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Kangaroo fern, *Microsorum pustulatum*
Inverewe Garden, Scotland

AUSTRALASIAN PLANT SOCIETY

Promoting the cultivation and conservation of Australasian plants, and their closest relatives, in northern hemisphere gardens

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APS NEWS

Welcome!

The APS would like to extend a warm welcome to new members Dawn Aldridge, Dr Adrian Cooper, David Cooper, Kevin Denson, Anthony Duchenne, Jackie Fox, Jude Lawton, Finn Michalak, Christopher Milligan, Mary Ross, Beth Smith, Paul Spracklin, Dr David Tigwell, Michael Tily and Bram Van Mol, a welcome back to James Benson.

John Purse

Everyone will be sad to hear of the death of John Purse who left us on November 10th after a short illness. John, a plant scientist with particular expertise in the cultivation of *Eucalyptus*, was a longstanding APS member, very supportive of the society and always happy to share his knowledge. Our thoughts are with his wife and family.

AGM 2016

Our annual general meeting and get-together, held at Lullingstone Castle on November 12, just gets better every year. First there's the formal meeting, which isn't actually very formal, where we review the past year and plan for the next. This isn't just committee members droning on. Everyone who attends is invited to contribute, and most do. The atmosphere is really friendly and relaxed, with just a show of hands when a vote is needed.

Lunchtime (with a free lunch) provides an opportunity to meet other members and talk plants, and also an opportunity to acquire a new treasure or two, whether by swapping or (for the first time this year) buying. And then in the afternoon Tom Hart Dyke gives us a conducted tour of the World Garden, his various under cover gardens, and his plant collections including eucalyptus.

So what did we talk about this time round? The rest of the news section tells you something of our deliberations; the minutes will be published on the website in due course as well as in the May 2017 issue of Pentachondra. One thing that is really heartening to the committee is that APS membership continues to increase. We are one of the very few specialist plant societies whose membership is rising rather than falling.

By the time we'd finished lunch it had stopped raining and we set off round the World Garden. Tom lost a lot of plants after the very cold winter of 2010-11 but recent winters have been kinder and the Australasian sections were looking excellent. One plant that attracted attention was a large specimen of the Tasmanian endemic *Asterotrichion discolor* (Tasmanian currajong) absolutely covered in small, white, strongly scented flowers. This species is dioecious (male and female flowers on different plants) with male flowers being not only larger than their female counterparts but also more powerfully scented. A quick look through a lens showed that Tom's plant is indeed a male.

Tom must have one of the most (if not the most) diverse collections of cacti, succulents, bromeliads and other arid land species in Britain, including in botanic gardens. We ooh-ed and aah-ed our way through the hot and spiky house to the Cloud Garden house which has a wonderful jungly feel. Plants grow under and

over and round about each other just as they would in the wild (not that this particular selection of plants would actually meet in the wild).

Each year we find that Tom has added more plants and new garden spaces. In 2015 the area adjacent to the Cloud Garden house was empty. Now planted up it includes many Australasian species which are already growing away fast. Another addition is an orchid house within which, corralled in a wire cage where no-one could brush against it accidentally, was a Queensland deadly stinger (*Dendrocnide moroides*), one of several closely related stinging trees native to the rainforests of north eastern Australia. Stinging trees are some of the most venomous plants in the world, with hairs on their stems, leaves and fruit that can cause allergic reactions, swelling, extreme itching, hives and intense pain. *Dendrocnide moroides* is reckoned to have the worst sting of all of them.

Dusk falls early in November so there was just time for a quick look at the eucalyptus collection - though not so quick that Tom couldn't point out one of his favourites, an impressive specimen of the hardy Omeo Gum (*Eucalyptus neglecta*) - and adjacent woodland. A splendid finish to a splendid day.

The 2017 AGM will again be held at Lullingstone, in mid- November. We do recognise that the location is a trek for members not located in the south-east (who include our chairman and webmaster who are based in North Wales) but, on the other hand, in the past finding a venue has often proved difficult, and using the same place each year has definite organisational advantages. It really is a meeting worth making an effort for, so please consider attending.

Free entry

APS members get free entry to Lullingstone World Garden; go to www.lullingstonecastle.co.uk/ for opening times.

e-Newsletter editor

For some time now the APS has been seeking a social media officer. Jan Michalak has volunteered to take over editing 34° SOUTH, our quarterly e-newsletter which provides updates about APS meetings and events and Australasian plant news from around the world. The last issue came out in September - did you get it? If not, it could be in your junk mail folder but more likely we don't have your current email address. You can update this by emailing Jeremy at membership@anzplantsoc.org.uk.

APS Library

The APS Reading Room at Lullingstone Castle houses a large collection of Australasian plant books bequeathed to our society by the late Brian Halliwell. Members will be pleased to know that Adrian Cooper has volunteered to compile a list of the items in the library which, in due course, will be put up on the website. If you would like to visit the library please contact Tom at president @anzplantsoc.org.uk, giving him at least 24 hours notice.

Pentachondra on the web

Some back copies of Pentachondra (though not the most recent issues) will soon be available on the members' section of the APS website. Since May 2008 Pentachondra has been produced electronically so it is quite easy to make numbers 40 and

above available as PDFs. However issues 1 to 39 are hard copy only, and need to be scanned in order to be added to the website. If you can help with this task please contact Judy at editor@anzplantsoc.org.uk.

APS car sticker

A sticker featuring the society's new logo is enclosed with this issue. The logo design depicts the red earth of Australia and the lush green of New Zealand, with a kangaroo paw (*Anigozanthos* spp.) which is one of the most iconic of Australia's plants. Displaying it somewhere (not necessarily on a car) is one way you can help to promote our society.

Seedlist review: where are we up to?

One of the benefits of being an APS member is that you can order seed from our extensive seed-list. A review of the list has taken place over the past year with the aim of making it more relevant to what members wish to grow, offering a wider range of reliable and potentially hardy species, and ensuring as far as we can that we offer viable and correctly named seed.

Our chairman, Robbie, has reviewed the viability of all seed currently in stock. Many species such as *Acacia* and members of the Myrtaceae retain (some) viability for many years; last year Judy obtained some germination of *Eucalyptus citriodora* seed that must have been about 20 years old. Other seed loses its viability quite quickly; members of the Asteraceae are notorious in this respect. Then there are seeds whose shelf life we just don't know; for example: *Coprosma*, *Cordyline*, *Melicytus*, *Orthrosanthus*, and *Pittosporum*.

Seed manager Janet Miller has reviewed current stocks and made suggestions for re-ordering based on recent popularity. Janet reports that she gets few orders for *Acacia* or *Eucalyptus* species (and stocks of most of these species are high) and that articles in Pentachondra influence what seed is ordered.

All these issues will affect what species we continue to offer and what new species can be added. For example, the list will continue to include many Proteaceae as these are very popular, and where possible we will try to anticipate demand .

Seed of some species has in the past been supplied by members. This includes seed that is difficult or impossible to obtain commercially, and seed with a very short life. Without members' help we may not be able to restock all such species (for example, see page 42). Please consider collecting seed from Australasian plants that you grow. We offer **a free packet of seeds** from the list to everyone who donates seed.

Judy will be ordering seed in the new year and the new list will be posted on the website once orders are confirmed. However, as the main seed collecting season down under is from February onwards we may not be able to supply some species until later in the year. Nonetheless please order early if you can; in particular don't wait for the May 2017 issue of Pentachondra with its printed copy of the seedlist. This will help spread the load for Janet who cannot get orders out as quickly as she would like if they all arrive on her doorstep at once. And don't forget you can order seed at any time of year.

The seedlist is published on the members area of the website; to

access it you need a password from webmaster Ben Ram. If you do not use the internet and would like to order seeds before the list becomes available in hard copy please contact Janet by phone or post (details inside the back cover).

Finally, if you are worried about a particular species or genus disappearing from the list, or have suggestions for potentially or reliably hardy species that we don't offer but should, please tell Judy. She will try to ensure that your favourites don't vanish and endeavour to find suppliers for your suggestions. You can email her at editor@anzplantsoc.org.uk, or write to her at the address inside the back cover .

Events 2017

A major subject of discussion at this year's AGM was events and meetings for 2017. Details of two that have already been organised - a visit to the Linnaean Society of London in January, and an APS stand at Wisley in June - are given below.

There will also be a big Australasian plant presence in the Plant Heritage marquee at the 2017 RHS Hampton Court Palace Flower Show which runs from July 4th to 9th. The APS has eight Plant Heritage National Collection holders (see issue 56, May 2016, for a list of them) and it is hoped that all of them will display some of their plants. We also want to show a range of Plant Heritage Plant Guardian plants as well as some better known antipodean plants in full flower. Previous experience at Hampton Court is that a few really colourful plants in flower attracts the public and gives us an opportunity to talk about some of the more unusual plants on display – as well as about the APS! It also means that all members of the APS have an opportunity to contribute to the display, not just National Collection holders.

It proved impossible in 2016 to arrange the promised trip to Ness Botanic Gardens on the Wirral peninsula near Chester, but, all other things being equal , a visit will be organised for 2017. Judy plans to open her garden in Hastings in September, when the correas are starting to flower. A morning in the garden will be followed by an afternoon at nearby Alexandra Park where a number of southern hemisphere trees are doing well. As soon as full details of events (including the date of the 2017 AGM) are available these will be posted on the website and included in the email newsletter. And, of course, you will find all the information in the next issue of Pentachondra.

Finally, we are very conscious of the fact that all but one of these events will take place in the south east of England, as indeed have many of our meetings in recent years. It just happens that the south east is where the majority of committee members live and we don't have such good knowledge of other parts of the country. Please, please, please, if you have any suggestions for an event in your neck of the woods contact Gary and Maria at meetings@anzplantsoc.org.uk. It's not too late to set up more events for 2017, particularly visits to public and private gardens.

Linnaean Society visit

To help get us all through the long dark winter days we have organised a trip to the Linnean Society of London on 27th January. We will meet outside Burlington House on

Piccadilly in central London at 10.15 and the tour will start at 10.30. If you wish to attend and haven't already send a message to Robbie at chairman@anzplantsoc.org or phone Judy. Please do so before 20th January at the absolute latest. Members are asked to make a donation to the Linnaean Society with a suggested minimum of £5 per person.

This is a rare opportunity to see some of the collections held by the Linnaean Society, so one not to be missed. The Linnaean Society is the oldest society for the study of natural history in the world. Founded in 1788 it takes its name from the Swedish naturalist Carl Linnaeus (1707-1788) whose botanical, zoological and library collections have been in its keeping since 1829. As it moves into its third century the Linnaean Society continues to play a central role in the documentation of the world's flora and fauna, recognising the continuing importance of such work to biodiversity conservation. Famous fellows include Charles Darwin and Sir Joseph Banks and its collections hold treasures that have to appeal to anyone with an interest in Australasian plants. Not least are two volumes of Celia Rosser's 'The Banksias' and we have made a special request to see these during our visit.

Wisley Specialist Plant Society Show

In 2016 the APS showed for the first time at the RHS Specialist Plant Society Show at Wisley Gardens (report page 40). The display was well received by the public and all members involved with the show seemed to really enjoy being part of this RHS event.

The show next year will be on the weekend of the 17th and 18th June.

One of the few criticisms of this year's event was that it was in a slightly remote part of the gardens and perhaps did not attract as many garden visitors as it could have done. The RHS have responded to this by moving next year's show to the main lawn where it will hopefully attract more visitors.

This show can only succeed if it is supported by members providing plants and help with manning the display over the weekend. The plants do not necessarily need to be in flower as long as they are in good condition and of Australasian origin. Gary will provide standardised labels for all the plants. If you feel that you could help with either plants to display or sessions manning the stand do please let Gary know at meetings@anzplantsoc.org.uk.

How about contributing to Pentachondra?

Many thanks to all who have contributed to this issue. Pentachondra is a newsletter by members for members, and it wouldn't be what it is without your input. The deadline for the next issue is **31st March 2017**. Please send contributions direct to the editor, Judy Clark, either electronically or as typed hard copy. Please **don't** compress photos, and please **do** contact Judy if you have questions of **any** sort about contributing.

Both longer articles and short snippets are welcome, as are stand-alone photos and drawings (as long as a caption is provided). Maybe you could write about your experience with particular plants, successful or otherwise. Or about a favourite plant, which doesn't have to be one that you grow; it could be one that you've seen growing elsewhere. Or how about a

garden you've enjoyed visiting? Many public gardens nowadays contain a few Australasian plants. Perhaps you know of a good nursery, or perhaps you've read a book that other members might be interested in. All that is required is that your contribution has at least a passing connection to Australasian plants and their relatives.

Subscriptions are due!

Subscriptions are due on **1st January 2017**. If you don't pay by standing order or PayPal please complete the enclosed renewal form and send it, together with a cheque payable to Australasian Plant Society, to APS Treasurer & Membership Secretary Jeremy Spon (his address is inside the back cover).

From 2017 annual subscriptions are £15 for UK members and £18 for members resident elsewhere.

If you would like to pay by standing order you can obtain a form from the Treasurer. Or you can set up a standing order yourself, using sort code 60-19-24 and account number 29872677. Please include your name as a reference for the Treasurer, and let him know that you have set up a standing order.

If you pay by standing order or have already paid for 2017 you will not have received a renewal form but **if you have not already done so please change your payment details as appropriate**. And please contact Jeremy if any of your details have changed.

ANTIPODEAN DELIGHTS IN SCOTLAND

Ben Ram

Think of Australasian plants and an image of warm sunny weather is usually the backdrop. On a recent visit to Scotland however, Robbie and I found a wealth of antipodean plants thriving in the typically cool damp of July, and all in gardens open to the public.

Our route took us first to Brodick Castle on the Isle of Arran. Situated at the foot of Goat Fell, on the eastern side of the island, the garden is sheltered from the worst of the prevailing, salt laden, south-westerly winds. Indeed the garden boasts many mature Australasian trees, including *Eucryphia moorei* (pinkwood), *Atherosperma moschatum* (sassafras), *Metrosideros umbellata* (southern rata), *Hoheria lyalii* (mountain ribbonwood), *Telopea truncata* (Tasmanian waratah), *Lagarostrobos franklinii* (huon pine) and *Knightia excelsa* (rewarewa). Abutting the walls of the castle itself a large *Leptospermum scoparium* (tea tree) was covered in red double flowers, attracting a multitude of bees.

On walking into the sloping, south facing walled garden, we approached an old, gnarled, stunted tree of *Hakea sericea* whose branches and trunk were adorned in mosses and lichens. Next to this was a bottlebrush with pink flowers labelled as *Callistemon salignus*; however this species usually has white or cream flowers and wider leaves than I observed, so I am reluctant to agree. So many



***Olearia* 'Henry Travers' at Garden Cottage Nursery**



Can anyone identify this broom at Linn Botanic Gardens?

leaf of *Ranunculus lyallii*, Mt Cook Lily





***Cordyline indivisa* at Inverewe Garden**



***Acacia pataczekii* , very much at home in a Kent garden**

callistemons are mislabelled that it becomes quite difficult to know what is what. *Hebe chathamica* and *Fuchsia excorticata* (kotukutuku) were also full of flowers here, as well as the now regularly seen *Grevillea* 'Canberra Gem'. Lower down the walled garden was *Pseudopanax ferox* (toothed lancewood), *Astelia nervosa* and the rarely seen *Cordyline banksii* (forest cabbage tree). This was followed by a wonderful shady walk behind the walled gardens, filled with an array of luxuriant ferns including *Todea barbara*, *Blechnum nova-zealandiae* and *Pteris umbrosa*. The last of these we have recently added to our garden thinking it not to be very hardy, so seeing such a large clump of it here was reassuring. Beyond the walled garden, we walked through a maze of pathways where *Dicksonia antarctica* (soft tree fern) had freely spored itself about. In typical Scottish fashion, the heavens, which had been leaking on and off all morning, gave us a good soak among the tree ferns, resulting in a very immersive experience.

A short ferry ride from the west coast of the Kintyre peninsula landed us at the small isle of Gigha, home to Achamore Gardens. Col. Sir James Horlick developed the 54 acre garden during his ownership of Gigha from 1944 until 1972, after which its maintenance subsequently declined. In 2002 the residents of Gigha purchased the ownership of the island in a community buy-out. The gardens are now managed by the community, through the Isle of Gigha Heritage Trust, and have since undergone various phases of restoration.

The short walk from the ferry to the gardens saw us walk past a pub with a planted, wind blown *Cordyine indivisa* (mountain cabbage tree) greeting its patrons. We met quite a few of its larger siblings in the walled garden behind Achamore house, including one particularly stout individual with leaves over half a foot wide.

Throughout the grounds there was a feeling of a once orderly garden gone wild and for us would-be adventurers this added a sense of excitement as we 'discovered' rarity after mature rarity at every turn. Up on an exposed small hill, were several *Olearia* (daisy bush) which at the time we assumed to be *O. semidentata*, but more on that later. *Callistemon pallidus* and *C. sieberi* were very large shrubs here and cloaked in flowers too. We found a small tree of *Telopea truncata* in amongst other shrubs. In fact the gardens contain a bewildering collection of rare plants; however, it is evident that the restoration is still not complete, no doubt due to lack of funding. There was a sign next to the honesty box explaining that the community was currently looking for a head gardener, an explanation for many things in this gem of a garden.

Further north, near Oban, we visited Arduine Gardens. Although the main body is very much a gardened environment, as you would expect to find in a National Trust property such as this, the woodland is really quite something else. Rising up behind the greenhouses, with views out towards the sea, a winding path takes you into a moist, shady forest-garden. Due to the cool, mild climate here, we found such rarities as *Dicksonia lanata* subsp. *lanata*, a stoloniferous tree fern from New Zealand without a truck. We also found a large crown of *Blechnum*

nudum with fronds to almost 3ft (1m), which is larger than I have previously seen even when grown under glass.

Leaving the mainland behind, we headed out to the isle of Mull. Whilst driving along the wild, single track road that makes its way round the west side of the island, we unexpectedly came across a sign saying "Lip Na Cloiche – Garden and Plant Sales". Nestled between the sea and a steep cliff were displayed a wondrous example of plants that thrive in such an exposed yet mild position. We found two different forms of the supposed *Olearia semidentata*, again more on that later. *Metrosideros umbellata* was not in flower but its rosy new foliage was looking sublime along a hedge which included various hebes and callistemons, all shaped beautifully by the wind.

Heading east for a short time, we visited Ardfern Nursery near Inverness, where we managed to acquire new plants of *Ranunculus lyallii* (Mt Cook lily, photo page 7), our first plant having died a few years ago. This is a really great nursery if you are looking for Australasian plants that prefer cool conditions, including celmisias, hebes and epacrids.

Back on the west coast and further north again, we visited what is possibly one of the furthest north locations where we have seen so many Australasian plants growing outside. Inverewe Gardens has a very large collection of olearias, many of which were flowering fragrantly during our visit. There are also a couple of *Banksia marginata* (silver banksia) growing here, as well as a beautiful rock garden of celmisias. The garden is set on the edge of a sea loch and has a large shelter belt of trees, but on the shore itself various species of Brachyglottis provide shelter. In the least exposed part of the garden is a grove of *Wollemia nobilis* (Wollemi pine) underplanted with southern hemisphere ferns including New Zealand's *Blechnum discolor*. Near to this grove is a handsome stand of large *Dicksonia antarctica* and *Cordyline indivisa* (photo page 8). The garden has many interesting eucalypts, the most notable being a veteran *Eucalyptus regnans* (mountain ash) towering above the other trees. A handsome shrub of *Weinmannia racemosa* (kamahi) was in flower, as was the weeping broom *Carmichaelia stevensonii*. On an exposed shoreline, a rock garden full of New Zealanders included three species of *Aciphylla* (speargrass), including *A. horrida*. To our complete surprise we also found here a large patch of the kangaroo fern, *Microsorum pustulatum* (syn. *M. diversifolium*, photo front cover). This is considered somewhat tender and it is interesting that it can grow in such an exposed location on what was essentially gravel.

A short distance north of Inverewe we visited Garden Cottage Nursery which offers some Australasian plants rarely seen for sale including species of *Olearia*, *Stylidium* (trigger plant), *Brachyglottis* and *Leptospermum.* Ben Rushbrooke, who owns the nursery, explained to us that what is often sold as *Olearia semidentata* is in fact the cultivar *O.* 'Henry Travers' (photo page 7), a hybrid between *O. semidentata* and *O. chathamica*, both of which are native to the Chatham Islands. Originally introduced by Major

Dorrien-Smith in 1910 it first flowered in Tresco Abbey gardens, Scilly, in 1913. He also informed us that *Olearia angustifolia* was the name of the narrower leaved olearia similar to *O. semidentata* that we had seen in the gardens we had already visited and that the true *O. semidentata* is a sprawling shrub unworthy of general cultivation. We bought a plant each of *O.* 'Henry Travers' and *O. angustifolia* from him to see how they fare in Wales.

Also worth a mention is the meticulously maintained Attadale Gardens. Of most interest to us here were the ferns, both outside and in the geodesic dome greenhouse. They protect their tree ferns here with heating wires wrapped around their trunks.

Last but not least, we visited Linn Botanic Gardens, located at the tip of the Rosneath Peninsula in the Firth of Clyde, a temperate wonderland. Exploring the gardens with owner Jim Taggart was like rediscovering a long lost jungle, with wondrous exotic trees at every turn. There is a species of New Zealand broom here in flower that Jim does not know the name of and that I have taken photos of (page 7). He would be most grateful if anyone can help with an identification.

It was the ferns, however, that stole the show. Filmy ferns grow here luxuriantly, such is the dampness of the place, and we have not seen the spectacular *Blechnum colensoi* growing outside anywhere else; a mature plant that has seen the test of time. *Blechnum nova-zealandiae* has spored itself about in a most authentic manner giving rise to some possibly unusual hybrids. In truth, Linn is a garden still mourning the sad loss of Jim's son Jamie, who went missing while plant hunting in Vietnam. It was many months before the authorities found his body in the precipitous mountains there. Without Jamie the garden is struggling but the significant collection of plants here warrants a knowledgeable pair of hands, younger than those of Jim, to see it thrive and provide a rich resource for botanists long into the future.

Scotland truly has some exquisite gardens and nurseries full of interesting Australasian plants and we strongly encourage you all to visit.



REPORT FROM EAST KENT

Jeremy Spon

As growers of Australasian plants (at least those of us without heated greenhouses) we are more at the mercy of the weather than most gardeners. The variable conditions of the last few years have provided various tests for the plants I grow, and not just the winter temperatures. Here in East Kent, we are no more than 15 miles from the sea to the north, east and south, so if we avoid an influx of cold air from the continent winters can be surprisingly benign. The lowest absolute minimum recorded in the last three winters was -4.5°C, and in the last two winters we have had surprisingly few nights with even a slight frost. However in the winter of 2011-12, we had a low of -10.8ºC and a run of 10 days when the daytime temperature barely rose above freezing. So winter cold can see off

many of the more tender Australasians, even when they are provided with shelter and excellent drainage. However, losing plants in hard winters is the price we all pay for our love of Australasian plants, and it is a choice between giving up and growing only things which are bone-hardy, or replanting and keeping fingers crossed for a run of milder winters such as those we have had recently.

A threat that is less often written about, however, is drought. East Kent, along with Essex, has one of the lowest average annual rainfalls in the UK, and with amounts distributed very unevenly through the year, it is not unusual to have long spells, of more than a month, with little or no rain at all. This year was particularly bad, with our weather station only recording 27.2mm between the beginning of July and the middle of September. It is easy to fall into the trap of thinking that all plants from Australia are very drought-resistant, but my own experience confirms that this is by no means the case. So what has done well over the last few years, and what has struggled?

I have written before about trying to grow acacias outdoors, and the frankly limited success I have had. However, as indicated above, recent winters have been kinder, and this has allowed some of the acacias I have planted out to come through the winters undamaged, and in some cases to flower profusely – a real bonus in the early spring.

I have not, unfortunately, managed to acquire a mature plant of what is almost certainly the best acacia for growing outdoors in the UK, *A. pataczekii*, but a friend has a large plant of this in his garden a few miles away, and this is a magnificent sight in March and April, with attractive blue-green foliage, dense growth habit, and masses of pale cream-coloured flowers (photo page 8). This plant sets viable seed, although I have found it tricky to germinate, and the one seedling I have is looking very sickly. But if you can get hold of a plant it is definitely worth growing.

Much easier to buy, but less hardy, are the two staples of garden centres, *A. baileyana* 'Purpurea' and *A. dealbata*. Both of these can make large trees in frost-free climates; I saw a memorable specimen of the latter in the wonderful Cornish garden of Lamorran, with a trunk larger than I could get my arms around, and the former makes impressive specimens at Ventnor Botanic Garden on the Isle of Wight. Both are easy to grow from seed, although I am not sure how true to form *A. baileyana* 'Purpurea' would be; seed is sold by various suppliers, but particularly good clones would need to be propagated by cuttings. They have both grown well for me, although *A. baileyana* seems less drought-resistant, and *A. dealbata* has not flowered profusely, possibly due to being in too much shade.

The best species for flowers has undoubtedly been *A. paradoxa*, bought from a local garden centre in its end-of-season sale as *A. armata*, an old synonym (which given the thorny nature of this plant actually seems rather more appropriate.) This has grown quite large over the last few years, and in addition to flowering well in early spring has set quite a bit of viable seed this year.

A. frigescens is a species the late Jeff Irons thought might do well in British gardens, and a seedling I grew from

APS seed did indeed survive some pretty low temperatures, but it was never very vigorous or ornamental, and I suspect lack of summer rainfall may be part of the problem. Certainly, as young plants, the acacias I have grown seem to need a steady supply of water, rapidly showing their distress by dropping leaves and suffering die-back if they become too dry at the root. On our shallow soil, over free-draining chalk, this can be a real problem in late summer, quite apart from the risk of the soil becoming too alkaline. Now that it is well established, *A. dealbata* seems more resilient, but I had to water *A. paradoxa* regularly, and I think lack of water did for *A. frigescens.*

One last species to mention is *A. boormanii*. This grew well for me until the two hard winters of 2010-11 and 2011-12, when it was killed but I now have it again, and it has the potential to be a beautiful thing, with a willowy habit and very narrow phyllodes. I grew it from seed on both occasions, and in general I have found acacias not too difficult to propagate in this way. I understand that few members order acacia seed from the APS seedlist, and I wonder why. Of course few can be regarded as truly reliable for outdoor cultivation, but a reputation for being difficult to germinate may also put people off ordering seed. However, I have found that with appropriate pre-treatment (boiling water, or better still sandpapering away a small portion of the outer seed-coat) germination can be good, and quite quick. You can then get several plants very cheaply to try outdoors.

Few *Melaleuca* species (paperbarks) will survive much frost, but one of the hardiest is *M. pustulata*, and this has also coped well with drought, perhaps not surprising given its native habitat, dry heathland on the east coast of Tasmania. (Of course Tasmania is the source of several of the hardiest Australian plants, but it is certainly worth bearing in mind that parts of Tasmania, including some of the coldest, have very high rainfall, so plants from there are not necessarily a good choice for the dry south-east of England.). *M. decussata*, a plant of which I bought

Growing acacias from seed

Acacias have a hard seed coat which must be cracked to allow moisture to penetrate so that germination can take place. The most frequently suggested method uses hot or boiling water (see for example Pentachondra 40, May 2008, p17).

Abrading the seed coat with fine sandpaper or nicking it with a sharp knife are more fiddly techniques which involve treating seeds one by one, but are preferred by some professionals. Either sandpaper one of the long sides of the seed until a white patch appears, which means enough of the seed coat has been removed, or use a very sharp knife to cut through the seed coat at the rounded end. (For more detail see Pentachondra 54, May 2015, p37).

APS member Maurits de Vries reports that he uses a different method, recommended to him by Dr Carl Whitcomb. This involves freezing the seeds for 30 minutes to an hour, then transferring them to boiling water for a minute or two (any longer may kill the embryo). The abrupt temperature change causes the seed coat to rupture. Maurits reports that this method has worked for *A. rubida*, *A. dealbata*, *A. obliquinervia*, and *A. pataczeckii*.

at Ventnor Botanic Garden, has only been outside for one winter, so its cold-hardiness has not been tested. Ventnor suggest it may be hardy in milder areas; however it did look a bit unhappy in the driest spells. I also grow *M. squarrosa*, which, true to Jeff Irons predictions, has proved better adapted to my hot dry summers, but while vigorous it is not particularly striking with its white flowers; and *M. squamea*, which is one of the hardiest of the melaleucas with coloured, as opposed to plain white, flowers. It is reasonably hardy, but certainly needs constant moisture at the roots.

The narrow-leaved *Callistemon* species are generally the hardiest; *C. viridiflorus* and *C. pityoides* with yellow flowers, and *C. subulatus* with red flowers, have never been damaged even in the hardest winters we have had, and they coped well with the drought this year. *C. pallidus* (also with yellow flowers) needs a more sheltered position, while the various named forms with red flowers which turn up from time to time in garden centres, from the old *C. citrinus* 'Splendens' to newer varieties like 'Endeavour' and 'Captain Cook' are even more likely to be damaged or killed in colder winters. (The exact species to which these forms should be attributed is unclear – the classification of bottlebrushes is, to put it mildly, a matter of some debate!)

Members of the Proteaceae I have generally had little success with (eccept *Grevillea* 'Olympic Flame', which is almost embarassingly vigorous and hardy), but I can recommend *Lomatia fraseri* as being both fast growing, and drought-tolerant. *L. myricoides*, by contrast, needed several drenchings to get it through the dry spell; not surprising, perhaps, given that its common name in Australia is river lomatia.

One tends to think of New Zealand as having relatively high rainfall, and yet in general plants from there coped better with the late summer droughts than many from Australia. I grow several species of *Carmichaelia* for instance, and almost without exception these showed little signs of stress. *Pittosporum*, *Olearia*, *Sophora* and *Corokia* species are also very tough, and likewise the beautiful late-summer flowering *Hoherias.* I have planted many of my Australasian plants underneath a medium sized oak, and mature eucalyptus, to provide some overhead shelter from frosts, but this does have the disadvantage that in summer the tree roots remove a lot of water from the soil. But I haven't really needed to water any of the New Zealanders.

The moral of all this, I suppose, is that while knowledge of the original habitats of plants can help us understand where they will grow best it is always worth experimenting – there will always be pleasant as well as unpleasant surprises! Now I am just keeping my fingers crossed that this winter is again not too harsh.



A COROKIA LEGACY
Mike Geenty:1937-2005

Mona Abboud

If the stamp of immortality as a plantsman is to have a plant named after you, then Mike Geenty is well assured of his legacy. As far as the *Corokia* genus is concerned, he selected and introduced four different





***Corokia* 'Geenty's Ghost' (left) and *Corokia* 'Geenty's Green' (right)**



All about Australasian plants at RHS Wisley, June 2016





Acacias in the Netherlands

above
Maurits de Vries with a hybrid between *Acacia pataczekii* and *A. dealbata*

above left
***Acacia rubida* in full flower**

right
flower of *Acacia angustissima* var. *suffrutescens*



cultivars. The best known and best selling one in the UK is *Corokia* x *virgata* 'Frosted Chocolate'. *Corokia* x *virgata* 'Geenty's Green', though very popular in New Zealand, is relatively unknown in the UK as is the beautiful grey leaved *Corokia* x *virgata* 'Geenty's Ghost' (photos page 15). As for the lovely cultivar *Corokia* x *virgata* 'Emerald and Jade', I will be introducing it to the UK for the very first time thanks to Lyndale Nursery in New Zealand.

It was said of Mike Geenty that "he could put roots on a crowbar !" Born in Waipawa, south of Hastings in New Zealand, Mike took up a horticultural apprenticeship soon after leaving college. His interest in plants and gardening came from his maternal grandmother, grandma Tierney who gave him gladioli bulbs to plant thus starting him off on his long career and passion as a plant propagator. He ended up working for Hamilton City Council in 1974, staying there twenty eight years. He was presented with many awards for his achievements as plantsman and propagator.

Apart from *Corokia* cultivars Mike selected and introduced many other plants: *Coprosma* 'Coppersheen', *Lophomyrtus* 'Red Dragon' and *L*. 'Red Cherry', to name but a few. Plant lovers all over the world owe Mike Geenty a great debt of gratitude.

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ACACIAS IN THE NETHERLANDS

Maurits de Vries

Living in the north east of the Netherlands it looks impossible to grow acacias outside in our cold climate, but being a plant pioneer I have tried some species over the past few years. A few of them are still standing.

My first *Acacia* was a potbound *A. pataczeckii*. When I wanted to plant it I had some serious problems removing it from the pot because it was so heavily potbound. It was a poor specimen with a height of 10cm and it died in its first winter, so that wasn't a good start.

A few years ago I tried to grow *A. pataczeckii* again from seeds I ordered from Wildseed Tasmania. John Purse told me when he saw some pictures of my plant that it is actually a hybrid, possibly with *A. dealbata*. I had two seedlings; the one that was planted in an unprotected spot died in a very mild winter but the other one is now 3m in height and still standing (photo opposite). It is planted in front of our house where it is protected from the freezing cold wind. Two years ago I received seeds from the true species and I have one little seedling, but strangely enough it doesn't grow well and I think the root system has been damaged because I didn't protect the little plant in winter. It was in a cold greenhouse.

I guess that *A. pataczeckii* is one of the coldhardiest species but unfortunately I haven't been able to test a good specimen in a real winter yet.

Acacia rubida

In 2014 I was at Pieter Zwijnenburg nursery in Boskoop and Pieter showed me his *Acacia rubida*. I`m not sure but I think he grows it from cuttings. I planted *A. rubida* in front of our warehouse (south side) where it is protected from the freezing wind and has its own microclimate. It is planted in humus rich sands with

very good drainage. Now in October 2016 it is about 7m in height and it's really thriving here. It bloomed for the first time in the spring of 2015 and in spring 2016 it had flowers everywhere and was really impressive (photo page 16). In midsummer it can be 30 to 35ºC (maybe higher?) in front of the warehouse wall and I think *A. rubida* really likes the reflected heat. It has survived at least -16ºC unprotected and I think if it is cut to the ground it will resprout from the base.

I think that acacias grown in Rootmaker pots do better and grow faster than similar plants grown in normal pots. I saw *A. rubida* in my friend's garden; it was a very thin specimen and it wasn't growing well.

Acacia obliquinervia

I grew this coldhardy acacia from seed in 2011. The first year I grew it in Rootmaker pots. I planted *A. obliquinervia* I guess in 2013 in front of our warehouse. It didn't grow fast and at the end of every summer it looked poor. I had no idea why. Then I noticed in late spring or early summer that most of the leaves had a lot of purple on them. Two years ago I wondered if *A. obliquinervia* doesn't like reflected heat and the hot temperatures in summer, so I moved it to another spot. It is now planted on the west side of the warehouse (morning sun and late afternoon sun) and in 2016 I noticed it`s really thriving. I haven't seen any more purple coloured leaves and now for the first time it is full of flowerbuds. I did protect it during its first winter with horticultural fleece and it seems that this will do the trick. I notice that many Australian plants in my garden can handle cold temperatures but have problems with the freezing wind. *A. obliquinervia* is now more than 2m in height and I don't protect it anymore.

Wattles round the world

In the wide sense the genus *Acacia* (*Acacia sens*. *lat*.) currently encompasses nearly 1500 species found in Australasia and the Pacific, North and South America, Africa, and Asia. Recent taxonomic studies have indicated that some species in *Acacia sens*. *lat*. are less closely related than others. These studies suggest that *Acacia* should be limited to the majority of the Australian species plus a few found in south east Asia and the Pacific, with the rest placed in five new genera (though studies are ongoing and this may change).

One of these is the genus *Acaciella*, containing 15 species from the Americas, including *Acacia angustissima* which is renamed *Acaciella angustissima*. However this name has not been widely adopted and the Plant List gives *Acacia angustissima* as the accepted name.

Acacia angustissima var. suffrutescens

Years ago a good friend from the USA told me about acacias from the USA. Till that time I had never thought that I could possibly grow acacias other than the ones from Australia. He sent me a whole bunch of different seeds of American acacias. I tried many of them in my garden and I noticed that *A. angustissima* var. *suffrutescens* really thrives in our climate. In its native habitat it grows in areas with relatively more rain, and typically dies back to ground level with winter freezing, resprouting the following

spring from the underground rootstock. It can take a winter miniimum of -20ºC.

I see normally that it resprouts in May from the soil and it can flower by late June or early July (photo page 16). It sets seed in September but it seems that the seeds aren't viable, maybe because of a lack of 'real' heat here. However new plants can can be grown from suckers.

I really would love to try *Acacia alpina* but I can't find a source for it. If anyone can help please contact me at maurits187@gmail.com.

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A COASTAL GARDEN

Beth Smith

Foamlea is a cliff top garden in North Devon enjoying the warmth of the Atlantic Ocean and the gulf stream drift effect with a fabulous view of Morte Point (National Trust). It's at the mercy of the winds – south-westerlies are benign, north-westerlies less so – but the use of hedges and specimen shrubs create adequate shelter. The air is clear and colours are bright in the sunshine. Light frosts are rare, annual rainfall is about 100cm (40in). The area is one acre, on a gradient – providing good drainage – divided into terraces by local slate drystone walls, steps and paths. The soil is neutral, deep, clay-based and fertile. New plantings go in with our own and bought peat-free compost, grit and sand. No mulching, no watering after the first rain soak, but plenty of pruning because the growing season in these conditions lasts 11 months.

The origin of plants collected is intentionally world-wide, comprising 270 genera and 650 taxa. Acquisitions occur wherever plants are for sale: village craft fairs, national, regional and local shows and plant fairs, as well as coming from seed, cuttings, gifts, swaps and, occasionally, the internet.

Foamlea's current list of Australasian plants:

Acaena, Astelia, Brachyglottis, Callistemon, Celmisia, Coprosma, Corokia (8), Correa, Dianella, Diplarrena, Eucalyptus, Grevillea, Gomphostigma, Gunnera (alp.), Hebe, Knightia, Leptospermum, Lophomyrtus, Metrosideros, Nablonium, Olearia (10), Orthrosanthus, Ozothamnus, Pachystegia, Parahebe, Phormium, Pittosporum, Podocarpus, Prostanthera, Raoulia, Sophora, Uncinia, Westringia.

Australasian plants are well represented (see box), with all the species thriving in the garden. Botanic trips to west and east Australia and to New Zealand have fuelled my enthusiasm and help to estimate the plants' growing needs in the UK. New Zealand's South Island's climate has noticeable equivalence here, the more so as our winters become more damp by the year. Corokia excels with two splendid hedges (photo page 21) and single shrubs while only a young *Knightia excelsa* is not liking the winds. A small alpine house provides cover for a few species where there may be initial survival doubts, though these are typically South African

subjects and some Mexican succulents.

All the Australasian plants listed will be familiar to members but you are welcome to visit us here to see them in their beautiful outdoor setting: bethmortepoint@fmail.co.uk. We gain huge pleasure from the discovery that so many settle here with complete maritime exposure. Still, how good would it be to also grow plants that require an acid soil and/or drier winters: *Banksia*, *Hakea*, *Isopogon*, *Melaleuca*, *Protea*! These are joys that come from visiting other gardens: the Chelsea Physic Garden and Mona Abboud's last August and Tresco (again) in 2017!



WATTLES IN HASTINGS

Judy Clark

For Australians, wattles are iconic plants. Wattle Day is celebrated every year on the first day of September, a time when many species are in flower. The golden wattle (*Acacia pycnantha*) is Australia's national floral emblem. The national sporting colours of green and gold reflect that many wattles have green foliage and yellow flowers. And of course wattles are popular choices for gardens.

The genus, *Acacia*, is the largest in Australia's flora, with over a thousand species. They range from small shrubs to large trees and can be very floriferous. They occur in every state and territory, with many growing in cool temperate regions and in subalpine and montane environments, locations where plants that could potentially flourish in Britain may be found. Yet UK nurseries and garden centres offer relatively few wattles for sale. Those with the greatest number of suppliers listed in the RHS Plant Finder are *A. baileyana*, *A. dealbata* and *A. pravissima*, with another twenty five or so species listed as available by one or occasionally more nurseries.

One reason for failure to experiment much with acacias might be that they have tended to be regarded as plants for milder areas only[1]. Yet many species are known to be relatively hardy and with the advent of climate change more species are likely to be able to survive outside in more places in Britain. Another reason may be that their size is off-putting but while the three most popular can make big trees (photo opposite) many wattles are relatively small shrubs, and it is often the case that larger plants can be kept under control by pruning after flowering.

Jeff Irons, writing eight years ago in Pentachondra (issue 40, May 2008), hoped to encourage members to try some of the less well known wattles in their gardens. I had had little success with them up to that point and it was Jeff's enthusiasm that persuaded me to persist, although those I grow now include only one of the 16 he wrote about in 2008. By relating my experiences I similarly hope to encourage more members to grow more of them. The cold hardiness, and size in its native habitat, of each acacia mentioned is listed in the table on page 26.

My relatively small garden is on the south coast of England and generally gets little frost. This means that I can contemplate growing outside species



Foamlea, showing one of the *Corokia* hedges (top right of picture)

A large *Acacia baileyana*, reaching nearly to the roof top of this two story house in St. Leonards, East Sussex.





Left, *Plagianthus regius* in flower; below the mess it makes!





Eucalyptus leucoxylon: roadside planting in Katanning, WA





Snow gum leaves affected by eucalyptus gall wasp; it looks unsightly but should not affect the long term health of the tree.

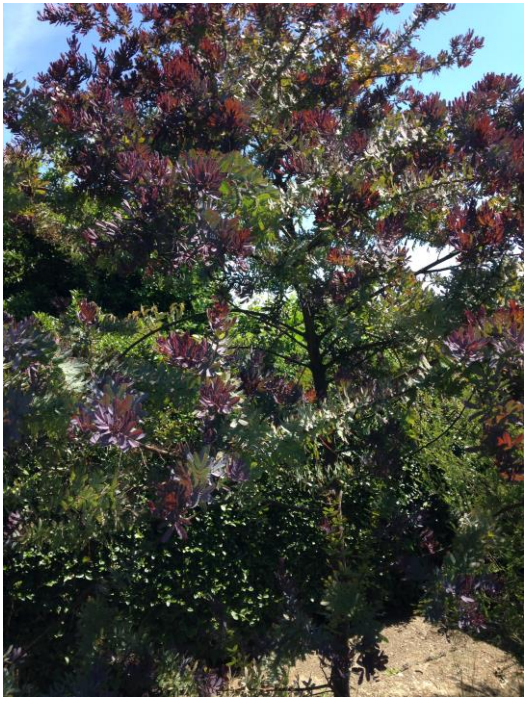


Wattles in Hastings

left
Acacia acinacea

below left
Acacia baileyana
'Purpurea'

below right
Acacia mucronata





that those who live in areas with colder winters are less likely to be able to grow successfully. But wattles can be grown in containers, something that can make it easier to protect plants from winter cold, and also to provide wattles with another condition that they really do need: protection from strong cold winds. I say this from bitter experience of shredded foliage and dead branches.

The first wattle that I ever tried, *Acacia melanoxylon* (blackwood), has proved perfectly hardy (it was unscathed by the series of colder winters from 2008-9 to 2011-12) but it did grow pretty tall pretty speedily. When I did the research I should have done before I planted it, I learned that in its native habitat it can reach 30m and even taller. But I was reluctant to take it out so, as an experiment, I tried pollarding it at a height of about 2m. This has worked well as a means of keeping it under control and I do it every two years or so, but I suspect it restricts flowering; all I get is occasional sprays of creamy flower heads in spring. This is really not a wattle for a small garden.

Usually shorter, but with the potential to grow to just as tall, is *A. dealbata* (silver wattle). This plant I bought a couple of years ago and ended up placing it in a rather difficult spot. It's not yet flowered and maybe won't flower much because of the lack of direct sun, but I do like the ferny foliage. However, not only smaller - rarely growing to more than 3m at higher altitudes of northern Victoria and southern New South Wales - but also hardier, is the subspecies *subalpina*. I don't grow it but Liesbeth Uitjewaal reported that this species survived -15ºC in her Netherlands garden[2] while Jeff Irons[3] reported that a plant of the same provenance was fine until the winter of 2010-11 when it succumbed to two nights at -12ºC in his Wirral garden.

Ovens wattle (*Acacia pravissima*) hails from roughly similar locations to silver wattle but does not get nearly as tall. It ought to do well in my garden and I suspect, it would do so had I not planted it in a place where strong winds almost invariably made it look terribly tattered by the end of winter. The wind not only affected its flowering but also its shape as (unlike some other species) it didn't put out new shoots from the stem. Every year it looked sadder and this year I took it out. But I still grow *A. pravissima*. I obtained a prostrate form, 'Bushwalk Baby', from Lower Kenneggy Nursery in Cornwall. It hasn't had a winter yet but as I write (November 2016) there are tiny buds on it and fingers crossed there will be bright yellow sprays of flowers next spring. It will presumably tolerate a similar temperature range to the tree form but shouldn't get to more than half a metre in height[4].

Acacia baileyana (Cootamundra wattle), both the usual form with blue-green leaves and the purple leaved cultivar 'Purpurea' grow well for me, at least so far. The former was planted out in 2011, the latter in 2012, so neither has yet had to endure much in the way of winter cold. The usual form I grew from seed without any trouble but although I got purple-leaved seedlings when I sowed seed labelled 'Purpurea'[5] none of the plants thrived. I'm not sure why but in the end I purchased a small plant from Ventnor Botanic Garden on the Isle of Wight, and it has been fantastic (photo page 24).

These two plants also illustrate the importance of protection from cold

winds. Most years the plant in the front garden, the blue-green leaved form, gets hit by a strong south-westerly or two. It does resprout from the stem and so recovers quite quickly but rarely flowers well. In contrast the purple leaved form is planted in the back garden in a really sheltered spot. Now it's got taller the very topmost branchlets can get a bit hammered (this November's south easterly storm was a bit of a shock) but otherwise it's not suffered any damage. I did, however, nearly lose it in the dry spring of two years ago by failing to notice until almost too late that it needed watering.

Cootamundra wattle can reach 10m but mine are kept to a couple of metres by pruning the tops where the wind hasn't done it or me. However *A. baileyana* also comes in a prostrate form. I have two small seedlings from seed sown this year; hopefully they too will flourish.

The native habitat of *A. mucronata* is forests and woodlands. I think my plant is subspecies *mucronata* from Tasmania, where it is known as the caterpillar wattle, but the species is also found in Victoria and New South Wales. My plant, which went out in 2011, and has suffered nothing more than a bit of wind damage to the very top. It first flowered in 2014 and now does so regularly. It has pale cream flowers in spring (photo page 24) and it doesn't mind having to cuddle up to its neighbours. Last year I pruned it after flowering to try and restrict its height.

A. myrtifolia (myrtle wattle) is a species recommended by Jeff Irons. It occurs in many parts of temperate Australia, being found in woodland, forest, scrub and heath in all states except the Northern Territory. This suggests that seed provenance could be important in determining how well it does in the UK. As my plant is only four years old its hardiness has not yet been tested but Australian sources describe this species as frost hardy to -7ºC and it is recommended for cool climate areas[6]. Although -7ºC sounds promising it must be remembered that this refers to a land where even heavy frosts tend to burn off during the day and prolonged continuous low temperatures are not usual. From

Heights and cold hardiness of some *Acacia* species

	Danger zone ºC	Height m
A. dealbata	-8 to < -16	30
A. baileyana	-4 to -10	10
A. melanoxylon	-8? to -12?	6-30 (45)
A. retinodes	-5 to -9	5-10
A. pycnantha	-1 to -4	3-8
A. pravissima	-8 to -13	3-8
A. dealbata subsp. *subalpina*		3 (10)
A. acinacea	-8? to -12?	c. 2.5
A. pataczekii	-8 to < -17	2-6
A. siculiformis	-10 to < -16	2-3
A. mucronata	-10? to < -14	1-15
A. myrtifolia		0.5-3
A. riceana	-8 to -15	10
A. buxifolia		4
A. axillaris		2-4
A. williamsonii	-8 to -12	2
A. amoena		1-4
A. decora		1-3
A. gunnii		1
A. guinetii	-5? to -8?	0.3-2

Temperature data from Ross and Irons (1997). Danger zone: the upper limit is the temperature at which damage may occur under unfavourable conditions, the lower limit is that at which a plant may be killed or cut to the ground.
Height data from worldwidewattle.com

seed it flowered in its third year for me - pale yellow flowers - and thus far shows prostrate tendencies, being no more than about 50cm high. It is said to tolerate lime[6].

My gold-dust wattle, *A. acinacia*, came from seed collected from a plant in my sister's garden in Melbourne. My records tell me that I collected the seed in December 2001 but I didn't sow it until 2007. I kept the plant in a pot for years. It grew slowly, barely flowered, and never looked very good, probably because I'm not good at container growing. Every year I lugged it into a frost free greenhouse for the winter, and then lugged it out again in the spring. When I did finally look it up I discovered it ought to be hardier than I had thought.

In 2014 it went out in the garden. It rewarded me with glorious golden flowers (photo page 24) in April 2015 (within its usual flowering period) but flowering started again in late November, presumably because it got confused by a very warm autumn. Then, even though I thought it was in a fairly sheltered spot, it got caught by cold winds this spring and lost almost all its leaves. It looked dead; indeed, there's a lesson there as I nearly took it out. Instead I pruned the really dead branches and it slowly recovered as the weather warmed up. As I write it is again packed with flower buds. This species is widespread in south eastern Australia so seed provenance may be important in influencing how well plants do in Britain.

The other four species that I grow outside have not flowered yet. Two of them, *A. pataczekii* (Wally's wattle) and *A. siculiformis* (dagger wattle), I do expect to be hardy, not only in my garden but also in colder parts of the UK. Wally's wattle is a Tasmanian endemic of restricted distribution in the north east of the state, where it grows at an altitude of about 1400m. It is listed as rare under the Tasmanian *Threatened Species Protection Act 1995*. My plant is slow growing, still only 50cm or so, but whether this is because it needs a less shaded position or because it just grows slowly I do not know. My dagger wattle came from Jeff Irons' garden so I assume he had plants that survived winters on the Wirral. It is found at higher altitudes in south eastern Australia and is very prickly!

I am less sanguine about what the other two will take. *A. retinodes*, known among other names as wirilda, only went in this year, an attractive blue-leaved form from Treseders. It is reported to take -7ºC in Australia but somewhat ominously is not listed in my book of plants for cool climate areas, unlike *A. pycnantha*[6]. However *A. pycnantha* is suggested by Ross and Irons (1997) to be less frost hardy than *A. retinodes*. Provenance again? *A. pycnantha* is found over much of Victoria and west into South Australia. My plant was grown from seed from the Grampians region of western Victoria, a provenance which might be expected to provide (relatively more) hardy plants, and planted out in 2015. This year it has begun grow away nicely.

To finish, here are some species that I don't grow but I would like to try, if I could find somewhere to put them! *A. gunnii* is a small shrub that grows on the slopes of the Great Divide in eastern Australia; the similar sized *A. guinetii* is a heathland species from south west Western Australia; and the

somewhat larger *A. williamsonii* is found in the colder parts of central Victoria. These three, along with *A. myrtifolia* and *A. acinacia* (and others) are recommended by Neil Marriot as small wattles suitable for gardens in Victoria[7].

Two Tasmanian endemics are. *A. riceana* (arching wattle) and its close relative *A. axillaris* (midlands wattle). The former, which comes from wetter areas in the south of the island, I have seen at Bedgebury in Kent where it must endure tougher conditions that it would were it in my garden; the latter, also a riparian species, is much smaller and listed as rare under the Tasmanian *Threatened Species Protection Act 1995*.

Finally, there are three species which I saw in gardens on a recent visit to Armidale in New South Wales: *A. buxifolia* (box-leaf wattle), *A. amoena* (boomerang wattle) and *A. decora*, which has many common names but its scientific one says a lot about it. Armidale is located at an elevation of around 1000m on the New England (or Northern) Tablelands of the Great Divide. So despite its latitude this region gets cold winters, with minimums as low as -10°C, frosty mornings, and even occasional snowfalls. Summers are cool (for New South Wales) with temperatures rarely exceeding 32°C.

Seed of every one of these wattles is offered on the APS seedlist. So why not try one or two? Go on, be adventurous!

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World Wide Wattle: worldwidewattle.com/

Notes

1. Armitage J. 2016. Which wattle where? *The Garden*, December, pp.62-5.
2. Jeff Irons pers. comm.
3. Irons J. 2011, *Pentachondra* 46 (May), p.35. This issue contains other local data on survival of acacias and other Australasians after the winter of 2010-11
4. www.gardeningwithangus.com.au/acacia-pravissima-bushwalk-baby-wattle/
5. The true cultivar 'Purpurea' should be propagated by cuttings.
6. Australian Native Plants Society Canberra Region Inc. 2015. *Australian Plants for Canberra region gardens and other cool climate areas*, 5th edition.
7. Australian Native Plants Society (Australia) Inc. Acacia Study Group Newsletter no. 130, September 2015 p.8.

COLLECTING MUEHLENBECKIA

Jan Michalak MA FLS

Despite the blank looks when I say the name *Muehlenbeckia*, I've discovered over time that many gardeners are fairly familiar with the small-leaved rampant climber, *M complexa*, and some with the shrubby *M . astonii*. The collection focuses on hardy forms, largely from New Zealand, but I'm trying other sources.

I first became fascinated by *Muehlenbeckia* when I came across *M. astonii* (photo opposite) at Wisley. I bought a plant purely on its decorative merits, then was able to observe the way it seems to form a twiggy ball with small round pea-green leaves, and then another around the first; growing larger, without seeming to grow at all. It is also surprising that the apparently stiff spiky frame is actually curiously rubbery .

Muehlenbeckia astonii





Muehlenbeckia complexa* var. *trilobata

Muehlenbeckia ephedroides





***Muehlenbeckia,* clockwise from left:**

***M. complexa* 'Sweet Broken Heart'**
M. axillaris
M. ephedroides* var. *muricatula
***M. complexa* (Three Kings)**







My further interest in the genus brought me eventually to the more commonly seen climbing form *M. complexa*, which I had seen before in botanical collections without taking much note. This plant is a most vigorous twining climber that will cover a tree stump or fence at remarkable speed (in fact, it can do the same to a house if neglected, but needs a support to twine onto) but it is often defoliated and set back by cold winters except in the south west. I've found the variant *M. complexa* var. *trilobata* much hardier; the leaf shape is fiddle-shaped rather than round, making it very decorative (photo page 29). *M. complexa* seems infinitely variable in leaf size, shape and habit, so that claiming cultivar status is regarded as dubious, although some geographical variants seem to deserve their own varietal status. For this reason the large-leaved form of *M. complexa* is now recognised as var. *grandifolia*, and adds another sort of decorative possibility to the species.

A few years ago I won a bottle of wine at a Plant Heritage plant fair by guessing that the strange plant being shown was likely to be another *Muehlenbeckia* – twiggy and rubbery, but this time with no sign of any leaves. I begged some unlikely-looking cuttings and rooted them and now have plants in my garden that have the trick of looking dead but continuing to grow larger and a couple of times a year getting excited and producing a few purple leaves and tissue like flowers. This is *M. ephedroides* (photo page 29) and as described is a botanical curiosity, but I also have forms that are elegantly wavy and dense enough for ground cover – indeed, the variations seem endless, and definition is complicated by natural hybridisation with other species.

It doesn't take long to discover that difficulty of definition is the biggest problem with the genus. H. H. Allan in his 1961 *Flora of New Zealand* says of the form *M. complexa*: "*A complicated aggregate of forms is at present included under this name – the complexity not resolvable by methods so far adopted…*" and that situation is only now being addressed.

When I considered applying for a National Collection I felt I had chosen a manageable subject with a dozen or so taxa – today I have over 20, and still find new forms. Bearing in mind the fluid state of the nomenclature I will try to outline some shapes and usefulness apparent in the collection as it stands.

Climbers

All climbing Muehlenbeckia are more or less rampant. *M. australis* is the strongest, making woody corkscrew stems, and bearing leaves unlike any others in the hardy section of the genus. *M. complexa*, and the variety *trilobata* are useful screening and topiary plants easily kept in shape with regular light clipping.

Scramblers

Complexa varieties can be surprisingly tame; scrambling through low shrubbery or trellis without the twining habit of the climbers. The cultivar 'Sweet Broken Heart' (photo opposite), has decorative foliage; 'Auslese' has bold shiny leaves and large flowers for the genus. The form collected on Three Kings Islands, New Zealand (possibly a separate species), is

similar but has showy clusters of flowers like miniature cherry blossom (photo page 30).

Ground cover

There are a number of ground-hugging varieties confusingly interchangeably labelled as *complexa* or *axillaris*. True *M. axillaris* should have numerous clusters of flowers in the leaf axils (photo page 30), while *complexa* flowers appear to be more commonly separately borne along the stems. In America, where the small leaved creeping forms are becoming popular as paving plants for their resistance to footfall, nursery catalogues often say "Muehlenbeckia axillaris, sometimes known as complexa". I like the description of the *complexa* type as being up to 15cm tall unless supported – surely a condition that would apply to many vigorous climbers!

Ephedroides

I have put these in their own category, not least because they are almost certainly going to be reclassified with their own genus. I am fascinated by their strange shoelace growth (photo page 30), and the changing hues of the stems and leaves through the year. A number of forms have been claimed, largely by geographical distribution. Strangely, many have been tentatively accepted, but lack any descriptions. My own collection features the type – a bristly horizontal bush, and various more elegantly waved and pendant types.

All *Muehlenbeckia* are vigorous if they enjoy their location; none will present seeding problems, as all the species are dioecious, having male and female flowers on separate plants.



PLAGIANTHUS REGIUS

Gary Dunlop

Plagianthus regius might sound like a regal ailment but it is actually the name of a tree. It is one of two species of the genus which are endemic to New Zealand. The rest of the genus, which comprises both trees and shrubs, is endemic to Australia. The total number of species in the genus has yet to be determined with certainty but Laurie Metcalf suggests about 15[1]. The second New Zealand species, *P. divaricus* grows in saltwater marshes and so is unlikely to be suitable for cultivation in gardens or arboreta in the British Isles.

The tree was named and first described as *Philippodendrum regius* by the French botanist Pierre Antoine Potieau in 1837[2], but transferred into the genus *Plagianthus* in 1906 by the Swiss botanist Benedict Hochreutiner[3]. The name for the genus was established by the father and son J.R and G. Forster in 1775[4], when they named and described *Plagianthus divaricus*.

In 1840 the tree was named and described again by Alan Cunningham[5] who named it *Plagianthus betulinus* and this is the name which became well established. It was over seventy years before the inappropriate species name given to the tree was discovered and corrected, albeit in Switzerland. However, the first correction of the name of the genus seems to have taken another seventy years or more to be discovered.

This is merely one example of the problems that have beset botany for

over 100 years, with different botanists working in different countries giving different names to plants from herbarium specimens held in different collections, and writing them up in local publications, without being aware of possible duplication. It will take many more years until all the correction and rationalisation of names is complete, but at least the establishment of the online Plant List provides a central and accessible source for the eventual rationalisation of all plant names (www.theplantlist.org/).

The common names for *Plagianthus regius* in New Zealand are ribbonwood and manatu, the Maori name. Until fairly recently the tree still was widely known as *P. betulinus* A.Cunn., which was the name still used by Metcalf when describing it in 1987, and the name indicates what the foliage resembles. It was under this name that I was given several small seedlings about 20 years ago.

As too often is the case, I planted the seedlings in temporarily, in a small area of clean soil, with the intention of moving them to a more suitable location. Needless to say they never got moved. I don't remember if, like a number of other New Zealand plants, they first formed a tangle of fine branches, before they finally started to send up a vertical stem that would become the trunk of the tree. I think I would have noticed, though if they did go through this juvenile stage it would possibly explain why I forgot all about them for some years until they had started to make trunks and were too big to move. The seedlings grew away quite quickly and the tree is clearly quite fast growing as they increased in height by at least 18 inches or 0.5m annually. Two of the seedlings formed good trunks against one another, whilst the third was much smaller and squeezed between the other two and, as it was clearly not going to develop in such a position, I cut it out.

Plagianthus regius is apparently the largest growing deciduous tree in New Zealand[6], reaching up to 15m with a trunk up to 90cm in diameter[1] though it has reached 16m at Islay House in Argyle, Scotland and 17m at Portmerion in North Wales[7]. Owen Johnson describes it as "*a delightful tree for milder areas*"; David Wright[8] was less impressed by its charm, considering that in a large garden it "*was just worth a place, for its elegant habit*". I suspect it requires a moist rather than a hot dry climate as my well-branched co-joined trees have experienced at least –14°C without distress. They have reached just over 10m in about 20 years. As the tree has a wide distribution, ranging from lowland forests in the south of North Island, the full length of the South Island, and Stewart and Chatham Islands, the hardiness of the trees in the British Isles is likely to vary depending on the location from where the seed was collected.

Rather like *Sorbus hedlundii*, *Plagianthus regius* seems to prefer open areas to develop symmetrically, as my plants have few branches and foliage low down on the north-west side where some light is likely to be blocked by a sycamore tree over 100ft away. More branching and foliage has developed to this side, but above 20ft or 7m up, where it gets more direct light. However flowering is more sparse where there is less direct sunlight on the foliage.

Bean[9] mentions that the tree was introduced into cultivation in the British Isles about 1870, but without specific details. He also mentions three large specimens, the two largest being at Caerhays 50ft (1971) and the other at Bicton 41ft (1971), but as they are not mentioned by Owen they must not have survived. The earliest published mention of the tree in cultivation in the British Isles is in an article of 1902 by the Earl of Annesley[10], which described many of the trees and shrubs that he was growing in his arboretum at Castlewellan in Co.Down. He described it as *"a very curious and graceful plant, having long slender pendulous branches. It is a very fast grower and does well here. Height 14ft."* Less than a decade later, it was recorded as being grown at Rostrevor House by Sir John Ross of Bladensburg[11]**.** Neither of these trees have survived, so the tree may be relatively short lived.

The tree flowers prolifically but not dramatically as the tiny green flowers are presented in panicles, like miniature bunches of grapes devoid of fruit. Or more precisely, as Metcalf describes: "*in many flowered terminal and axilliary much divided paniculate cymes up to 23cm long"*[1] (photo page 22)**.** When in full flower the trees seem to be enveloped in haze obscuring most of the foliage. It is not a suitable tree for tidy gardeners, as it starts shedding some of the earliest new spring leaves in early summer, followed over several weeks by the dead flower clusters, which thickly carpet the ground around in July (photo page 22), and after a short time there is a very protracted period during which it gradually sheds leaves, starting well before autumn. In mild winters it is not completely deciduous, with a few leaves clinging on until the following spring.

I'm not sure I would subscribe to the view of the Ribbonwood being a 'delightful tree', particularly as I have to clean up the mess it makes. Only one nursery listed it in the 2015 Plant Finder, so it is clearly not likely to be widely grown, but it should make a welcome addition to any woodland garden, or arboretum, where its subtle and understated charm would happily blend in.

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EUCALYPTUS NEWS

Judy Clark

This piece has been compiled using correspondence with John Purse as well as other sources. John had agreed to look at and correct what I wrote but sadly he was unable to do so. Errors are entirely my own. Readers are also referred to John's article about eucalypts and frost in Pentachondra 54, May 2015.

Eucalyptus gall wasp

In May this year member Kathy King, who lives in Surrey, asked if anyone could identify the cause of a horrible spotting on the leaves of a snow gum in her garden (photos page 23). John Purse identified the cause as the eucalyptus gall wasp, *Ophelimus maskelli*. He noted that it used to be a serious pest in southern Europe but is now controlled quite effectively there by a parasitoid that was originally released in Israel. After a spate of heavy occurrences in London and Kent, the problem seems to have become less frequent in the south of England, so John thought that maybe the parasitoid had now arrived in the UK.

Online advice from the RHS (www.rhs.org.uk/advice/profile?PID=496) describes the eucalyptus gall wasp as "*a minute black insect whose larvae develop inside raised galls that form on eucalyptus leaves ..... Females lay eggs on new eucalyptus foliage in spring, and the larvae develop within the leaves, although the raised galls do not become particularly obvious until the following spring, when the mature larvae pupate within the galls*".

While the galls are very unsightly the affected leaves eventually fall off naturally and the good news is, according to the RHS, that an infestation does not affect the long term health of infected trees. The RHS also notes that spraying with a systemic insecticide in spring may help, and advises removing fallen leaves in spring to reduce numbers of eggs and larvae and hence future numbers of gall wasps.

Eucalyptus leucoxylon

My garden is too small for gum trees, except perhaps the small shrubby Tasmanian endemic *Eucalyptus vernicosa* (varnished gum). But if I did have the space I would prefer to give it to eucalypts with coloured flowers, like *E. preissiana* and *Corymbia ficifolia* (syn. *Eucalyptus ficifolia*). Sadly, such eucalypts don't like frost and at best are considered marginal in the UK. So I was delighted when in 2014 John gave me a small plant of *E. leucoxylon* 'Magnet' to try out in my south coast garden.

I planted it out in the most sheltered spot I could find. Buds appeared for the first time in June this year, followed towards the end of July by more than a dozen deep pink flowers (photo back cover). John said that he would expect it to flower much more prolifically in future years provided it doesn't get knocked back in winter.

John had advised me that my plant was a dwarf form: the source of seed was a shrubby tree planted by the roadside in Katanning, Western Australia (photo page 22). But at the moment it doesn't look very dwarf, with the three somewhat spindly stems from the base already over 2m in height and little by the way of foliage lower down. I asked him if I should prune it.

The answer was no: "*I think the form of your plant will be mainly a consequence of our lower light levels and higher rainfall compared with Katanning. The lack of a lower canopy is probably down to low nutrition levels, which in turn reflect the competing vegetation. I wouldn't prune the plant at this stage. I suspect it will continue to branch and form a bush, unless a really cold winter gets it first.*"

Clearly the prognosis for my small tree is very much reliant on the winter to come. I have to hope it won't be too cold.

Corymbia citriodora (syn. Eucalyptus citriodora)

One hit on the APS stand at this year's RHS 'All About Plants' show (report page 40) was lemon-scented gum, *Corymbia citriodora*. Stephen Harding kindly donated a tray of small plants (which all went) and when I helped on the stand on the Sunday asking visitors to feel the roughish leaves (the juvenile leaves; mature leaves are smooth) and then sniff their lemon-scented fingers proved a good way of grabbing their attention.

I took a small plant home where it now lives outside my front door in a very large pot. According to John lemon-scented gum is very easy to grow provided it doesn't get a hint of frost. However, it doesn't like the low humidity of heated rooms either so in winter it needs to be removed to a frost-free greenhouse if cold nights beckon.

My mother had a well-grown lemon scented gum in her Melbourne garden. It had a most beautiful trunk, the bark smooth, mottled and mostly grey and coppery-pink. As a tree it can make 50m but fortunately it responds well to pruning so it can be kept as a bush. This has the added advantage of maintaining the lemon-rich juvenile foliage. If pot grown the use of containers that promote good root structure is advised.

It must be easy to grow from seed as I now have three more plants. I sowed the fine seed on the surface of the compost, watered it very gently, and set the pot in about a centimetre of water to ensure the compost stayed damp. Germination was noted after 30 days. But be warned, I am no eucalyptus expert and most probably there are better ways to do it.

Reference:

www.anbg.gov.au/gnp/trainees-2016/corymbia-citriodora.html

APS EVENTS 2016: REPORTS

Members' gardens, May 2015

Judy Clark

Haywards Heath: Gary and Maria Firth

I have to start this report with a confession. I was late getting to Gary and Maria's garden, so late that by the time I arrived everyone else had trundled off for lunch en route to Tim and Gill's. Because I was late I didn't spend as much time there as I would have liked (especially in the two greenhouses which house a large collection of tropical orchids, including some from Queensland) and I forgot to take notes or photos.

However, I think it would be quite a difficult garden to photograph





Chelsea Physic Garden

above
(not admiring)
Cordyline banksii

left
(admiring)
Macropiper excelsum



above: *Syzygium australe* at the centre of the display of Australian myrtles at Hampton Court Flower Show

below: contemplating plants in Tim and Gill Burr's greenhouse



adequately, at least for an amateur like me. Arriving, you walk up one side of the house, passing along a narrow path between plant filled borders, to get to the back where the bulk of the garden spreads out and slopes upwards. Partly for this reason and partly because it is densely planted with few open spots, it can't all be seen at once, so you never know what's going to be round the next corner.

An impressive range of plants is packed into what is a normal size suburban garden that also contains four greenhouses, several ponds and a neat container set-up for growing vegetables. For me the most interesting are the Plant Heritage National Collection of Myrtaceae (tribe Myrteae) and other trees and shrubs from Australasia and South America.

The Myrtaceae collection includes the understated genus *Lophomyrtus*, with specimens planted in the garden and also displayed in tubs as these plants need shelter in winter. Endemic to New Zealand, the genus comprises two species, L. *bullata* and L. *obcordata*) and their naturally occurring hybrid *L.* x *ralphii*. Cultivars of the latter come in a range of leaf colours, and including purple, chocolate, red and bronze-green. I have liked *Lophomyrtus* ever since I purchased, years ago, a small *L.* x *ralphii* cultivar; it was the tri-coloured leaves that attracted me: green with cream margins and pinky-red markings.

The garden also contains Australian members of the Myrtaceae. Some are grown outside, including species of *Leptospermum*, *Eucalyptus* and *Callistemon.* Species that won't survive outside are grown in pots, for example *Backhousia citriodora* (lemon myrtle) with its lemon-scented leaves that can be used to make tea. Gary has been very successful growing the very borderline *Syzygium australe* (brush cherry), not only flowering but also fruiting it. A large specimen formed the centrepiece of the display of Australian myrtles at this year's RHS Hampton Court Palace Flower Show for which Gary and Maria were awarded a Silver-Gilt medal (photo opposite).

Periodically Gary and Maria open their garden for Plant Heritage and I for one hope to get there again soon.

Pulborough: Tim and Gillian Burr

Next it was off to Tim and Gill Burr's place near Pulborough where I did manage to catch up with the rest of the group, and we had plenty of time to look round their garden and especially their amazing greenhouse. It is enormous - Tim and Gill don't do things by halves - and planted up with super specimens of mainly West Australian species (photo opposite).

What particularly took my fancy? A patch of kangaroo paw (*Anigozanthus flavidus*) in full flower, a plant I also grow, but mine doesn't usually flower till July as it is outside. I suspect Pulborough gets too much frost for this species to succeed outside for Tim and Gill. *Templetonia retusa* (Cockies Tongues) was really flourishing: seeing it drove home to me just how much this is really not a plant to grow outside in the UK. Mine is growing in the warmest part of my garden but it remains a miserable specimen. Yes, it has flowered, but it doesn't thrive. And I am envious that they can grow

splendid plants of native hibiscus (*Alyogyne hakeifolia*), M*elaleuca pulchella* (claw flower) and *Kennedia coccinea* (coral vine); the latter two were both in flower.

Boronia crenulata (aniseed boronia), I thought a pretty thing with its dainty pink flowers. I saw it again recently, in a garden in Armidale (New South Wales), and I was assured that it takes their frosty weather. So I was surprised when I did some research and found that *B. crenulata* is native to south west Western Australia; I would have thought it would be likely to be frost tender. But I would also be very surprised if there was an identification mix-up at the Australian end (one explanation for the discrepancy) so I intend to have a go with it in my garden.

I'm afraid I didn't take much notice of the undoubtedly important technical information about the greenhouse as I was too busy admiring the plants. The afternoon finished with a leisurely afternoon tea taken in style, in the sun on the patio at the back of the house. Delicious home-made cakes and lots of plant talk; what more could one want?

APS at Wisley

Jeremy Spon

In June this year, the RHS staged a two day show at Wisley aimed at promoting specialist plant societies, called 'All About Plants'. The APS had a stand, shared with the Hebe Society, showing a display of plants grown by members (photo page 15). Our aim was to take advantage of this opportunity to raise the profile of the Society, promote the growing of Australasian plants, and recruit some new members.

Stands were set up in a specially erected marquee on the Friday, with the show being open to visitors to the garden (for no extra charge) on the Saturday and Sunday (18th and 19th). Quite a few other societies were present, and it was generally agreed that the event was worth attending, although with the marquee rather tucked away in a far corner of the garden, the number of people who actually ventured in was a little disappointing, given how busy the garden was overall.

I helped man the stand on the Sunday, and it was interesting talking to visitors, and trying to answer queries about the plants displayed. Some of these plants were very unusual, and included *Banksia media*, *Petrophile sessilis*, *Knightia excelsa* and several new hybrids from APS member Mona Abboud's National Colllection of Corokia. Their unfamiliar nature provoked a good deal of curiosity, although as so often happens, some people walked straight past without a second look. I thought the display was excellent, but some people just look for 'a riot of colour' I suppose! We had a few queries about membership, and one or two new members did join after the show, so although it was a lot of hard work, it was probably worth doing.

Thanks must go especially to Gary and Maria Firth who organised and set up the display, and to everyone who loaned plants.

Is transport a problem?

You'd like to attend an event but don't drive? Contact the organiser to see if a lift can be organised.

Southern meeting August 2016

Greg Plenty

The day dawned pleasant and bright as Laura and I set off by train and bus for the trip from our place on the Sussex coast for Chelsea Physic Garden very near the bank of the River Thames. Our transport thankfully went according to plan and we arrived in good time. The bus dropped us off and we made our way round the corner to the garden entrance. It was about ten minutes before opening time yet there was just one other person standing at the gate. After a minute or two we exchanged pleasantries and it turned out that the lady was the Hannah, who gardens for Mona Abboud, the APS member whose garden we were due to visit in the afternoon. At least we now knew we were at the right place and at the right time!

Over the next few minutes the familiar faces of other APS members rolled up. Most were from the south east, but there was one member from Devon and our chairman and his partner had come all the way from north Wales, albeit with an overnight stop close by. We were a group of about a dozen and we had hoped for a guided tour round parts of the garden but at the last minute this was not to be so we made our own way over to the part of the garden where we knew antipodean plants to be.

Until 2012 we had a large garden in West Yorkshire where plants were frozen in the winter and blasted by the wind all year round, so whilst we grew lots of Australasians they had to be of a certain type. Many were written off in December 2010 by three days or more below- 15ºC. Now we are in coastal Sussex, and with a much smaller but milder garden our growing has changed to a more exotic looking theme with plants that must really 'pay the rent'. Therefore, whilst most members were looking down at the smaller shrubs and herbaceous species I was staring up at the tropical form of a very old *Cordyline banksii* from South Island, New Zealand (photo page 37). This is what I wanted in my garden! I'd collected a few rather immature seeds in New Zealand earlier this year but they had failed to germinate.

Meanwhile most members were at most were looking at plants like *Dodonea viscosa*, *Acacia paradoxa*, *Solanum aviculare* and some Australian nicotianas. Also much admired was a large plant of the New Zealand endemic *Macropiper excelsum*, its healthy growth a sign of the mild microclimate in the garden (photo page 37).

After a while we moved through the fern house where there were various *Dicksonia* and *Cyathea* species from Australia and New Zealand. Very tempting for me to obtain but completely unrealistic for anybody inland to attempt, except *Dicksonia antarctica* which does pretty well as long as it is protected against drought and severe frost. Another indication of the lack of frost at Chelsea is the large old *Cyathea medullaris*, the so called black tree fern, from New Zealand, that like most of us hates the cold.

From there we made our way over to the greenhouses. I'd almost describe them as rather quaint and old-fashioned, nicely in keeping with the rest of the garden. I was drawn by the weird and wonderful Canary Island

plants in one section and can't actually remember seeing any Australasian stuff under glass. Our president was swiftly chased out of a private greenhouse by the garden staff where he was desperate to get closer to a nice plant of the rare *Welwitschia mirabilis* from the deserts of West Africa.

Time was pressing and we were getting hungry, but rather than stopping for refreshments we were persuaded to march to the nearest underground station which took us all to Finsbury Park. This was followed by a bus ride and a short walk to Mona's house. There she was to greet us, with our 'rumbling tums', but she had the solution to our problems. On her table was an excellent spread so we indulged ourselves before going into the garden.

Mona's garden is very long with an excellent aspect and can be seen quite well from the house. However, to see her amazing range of wonderfully grown plants from all parts of the world, we needed to get right into the garden. It soon became obvious why she was awarded 'Best Back Garden' in 2015 by the London Gardens Society. Soon the visitors split up into small groups with intense discussions going on around individual plants. There were many Australians to see, in particular her national collection of *Corokia*. (Go to monasgarden.co.uk/ for a list of plants and photographs of many of them, as well as of the garden.)

Time was getting on so reluctantly we made our farewells and went our separate ways. Everyone seemed to enjoy the day. We saw two extremely interesting gardens and we managed to catch up with lots of friends and exchanged lots of ideas. Now we are looking forward to our next 'meet'!

Thanks to all who attended to make it a great day and particular thanks to Mona Abboud for being such a great host!



SOPHORA HOWINSULA

Jeff Irons

This article was written about ten years ago but not published at the time. Now, however, we have run out of Sophora howinsula seed and so far a supplier has not been located. Do any members who grew it still have plants, and if so is there anyone who could supply us with seed?

Two of the most asked for species on the 2005 APS seedlist were *Sophora chathamica* and *S. howinsula*. The former poses no problems, but the latter is surrounded by mystery. Unless you have one of Graham Hutchins' early descriptive catalogues or Pentachondra issue 15 of you will find it difficult, if not impossible to find out anything about it from British literature.

In fact there are four different plants grown under this name. Incidentally, if you haven't twigged it already, *howinsula* is a latinization of howe and island. In other words it refers to the fact that the species is endemic to Lord Howe Island which lies between Australia and New Zealand at about the same latitude as Sydney.

The first plant is a 10m high tree that grows on Lord Howe island between 50 and 250m above sea level. It does not concern us, because APS seed is from the others. One of them was

originally called *S. tetraptera* 'Otari Gnome'. It differs from the first in that it is only about 1.3m high and has 3 or 4 branches arising from a woody rootstock called a lignotuber. The tree form plants usually have leaves with rounded ends. This one has leaves with a little nick at their ends (retuse). It is believed to have travelled from Lord Howe Island to New Zealand around 1913. Another small stock travelled from Lord Howe Island to New Zealand in 1970. Its leaves are apiculate. Not all plants of this stock have a lignotuber and such seedlings are upright, not multistemmed. So we have:

1. a tree form with rounded or slightly retuse leaves
2. a multistemmed form with a lignotuber and retuse leaves
3 a multistemmed form with a lignotuber and apiculate leaves
4. a multistemmed form without a lignotuber and apiculate leaves.

In 2000 a contribution to Curtis' Botanical magazine attempted to refute the belief that Sophora 'Otari Gnome' is a form of *S. howinsula*, but the authors had not carried out a chemical and physical comparison of the two plants; indeed they had not even seen 'Gnome'. So for the moment the belief stands. If you got seed of *S. howinsula* from the 2005 seed list, do keep us up to date on the progress of your plants. They should flower after 5 or 6 years and in suitable conditions will live to at least 19 years, the age of my healthy and vigorous older specimen.

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SMELLY ACACIAS AND CLIMATE

John Gibson

This article is reprinted from the Australian Native Plants Society (Australia) Acacia Study Group Newsletter number 133 (June 2016) with kind permission of the author, owner of Plants of Tasmania Nursery in Hobart.

About 10 years ago there was a bit of discussion in the Acacia Study Group newsletters (97 and 98) about the sulfurous smell that was released when many acacias were damaged by disturbing the roots or cutting a branch. A few years later, after a long career as chemist and before I joined the ASG, I bought a native plant nursery in Hobart. I thought that I had left the world of test tubes, complex instruments and noxious chemicals for a simpler world of growing plants and selling them to an appreciative public.

One of the first things I noticed in the nursery, however, was the intriguing smell produced by acacias as young tubestock. I eventually took some samples in to the University of Tasmania to identify the smelly gas. There, a young acacia seedling was removed from its pot and placed in a plastic bag. After a few minutes a sample of the air in the bag was

removed and placed in a gas chromatograph mass spectrometer set-up. The instrument clearly showed that the compound present was carbonyl sulphide (COS), a gas with the same general structure as carbon dioxide (CO_2), but with one of the oxygens replaced by a sulfur atom. I tested quite a few Tasmanian acacias, and all showed the presence of COS. In contrast, a few other non-acacia members of the Fabaceae and eucalypts showed no COS production.

It turned out that this observation was not entirely new in the scientific world. The COS is thought to be released due to the breakdown of an unusual amino acid, djenkolic acid, in roots, stems and seeds of *Acacia*, *Paraserianthes*, and a few other legumes. In the earlier ASG newsletter articles there was a suggestion that the bacteria in the root nodules were responsible for the smell, but it is actually the acacia plant itself. This in itself is interesting, as COS is a bactericide. Therefore, acacias are in effect killing off the bacteria that help them through nitrogen fixation. Weird!

Why is this observation of any interest, and why the second part of the title of this note? Well, COS is an important gas in the atmosphere, where it is a precursor of sulfate aerosols (very fine particles) that reflect light back out into space. Through this they have a cooling effect on the atmosphere, similar to that seen after volcanic eruptions. COS also plays a role in stratospheric ozone chemistry. The global cycle of COS is poorly known, though in general it is thought that the oceans are the main source, and that land areas are the main sink (COS is taken up by plants that mistake it for CO_2). However, the numbers never seem to add up completely. Perhaps this is because of a major, overlooked source, namely acacias. Perhaps Australia is a major COS source area, but no-one has ever noticed it because they haven't looked closely enough.

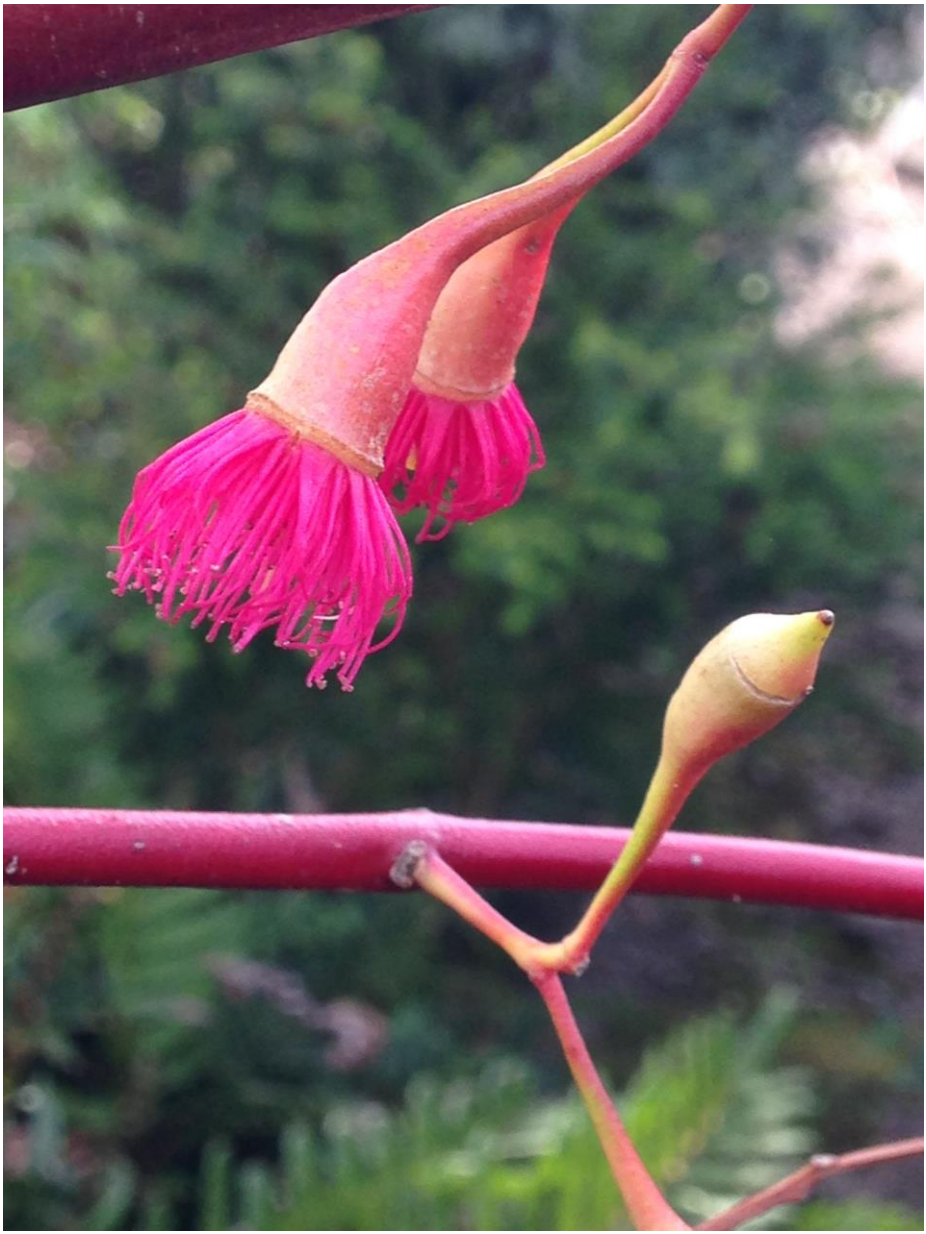
One of the questions that needs to be answered is how widespread COS production is within the *Acacia* genus. It seems to be the case for all the Tasmanian wattles, at least if they are grown in standard potting mix. However we only have a few percent of all *Acacia* species in the state, and for most other species COS production (or non-production) has not been recorded. So, if you have noted a sulphurous smell around young acacias, especially on disturbing the roots, I'd like to hear about it. Please send an email to detailing the species to john@potn.com.au, and I'll collate the data and report back.

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***Eucalyptus leucoxylon* flowering in Hastings**