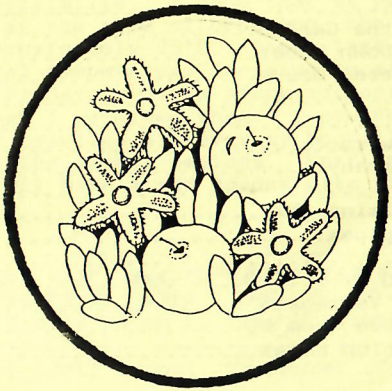
NEWSLETTER OF THE AUSTRALASIAN PLANT SOCIETY

PENTACHONDRA



ISSUE 17 DECEMBER 1996

AUSTRALASIAN PLANT SOCIETY

Newsletter No. 17

December 1996

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EDITORIAL

The summer of 1996 seemed very short and cool to me after the wonderful hot spell last year. On the odd few times that I contemplated setting up the barbecue, a strong breeze appeared!

Even so its been an interesting summer discovering what really did survive the cold 1995/6 winter. Some plants that seemed to have pulled through, subsequently keeled over as the weather warmed up. There are several articles in this issue of Pentachondra describing winter casualties and survivors. Many thanks to those members who sent them in and to all who contributed to this issue no matter how small the article. All snippets of information are gratefully received. If I could just put forward one plea - does anyone grow any New Zealand shrubs/perennials? I very rarely receive news of such plants.

Despite the cooler weather, I've still had a battle with red spider mite in the greenhouse. In the past I've used the fine jet on my hosepipe to create a humid atmosphere which helps to keep down the mites but since the hosepipe ban was brought into force in August 1995 (just lifted at the beginning of November 1996) the mites seemed to be winning. In October, in pure desperation, I ordered the predatory mite Phytoseiulus persimilis. I know that it performs best in warm temperatures, and at the time of ordering, the internal glasshouse temperature was approximately 25°C. These last few nights have been cold with the external temperature dropping to almost freezing. I've lost site of the Predatory Mites since releasing them (they were definitely alive when I received them - I opened the package in the house and had creepy crawlies all over my books!), but hopefully they are still working in the warmer periods. Next spring I'll order some more and hopefully I'll have a red spider mite free zone next summer.

MINUTES OF AGM AT BARNSTAPLE HELD ON 16.6.96

Kindly taken by Tony Entwistle

Present :- Secretary (Jeff Irons), Treasurer (Tony Entwistle) and 6 members.
Apologies :- Chairman (James Harris), Newsletter Editor (Sue Hyams).

1. The minutes of the 1995 AGM and the financial report for 1995 were approved.

2. The present officers of the Society were re-elected for the forthcoming year.

3. Secretary's report : Jeff Irons reported that there had been a request from a Manchester-based television company for members to participate in a TV garden series, but because of the widespread distribution of members this had not been possible to implement.

   He also described problems with the seed distribution. Many members did not send a stamped addressed padded envelope as

requested and he proposed that next year the charge be increased to cover the cost of this for all applicants. More seed donated by members was needed, as the cost of purchase from Australia and New Zealand was high. (See separate article on the APS Seedlist).

4. Treasurer's report :- Tony Entwistle reported that 1995 had been very satisfactory with a small surplus due to the low cost of the 1995 AGM. Membership currently stood at 95, having reached a 'high' of 103 at the end of 1995. 10 members had resigned this year. Membership had tended to stick at around the 90 mark for some years and he felt that it was time to advertise the Society again.

   Seed income was around £75 p.a. and the Society could afford a similar extra amount from general funds for seed purchase.

5. Matters discussed and decisions.

   (a) The question of expansion of the Society's interests to cover South Africa and perhaps South America :- The Secretary reported that only 16 members had written in support of this and it was decided that the Society should remain only Australasian at present.

   (b) The AGM in 1997 would be at either Edinburgh, Kew or Ventnor (IOW). Members would be asked their choice, if they were seriously intending to come.

   (c) The Society would advertise itself in one or more of the following (subject to total cost) :-

   The Garden (RHS), Plant Heritage (NCCPG), Hardy Plant Society news.

The AGM weekend at Barnstaple.

A warm sunny weekend started with members visiting Marwood Hill on Saturday afternoon. Dr Smart himself (an amazingly sprightly octogenarian) kindly showed us around his beautiful coomb gardens, pointing out the Australasian plants.

Especially interesting were the large collection of eucalypts on the hillside, interplanted with birches, and the many species of Leptospermum. Then a visit was made to Mervyn Feesey's small suburban garden in Barnstaple itself; a wooded garden full of interesting plants, and a truly staggering collection of pot plants around the house exterior.

On the Sunday morning, after the AGM, we visited Rosemoor. Lady Anne's old garden was beautiful, but we felt that the new areas were rather too formal after the delightful informality of Marwood Hill.

HOVEA MONTANA

A member asked whether the Hovea montana in our 1996 seedlist is different from H. purpurea var. montana described in the A.G.S. Encyclopaedia of Alpines. They are the same. The entry in the encyclopaedia should be amended to H. montana (J.D.Hook.) J.H.Ross.

THE APS SEED LIST

By Jeff Irons

Most gardening societies consider 10% to be a high take up of seeds from a seed list. Over 30% of APS members request seeds from its list. In fact in 1996 38% of members sent in seed requests. Individually they request a lot too. In 1996 the average worked out at 19.7 packets of seed per member requesting seed.

Because of this popularity I thought that some information about how the seed list is made up would interest members. Most seed lists contain seeds donated by members and collected either from their gardens, or on field trips. Out of 601 species in our 1996 list only 8 had been given by members. We need more member input and I think that just one example will serve to show how easily it could be done.

The 1995 summer was a good one for Clianthus puniceus and much seed was set. Not a single member set in seed. However in 1996 three members asked for seed, writing that their plant had died over-winter. It would have been easy for each of those three people to leave a few seed clusters to ripen when they were pruning their plants. They could then have let us have it.

Many of the 'long life' seeds in the list, notably the Acacias and Eucalypts, were given to the society by the late Thomas Ross. Other seeds come from a number of sources - private contacts, other societies, and botanic gardens. We can exchange with botanic gardens only because the APS has a list of seeds of known wild origin. They have been obtained from private contacts. It would help the society if members could share their own wild origin seed, from any country, and let us have some of it. The seed would not go into the members' list, but into a separate list for circulation to botanic gardens.

Some seed is purchased from seed houses in Australia and New Zealand. It is not cheap. Eg: A 50 pence packet of Banksia seed usually contains just 4 seeds. Some species have just one seed in a packet.

The seeds received by members have been packeted by me. Each little glassine packet costs 4.2 pence. So if a member asks for 20 packets of seed (and gets them), the packets will have used up 84 pence from the administration charge. That does not leave a great deal of money for all the other costs associated with the seed list. In 1996 half of the U.K. members requesting seed did not enclose the stamped addressed envelope which had been requested. The society had to bear the costs associated with sending the seeds.

The problem was discussed at the 1996 A.G.M. Various ideas were considered and it was decided that in future the APS will buy envelopes for seed despatch, and stamp them. Because of this the price charged will have to go up, and in 1997 U.K. and Irish members will be asked to pay £3 for seeds requested. Members in other countries will continue to receive their seeds free. Some members have been giving a substitute list, even though there is not space for them on the application form. Because of the unusual way in which the seed list is made up the society cannot allow substitutes.

We hope to continue to offer a wide range of seeds, with some new items each year. The APS likes to keep its seeds in good condition, and my accommodating wife lets me store them in her fridge until they are needed for members' requests. I hope that you get good results from them.

CHANGE OF NATIONALITY : The 1995 and 1996 seedlists included Berberidopsis beckleri as a plant from Ecuador. We have been told that it is an Australian liane which was known formerly as Streptothamnus beckleri.

MAY 1996 ISSUE OF PENTACHONDRA

One correction : Page 23 Rhododendron lochae. Line 4 should read notialae not lochialae.

Jeff Irons has compiled the following comment on Seed Suppliers re: Page 23. 'Not having seen the literature produced by Aus-seeds I can only guess at the firms' use of the word 'hardy'. My supposition is that it has taken the word from Australian literature and used it in an English context. Australians, especially those in the south east, use the word 'hardy' to signify that a plant will stand up to summer drought. Such a use would explain why the Western Australian Corymbia ficifolia is described as 'quite hardy'. The southern part of Western Australia has a Mediterranean climate, so experiences dry summers. Incidentally in Australia 'mild' (weather) means cool, not warm.'

PLANTS REQUIRED OR OFFERED

In the last issue of Pentachondra, members were asked to send in their lists of 'Plants they would like'/'Plants they are offering to a good home'. The only member to do so for this issue is Greg Plenty who is offering young plants of Hakea macrocarpa (see article on this species in this issue). Greg is also interested in trying any Australasian plants against his southwest facing house wall so if you have got any extra unwanted correas, prostantheras etc, please contact Greg.

Greg Plenty, South View Barn, The Mount, Birstall, Batley, West Yorkshire, WF17 9DS. Tel : 01924 477793.

AUTUMN NORTHERN MEETING

Held November 2nd at 4 Highfield Road, Stockport

Ten members attended the meeting and after introductions various subjects were discussed, amongst which were :-

The amount of light required by overwintering Australasian plants in greenhouses. Jeff Irons pointed out that some grevilleas needed upto 15 hours daylight over the winter months and advised using a warm-light flourescent tube to provide the extra light needed. This should be timed to give at least 12 hours per day as a supplement to the normal winter light levels.

Frost tolerance of plants was discussed and Jeff Irons said that most

Australian frosts are of short duration, and also that the deep ground cover on mountain tops kept the soil temperature stable. Tony Entwistle described his method of covering the root systems of tender bushes and trees with Fibre Glass. Rock Wool could also be used to protect from the worst effects of frost.

Samples of the leaf form of four Australian gaultherias were shown and a description of their natural growing conditions were described by Jeff Irons. He uses a 2 parts Perlite and 1 part Peat as a compost for growing them.

Germination temperatures were mentioned and it was stated that some of the tropical species might need temperatures of up to 39°C and most tropical species need an average of 35°C to stimulate germination.

A discussion on the need for deep pots to accommodate the long searching roots of many species took place with Jeff Irons showing a small square deep pot, bought as a forestry tube. The local group will try to find a local supplier of similar deep square seed pots.

The cultivation of many plants was discussed and some problems of members were sorted out. After the meeting there was time for swapping or buying of plants.

* * * * *

MANY THANKS to Dennis and Anne Rowlinson for organising this meeting and letting members invade their home and garden. Also thanks to those people involved in providing food for the hungry mob.

SPRING NORTHERN MEETING is to be held at the home of Greg Plenty, in West Yorkshire, on April 27th (Sunday).

If members in other areas are interested in forming a local group, let us know.

WELSH PLANT REPORT

Dr. Graham Sumner

Plant damage/survivals after winter 1995/96, Aberaeron, Ceredigion, Wales : now the summer is over too.
Absolute minimum air temperature (26/12/95) -8.8°C.

The winter in Aberaeron was not nearly as severe as further east. We had only three days on which a little snow settled, and apart from the one extremely cold night (the coldest since I moved here in late 1983, by nearly two degrees), the winter brought frosts the like of which most of my plants have survived in the past.

Unfortunately on Boxing Day morning, prior to the really cold night, we had about 5 cm of snow, much of which subsequently melted during the rest of the day, and I tried to dislodge snow from branches of evergreens after the fall. I suspect some remained to freeze around the necks of my Cordylines. This is a known kiss of death for these plants, and sure enough, two two year olds were killed outright, two

four year olds had subsequently to be decapitated, and the top of one elderly (more than eight years old) specimen finally collapsed in a strong northwesterly during August. Of the two beheaded, strong suckers have now appeared, and numerous small plantlets were retrieved (to live another day?) from the stem of the one which collapsed in August. Two of the remaining three have revived well, flowering during May. Regrettably all will shortly have to make way for a garage.

After the Christmas cold snap I undertook a New Year's Day inspection, and was amazed at the apparent survival rate. There was subsequent massive defoliation of Callistemon citrinus in particular, and of all the acacias, which had never really stood a chance, but had survived the previous mild winter. These were vigorously setting flowers at the time. The eventual loss of callistemons was particularly heart-breaking, since they were amongst the first Australian plants I had grown from seed (in 1987 or 1988) and one of them was about 3.5 metres tall. The three largest around the paved patio (perhaps a significant microclimatic factor) had reliably bloomed profusely every June or July for several years, but each of these succumbed. They were obtained from a (now defunct?) seed merchant in Cornwall, and seemed to be a wild form. I cut them all down to ground level, and it is gratifying that all have regenerated from near the base to about 50 cm. Seed from collected seed pods on the dead branches of the original plants failed to germinate.

We were unlucky that Boxing night. Our position at the mouth of a narrow river valley means that, even though a mere 200 metres from the beach, cold air sometimes stagnates as it spreads out over the town area (on a river delta). Just outside town on the cliffs and in gardens on the edge of town Phormium were untouched, whilst I lost one of my (large) specimens, and the other just about summoned the energy to produce a single flower spike this year. Although a neighbour lost one Eucalyptus globulus another (?) up the coast on a cliff side near Aberystwyth seems to have survived unscathed. The stone wall around my garden does not help either, trapping cold air below wall level (noticeable in the damage to Eucalyptus leaves).

All refugees in the conservatory survived, since I kept the temperature above 3°C throughout the winter. However, many had by spring grown too big to be brought back in this winter, and now grace the garden, but for how long (Paraserianthes lophantha, Acacia longifolia, Acacia salicina, Agonis flexuosa - I must expect the death of all these)? The rear of the more 'permanent' plants remain, and the garden looks just as full as ever in the early autumn. Most eucalypts (apart from Eucalyptus nitida, E. perriniana and E. polyanthemos) regenerated, and even Bursaria spinosa, which I had thought lost, has regenerated. Callistemon linearis and C. rigidus flowered well in July and August respectively, and the various



Melaleuca squamea

hebes (Hebe hulkeana, H. parvifolia and Parahebe lyallii, but not, curiously, one or two large Hebe 'Great Orme') also regenerated or grew well to flower this summer. Melaleuca squamea seem to relish a hard winter as both flowered well through most of the spring and summer.

Climate modellers in the USA (correct about last winter) are suggesting '96/'97 might be more severe still, with once again a notable lack of westerly winds. Still, as I write (24 September) the long-awaited rains seem to be coming, so let's hope..!

THE OUTDOOR DEATH LIST

Acacia dealbata, longifolia, melanoxylon, retinodes, riceana, verticillata
Paraserianthes lophantha
Carmichaelia arborea
Corokia buddlejoides
Correa backhousiana
Dicksonia antarctica
Eucalyptus globulus, nitida (not all, two regenerating from epicormic buds), pauciflora (a surprise!), perriniana, polyanthemos, regnans
Geranium traversii
Grevillea 'Canberra Gem'
Melaleuca armillaris, ericifolia, squarrosa
Prostanthera ovalifolia
Sophora tetraptera
Syzygium australe

THE OUTDOOR WALKING WOUNDED (regenerated)

Bursaria spinosa
Callistemon citrinus
Eucalyptus cinerea, kitsoniana, nitida (a minority), stellulata
Hebe parvifolia
Libertia grandiflora, ixioides (fewer flowers than usual or none)
Orthrosanthus multiflorus
Phormium tenax

THE OUTDOOR SURVIVORS (little or no damage - grew well)

Acaena microphylla (will nothing kill this?)
Callistemon linearis, rigidus
Cassinia fulvida
Chamaerops humilis (non-ANZ)
Cordyline australis (some mature specimens)
Corokia cotoneaster
Drimys lanceolata
Eucalyptus aggregata, glaucescens, gunnii, niphophila, viminalis
Eucryphia intermedia, ledifolia
Hebe 'Great Orme', hulkeana
Hoheria lyallii
Leptospermum scoparium
Melaleuca squamea
Olearia ilicifolia
Ozothamnus rosmarinifolius
Parahebe lyallii
Pittosporum tenuifolium
Prostanthera cuneata
Trachycarpus fortunei (non-ANZ)

BOOK REVIEW

By Greg Plenty

THE PROPAGATION OF NEW ZEALAND NATIVE PLANTS By Lawrie Metcalfe

Published by Godwit Publishing Ltd, New Zealand. Price NZ$22.95 + $14 surface postage from Touchwood Books, PO Box 610, Hastings, New Zealand.

This softback book has 87 information-packed pages with a number of interesting line drawings and colour photographs.

The first thing I did was to flick to the back to check on the alphabetical list of New Zealand species to find out more about the propagation of those that particularly interest me.

Techniques for propagating a wide range of New Zealand native plants are discussed in a straightforward, explicit way. The drawings help to clarify some of the trickier procedures.

I was reminded how I should have increased a large Cordyline banksii - growing happily against a west wall in my old garden near Leeds - by rooting stem sections. It died when I dug it up to move house.

I realise now, having consulted this book, why regular attempts to germinate Pseudopanax species have resulted in failure.

The book is well organised and I could not spot any obvious errors. My only real criticism is that it is presented in a slightly dull manner, perhaps to keep costs down, but no doubt this will not spoil the enjoyment of the real enthusiast or professional nurseryman who will find this book very useful indeed.

Perhaps the most significant thing about this book is that I am reliably informed by Jeff Irons that this is probably the first book that attempts to deal in some detail with the propagation of many of the thousands of species in New Zealand's rich flora. In this respect it must be regarded as a landmark publication for which the author must be congratulated.

UNCOMMONLY PRODUCTIVE

By Jeff Irons

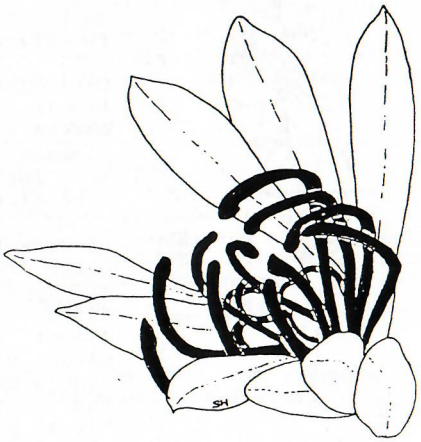
Every year our television screens show the yachts in Hobart's Constitution Dock, after the Sydney-Hobart race. Sometimes we can see snow on top of the magnificent backdrop to the harbour. The mountain that we see is Mount Wellington. At 1270m (4166 ft) it is twice as high as Cape Town's Table Mountain, and can receive snow at any time of year. Imagine the outcry in Britain if a government decided to create work for unemployed people by constructing a road to the top of Helvellyn. In the 1930's the Tasmanian government did something analagous to that. In order to put people in jobs it constructed a road to the top of Mount Wellington. Today we can benefit from its foresight. The able-bodied can walk to the mountain's top, the less active can drive

there. The weather on top of Mount Wellington can be foul. On one visit I saw horizontal icicles about one metre long. Nowadays there is a glass fronted shelter, from which visitors can enjoy the views, away from the wind.

The great botanist Robert Brown (familiar to school children through the Brownian Motion) described Mount Wellington as "Uncommonly productive". His comment was apt because over 400 flowering plants grow on it. That is one quarter of the number in the whole of the British Isles. There is always something to see there.

Most tourists will probably drive to the top of Mount Wellington, then stop where possible on the way down, getting out to look at plants. So here are some of the things that I saw when there in January 1996. On getting out of the car the windswept summit seemed barren. It was just a flat area littered with boulders. However a walk of a few metres filled me with excitement. The boulders create shelter, and in the spaces between them all kinds of wonderful plants made a magic carpet. Perhaps fittingly, the first plant I saw was Ozothamnus ledifolius - my favourite shrub. In my garden a 20 year old specimen is over a metre high and through. Here it was a low windswept plant ablaze with the terracotta of its flower buds. The botanists have a term - convergent evolution - which is used to describe how environmental conditions have caused plants from different families to adopt similar forms.

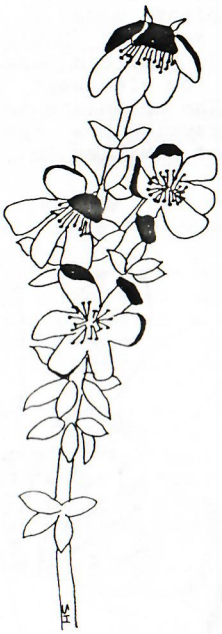
Here was convergent evolution in practice, for next to Ozothamnus (Asteraceae) grew Orites revoluta (Proteaceae). Both plants have revolute leaves. That is, leaves with the margins rolled under to reduce evaporation. In my garden O. revoluta is small, and unflowered after 14 years. Here I was able to see its creamy white candles of flower in their full glory. Another member of the Proteaceae, Orites acicularis, grew nearby. It has adopted a different strategy to reduce water loss, for the leaves are long and needle-like. The yellow flowers are similar in shape to those of O. revoluta. Mixed in the carpet were patches of red and orange from Richea scoparia. Here it was less than 30cm high. Elsewhere I was to encounter dense thickets of it, about 1m high. Another member of the Proteaceae, Bellendena montana, has the common name of Mountain Rocket. In January I saw its white flowers and young growth. By March the bright red fruits would be prominent. Unfortunately seed of this species is almost impossible to germinate. My own Bellendena died in the 1995 summer, so the Edinburgh Botanic Garden specimen is probably the only one left in Britain.



Telopea truncata

In most parts of Tasmania Epacridaceae fill the niche occupied by Ericaceae in the northern hemisphere. On the relatively dry Mount Wellington Epacris are not as well developed as on Mount Field, 48km (30 miles) west, or the Hartz Mountains southwards. Even so Cyanthodes display their attractive red fruits from late summer onwards. Having both an extremely hard seed coat and embryo dormancy, they are propagated from cuttings. Trochocarpa thymifolia displays its bell-shaped flowers along the edges of the moor. Later its purple fruits brighten the scene. Often these Epacrids abort pollen or ovaries to become unisexual, others are self incompatible, so that in cultivation we rarely see their fruits.

Crossing to the Visitor Shelter and going along its walkways stunted Eucalyptus coccifera can be seen growing between dolerite boulders. The grassy patches are bedecked with thousands of Celmisia asteliifolia, another Tasmanian endemic.



Bauera rubioides

Descending from the summit, the road passes through open Eucalyptus woodland. Flashes of bright red indicate the presence of waratah (Telopea truncata). Their roots are buried in the tumble of boulders, and Bauera rubioides forms a tangle over the rocks and round the stems. At these high levels its flowers are white. Lower down they are pink. Pimelea nivea, known locally as Cottonbush is common at all levels on the mountain. Here, just below the waratahs it makes a 30cm shrub covered with white cottony down. The white flowers, in dense terminal heads have only two stamens.

Oxylobium ellipticum is another plant found at all levels. One of Australia's many pea-flowered shrubs, it puts on a wonderful display of golden flowers from October onwards. Near the Big Bend I saw Euphrasia collina ssp diemenica, with sumptuous lilac flowers.

At lower levels, in wet gullies, underneath a dense tree canopy there are colonies of Richea dracophylla. Pomaderris apetala lines the track-sides, sometimes with so much pollen that its flower spikes appear to be pale yellow, not the usual green. The bright red of ripening pods on Acacia dealbata stands out in both sun and shade. Bus routes take the visitor to Fern Tree. From there a track passes through a park-like area, with tree ferns under Nothofagus cunninghamii. In the wettest areas Olearia argophylla (Musk Daisy) dominates the shrub layer, making a dense canopy about 5m above the ground. Only tree and a few other ferns grow underneath it.

Here in England I have the 5 volume Students Flora of Tasmania. On Mount Wellington my companion was a small pocket-sized book called 'Plant Identikit, Wildflowers of Mount Wellington'. With companion volumes on 'Alpine Flowers', 'Woodland Wildflowers' and 'Rainforest Plants' it should be every visitor's first purchase.

MYOSOTIS AUSTRALIS 'BROWN'

By Sue Hyams

I have no information at all on this forget-me-not, other than my own experience of growing it. Myosotis australis is a New Zealand species which is also native to south east Australia and Tasmania; I have no idea from which of the two countries M. australis 'Brown' originates. The seed was listed in the Alpine Garden Society's 1996 seedlist so I chose it along with seed for several other Australasian alpines.

It was sown at the end of January on a soil warming cable along with M. australis (supplied by Jeff Irons). M. australis seeds were the first to germinate and were pricked out in mid-March; M. australis 'Brown' in early April. A dozen plants of each were finally potted into large terracotta pots and stood outside the greenhouse in partial shade.

The upper surface of the rounded leaves of M. australis 'Brown' is olive green; the undersurface is reddish-brown. Both sides are hairy; size upto 25mm wide x 36mm long. Rosettes of leaves rapidly filled the surface of the pots before flowering stems emerged upto 20cm in length. The first flowers opened at the beginning of July - just 5mm in diameter with five white petals, a yellow eye and 5 reddish brown stamens.

M. australis has narrow-elliptic leaves, more of a bottle green colour and so far has not flowered. I understand that it is a short-lived perennial and will probably flower next year. M. australis 'Brown' appears to be an annual; the foliage is grey and brittle now that flowering is over.

SNIPPETS OF NEWS

Christine Yeo, of Devon, reports the following... In the summer of 1995 both Prostanthera lasianthos and P. lasianthos var subcoriacea were planted near to a south wall (but not against it). Both have survived the winter completely unscathed despite temperatures of -9°C and being exposed to the cold easterly winds. P. walteri did not survive a previous milder winter.

A specimen of P. lasianthos did not survive the same low temperature in Jeff Irons' garden. He wonders if it was a different clone.

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Carol Hawes of Poole reports that a large specimen of Acacia retinodes, planted by the back door, was flowering madly, and giving off a beautiful scent, in September.

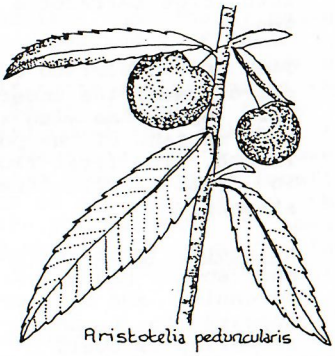
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Steve Law, who has moved from Sussex to Anglesey, reports that the only casualties he had last winter (in Sussex) were Lomatia tinctoria (Port Arthur origin) and a 1.2m tall, broad leaf form of Correa lawrenceana.

Tony Entwistle submitted the following relating to winter losses. 'As I surmised in the May report, I was being optimistic. Several plants seemingly unharmed in foliage, collapsed later due to death of the main stem at or below ground level. All my Grevilleas perished in this way - 'Canberra Gem', 'Olympic Flame', 'Bonnie Prince Charlie', juniperina sulphurea. Also, very surprisingly Prostanthera cuneata. I had always regarded this as tougher than say Callistemon pityoides! And yet the South African Freylinia lanceolata survived. But I suppose that in a frost which cut even Embothrium 'Norquinco Form' to the ground and killed off a huge clump of Kniphofia 'Atlanta' one can expect anything!

* * * * * * * * * * *

From Sheffield, Sue Kohler writing in late May states that Aristotelia peduncularis survived the winter and looked as if it might flower. Bursaria spinosa planted outside is okay although potted specimens died in a cold but sunny greenhouse.



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Margaret Glover, writing in late April from Somerset (she has recently moved to Yorkshire), lists the following survivors after the winter of 95/96 : Leptospermum lanigerum, L. scoparium 'Chapmanii', Olearia phlogopappa 'Combers Pink', Melaleuca squamea, plus several unnamed hebes. One plant that died was Leptospermum rupestre (syn L. prostratum) in December 1995 when the temperature dropped to -5°C.

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Jeff Irons reports that the way Wahlenbergia gloriosa overwintered in his garden was interesting. 'I had it in 3 places, at various levels. The only one to survive was in the top of a freestanding wall. There is 45cm of rubble filling in the wall, topped with 15cm of very sandy soil.'

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A snippet of information gleaned from a copy of the MELALEUCA & ALLIED GENERA STUDY GROUP NEWSLETTER :

'Many of the local shrubs have proved frost tender without their tree cover'. Since even in Australia it is often difficult to grow plants without some overhead protection, here in Europe we should try to grow them under cover of overhanging shrub/tree branches - we have much harsher conditions. Plants will have a much better chance of surviving winter.

NORFOLK NEWS

By Jan Williams

Here in mid-Norfolk we had temperatures of -11°C (-17°C when the windchill factor is taken into consideration). Eucalyptus gunnii and Derwentia (Parahebe) perfoliata both came through the winter unscathed. Hebe hulkeana, Acaena caesiiglauca (and also A. magellanica) have grown well in the spring and summer after much damage and windburn in the winter. The hebe looked particularly beautiful when it produced its lavender-blue flowers.

My unheated greenhouse went down to -6°C which meant the death knell for a 3 year old Acacia longifolia, a 7 year old Cordyline australis, a 2 year old Sutherlandia frutescens, 3 x 3 year old Dianella tasmanica, Libertia pulchella Tasmanian Form, Arthropodium seedlings, Leptospermum scoparium, L. rotundifolium and Kennedya prostrata. All were in pots. Perhaps they'd have had a better chance planted out in the greenhouse border and given protection.

Seedlings from last year's sowings I brought indoors into an unheated room, but even here there were casualties including Hardenbergia comptoniana, Banksia seedlings and Scaeveola crassifolia. Luckily the following seedlings survived and are now thriving - Anigozanthos flavidus, Jacaranda mimosaefolia (now 1m tall with a strong woody stem and beautifully delicate foliage, Sutherlandia montana, Alyogyne hakeifolia (now 45cm), Kennedya rubicunda (each stem reaching 60cm outwards), Desmodium callianthum (45cm), Chorizema ilicifolium, Kunzea baxteri, Hovea pungens, Leptospermum rotundifolium, Kennedya rubicunda and K. prostrata, Templetonia retusa and Hardenbergia violacea Clarence River form.

I also now have a 10cm seedling of Sophora macrocarpa and another Scaeveola crassifolia (45cm) which I'm determined to bring through the winter to see it flowering one day.

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ACNISTUS AUSTRALIS

Ed :- Like myself, Jan also grows Acnistus australis (syn, Dunalia australis). This shrubby plant, a member of the Solanaceae family, is not australasian as far as I know. 'Australis' means 'southern' but I have been unable to discover any information on this plant in any of my reference books. Perhaps someone else can shed light on where this plant originates.

One of Jan's plants, in the open garden, looked dead in early spring but during the summer it sent up strong new growth though failed to flower. Her other specimen in the greenhouse came through the winter unscathed. My own specimen, also overwintered in the greenhouse, completely defoliated itself from late October to early May. Then new leaves appeared and as the summer progressed, it provided an abundance of small blue datura-like bell flowers.

MONTH BY MONTH IN THE GARDEN

By Sue Hyams

This report has actually been written at various times throughout the year, rather like a diary.

JANUARY 12TH 1996

The shortest day of 1995 was accompanied by the first freezing night of a period of very cold days and even colder nights. Daytime temperatures struggled to rise above freezing point especially where there was a lack of sunshine, as there was here, living close to the Vale of York where freezing fog lingered. Before driving home from work I had to scrape the frost away from both the inside and outside of my car. The question on everyone's mind was 'Will it be a white Christmas?' In North Yorkshire snow didn't start falling until Boxing Day. With freezing fog both day and night, plus several successive nights with temperatures dropping to -10°C, it was a very bleak time. At the start of the cold snap I erected garden canes and horticultural fleece over Corokia x virgata, Pittosporum 'Silver Queen', Acmena smithii and some small Leptospermum plants. Looking around my garden in the last few days, now that the temperature is once again above freezing, I can assess the initial damage. Acmena smithii, by a southfacing house wall, which had come through last winter with only minor damage, has blackened foliage. Corokia x virgata has its usual winter bronze colour so it is too soon to say whether or not it will survive. Olearia scilloniensis (2 bushes 1m x 1m, both by the south-facing house wall and having survived several winters outdoors), have browned foliage right down to ground level as well as wilted branch tips. Bursaria spinosa against the same wall, has wilted tips and the top half of the shrub is completely defoliated, the remainder of the plant is still green. Various unnamed melaleucas and leptospermums have discoloured foliage and wilted blackened tips. The foliage, over 30cm above soil level, of Muehlenbeckia axillaris assumes a blackish-green but since this plant has become so rampant, it could do with a haircut. Hebe 'Great Orme', which I find to be on the slightly tender side, suffers from browned foliage on its top branches. Since it is growing behind Olearia scilloniensis and O. macrodonta, its lower half is still green.

In the greenhouse there is also cold damage. Despite using a heater (I try to keep the temperature around 5°C) plants have still suffered. I've been caught out a few times by the cold daytime temperatures and have not switched on the heater early enough.

Indigofera australis, with many flower buds formed, is wilting badly. One side of Kunzea baxteri (the side nearest the glass) is defoliated and the tips are wilting. Melaleuca armillaris also has blackened wilted tips. Melaleuca nesophila looks dead - completely discoloured foliage. The top part of the climbing Kennedya rubicunda is also frosted.

END OF JANUARY 1996

It has not been an easy month in the greenhouse. There has been a great lack of sunshine to warm up the growing space during the day. According to the Meteorological Office, it has been the dullest January on record, with an average of 48 minutes of sunshine per day (I'd

like to know where my sunshine was - there were only three days in January when I saw the sun, and for one of them it lasted barely an hour). Day after day of fog. The atmosphere was damp. I could see moulds growing on plants, but with the constant freezing fog there was no incentive to ventilate.

An 8 year old specimen of Melaleuca armillaris planted in the front garden in the spring of 1995, looks dead; brown brittle stems.

MID MARCH 1996

In the greenhouse it still looks as if Indigofera australis is dead. I have pruned Melaleuca nesophila back to a 30cm stump, removing its discoloured foliage. Blackened tips upto 20cm long of Melaleuca armillaris have also been removed. The top half of Kennedya rubicunda has also been pruned away - it was dry and brownish-yellow. Hardenbergia violacea alba also looks dead; it has been pruned to about 20cm above soil level. The dead parts of one of the Kunzea baxteri plants have been removed as have the dead parts of a Dryandra praemorsa by the glass. Grevillea robusta has some discolouration but is still alive. Eucalyptus globulus is still trying to push the roof off! Two specimens of Sterculia rupestris are completely defoliated; one specimen which I use as a houseplant is still flourishing. Acacia dealbata and Prostanthera rotundifolia thrive as does Bursaria spinosa. A metre tall Acmena smithii has browned foliage but is producing new shoots from the base. Templetonia retusa is also unharmed as is Grevillea 'Canberra Gem' and Acradenia frankliniae.

In the garden its a different story. It looks at the moment as though I have lost both Olearia scilloniensis shrubs (10 years old), Hebe 'Great Orme' (which at the end of January didn't look too badly damaged but lost its protection from cold winds when Olearia scilloniensis defoliated), all my Olearia phlogopappa shrubs (they have spent much of the winter under snow drifts), my outdoor Prostanthera rotundifolia (which survived two previous winters), and possibly Muehlenbeckia axillaris which is now completely defoliated. Part of Bursaria spinosa, the part exposed to the cold winds is also completely defoliated. The foliage on Eucalyptus viminalis and E. coccifera is papery brown in colour (viminalis most affected). Corokia x virgata is still its usual winter bronze colour. In the scree beds, Celmisia spectabilis and C. ramulosa are unscathed. Leucogenes leontopodium survived the winter in the greenhouse. Wahlenbergia gloriosa is just showing new shoots again as is Acaena 'Blue Haze' which for the first time became deciduous. Leptospermum humifusum is slightly discoloured but otherwise seems alive. Phormium tenax specimens in the garden seem alive but those in pots on the patio are dead. All the melaleucas and leptospermums which I planted in the garden in spring 1995 appear to be dead twiggy specimens. Pittosporum 'Silver Queen' suffered tip damage to the top part of the plant.

I wonder if some of these deaths are because of the drought in the summer of 1995. In the April 1993 issue of the APS newsletter, Dr Hugh McAllister, Deputy Director of Ness Garden reported that late summer and early autumn droughts prevent woody plants laying down thick cuticles on their buds and twigs. This renders them susceptible to winter desiccation and subsequent dieback. The reason I wonder is that a specimen of Hebe 'Great Orme' in a tub on the patio, facing south east, is suffering very little damage. Unlike the specimen

growing in the southfacing border against the house wall, this one was regularly watered (by watering can - hosepipe ban in operation!).

Incidentally, this March has been the coldest and gloomiest for 9 years.

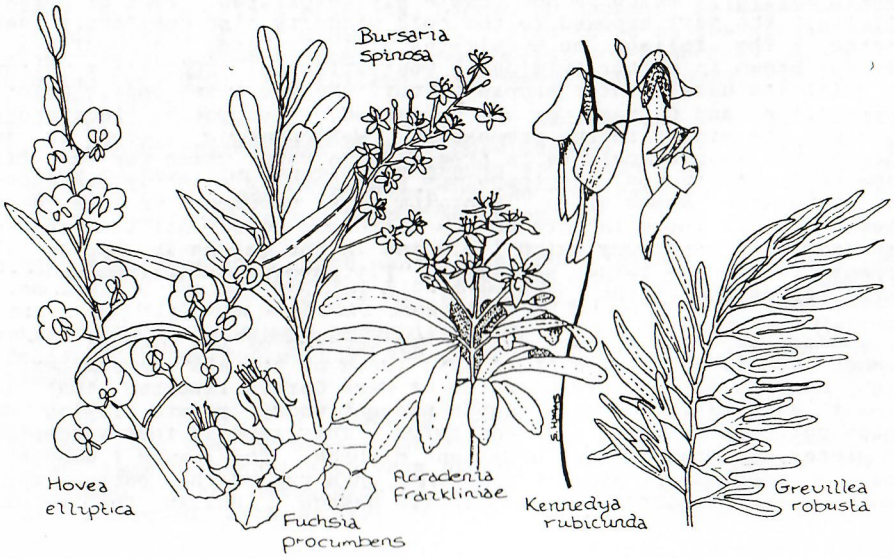
Spring is 3-4 weeks later than normal.

APRIL

Indigofera australis is reshooting from the base. Acradenia frankliniae is forming lots of flower buds. All specimens of Eucalyptus viminalis have brown papery foliage. The trunk of the oldest tree (sown 1989) has split.

MAY

One Olearia phlogopappa is showing signs of regrowth from the base as is one of the two specimens of Olearia scilloniensis against the southfacing house wall. Hebe 'Great Orme' looks to be alive with new green leaves appearing. And, why I ever doubted that it was alive, Muehlenbeckia axillaris fights back! In the front garden Corokia x virgata is showing signs of greening after its winter bronzing. In the greenhouse Melaleuca armillaris is sprouting new green needle-like leaves. Melaleuca nesophila is beginning to sprout from its pruned-back 60cm stump. There is still no apparent regrowth on Sterculia rupestris. Eucalyptus globulus and Acacia dealbata have been pruned to prevent them pushing off the roof. The bottlebrushes and Kunzea baxteri shrubs are growing okay as is Melaleuca heterophylla. Acmena smithii is producing new growth from soil level and along its trunk and branches after completely defoliating itself. Hardenbergia violacea alba is sprouting from the base. Grevillea 'Canberra Gem' is producing red spider flowers with lots of buds to open. Kennedya rubicunda is producing new shoots and leaves all along the older climbing branches. The one remaining Dryandra praemorsa is flowering



although the shrub is now a third of the size it was last autumn. Grevillea robusta is producing new growth along its woody branches and at its tips. Acradenia frankliniae is full of flower buds just waiting to open. Indigofera australis continues to produce lots of new growth from the base. Hovea elliptica provides a display of blue pea flowers. In the second half of May, ruby flowers start opening on Pittosporum tenuifolium. At the same time a few red pea flowers are produced on Kennedya rubicunda.

According to the Meteorological Office this May has been the coldest since 1923. The average temperature in England and Wales was 9.3°C - 2°C below average. In Scotland the temperature was 1.6°C below average. However sunshine was 99% of the average. Rainfall in England and Wales was 89% of normal at 57mm while in Scotland it was 99% of average at 85mm.

JUNE

Flowers similar to those of Pittosporum tenuifolium open on Pittosporum 'Silver Queen'. Grevillea 'Canberra Gem' is full of red spider flowers. Prostanthera rotundifolia growing in the greenhouse is in flower; the outdoor specimens have not survived. Celmisia spectabilis is producing 4 daisies. Also in flower in the garden are Parahebe 'Porlock', Parahebe catarractae alba, Hebe 'Pagei', Hebe odora prostrata, Cotula squalida, Pratia pedunculata, Leptospermum humifusum, Viola hederacea and Acaena anserinifolia. In the greenhouse Fuchsia procumbens is in bloom. A visit to Bressingham this month has resulted in the purchase of Sollya heterophylla, in bloom, which I've planted in the greenhouse bed.

JULY

The beginning of July sees the first of this summer's flowers on Kunzea baxteri and an unnamed bottlebrush. Boronia parviflora produces small pale pink 5-petalled flowers. The spider flowers of Grevillea 'Canberra Gem' provide bees with an abundance of nectar, as do the multicoloured blooms of Fuchsia procumbens. Early July sees the first flowers of Pelargonium australe (seed sown earlier this year). Several shades of lilac/purple are provided by the flowers of Hebe glaucophylla variegata , Hebe 'Purple Pixie' and Prostanthera rotundifolia. In the garden Bursaria spinosa is preparing itself for its best ever blooming - many spikes of flower buds. Muehlenbeckia axillaris continues to spread! It is now climbing up a wooden trellis as well as along the ground. Eucalyptus coccifera is sprouting new growth along its trunk so its time to remove the dead branches. In the same border Hebe 'Youngii' adds purple spikes of colour to its green foliage, and Derwentia perfoliata sends up violet racemes of flowers at the end of stems of grey-green leaves. In the scree beds various parahebes are in bloom : Parahebe catarractae alba, P. 'Porlock', P. catarractae ssp diffusa and P. 'Kea'. Acaena 'Blue Haze' joins the other bidibidis in flower. Pratia pedunculata continues to produce its blue starry flowers. More blue is provided by the first flowers of Wahlenbergia gloriosa which really bring the small scree bed to life. In the bright sunlight the upturned bells are particularly striking. By the middle of July, the four flowers produced on Celmisia spectabilis have set seed and it can be harvested. Towards the end of July I decide to plant a specimen of Phormium cookianum in the front garden. This plant has been growing in a pot for two years in the greenhouse, but after successfully overwintering Phormium tenax in the open ground, I have decided to risk another New Zealand flax.

One of my favourite hebes, Hebe albicans is now in bloom. Towards the end of July Bursaria spinosa opens its first buds to reveal its white 5-petalled flowers. There are also creamy-white flowers on Eucalyptus perriniana which the bees absolutely love. In the greenhouse Sollya heterophylla continues to produce blue bell flowers. My one remaining Dryandra praemorsa has slowly deteriorated and I have decided to remove it. The whole plant is brown and papery and scraping away the bark reveals only brown tissue. Fortunately I have managed to harvest seed and have sown several. The younger plants of Eucalyptus viminalis, coppiced each year, are showing new growth but the oldest specimen grown as a tree is most likely dead. The trunk is badly split and there has been no regrowth.

AUGUST

Back in January I thought that I might have lost my specimen of Hebe 'Great Orme', which grows by the southfacing housewall. Later in the spring it seemed as if it was still alive as it produced some new growth. But now, in August, it is stick-like and I am going to remove it. The specimen growing in a tub on the patio is fine and in full bloom. Butterflies just love the flower spikes. Two Dryandra praemorsa seeds have germinated.

SEPTEMBER

Mid-September - the unwanted long growths on the various eucalypts in the front garden are removed.

Seed continues to be collected including that from Wahlenbergia gloriosa, Parahebe catarractae alba, Pelargonium australe, Celmisia spectabilis, Hovea elliptica, Kennedya rubicunda (just a few pods this year after the winter damage).

OCTOBER

Bursaria spinosa is producing a small amount of seed after its summer flowering. The 8 year old specimen of Melaleuca armillaris planted in the garden in 1995, which looked dead back in January, is now showing 15cm of new growth from the base. If the coming winter is mild, it may survive. Parahebe 'Porlock', Viola hederacea, and Wahlenbergia gloriosa continue to provide colour. In the greenhouse there are still red spider flowers on Grevillea 'Canberra Gem', pale pink flowers on Pelargonium australe, blue bell-shaped flowers on Sollya heterophylla as well as red fruits on Fuchsia procumbens.

My two Dryandra praemorsa seedlings are approximately 6cm tall.

SUMMARY

No flowers on any honeymyrtles this year. Neither on Indigofera australis, although there is sign of flower spikes forming for later this year/early next. None of my New Zealand daisy bushes flowered (O. scilloniensis, O. phlogopappa and O. macrodonta), neither did Corokia x virgata or Leucogenes leontopodium.

SMOKE GERMINATION DOWN UNDER

Courtesy of Harry Brush

Harry Brush sent me a clipping from The West Australian newspaper regarding 'Smoke Germination'. I have reproduced the article below.

SMOKE ON TRIAL FROM SEED GROWTH

A small strip of land along Bussell Highway near Ludlow, 15km east of Busselton, will help researchers understand more about one of the marvels of WA flora.

Main Roads WA and the Kings Park and Botanic Gardens research laboratories have joined forces to pour "smoke water" on the land to promote native seed germination.

Smoke water is water mixed with smoke from burning woodchips, mulch, leaf and bark taken from native plants.

Scientists have found that seed germination is improved greatly by exposure to smoke particles. They believe spraying smoke water on seeds in topsoil will also trigger germination.

Main Roads WA used a vacuum process to draw smoke through 5000 litres of water and added soil bonding agents to help smoke particles stick to Ludlow's sandy soil.

The department's roadside manager Alan Grist said the tests aimed for the smoke water to stay in the top 6mm of soil for as long as possible to stimulate seed germination.

"There are a number of native species in WA which will only regenerate through exposure to smoke," he said.

"At Ludlow, for example, we will closely watch the growth of Conostylis candicans, a small shrub more commonly known as cotton head, which has been difficult to grow in the past."

Mr Grist said if the Ludlow trial was successful in promoting vigorous growth of native plants, the results could have wide ramifications for WA's developing floriculture industry and for minesite rehabilitation.

"If the smoke water works well, it means road construction and mining companies can use original top soil to rebuild the native vegetation," he said.

"It also means a greater variety of native species is likely to regenerate, restoring the area as close as possible to its original condition."

The Ludlow trial will be monitored for three years.

Kings Park botanist Kingsley Dixon, who learnt of the link between smoke and seed germination in South Africa in 1993, said a third of WA plants needed smoke - not heat, as thought previously - to stimlate germination.

"We had good seeds for many plants but we could never get them to germinate," he said.

"If this trial works it will be great encouragement for people who are trying to regenerate urban bushland and for landcare groups who work on broadacre farms."

SMOKING SEEDS IN HAZEL GROVE

By Dennis Rowlinson

After reading all these articles on using smoke to remove inhibitors on seeds I decided to have a try myself.

First I realised that there is a problem of containing the smoke, some people seemed to have built a plastic greenhouse to smoke in and others seem to have had an 'unknown' sized box to contain it. So first I had to see what happened when the material was set fire to - obviously dried material was needed and I had already dried some Eucalyptus leaves, donated by a friend after I had hacked her tree down to a low level. I placed some of these on a metal tray and set fire to them - it just smoked for about one minute and then went out - Charming!!! Another tack was needed. This is when I went round the garden cutting off all those beautiful brown bits, kindly left by that nice -12°C frost that visited us last year. These I crushed up and mixed with the Eucalyptus leaves - perhaps giving me enough variation to simulate Australian leaf litter.

I then took all the seed pots of the seeds that I thought would benefit by being smoked and placed them on the tops of the benches in the greenhouse. This was a position halfway up the greenhouse.

Placing some of my 'litter' on the tray I set fire to it and closed the door - two things happened :- 1st - the fire produced some thick white smoke and, 2nd - then the fire went out. This caused me to go in and re-light the litter then close the door, and this happened quite a few times and every time allowing thick white smoke to billow out. This caused two other things - the neighbours peering around to see who was on fire and Anne (my better half), who was coughing, running into the house to get away from it all. Once there, of course, she laughed at me going in and out. After all this I feel that all the seeds were smoked, though whether they were smoked enough remains to be seen.

I then also remembered that some seeds need ash as well, so I burnt the rest of the litter and spread that over all the seed pots.

A report on any results will follow. (Ed- this is assuming that the men in white coats haven't taken Dennis away!)

WINTER IN LEEDS

By Thomas Naylor

As I suppose everyone knows only too well, we had a long winter and a cold dry spring, with well over 50 frosts, several snowfalls, and an extraordinary prevalence of easterly winds. The temperature remained below freezing for a full week in late December. There were 4 air frosts in May. Very few plants managed to survive entirely undamaged. Unprotected acacias out of doors - A. melanoxylon, pravissima, riceana all appeared to be dead by the end of May; A. riceana was the least resilient and first to succumb. A. melanoxylon began to send up a new shoot in September 1996. Three Banksia oblongifolia have survived. I am afraid that my Banksia conferta ssp penicillata died soon after I

planted it out in Spring this year. Correa reflexa survived the winter but was dead by June: it was planted in a very dry spot. By way of contrast two Leptospermum scoparium plants appeared to have died over winter but produced new growth over the entire length of the upper stem in early Summer and have continued to flourish. Leptospermum riparium seems not to have suffered at all. Callistemon linearis was badly damaged but recovered. The other callistemons :- citrinus, pityoides and subulatus are still alive but there have been no flowers.

One Eucalyptus globulus and a Eucalyptus rubida were dead by midsummer. The other E. globulus suffered quite severe damage but regenerated, both from the base and higher up the stem, later in the year. E. cordata, coccifera, dalrympleana, glaucescens, gunnii, pauciflora ssp niphophila, perriniana and viminalis survived, though most suffered considerable browning of the leaves. E. glaucescens flowered for the first time in September 1996. Leaves of Melaleuca squarrosa were also somewhat browned, but this plant soon recovered and is now doing well. Cassinia fulvida, in the open, and Ozothamnus rosmarinifolius, against a wall, were both undamaged by frost and drought.

I planted out several Arthropodium cirrhatum in Spring 1995 but none survived last winter.

Ed :- Thomas enclosed a wonderful photograph of a painted lady butterfly on Ozothamnus flowers in his garden. 1996 seemed to be the year for this particular butterfly; clouds of them flitted around my garden, moving from lavender to hebes and buddleias.

WRIXONIAS REVEALED

By Tim Longville

Well done, the APS! As ever, if you ask a question through 'Pentachondra', you can almost guarantee, not just one answer but a little swarm of competing bits of information. Thanks in particular to Tony Entwistle and Jeff Irons, I can now offer some more facts about Wrixonia prostantheroides.

Yes, wrixonias are prostanthera relatives. I hadn't previously known the distinctions separating prostantheras from westringias and both from wrixonias. This is the story: in prostantheras all four stamens are fertile; in westringia the lower two stamens are sterile; in wrixonia the two upper stamens are sterile.

The original material from which Wrixonia prostantheroides was named was collected by Jess Young during the Giles Expedition in 1875 in the vicinity of Mt. Churchman, Western Australia. The plant was named by F. Mueller in 1876 and the genus name honours one Henry John Wrixon, for many years Minister of Justice in Victoria and 'a scholarly patron of the Arts and Sciences'. Good on yer, Henry John.

W. prostantheroides does indeed have the characteristic minty smell of most prostantheras. The flowers, which occur in late winter and spring, are white with violet spots. It makes an upright, spreading, small-leaved bush. There seem to be different notions of its maximum size. Some authorities say it is a miniature shrublet and will only

grow to half a metre at most. Others say that it will grow to as much as 2m. It'd probably be safe to suppose that in the U.K. it would only manage the lower levels of this spread of possible heights.

What everyone seems agreed on is that from its natural habitat, in quite a dry area, where it is found among acacia thickets, it would have no chance of being hardy outdoors in the U.K. On the other hand, as I suggested previously, if it grows as quickly and comes from cuttings as easily as do most prostantheras, then it might well make an easy and attractive indoor shrub under glass.

There is, by the way, a second wrixonia: W. schultzii. From published descriptions this seems so close to W. prostantheroides as to be for horticultural purposes indistinguishable : W. schultzii has smaller flowers and flat leaves (whereas the leaves of W. prostantheroides are wavy). W. schultzii was originally found, in 1886 on the summit of Mt. Sonder in the Northern Territory, by the Rev. W.F. Schwartz of the Hermannsburg Lutheran Mission, who named it after his colleague, Pastor Louis Schultz.

Nor is this the end of the Prostantheroideae. The sub-family also contains both the genus Hemigenia - with about 40 species, mostly from south-western Western Australia but a few from Queensland and N.S.W., including the interesting-sounding violet-flowered H. purpurea - and the genus Hemiandra, with seven species from south-western Western Australia, including Snake Bush, H. pungens, a spreading shrub which is quite often used as a garden plant in Australia. Neither genus is likely to contain species hardy outdoors in the U.K. but some species might have the same attractions as the more tender prostantheras. An area worth some exploration, perhaps.

AUSTRALIAN PEA FLOWERS

By Tony Entwistle

Australia is rich in Papilionoideae; they are not widely grown here for two good reasons; they are not really hardy and we have so many hardy 'Peas' from the Northern Hemisphere anyway. Many eg Daviesia and Jacksonia are horribly prickly and some eg Oxylobium are rather coarse and not of much horticultural value.

Having said that, there are a few that are worth growing. I suppose everyone would choose first the 'Glory Pea' Swainsonia formosa, which is difficult to keep as a perennial but could be tried more as an annual (as in Australia). Certainly seedlings put out in May in the Australian Garden at the Liverpool International Garden Festival in 1980 romped away and flowered all summer.

I am fond of Chorizema with their peculiar orange and pink flowers; C. ilicifolia is perhaps the best, but won't stand any frost.

Blue 'Peas' are unusual and I have admired the Hoveas as undershrubs in the Yarri forests. Kennedya violacea is also very pretty, and K. coccinea, the coral vine, is handsome in the same habitat.

There are some very good dwarf 'Peas' in the Sterlings, almost cushion plants with soft foliage and pink or orange flowers eg. Dillwynia

cinerascens.

But in general I am quite content to stick with our own 'Brooms' - Cytisus. Argyrocytisus and Genista!

NINDETHANA SEED COMPANY, ALBANY, WA

By Nick Andrews

In the summer I faxed a small order, making payment by Visa (hence incurring no bank charges). The seeds arrived only 6 days later - quicker than the response of many enquiries made in the U.K.!

No special treatment, I sowed the seeds in August in a very open perlite rich mix and kept them just moist. I have been thrilled with the success. The following have all germinated:

Hovea chorizimifolia - as cooler weather came on in autumn
Isopogon latifolius - ditto
Banksia gardneri gardneri - ditto
Banksia blechnifolia - ditto
Cheiranthera filifolia - ditto
Dryandra formosa - ditto
Callistemon glaucus - after 2-3 weeks from sowing
Melaleuca spathulata - ditto
Crotalaria cunninghamii - ditto
Acacia oxyclada - ditto
Acacia drummondii ssp affinis - ditto

The only species ungerminated as yet (early November) are:- Anigozanthos preissii, Drymophila cyanscarpa, Grevillea quercifolia and Dichopogon capillipes.

At 90c per packet, the whole order including postage was around £10.00.

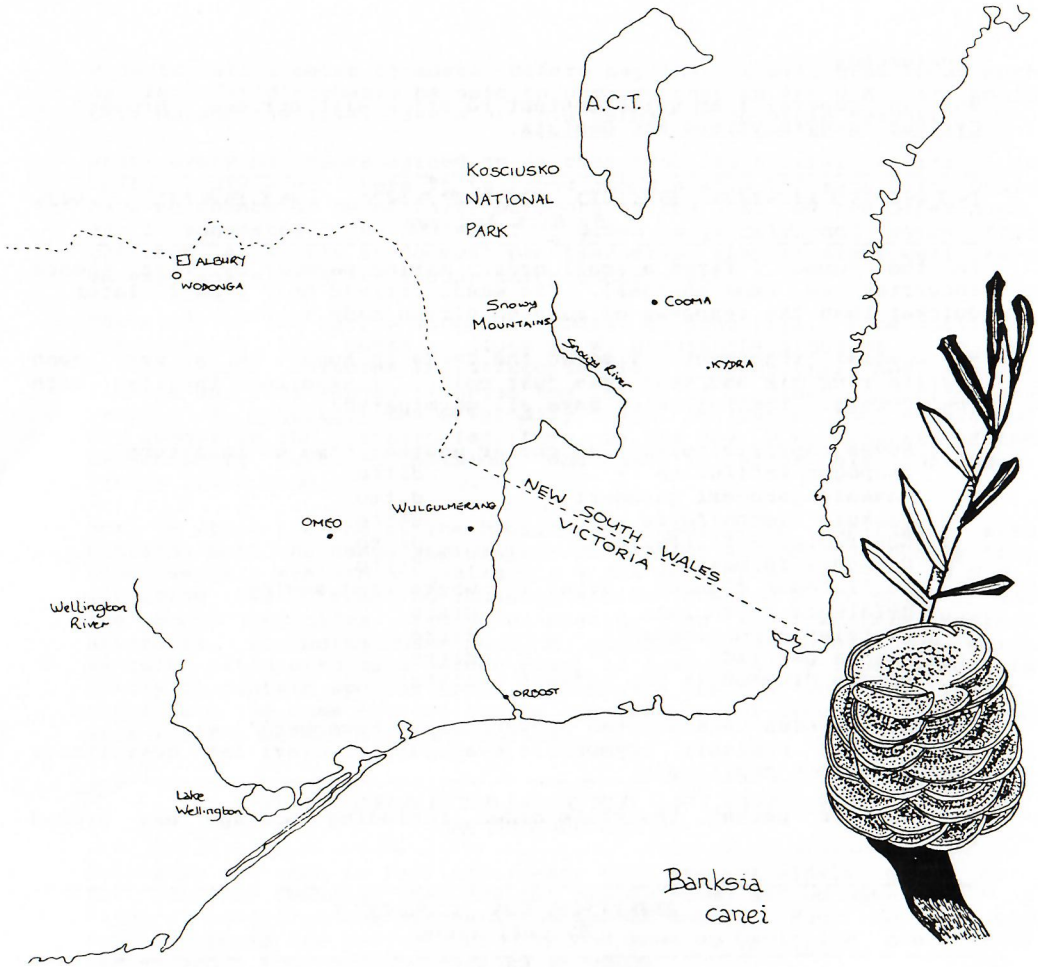
BANKSIA CANEI

By Jeff Irons

Since writing about Banksia canei in the April 1992 Newsletter I've learnt quite a lot more about the species, and an update of information seems desirable.

The species is popular because it is one of the few Banksias with a chance of surviving most British winters outdoors. It is found in mountainous parts of south eastern Australia and has evolved into four distinct types, called topodemes. Because of this it is important to specify the origin when writing about, or exhibiting B. canei. The four topodemes are : Wellington River, Victoria; Wulgulmerang, Victoria; Kydra Peak, NSW, and Snowy Mountains, NSW.

If anyone wants full details they can be found in Aus. J. Bot., 1978, 26, 707-21. The Topodemes of Banksia canei J. H. Willis (Proteaceae) by A. Salkin and N. D. Hallam.



Seed of Banksia canei should be stratified for at least 2 months before sowing. It will germinate in the refrigerator. The seed can be mixed with moist sand, but I find sieved dried (and remoistened) sphagnum better. There is less chance of breaking a radicle when removing seed from the material than there is with sand.

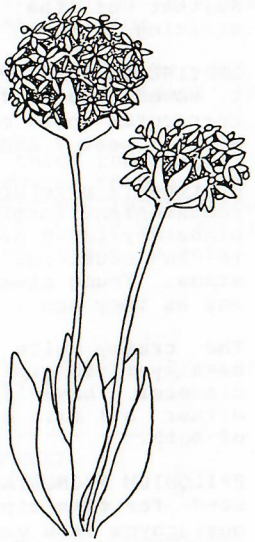
WESTERN AUSTRALIA
THE NORTHERN SANDPLAINS

By Tony Entwistle

North of Perth, between the sea and the dwindling escarpment of the Darling Range, and extending 320+ km (200+ miles) to Geraldton and beyond, is an area of poor sandy, mostly acidic soil, flat or gently undulating. It is mostly farmed (grazing predominantly) but there are plenty of National Parks and reserves, both huge and small, and often

the roadside verges are so large they are mini-reserves in themselves. I visited this area with one of the excellent Westrail botanic tours.

Heading north and soon after leaving the Swan River valley the roadsides are full of Banksia sp. Mostly the yellow B. hookerana and menziesii. I have to say that old banksias are the most ugly plants - full of dead branches and festooned with old cones - one can see the virtue of bush fires! Scrubland revealed the white plumes of Smoke Bushes (Conospermum stoechadis) and the more elegant C. incurvum, and the sky-blue patches of Lechenaultia biloba, which was to be a very common sight throughout.



It was interesting to observe how one plant dominated an area - we travelled for miles through a sea of white Hakea, then abruptly it became gold Acacia for an equal distance.

The area is not well wooded, but the shallow river-beds grow huge eucalypts, mostly the handsome Eucalyptus salmonifera. Though we did not see E. macrocarpa in the wild, it was commonly planted and was most striking with its combination of silver-white foliage and large red flowers.

This area is also well-known for its spectacular and colourful spring display of 'everlastings' and there were many areas of pink Helipterum and yellow Waitzia. Just as impressive was the blue-purple of the Firebush Keraudrenia integrifolia shimmering metallically in the sun.

There were many grevilleas, few of any horticultural interest. The best was G. leucopteris, with huge creamy plumes. Known locally as 'sweaty socks' - typical Australian candour - this proved only too true - a piece brought into the coach was quickly ejected! Myrtaceae were widespread, and there were all colours of Melaleuca, Eremaea, Chamelaucium and Malleostemon.

Other plants which remain in the memory were the 'foxglove' Pityrodia terminalis, the pink Isopogon divergens, the 'pomegranate' Balaustion pulcherrimum forming dwarf mounds of scarlet and the vivid acid-yellow of Glischrocaryon aureum.

We were taken to see a few rarities; memorable was the wreath lechenaultia (L. macrantha) growing on pure sand, perfect circular mats of pink and yellow, together with the blue pincushions of Brunonia australis. We also saw Hibbertia miniata, a small deep orange Guinea Flower, growing under eucalypts and the black 'kangaroo-paw' Macropidia fuliginosa. We did not find the 'Queen of Sheba' orchid Thelymitra variegata despite a search; but there were plenty of the exquisite Cowslip Orchid Caladenia lutea.

TWO NEW ZEALAND ALPINES

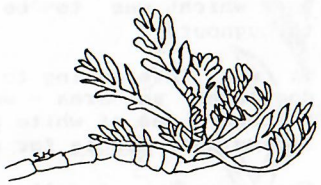
By Sue Hyams

Neither of the following two New Zealand alpines is particularly striking but both are welcome additions to my alpine collection.

LEPTINELLA PYRETHRIFOLIA

I sowed seed for this species in January 1996 and currently have 3 terracotta pots of strong plants, growing in a mixture of John Innes No. 1 / peat / added grit.

Leptinella pyrethrifolia is a spreading robust plant forming a carpet of fleshy pinnately-lobed green leaves which tend to be clustered at the tops of the stems. Young stems are purplish, greening as they age.



Leptinella pyrethrifolia

The creamy white flowerheads, which I have yet to experience, upto 16mm in diameter, have florets that may be either all male or female or a mixture of both.

EPILOBIUM PYCNOSTACHYUM

Seed for this alpine was also sown in January 1996. Epilobium pycnostachyum is a semi-woody alpine with numerous reddish stems arising from the base. The stems are packed with closely set leaves 1-2cm long x 2-4mm wide, green above, reddish-brown below.

In June the first flowers opened: tubular, four petalled and white, produced near the branch tips in the leaf axils. The seed capsules upto 2cm long are slightly curved and split open to release typical willowherb-type seeds.

This species is best grown in a gritty free-draining soil; I have one clump in the scree bed and another in a pot.

HAKEAS AGAIN

By Greg Plenty

Hakeas are plants that people feel should not grow in my West Yorkshire garden - but they do, I hope!

When I moved here from 6.5km (4 miles) away in the Leeds suburbs two years ago, I brought with me a smallish Hakea lissosperma bought from Angus White at Architectural Plants in Sussex and two plants of Hakea saligna grown from Chiltern Seeds a few years previously.

The former died during summer 1995 due to the drought, despite its hard cylindrical leaves. Does it need more water than I think?

Hakea saligna is almost hardy in the open garden here, having purplish needle-shaped leaves typical of many of the species. Despite temperatures falling to near -20°C here last winter and a long freeze with little snow, one plant survived undamaged against a south-west

wall. It is also very easily propagated from softish cuttings and grows quite fast.

But I wanted to try more. I sowed some H. lissosperma from the APS seedbank in May 1995. Nothing germinated upto early spring this year, suggesting that this species perhaps requires stratification.

However, this year I sowed some H. microcarpa from the APS list and a large number popped up in a very short time with almost 100% germination.

I hope these will be hardy. Jeff Irons seems to think they might be (see article in APS newsletter May 1996). I'm growing them on in a mix of my (acid) garden soil, peat and sand to avoid the large amount of phosphate in conventional John Innes compost. I shan't be putting them out until next spring. Unfortunately they're taking up lots of greenhouse space...

Anybody want to try a hakea?

Ed: Contact Greg Plenty at South View Barn, The Mount, Birstall, Batley, West Yorkshire, WF17 9DS. Tel : 01924 477793.

MORE HELP REQUESTED

By Tim Longville

Has anyone else tried to grow Callicoma serratifolia? I have a flourishing two-year-old seed-grown plant which is certainly worth growing just for its handsome foliage. Excuse the following brief description, which is strictly non-technical: the leaves are large (as much as 12cm long by 6cm wide); lanceolate; heavily toothed, as the specific name would suggest; equally heavily veined; almost white and slightly felted on the undersides; opening bronzy red and maturing to a fresh, bright but pale green on the upper surfaces; and they hang in an elegant and stylish droop. To date (Ed- article was written in May) the plant has made an upright bush to around 0.75m, is spreading satisfactorily, and continues to grow with vigour.

So far so good.



Callicoma serratifolia

What it doesn't do, though - or hasn't done yet - is what I was told it would do when 'only two or three feet' tall. That is, of course : flower. I'm told that it's a member of the Cunoniaceae, eventually makes 'a large' (I don't know how large) shrub and should have flowers in the form of fluffy cream powder-puffs. Can any member (a) provide any more information about it, (b) suggest reasons why it hasn't flowered so far and (c) ways in which to persuade it to do so? If it would do that in addition to its other virtues, I'd certainly 'give it five'.

COPROSMA X KIRKII 'VARIEGATA'

In the Bonsai Section of your local garden centre you are most likely to find several 'starter' plants as well as mature trained specimens. These plants range from young hardy conifers to tropical species preferring the indoor life. One plant likely to be found is Coprosma x kirkii 'Variegata'.

Coprosmas belong to the Rubiaceae family, where the leaves are always in pairs. This results in opposite pairs of branches from the buds in the leaf axils. In 'Variegata' the branchlets are very pale green, almost white. The leaves are oval in shape, 15-25mm long x 6mm wide, green with creamy white margins; the underside is pubescent (ie clad in short hairs). This cultivar is not fully hardy but makes a very attractive houseplant/conservatory plant or could be used as a subject for a summer hanging basket since it has a sprawling habit.

At less than £2.00 per plant, what better way to increase your Australasian collection.

INFORMATION AVAILABLE FROM HQ

Updated copies of 'Propagation Notes' (price £1.00) and an 'Index to APS Newsletters' (price 50p) are always available from Newsletter Headquarters.

ADDITIONAL PROPAGATION NEWS

Acaena - usually give a mixture of immediate germination and germination the following spring.
Aciphylla - soak 1-24 hrs before sowing. Germination occurs at intervals over 1-3 yrs.
Anisotome - stratify 1-2 months. Keep at least 2 yrs before discarding.
Arthropodium - good hygiene is essential. Seedlings are susceptible to fungal diseases.
Astelia - stratify 30-60 days before sowing.
Bulbinella - stratify 100 days before sowing.
Chionochloa - Danthonia is now included in this species. It needs 12 months storage before sowing. APS seed should be suitable for immediate sowing.
Chordospartium - treat with water at 50°C.
Clematis - usually take 6-12 months to germinate. May require 2-3 yrs.
Corokia - keep 2 yrs before discarding.
Dacrydium - stratify 100 days.
Dolichoglottis - stratify at least 30 days.

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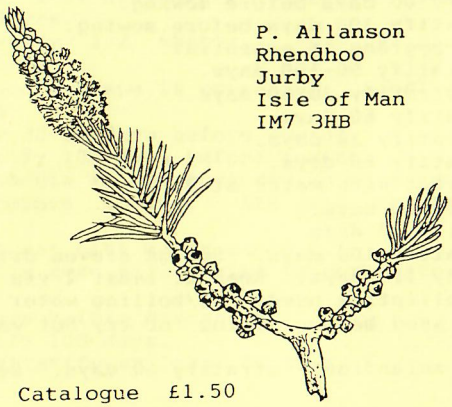
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Donatia - stratify 100 days. It is possible that dry storage of seed inhibits germination.
Drapetes - stratify 50-100 days.
Euphrasia - there is some evidence that cool climate southern Euphrasias are not root parasitic. Nevertheless it is advisable to transplant seed into a pot containing native grass.
Gahnia - fresh seed takes up to 12 months to germinate.
Gentiana - stratify for 6 months.
Grevillea - peel the seed coat before sowing. This is easier if the seed is first soaked in water.
Gunnera - stratify 60 days before sowing.
Halocarpus - stratify 100 days before sowing.
Heliohebe - good hygiene is essential.
Herpolirion - stratify 60-100 days.
Lepidothamnus - stratify 30-60 days.
Leucogenes - stratify 60 days.
Myosotidium - stratify 30 days.
Nothofagus - stratify 60 days.
Notospartium - treat with water at 90°C.
Ourisia - stratify 60 days.
Parsonia - stratify 60 days.
Phyllachne - stratify 100 days. Sow on sieved dried sphagnum.
Pimelea - stratify 100 days. Keep at least 2 yrs before discarding.
Pomaderris - P. elliptica needs hot/boiling water treatment.
Sophora - nick seed before sowing, or try hot water treatment with water below 90°C.
Swainsonia novae-zelandiae - stratify 60 days. Beware gastropods.

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