum grandifolium	2001	no damage	no damage
Leptospermum lanigerum	2008, as 3-year old plant	no damage	no damage
Leptospermum (?)*minutifolium*	2002	some damage to stem tips	some damage to stem tips
Leptospermum myrtifolium	2005	no damage	no damage
Leptospermum nitidum	2008, as 4-year old plant	no damage	no damage
Leucopogon parviflorus	2004	no damage	almost dead – lack of water?
Lophomyrtus x ralphii 'Tricolor'	2001	no damage	uppermost stem tips scorched
Melaleuca ericifolia	2006	top growth, wind scorch	top growth, wind scorch
Melaleuca lateritia	2008	top died but re-sprouted below	dead by January
Melaleuca squamea	2005	no damage	no damage
Melaleuca squarrosa	2001	no damage	no damage
Phyllocladus aspleniifolius	2009	no damage	no damage
Prostanthera lasianthos	2010	in pot; damage to top growth but recovered after planting	barely alive
Prostanthera ovalifolia 'Variegata'	2010	na	some damage to stem tips, recovered and is flowering well
Prostanthera rotundifolia	2010	na	no damage; flowering well
Prostanthera sieberi	2010	na	some damage to branches, recovered and flowered

Correas and acacias in particular seem to have been more affected this time round though in the case of the latter cold may not have been the only or the critical factor. For example, *Acacia mucronata* sailed through winter 2009-10 and looked green as late as February 2011, but after the March winds its leaves went brown quite suddenly and it died. March was dry and desiccation may have been the final straw. In contrast, a smaller specimen growing in a pot was completely undamaged. It was in a more sheltered location than the planted out specimen, but also it did not dry out. With *Correa* 'Mannii' microclimate does seem to have made the difference with the plant in the more open spot dying while the specimen sheltered by taller plants and more protected from frost survived.

Kent: Canterbury

Jeremy Spon

My experience of this last winter was that it did more damage than the previous one, even though the cold spell was not really any longer than the previous year, nor was the minimum temperature any lower. There was more snow, which lay on the ground for much longer, and several shrubs were damaged by the weight of snow on the branches, which I was unable to remove promptly in all cases. (Branches bent to the ground also fell prey to a rabbit that frequented the garden throughout the winter, but this at least is a threat I can do something about!) The prolonged snow cover may also account for some of the damage to leaves and shoots, although plants that died may have been weakened by the previous winter. One other difference from winter 2009-10 was that the cold spell came much earlier in the winter, so perhaps some plants were not so well acclimatised to the cold.

Anyway, this time I lost all the acacias I had planted out, even *Acacia pravissima*, which I had previously regarded as safe to grow outside. I was not alone in this loss; a much larger and older plant than mine in a nearby garden was also killed. However, fellow member Kathleen Longbottom told me that her plant did survive, and was flowering, and I also saw another large plant in West Kent with flowers among the damaged shoot tips. Perhaps my plant was too small to survive. The deaths of *A. boormannii* and *A. retinodes* were less surprising; the former had already been badly damaged in the previous winter, although it had started to regrow, and the latter was a young plant with a very thin main stem.

Melaleuca squarrosa was another plant which died after having been badly cut back the previous winter, and a *Hakea*, probably *H. nodosa*, also succumbed. One positive side-effect of this latter death was that two seed-pods which had remained un-opened for several years, finally split to reveal four nice fat seeds, so I hope to grow a replacement or two.

Perhaps the most unexpected damage was to various bottlebrushes. *Callistemon pallidus* and *C. subulatus* both



***Acacia pravissima* at Hunts Farm**

***Hoheria* at Hunts Farm**





Otari Bush



***Muehlenbeckia astonii*, a divaricating native of New Zealand**



***Hakea microcarpa* came through last winter unscathed in gardens in both the north and the south of England**

suffered severe burning of the leaves, although the main stems survived, and regrowth has begun. It looks as though I should get some flowers, although nothing to compare with last year's splendid display.

On a positive note, quite a few plants came through quite unscathed. *Grevillea* 'Olympic Flame' flowered intermittently throughout the winter as usual, and suffered no damage to the leaves. This is a cultivar of almost embarrassing vigour and hardiness! *Hakea microcarpa* was also undamaged, as was the attractively dense-growing *Callistemon pityoides.* Various *Olearias* including *O. solandri, O. illicifolia, O. nummulariifolia* and *O. virgata* var. *lineata* 'Dartonii' were unharmed, and even O. 'Tweedledum', which is apparently a cultivar of the fairly tender *O. traversii,* suffered only minor shoot-tip damage.

Overall, I am quite encouraged by the winter's survivors, and certainly keen to continue experimenting with Australasian plants in what is clearly a relatively benign corner of the UK. And the remarkably warm and early spring we are experiencing as I write means a head-start in getting replacement and new plants established.

Worcestershire

John Buxton

I though it worth listing what happened to my Aussie collection and some other plants during this past (awful) winter in Worcestershire as this information may be of interest to colleagues.

Callistemons: all gone.
Grevillea 'Canberra Gem', planted against a south wall is stone dead; it was 4ft (1.2m) high originally.
Celmisias: surviving but look a bit sick.
Hebes (hybrids and a few species): seem mainly OK.
Helichrysum hookeri (now *Ozothamnus ledifolius*): seems unaffected.
Pittosporum tenuifolium, a hardy strain from a Cheshire site which was 3 m high, dead.
Poa colensoi: damaged but will survive.
Eucalyptus gunnii (20m tall): unaffected..
Hoherias: All including 'Glory of Amwlch' seem dead.
Pseudopanax ferox and *P. crassifolius*: both dead.
The best survivor of all is *Prostanthera cuneata* which looks untouched and is growing away well in an exposed bed!

All my South American stuff including embothriums (Chilean fire bush) and *Azara*, looks dead although *Embothrium* 'Norquinco' shows signs of new leaves coming back.

Yorkshire: Leeds

Thomas Naylor

This article follows on from the winter report in Pentachondra issue 44 (May 2010, page 14). All of the plants mentioned in this article were well-established in north Leeds, having survived for

years in the open without any covering of fleece or similar protection.

I cut down *Eucalyptus paliformis* in the spring of 2010 because it was uprooted and on its side. Eight eucalyptus species remained growing in my garden at the beginning of winter 2010-11. Of these *E. globulus* appears to be the only one killed by the exceptionally cold December. *E. cordata* usually flowers over winter but now, in March, there is no sign of any flower buds. There is no doubt that the tree is still alive though some of the leaves have turned quite brown. *E. viminalis* also suffered some slight damage. *E. dalrympleana*, *E. gunnii*, *E. perriniana*, *E. glaucescens* and *E. niphophila* (*E. pauciflora* ssp. *niphophila*) all seem to be entirely unharmed.

Callistemon subulatus has survived though the tips of some of the branches are damaged. *C. pityoides* seems completely unscathed. *C. citrinus* has, as far as I can tell, come through the winter with hardly any damage at all. I think being surrounded by other shrubs may have contributed to its survival. The bark is split on a more exposed *C. linearis* which shows no sign of life.

Both of my *Banksia paludosa* plants appeared damaged but alive in February 2010. By June 2010 I could tell that one had survived and the other had died. The survivor is still alive in March 2011 but it is showing signs of what an ordeal this most recent winter has been and it has made no attempt to flower as it has done in previous mild winters.

Grevillea 'Canberra Gem' is one shrub which shows no signs of any damage at all. In contrast *Cordyline indivisa* is dead. There are many dead cordylines in front gardens nearby. It seems that a *Leptospermum scoparium* with green leaves and light pink flowers has succumbed to the harsh winter but one with bronze foliage and deep pink or red flowers has a few shoots still alive.

Cheshire

In December we had temperatures down to -17°C. We thought the 2009-10 winter was bad enough but now (late February), except for the following few which appear unscathed ALL my anz plants appear dead, at least to ground level.

The exceptions are *Eucalyptus niphophila* (*E. pauciflora* ssp. *niphophila*), *Prostanthera cuneata*, *Tasmannia lanceolata*, and some smaller hebes. Even some in my polytunnel some have died, for example *Xeronema*.

Tony Entwistle

Wirral: Heswall

Jeff Irons

The plants listed below were uninjured by the 2010-2011 winter. Lowest temperatures in my garden (5 miles from the sea) were

two successive nights at -12°C. Snow cover was about 2 inches. All except the eucryphias were raised from seed that I collected and after sowing what I needed, gave the surplus to the APS seedlist.

Abrotanella forsterioides
Acrothamnus hookeri
Anopterus glandulosus
Baeckia gunniana
Celmisia asteliifolia
Dianella longifolia
Dracophyllum longifolia
Epacris serpyllifolia
Eucalyptus vernicosa
Eucryphia lucida
Eucryphia milliganii
Hakea microcarpa
Grevillea australia var. *australis*
Grevillea australia var. *brevifolia*
Kunzea muelleri
Leptospermum grandifolium
Leptospermum micromyrtus
Leptospermum obovatum
Leptospermum rupestre
Lomatia myricoides
Olearia lineata
Olearia pinifolia
Ozothamnus hookeri
Ozothamnus ericifolius
Ozothamnus ledifolius
Melaleuca pityoides (*Callistemon pityoides*)
Pentachondra pumila
Persoonia gunnii
Prostanthera cuneata
Richea acerosa
Richea gunnii
Richea pandanifolia
Richea scoparia
Richea x *curtisiae*
Tasmannia lanceolata
Athrotaxis cupressoides
Callitris oblonga
Diselma archeri
Lagarostrobos franklinii
Microcachrys tetragona
Podocarpus lawrencii

I thought that *Pherosphaera fitzgeraldii* was dead but I noticed that there are green tips to the branches, so it may be alright.

Olearia algida is also uninjured. People report it dying because *Olearia floribunda* is sold as *O. algida*. It must be 10 or 15 years since Paul Allanson alerted me to the fact that commercially *O. algida* and *O. floribunda* were the same plant. My *O. algida* are seed raised.

However the winter cold did kill *Acacia dealbata* ssp. *subalpina*, *A. nano-dealbata*, *A. melanoxylon* (40ft high) and *A. leprosa* ssp. *uninervia*, Nail Creek variant.

Merseyside: Wallasey

Amanda Kershaw

These are our main results after the winter. All the plants listed were outside in the garden and unless otherwise indicated were not given any protection.

Plants that are fine:
Astelia nervosa 'Westland'
Athrotaxis cupressoides
Blechnum 'Novae-zelandiae'
Brachyglottis 'Compacta'
Dianella 'Tas Red'
Eucalyptus pauciflora ssp. *niphophila*
Grevillea 'Canberra Gem'
Grevillea victoriae
Libertia peregrinans
Libertia peregrinans 'Gold Leaf

Libertia 'Tricolour'
Myosotidium hortensia (had bark chips piled over it)
Phyllocladus alpinus
Phyllocladus aspleniifolius
Pittosporum tenuifolium 'Gold Star'
Pittosporum tenuifolium 'Irene Paterson'
Pittosporum tenuifolium 'Tom Thumb'
Podocarpus lawrencei 'Lucky Lad'
Podocarpus salignus
Podocarpus totara 'Aurea'
Podocarpus totara 'Young Rusty'
Prostanthera cuneata 'Kew Form'
Pseudopanax crassifolius
Pseudopanax 'Forest Gem'
Pseudowintera colorata
Tasmannia lanceolata
Austrocedrus chilensis

Plants that died:
Coprosma repens 'County Park Red'
Dicksonia antarctica (even though crown had straw)
Grevillea barklyana (even though it was under cover)
Leptospermum 'Crimson Glory'
Leptospermum 'Martinii'
Leptospermum rotundifolium
Leptospermum scoparium 'Wingletye'
Lophomyrtus bullata
Libertia caerulescens

Barely alive:
Lophomyrtus x *ralphii* 'Kathryn'
Acacia boormanii: now resprouting after being knocked back.

COLOURED FLOWER FORMS OF OLEARIA PHLOGOPAPPA

Brian Halliwell

I was interested to read the article by Gary Dunlop in Pentachondra 45 (December 2010) about the genus *Olearia* making special note of the section devoted to *O. gunniana* although this species is more usually referred to as *O. phlogopappa* as determined by Winifred Curtis in the Student's Flora of Tasmania (part 2, 1963). This species has long been known to me and I have always been especially interested in the coloured flower forms.

When I lived in Tasmania I was to see these coloured forms only in gardens, most usually as old bushes of untidy habit but which came into their own at flowering time. I was told by horticulturalists that these coloured forms were only to be found in gardens and never in the wild. These coloured forms had been seen by HF Comber during his Tasmanian collecting expeditions in 1929/30. In his collecting notes he gave them 4 stars and stated that they were quite his best find in Tasmania.

From botanical sources I was to read that the coloured forms were known in the wild and I was given two localities where they could be found: Lenah Valley and Tea Tree. Extensive explorations of both these areas proved to be unsuccessful; no plants were found

of *O. phlogopappa* with coloured flowers. In his article Gary Dunlop states (Box 2, page 12) that a plant bearing coloured flowers was discovered at Mt Sedgewick. This location was unknown to me and I did not explore that area.

It has been suggested that these coloured flower forms might be of hybrid origin with *O. stellulata* as the other parent; there are coloured flower forms of this species. In antipodean nursery catalogues they were often offered for sale as Comber Hybrids. These colour variants are, however, now most usually referred to as *O. phlogopappa* 'Splendens' with splendens indicating a horticultural rather than a botanical grouping.

Of the coloured flower forms the best known and most frequently seen are Comber's Pink more usually called Pink Gem and Comber's Blue as Blue Gem. Two others I have seen listed are Comber's Mauve and Pink Profusion and one living plant shown to me as Rosea was almost certainly Pink Gem. The illustration in Gary Dunlop's article entitled Comber's Deep Pink (page 12) is the deepest shade of pink I have seen and its less numerous petals are broader.

Seed of *O. phlogopappa* collected by Comber in Tasmania came into Britain and was widely dispersed. Coloured flower plants were to become fashionable, but for the cool greenhouse. At the onset of the second world war these plants were to suffer when fuel was rationed for glasshouse heating. Plants had to take their chance planted outside and the cold winters of the war years killed off many. Survivors were found only in the milder parts of the country. Post 1945, these plants were no longer in favour.

Whilst I was at Kew I was to grow Pink Gem and Blue Gem together with the white flowered straight species from the wild collection in a south facing border backed by a brick wall. In the cold winters of the 1970s the straight species proved to be fully hardy whereas the coloured flower forms were badly damaged or even killed.

My interest in these coloured flower forms of *O. phlogopappa* became known and I was sent propagating material from a number of sources, mostly unnamed. On flowering these plants seemed to be either Pink Gem or Blue Gem although there were gradations in their intensity of colour. Comber had chosen a pink flowered form which he claimed was the best of all the variants and was to name it for his wife as Mrs HF Comber. I always hoped to find this form but never did; I wonder if it still exists?

I collected seed from both Pink Gem and Blue Gem and sowed it. There was a high percentage of infertile seed and seedlings resulting were few. At the flowering of these survivors neither bore any resemblance to their parents and at the best were no more than faintly coloured.

Whilst it is unlikely that these coloured flower forms of *O.*

phlogopappa will ever become as fashionable as they were in the 1930s they do deserve to be better known and not cast into oblivion. After 3 decades of mild winters this could have happened with them treated as hardy plants but this hope has been banished with the cold winters of 2009 and 2010.



GHASTLY GREVILLEAS

Jeff Irons

Some readers will have been taken aback by my title and wonder what is meant by it; surely there can't be any bad grevilleas? There are, and pretty nasty they are too!

The first of them is an absolutely super garden plant, with a long flowering season. The problem is that touching it can cause a nasty form of dermatitis, which requires the intervention of a dermatologist and even then can take months to heal. It is *Grevillea* 'Robyn Gordon'. The simple remedy is to wear disposable rubber gloves when pruning it, so avoiding the possibility of it touching your skin. Both its parents have the same potential. One of them is *G. bipinnatifida*. I grow it and have not had problems when taking cuttings. Of course not all seedlings have the same properties and people's reactions do differ. Nevertheless it is probably best to take precautions when handling it. The other parent is *G. banksii* var. *forsteri*. It too should be treated with caution, as should *G.* 'Mason's Hybrid' (synonym 'Ned Kelly'), which has the same parentage as 'Robyn Gordon'. Another hybrid that can cause problems is *G.* x *gaudichaudi*. In fact any grevillea with pinnate or pinnatisect leaves should be regarded with suspicion.

The second type of nasty grevillea is those that have turned out to be environmental weeds when grown outside their natural home. These include *G. juniperina*, *G. rosmarinifolia* and *G. juniperina* x *victoriae* (on the APS seedlist). So far there have not been any reports of their self seeding in Britain but with global warning it could be a problem.

The third kind is simply too vigorous for its own good. I recall buying a plant of *G.* 'Canberra Gem' when it was first introduced. Three years later it had reached 5ft high and was 7ft across (1.5m by 2.1m). Having had enough, I grubbed the thing out. If you must have it, confine this triffid like hybrid to a pot. Never let it loose in your suburban garden; it's far too vigorous. *G. juniperina* x *victoriae* may also fall into this category. A friend gave me seeds from his specimen. I sowed three and gave the remainder to the APS seed list. In the first few months after germination they grew extremely quickly.

So there it is, grevilleas can be harmful to your skin, harmful to the environment and just too fast growing for their own good. As with all plants, care needs to

exercised when choosing them and they should be grown selectively.



NAMES AGAIN

Judy Clark

The Plant List (www.theplantlist.org/), a collaborative effort by the Royal Botanic Gardens Kew and the Missouri Botanical Garden, is a working list of names for plant species. It has been created from existing global, regional and national checklists of plant names, using consistent rules to resolve conflicting opinions and decide correct names. It thus provides a currently accepted Latin name for most species as well as all the other names by which that species has been known.

Names on the list are given the status of 'Accepted', 'Synonym' or 'Unresolved'. A name with the status 'Accepted' is the one which should be used to refer to this species while a name with the status of 'Synonym' is one which has been used to refer to a species but which The Plant List does not consider to be the currently accepted name. Each accepted name is accompanied by an indication of how confident *The Plant List* is that its 'Accepted' status is correct, and similarly for synonyms. If there is insufficient evidence to assign a name to either status then it is classed as 'Unresolved'.

The Plant List doesn't remove underlying differences of opinion which reflect real issues about how plants should be classified. For example, new names were recently published for *Callistemon* species so that they all become *Melaleuca*, predicated on the argument that differences between *Callistemon* and *Melaleuca* are not enough to warrant separate genera. Arguments about relationships between these two groups are ongoing and it is not clear what the outcome will be. Similarly, scientific arguments remain about whether *Dryandra* should be subsumed into *Banksia*. (See http://anpsa.org.au/changes.html for a clear layperson's summary.)

What The Plant List does is come to a judgement about the best name to use. It is described as a 'working' list so presumably the status of a name could change if the balance of underlying scientific views changes. In the meantime if its authority is accepted it should make life easier for people like me because it could be cited when it comes to whether to use this name or that in Pentachondra. In fact, it assigns the status 'Accepted' to both *Callistemon* and *Dryandra*.

Also, if the Plant List becomes the accepted authority for names used in science it may encourage more consistency between science and horticulture. For example, in Australia the red flowering gum has been called *Corymbia ficifolia* for some time, but the RHS Plantfinder still uses *Eucalyptus ficifolia*. 'Accepted' status on The Plant List goes to *C. ficifolia.*

Of course using the correct name doesn't mean it's been attached to

the right plant. For Australian cultivars ACRA, the Australian Cultivar Registration Authority (www.anbg.gov.au/acra/), is a useful on-line source as it provides a list of registered cultivars of Australian species with links to their descriptions. Cultivar names, whether the cultivar is registered or not, are listed in the Australian Plant Name Index (APNI) (www.anbg.gov.au/acra/apni-cultivars.html).

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GROUND ORCHID SUPPLIERS

Tim Darrington

After seeing some fantastic displays in the Stirling Ranges (West Australia) in 2007, I have been looking for Australian ground orchid suppliers for some 18 months now.

I recently found the Scottish Rock Garden Club Forum www.srgc.org.uk/smf/index.php?topic=3299.150 which has a long and interesting discussion about the cultivation of Australian ground orchids. As for suppliers, I had already discovered and ordered from Laneside Hardy Orchid Nursery in Preston, which supplies three sorts of *Thelymitra* (Sun orchid). I have been recommended Heinrich Beyrle in Germany (www.myorchids.de) who has a long list of Australian species and hybrids and Orchid Alchemy who currently offer only two Australian species (www.orchidalchemy.com).

Perhaps other APS members should consider growing these superb plants!

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ANPSA CONFERENCE 2011

Australian Plants in a Wondrous Web

The biennial conference of the Australian Native Plants Society (Australia) will be held from 2nd to 7th October 2011 at Westminster School, Marion, in the southern suburbs of Adelaide, South Australia.

It offers an opportunity to enjoy informative and entertaining presentations, to learn new skills at practical workshops and to join fellow enthusiasts in public and private gardens and bushland. There will be pre-conference tours to Kangaroo Island and to the Flinders Ranges, and post-conference tours, again to Kangaroo Island and also to the Coorong and the south-east.

Registration closes on August 31st. For more information go to www.australianplantssa.asn.au/the-society/anpsa-conference.html.

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