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***Banksia integrifolia* subsp. *integrifolia* in north Wales**

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

Seed challenge success

It can be done! Congratulations to Christine Yeo who has successfully germinated and grown *Siegfriedia darwinioides*, one of the two seed challenge species. There is still *Ricinocarpus pinifolius* to conquer; has anyone done so yet?

AGM 2018

November 10th was a dull day weatherwise, but there was nothing dull about the 2018 APS annual general meeting and get-together, held as usual at Lullingstone Castle near Eynsford in Kent. To begin, the meeting opened with the surprise appearance of a birthday cake, complete with 30 candles, to celebrate our 30th anniversary year.

APS business included reports from officers (all of whom were re-elected), clarification of the society's structure and its implications, consideration of our capacity to take on new projects, and planning of events for 2019. (The full minutes will be published on the website in due course, and in the May 2019 issue of Pentachondra.)

Business over, it was time for a delicious lunch, including the birthday cake! Lunchtime always offers an opportunity to catch up with old friends and make new ones, and to swap and buy usual and unusual Australasian plants from each other.

The day finished with something that makes APS AGM's really special; Tom Hart Dyke's inimitable tour of his World Garden and various undercover areas including the cactus house, orchid house and Moroccan Blue Room. Tom is constantly adding rare and unusual species to his plant collections and there is always something new to see, even for regular AGM attendees - an amazing cactus garden in a boat anyone?

The APS is exceptionally lucky to be able to hold AGMs at Lullingstone Castle. A big thank you to Tom and his mother Sarah for their wonderful hospitality.

Grevillea collection

Recently Plant Heritage asked if there was anyone out there who might be able to take on a National Collection of *Grevillea*, commonly known as spider-flowers. This opportunity was discussed at the AGM, and it was decided to consider forming an Australasian Plant Society dispersed collection of the genus.

A dispersed collection is one where the plants are held in a number of gardens rather than just one. This is appropriate for *Grevillea* as there are so many different ones it would take a very large garden indeed to accommodate them all! In addition, more demanding species are more likely to find a suitable home, while having the same plants in different locations safeguards against losses, especially of those that are rare in cultivation.

The first step in the process of forming a dispersed collection is to find out how many of the different grevilleas - species, varieties and cultivars - are grown by members. What we know so far is that the twenty three who responded to our chairman's recent email between them grow over 100 different *Grevillea* taxa.

If you missed that email it's not too late to respond. You can find the survey on the APS website - click on 'Grevilleas in cultivation'. Even if you grow only one species or cultivar that information is useful. Completing the survey does not commit you to anything, so even if you

would not want to join in we'd be interested to know what you grow.

Events: plans for 2019

Plans for 2019 are coming along well but dates have yet to be finalised. Detailed information will be posted on the APS website as soon as it is available, and, for events later in the year, published in the May 2019 issue of Pentachondra. In advance of each event a reminder is sent out to all members who have provided email addresses, so do watch out for these. Occasionally a special opportunity comes up at short notice, another reason for keeping an eye on your inbox.

A visit to Chester Zoo is planned for March or early April. Chester Zoo holds five Plant Heritage National Plant Collections, all of which we will be able to see, but there will be special emphasis on the National Collection of *Nepenthes*, commonly known as pitcher plants. Many *Nepenthes* species come from New Guinea, New Caledonia and Australia as well as being found throughout Indonesia, Malaysia, India and Madagascar. The zoo's collection is made up of over 500 individual plants and contains both species and hybrids. We will learn about some of the adaptations of these incredible carnivores and what the zoo is doing to conserve them. The visit to the horticultural collections will be free to APS members but those wishing to visit the animal collections will have to pay the zoo's standard entry fee.

At least two visits to members' gardens are planned. First, to Doug and Linda Smith's Hampshire garden which holds National Collections of *Eucalyptus* and *Podocarpus* & related Podocarpaceae. On the same day we hope to visit the recently relocated County Park Nursery. The provisional date for this visit is Sunday 19th May.

Second, to Beth and Tim Smith's maritime garden in a virtually frost free site on the north Devon coast. They can grow southern hemisphere plants that would struggle in most UK gardens. RHS Rosemoor is not far away, and Jonathan Webster and his team have kindly offered to host APS members. It is likely that this visit will be held over two days, probably in early to mid September.

We also hope to have an APS stand at the Malvern Autumn Show on the 28th - 29th September. Further details will be available once our application for a stand has been accepted.

For more information or to book for any of these events please contact events organisers Gary and Maria Firth (meetings@anzplantsoc.org.uk). If you do not use email and wish to be informed of events as soon as the details are known please contact Pentachondra editor Judy Clark (contact details inside the back cover).

Subscriptions are due!

Subscriptions are due on **1st January 2019**. A renewal form is enclosed with this issue for those who pay by cheque. Please 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). Annual subscriptions are £15 for members resident in the UK and £18 for members resident elsewhere.

If you pay by standing order or PayPal, or you have already paid for 2019, you do not need to anything, **unless** any of your details have changed. If so, please contact Jeremy directly.

2019 Seedlist

The plan is that the 2019 seedlist will be ready earlier than the 2018 list, probably in early March. As soon as the list is finalised it will be posted on the website so members who want to get an early start won't need to wait until the printed list is available with the May Pentachondra. Ordering early also helps Janet our seed manager. If orders come all at once it inevitably means that there will be delays in sending them out.

In 2018 not only did Janet receive many orders at the same time but she was not well at the time. There were also problems with orders from suppliers being delayed by customs. So some orders were sent out later than we would have liked. Hopefully starting earlier will mean we avoid any such problems in 2019.

It's not too late to put in requests for species that you would like included on the seedlist. We will try our best to find a supplier but it is an unfortunate fact that many species that we would like to obtain, for example from higher altitude regions of Victoria and New South Wales, are rarely if ever offered. Moreover it seems that growing from seed is not the main way that Australian gardeners get hold of native plants for their gardens; rather, they tend to propagate from cuttings. So they don't need seed as much as we do. And some seeds are hard to collect, *Correa* seeds for example, because they are shed very quickly once they are mature.

It's also not too late to donate seed to the seedlist. All donors are entitled to an extra packet of seed for each species donated.

Pentachondra contributions

As always, many thanks to all those who have taken the time to contribute to this issue of our journal. Our mantra is 'by members, for members' and it wouldn't be what it is without your input.

All that's required is that articles have some connection with Australasian plants and their allies. You could tell us about your own garden, where it is, what the soil and climate are like, and the successes, and otherwise, you have had growing Australasian plants. Or maybe you have a favourite plant that you would like to tell others about? Or perhaps you could recommend a book, or a garden or nursery that you enjoyed visiting? If you have an idea but are not sure about writing about it you can always contact the editor, Judy Clark, to discuss it.

The deadline for the next issue is **31st March 2019**. 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.



WE CAN DO BETTER THAN THAT!

Jan Michalak

The following article was published in the August edition of *Trilepidea*, the monthly journal of the New Zealand Plant Conservation Network (NZPCN).

New Zealand flora overseas

On a number of occasions some years ago, we featured images of New Zealand native plants growing in overseas countries. Back in late May and early June, I was travelling in Europe and had separate one-week stays in Biarritz (France) and Isle of Wight (UK). In travelling around those areas, I saw quite a few examples of two native plants, cabbage trees (Cordyline australis) and flax (Phormium tenax)

and I thought it was worth repeating images of these species in these 'foreign lands'.

One thing that was very obvious about the numerous cabbage trees on the Isle of Wight was how prolifically they were flowering. Given the summer that UK has had, it would seem that Māori tradition regarding the flowering of cabbage trees has been retained into their Northern Hemisphere home.

Any time anyone is overseas and spots a New Zealand native plant, photograph it and send a copy to us (info@nzpcn.org.nz) with the location and the name of the photographer; it would be good to increase the species list, surely more than flax and cabbage tree have been exported!

Following this a number of travelling Kiwis sent in their own pictures, mainly of flax and cabbage trees.

My first thought was that a much more varied and interesting selection of New Zealand plants could easily be revealed to NZPCN members. My second was that this was an invitation to APS members to introduce themselves by sending their own photos to *Trilepidea*.

My idea is that we could put together an article with perhaps half a dozen pictures from separate gardens, accompanied by an explanation of various collections, and perhaps the collectors. If those of you who grow more out-of-the-way examples of New Zealand plants would like to take part, a single photo with the name of the owner and just a little explanation (sent to me at jsmichalak@btinternet.com) would do the job. I'll turn it into an article, and send it to Wellington by way of introducing ourselves as New Zealand plant enthusiasts.

ANPSA BIENNIAL CONFERENCE: BLOOMING BIODIVERSITY

Every two years the ANPSA (Australian Native Plants Society (Australia) holds a conference hosted by one of its member societies. The 2019 conference will be held in Albany, Western Australia, from 29 September to 4 October, with the theme 'Blooming Diversity', and will be hosted by members of the Wildflower Society of Western Australia (WSWA).

The conference programme is yet to be finalised but as with all ANPSA conferences it will include field trips to gardens and natural areas, and lectures by experts in their field. The two key speakers have already been signed up: Stephen Hopper, Professor of Biodiversity at the University of Western Australia, and Gregory Keighery who has undertaken biological surveys throughout most of WA and has collected more than 30,000 plant specimens for the WA Herbarium. The day excursions will take in native flora in bushland settings as well as gardens and landscaped areas. Equally importantly, you will get to meet native plant enthusiasts and growers from all over Australia.

Registrations to attend 'Blooming Biodiversity' will open in January 2019 but you can register your interest via the 2019 Conference Website. I found it by going to the WSWA website (www.wildflowersocietywa.org.au/) and clicking on 'Albany 2019'. You will need to join one of the ANPSA regional groups to attend the conference. Access their websites via the ANPSA website (anpsa.org.au/index.html); click on 'Contacts'.

I went to the conference in Tasmania in January 2018 and it was absolutely brilliant (see report in Pentachondra number 60, May 2018, p35). I am looking forward to next September in Albany!



AUSTRALASIAN TREES IN GREATER LONDON

Owen Johnson

London and the Scilly Isles, though at opposite sides of England, share a microclimate characterised by very mild winters and dry, sunny summers, making them the most promising parts of Britain in which to grow a broad range of Australasian trees and shrubs. (On the Scillies, the free-draining acidic soils are also ideal; London's soils are often heavy and fertile, but there is enough variety to suit most subjects somewhere.) The Scillies owe their mild winters to their situation in the open Atlantic, while London owes them to the effects of the urban heat island and is more vulnerable to sudden incursions of cold continental air; however, London's greater summer warmth is a significant factor in allowing many tender trees to grow vigorously enough to be able to withstand the odd spell of frost or snow.

The tree collection at Tresco Abbey on the Scillies is celebrated and easy to reconnoitre. In London, remarkable southern hemisphere trees are scattered in private gardens and public parks across 1500 km^2, and are continually being discovered. Five years ago in *Pentachondra* I mentioned the Queensland silky-oak *Grevillea robusta* in front of Rotherhithe Police Station, 12m tall by 2013, but the capital has since sprung plenty more surprises.

I had long hoped that somewhere in London we would find an example of that subtropical shibboleth, the Norfolk Island Pine *Araucaria heterophylla*, to rival the many young ones on the Scillies. In 2017, we found two, with John Medhurst reporting a tree now 9m tall and flourishing under the south-facing wall of Lyly House on the Lawson Estate in Newington, while Sandra Bell spotted another the same size in the tiny front garden of 24 Star Road, Fulham (photo page 19). Both grow in deprived parts of the city (rather than in areas with large and ambitiously stocked gardens) and are presumably evicted pot-plants.

Another shock in 2018 was to find the Queensland bottle tree *Brachychiton rupestris* growing well in the Australian garden at Capel Manor, Enfield (photo page 19); planted out in the reconstruction of a Chelsea show garden in 2011, its 'bottle' trunk is already 25cm thick. *B. populneus* in the same garden was about the same height, but showing more significant frost-damage. Growing within earshot of the M25, these trees stand almost outside the winter influence of London's heat island.

Acacia dealbata is a popular and successful flowering tree in gardens across London. The blackwood, *A. melanoxylon*, would need a more humid climate to grow really big, but a happy tree in Lewisham's Old Mill Gardens was 13m tall by 2013. Another is in the Lewisham Community Garden in Besson Street, New Cross, a site planted in the 1990s with an ambitious range of borderline plants; other interesting *Acacia* here include trees of *A. pataczekii* and *A. riceana*. *A. longifolia* is doing well in a few public gardens in the City of Westminster, such as the Hanover Square garden where it was 5.5m tall in 2017. The lovely *A.*

obliquinervia has been planted as a tall-standard street tree around Herne Hill but I am not sure that any survive. A good young *A. retinodes* was 6m tall in a front garden in The Broadway, Hanwell, in 2012. Rather conspicuous for its absence in London gardens, as far as we know so far, is the glamorous but less hardy *A. baileyana*.

The taller *Eucalyptus* species prefer a wetter climate than London's. The blue gum *E. globulus*, rather tender but quite widely planted, had reached 25m by 2016 near the bandstand in Hyde Park. The Old Mill Gardens at Lewisham have one of the best *E. neglecta*, and there are good trees of the uncommon ribbon gum *E. viminalis* in the Norman Leddy Memorial Garden and Inwood Park (Hounslow).

Dicksonia antarctica is now planted everywhere, and does seem likelier to thrive in London, despite summer droughts, than across most of England. The New Zealand *Cyathea medularis* is more delicate, but had a trunk 3m tall in the well-sheltered medicinal garden at William Harvey House, Regent's Park, in 2017.

The majority of New Zealand trees would be expected to struggle in London's often dry summers. *Hoheria* is an interesting case, with the larger-leaved species (*H. glabrata*, *H. lyallii* and *H. populneus*) confined as big trees to the cooler, wetter parts of Britain. The smaller-leaved *H. sexstylosa* is tougher, but a 7m street tree in Vauxhall Grove was looking very sorry indeed in the extreme early summer drought of 2018. Around the corner however, tucked under a white-painted south-facing terrace wall in the front yard of 30 Fentiman Road, Kennington, a 10m tree of *H. angustifolia* (with the smallest leaves) was luxuriating on the same day – and is only pipped for girth by the inevitable Tresco specimen. *H. angustifolia* also flourishes as a street tree in Breakspears Road, Brockley. Next door to this, the garden of New Zealander James Harris features an 11m *Plagianthus regius* and trees of *Pseudopanax chathamicus* from the Chatham Islands, to 7m tall.

Other unexpected street trees of recent planting are *Callistemon citrinus* in Moreton Street, Pimlico, and three *Neopanax arboreus* along Langley Lane, Vauxhall. In the central garden of Bonnington Square nearby – a hotspot for New Zealand plantings - *Pseudopanax ferox* has reached 5m.

Dodonaea viscosa is another of the species I have seen reaching tree-size only on the Scillies and in Greater London – with a 4.5m plant (not the usual 'Purpurea' form) in a small front garden in Dalston in 2018. *Pittosporum eugenioides* 'Variegatum', gorgeous in the woodland gardens of Cornwall, does unexpectedly well in London, with trees to 6m in several front gardens. The kowhai *Sophora tetraptera* also flourishes, reaching 9m at Elthorne Park in Upper Holloway and 8m at Sayes Court Park in Deptford, the site of John Evelyn's garden in the 17th century.

However, plenty of missed opportunities may spring to mind; Tresco has dozens of well-grown Australasian trees which I've yet to see in London. Has anyone here experimented with the New Zealand Christmas tree *Metrosideros excelsa*, I wonder? *Banksia* seem largely absent from the capital, though *B. integrifolia* subsp. *compar* had reached 5m at the Chelsea Physic Garden in 2016. The she-oaks *Casuarina cunninghamiana* and *C. glauca* were growing splendidly as young trees in the Buckingham Palace garden on my last visit in 2010, suggesting what this genus might achieve in the city.

Dr Owen Johnson is a dendrologist and conservationist. He is the Registrar for the Tree Register (www.treeregister.org/) and the author of several books including the *Collins Tree Guide*. If you spot any unusually large, or just unusual, trees of Australasian origin in Greater London, or anywhere else for that matter, you can report your find to The Tree Register at records@treeregister.org.

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THE GENUS RICHEA

© Gary Dunlop

The genus *Richea* was established in 1810 by Robert Brown[1], in his *Prodomus Florae Novae Hollandiae*, in which he also established the new family Epacridaceae in which to place it[2]. He also established and placed several other new genera in this new family, which has recently been subsumed into the Ericaceae.

According to Wikipedia *Richea* are almost all endemic to Australia, with nine species in Tasmania and two on the Australian mainland[3]. Tasmania also has one naturally occurring hybrid, *R.* x *curtisiae*, a cross between *R. pandanifolia* and *R. scoparia*, which was first described as a species as recently as 1971[4]. That increased the number of endemic species in Tasmania to ten. .

The Plant List[5] has a rather longer list of names but as the genus has not been formally reviewed most plants listed are given an 'unresolved' status. Several are recorded as synonyms and belong to the genus *Cassipourea*, largely found across central Africa. Only one species, *R. obovata* from Madagascar, was recently discovered to have been reclassified from another genus, in 1891[6] and is accepted with a medium (**) confidence rating. The reclassification was done by the self-taught, German, amateur botanist Otto Kunze, who took it upon himself to reclassify a significant number of plants. His work was frowned upon and initially largely ignored by conventional, professional botanists, though over the years more and more of his proposed reclassifications have come to be accepted.

There are unlikely to be any changes made to the Australian species since a taxonomic revision was published in 2000[7]. This confirmed the status of most of the then recognised species, added one new species *R. alpina* Menadue, and recognised a new subspecies, *R. pandanifolia* subsp. *ramosa. R. angustifolia* B.L.Burtt was reduced to a synonym for *R. scoparia.* The paper excluded *R.* x *curtisiae* but it is not clear why from the abstract.

The two species from the Australian mainland are *R. continentis* and *R. victoriana*, neither of which seem to have ever been introduced into cultivation in the British Isles. The ten Tasmanian species are *R. acerosa, R. alpina*, *R.* x *curtisiae*, *R. dracophylla*, *R. gunnii*, *R. milliganii*, *R. pandanifolia*, *R. procera*, *R. scoparia* and *R. sprengelioides*. All are illustrated in Tasmania's Natural Flora[8]. Alternatively, an internet search should turn up images of probably all species, including *R. alpina* which has quite a plump deep red flower-head. Most species grow in alpine or sub-alpine habitats and are small or dwarf shrubs, with only one species, *R. pandanifolia* reaching tree like proportions, up to about 10m, though taking many decades to do so.

Only some of the Tasmanian species seem to have been introduced into cultivation in the British Isles, and few of them seem to have survived for long. The first one that I can find a reference to is in 1841, in the Botanical

Magazine[9], when *R. sprengelioides* was illustrated from a plant which was growing at RBG Edinburgh, and which was raised from seed sent in 1834 by a Mr Ward.

The second species to be introduced into cultivation was mentioned almost a century later in 1935, when a plant of *R. milliganii* was shown at an RHS monthly show on 10th December, by Colonel Messel who continued to develop the garden at Nymans begun by his late father. It was raised from seed collected by Harold Comber, the son of the head gardener at Nymans, during his expedition to Tasmania in 1930[10, 11].

A third species, *R. scoparia*, was illustrated and described in tab. 9632 of the Botanical Magazine in 1941[12]. In two footnotes, in this entry by BL Burrt, he named two further species from herbarium specimens at Kew, *R. continentis* and *R. angustifolia*, but without descriptions. It is curious that he did not note the similarity of the latter to the live plant being illustrated, though the herbarium specimen may have been a poor one. The material for the illustration was supplied by Colonel Clark of Borde Hill, and again the plant had been raised from seed collected by Harold Comber. Colonel Clark exhibited the plant at a RHS monthly show in 1942 where it was given an Award of Merit[13]. The plant was subsequently exhibited at the RHS Chelsea show in 1949 and was illustrated in the RHS Journal[14]. It was the white flowered form of the species, which is the most common colour form.

In the 1950s an orange flowered form of *R. scoparia* was introduced from Mount Wellington in Tasmania by Talbot de Malahide, who owned land there as well as his estate in Ireland, north of Dublin. That is likely to be the source of the orange form growing at Glasnevin Botanic garden in Dublin, mentioned by Krũssman[15].

R. dracophylla was first raised and grown at Kew, in the Australian House, as it was deemed not to be very hardy[16]. It flowered in 1965 and was illustrated in the Botanical Magazine[17]. In 1985 *R. dracophylla* grown by James Platt was mentioned by Roy Lancaster in an article about his visit to Platt's garden; the young plant was illustrated growing amongst a variety of other plants[18].

In 2006 or 2007, I briefly visited Jeff Irons on my way to the ferry to return home, and was surprised to see that he was growing *R. pandanifolia* in a large tub. The leaves were probably about half size, the plant was not very tall, and it was probably just starting to develop a trunk. It can grow to between 2 and 10m tall with leaves over 1m long but is slow growing and is considered suitable for growing in tubs in Tasmania. I think Jeff subsequently gave this plant to Dr Keith Lever of Aberconway Nursery. There are actually two subspecies of *R. pandanifolia*: subsp. *pandanifolia* which forms a tall un-branched trunk with persistent dead leaves clinging to it, and subsp. *ramulosa* which branches but only reaches about 4m tall and is found in the south west of Tasmania though only growing beside rivers. Owen Johnson[19] records that *R. pandanifolia* subsp. *ramulosa* is in cultivation in the British Isles as a young plant but without further details. Jeff's plant is likely to be the basic species, as is the Kew plant mentioned below.

In 2014 a press release was published on the Kew website[20] stating that *R. dracophylla*, also known as the pineapple candleheath or dragon leaf richea, had flowered at Wakehurst Place, having been raised from seed collected in 2008. It was noted that it is extremely rare in cultivation because it

below
Richea dracophylla
right
Richea gunnii







Richea dracophylla

Developing flower bud, which opens with white flowers.







Richea scoparia

above left:
Showing a mature flower, a half developed flower and an immature flower. The flower first opens white with a yellow flush, maturing through pink to orange.

above right
With some of the capsules brushed off leaving only the functional parts of the flower

left
Well developed seed pods with a few dead flower capsules

is notoriously difficult to propagate. However, Tasmania's Natural Flora describes it as "*one of the easier Richea spp. to grow*"[9]. At the same time seed of *R. milliganii* and *R pandanifolia* were also collected for the Millennium Seed Bank and plants of these two species have also been successfully raised, though have not yet (January 2017) flowered.

R. dracophylla (photos page 9) was the first richea that I acquired. I obtained it in 1991 from the late Graham Hutchins of County Park Nursery, who grew an impressive collection of Australasian plants. My new garden was still in its infancy, and I was still clearing areas and extending it, a process which lasted over 15 years, so new plants had to largely fend for themselves once planted. Unfortunately this first richea acquisition did not survive. Four years later, I obtained *R. scoparia* from Mark Filan and the following year I obtained *R. milliganii* from him. Whilst the former fortunately survived the latter did not. After 20 years, the tallest branch on my *R. scoparia* has reached 2m high with several others about 1.5m high, and with a similar overall width, though it was planted close to a rock face and is surrounded by several other shrubs, mostly from New Zealand. Despite the cramped growing conditions, it now flowers well and regularly.

On the visit to Jeff when I saw *R. pandanifolia* in a pot, Jeff gave me some small seedlings of *R.* x *curtisiae*, which he had recently raised from seed; several for myself, and the rest to be divided between Mount Stewart and Rowallane gardens, which I duly did. One of my plants first flowered in 2011, but seemed no different in growth and leaf than *R. scoparia*. Jeff later told me that he had doubts that the seedlings were *R.* x *curtisiae* The illustration of a young plant in Tasmania's Natural Flora would seem to confirm this, as it has denser and broader foliage, even as an apparently young plant. My plant still looks no different to a couple of other young forms of *R. scoparia* that I grow, so it clearly is just the red flowered form of that species.

I finally identified a plant I had previously noticed at Mount Stewart several times as being *R. dracophylla*, after briefly considering it to possibly be *R.* x *curtisiae* based on a photo that I took in 2015, with the brown remnants of the previous year's flowers still persisting. On discovering that I had photographed it in 2014 when several flower buds were starting to develop, that eliminated my first tentative identification and only left the one possible identification. Unfortunately I did not go back a few weeks later to photograph it when the white flowers had made their appearance. The plant at Mount Stewart is over 2m tall though it can reach 5m in the wild. I asked Nigel Marshall about the origin of the plant. He is the retired head gardener who, in a career of about 25 years at Mount Stewart had gradually brought the garden back from near dereliction to its prime condition, though in my view it has deteriorated badly since he retired over 15 years ago. Nigel raised the plant from seed about 20 years or more ago, from seed, either from the APS or collected by Michael Lear.

Only the one species *R. scoparia* has been and is more widely, if not commonly, grown in the British Isles. It is occasionally commercially available. Apart from being white flowered, it also occurs in yellow through pink to red[9] (photos page 10) though the first form that I obtained about 20 years ago is orange flowered. In their natural habitat different colour forms grow in mixed colonies and it possible that there are really only three basic colour forms,

white, yellow and red, with the pink and orange forms being naturally occurring crosses. My first plant, which as already mentioned was obtained about 20 years ago from Mark Filan, was slow to start flowering and initially rather sparse flowered but is now flowering more freely, in May. In 2008 I obtained small plants of the white and pink forms of *R. scoparia* from Glendoick nursery. Whilst the white form flowered in 2012, the pink form has still not flowered. Curiously both plants are still small and sparsely branched whereas the plants of the red flowered form from Jeff have bushed up more densely but again have not flowered for the last few years. They are clearly not suitable plants for anyone wanting an immediate effect in their garden.

I was recently looking thorough and culling most of a collection of old photographic prints taken between 10 and 20 or more years ago. I was surprised to discover two prints of *Richea* species amongst them. One was of a large orange flowered form of *R. scoparia* in full flower, growing in Helen Dillon's garden in Dublin. The other, more surprisingly, was of *R. gunnii* (photo page 9) I have not discovered any reference to it being grown in the British Isles, although by no means all interesting or uncommon plants in cultivation have been referred to in publications. I can't be certain where I photographed it, but most likely it was in the nursery ground that Mark Filan was operating from in the mid 1990s, not far from Buckland Monachorum in Devon. I think Mark had said it had previously been run by Vic Pawlowski. *R. gunnii* is superficially similar to *R. scoparia*, though more compact, and with more congested foliage which discolours readily. It also has shorter and broader flower spikes.

The flowers of *Richea* species have a very distinct property. Anyone looking at the putative photograph of *R.* x *curtisiae* on the back cover of issue 56 of Pentachondra (May 2016) may have assumed that the photo showed the plant in berry, rather than in flower. It is in flower, but the essential features of the flowers are not visible. That is because the pistil and stamens are enclosed by a cap, or capsule, which obviously makes fertilisation impossible. Jeff Irons drew my attention to this and sent me a copy of some information which explained that the caps were removed by a skink, a Tasmanian lizard. This then allows fertilisation to take place, as only the functional parts of the flower remain (photo page 10). The removal of the caps can be easily accomplished by gently stroking the flower head between the fingers and thumb. I did try this in 2012 and seed was set, and well developed within a month or more, though I subsequently forgot to collect it. In the exposed conditions of my garden the wind may also be able to strip off the caps as I noticed this year that the caps of some of the flowers had been removed. It is possible that birds may have done this by mistaking the flowers for a cluster of berries, though not many individual flowers were affected.

In 2005 Jeff Irons wrote about the genus in the Plantsman[21]. In his article he briefly described all the species, and most were illustrated by photographs, which unfortunately were reproduced not much bigger than postage stamps. He provides some propagation details: fresh seed germinates readily if surface sown on acid compost, and cuttings can be taken in summer but take up to a year to root in a propagator, though a little quicker in mist. One significant factor that Jeff mentions in the final paragraphs is that Tasmania has an

oceanic climate, as well as the plants growing in alpine habitats. This explains why the earlier introductions, mostly in the south of England, did not survive for long in hotter and drier conditions. *Richea* are best suited to the cooler and moister conditions of the northern and western parts of the British Isles and are certainly frost tolerant, as many species are used to being buried under snow for several months in winter,

Richea is clearly not a genus to excite great interest in most gardeners, apart from curiosity and being uncommon. It is certainly not a genus for impatient gardeners, as *R. scoparia*, the most garden worthy species, really requires 10 to 15 years before it forms a worthwhile contribution to any garden, as would *R. dracophylla*. *R. pandanifolia* would probably have to be planted for the next or even succeeding generations.

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2018 – AN INFORMATIVE YEAR

Ben Ram

As I write this, summer is coming to an end and so it seems an appropriate time to reflect on how the extremes of weather have affected our garden this year. For the most part, winter in our bit of northwest Wales was fairly average. We saw the typical heavy downpours of November and their accompanying winds. One evening, 22nd November, saw 56mm of rain in a very short space of time and the valleys of Snowdonia saw flash floods galore, but on the whole the jet stream was being kind and there was a distinct lack of anything too extreme. Even as late as February 22nd we had not seen temperatures lower than

-1.6ºC. Our small tree of *Banksia integrifolia* subsp. *integrifolia* (front cover) had over 50 pale yellow inflorescences gleaming in the low winter light as the frosts, snows and icy winds of the 'beasts from the east' began their assault.

Almost instantly, many of our evergreen trees and shrubs from Asia started to droop their leaves as the temperature dropped to -5.9ºC, the humidity dropped to 30% and the wind gusted 80mph. We experienced a few weeks of freezing night time temperatures into the latter part of March and it didn't get much above that during the day. Some of the snow that fell was quite heavy and wet, with the effect of flattening some shrubs and weighing down some enough to snap the odd branch. By this time almost all of our Asian evergreens had lost many of their leaves, tree fern fronds were scorched and battered and the garden was looking really rather sorry for itself. Surprisingly, despite not protecting any plants in the ground, the Australasian evergreen trees and shrubs were still looking healthy and our banksias were still flowering.

By April, the weather was warming up and the frosts had ceased but the garden was not really growing yet and so continued to look awful well into May. The leaves on *Grevillea victoriae*, supposedly one of the hardiest grevilleas, started to turn brown. Over time, so did those of many more Proteaceae: *Lambertia formosa*, *Grevillea robusta*, *Dryandra formosa*, *Isopogon anemonifolius*, *Knightia excelsa*, *Banksia integrifolia* subsp. *integrifolia* (two of these), *B. oblongifolia*., *B. paludosa*, *B. spinulosa* subsp. *spinulosa*, *B. spinulosa* subsp. *collina* and *B. ericifolia* subsp. *ericifolia*.

We weren't all that surprised as in previous years something similar had happened in the spring as the new foliage came through, however this year there was no new foliage coming through and by the end of May some of the stems had turned black. Then the thought occurred to us that rather than being affected by the cold, the problem may in fact be one of drought. During April rain was infrequent, and we hadn't had any rain since 2nd May. We started watering, adding seaweed extract as a tonic as well as sequestered iron. By early June there was still no effective rain and we had almost stopped worrying about the plants that already looked dead, concentrating on getting water into the ground for those that still looked alive, not to mention all the plants in pots.

The Asian evergreens had by this point started to put on new leaves and *Dicksonia antarctica* was finally throwing out new fronds, months later than usual, but *Cyathea australis* and *Dicksonia fibrosa* were still quite crispy with no signs of growth. It got hotter as June progressed, with maximum temperatures over 30ºC day after day and a summer maximum of 33.4ºC recorded on 7th July. We were hand watering for 3 hours a day, during dawn and dusk, so the drought wasn't only taking its toll on the plants!

One plant that shocked us, by making its way through the winter unblemished and even flowering profusely in May and June, was the daisy-bush *Olearia* 'Henry Travers'. It started putting on new green growth and was looking resplendent. By the middle of July it was dead - I am convinced it was the heat that killed it. Planted in a free draining position, we had been watering it well; one day it looked fine the next, gone. Interestingly another daisy-bush, *Olearia angustifolia*, which gets shade in the hottest part of the day and has not yet flowered is still with us.

By this point *Knightia excelsa*, *Banksia paludosa*, and both subspecies of *B. spinulosa* had put on new leaves. *B. oblongifolia* and the smaller of the two *B. integrifolia* were resprouting from the base so were pruned accordingly. *Lambertia formosa* even flowered well although will need some work to bring it back to being the smart shrub it once was.

Eventually we gave up waiting for the remaining brown plants and the ones that never made it were removed. Many of these plants have been in the ground for up to 6 years, so it was a shame to have to see them go, but by this point we really were convinced they were dead. Their wood was black and when we when scratched the bark it did not reveal anything green underneath. We are not looking on it as a travesty though, far from it; the 'beast from the east' and the 'devil of a drought' have made space for a whole load of new plants.

New additions include *Banksia ericifolia* subsp. *macrantha*, *B. spinulosa* 'Son of Skyscraper', *B. aemula*, *Lomatia silaifolia* and *Isopogon dawsonii*; all plants that had sat waiting for their turn in the ground. We have replaced the *B. integrifolia* subsp. *integrifolia* that died with *B. integrifolia* subsp. *monticola*. This subspecies comes from the Great Dividing Range of New South Wales, north from the Blue Mountains, and is meant to be the more frost hardy subspecies - not that that would help if it is drought that it died of. Looking back, in reality, it was probably a combination of both; heat and water stress on top of cold stress. *Dicksonia fibrosa* eventually threw up some small fronds but I am not sure I hold out much hope long term as the crown has shrunk quite a bit. Sadly, I am convinced that *Cyathea australis* is dead.

This year has been very informative not only in what can survive such extreme weather, but what can thrive in it. Throughout this year *Wollemia nobilis*, *Persoonia gunii*, *Grevillea diminuta*, *G. miqueliana*, *Banksia marginata*, *B. canei* **(photo page XX)** and *G. alpivaga* have grown and flowered beautifully. Here's hoping that next year is less extreme.



A TALE OF TWO SEASONS

Jeff Layman

It was the best of weather, it was the worst of weather… (with acknowledgement and apologies to Charles Dickens), although I don't know whether it was the winter or summer to which best or worst should be applied. And, indeed, perhaps I should add spring too.

Here in south central Hampshire it is usually fairly mild in winter as we are only about 6km from the sea. However, last winter saw at least 12 nights of frost, with a couple at -6°C. I try to keep my greenhouse just frost-free, but on those nights it fell to -2.5°C. However, none of the plants seemed to suffer, with no signs of leaf damage at all.

Outside the greenhouse, there was little damage to the Australasian plants other than some on the leaves of a *Clianthus puniceus* (kakabeak, glory pea). Perhaps most surprisingly, a long-held belief of mine that no shrubs from Western Australia are reliably hardy in a UK winter was broken. I have had a kangaroo paw, *Anigozanthos* (*flavidus*? r*ufus*?), grown from seed, growing and flowering outside in a somewhat sheltered area for some years, and that has always survived. Last autumn I planted a *Hardenbergia violacea*

"Happy Wanderer" outside in a very sheltered position as it had outgrown its welcome in the greenhouse and grown into a very tatty plant. It was also covered in several centimetres of leaf mulch. I was not at all surprised to see all its leaves had gone in late February, and the branches were dry and brown. I was, however, most surprised to see many green shoots from the remaining base of the plant in May, and now there are many leaves (although most are chlorotic for some reason) on twining shoots over a metre long.

That was followed by one of the wettest springs. Inside the greenhouse it didn't matter, but outside some plants were in standing water for days. I thought that I was going to lose a lacebark, *Hoheria sexstylosa* (probably 'Stardust') and also *Veronica perfoliata*, but both just shrugged off the water.

By this time several of the greenhouse plants were in bud, and all went on to flower over the next few months. These were *Anigozanthos flavidus (rufus*?), *Banksia blechnifolia*, *Boronia heterophylla*, *Calothamnus homalophyllus* and *C. quadrifidus*, *Chorizema cordatum*, *Correa* 'Dusky Bells', *Dryandra praemorsa*, *Eucalyptus ficifolia*, *Eucalyptus macrocarpa*, *Grevillea wilkinsonii*, *Hakea clavata* and *H. victoria*, *Hardenbergia violacea*, *Hymenosporum flavum*, *Isopogon formosus*, and *Westringia fruticosa*, In bud at present (the end of August) is *Eucalyptus preissiana*, as is *Grevillea wilkinsonii* - although that flowered in March. (Photographs of many of these plants can be found on the APS website; click on 'What's Growing' and then 'Jeff Layman'.)

I was particularly pleased about *E. macrocarpa* as it had a bud last year which aborted just before it would have opened. The last time I managed to get a plant to flower was at least 25 years ago! It was also first-time flowering for *E. ficifolia* and *Banksia blechnifolia*. In fact, I almost missed the latter as it was flowering at ground level and hidden by another plant! *Hymenosporum flavum* (native frangipani) had flowered in previous years, though only sparsely as it had suffered very badly from tortrix moth or sawfly larvae damage on the flowering ends. This year, however, there was almost no damage at all, and the plant was smothered in dozens and dozens of flower heads. The scent in the greenhouse was almost overpowering over the six-week period that the plant flowered. It has set seed on around a dozen fruits.

All the plants seem to have revelled in the summer heat except for one - *Knightia excelsa*. It is 17 years old and has never flowered. It has grown slowly without any problems. This year however, many of the upper leaves have suffered scorch damage (the greenhouse remains unshaded all year round) and are partly dry and shrivelled.



REVIEW OF 2018

Jeremy Spon

2018 was quite a challenging year for my Australasian plants. The cold spell at the end of February was the most severe weather in terms of absolute minimum (-10.2^{o}C on February 27th) that we have experienced in nearly 20 years of living in Canterbury, and the east wind was for a few days the worst I have ever experienced. A lot of damage was done, with many plants being defoliated. The one saving grace was a layer of snow 15 – 30 cm deep, which undoubtedly insulated the base of many plants from the worst of the frost. Several plants, the top growth of which was killed, such as

Correa nummulariifolia and *Corokia* 'Ginty's Ghost', retained healthy green growth under the snow.

When the frost relented, happily quite a few plants which had looked completely dead started to regrow from the base. But they were then handicapped by one of the hottest and driest summers in living memory. So it remains to be seen which have put on enough healthy new growth to survive the coming winter.

As ever, what did and did not survive was not completely predictable. Among bottlebrushes, *Callistemon viridiflorus* (synonym *Melaleuca virens*) confirmed my past experience that it is the hardiest of all, suffering no damage, even to a plant exposed to the full blast of the east wind, and flowering as usual in June. Those of the *subulatus*/ *rigidus* group were cut to the ground, but have mostly regrown quite vigorously. *C. pallidus* was killed outright, except for one plant in a very sheltered spot right by the house.

Among the gums, *Eucalyptus urnigera*, *E. glaucescens*, *E. debeuzevillei* (synonym *E*, *pauciflora* subsp. *debeuzevillei*) , *E. moorei* and *E. subcrenulata* were scarcely touched, but *E. dalrympleana* was badly defoliated; the latter however has recovered fully and raced away again in the summer , comfortably the tallest tree in the garden. Of the pittosporums, most of the *Pittosporum tenuifolium* cultivars were badly damaged, and few showed much sign of recovery. Strangely, the variety 'Margaret Turnbull', which is sometimes said to be a hybrid between *P. tenuifolium* and *P. colensoi*, a more tender species, was virtually undamaged, as were the forest of self-sown seedlings surrounding it. A plant grown from Ventnor Botanic Garden seed as *P. buchanani,* which New Zealand botanists consider is a synonym of *P. colensoi*, was also relatively unscathed.

Another New Zealand evergreen genus, of which I am particularly fond, *Hoheria*, proved outstandingly hardy. I have both the *H. sexstylosa* variety 'Stardust', and an un-named plant originally bought from Graham Hutchins which may be a form of *H. angustifolia.* Both sailed through the winter, and flowered superbly in August as usual. They do not seem to be at all affected by our increasingly common long hot dry summers. Among the New Zealand brooms, of which I have tried quite a few outside, only *Carmichaelia australis* 'Aligera Group' (as I believe we are supposed to call it) succumbed to the cold, although I did subsequently lose *C. kirkii*, which was cut back hard and faded away in the summer drought despite regular watering.

Wattles (*Acacia*)are generally too tender for the more severe winters here, as are paper-barks and honey-myrtles (*Melaleuca*).. Of the former, *A. baileyana* 'Purpurea' and *A. dealbata* died, despite have made good growth in the previous two years, and only a plant bought as *A. longifolia*, but which I think may actually be *A. melanoxylon*, regrew from the base. *Melaleuca pustulata* has proved reasonably hardy in the last few years, but this winter saw it off, as it did *M. decussata*, another plant which showed signs of life in the spring but then gave up the ghost in the summer.

Both correas and corokias suffered badly, although as mentioned above growth covered by the snow survived. *Correa* 'Marian's Marvel', which has consistently been the hardiest of those I grow, was more or less cut to the ground, after flowering throughout the winter; this has thrown up several vigorous shoots from the base, and looks

as if it will flower again this winter, if the cold of February is not repeated.

Among all the devastation, there were one or two real surprises. *Bursaria spinosa* is not generally considered at all hardy, but it actually survived quite well, although it did not put on much new growth in the summer. *Grevillea* 'Olympic Flame', however, which I have never seen damaged at all in previous winters, and have photographed flowering profusely while covered with snow (photo page 21), was completely killed, despite having grown to 6ft tall and across, and being under the shelter of several tall eucalypts.

Years such as 2018 are ones we have to expect every so often, and plant losses are something we have to accept and learn from. I have resolved to take better advantage of the shelter provided by house walls, and to investigate ways to better protect the bases of marginally hardy shrubs. I have also been encouraged by the fact that in my unheated greenhouse, a venerable Northern Light model with double plastic skin and a design intended to maximise heat capture and retention in winter, the temperature never dropped below -4°C. Quite a wide range of plants in pots were undamaged in these conditions, including *Carmichaelia williamsii, Melaleuca hypericifolia, M. diosmifolia*, *Grevillea barklyana*, and *Hakea laurina*.

Historically the emphasis in the APS has been on growing Australasian plants outdoors, but most of us have at least a small greenhouse, and there is clearly scope for using the shelter this provides to greatly extend the range of plants we can grow. With the exception perhaps of *Eucalyptus* most Australasian genera are amenable to pot culture, to a greater or lesser degree, and it would be interesting to hear more from other members of their experiences in this area, particularly regarding growing media and pruning.



IS IT REALLY THAT GREVILLEA?

Judy Clark

Grevillea is a genus of distinctively Australian shrubs, and occasionally trees, in the Proteaceae family. It is the the third-largest genus of Australian flowering plants, and one that has attracted northern hemisphere gardeners almost since the first species were collected in 1770 by Joseph Banks and Daniel Solander[1].

The first grevillea to flower in cultivation in England was *G. buxifolia* (as *Embothrium buxifolium*) at the Vineyard Nursery in 1795 (photo page 31) [2]. Their popularity fluctuated over the years in line with changes in fashion and gardening practices, but by 1920 more than 50 different taxa had been at some time cultivated in England and Europe[3,4] (see table page 39). While almost a century later the RHS online Plant Finder lists suppliers for just 32 species, hybrids and cultivars[5], the recent APS survey produced a list of over 100 different *Grevillea* taxa currently being grown in Britain. Even allowing for misidentifications and duplicate names it is clear that a wide range are still being cultivated.

Grevilleas may be thought of as plants for the specialist but for all their exoticism many are not that difficult to grow as long as they have really well-drained soil, and they can be hardier than they look. I have accumulated about twenty, and the great majority of them are planted outside, without winter protection, in my Hastings garden.





Street Trees in London

Left: ***Araucaria heterophylla*** **in west London ,** ***right Brachychiton rupestris*** **at Capel Manor**





Doryanthes palmeri **flowering at the Royal Botanic Gardens Melbourne**



***Eucaluptus lacrimans* at Cookscroft near Chichester**





left: ***Grevillea*** **'Olympic Flame' in the snow, or is it?**

above: ***Grevillea alpina***

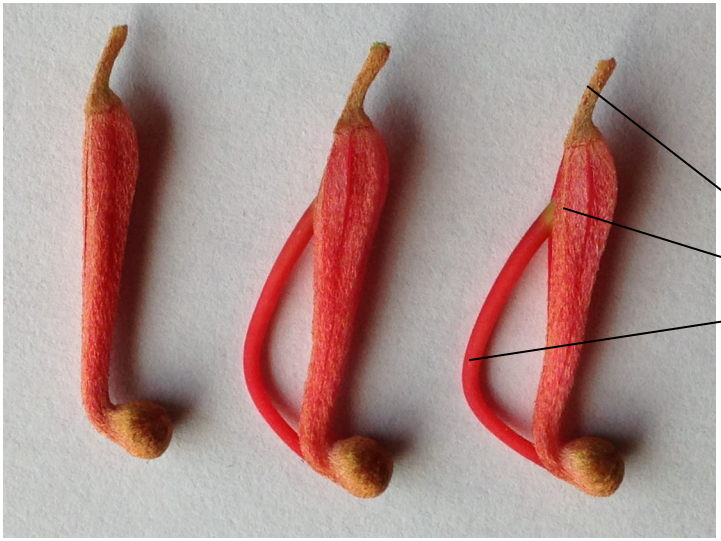


Grevilleas in Hastings
left
G. **'Canberra Gem'**
below right
G. rosmarinifolia **with yellow flowers**
below left
leaves of ***G.*** **x** ***semperflorens*** **(left) and** ***G. rosmarinifolia*** **(right)**





The Grevillea flower



left: **the style unfurling on ?*G.* 'Poorinda Constance'**

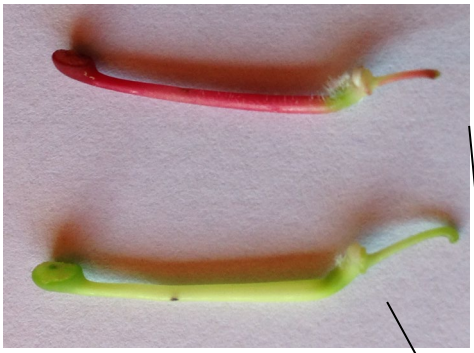
pedicel

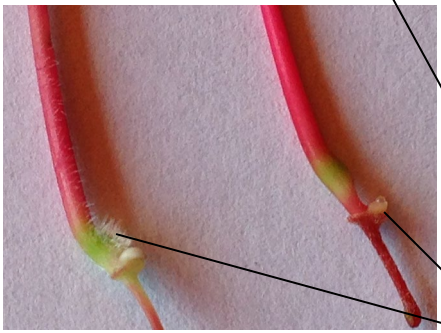
perianth

style

below: **a conflorescence with fully unfurled style**







Styles

***G. rosmarinifolia*, 'Jenkensii'**
***G. rosmarinifolia* yellow flowered**

G. rosmarinifolia (left) **compared with *G.* 'Canberra Gem** (right)

nectary

ovary with tuft of hairs

The *Grevillea* flower

The grevillea 'flower' is actually comprised of a lot of flowers, usually in pairs, and arranged close together. This cluster is called the conflorescence and can take a variety of forms, such as in the 'toothbrush' grevilleas where the flowers are borne on one side of a stalk.

As each flower opens, a 'loop' slowly appears, enlarging until it eventually sticks out of the flower. This ‘loop’ is the style, part of the female bits of the flower. The part that looks like joined together petals is the perianth, the technical name for the petal like parts of the flower. On grevilleas it is usually comprised of four segments, or tepals. When the perianth opens the anthers, the male bits of the flower, can be seen. They appear directly attached to the tepals, in contrast to the probably more familiar arrangement where the anthers are attached by a stalk (filament) at the centre of the flower.

As the style unfurls, but before the tepals separate, it brushes against the anthers and pollen is transferred from them to the pad on the tip of the style. The time of release of the style end is called anthesis and the pad is the pollen presenter. When a pollinator visits the plant and attempts to get nectar from the nectary at the base of the flower base its actions can also detach pollen from the presenter’s tip; hopefully the pollen attaches to the pollinator. Removal of the pollen allows the pollen presenter to continue its growth into a stigma which can receive pollen from a different flower. This way, an individual flower cannot pollinate itself.

Once the flower has fully opened the tepals often fall off. The pistil (all the female bits together) commonly sits on a small stalk called the pedicel, though some species lack pedicels (sessile).The pistil itself is comprised of a nectary at the base, a stipe between the nectary and the ovary, the style, and the style end. The size and shape of all of these bits, whether they are hairy or not and the degree of hairiness can all be important in identifying Grevillea species.

The various parts of the grevillea flower are labelled in the photos opposite. More rewarding than looking at photos however is getting hold of a grevillea flower and taking it apart, especially with the aid of a magnifying glass or hand lens.

The above borrows from and extends 'The grevillea flower', an article by Jeff Irons in Pentachondra number 40 May 2008, page 36.

If I remember correctly the first *Grevillea* I planted was *G*. 'Canberra Gem'. Not long after came *G*. x *semperflorens*, *G*. *lanigera* 'Mt Tamboritha' and a yellow flowered *G*. *rosmarinifolia*. All but the first of these, as I subsequently discovered, came with an incorrect name attached, as did several of the others that followed. This is perhaps unsurprising for those I found in garden centres and discount stores, but some did come from what might be thought to be more knowledgeable sources.

However, it only takes a plant introduced under the wrong name, or a label inadvertently attached to the wrong plant, for mistakes to kick off, and such errors are (presumably) likely to persist unless there are good reasons for questioning a plant's identity. At the same time grevilleas are not that easy to

identify as some species and hybrids can look superficially similar. I have noted cases of mistaken identity with all three of the commonly grown species, *G. rosmarinifolia* (rosemary grevillea), *G. lanigera* (woolly grevillea) and *G. juniperina* (juniper-leaf grevillea).

Does the wrong name really matter? Well it can if it leads to a plant being put in the wrong place, or given the wrong soil conditions, or thought to be tender when it is actually reasonably hardy. This is why I spend time on checking the identification of plants that I obtain; I want to be as sure as I can be that they will thrive. But I also obtain great pleasure from closely examining the parts of a plant, and I will cheerily admit to getting a geeky satisfaction when I believe I might have nailed the right name for a plant.

Grevillea x semperflorens

Grevillea x *semperflorens* is one of my favourites. It flowers prolifically for much of the year (semperflorens is Latin for 'always flowering') producing clusters of delicate pinky yellow flowers on the ends of the branchlets). It can get quite big but tip-pruning keeps plants to a reasonable size and mine have proved able to take the occasional robust assault with a pruning saw.

It has has also proved quite hardy in my garden. February and March of this year brought the two 'beasts from the east' with not only sub-zero temperatures but also freezing easterly gales blowing straight at my garden. But the only damage was minor, some burnt branch tips where new growth had sprouted. Various plants have been similarly unscathed by cold winters earlier this century, experiencing -6ºC during the winter of 2008-2009, and below freezing again during the bad winters of 2009-10 and 2010-11. I used to be meticulous about overwintering specimens in pots in a frost free environment but now they stay outside and are only given protection if the forecast is for prolonged cold. However, I have lost a couple of plants in pots because I forgot to water them!

My first *Grevillea* x *semperflorens* came to me via an APS plant swap under the name of *G.* 'Desert Flame'. When I later started researching it, I soon discovered that this is a name which has been applied to a selection of the narrow leaved form of *G. rosmarinifolia* found in the Little Desert in western Victoria[3]. I wondered if a plant from there would be as cold hardy as the plants in my garden had proved, and took a closer look. Fortunately *G. rosmarinifolia* and *G.* x *semperflorens* can easily be told apart by their leaves. Those of the former are lobed showing their *G. thelemanniana* heritage while the latter has simple lanceolate leaves (photo page 21). *G.* x *semperflorens* has an interesting history. It actually originated in England, as a cross between *G. thelemanniana* and *G. juniperina* var. *sulphurea*, bred by F.E.Briggs in Plymouth in 1926- 27[3]. Marriot[6] sings its praises as a garden plant, giving one of the parents as *G. preissii,* the current name for what was *G. thelemanniana* subsp. *preissii*.

'Canberra Gem' and 'Olympic Flame'

Grevillea 'Canberra Gem' (photo page 21) must be one of the best known *Grevillea* cultivars and also one of the the hardiest (if not the hardiest - the RHS Plant Finder rates it as H4, hardy to between -5 and -10ºC[7]. In my experience it is tough as old boots. When my first plant eventually got too big for its space (it was over a metre high and about 2 metres wide) I decided I had no alternative but to take it out. The foliage was reduced to a small branch and the root was dug up any old

how. In the event I just couldn't throw it away so I planted it in a gap in the blackberry hedge at the bottom of my allotment. Several years later it is thriving and flowering, and suffered no damage whatsoever from the 'beasts from the east'.

As a hybrid, 'Canberra Gem' has two parents, *G. juniperina* and *G. rosmarinifolia*[8], though I have seen it called *G. rosmarinifolia* 'Canberra Gem'. This may be because the RHS Plant Finder insists that *G. rosmarinifolia* 'Canberra Gem' (and *G. banksii* 'Canberra Hybrid') are synonyms for 'Canberra Gem', even though the plant is correctly listed as a hybrid on the RHS horticultural database[9].

A few years ago I obtained a plant which came to me as *G.* 'Olympic Flame'. Its foliage looked very like that of 'Canberra Gem' and so, when it flowered, did the flowers. At that stage I checked my 'Canberra Gem' plant against the description on the ACRA register[8], and I was happy that that was what it is. I compared it every whichaway to 'Olympic Flame' but I couldn't detect any significant differences between the two. I assumed I had a case of mistaken identity, but I was curious to learn more about 'Olympic Flame', which I thought must bear some resemblance to 'Canberra Gem' if the one could be mistaken for the other.

An RHS Plant Finder search turned up *G.* 'Olympic Flame'[10], with an illustration showing a flowering plant and, crucially, details giving the name as *G. alpina* 'Olympic Flame'. The flowers in the Plant Finder photograph bear little resemblance to the plant I know as *G. alpina*, (photo page 21) even allowing that it is a rather variable species, but they do look rather like those of 'Canberra Gem'. (If you are wondering about my cautious language this is because I believe it is difficult to identify grevilleas unambiguously from photographs alone.) An internet browse turned up a few suppliers, but again accompanying photos did not show *G. alpina*-like flowers. Then quite recently Jeremy Spon told me that he grows a plant called 'Olympic Flame' (or rather grew, see page 18) and he sent me a photo (page 21). I am unsure what it is thought it doesn't doesn't look much like a *G. alpina* either. So what next?

There is no ACRA registered *Grevillea* 'Olympic Flame' cultivar but the Australian Plant Name Index lists two taxa with this name[11]. One is *Grevillea alpina* 'Olympic Flame" and the other is a cross between *Grevillea rosmarinifolia* and *Grevillea alpina* 'Dallachiana', the latter name being a synonym for *G. alpina* 'Dallachiana' which is thought to be a cross between *G. alpina* and *G. rosmarinifolia*. The names may be confusing (they confused me) but the point here is that this second *Grevillea* 'Olympic Flame' cultivar must have a lot of *G. rosmarinifolia* in it and conceivably might not look very dissimilar to 'Canberra Gem'.

This 'Olympic Flame' is described in Elliot and Jones (1990)[12]. It is said to be a compact shrub with elliptic to oblong leaves and deep red flowers with a deep red style with a cream tip. It is superficially not that dissimilar to Canberra Gem"[13] and I suppose the two could get muddled up. However 'Olympic Flame' was rare in cultivation in Australia when Elliot and Jones were writing about it and it may have fallen out of cultivation altogether[14]. Unfortunately I couldn't find any pictures of it. Nonetheless there remains the possibility that correctly named plants of this *G.* 'Olympic Flame' were once offered for sale over here and even that it could still be in cultivation. It

could even be Jeremy's plant, but as it's gone I can't check, and anyway I wouldn't bet on it.

Returning to *G. alpina*, despite its name it is not an alpine plant. I don't grow it, but Ross and Irons (1997)[15] state that although it can withstand up to -10ºC the form (not named) most commonly grown in the UK is not very hardy. It may also be short-lived if it doesn't get the right conditions. It likes hot dry summers lacking humidity and well-drained acid soil[16].

Not *Grevillea williamsonii*

In 2015 I obtained a plant, labelled *Grevillea williamsonii*, and new to me as being cultivated in Britain. That same year I bought a second plant from a different nursery. It was labelled *G. rosmarinifolia*, but when I got it home it was clearly the same as the one labelled *G. williamsonii*.

I vaguely remembered seeing, a few years ago, a plant labelled *G. williamsonii* growing at Karwarra Australian Plant Garden at Kalorama in Victoria, and I also vaguely remembered that it didn't look like these plants. So when the flowers came I started checking. The ANPSA website provided a photo of a flowering plant[17] but the flowers on my plant looked rather different, especially the colour. I also checked out a few suppliers; where they provided photos, they showed flowers more like the ones on my plants, rather than more like the ones in the photo on the ANPSA website.

However, as I have already indicated, identifying grevilleas from photos alone is not a good idea in my book. The flowers change as they age, and the photo colour depends a bit on the light when the photo was taken . I needed a good description to determine whether my plants were or were not *G. williamsonii*. Fortunately, being a species, *G. williamsonii* is described in Olde and Marriott[18], and their description provided evidence that whatever my plants were they were not *G. williamsonii*.

The illustrations accompanying this description show a flower with a style emerging from the top of the perianth before anthesis, and a style after anthesis with a distinct kink in the middle (see box). The flowers on my plants have the style emerging from near the base of the perianth and a style with a slight bend near the top (photo page 22). Other features are different too. But if my plants were not *G. williamsonii* then what are they?

I had a go with the key in Olde and Marriott[19] and didn't get anywhere, which could have been due to my lack of expertise, or because my plants are a hybrid, which wouldn't key out. In the end I posted a picture on Twitter and it was suggested that it looked like might be *G.* 'Poorinda Constance'[20]. And yes, when I compared my plant with the description on the ACRA register, I realised that it very well could be. It is described as follows:

> *"**Grevillea** 'Poorinda Constance' is assumed to be a hybrid between a New South Wales form of **G. juniperina** and a red flowered form of **G. victoriae**. .... It can be expected to reach a height of about 4m. The leaves are shiny on the upper surface whilst being covered with short white hairs on the underside. Individual leaves are 2.5 - 3cm long and up to about 7mm wide and pungent. The edges are rolled under. The flowers are produced in clusters at the ends of short branchlets. Each flower is about 1cm long whilst the styles are 2cm long. The flowers are a clear red colour."* [21]

The flowers of my plants are a clear red, with a bit of a look of those of its parent *G. victoriae*, and the pointed leaves have white undersides and slightly recurved margins. 'Poorinda Constance', if that be it, is a splendid plant. It is very floriferous, flowering much of the year, as well as being quite cold hardy. Both my plants, one in the ground and one in a pot, came through the 'beasts from the east' with nary a mark. I am however a bit alarmed at the idea that it might get to 4m!

There is one more twist to this story. *G. williamsonii* F.Muell. has always been an extremely rare plant. It was first recorded in 1893 by HB Williamson in the southern part of the Grampians in western Victoria. The area was destroyed by fire in 1897 and the species was thought to be lost until a tiny colony was rediscovered in 1992, close to the site of the original record[22]. However subsequent research determined that *G. williamsonii* is actually a form of the similar but rather more common *Grevillea aquifolium* (holly grevillea)and this name is now accepted with *G. williamsonii* reduced to a synonym[23]. The plant was brought into cultivation in Australia because it was thought to be so rare, and it's not inconceivable that the real thing could have reached the UK. But if there is a plant lurking out there its correct name is no longer *G. williamsonii*.

Yellow flowered *Grevillea rosmarinifolia*

My final story concerns a grevillea I bought in a Granville in Normandy about ten years ago. It had flowers of a colour that I had not previously noticed on a grevillea - a very attractive acid lemon yellow (photo page 21) - and it went by the name of 'Grevillea gracilis alba'. I planted it in the garden near my big *Banksia marginata* (which was not so big then). I don't remember what I did to the soil - probably not a lot - but the plant flourished and has never suffered any damage from the colder winters that it has had to endure, though as the years have gone on it has ended up with overhead protection. At first I left it alone but as I learned more about grevilleas I took to tip pruning it, and it hasn't minded the removal of larger branches overhanging the path.

There's no such thing as *G. gracilis* (alba or otherwise) but French suppliers also call this plant *G. juniperina alba* and for a long time I assumed that it was a *G. juniperina*. It took me a while to get around to checking but early in 2017 I had a good look at the flowers of my plant and discovered that they didn't fit Olde and Marriott's description of *G. juniperina*[24]. My plant has a flower with glabrous pedicels and a tuft of hairs above the ovary, and the style emerges from near the top of the perianth, while *G. juniperina* flowers have hairy pedicels and glabrous ovaries and the style emerges from lower down in the perianth. I eventually figured out that my plant was probably a form of *G. rosmarinifolia*[25].

In its native land *G. rosmarinifolia* is an extremely variable species, The perianth colours are listed as "*red, pink and cream, cream, lemon green, burnt orange*", and the style colours as "*red, pink, brownish red, cream, lemon*". One of the illustrations shows a form with lime green flowers and the text also mentions a low form with yellow flowers that has been sold in Australia as *G. lutea*. So yellow flowers are not out of the question. But to be sure I sent some photographs to Peter Olde and he confirmed that my yellow-flowered plant is indeed a form of *G. rosmarinifolia*[26].

G. rosmarinifolia is found in Victoria and NSW with some populations at

quite high altitudes and is another species that should be quite hardy in most of the UK. The RHS rates it as H4[27], the same as 'Canberra Gem' while Ross and Irons give the danger zone as -8 to -16°C[28]. I also grow a form which came as *G. rosmarinifolia* 'Jenkensii' and which has pink and cream flowers. Like the lemon flowered plant it has shown no signs of suffering from cold weather. I have never given either plant any special treatment though I probably planted 'Jenkensii' taking more care to improve the drainage as I obtained it more recently.

I don't feed either of them. In fact I don't feed any of my grevilleas because I don't think they need it. The exceptions are the ones in pots which get a low phosphorus fertiliser. Many grevilleas, but not all, are sensitive to phosphorus[29]. My potted specimens are all hybrids (including 'Robyn Gordon' and 'Mason's Hybrid' which are quite tender and need winter protection) and I don't know how phosphorus sensitive they might be, so I play it safe.

It would be interesting to know if the type form of *G. rosmarinifolia* is still to be found growing in Britain. The type specimen (the specimen used for the official description of a species) was collected by Allan Cunningham at Cox's River near Bathurst in NSW in the early 1800s, but when the type locality was searched in the 1960s and 1970s no plants were found and it was thought it had disappeared. It was subsequently refound at its type locality in 1999, but before that, nearly 25 years previously in 1975, a plant of the type form had been found by the Australian grevillea expert DJ McGillivray growing outdoors at Edinburgh Botanic Garden. It was labelled *Grevillea lanigera* and it is not clear how or when it got there but what is amazing is that "*perhaps the only person in the world capable of recognising the taxon and its correct name and significance at that time happened upon it there by chance*"[30]. The type form has pink and cream flowers and the rosemary like leaves typical of the species.

There is much more to be found out about grevilleas growing in the northern hemisphere, not just what they are but where they grow and what conditions suit them best. I hope this article will encourage you to take a closer look at grevilleas that you grow and tell the APS about them.

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TWO RARE GREVILLEAS FROM NORTHERN NSW

Warren and Gloria Sheather

The Northern Tablelands of NSW has a rich flora with new species being discovered and named with monotonous regularity. There are also large areas that are protected in an extensive system of national parks.

Here two two rare grevilleas from this area are featured. Populations of both species are protected in reserves. Also both are coming into cultivation. This will ensure their long term survival because if a disaster happens to the wild populations then there will be pool of cultivated plants to supply plants for reintroduction to the wild.

Grevillea acerata

Gibraltar Range National Park (GRNP) is situated east of Glen Innes, on the Northern Tablelands of NSW. The park is bisected by the Gwydir Highway and shares boundaries with Washpool NP, Barool NP, and Nymboida NP. The park is home to a varied range of native plants. At last count 32 species were classified as rare and/or threatened.

Grevillea acerata is one of five rare grevilleas that are protected in the park. Initially it was included with the more common *G. sphacelata*. It was named by Donald McGillivray in 1986 based on material collected in GRNP in 1973. The species name means 'lacking horns' and refers to the end of the style.

It is a short shrub that is usually about one metre tall. Young growth is light green and mature leaves are linear, green above and whitish below. Each leaf is crowned with a prickly point. Clusters of flowers are carried at the end of branches. They are hairy and an

unusual grey-pink and white colour. Flowering is profuse between June and December. Sporadic blooms may appear at other times. Flower colour and shape are similar to *G. buxifolia*, *G. sphacelata* and the well known hybrid *G.* 'Evelyn's Coronet'.

G. acerata is a colourful small shrub (photo opposite) that would enhance a cottage garden or rockery. In cultivation it appreciates light pruning. This will keep plants bushy and blooming bounteously. Propagate this rare and colourful species from cuttings.

G. acerata is confined to GRNP. Coming from Glen Innes, along the Gwydir Highway, plants are relatively common and are often observed growing in company with *Telopea aspera*, the Gibraltar Range Waratah, another rare species.

Grevillea scortechinii

Grevillea scortechinii is basically a ground cover but this depends on where the species is growing. Plants will often use nearby shrubs for support and clamber into them. Stems may be many metres long. This is an unusual feature in ground covering grevilleas.

It has two subspecies. *G. scortechinii* subsp. *scortechinii* is found around Stanthorpe in southern Queensland. *G. scortechinii* subsp. *sarmentosa* occurs on the Northern Tablelands of NSW in the Backwater area near Guyra. The NSW subspecies is usually known as the Backwater Grevillea whilst the Queensland subspecies is known as the Black Grevillea. Both propagate readily from cuttings.

The former subspecies has a pistil length of 28-30 mm. The leaves are papery and simply divided. The latter has a pistil length of 19-22 mm and the leaves are leathery and more deeply divided. They are crowned with sharp points.



***Grevillea scortechinii* leaves**
Drawing from a 1930 paper by WF Blakely and Rev EN. Mckie

The flowers are toothbrush-shaped and black or dark maroon (photo opposite). The main flowering period is spring and summer. The blooms are an eye-catching feature with their unusual colour.

G. scortechinii subsp. *sarmentosa* is considered to be a threatened species. It is included in Rare and Threatened Australian Plants and is considered to have restricted distribution and to be vulnerable, and protected in a reserve, in this case Warra National Park.

G. scortechinii subsp. *sarmentosa* is a vigorous plant that will cover a large area. In cultivation, with judicious pruning, it will form a dense ground cover. The flowers are an attractive and unusual feature.

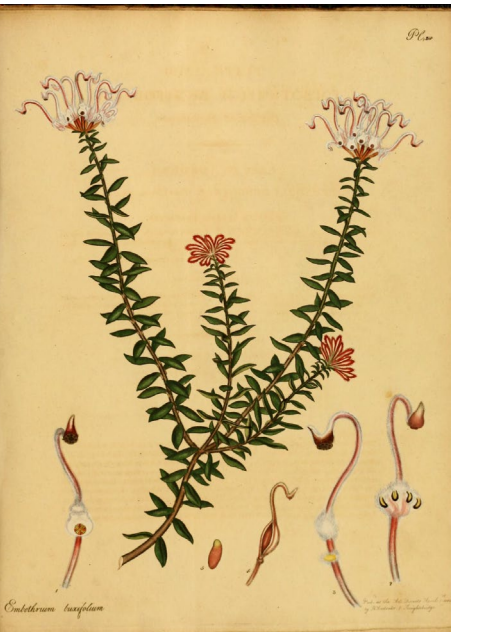


Grevillea scorchetinii



above: ***Grevillea acerata***

right : **1789 drawing of *Grevillea buxifolia*, as *Embothrium buxifolium***









Clockwise from above:

Tom Hart Dyke hugging *Eucalyptus pauciflora* at Geoffrey Cooper's arboretum

***Apodasmia similis* and below it *Rubus squarrosus*, both at Cambridge University Botanic Garden**

Kevin Collins talking about Banksias

***Grevillea victoriae* at Geoffrey Cooper's arboretum**





In 1833 the Linnean Society of NSW published a paper, *Contributions to the Flora of Queensland*, by Rev. B Scortechini. In the paper he described plants observed near Stanthorpe, southern Queensland. Included was a description of *G. ilicifolia* var. *scortechinii*, the precursor of *G. scortechinii* subsp. *scortechinii*. Scortechini (1845-1886) was a catholic priest who worked in the Stanthorpe area. He was an ardent botanist who collected specimens wherever he worked. He is one of many clerics (of various denominations) who added to our knowledge of the Australian flora.

We skip to the 1930 volume of the Proceedings where there is a paper, *Additions to the Flora of New England NSW*, by WF Blakely and Rev EN Mckie (another cleric). In this paper they described *G. sarmentosa* which eventually became *G. scortechinii* subsp. *sarmentosa.* Material was collected from Backwater near Guyra, NSW. The drawing on page 30 comes from this paper. The subspecies name means producing long runners, an appropriate name.

APS EVENTS 2018: REPORTS

Cookscroft

It was a warm day in early June when about ten of us gathered at John and Jill Williams five acre garden, Cookscroft, located south west of Chichester in West Sussex. It certainly lived up to the review by Jeff Layman in Pentachondra 59 (December 2017, page 41) as a place where many fine plants from all over can be found, though the emphasis is on southern hemisphere species. Those in flower that I admired included *Prostanthera cuneata* (alpine mint-bush), *Leptospermum lanigerum* (woolly tea tree), *Grevillea johnsonii* (newly planted - it is rather tender but you never know), and several daisy-bushes (*Olearia*).

One plant that particularly impressed me was a gum tree with a weeping habit (photo page 20) labeled 'Eucalyptus niphophila pendula'. Now *Eucalyptus niphophila* is a synonym for the now more commonly used name for *E. pauciflora* subsp. *niphophila*, one of the snow gums, but this plant is *E. lacrimans*, the weeping snow gum, a species that was only described in 1991. In Australia it is confined to the high altitude Adaminaby area in south east NSW. It is rarely found in cultivation in Britain and Ireland and the champion tree of the species for West Sussex.

I was also impressed to see *Boronia heterophylla* growing outside in the garden as it is a very marginal species in England. This encouraged me to plant one outside in my own garden. So far it looks fine and I am hoping that the shrubs that give it overhead protection will shield it from frost.

But Cookscroft is not just an agglomeration of plants. It is skillfully designed and delightful to walk round; the photo on page 20 captures some of its atmosphere. No wonder the morning was so much enjoyed by us all.

If you missed the APS event Cookscroft will be open in 2019 under the National Gardens Scheme, on May 11th and 15th and June 15th., and by arrangement from May 1st to July 31st.

Judy Clark

Kevin and Kathy Collins at Cambridge Botanic Gardens

Kevin and Kathy Collins hold the only complete collection of *Banksia* in the world at their home in Western

Australia and are world authorities on the genus. For me their lecture given at Cambridge Botanic Gardens (see opposite) was one of the highlights of 2018.

Did you know that *Banksia coccinea* (scarlet banksia), one of the most attractive species, needs robust formative pruning to flower well? Or that to extract seeds from the cones of banksias from Western Australia you need to first burn and then soak the cone, mimicking what happens in nature? Or that you can bonsai banksias? (Try *B. serrata* or *B. integrifolia*.)

These are just a few of the things I learned from a fantastic lecture, full of fascinating detail and with the technical stuff clearly explained. Growing banksias successfully requires close attention to the conditions they need, not always easy to provide, but a bit easier in WA than here in the UK, especially when it comes to climate (at least for those without glasshouses).

So what species could we try outside in the UK? From WA, Kevin suggested some from the south west of the state: *B. brownii*, *B. blechnifolia*, *B. petiolaris*, and *B. media*, particularly if seed from areas where frost occurs could be obtained. From the east, we could try *B. paludosa*, *B. oblongifolia*, *B. canei*, *B. spinulosa* and *B. conferta*, as well as well as the more obvious *B. integrifolia* and *B. marginata*. Once the lignotuber has been established lignotuberous species recover and resprout after cold weather so maybe they will do so here.

After lunch we were given a guided tour of Cambridge Botanic Gardens by several members of the horticultural team: a big thank you to all of them. I think many of us were a bit surprised at the range of Australasian plants that grow there, not just in the glasshouses but also outside in the garden.

There is a large New Zealand area with several *Acaena* species showing their use as groundcovers, though some are a bit thuggish for my liking. More interesting was a flourishing *Apodasmia similis* (photo page 32); this is one of five restios found in New Zealand, and is presumably hardy at Cambridge. Then there was a fine specimen of the leafless lawyer vine, *Rubus squarrosus* (photo page 32), with its distinctive yellow prickles and almost no leaves; a fascinating plant though I'm not sure that I'd want it in my garden.

Cambridge University Botanic Garden is one of those places I wish was on my doorstep, and not several hours away by train or a ride round the M25 in the car. is one of those gardens. If it was I would certainly visit it more often.

Judy Clark

Royal Botanic Gardens, Kew

It proved impossible to organise a guided tour of the Temperate House at Kew Gardens during September but we decided to go anyway. It would be the first time I had visited the Temperate House since its restoration, and who better to do this with than fellow APS plantaholics.

My first impression, unsurprisingly, was how full of light the glasshouse now feels, and how much less cramped the plants seem, though this will change as they grow. As always with a botanic garden there are far too many of them to take in on one visit. I particularly remember the many Proteaceae, not only *Banksia* and *Grevillea* species but also some less familiar ones such as the rainforest plants *Buckinghamia celsissima* and *Stenocarpus sinuatus*. Two other Australian natives that I was delighted to find were *Araucaria*

bidwillii, which has as one of its common names the wonderful epithet bunya-bunya pine; and *Pandorea pandorana*, a vigorous plant found in many parts of Australia that also has a splendid common name, the wonga wonga vine. It will be exciting to see how all these and many others prosper, and to return again when they flower.

One plant that was in flower was *Geranium potentilloides*, which makes an excellent ground cover. I mention it particularly because while I am sure that there are very good reasons for growing it under glass at Kew it can be grown outside in the UK; it has thrived in my garden for many years. The same applies to a few other plants that I noticed, including *Doodia media*, *Leptospermum lanigerum* and *Banksia marginata*.

I could not leave Kew without visiting the Marianne North Gallery, with its extraordinary wall to wall collection of her botanical paintings, including many plants from the southern hemisphere. She was determined in seeking out specimens to paint and for her time (she travelled in the 1870s and early 1880s) she was an extremely brave and adventurous woman, though it must also be said her travels were enabled by very good connections - her father was Frederick North, MP for Hastings. The value of her paintings lies not only in the way that she recorded plants in their natural settings but also in that they served to communicate to the public the weird and wonderful beauty of plants from far-away places at a time when painting was the only way of doing so.

Today we have high resolution full colour photography but I still believe botanical paintings and drawings can better convey the fundamental nature of a plant. So it was a treat to finish our visit with a quick stroll through the Shirley Sherwood Gallery which had not one but two exhibitions featuring Australian plants, including a stunning life size botanical drawing of the parts of my favourite bunya-bunya pine.

Judy Clark

Geoffrey Cooper's arboretum

Eucalyptus and other trees in deepest Oxfordshire

About a dozen of us met at Geoffrey Cooper's house in Oxfordshire prior to a visit to his arboretum a few miles away. We started, however, with a look round his greenhouses which hold a huge collection of mainly *Opuntia* and *Agave*, together with *Yucca* and quite a few different genera of cacti. One greenhouse is of glass and about 100 x 40 feet; the other is polythene and about 40 x 15. Neither were heated, as Geoffrey has been investigating the hardiness of these plants for some time. There were also quite a few in raised beds outside the greenhouses.

We then went to the arboretum itself, where the first things we saw were more opuntia and agaves in raised mounds of soil and ballast (for drainage)! This was most unexpected for an open position in otherwise sheltered woodland in Oxfordshire, which is hardly a county that one associates with warmth and low rainfall. Geoffrey assured us however, that the temperature rarely falls below -5°C even in the coldest winters. The site is also one that is fairly free draining, and it slopes gently to the south. It is fairly high up.

Geoffrey then started showing us round the amazing collection of trees. There are about 100 different eucalyptus, more than a dozen acacias (including *A. boormanii* and *A. dealbata*) and also many trees from Chile, in particular several species of *Nothofagus* and the monotypic *Aextoxicon punctatum*. From

Australia there were also some Proteaceae - several grevilleas including *G. victoriae* (photo page 32) and *G.* 'Olympic Flame', plus *Hakea lissosperma* and *H. nodosa*, both with fruit.

We spent three hours going round this amazing arboretum. Geoffrey's endless knowledge kept us informed and in anticipation of what his next tree would reveal. I am most grateful to Geoffrey for offering this opportunity to see his arboretum. I can only wonder what other hidden delights involving plants from Australasia are as yet unknown to us, and await discovery!

Jeff Layman

What a day!

There was a huge sense of botanical excitement and overwhelming plant filled anticipation when arriving en masse in Geoffrey Cooper's Oxfordshire driveway! My dear friend, who I've known for many years, was about to show us his lifetime work and guide the first **ever** group to see his impressive collections. He started collecting cacti, succulents and bromeliads at the age of 15 and members were astonished to lay their eyes on a 4,000 square foot greenhouse crammed with some 10,000 prickly beasts! An extraordinary sight, especially an exceptional specimen of *Austrocylindropuntia subulata* (Eve's needle) from the Peruvian Andes.

This was just a warm up. A convoy then drove a few minutes to see Geoffrey's woody plant collection, described by Owen Johnson as the best collection of *Eucalyptus* in the British Isles! The 6 acre site, known as Singe Wood, is endowed with a neutral to acid clay loam with poor drainage on a 3 to/4% gradient, with protection from surrounding native trees. But this doesn't really explain (I type this green with envy!!!) how Geoffrey has successfully managed to cultivate hundreds of species of sometimes half hardy woody plants mostly from the Southern Hemisphere. Members were in jaw dropping awe at the sheer diversity of plantings combined with excellent quality of growth and Geoffrey's delightful enthusiasm.

Planting commenced in 1983, but however from 2001 onwards has seen the bulk of the planting dates from 2001 onwards. My favourites were a 100ft *Eucalyptus nitens* (Shining Gum) and an enormous *Eucalyptus perriniana* (spinning gum). As the group peeled off in all directions I headed towards Geoffrey's early antipodean plantings. Well I could have been in Tasmania, surrounded by a massive *Hakea lissosperma* (needle bush) and *Pittosporum bicolor* (cheesewood), not to mention dozens of huggable eucalypts (photo page 32) towering towards the heavens. A huge range of South American delights were also present including a stunning *Aextoxicon punctatum* from Chile. What a day! What a chap! With heaps of enthusiasm look at what can be achieved!

Tom Hart Dyke

Great Dixter Autumn Plant Fair

We were honoured to be invited to attend Great Dixter house and gardens for their annual autumn plant fair. It was a great publicity opportunity for the society and more generally for putting Australian plants in the spotlight. Great Dixter Autumn Plant Fair has come to be considered, in horticultural circles, the most anticipated plant fair each year. The only caveat stipulated by the Friends of Great Dixter was that the stand would be mostly directed towards selling plants and that it would not look like a 'trade stand'.

Luckily, Gary, Maria, Bob, Jeremy, Ben and I (the team charged with manning the stand for the weekend) had plenty of plants to sell and so we were able to offer quite a varied assortment of both common and more unusual species. We did rather good trade well before the planty proceedings of the weekend got going in earnest as many of the other stall holders were quite intrigued by our assortment of gems from the southern hemisphere. Some are even destined to be tried in the garden at Great Dixter itself!

Once the gates opened on the event and the public were allowed in, we pretty well didn't stop for the whole weekend. I gave a short talk about the history and importance of Australasian plants in Britain's gardens and we had many interesting conversations with both amateur and keen gardeners from across the country and into Europe. It also turned into a fantastic opportunity for us to meet up with quite a few APS members too.

It really was a lovely weekend, both socially and horticulturally, and what is more Great Dixter have invited us to come back at some point in the future.

Robbie Blackhall-Miles.

DORYANTHES PALMERI

Judy Clark

For me one of the most exciting things about the APS visit to Cambridge was discovering that one of the spear lilies, *Doryanthes*, is being grown outdoors, in a sheltered spot by the glasshousesl. If I remember correctly it is *D. palmeri*, and it survived -3ºC last winter. *D. palmeri* is one of only two species in the genus (the other is *D. excelsa*) and they have a family all to themselves - the Doryanthaceae.

I have long admired spear lilies and I have often wondered how they would do here. Both species grow well in Melbourne are quite a favourite in parks where they can make a real statement (photos page 19). *D. palmeri* in particular needs a lot of space; it is not called *giant* spear lily for nothing as it can get to 3 metres tall and 4 metres wide. Not a good plant for a pot!

I do remember being told that the flower buds are vulnerable to frost but the leaves seem pretty tough. I have a small plant which is currently in a pot and which I inadvertently left outside all through last winter's 'beasts from the east'. When I got round to looking at it in May all the leaves were dead and I thought the roots had gone mushy and that would be the end of it. Fortunately I didn't throw the pot away, because by mid July, to my great amazement, there were green shoots. This winter it is already in the greenhouse, but heaven knows where I will put it if it thrives.

For more information and some good pictures of *D. palmeri* try www.anbg.gov.au/gnp/interns-2012/doryanthes-palmeri.html.

BITS AND PIECES

Grevillea: not renamed

Recent work by Mast et al. (2015)[1] looked at the relationships between *Grevillea*, *Hakea* and *Finschia* (a small genus of three species hailing from New Guinea). The authors concluded that there were several possibilities for future classification, one of which could be the three genera becoming one, which would have to be *Hakea* (under the International Code of Nomenclature for

algae, fungi, and plants). However this piece of work did not resolve classification issues and further work is ongoing. It looks, however, that although there will be some alterations both *Grevillea* and *Hakea* can continue to be recognised[2].

1 . Mast AR, Olde P, Makinson R, Jones E, Kubes A, Miller ET and Weston PH. (2015) Paraphyly changes understanding of timing and tempo of diversification in subtribe Hakeinae (Proteaceae), a giant Australian plant radiation. *American Journal of Botany*. 102(10), pp. 1634-1646 (free access).
2 Olde P. (2018) Editorial, *Grevillea Study Group Newsletter*, 110, June, p. 2.

Flora of Australia online

The *Flora of Australia* series describes to species level flowering and non-flowering plants (angiosperms, gymnosperms, ferns, mosses, liverworts and lichens) known to be indigenous or naturalised in Australia. It is not yet complete and many volumes are out of print. Some volumes have been digitised and can be consulted online. All of these volumes, and more, can also be downloaded for free as PDFs. Search for Flora of Australia or go direct to www.environment.gov.au/science/abrs/publications/flora-of-australia.

Wattle: Acacias of Australia

The main purpose of Wattle (apps.lucidcentral.org/wattle/text/intro/index.html) is to enable users to accurately identify wattle plants that occur anywhere in Australia or elsewhere in the world where they are grown, using a random access key. It includes all 1,057 formally described species of *Acacia*; some informal taxa and several hybrids; and species in the related genera *Acaciella*, *Senegalia* and *Vachellia* that occur in Australia and which were previously included in *Acacia*. Just as useful, in my view are the fact sheets which for each species provide detailed descriptions, illustrations, photographs and maps, providing this information in a format that is easier to access than in World Wide Wattle (worldwidewattle.com/).

Horticultural Flora of South eastern Australia online

HortFlora is an updated online version of the five volumes of the *Horticultural flora of south-eastern Australia*, which includes cultivated natives. The Royal Botanic Gardens Victoria provides this free resource which can be found at hortflora.rbg.vic.gov.au/.

London Trees

Extensive data on London trees is available online. The database of local authority maintained trees is at data.london.gov.uk/dataset/local-authority-maintained-trees. Be warned, it's a big file! Most of the tress are quite common but the spreadsheet includes a *Banksia* growing in Southwark, quite a few *Eucalyptus*, *Acacia*, and even half a dozen or so *Callistemon*. A second source, the 'London Tree Map' (www.london.gov.uk/what-we-do/environment/parks-green-spaces-and-biodiversity/trees-and-woodlands/london-tree-map) provides locations and species information for over 700,000 trees. Thanks to Jeff Layman for providing information about these resources.

Mim and Michellino

You can learn a lot about Australian native gardens, view lots of interesting Australian plants and discover all manner of other things from Mim and Michellino's videos at vimeo.com/user61493170. Thanks to Tim Smith for telling us about this site.

Grevilleas cultivated in England between 1792 and 1920

Present Name	Year first Introduced	Name used at time
G .acanthifolia subsp.*acanthfolia*	1822	
G. agrifolia	1821	*G. aquifolia*
G. alpina **	1856	*G. alpestris*
G. annulifera	1880	
G. arenaria subsp.*arenaria*	1803	
G. arenaria subsp.*canescens*	1822	*G. cineria*
G. aspera	1824	
G. asplenifolia	1806	
G. banksii **	1856	*G. fosteri*
G. baueri subsp.*baueri*	1822	*G. pubescens*
G. bipinnatifida	1837	
G. buxifolia subsp.*buxifolia*	1792	*Embothrium buxifolium*
G. caleyi	1829	*G. blechnifolia*
G. concinna subsp.*concinna*	1824	
G. crithmifolia **	1840	
G. curviloba subsp.*curviloba*	1839	*G. lawrenceana*
G. drummondii	1858	
G. x *ericifolia*	1878	
? G. exul	1850	
G. fasiculata	1872	
G. flexuosa	1836	*Anadenia flexuosa*
G. floribunda	1835	*G. ferruginea*
G. x *gaudichaudi*	1823	
G. gillivrayi	1854	
G. glauca	1821	*G. gibbosa*
G.hilliana	1862	
G. intricata	1870	
G. juniperina **	1822 ?20	
G. juniperina form "sulphurea" **	1823	
G.l avandulaceae	1850	*G. rosea*
G. linearifolia	1792	*Embothrium lineare*

G. manglesii subsp.*manglesii*	1836	*Manglesii glabrata* and *Anadenia manglesii*
G. manglesii subsp.*ornithopoda*	1850	
G. montana	1803	
G. mucronulata	1805	*G. acuminata*
G. oleoides	1917	
G. parallela	?1821	*G. ceratophylla*
G. parviflora	1824	
G. phylicoides	1802	*Stylurus collina*
G. preissii	1838	
G. pulchella	1824	
G. quercifoliia	1838	*G. brachyantha*
G. refracta	? 1821	*G. heterophylla*
G. robusta **	1829/30	
G. rosmarinifolia **	1824	
G. sericea	1792	*Embothrium sericeum*
G. speciosa	1809	*G. punicea*
G. sphacelata	1825	
G. synapheae subsp.*synapheae*	1836	*Anadenia gracilis*
G. tenuiflora	1836	*Manglesia tenuiflora*
G. tetragonoloba	1886	*G.hookeriana*
G. tripatita subsp. *macrostylus*	1868	*G. macrostylus*

Adapted from Cavanagh T. (2016) The introduction of Grevilleas to England and Europe - an Update. *Grevillea Study Group Newsletter*, 105, November, pp. 5-7.

Cavanagh notes that list is not exhaustive as not all introduced plants would have been recorded , and some plants would have been misidentified or confused. Those marked ** are listed in the Plant Finder as currently having suppliers, as species and/or as cultivars.

Illustration acknowledgements

Robbie Blackhall-Miles, page 32 below right

Judy Clark, page 19, below; page 21 below; page 22

Gary Dunlop, pages 9 and 10

Owen Johnson, page 19 top

Ben Ram, back cover

Warren and Gloria Sheather, page 31

Hilary Spon, page 32 centre right, top left and below left; back cover

Jeremy Spon, page 21 top left;, page 32 top right

Graham Sumner, page 20

commons.wikimedia.org/wiki/File:Grevillea_alpina_(Cat%27s_Claws),_Grampians_National_Park,_Victoria_Australia_(4872569625).jpg, page 21

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Geoffrey Cooper's arboretum, Oxfordshire