AUSTRALASIAN PLANT SOCIETY
NEWSLETTER

PENTACHONDRA

ISSUE 41 DECEMBER 2008



Swainsona formosa
Sturt's Desert Pea

AUSTRALASIAN PLANT SOCIETY

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Alyogyne hakeifolia

EDITORIAL

Judy Clark

I had good intentions. This issue was going to come out in November. But what with one thing and another I was unable to progress as fast as I would have liked. So not only many thanks to all those members who duly sent contributions by mid October, but also apologies for having to wait some time to see them in print.

Despite a summer more memorable for cloud and rain than sunshine the weather was perfect for the 2008 AGM, held at the Hillier Gardens. Attendance was excellent, although I suspect this was due not least to the before and after attractions: tours of the nearby Meon Orchard and of Hillier Gardens themselves. Maybe the reports (see pages **XX** and **XX**) might tempt more members to one or both of the 2009 get-togethers (see page 3). As well as an enjoyable day out you get to meet other members and have a chance to acquire more Australasian plants through plant swaps.

One slightly worrying matter discussed at the AGM was our slowly falling membership. In June 2008 this stood at 146, down from a peak of around 200 in 2003. The long-term the viability of the APS would be threatened if membership dropped below 120 as we would have to start drawing on our reserves each year, even though these are quite healthy at the moment (see the 2007 accounts). One suggestion was that personal recommendation might help to recruit new members. If you value your membership, then isn't it likely that friends or acquaintances would too, or even someone met by chance who turns out to be an Australasian plant enthusiast? They haven't all heard of the APS, as Amanda Kershaw writes. "We recently met (yet another) plant enthusiast - who loved Australasian plants and had visited Australia - but hadn't heard of the APS. We soon told him and within 20 minutes he had visited the website and had his application ready to post. It's good to spread the word!" It's for this reason that a membership form is included with this issue. It does no harm to make things easier.

This discussion also touched on the name of our newsletter and whether it should be changed; it could imply that the APS is only for the specialist or the very technically-minded. I'm sure some of you will recall that this issue has provoked discussion in the past. Comments in issue 32 (May 2004) show that some members find the name Pentachondra perfectly satisfactory but others believe it is somewhat obscure. Proposals for change included some variation on 'Gondwanaland', 'eucalypt', 'Australasia & Beyond', 'Anzplants', and, tongue-in-cheek, 'Up a Gum Tree'. Is it time to open the debate again?

For any newer members who have wondered *Pentachondra* is actually a genus of four species in

the Epacridaceae which are found in alpine areas of Australia and New Zealand. The picture on page 9 shows a cultivar of *Pentachondra involucrata*, a Tasmanian endemic.

Notwithstanding, some things just are a bit technical. Botanical terms come into this category, but a bit of botanical knowledge helps enormously to ensure that the plant you buy is what the label says it is. Unfortunately, non-specialist nurseries, not to mention garden centres, can get the names wrong. Jeff Irons' article on page 8 makes this point in discussing the botany of acacias, noting that *A. dealbata* (Silver Wattle) and *A. mearnsii* ((Late) Black Wattle) are frequently confused. This matters because although they look similar they flower in different seasons and the latter is more tender than the former. (Jeff tells me that *A. mearnsii* gets frost damage nearly every winter round where he lives in the north west of England.) The general point of course is that garden plans can go badly awry if the wrong species is unwittingly purchased because similar looking species can have quite different requirements and characteristics.

Names of plants can be another source of confusion. We use latin names because they are specific to a particular plant. However they can change and, moreover, different authorities don't always agree. I check the latin names of plants in contributors' articles as far as I can and if there is a nomenclatural issue or the plant is not well known I have added a comment in a box. For interest I have also added the common name (where I can find one) in brackets after the latin name, using Wrigley and Fagg (2003) or, failing that, Costermans (1996) as references. But it is inadvisable to use them when buying plants as the same common name can apply to more than one species.

That's more than enough from me. **The deadline for the next issue is 1st March 2009**, but you don't need to wait; I'll be very pleased to have your contributions before then (for where to send them see my contact details inside the back cover). The length doesn't matter but accompanying photographs or drawings will be much appreciated although I would also stress that they are not necessary. After all, you need something to do to fill all those long winter evenings!

References

Wrigley JW and Fagg M. 2003. Australian Native Plants: Cultivation, Use in Landscaping and Propagation (5th edition). Reed New Holland

Costermans L. 1996. Native Trees and Shrubs of South-Eastern Australia. Lansdowne Publishing Pty. Ltd.

APS NEWS

Forthcoming meetings

The 2009 AGM will be held on 13th June at Chester Zoo, home of the Joseph Banks Garden (see issue 40), and, so I'm told, a kookaburra. Many thanks to Mark

Sparrow for offering the Zoo's facilities.

The southern meeting will take place on a Saturday in May; the date has yet to be finalised. We will be visiting the National Pinetum at Bedgebury in Kent, hopefully guided by one of the curators who has collected seed for propagation in Australia and New Zealand, and Plantbase Nursery near Lamberhurst.

Further details of both meetings will be in the spring issue of Pentachondra but if you can't wait till then contact our Secretary, Jeremy Spon.

2009 Seedlist

The 2009 seedlist and application form will be sent out with the spring newsletter. It will also be available by email from our seed manager, Richard Christmas. Send an email to Richard at seeds@anzplantsoc.org.uk at the end of March 2009 if you would like to get your seeds going early.

New treasurer wanted

Tony Entwistle had done a sterling job as Treasurer for many many years. He would like to retire in the near future so we are looking for someone to take his place You know what's coming – could you do this essential job?

Currently the treasurer's tasks include keeping the APS accounts, receiving subscriptions and other income, paying bills and expenses, keeping the membership list up to date and contacting members who have not paid their subscriptions. Anyone interested can contact Tony to find out more. It might also be possible for two people to share this task, one looking after the money and the other looking after the membership.

Subscriptions are due

All subscriptions are due on 1st January 2009. If you don't pay by direct debit or standing order send your cheque for £10, payable to Australasian Plant Society, to the Treasurer, Tony Entwistle (his address is on the contacts list inside the back cover).

Deadline for next issue

The deadline for the next issue is 1st March 2009. Please keep those contributions coming.

SUCCESS WITH SEEDS

Further comments and experiences

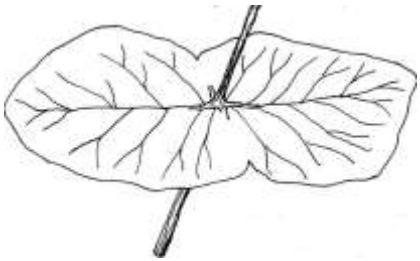
John Purse

The articles by Judy Clark and Jeremy Spon in the last two editions of Pentachondra have provided a lot of helpful information on germination procedures and successes. They have also posed the obvious

questions about why germination fails with some seedlots. In this article I will mention successes that I have had with a few more species. But I will also outline some advances made in recent years in the understanding of the science of dormancy and germination, and how this has led to some new approaches for germination of species from the southern hemisphere.

Seed dormancy is best considered as a mechanism that ensures survival of species in the wild; seeds that are dormant can avoid premature germination. If we keep this point in mind, and try to mimic conditions that our seed is likely to encounter in the natural habitat of the species concerned, then we have a better chance of getting seed to germinate.

It is worth remembering that getting efficient germination of seeds of species we regard as ornamental is not just of interest to enthusiasts. Some species are commercially important for forestry, nursery stock, and cut foliage. Where such species are grown on a large scale, efficient and uniform germination is essential to economic running of nurseries, and a lot of effort has been made to ensure that this is achieved consistently. One big stimulus for all this was the development from the late 1970's of the pulp and paper industry based on purpose-grown *Eucalyptus*. An invaluable result of this was a handbook 'Eucalyptus seed' published in 1980, aimed at producers and users of the seed. It is an amazing compendium of knowledge on the subject, and there was a lot known even in 1980. The appendices provide some pointers for a couple of Jeremy's problem species: *Eucalyptus kybeanensis* (Kybean Mallee-ash) and *E. perriniana* (Spinning Gum) seed require cold-moist stratification (for 6 weeks and 3 weeks respectively, at around 4°C) prior to germination.



Eucalyptus perriniana juvenile foliage

I obtained good germination of two *E. perriniana* seedlots, one from APS (Kiandra, NSW provenance) and the other collected from one of the Tasmanian populations, following stratification for 6 weeks. I subsequently discovered that the Tasmanian populations of this species do not require stratification, and this point is well-documented. This exemplifies a couple of useful points. Firstly, it does no harm to stratify seed, whether or not the seed actually requires this. (Of course, this assumes that the seed does not succumb to infections during stratification, but in my experience such infection is unusual provided stratification is done in moist vermiculite; the

entire seed + vermiculite mix can be sown afterwards). Secondly, there is variation in the need for stratification between different provenances within species. This should not be too surprising: species that occur naturally over a wide altitudinal ranges will experience widely contrasting amounts of cold. Stratification presumably removes a dormancy that exists to avoid germination of fresh seed in the autumn, in areas having cold winters. It would be a positive disadvantage to have such pronounced dormancy in a population growing in a lowland region with mild winters – Tasmanian *E. perriniana* would appear to be a good example!

In general, I think it is worth stratifying seed of any eucalyptus species from highland areas of south-east Australia, unless one is certain that this is not necessary. It may not work (for all sorts of possible reasons, of course), but if the seed is viable one has probably lost nothing. And of course, it may not be the only trigger required for germination. Certain eucalyptus species from lowland and/or hotter parts of Australia require the seeds themselves to be exposed to light to stimulate germination. It has been reported that light can substitute for stratification in *Eucalyptus nitens* (Shining Gum), a species from high elevations in Victoria and New South Wales. To make things even more confusing *E. ovata* (Swamp Gum), a lowland species that is said to benefit from light for germination and which has no apparent need or requirement for stratification, is also said to germinate well without the seed being exposed to light if the seed is first stratified.

Personally, I have not seen marked effects of light exposure on germination of any *Eucalyptus* species. However, this may be because I stratify seedlots that I suspect will benefit from this treatment, and then routinely use the bog method for germination. If the seeds are small enough to sit in the surface cervices of the bog compost, I do not cover them; thus they are exposed to light. Finally, I use sunny windowsills for the bog trays – the more sun the better, in my view!! The light helps to ensure that the seedlings are robust, but it may affect germination as well.

One final point on germination of eucalypts. A nurseryman who is raising a range of eucalyptus species commented that seedling emergence following stratification seemed to be markedly better when the night temperature is close to a day temperature of around 18°C. Cool night temperatures seemed to result in markedly reduced seedling emergence. I can't comment on whether this is really so, but it does fit with the general recommendations to germinate seeds at moderate, even tempertaures, and with my experiences using indoor windowsills rather than an unheated greenhouse for germination. And doubtless there are other genera whose seed germination benefits from oscillating temperatures.

I have used eucalyptus species for all my examples so far, but will move onto other genera. I am a great fan of the bog method for germination (outlined by Judy Clark in Issue 40), and find it far more versatile than is generally acknowledged. The compost does need to be really free-draining, so that it contains air as well as water, and the water level in the tray needs to be well below the compost surface. It is also essential that larger seeds are covered with a highly porous material such as perlite, so that the entire seed surface remains moist and aerated. I have achieved excellent germination of *Eremaea pauciflora*, *Swainsona formosa* (Sturt's Desert Pea) and lettuce using the method.

Eremaea pauciflora

This species belongs to a little cultivated group of West Australian plants related to melaleucas, though with somewhat different flowers. It is a medium sized shrub with orange flowers; the colour comes from the prominent stamens. In the south of the state it is quite common in the wild.

The increased interest in species conservation, both *in situ* and through use of seed banks, has also stimulated research into germination requirements for a whole host of species. After all, there is no point in having seed banks from which you cannot recover plants reliably! One of the most significant recent breakthroughs has been an understanding of the role of fire in stimulating the germination of an enormous range of species from areas subject to regular bushfires. Jeremy's article mentioned this, but further findings have been made in recent years. Work on germination of the Fynbos flora of the Cape Region in South Africa led to the clue that smoke, not heat or ash, from bushfires is a trigger for germination of many species.

This finding was followed up by scientists in Perth, WA, and led in 2004 to the discovery of a particular chemical in the smoke of burning plant material that promotes germination. The chemical is a butenolide that has not been given a catchy name, and does not appear to be available commercially. However, there has been a lot of interest in practical applications of the finding at Kings Park Botanic Gardens in Perth, WA. The visitor centre at the gardens produces a very useful practical leaflet 'Smoke to sow and grow – using smoke to germinate Australian native plants', and used to sell small bottles of 'Seed Starter', which is a pungent, pale-brown solution of smoke in water. Soaking seeds in diluted smoke water for between 6 and 24 hours prior to sowing is a convenient way of treating the seeds. This product is now available commercially in Australia as Regen 2000®. There is an informative website on this product and the range of species that benefit from treatment at: http://www.tecnica.com.au/Regen-Overview.html

Even in 2002, the researchers at Kings Park had found that the seeds of over 400 native Australian species, spanning 122 genera and most of the dominant Australian plant families, respond to smoke under nursery and/or field conditions. Even species from habitats that are not fire-prone, such as the alpine herb fields of Tasmania, are responsive. However, they also point out that not all species are responsive to smoke, and that the fact that a particular species is responsive is not a predictor of responsiveness in related species.

Despite this exciting development, smoke is not a panacea. Some species, notably some of the Australian *Acacia* species, appear to germinate following bushfire in response to physical damage to the seed coat by the fire, or exposure to the heat of fire. Attempts to germinate the seed of other species at high temperatures (usually over 25°C) can lead to poor germination – this phenomenon is very marked with *Eucalyptus nitens.* These two simple examples illustrate a general point: in the wild, seed is adapted to survive until conditions suitable for germination arrive. Such survival may be simply passive, or it may involve dormancy mechanisms. When conditions for germination are favourable, there may be a huge flush of germinants in the wild. But if all the seeds present germinate at this point, the population may be at risk of all the seedlings being killed by a drought or some other factor – not a good thing if the parents have been destroyed in a bushfire!. The germination of some species has evolved to cope with such uncertainties and risks, by ensuring that only a proportion of seeds actually germinate at any one time, even under favourable conditions. In this situation, there may be natural variation in dormancy between seeds harvested from a single plant. The practical consequence for growers would be that some seeds in a packet may be much more dormant than others!

The overall message is that we are more likely to have success with seed germination if we try to mimic the conditions the the seed of a particular species experiences in the wild, both prior to and during germination. Thus, seed from cool temperate areas of Australia is likely to be able to cope with being kept cool and moist for winter, whether or not it requires stratification. But such seed may not germinate at high temperatures if it is from an area with predominantly winter rainfall, as any seeds that did germinate after summer rainfall would be at high risk of mortality if there is no further rain for many weeks. Analogous arguements could be made for other environments.

I have only touched on a huge and complex subject. But hopefully I have given encouragement to keep trying, and provided a few further approaches to try. And it is worth keeping in mind that while rapid and high levels of germination can be gratifying for the propagator, overcoming all the seed dormancy mechanisms to achieve this may tax our ingenuity.

References
Eucalyptus seed. D J Boland, M I H Brooker and J W Turnbull. CSIRO, Australia (1980). ISBN 0 643 02586 3
Genetic variation in the Spinning Gum, *Eucalyptus perriniana*. R J E Wiltshire and J B Reid. Australian Journal of Botany Vol 35 pp 33-47 (1987)
A compound from smoke that promotes seed germination. G R Flematti *et al* Science Vol 305, no. 5686, p977, 13 August 2004

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FOGGING

Tony Entwistle

Have any members used fog for cuttings? The essential point of fogging is that it keeps cuttings turgid without wetting the foliage. It is used extensively by nurserymen both here and in Australia.

There is a display each year at the Four Oaks Show (a commercial horticultural show held annually in Cheshire) and this year I plunged into the exhibit. After some time I was able to make out a young lady who explained the equipment. However I discovered that even a single unit would require compressed air, would cost over £500, and would be far too big for what I had in mind. So I turned to the mini-foggers, seen in garden centres and made for ornamental effect, often with coloured lights. But they wanted £70, the box lacked the name of the manufacturer, and there was no guarantee. Nor did the staff seem able to help.

Searching around, I found one for £30, made by Heissner of Lauterbach in Germany, with a guarantee and an English contact The device works on ultrasound with a transformer and cuts off automatically if the water level drops. I have a small propagating frame about 1m x 1m x 1m with polycarbonate sides and a heated base. The fogger is placed in it in a small container of water; distilled is recommended but I use rainwater. It seems to be working well but it uses quite a lot of water and so only lasts about an hour and a half before shutting off. Nonetheless this seems sufficient and I have improvised a drip feed (from an old transfusion set) which prolongs it.

I have only has the fogger for a few weeks so I cannot yet say how successful it will prove as a propagation tool.

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ACACIAS AND GREEK MYTHOLOGY

Jeff Irons

Have you ever thought about *Acacia* leaves? Some of them, including those of the popular *A. baileyana* (Cootamundra Wattle) and *A. dealbata* (Silver Wattle), are rather like rowan leaves while others are very different and can



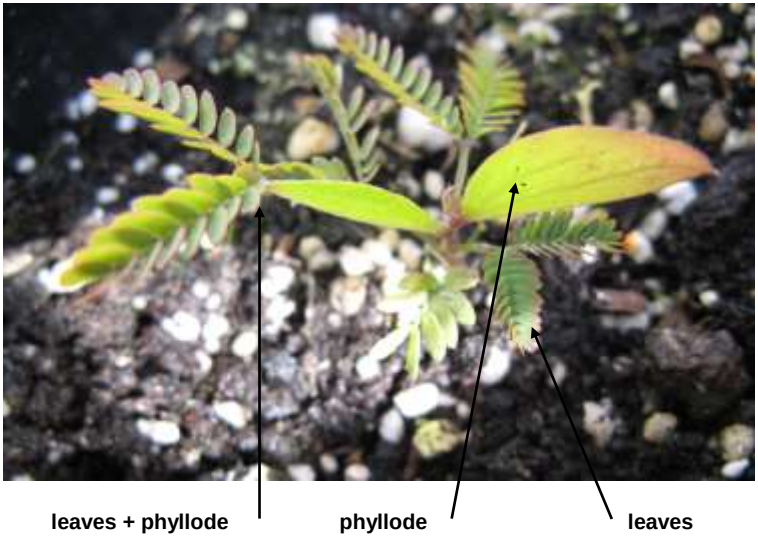
***Pentachondra involucrata* cultivar**



King's Lomatia



Marsdenia australis



***Acacia* seedling**

be a variety of different shapes. The latter are not leaves at all, but are modified stalks, called **phyllodes**. All acacias start life with **bipinnate** leaves; pairs of leaves on their own stalk, on opposite sides of a main stalk. A few of them (about 22) have leaves throughout their life but most of the 960 species lose their leaves shortly after germination. The lower part of the leaf stalk, called the **petiole**, expands and takes over the functions of the leaf. It is the chlorophyll containing organ and is called a **phyllode**. Phyllodes are a way of coping with aridity. They are thick and usually small. In hot weather they lose much less water than a leaf would.

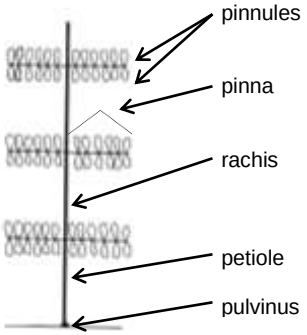
The origin of the name phyllode has appeared in Pentachondra before, but there is no harm in repeating this delightful fable.

When on his way back from Troy, Demophon was washed up on the shore of Thrace and was given hospitality by the king. The king's daughter, Phyllis, fell in love with Demophon who said that he had to settle his affairs in Athens before he could marry her. Phyllis agreed to the separation. On the day that he was expected to return Phyllis went to look out for him and when his ship did not appear over the horizon, she hanged herself and was changed into a leafless almond tree. When Demophon did return he was told of Phyllis' death and embraced the tree, which burst into leaf. From that day on the Greeks changed their word for leaves from petala to phllylla.

Yes, petals too are modified leaves and we come across the name Phyllis in another form at the base of a flower head in many plants. Look closely with a lens or magnifying glass and you will see small things, usually triangular. They too are modified leaves and in some species are called **bracts** and in others **phyllaries**. All this is a pleasant digression and I must get back to acacias.

The photograph on page 10 shows a young acacia plant. We can see the original leaves, some with a thickened and flattened stalk, turning into a phyllode. Finally there is maturity shown by the phyllode, without any leaves. To distinguish the various species we need to look more closely at the leaves and phyllodes, and that entails some more specialised vocabulary.

The leaved species have bipinnate leaves throughout their life. The diagram on page 11 shows the general structure of a bipinnate acacia leaf. The stalks carrying the tiny leaves are called **pinnae** (singular **pinna**) and each leaf is a **pinnule**. The part of the stalk to which the pinnae are attached is called the **rachis**, and the stalk of this whole leaf is the petiole. On many of the leaved species there are small **glands** on the rachis and petiole. Phyllodinous species can also have such glands, on the phyllode, sometimes on an edge, sometimes right at the base, next to the **pulvinus.** The pulvinus is a swelling at the base of the petiole, and it allows the leaf or phyllode to move.



Structure of a bipinnate leaf

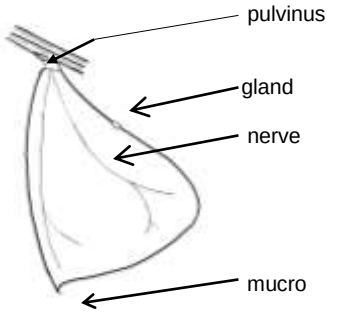
The arrangement of the flowers is also important in differentiating between *Acacia* species. Flowers are in compound heads and can be shaped like a ball (**capitate**; see picture page 21) or like a rod (**spike**). A few species have very short spikes, less than twice as long as they are wide. They are said to be **ovoid** or **oblongoid**. The flowering shoots (the **inflorescence**) are located in a leaf or phyllode axil. The flower heads may be arranged in a **raceme** or a **panicle** (a branched raceme). Individual flowers are very tiny and can be examined only under a microscope. Here it suffices to say that though they usually have 5 petals and 5 sepals, some species have 3 or 4 or 6 of each.

There are many more terms than these, but the few given here are enough for most people's needs. And as the following examples show they can be used to avoid being sold the wrong plant.

A common mistake made by nurseries is to sell the summer flowering *A. mearnsii* ((Late) Black Wattle) as the winter flowering *A. dealbata* (Silver Wattle). The leaf colour alone is insufficient identification because although dealbata means "becoming white" and the leaves are usually greyish-green the species can have dark green leaves similar to *A. mearnsii*. Armed with our knowledge of fine detail all we need to do is look at the glands. *A. mearnsii* (see picture page 20) has glands at the base of each pair of leaves (**jugary glands**) *and* some glands between them on the rachis (**interjugary glands**). *A. dealbata* (see picture page 20) has *only* jugary glands and it also has one on the petiole, below the lowest set of leaves. Although most desired in its purple foliaged form *A. baileyana* too can have greyish leaves. It has very prominent jugary glands (see photograph page 21), but neither interjugary glands nor one on the petiole. The *A. nano-dealbata* (Dwarf Silver Wattle) on the APS seed list can be separated from *A. dealbata* by the absence of a gland on the petiole. Otherwise it resembles *A. dealbata* ssp. *subalpina*. In all cases you do need to look at a fairly young leaf because all too often the lowest pair of pinnae fall off and then what you see appears to be a petiole gland but is, in actuality, the lowest jugary gland without its pinnae.

Even though they are very different the phyllodinous *A. cultriformus* (Knife-leaf Wattle) and *A. pravissima* (Ovens Wattle) are also often confused with one another. Both have triangular phyllodes but whereas *A.*

cultriformus has only one **nerve** (vein) *A. pravissima* has two (see diagram). The gland of *A. pravissima* is on the lower part of the upper **margin** (edge) while that of *A. cultriformus* is on the angle of the upper margin. If you look a bit more closely, the **reticulation** (network) of the secondary veins of *A. pravissima* is clearly visible. *A. pravissima* also has a small hook (mucro) at the tip of its phyllode but *A. cultriformus* does not.



Acacia pravissima leaf

Even when they are not in flower many acacias can be identified by careful examination of features such as these. Sometimes a knowledge of botanical or classical latin is enough to enable you to impress the unknowing. Last year someone came to me carrying a piece of *Acacia*. Having told him that identification would be very difficult, if not impossible, I then said with confidence that it was a specimen of *A. decurrens* ((Early) Black Wattle), a species I had never seen before. This was because it had prominent ridges (or flanges) running down the petiole onto the branch. The botanical name for this feature is **decurrent**. Subsequent checking of a specimen with an identification key in a book confirmed this.

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KING'S LOMATIA

The oldest plant clone in the world?

Judy Clark

Tasmania is well-known for having many endemic species but *Lomatia tasmanica*, a member of the Proteaceae, is particularly special because it is believed to be the oldest living plant clone in the world. It was first seen in the wild in 1934 by Tasmanian naturalist Deny King (hence its common name). One of his descendants, Mary King, tells the story thus:

"In 1934 Deny King (a well-known amateur naturalist) was tin mining at Cox Bight. One day, when rambling through the bush, he found a strange and interesting plant he'd never seen before. On his next visit to Hobart he took specimens to the Tasmanian Herbarium. It was new to their botanists as well and specimens were sent off to Kew Gardens in England. The accompanying letter stated "A man called King brought this plant in the other day - I cannot place it at all." In fact the plant was not named until the 1960s as it was necessary to have flowers in order to classify it. In January 1965 the King family travelled on an important mission

to Cox Bight to collect flowers of this strange new plant for the eminent Tasmanian botanist, Dr Winifred Curtis. Lo and behold, the plant was in flower! The blooms were rusty red in colour and looked rather like grevilleas." (http://www.apstas.com/lomatiatas.htm).

Although it produces flowers neither fruits nor seeds have ever been detected on *L. tasmanica* specimens. Moreover, unlike other Australian species of *Lomatia*, plants are highly uniform. Scientific analysis showed that the wild population comprises genetically identical plants.

Further genetic analysis provided an explanation for these features. *L. tasmanica* is a triploid, which means its genes come in sets of three; that is, it has three chromosomes. Put simply, having three chromosomes makes it extremely difficult for the reproductive process to work properly as the bits that have to combine when a pollen grain fertilises and ovule (a plant 'egg') end up with the wrong number of chromosomes. So triploids are normally infertile.

All this evidence suggests that the wild population of *L. tasmanica* comprises a single clone which proliferates vegetatively, probably by layering and suckering. But it was the discovery, close to the extant wild population, of fossilised leaf fragments identical to living *L. tasmanica* material, that enabled the age of the clone to be surmised. Using carbon dating the age of these fossils was determined to be at least 43,600 years. It is likely that these fossil leaves do indicate the age of the clone because triploidy is rare in nature (plants that can't reproduce sexually are at a great disadvantage when it comes to adapting to changed conditions) and unlikely to occur twice in the same species. If the fossil plant were a triploid it too would only have been able to reproduce vegetatively and this would mean that *L. tasmanica* has been reproducing itself vegetatively for at least 43,600 years.

This does not mean that individual plants are 43,600 years old! (Individual plants are thought to live for about 300 years.) But it does mean that *L. tasmanica* would be the oldest plant clone in the world, nearly four times as old as a Box Huckleberry clone (*Gaylussacia brachycera*) in Pennsylvania reported to be around 12,000 years old.

The only known wild stand of *L. tasmanica* occurs in the southern foothills of the Bathurst Range in the world heritage area of southwest Tasmania. Although it is safe from destruction by development, and the stand is quite large, spreading over more than a kilometre of creek gully in the rainforest, nonetheless the species is considered to be critically endangered. As it occurs in just one small area it is very vulnerable to fire and disease, making extinction in the short term a real possibility.

One way to guard against extinction is to propagate King's

Lomatia so that eventually new populations can be established in the wild. The problem is that propagation is extremely difficult. It's not that cuttings don't strike – they do, quite easily – but that cuttings tend to die when transplanted for reasons not yet understood. The Royal Tasmanian Botanical Garden has propagated and maintained some plants, and Jeff Irons has also managed this difficult trick. His plant comes from a cutting from a specimen (now dead) given to Ness Botanic Gardens. However he has not yet cracked getting it to flower; the picture on page 9 shows a plant growing in a Tasmanian garden.

King's Lomatia has potential as a garden plant, but only, of course, if a successful propagation method is developed: tissue culture perhaps? Descriptions state that it is a distinctive slender shrub or tree which can grow to up to 8m although plants are usually much less tall. The leaves are shiny dark green with deeply and irregularly toothed leaflets, their similarities to holly leaves presumably underlying its other common name of King's Holly. Meanwhile, I have never seen it growing and to my knowledge there are no public gardens (at least in England) where it can be seen now Kew no longer has a living specimen. Is Jeff's plant the only one left?

Notes

1. My thanks to Jeff Irons for introducing me to King's Lomatia.
2. To compile this article I used information from Jeff; an article in the April 2008 edition of the Burradong Botanic Garden and Arboretum newsletter; a presentation by Tim Stretton to the Kew Mutual Improvement Society on 06.10.2008; and various websites including http://www.environment.gov.au/cgi−bin/sprat/public/publicspecies.pl?taxon_id=3745; http://www.apstas.com/lomatiatas; and http://www.parks.tas.gov.au/index.aspx?base=3248. Details vary slightly from source to source.
3. Several sources referenced articles that I did not have access to, including:
Lynch A. J. J. and Balmer J. 2004. The ecology, phytosociology and stand structure of an ancient endemic plant *Lomatia tasmanica* (Proteaceae) approaching extinction. Australian Journal of Botany, 52, pp 619-627.

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GROWING STURT'S DESERT PEA

John Purse

Sturt's Desert Pea (*Swainsona formosa)* is one of the iconic plant species of inland Australia, and is the floral emblem of South Australia. In the wild it can produce massed displays of extraordinary scarlet flowers, usually having a glossy black central boss.

The photograph on the front cover, taken in August 2006, shows one such display in the Cape Range

National Park in Western Australia. It is worth noting that many populations in that park lack the glossy black boss on the flowers.

It is reputed to be fairly easy to cultivate in hot climates. I guess it has been cultivated in Britain occasionally, though I am not aware of any reports of this. It seemed to be an interesting challenge....

I bought a small packet of seed in Australia in 2006, and decided to give it a go this spring. The seed germinated well and rapidly using the bog method on an indoor windowsill, without any pre-treatment of the seed, following sowing on 5th May. The young seedlings transplanted well into a peat-based compost containing 30% perlite, and grew on in the greenhouse. Then slugs discovered them (even in the greenhouse!). I transplanted the surviving plants into 2 litre pots (both clay and plastic) containing a similar, well-drained, soil-free compost. The plants that had survived the slugs grew well initially, but many succumbed to root rots in the dank conditions in July and August. Two plants initiated flower buds during August, and one of these flowered in early September. This plant made a spectacular display on our kitchen windowsill before it too succumbed to a root rot. These flowers too had paler bosses than normally seen in the wild, but the red colouration was superb.

With hindsight, and having read more on the cultivation of this species, I may have achieved better results had I used a free-draining inorganic compost at transplanting. And I am sure I would have seen better growth had there been more sun this summer! Nevertheless, my experience does show that Sturt's Pea can be grown to flowering fairly easily, and I'll try again.



MARSDENIA AUSTRALIS

Alan Hendy

Marsdenia australis, formerly known as *Leichardtia australis*, is well known as a bushtucker plant in its native Australia. It has many aboriginal names. In the language of the aboriginal people of Kalgoorlie in Western Australia it is known as Karlkurla, which is the word from which Kalgoorlie takes its name. Karlkurla means 'place of the Silky Pears', and Silky Pear is one of its English common names. Another is Bush Banana. The whole plant is edible including roots, leaves, flowers and fruit. It is one of the significant bush foods for aboriginal people and is often depicted in their art.

The genus *Marsdenia* contains about 100 species, mostly twining shrubs, found in warm temperate to tropical regions. *Marsdenia australis* is widespread throughout the arid regions of mainland Australia, occurring in every state.

It is a slender twining plant with grey–green leaves and creamy

flowers and it can grow up to 4 metres in the wild. Leaf shape can vary from one population to another. I have one plant grown from seed collected in New South Wales which has long narrow leaves compared to my other plants from Kalgoorlie in Western Australia that have shorter and wider leaves.

Asclepiadaceae or Apocynaceae?

What family does *M. australis* belong to? It is shown as a member of the Asclepidaceae by my Australian sources but according to Flowering Plant Families of the World (Heywood *et al*, 2007, Kew) this family is now regarded as a sub family of the Apocynaceae, making *M. australis* a relative of oleanders and milkweeds.

To my knowledge I am the only person in the Northern Hemisphere cultivating this species which does surprise me as it is a fascinating plant to grow. Originally I bought some seed from a supplier in New South Wales but all the seedlings died within 24 hours of germinating apart from one that has now reached over a metre high. I then obtained seed from Kalgoorlie which was obviously fresh as the germination rate was at least 95% and vigorous seedlings were produced. Most sprouted within 24 hours from sowing in sandy compost. The photograph on page 10 shows three of my twelve plants after four months growth. At the moment they are yet to flower and produce fruit as they are still young plants but they have grown to about 1.5 metres.

There appears to be no detailed information available about their cultivation and care so my success so far has been encouraging. And it is nice for me to be able to share my enthusiasm for Australian flora with others through the society.

NEW EXOTIC LIFE IN AN OLD ENGLISH GARDEN

Tim Longville

Whisper it quietly but to me many National Trust gardens seem rather lifeless – too much gardened by committee, too much hampered by respect for 'the past' (whether the past in general or the past of a specific place). And whisper it perhaps even more quietly but English gardens full of Australasian plants often seem to me more concerned simply with having the plants and specialising in them rather than with using them effectively as one part of the design of a whole garden. The National Trust garden at Felbrigg in North Norfolk is a shock and an education in both those respects – and in several others.

The first shock is that it's there at all. Well-known as a house, yes. Well-known as the subject of the classic book about it by its last

private owner, Wyndham Ketton-Cremer, yes. But well-known as a garden? No. And indeed, when 'The Squire', as he was known locally, left it to the National Trust on his death in 1969, there hardly was a garden – because none of Felbrigg's owners was ever much interested in flower gardening. Those who had any interest at all in plants were interested in trees – mostly parkland trees. A sizeable area of trees and shrubs in Victorian style (known as The West Garden) had indeed been developed beside the house. But only a relatively small part of the four acres of the three sections of the eighteenth century walled garden had ever been used for ornamental purposes. So in re-designing it the Trust had more or less a free hand.

In fact, they have re-designed it several times - and Felbrigg's second shock is the style into which head gardener Tina Hammond has recently transformed the major portion of it. Though she was born in England, her parents emigrated to Australia when she was a child and the nine years she spent there, plus the years she spent working for the Trust at Saltram House in Devon, have had a profound influence on her approach. North Norfolk mightn't seem the most obvious place in which to try to grow tender exotics but in fact, as she says, 'I soon realised that the climate here was actually very like that at Saltram.' Proximity to the sea means few hard frosts, while sandy soil and a site deliberately constructed to slope gradually to the south mean good drainage. So she decided " … to be more experimental in the planting, because to make the place lively and worth visiting we needed to increase its botanical interest."

It is the garden's central section she has most completely transformed. Even in the nineteenth century it had become largely ornamental rather than practical and that is how the Trust has continued to treat it. Though as late as the 1960s it was still planted out with row upon row of dahlias, in the 1970s it was transformed into a series of low-maintenance shrub borders. That sort of planting was fashionable at the time but twenty years later those borders had become, in Tina's words, "tired and institutional, full of plants you can see on every roundabout." So four years ago she agitated to be allowed to redesign the whole area.

Greenhouses against the top wall flank the entrance to this section – but the surprise comes in the dramatic and completely unexpected vista which stretches beyond them. It is, in effect, the traditional English country house double border reinterpreted in terms of exotics. 'Exotics', note, not solely Australasians. Tina is anything but a purist: she wouldn't see the point in restricting herself to plants from just one part of the globe. Her aim is to use as wide a range as possible of relatively tender plants, each of which is individually attractive and then – and this is the crucial point - to use them in eye-catching combinations which increase and intensify



***Eucryphia lucida* 'Ballerina' – pink as it should be**



***Melicytus dentatus* with fruits**



***Acacia dealbata* – glands *only* at the base of each pair of leaves**



***Acacia mearnsii* – glands at the base of each pair of leaves *and* on the rachis between them as well**



***Acacia baileyana* with prominent glands at the bases of the leaves**



***Acacia mearnsii* showing capitate flower heads**
Its flowers are paler than those of *A. dealbata*





The double border at Felbrigg Hall

The photo at the top of page 22 shows the large potted *Chamaerops humilis* in the area beyond the central section which acts as an appropriate eyecatcher at the end of the vista down the long north-south double border. At the back, on both sides, are some *Callistemon laevis* (see page 29 for comments on the name) in spectacular flower. On the left, towards the hedge, are fine specimens of that handsome foliage plant, *Astelia chathamica*, with *Sedum* 'Purple Emperor' in front. Between the callistemon and the astelias is *Hakea drupacea* with its feathery foliage and in the foreground, on the right, the yellow flowers and blue-grey foliage of *Ruta graveolens*. The other photo is a closer shot of the right hand border.

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their attractiveness. So the plants she uses come from just about all of the planet's areas of more or less Mediterranean climate – not only from Australia and New Zealand but from South Africa, South America and the Mediterranean itself. And her most characteristic plant-combinations rely on foliage contrasts as much as dramatic flowers. So, for example, the silvery sword-like leaves of *Astelia chathamica* and the feathery foliage of *Hakea drupacea* (Sweet-scented Hakea) become dramatically contrasting neighbours, each setting off and intensifying the characteristics of the other. Another crucial point – one many gardens need to learn (my own more than most!) – is that she gives her plants space: they combine, but they don't crowd. So their effects aren't muffled.

As a result of her energy, her keen eye and her ruthless pursuit of good plants (which has included calling in favours from old friends in the south-west!), this single pair of long, broad beds (their already sandy free-draining soil now topped, incidentally, with a good two inches of gravel) has become home to flourishing and flowering specimens not only of various species of astelia and hakea but of many corokias, olearias, callistemons, melaleucas and pittosporums – and, from other parts of the world, of beschornerias, dasylirions, fascicularias, puyas, agaves and aloes. This is not 'imitation' exotic gardening, with plants merely bedded out for the summer or, if left in the ground, swaddled in fleece during winter. All of them survive winters here in the ground and essentially unprotected. "The really tender aloes we do cover with glass domes, to keep off damp rather than cold, but otherwise things survive quite unprotected – though we do keep a stock of sedums and sempervirums to fill any gaps caused by unexpected deaths! So far, though, we've had encouragingly few."

The borders flanking the path along the top wall, incidentally, though they contain more obviously 'English' plants (particularly an interesting range of unusual buddlejas) also contain a good many exotics. For example,

From the end of May to the beginning of November the garden at Felbrigg Hall is open every day, from 11am to 5pm until the end of August, and then from 11am to 4pm. From the beginning of March until the end of May they are closed on Thursdays and Fridays but open on all other days. For more details, including those of winter openings, phone 01263 837.

azaras, *Callistemon sieberi* (synonym *Melaleuca paludicola*), many ginger lilies, and cheerfully self-seeding populations of *Echium pininana*, which may be a commonplace in South Devon or Cornwall but hardly in North Norfolk!

This is an enormously encouraging garden to visit - somewhere truly alive, in a way that, even today, too many National Trust gardens aren't. Tina Hammond, whose own articulate enthusiasm is as invigorating as the garden she has done so much to reinvent, summed it up very aptly when she said: "We're still a bit of a secret, I suppose – but people are gradually discovering us and seem to like what they find".

Notes

My thanks to Val Corbett for the use of her photographs. My full account of the garden at Felbrigg (there is much more to it than the 'exotic' section of the walled garden) will appear in *Country Life* during 2009, illustrated by many more of Val's photographs.

SOPHORA MICROPHYLLA 'SUN KING'

Jeff Layman

In the last Pentachondra (May 2008) I wrote that my *Sophora microphylla* 'Sun King' had flowered very early in the year. I then received an email from Jeff Irons, who pointed out that *Sophora microphylla* 'Sun King' was not from New Zealand! According to Hillier's Manual, it was a selection of Chilean origin. He also pointed out that it was not in the books on New Zealand plants by Lawrie Metcalf or Cave and Paddison.

I was a bit puzzled by this, as I had checked beforehand that "Sun King" was of NZ origin, but knowing that Jeff is rarely wrong, decided to look again.

Firstly, I looked in my RHS Dictionary of Gardening. Now I know that this isn't the most exact source of knowledge, but it is fairly comprehensive. It stated that *Sophora microphylla* (note that there was no mention of 'Sun King') comes from New Zealand; there was no mention of Chile. Many other sources state that *Sophora microphylla* comes from New Zealand and Chile (An aside - why these two countries? It seems a rather strange association; surely *Sophora microphylla* wasn't around at the time Gondwanaland split. Why is it found in New Zealand and Chile? Why not

South Africa, too?). So perhaps this wasn't the most accurate reference.

I then turned to Google. It revealed a number of hits for *Sophora microphylla* 'Sun King'. Amongst them was http://www.nccpg.com/gloucestershire/plantweek47e.html. This showed a photo entitled *Sophora microphylla* SUN KING 'Hilsop', and stated "Sophora microphylla (Papilionaceae family) comes from New Zealand and grows to about 20 feet high. This cultivar is claimed to stop at 10 feet. The common name of Kowhai seems to be attached to all New Zealand species of Sophora". It may not have come out and stated explicitly that *Sophora microphylla* 'Sun King' comes from New Zealand, but that is what is inferred. Against that, http://store.whitehallgardencentre.co.uk/store/product/12265/Sophora-microphylla-'Sun-King',-Shrub,-3L-Pot./ states that *Sophora microphylla* 'Sun King' comes from Chile.

Looking at information available on the internet from the Hillier Arboretum adds further evidence that the plant is of Chilean origin. Dorothy Holley collected specimens in Chile in 1996, according to the Hillier herbarium database. These are entitled "*Sophora* [Sun King] = 'Hilsop'" (http://193.62.154.38/cgi-bin/nph-readfile.pl/dataset=hillier/parent=hilnames/filename=hilspecs?1472709+1674750|retq=ETI%3Dsophora|firstval=1|lino=4|nocount=|dataonly=|SID=180.1210960712)

Note that the specific name 'microphylla' is not included. It is, however, present in the alternative name on the search results page for 'Sophora'. This is *Sophora microphylla* Aiton [Sun King] = 'Hilsop'. (See No.4 at http://193.62.154.38/cgi-bin/nph-readbtree.pl/dataset=hillier/parent=/filename=hilnames/firstval=1/SID=507.1210960698?ETI%3Dsophora).

But perhaps the most interesting reference of all is http://www.rhs.org.uk/nr/rdonlyres/639408e3-5f9f-4357-864a-a7ea30fe13bd/0/aponat140607.pdf This provides the minutes of a meeting of the Advisory Panel on Nomenclature & Taxonomy held on 14 June 2007 at RHS Garden Wisley. Point 27.1 of those Minutes noted: "Recent papers on *Sophora* had suggested that the variable species *S. microphylla* should be split into several smaller geographic species. The Chilean plants previously included in *S. microphylla* were now regarded as *S. cassioides*. Mr Allen Coombes had followed this and a plant at the Hillier Arboretum, which was now labelled as *S. cassioides*, had been received originally as *S. microphylla* 'Goughensis'. It was also reported that SUN KING 'Hilsop' should be regarded as a cross between *S. cassioides* and *S. macrocarpa* (*S. macrocarpa* being the Chilean equivalent of *S. tetraptera*)."

So it seems that Jeff Irons is right - in a sense - that the plant I was referring to does come from Chile, even though it may not be exactly

the plant I was referring to (if you follow me)!

That led into further digging regarding cultivar names, and Plant Breeders Rights (PBR). And, indeed, plant patents (which don't always agree with PBR!). My intention was to try to find out when *Sophora microphylla* 'Sun King' was first registered (or indeed when 'Hislop' was first registered, and why a separate name was being applied to what was probably the same plant). Well, in correspondence with Jeff, it was noted that PBR names are country-specific, and it was not unknown for a cultivar in one country to be imported into another and given a different cultivar name. However, it has not proved possible, despite an hour with Google, to find out who first registered *Sophora microphylla* 'Sun King' under a PBR (nor, indeed, to find out where 'Hislop' came from). It may be possible by delving into the archives of the RHS library, but as I am not an RHS member I can't do that.

So its exact source remains a mystery at present. I am, however, of the opinion that Jeff was quite right to point out that *Sophora microphylla* 'Sun King' should not be considered to be of New Zealand origin.

Why not write something about your garden, or a plant that interests you, for Pentachondra? The deadline for the next issue is 1st March 2009.

FLOWER COLOUR AND SOIL ACIDITY

Jeff Irons

The way in which soil acidity or alkalinity affects the flower colour of hydrangeas is well known. However it is not generally realised that this effect is much more widespread.
The colouring agents in hydrangeas are called anthocyanins. Many of them are sensitive to the acidity or alkalinity of a solution. Use is made of this fact in removing stains by soaking fabrics in borax or bleach; the colour disappears in alkaline solution.

In 2008 my *Eucryphia lucida* 'Ballerina' (see picture page 19), *E. milliganii* 'Pink Whisper' and *Leptospermum rupestre* 'Highland Pink' all produced white flowers rather than pink ones. I have ascribed this to alkali moving upwards through my soil in two successive wet summers. There is soft yellow clay two ft. down under my garden. No matter how wet the summer, evaporation in the summer months is always sufficient for alkalinity to move upwards. I have scattered agricultural sulphur round the affected plants at 2 handfuls per sq. yd and hope that this will lower the acidity sufficiently for next years flowers to be pink. If they are not then each sq. yd. will receive another handful of sulphur next autumn.

Note: Agricultural sulphur can be bought from horticultural sundriesmen. It contains 90% sulphur and 10% bentonite and is much cheaper than the Flowers of Sulphur usually seen in garden centres.

SUDDEN OAK DEATH

Tony Entwistle

Sudden Oak Death is the popular name for *Phytophthora ramorum*, a pathogen which damages trees and ornamental plants. The Department for Environment Food and Rural Affairs (Defra) and the Forestry Commission have produced a leaflet on this which makes rather worrying reading.

It appeared in the USA (California) where is has caused widespread damage to native oaks and has also affected many nursery plants, especially species of *Rhododendron*, *Camellia* and *Viburnum*. In all over 30 species of trees and shrubs are known to have been affected. It was first discovered in the UK in 2003 on an American oak, and nearby shrubs were also affected.

Spores (sporangia) have been found to survive in soil debris for several years. These are produced asexually so the fact that only A1 'sex' has been found in the UK is not such good news. Don't ask me about the sex life of fungi – that of Homo sapiens seems a doddle by comparison! You evidently don't talk about males and females but about 'mating types' and if A1 meets A2 there will be more tenacious and long-lived spores. If you suspect this notifiable disease you should report it to Defra.

Just to confuse you further there are some 40 species of *Phytophthora*, many of which are host specific; for example to potato, strawberry and leek. But there are two species in particular which can affect many trees and shrubs. *P. cinnamoni* is well known here and in Australia for killing many natives, such as *Banksia* species. *P. cactorum* causes root rot and can affect trees such as apples. I suspect that this was what caused the death of two rhododendrons in my garden earlier this year.



GARDENING IN THE WIRRAL

Amanda Kershaw

In our garden on the North Wirral coast, our *Acacia retinodes* (Wirilda) had shot up, so we pollarded it last Spring. It has bushed out and is now covered in flowers. Our *Acacia pravissima* (Ovens Wattle)has had yet more main trunks removed and a thorough thinning out as it was about 12 ft. square and so dense that both ourselves and our neighbours welcomed the light back afterwards. Our *Clianthus puniceus* 'Kaka King' flowered

from last November through to March and was followed by the *Clianthus maximus*. It is the first year that our (potted) Banksias are flowering, but the damp weather hasn't helped. The *Banksia canei* (Mountain Banksia) only has one flower, but the *Banksia media* prostrate form has over twenty. We're not expecting any from the *Banksia grandis* (Bull Banksia) - unless global warming helps....

Members are very welcome to visit Amanda and Dennis' garden in Wallasey, with tea and cake provided! Ring them on 0151 639 7611 to make an arrangement.

NO MORE CALLISTEMON?

Judy Clark

The first plant of Australian origin that I knowingly planted in my garden was a bottlebrush. As I soon discovered it was wrongly identified, but it was the species name (the second part of the latin name) that was wrong; it was still a *Callistemon*. But for how long will it continue to be?

Along with eucalypts, bottlebrushes are possibly the best known of Australian plants cultivated in Britain. Paperbarks and honey myrtles (*Melaleuca* species) are closely related to bottlebrushes; in fact so closely related that in the view of Lyn Craven of the Australian National Herbarium all the Australian species of both groups should belong to one genus.

The traditional basis for separating *Melaleuca and Callistemon* is the way in which the stamens (male parts) of the flowers are arranged. The former have stamens fused in groups of 5 while the latter have free stamens. Or rather most of them do; some bottlebrushes do have fused stamens. The same problem occurs with other botanical features that have been studied; differences have proved not to be fully consistent between the two groups. Genetic analysis also supports the view that the two genera really are quite similar.

If *Melaleuca* and *Callistemon* are not dissimilar enough to warrant them being classified separately the species in one or the other group have to be given new names. In this case *Callistemon* species have to be transferred to *Melaleuca* because the name *Melaleuca* takes precedence over *Callistemon* according to the rules for naming plants. Craven's new names for some of the bottlebrushes grown in the UK are given in the table on page 29.

I haven't included *C. citrinus, C. linearis* (see picture page 31), or *C. rigidus* in this table because Craven doesn't give them new names and the Australian Plant Name Index (APNI), a database of scientific names for Australian plants, doesn't give any alternative names. I don't understand why this is, like much about how to ascertain the valid scientific name for a plant in the absence of a

complete checklist. *C. laevis*, mentioned in Tim Longville's article about Felbrigg Hall, is another example. A quick browse on the internet shows enough nurseries selling a plant of this name. Yet APNI says *C. laevis* is 'nom. illeg.', presumably meaning 'not allowed', but gives no alternatives. Put *C. laevis* into the RHS Plant Finder and it produces *C. rugulosus* (see picture page 31) as the correct name. Try the Kew electronic Plant Information Centre (ePIC) and the name is given as 'nom. inval.' (presumably 'not allowed' again) but the synonym given is *C. citrinus* var *splendens*; no mention of *C. rugulosus.* And all I wanted to know was what name to use in Pentachondra!

current name	new name
Callistemon pallidus	*Melaleuca pallida*
Callistemon pinifolius	*Melaleuca linearis* var. *pinifolia*
Callistemon pityoides	*Melaleuca pityoides*
Callistemon rugulosus	*Melaleuca rugulosa*
Callistemon salignus	*Melaleuca salicina*
Callistemon sieberi	*Melaleuca paludicola*
Callistemon subulatus	*Melaleuca subulata*
Callistemon viridiflorus	*Melaleuca virens*

If accepted, the generic name *Callistemon* should eventually disappear, but it hasn't gone yet. APNI currently gives both new and old names as synonyms but it does not pronounce on which to use. The Australian Plant Census (APC), a database which does give accepted scientific names for the Australian flora, has not yet dealt with *Callistemon*. However the Association of Societies for Growing Australian Plants (ASGAP) suggests that it seems "more likely than not" that *Callistemon* will be moved into *Melaleuca* because Craven's work forms the basis of its treatment in a yet to be published volume of the Flora of Australia.

Even then it may take a long time for *Callistemon* to vanish. Acceptance in Australia doesn't mean the RHS Plant Finder will immediately follow suit; name changes can cause horticultural confusion. Nurseries may well continue to use *Callistemon* anyway because that's the name their customers know; a skim through nursery web pages does not indicate great concern for botanical correctness. Whether this matters depends; a botanically incorrect name doesn't necessarily mean that a plant has been mis-identified, which is the real problem, and easy to do with bottlebrushes. But it is a problem that can be exacerbated by mis-naming. So I like to try to be botanically correct, and I think Pentachondra should use names accepted in Australia and New Zealand. Which leaves bottlebrushes with two latin names for the time being.

Notes

Thanks to Jeff Irons for sending me Craven's paper and for his

helpful correpondence on this issue.

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http://www.cpbr.gov.au/apni/index.html
http://www.chah.gov.au/apc/about-APC.html
http://asgap.org.au/index.html

PS

I have just learned that Kew have published The World Checklist of Myrtaceae (the family to which Callistemon and Melaleuca belong). This lists all validly published names in the family and indicates which names are accepted and which are synonyms. It should help with nomenclatural difficulties but at £72 it's a bit much for me!



Antipodean Plants and Asthma

Jeff Irons

It is easy to get contradictory information about whether a plant does or does not cause asthma. The website of Asthma NSW states that *Acacia* pollen can cause problems. However the Australasian Society of Clinical Immunology (ASCIA) advises that certain flowering trees and shrubs, including wattles, jacaranda, jasmine, pine trees, eucalypts and tibouchina are frequently blamed for producing hay fever symptoms, but do so primarily through chemical (perfume) hypersensitivity. Their pollen, in common with that of other insect and bird pollinated plants is large. It is not blown any great distance from the plant, but drops down. The idea that their pollen can induce hay fever has probably arisen from the fact that they flower at the same time as grasses.

The ASCIA has a pollen calendar on its website at http://www.allergy.org.au/month/pollen.htm. Another site is http://allergy.org.au/aer/infobulletins/pollen allergy.htm.

An unusual sight

Grevillea robusta or Silky Oak is a beautiful tree that can reach 30 metres in Australia. It is said to be tender in the UK; the RHS Encyclopaedia of Garden Plants gives a minimum of 5°C. So I was somewhat surprised when a friend told me he'd seen two growing in a front garden in St Leonards in East Sussex. Sure enough, that's what they were. After spring's late frosts and strong winds the leaves looked pretty tatty but by September this year one had reached 4 metres and was looking very healthy indeed. If they're still going strong next year I think I shall have to overcome my inhibitions and knock on the door to find out what they are doing there.

Judy Clark



***Callistemon rugulosus* – to become *Melaleuca rugulosa*?**

***Callistemon linearis* – to become …?**





Carmichaelia stevensonii
Hillier Gardens



Eucalpytus vernicosa
Mike Ashford's garden

APS Meetings 2008

AGM Report

In a summer more notable for cloud and rain we had the good fortune to get a rare day of good weather for the 2008 AGM held at the Hillier Gardens in Hampshire. Attendance was good, though probably more due to the appeal of before and after tours of nearby Meon Orchard and the Hillier Gardens than the prospect of the AGM itself. Amongst the 'old hands' it was good to welcome Peter Eaton from Portugal and also two new members, David Watson and Kate Abel. We hope their introduction to APS members, and to the interesting plant places that we visit, will inspire them to many things Australasian in the future.

Meon Orchard

Bob Foulds

As a curtain raiser to the afternoon AGM we enjoyed a morning visit to Meon Orchard at Kingsmead in Hampshire. It holds National Collections of *Eucalyptus*, *Pseudopanax* and *Podocarpus* as well as many other rare and unusual plants. This certainly whetted our appetites for what turned out to be a brilliant day overall in terms of both the weather and fascinating things to see.

Fifteen members and partners attended on a beautiful summer morning, hot sunny and still. Doug and Linda Smith's great hospitality was much appreciated by all, especially those who had travelled some distance.

So 'tropical' was the weather that Meon Orchard's bananas and towering eucalypts seemed very natural, normal and totally at home in the gardens there. It was very refreshing to see the way the Smiths mix and integrate both Australasian and non-Australasian plants to produce such an interesting ambience.

The nearly fifty species and subspecies of eucalypts certainly set the scene. One could almost feel one was in Australia at times, in such hot sun and under such magnificent trees. They provide high canopy, achieved by regular crown-lifting that produces clear boles. This gives shelter in winter whilst allowing a great range of plants to be grown underneath them.

On the New Zealand side of things I was very intrigued by Doug's comments on the leaf morphology of *Pseudopanax ferox*. Its common name of Toothed Lancewood captures well the nature of the juvenile leaves which are indeed sharply pointed and jaggedly toothed. In olden times the great flightless birds of New Zealand, the moas, are hypothesised to have found these lower leaves unpalatable, whilst being unable to reach the totally different and palatable leaves of the upper foliage of mature trees. It is indeed interesting to note that moas are extinct, but *P. ferox* is not ….

Behind the scenes every garden has the 'work stations' that make

for success and I was particularly impressed with the composting systems at Meon Orchard. And any fish fancier would be more than excited by their carp pond.

If you want to find out more Meon Orchard was profiled in the August 2008 issue of the RHS magazine 'The Garden'. And it opens under the National Garden Scheme (see www.ngs.org.uk) so there should be chances to see it in 2009 if you were unable to attend the AGM.

Hillier Gardens

Jeff Layman

Following the AGM we were treated to a tour of some of the Australasian plants in the Sir Harold Hillier Gardens by Barry Clarke (in charge of propagation). Fortunately, the weather was perfect and we were able to spend over an hour visiting various areas of the Gardens.

The first thing we saw, or rather didn't see, was a small area of eucalyptus plants of which nearly all had been stolen. Barry told us that this was a continuing problem in the Gardens. Only a single *E. coccifera* (Tasmanian Snow Gum) remained of a dozen or so different eucalypt seedlings planted.

He explained the labelling system used there. This included the name of the plant, an accession number, and position number. A "W" on the label indicates it is from wild-collected seed. He added that they had obtained a number of wild-collected plants from Bedgebury. (Bedgebury, the National Pinetum not far from Tunbridge Wells in Kent, is well worth a visit. One is being arranged for APS members in May 2009.)

We were then shown a *Polyscias sambucifolius* (Elderberry Panax, a member of the Araliaceae). It was not a particularly inspiring specimen, and Barry explained that it had never got going. One of our members asked how cold it got there. The lowest ever recorded was -14°C, with the usual average about -5°C. Frosts are usually light.

A number of *Callistemon pallidus* (*Melaleuca pallida*) were seen growing in protection cages (defence against deer, rabbits or perhaps humans?), and not too far away a fine, large specimen of *Podocarpus lawrencii* (Mountain Plum Pine).

We were then shown a 'protected' specimen of *Wollemi nobilis*, the Wollemi Pine (a member of the Araucariaceae). Interestingly, the young growth appeared to be chlorotic, but apparently this colour is quite normal. It was in a small open-topped cage less than a metre high, and its roots were anchored with cables! Sadly, this had not prevented it being damaged by people taking cuttings from it. Barry explained that it was one of the easiest plants to propagate from apical cuttings.

A short walk took us to a *Pittosporum bicolor* (Banyalla). This was in a very sheltered

position. Its name derives from its flowers, which are pinky-purple and white (although it was not in flower at the time). Nearby was a *Callistemon viridiflorus* (*Melaleuca virens*), in a slightly shaded site, with some pale greenish flowers showing.

On the way, we passed a *Eucalyptus vernicosa* (Varnished Gum). A lively discussion then took place between two members as to whether or not this was correctly named, as one opinion was that it was *E. subcrenulata* as this has leaf petioles whereas *E. vernicosa* does not.

Tree violet

The accepted name is *Melicytus dentatus* rather than *M. angustifolius*, although some Australian plant books use the name *Hymenanthera dentata*. It is quite common in Australia, being found in all four south eastern states. Its attractive fruits are one reason for growing it; see the picture on page 19.

Next we were shown a *Bursaria spinosa* (a member of the Pittosporaceae). This was 4 metres high, but was not yet in flower. This was followed by *Melicytus angustifolius* (now *Melicytus dentatus*), which had recently finished flowering and was just starting to form its small white berries. This 1.5 metre high bush is always intriguing, as Melicytus is an unlikely looking shrubby member of the Violaceae. Its common name is Tree Violet

Continuing, we came to a small bed with several Australian plants. A *Leptospermum scoparium* 'Chapmanii' was flowering well. This was an impressive shrub nearly 4 metres high. Nearby was a *Melaleuca gibbosa* (Slender Honey-myrtle) with lilac flowers, and a small *Hakea lissosperma*, with its needle-like leaves and a few creamy-white flowers. A few metres from that was a *Hakea macrocarpa*. This had been a very large plant, but had lost its centre. Nearly at ground level, the remaining piece of trunk from the centre was around 20 cm across.

Approaching the end of the walk, *we* came across two examples of *Carmichaelia stevensonii*. One of these was still labelled with the outdated name *Chordospartium stevensonii*. Interestingly, this plant was of a different habit to the correctly-named plant (see picture, page 32), which had the typical dense, pendulous branches of this New Zealand broom; very few branchlets were dead, and most were about to carry flowers. The other shrub was rather thin-branched and somewhat scruffy in appearance. Many branchlets were dead, and there were no flower buds apparent. According to our guide, these shrubs had different flowers (although in what ways different was not stated). The Carmichaelia was identical to the plant I have, which I obtained as a 60 cm seedling from Graham Hutchins (County Park Nurseries) in around 1986. Perhaps there are two different forms in cultivation, as several members thought that the Chordospartium was the plant they had seen elsewhere.

Our final plant was a very impressive *Acradenia frankliniae* (Rutaceae). This shrub, about 1.5 metres high and across, was in full bloom, and covered in its 2.5 cm white flowers. A spectacular end to an interesting hour.

This was a most enjoyable afternoon, with an opportunity to see many plants of a size not often seen in cultivation. Our thanks to Barry for giving us his time and knowledge. Finally, he gave us a complete list of all the Australasian plants at Hilliers (around 300 of them). If anyone is interested, a copy could be made.

If you want to go and see some of the Australasian plants in the Sir Harold Hillier Garden, have a look at the website (http://www.hillier.hants.gov.uk/index.html), where there is an index of all the plants in the garden, together with their location. However, the locations are somewhat vague, and difficult to find unless you are a member of staff. So record the plant and location, and ask someone exactly where it is when you are there.

Northern meeting report

Amanda Kershaw

My husband Dennis and I really enjoyed the APS's Northern meeting held in July at Mike Ashford's home, north west of York. Between heavy showers, Mike and his wife Isobel showed us around their lovely garden, which is in the NGS and has a range of different plants.

The Australasian ones included *Hakea lissosperma* and *H. microcarpa,* and *Callistemon viridiflorus* (*Melaleuca virens*) and *C. subulatus* (*M. subulata*) which had very few flowers this year (anyone else had similar?). The most unusual one was *Eucalyptus vernicosa* which, although about 15 years old, was less than one foot high and sat on his rockery (see picture page 32). Mike had obtained seed from the APS and two had germinated. He then selected the 'dwarfer' of the two to grow.

Afterwards, they treated us to a delicious meal which included homemade pickled walnuts and sweet homegrown strawberries for dessert. There was certainly enough room at the table as we were the only people who turned up for the meeting. .

Southern meeting report

Judy Clark

Five members turned up for the morning visit to County Park Nursery at Hornchurch in Essex where Graham Hutchins crams an amazing range of plants into a nursery hidden behind a façade of shops in a very ordinary looking suburb. Pots fill every available space and plants spill over onto the paths, giving an impression of colourful chaos where who knows what might be found.

In his own garden Graham has several large specimens of the rare (in its native New Zealand) Weeping Broom *Carmichaelia stevensonii* (he sells it under its old name of *Chordospartium stevensonii*). I was very pleased to learn that that the plant in my own greenhouse that I had nurtured from seed was probably not dead (and it isn't); rather, dryish brown stems are just what *C. stevensonii* mostly produces for its first few years.

In one of the greenhouses the gorgeous flowers of *Alyogyne hakeifolia* (see the photograph on the back cover) caught my eye. I am familiar with this native hibiscus as my mother grows it in her garden in Melbourne, but its flowers never fail to please. Another plant which attracted me was *Pelargonium havlasae*, a very pretty geranium from Western Australia. I bought one to try out as ground cover. This summer I kept it in the greenhouse where it flowered prolifically and then seeded itself happily. Now that I have some spares I feel that I can risk putting it out in the garden to see how well it copes with frost.

The RHS garden at Hyde Hall, also in Essex, was chosen for a visit in the afternoon as it has an Australian and New Zealand garden. To be honest, I found it rather disappointing. Yes, this garden contains a range of garden worthy Australasian plants including *Anigozanthos* cultivars (Kangaroo Paws) that had clearly over wintered successfully, *Orthrosanthus laxus* (Morning Iris), *Libertia ixioides*, and *Grevillea* 'Canberra Gem'. There is even a pond presumably meant as a miniature billabong. But overall the design is uninspiring and a very dead *Acacia pravissima* did not help matters. More imaginative is the way that bottlebrushes and other Australasian species are used in the Dry Garden, which is impressive and worth seeing.

Neither County Park Nursery nor Hyde Hall are easy to find; I got lost going from one to the other. If you plan to visit either taking a good map is strongly advised! And to avoid a wasted effort phone beforehand (01708 445205) to make sure County Park is open.

Illustration acknowledgements
Mike Ashford: page 32 (*Eucalyptus vernicosa*)
Judy Clark: pages 20, 21& 31 (*Callistemon linearis*); diagrams pages 12 &13
Val Corbett: page 22
Tim Darrington: page 31 (*Callistemon rugulosus*)
Alan Hendy: page 10 (*Marsdenia australis*)
Sue Hyams: line illustration, page 4
Jeff Irons: pages 9, 10 (Young *Acacia* plant) & 19
Jeff Layman: page 32 (*Carmichaelia stevensonii*)
John Purse: front cover
David Ware: back cover

The Australasian Plant Society

Minutes of the Annual General Meeting 2008 held at The Hillier Gardens on 7th June

Members Present:

Keith Larkin – Chairman
Tony Entwistle - Treasurer
Jeremy Spon – Secretary
Judy Clark – Newsletter Editor
Peter Eaton
Bob Foulds
Jeff Layman
Tony Parry
John Purse
Mark Robinson
Dave Watson
Steven Wood

Apologies:

Jeff Irons – President
Richard Christmas – Seed Manager
John Warren

The chairman welcomed those members and partners attending. He expressed his thanks to the new Secretary and Newsletter Editor, and his pleasure at the smoothness of the handover from the previous officers.

1. **Minutes of the previous meeting** – were approved without amendment.

2. **Matters arising** – none which were not covered by agenda items.

3. **Secretary's report**

   The Secretary reported that he had dealt with a few membership enquiries during the year, and with a request for information on acacias from a journalist writing an article for the gardening section of the Observer - it was not known if this had appeared, and if so, whether the author had mentioned the Society as promised.

4. **Treasurer's report**

   The Treasurer apologised that due to a misunderstanding the accounts were not included in Pentachondra – they will be next year. The financial position is satisfactory, with a surplus of about £300 on the year. However, the decline in membership is a concern. Despite reminders in Pentachondra, more than 20 members had failed to

renew by mid-May. Phone calls did prompt most of these to renew eventually, but long-term the viability of the Society is threatened if membership drops below 120. Currently membership stands at 146, down from a peak near 200 around the time of the RHS Australia Day. The financial reserves are adequate for a year or two.
The accounts were unanimously approved. Proposed Steven Wood, seconded Peter Eaton.

5. **Newsletter Editor's report**

The Editor reported that production of her first Pentachondra had gone smoothly. She was pleased with the quality of the printing, and thanked everyone who had contributed articles. The question of more colour pages was raised, and the consensus was that this was a good idea if the Society's funds allowed.

6. **Seed-list Manager's report**

The editor read out an email from the Seed Manager, in which he reported that 55 applications had been received and processed, up from 45 last year. Seed envelope purchase meant that there would be an overall loss of £100 on the year, but the seed envelopes would last another three years. The type of seeds requested was similar to previous years, except that demand for Banksia and Dryandra was up, and there was a big demand for Acacias. Few members had requested seeds not on the list, but these had been obtained where possible. Suppliers of NZ seed are difficult to find, but demand from members is not great.

There was some debate about the timing of the distribution, and the Secretary agreed to consult with Richard Christmas as to the viability of options for getting seed to members earlier.

Members agreed that Richard should be thanked for and congratulated on the smooth running of the distribution this year.

7. **Election of officers**

With the proviso that Tony Entwistle would like to retire as Treasurer in the near future, and a replacement should accordingly be sought as soon as possible, the officers were re-elected en bloc. Proposed Bob Foulds, seconded Mark Robinson.

8. **Next Year's AGM and other meetings**

The Chairman asked for ideas for a venue for next year's meeting. The National Botanic Garden of Wales was suggested, and also Logan Botanic Gardens, but neither would be particularly convenient

for most members. Anyone who came across a particularly interesting private garden was asked to let the Chairman or Secretary know about it.

The consensus was that the meeting should be in the northern half of the country next year, with perhaps a venue in the South-West the year after. Ideally a decision about next year's meeting should be taken in time for date/venue to be given in the next edition of Pentachondra.

9. **Any Other Business**

There was some discussion about retention of existing members and recruitment of new ones. Personal recommendations were felt to be particularly useful, and an item would be written for the next Pentachondra urging members to encourage friends to join. More meetings might help to increase members loyalty; these need not be very formal, and the Newsletter Editor asked any members willing to open their gardens to other members to let her know so that she could mention them in Pentachondra. Links with other societies, such as the Hebe Society, could be worth developing, including possibly joint meetings, and reciprocal (unpaid) advertising. It was suggested that the name of the newsletter might give the impression that the Society is only for the very technically-minded, and perhaps this could be changed. If any members were known to be journalists, they might be approached to mention the Society in their articles. The website had drawn several membership enquiries over the last year, and improvements to this were felt to be desirable. The Chairman explained that lack of time had prevented him giving the website the attention it needed, and the possibility of paid development was raised, although it was felt this would probably be too expensive.

The Secretary read out a letter from Jeff Irons asking the Society to consider taking over various subscriptions to specialist societies which he currently maintains as a way of gathering information to pass on to members. The Secretary agreed to forward copies of the letter to all committee members so that they could consider this in more detail.

Tony Parry commented that the timing of the deadline for articles in the spring Pentachondra was too early for reports on winter survival rates, and asked if it could be put back. The Newsletter Editor pointed out that this would conflict with the requirement for the seedlist to go out earlier, and that in any case her window for producing this issue was fairly limited by her other commitments.

The Chairman then thanked everyone for attending, and declared the meeting closed.