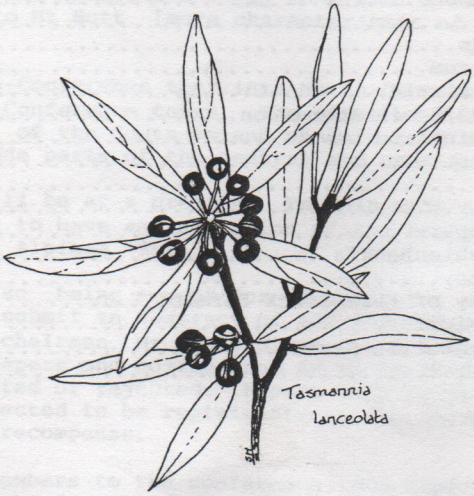
AUSTRALASIAN PLANT SOCIETY NEWSLETTER



ISSUE 12 MAY 1994

AUSTRALASIAN PLANT SOCIETY

Newsletter No. 12

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EDITORIAL

The APS Newsletter will be now issued in May and December. It is hoped that this will prevent extra postage previously incurred, informing members of the AGM and of subscription renewals.

The 1994 AUSTRALASIAN PLANT SOCIETY AGM will be held on Saturday June 4th, in Room 3 at Church House Conference Centre, Dean's Yard, Westminster, London from 2-5.30pm. Professor Peter Bannister of Otago University will deliver a slide lecture on the Plants of New Zealand.

SEEDS Thank you to Dennis Rowlinson, Steve Law and Thomas Ross for donating seeds to the seedbank.

SOUTHERN ALPINES 1996

Southern Alpines '96 is an opportunity to see and discover some of the alpine plants of New Zealand as well as learning about other southern hemisphere alpines. It is also hoped that northern hemisphere visitors will share their experiences with southern hemisphere alpines.

There will be two one-day trips into the mountains west of Christchurch during the conference - [1] to Arthur's Pass [a high rainfall area] and [2] to Mt Hutt, [more characteristic of the drier Canterbury mountains].

A 3-4 days pre-Conference tour into North Canterbury will be offered and two post-Conference tours. The first will be 5-7 days to the northern part of the South Island while a tour of approximately 10 days will include parts of the central and southern South Island.

Accomodation will be at a premium. To help with planning, the organisers would like to have an indication of the numbers who are hoping to attend Southern Alpines '96.

Papers are also being sought for presentaion at the Conference. Authors should submit an abstract of 100-150 words for consideration. The programme chairman, Mr David Given, will contact all authors who have offered papers and advise them as to whether their contribution has been accepted or rejected. Papers will be allotted 15 minutes. Authors are expected to be registrants at the conference, and will not be offered any recompense.

To encourage members to the conference, AGS Expeditions Ltd will be offering a flight from London to New Zealand, probably flying on the 28th December 1995, with a flexible return date. In addition, AGSE Ltd will offer a pre-Conference Tour of about 5-6 days starting at Blenheim and finishing in Christchurch. This tour will focus on the mountains of Marlborough and Nelson. A post-Conference Tour of 12 days will cover the area from Mt Cook south to Fjordland, finishing in Dunedin. The immediate return flight following the tour would reach London on 24th January 1996. These tours are being arranged for the AGS by Mark Hanger of Nature Quest, New Zealand, who has led the Society's New Zealand tours in 1992 and 1994 so successfully. A prospectus covering flight details, itineraries and costs of each tour

should be available in September. The flight costs are unlikely to be known before March 1995 and will depend on the number flying.

If you are at all interested in taking part in the conference, please contact Jeff Irons by 1 June 94. This is NOT a binding commitment.

PACHYSTEGIA

By Brian Halliwell

In a volume of J.D. Hooker's Flora Nova Zelandiae published in 1885 a plant appears as Olearia insignis. W. Colenso in Transactions of the New Zealand Institute of 1883 referred to it as Olearia marginata. It was however, T.F. Cheeseman in the second edition of Manual of the New Zealand Flora published in 1925 who created the monotypic genus of Pachystegia with its one species: P. insignis and a variety minor. In New Zealand Journal of Botany 1987, B. Malloy was to elevate the variety into a species in its own right : P. minor. He was to apply P. rufa to a recent discovery whose status had been undecided. I am told that there are two more discoveries awaiting description.

It is curious that in volume 3 [1977] of the 8th edition of Bean's Trees and Shrubs Hardy in the British Isles, D.L. Clark, its editor, used the Hooker name of Olearia insignis. Even stranger is this use in the 1993/1994 edition of the Plant Finder when in earlier editions it had been Pachystegia insignis.

The three species are confined to a north east corner of the South Island of New Zealand in the provinces of Marlborough and Canterbury to the north. Commonly found growing on limestone in crevices, grow in open positions. Frequently they are coastal plants where they can be subject to maritime gales.

P. insignis extends from sea level to 1200m [approx 4000ft] in an area bounded to the south by Waipara with the Wairau river to the north. It is a stout, spreading, much branched evergreen shrub reaching perhaps 2m [6.6ft] in height. Alternate, thick, oblong-oval leaves which tend to be crowded near the apex of branches can reach 15cm [6"] in length and 8cm [3.1"] in width. These are green above when mature whilst undersurfaces, petioles, peduncles and involucral bracts are covered with white or occasionally buff-coloured felt. In summer from the ends of branches develop upto 5 peduncles with drumstick-like flower buds which open into white daisy flowers some 5cm [2"] in diameter.

This is a handsome foliage plant which is further enhanced by its spectacular flowers. As it extends to over 1000m [3300ft], one would expect some of the seedlings raised from higher seed collections to be hardy in this country. In general it does not seem to be reliable in Britain. In New Zealand it can be hardy in colder areas but fails in warmer regions that experience a high rainfall. Perhaps it is winter damp in this country rather than a straight cold which is the killer.

It is easily raised from viable seed sown in gentle warmth in spring. Seedlings are prone to slug and snail damage so take precautions. Crowded seedlings growing in warm damp conditions are prone to infection by damping-off diseases and grey mould. Give seedlings plenty of

space and ventiliation so that air can circulate and water with captan or benlate. Cuttings of non-flowering thinner shoots taken in late summer are not difficult to root. There is improved success when cuttings are stood on an open bench and not enclosed in a polythene bag or propagator.

Best grown in a glasshouse, without heat as long as there is always plenty of air movement. It would be worth trying outside in milder areas. If one has contacts in New Zealand do ask for seed collected from higher elevations.

P. minor as has been said, was formerly known as P. insignis var minor and appears as such in most books. It occurs in an area between Clarence and Puhi Puhi Rivers, Marlborough; there is an overlap with P. insignis and natural hybrids occur. It is smaller in all its parts to P. insignis making a dome-shaped bush some 30cm [1ft] in height. Leaves which may reach 10cm [4"] in length, are darker green and more shining above but with thinner felting on underside, petiole, peduncle and bracts. Flower stems are about 10cm [4"] and blooms when open about 2.5cm [1"] in diameter.

This species seems hardy throughout the British Isles being grown on rock gardens, by alpine enthusiasts. It is indifferent to soil as long as it is well drained but ensure that it is not hemmed in or overgrown by vigorous neighbours. Propagation is the same as for P. insignis. Fresh seed received from the Southern Hemisphere in July and sown immediately will germinate by September and overwinter easily in a frost free greenhouse.

P. rufa has been known for only a few years. It was discovered in the gorges of tributaries of the Blind River in the Haldon Hills of Marlborough. Somewhat similar to P. minor but with slightly larger leaves, darker green above and with rust coloured felt on leaf undersides, petioles, peduncles and involucral bracts. Flowers seem a little larger being about 3cm [1.2"] in diameter.

This is a very handsome foliage plant but which comes into its own when its white flowers are contrasted against the dark green and/or rusty felt of the leaves. I have seen plants in cultivation in New Zealand but I do not know if it is yet available in this country as seed or plants. It is hoped that it will prove to be as hardy as P. minor so it can take a place on a rock garden.

References

The Cultivation of New Zealand Trees and Shrubs by L.J. Metcalf, published by Reed Methuen 19 revised edition 1987.
New Zealand Journal of Botany 1987 Vol 25.

NAME CHANGES

Bedfordia salicina sensu J.H.Willis non [Labill] D.C. is now Bedfordia arborescens. [Note : sensu = according to; non = not].

Burtonia conferta is now Gompholobium confertum. Ref: Advances in Legume Systematics, part 3, 1987, RBG Kew.

SIR JOSEPH BANKS

In 1768 the Royal Society became interested in an impending transit of Venus across the face of the sun. It persuaded King George III to promise financial help to an expedition to the Pacific Ocean. The Lords of the Admiralty too were interested in such an expedition. They were interested in Tasman's arguments in favour of a southern continent which the French, defeated in Canada and India, might colonize. They had already selected a commander, James Cook, a boatswain who had very competently charted the St. Lawrence River, and who was ready for promotion. He was commissioned Lieutenant, and allowed to choose his ship. He selected a Whitby collier. It was roomy, sturdy, had a shallow draft, and would be easy to repair. It was renamed HMS Endeavour.

The choice of scientific leader was Joseph Banks, the young squire of Revesby, a village 12.8km [8 miles] north of Boston in the Holland division of Lincolnshire. He had been to school at Harrow and Eton, and was more of an open-air boy than an academic. He wanted to know everything and had a zest for botany and natural history. When Oxford University was unable to provide instruction in three areas of his interest, he rode to Cambridge and persuaded an expert there to change universities, so that he might continue his studies. He had acquired knowledge of the needs of an expedition when a member of one to Labrador and Newfoundland. Almost everything for the Pacific trip was provided at his expense. As was typical of him, it was on a lavish scale. Among those chosen to accompany him was an old friend, the Swedish naturalist Dr. Solander.

The expedition reached Tahiti and stayed there while the astronomical observations were taken. On 13th July 1768 it set sail again, in search of the southern continent. In early October New Zealand was sighted. After 6 months there, they decided to return via the East Indies. One morning land was seen, and on April 28th 1770, HMS Endeavour sailed into a sheltered and attractive bay. Banks and his party 'had the time of their lives so far as botanizing was concerned'. Hundreds of specimens were taken. The place is known now as Botany Bay. Time did not permit exploration of the harbour of Port Jackson a little further on. One of the specimens taken was Banksia serrata, which is now the type specimen of the genus Banksia. Others were Banksias ericifolia, integrifolia and robur. In July, when the Endeavour stopped in North Queensland for repairs a fifth species, B. dentata was collected.

Banks did not describe his new discoveries, and it was left to Carl Linnaeus to describe the new genus, and name it in honour of Banks. That was in 1782. However the name was not conserved officially until 1940. The reason was that in 1775 J R & G Forster had honoured Banks by naming a genus after him. Subsequently Banks renamed it Pimelea.

After the expedition the King sent for Banks, who became a lifelong friend. In literature of the time Cook was ignored, and it was Banks' voyage. The Admiralty promoted Cook to Commander and sent him on a second expedition to the Pacific. Banks made preparations on an even larger scale than before. His equipment and instruments were so bulky and so heavy that the ship Resolution became top heavy. Banks' train

of followers included 'thirteen servants in scarlet and silver, comprising a full band of music.' When the vessel reached Sheerness, Cook insisted that the excess baggage be removed. Banks cut his losses and returned to London. He was the unchallenged authority on 'New Holland', but he had other interests too, and in 1772 went to Iceland. He spent much time in London, and had both a large circle of friends and an enormous correspondence. He kept kangaroos in a corner of the park at Revesby, and the place is still known as 'Kangaroo'. In 1778, at the age of 35, he was elected President of the Royal Society, and remained so until his death in 1830. In partnership with the King [Farmer George] he transformed agriculture and stirred subsidiary interests in housing and sanitation. He imported sheep from Spain and promoted their export to Australia, being conscious that the new country needed both meat and clothing. He was chiefly responsible for the expedition, under Captain Bligh, to collect bread fruit trees from the South Sea islands and take them to the West Indies.

Among the treasures of Lincoln Public Library are four volumes of water colour drawings of village churches all over the county, painted at Banks' expense. Important paintings of him are to be found in the Usher Art gallery, Lincoln and in the Guild Hall Museum in Boston.

No-one knows why, but the view from the gallery at the west end of Lincoln Minster is known as Banks' view.

Banks commissioned a set of 738 copper plate engravings of flowers to record the Botany Bay voyage. They were not printed till the 1980's when, as the Banks Florilegium, 100 sets were made on hand-made paper.

Banks most absorbing interest was always the place that he called 'New Holland', and he insisted that the foundation colonies around Botany Bay would compensate for the loss of America. He has been commemorated on both Australian banknotes and postage stamps.

GERMINATION FAILURES

Dr. Tony Entwistle

As mentioned in previous issues, the aim of the newsletter is to provide information on successes and failures. This way we can help each other to succeed in growing these wonderful plants. This article concerns germination failures. If you have managed to succeed with one or more of these plants, let us know your secret - Editor.

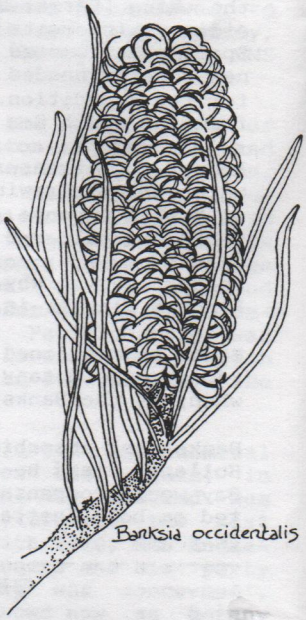
'The following have persistently failed to germinate, despite the adoption of what seemed to be appropriate techniques such as stratification, hot water treatment, scarifying, even the lighting of miniature bonfires on the seedpan to simulate a bushfire. I am aware that some of these eg. Epacridaceae are considered almost impossible even by the experts, but it would be interesting to hear of the experience or any tips that members may have.

Failed to Germinate: Proteaceae: Bellendena, Conospermum, Lambertia; Epacridaceae: Dracophyllum, Richea, Epacris, Leucopogon, Astroloma; others: Verticordia, Pileanthus, Darwinia, Stackhousia, Pimelea physodes, Johnsonia, Hemiandra, Boronia molloyae, Calytrix, Dampiera, Hibbertia, Lechenaultia, Tetratheca.

MEMBERS' EXPERIENCES WITH AUSTRALASIAN PLANTS

Several members were sent a questionnaire concerning their experience with a particular plant, in the hope that they would pass on useful information to other members; ie ways of germination, cultivation etc. The following information has been compiled as a result of those members who took the time to fill in the form and return it. Thanks.

Nick Andrews, of Powys, chose to write about Banksia occidentalis, germinated from seed from the APS seedlist. Growing in the greenhouse in a very open and free draining compost, it receives normal watering and is fed with a phosphate-free fertiliser. Nick says that he was fearful that banksias were difficult to grow, but this species seems very easy. It grows alongside other plants and Nick has no problems overwintering it in a frostfree greenhouse. He urges other members to give banksias a go! Plants of Dietes robinsoniana germinated from 92 APS seed have grown well too.



D.P. England, of South Devon, whose garden is about 90m [300ft] above sea level, describes some if his plants. Corynocarpus laevigatus, a plant bought 18 months ago as a seedling was chosen for its large leaves. It lives in the open garden and has twice survived temperatures of -9°C and frequently experienced temperatures of -5°C. It appears to like moist well drained soil, and feeding from June to end July, leaving plenty of time for growth to harden before the onset of cold weather. Snails and large green caterpillars seem to find it rather tasty. Other plants grown include Diplarrena moraea, which seems perfectly hardy; the only bad point being its slow speed in bulking up. Arthropodium cirrhatum, grown against a wall in pots, has survived untouched by frost, but has slight leaf damage from the snail population. A four-year-old, seed-raised Callistemon violaceus, approximately 1m [3.3ft] tall, stands out in the open all year in a pot but has not yet flowered. Has any member grown this plant to flowering stage? Hebe macrocarpa var latisepala seems to be a winter/spring flowering species but does suffer slight blackening of the foliage as a result of frost. Hebe townsonii also suffers tip damage from frost.

GROWING PLANTS MY WAY

By Dennis Rowlinson

I have always tried to grow the odd Australian/New Zealand plant since returning from an extended trip out there in 1970.

Having grown many of the usual hebes in the garden, in 1988 I decided to grow one or two plants from seed obtained from Chiltern Seeds.

From these seeds germinated a few Kunzea ambigua and various Eucalyptus sp, and I grew them on for a while. Slowly most of them died away and the only remaining plants are a few seedlings of an unknown eucalypt - most were removed as too vigorous for their position - and a Kunzea ambigua around 30cm [12"] high. This was only saved by information from Jeff Irons on the acidic/sandy compost required to keep them growing.

Whilst I was playing around with these Australasians, I had started growing alpine plants from seed and was getting a glimpse of the whole range of Australasian plants available in various lists. This persuaded me to join the APS and with the cultivation details gleaned from the Newsletter and given to me by Jeff Irons I have now managed to germinate a few more seeds and grow most of them on to a reasonable size.

Most of the earlier seed had been obtained from the AGS lists, with the usual result of poor germination as the seed was most likely too old. Last year I started to try and germinate APS seed and have had one or two successes which are now growing 'gently' on.

My composts are usually home made ones - I steam the soil and sand to sterilize them and then mix with the peat in a concrete mixer specially bought for the purpose [a great back saver]. They are, generally in a mix of : 1 part soil: 2 parts sharp sand/fine grit: 2 parts peat for potting on plants, and 1 part soil: 3 parts sharp sand/fine grit: 1 part peat for seeds.

When small amounts are required I buy some Ericaceous compost and add sharp sand to peat, 1 peat: 3 sand.

The leanness of the mixes is a result of growing alpines and of course I realise that these may not be the optimum mixes to use - however until proved otherwise I feel that a lean mix gives stronger plants for use in the garden.

For feed in mixes I add a small amount of 6X manure which seems to help.

My house is on a third of an acre, lying North/South, with the back garden facing West. We are surrounded by trees at the back and seem to get little snow but plenty of frost when it is due, so I have to keep anything of doubtful hardiness covered by any means possible.

I have a frost free greenhouse for tender species - this is allowed down to 0°C by my fan heater on very cold nights - but as yet does not seem to have killed anything off and I am quite happy with this low level.

I have an Alpine Table for hardier plants that require drier conditions than the open garden. This has completely open sides to allow plenty of ventilation.

Hardy seeds in pots and various other plants go into a Rollhouse that is proving very useful, whilst I have two small frames for any other plants needing winter cover - Cyclamen, Lewisias, various bulbs etc.

I have made a few sheltered areas for the Kunzea and other plants that are too large to go into the greenhouse - these are only small areas and I am hoping to extend these in the future.

My list of growing plants grown from seed is gradually improving and now includes:
Coprosma depressa, 'Indigo Lustre', petriei, and 3 collected unnamed types with only areas collected to go by.
Kunzea ambigua, Billardiera cymosa and longiflora, Patersonia fragilis, Arthropodium candidum purpureum and cirrhatum, Burchardia umbellata, Baeckea behrii [not seen of late], Blandfordia punicea [I think], Wahlenbergia matthewsii, Boronia megastigma.

This is, of course, a small selection of plants, but as I try to grow most of my plants from seed it takes quite a while to build up the collection.

Awaiting Australasian seeds to germinate seems to be, of course, a great builder of one's character.

This year I am also trying out different types of cuttings from the good plants, and hope to have some success with those to swap for plants I don't seem to be able to germinate.

In the meantime I have quite a few seeds in pots still waiting to germinate and surprise me. After 3 years I give up and place the pot contents in a selected area in the garden. This, I feel, is a good way to feed the birds.

As you can see my progress is slow and not at all sure but I get great enjoyment from seeing my plants grow and flower.

JUVENILITY

By Brian Halliwell

Juvenility in plants might be described as the period between germination and commencement of flowering. This stage can last only a few days, as with ephemerals, eg groundsel, or one or more decades with some trees, eg Magnolia campbellii. With most it is impossible to determine when juvenile growth becomes adult but with some plants there are marked visual differences. Differences can be so marked that the uninitiated can be forgiven for thinking there are two different plants rather than just one which is at a different stage of development; even botanists have failed to be aware of these differences.

A common plant which exhibits marked differences between juvenile and adult growth is ivy, Hedera helix. In its early stages there are long undivided stems with climbing roots and lobed leaves. When adult, stems are much branched, there are no climbing roots and leaves are now oval or rhomboid.

Visual differences between the two stages of growth are more frequent with Australasian plants. The dominant genus of forest tree in Australia is Eucalyptus. Plants when juvenile have opposite, broad, thin leaves held horizontally; adult leaves are alternate, narrow,

nearly always leathery and pendent. Second to the genus Eucalyptus amongst forest trees is Acacia. In many species, phyllodes which are modified petioles and often spiny, replace true leaves; juvenile growth, which may be of short duration, has true pinnate leaves.

In New Zealand there is an even greater diversity of form. Juvenile leaves in species within the genus Aciphylla are soft, bright green and parsley-like. Adult leaves which are thick and leathery with sharply pointed tips are dull green, bronze or yellowish.

There is a group of woody plants which has a divaricating habit. Eg, in Sophora microphylla, plants begin life as sparsely leaved multi, thin stemmed shrubs where growth tends to be inward rather than up and outward. At some stage, one stem will become dominant to grow into a trunk having normal outward branches with more and larger leaves. Perhaps the greatest differences are to be found in the genus Pseudopanax. In P. crassifolia, juveniles have upright unbranched stems with narrow downward pointing leaves, sometimes a metre [3.3ft] or more in length which are thick brownish and with spines along their margins. On adults there is branching in the upper part of the trunk, leaves become tri- or pentafoliate with leaflets linear or lance-shaped, dark green and with unspined margins; in some forms leaves can be simple.

Why are there these differences between juvenile and adult growth? In plants with climbing roots eg Hedera helix, Hydrangea petiolaris, Ercilla volubilis and Tracheliospermum asiaticum, these attach their stems to tree trunks to take them up into the light as quickly as possible when branching begins with subsequent flowering. Holly, Ilex aquifolium and holm-oak, Quercus ilex have spiny juvenile leaves to protect growth from browsing animals.

In Australia these differences may be evolutionary having come about due to climatic change. The juvenile stage indicates the kind of growth which developed aeons ago when the climate was wetter. Environmental changes are probably responsible also for the differences in New Zealand plants. This time though, juvenile growth suggests that in former times the climate was much drier than it is today. With Aciphylla it might be that the genus was formerly from lower elevations than the alpine regions they occupy today. When freshly potted rooted cuttings of the whipcord group of Hebe are kept in a warm, humid glasshouse, leaf form changes. Soft, outward pointing narrow leaves are produced but when the plants are transferred outside leaves revert to a typical scale-like form which clutch the stem. This too suggests that formerly this group came from lower elevations than they occupy today.

In some plants the adult stage can be converted temporarily into the juvenile by hard pruning. This treatment can be beneficial on many plants, either perennial or woody, for cuttings taken from juvenile growth root more easily than when taken from adult material. If propagation material is taken from a trimmed hedge of Leyland cypress, Cupressocyparis leylandii, cuttings are easy to root and give a higher percentage success than when taken from free growing untrimmed trees. Hard pruning is beneficial with many species of Eucalyptus. Not only does it keep plants small enough for a suburban garden but juvenile foliage is often more attractive than adult, eg E. perriniana.

Not all plants revert to their juvenile form when hard pruned. Plants resulting from vegetative propagation of juvenile growth can be and remain quite different from those increased from adult growth.

Many conifers eg spp of Chamaecyparis and Thuja have juvenile growth in which leaves surround the stems; as adults, growth is two dimensional and leaves are scale-like. In Thuja orientalis cultivars 'Juniperoides' and 'Rosedalis' have juvenile foliage; cvs 'Intermedia' and 'Elegantissima' have adult and cvs 'Meldensis' and 'Minima' seem intermediate. These forms seem stable although with great age there can be conversion of juvenile or intermediate to adult.

Readers of this newsletter need to be aware of differences between juvenile and adult forms. When seed germinates to produce seedlings which differ in form from pictures, it does not necessarily mean that seed was incorrectly named.

GARDEN REPORT 1993/4

By Jeff Irons

Losses, Summer 1993

All occurred while I was away on holiday. Plants were in the open garden, not in pots.

Name	Date Germinated	Planted Out	No. of specimens
Blandfordia punicea	1988	1989	3
Coprosma ex 'Indigo Lustre'	1993	1993	12
Helichrysum milliganii	1993	1993	10
Hymenanthera dentata	1993	1993	3
Richea milliganii	1993	1993	4
Xanthorrhoea resinifera	1990	1991	3

Rapid Growth

Three 1992 seedlings of Ozothamnus thyrsiflorus were planted out in April 1993. They were 15cm [6"] high. By the end of the summer they were 1.3m [4.3ft] high. Books give the ultimate size as 2-3m x 2-3m [6.5ft-10ft x 6.5ft-10ft].

Wind Damage [Autumn - Winter 1993-1994]

Carmichaelia ovata	2m [6.5ft] high, blown over
Eucalyptus neglecta, coppiced	2m [6,5ft] high, blown over
Melaleuca squarrosa	3m [10ft] high, some long branches broken off at base of shrub

BOOK REVIEW

'Bottlebrushes, Paperbarks & Tea Trees.
And all other plants in the Leptospermum alliance.'

John W Wrigley and Murray Fagg, Angus & Robinson 1993 A$95

This coffee table sized book covers new ground, the text is authoritative, the taxonomy up to date, and the photographs [about 300 of them] are first rate.

The book uses John Wrigley's tried system of beginning with introductory chapters which, in this case, show how the Leptospermum alliance fits into the Myrtales; tell of the early botanists, aboriginal and present day commercial uses, conservation and propagation.

Individual genus and species descriptions are accompanied by small maps which show the natural occurrence. There are brief notes on cultivation. Clear, scaled, black and white illustrations depict the flower and fruit parts. Nearly every species is, and many of the cultivars are, illustrated in colour.

There are several hundred Callistemon names in Australia. The same plant can be bought under up to ten different names. John Wrigley has studied the synonymy and put sense into what was a confusing mêlée. As cultivars begin to be imported into Europe this clarification will be important. New Zealand Callistemon names will have to wait for the book's second edition.

Having been written for Australians the book is a trifle short on detail in some areas which are important to overseas readers. In Britain Leptospermum grandifolium is often passed off as L. grandiflorum. The two are easily separated because L. grandiflorum has deciduous sepals while those of L. grandifolium are persistent. These distinguishing features are not mentioned. Leptospermum cunninghamii 'Schauer' is listed as a synonym of L. myrtifolium, but L. cunninghamii HORT is not given as a synonym of L. lanigerum.

Europeans will find that this book will help them to decide which species and cvs they should try. It will direct them to some which are usually overlooked. The distribution notes indicate what conditions will be needed. With postage it will cost about £60. The price is not low, but the value and enjoyment content are high.

OBTAINING AUSTRALASIAN BOOKS

Books about New Zealand plants can be bought from Touchwood Books, PO Box 610, Hastings, New Zealand. Fax [06]874 2701.
The book 'Cultivation of New Zealand Plants' reviewed in the November 1993 Newsletter costs $59.95 + $20.00 surface postage. SAL postage is $26.50 and airmail $33.00.
Its companion volume 'The cultivation of New Zealand Trees and Shrubs' costs $49.95. Postage rates for the two volumes are $28.00, $49.00 and $61.50.

Australian books can be bought from The Botanical Bookshop, PO Box 351, Jamison Centre, ACT 2614. Ask for the mail order list.

HOW TO FEED AUSTRALIAN PLANTS

Nick Andrews of Powys sent in the following :

'I am a keen plantsman, but alas have a poor knowledge of the cultural requirements of specific species and genera of Australian plants.

'Plants raised from APS seed in 1992 were fed on phostrogen, along

with my other plants. Many species, such as Dietes, Diplarrena, Patersonia and a number of Acacias, seemed happy on this. However other species of Acacia, Eremaea and Hovea became yellow, stunted and eventually died.

'When it came to 1993 I was uncertain what to do as regards feeding. In my uncertainty I decided to feed all my Australian seedlings and plants with Chempak, phosphate free fertiliser and at the end of the season, I was pleased with all my plants.

Now my understanding is that certain Australian plants resent the presence of phosphates, however my limited success begs the question as to whether Australian plants actually need phosphates.'

* * *

As might be expected there is no simple answer to this question.

The old soils of Australia are often heavily leached. Plants have evolved in a way that enables them to cope with these soils. Some such as Acacias and Allocasuarinas live in association with bacteria which 'fix' nitrogen for them. Some species, notably the Proteaceae, develop special roots to help them absorb phosphates. Others live in an association with mycorrhizal fungi which help them to collect nutrients, particularly phosphates. Sometimes the association does not develop if the plant is grown in rich soil.

European soils are generally fertile, and as a general rule no supplementary feeding is needed if plants are grown in open ground. Australian books recommend low phosphate fertilizers for Acacias, but experience in Britain with those species which have been grown outside does not indicate any special antipathy to phosphate. Phosphorus toxicity in Proteaceae is very specific, and the long history of outdoor cultivation of such species as Grevillea juniperina and Telopea truncata indicates that they are not oversensitive to phosphorus. In Australia dolomite is recommended for Grevilleas, whether that is for its calcium or for its magnesium content we do not know.

Pot culture is obviously different. Proteaceae should certainly receive a low phosphate fertilizer, say N:P:K 10:4:7. Little and often is a good rule for feeding. It makes it possible to flush out any excess nutrient with water. Signs of deficiency can be rectified by an extra feed. Some growers prefer to use slow release fertilizers.

Summing up, don't bother too much about feeding. In the garden it should not be necessary. In pots treat as you would any other plant.

LAND OF THE BLUE HAZE

By Jeff Irons

Fed up with Britain's 1993 pseudo-summer, my wife and I fled south, in search of light and warmth. Most of our trip was spent in New Britain and Queensland. The latter was an exciting place, not least because amongst other things we saw a real Jurassic forest there. Fossil evidence from that period shows that the forests were composed of Agathis jurassavica, with an understorey of Podocarps and tree like Cycads. The relict Kauri Pine forests on the Atherton Tableland are

composed of Agathis species, and have an understorey of Podocarps and a tree like cycad - Lepidozamia hopei. Even though the plants themselves have evolved, the forest looks just the same as that which is known only from fossils of 175 million years ago.

The final week of the journey was passed in the Blue Mountains of NSW. Winters there are only a little warmer than those in the milder parts of Britain. However there is more, brighter, sun and less rain. The Blue Mountains are not mountains as we usually understand them. They are a ramp, which rises gently from east to west. The ramp is dissected by steep sided valleys, which end in sheer cliffs. Because of this feature the roads and settlements are on the tops, not in the valleys. Seven low basalt capped peaks rise above the general level of the sandstone, and we were bound for one of them, Mount Wilson. The Blue Mountains get their name from the faint blue haze in the air, which is caused by eucalyptus oil vapour. The haze is really very slight, and is visible only because of the large scale of the landscape. In Britain and much of Europe it would be un-noticeable. The air is clear, and the buildings of Sydney [or the smog over the city], 100km [approx 60 miles] away, can be seen from vantage points. When we stepped out of the train at Katoomba the cold wrapped itself round our faces. It was windy, and the maximum temperature that day had been 9°C. We had been used to calm days, with maxima in the mid 20's. Our final destination was half an hour's drive from Katoomba.

On the way the road passed through Eucalyptus schlerophylla scrub. The trees had curiously contorted trunks, which made one think of an artist's depiction of the blasted heath in Macbeth. The understorey was Acacia terminalis, mostly about 1m [3.3ft] high. Its flowers made great swathes of sunshine yellow along the roadside. The whole area was burnt out about eight years ago, and the dense vegetation indicated the regrowth powers of native plants. The Acacia was growing at the upper limit of its range. Even so it is not very hardy and in my garden this winter-flowering shrub needs the shelter of a wall to survive. Good drainage is essential; looking at the sandy soil in which these wild plants grew, I could see why. Grown in a pot, under cold glass, Acacia terminalis is a reliable Christmas flowerer.

Suddenly the whole appearance of the roadsides changed. We had left the sandstone, and reached the basalt. The road was in a canyon, with cliffs of majestic Eucalyptus oreades, and a solid understorey of Dicksonia antarctica. Here the common name is Soft Tree Fern but in Tasmania it is Man Fern.

Many people who live with the wilderness all around them tend not to grow Australian native plants. Like us they fill their gardens with exotics. The only native plants in my host's 3.2 hectare [8 acre] garden were Anopterus glandulosus, Lagarostrobos franklinii and Prostanthera cuneata. His garden was bright with camellias, cyclamen, Ericas, daffodils and his first Prunus. Hellebores are a Blue Mountains love, and I am sure that every named cultivar illustrated in Rice and Strangman was to be found among the spontaneous seedlings in Blue Mountains gardens. One local enthusiast raises 1000 H. orientalis seedlings every year in his search for the 'best'.

The RBG Sydney has a cool climate annexe on Mount Tomah, about 18km [11 miles] from where we were staying. A visit proved exceptionally

rewarding. Though containing many of the usual species, the garden has been developed to show the affinities of today's southern continents with the ancient one of Gondwana. Sections are devoted to themes such as Fuegia, New Zealand and a mist garden. The dominant open canopy forest tree on Mount Tomah is Eucalyptus fastigiata. Its existence depends on fire. What happens is that gradually the understorey fills up with closed canopy species. They cast so much shadow that E. fastigiata seedlings cannot survive. By burning off the closed canopy species while they are relatively small, bushfires enable E. fastigiata seeds to grow and maintain the forest. When, after 200 years or more the E. fastigiata trees die, they are not replaced, and the forest changes to rainforest. In Scotland E. fastigiata has a reputation for shedding branches, so when visiting a woodland garden on Mount Tomah I asked whether that happened in the virgin forest, and was told that it does not shed branches.

My wife and I spent a couple of days walking some of the many tourist trails. They gave us an opportunity to see the vegetation first hand. It is dense, and very different from the species poor heaths in Britain. Plainly the plants depend heavily on mycorrhiza and proteoid roots to help them extract nutrients from the poor soil. Some, such as Acacias, Allocasuarinas and the pea-flowered species live in association with nitrogen fixing bacteria. Their roots will never be in frozen soil, even with minima like the -16°C experienced a few years ago at Leura. In our own gardens we need to aim for dense planting, and to protect roots and stems in their early winters.

Around the top of Wentworth Falls I noticed three different banksias growing in close proximity to one another. A small shrub in bloom was Leucopogon lanceolata. It is scented, but fools people because the scent lies in pockets, and they cannot work out from where it comes. Leucopogon setiger made small igloos of snowy white, half buried in the scrub. Another beautiful small scented shrub, this time with a strong honey like smell similar to that of Melaleuca squarrosa, was Epacris obtusifolia. Introduced to England in 1804 it appears not to be grown today. Since seed collection is prohibited in National Parks, it did not matter that there was none. Dracophyllum secundum also grew in this dry, acutely drained area. We saw it elsewhere in deep shady cliff faces, dripping wet with water, and mixed with Sprengelia incarnata. In Greaves Canyon there were large numbers of banksias in flower. Some were Banksia ericifolia and I think the others were probably B. serrata. They grew on cliff faces, in extremely sheltered situations. On the same track we came across two Epacris in flower. One had white tips to its flowers, I thought it was E. longiflora, but that is reputed to grow much closer to Sydney. The other, with red flowers was probably E. reclinata, a species found only in the Blue Mountains. Many other plants were in flower too, too many to mention them all here.

This was my second visit to the Upper Blue Mountains, but twenty visits would not exhaust the pleasure of this delightful area. Even if one could discover everything about it, there are still the Lower Blue Mountains, and the vast tumble of peaks that stretches northwards to the Warrumbungles. The area can be wet, and in summer there can be 12.5mm [0.5"] of rain every afternoon for the first three months of the year. Winter and spring tend to be dry, and on this trip we experienced a succession of sunny days.

XERONEMA CALLISTEMON

Phormiaceae

'Xeros' meaning dry, 'nema' meaning thread : a reference to the filaments; 'kallistos' meaning most beautiful, 'stemon' meaning stamen.

Known as Poor Knights lily, this robust herbaceous plant grows on the sea cliffs of the Poor Knights Islands and Hen Island near Whangarei. Usually facing the sea, it grows on sunny well drained sites at heights of up to 300m [985ft]. This gives an indication of what is needed in cultivation - excellent, even acute, drainage and plenty of food to simulate that provided from bird droppings.

The bright green sword-like leaves are in large fans, rather like those of an iris, and have a characteristic scalloping at their bases. They can be up to 1m [3.3ft] long and 5cm [2"] wide, and have a hook at the tip. The flower head is one sided, like a toothbrush, but is 15-35cm [6-14"] long. It is held horizontally, just above the leaves, and is usually described as being Cardinal Red in colour. The remains of old leaves build up around the base to form a mound, with the new growth on top. These old bases should not be removed because they provide protection from temperature and humidity fluctuations.

The natural occurrence, on islands off the top of New Zealand's North Island indicate that the species is unlikely to be hardy in Britain. The RHS Dictionary of Gardening suggests a winter minimum of 12-18°C [55-65°F]. Graham Hutchins of County Park Nursery has grown the species since 1977 and has found that minima as low as -3°C are tolerated. His plants have never flowered. A winter minimum of at least 10°C is recommended, and the plants should be kept almost dry. Higher minima allow more winter moisture. As soon as growth commences, generous water and food should be given. High maxima are not required - remember that the wild habitat is warm temperate.

A large pot is needed too, perhaps even a section of concrete drain pipe. At least a third of the container should be filled with coarse sand, and the remainder should be filled almost to the top with a fibrous, free-draining, but water retentive mix.

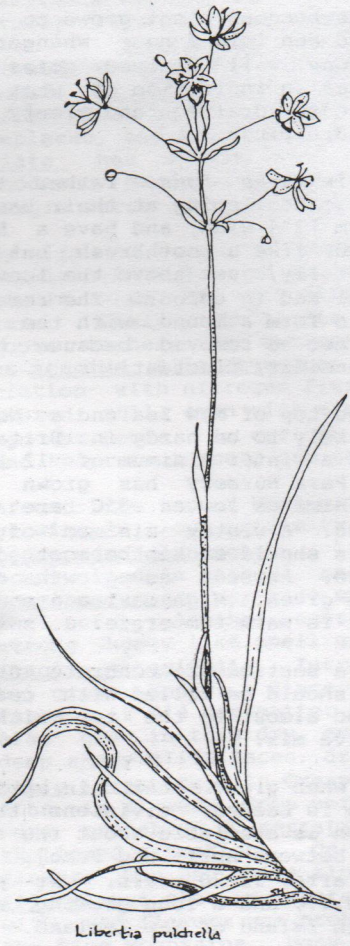
Propagation is from seed, or by division when growth starts in spring. Seedlings damp-off easily, and vigilance is needed; divisions taken too early usually rot. Little information is available about the time needed for seedlings to flower [usually between April and June], but at Kew, plants have remained unflowered after 15-20 years. It possibly needs very bright light, high in U.V., and a long growing season. It does not flower well in the South Island of New Zealand.

IMPORTING PLANTS

Because of E.C. regulations, quarantine restrictions on plants coming into Britain were eased last year. Plants may now be imported in soil, not bare-rooted as formerly. Only a Plant Health Certificate is required. The change should make it easier to establish plants. One consequence will be that we may see some of the dwarf Kangaroo Paw cultivars, and some of the small Callistemons that are so desirable.

SOME UNUSUAL IRIDS

by Jeff Irons



Libertia pulchella

Look through the Plant Finder, and you will find many unusual names ascribed to the Iridaceae, from Babiana to Watsonia. Here I want to write about just five of them. All can be bought from nurseries but because they are uncommon there is little reliable information about their hardiness.

Libertia is a group of evergreen perennial herbs which have a tufted, grass-like habit. Most species have white flowers, and the tall L. grandiflora is the best known one. Two others, L. ixioides and L. peregrinans, though less well known, are worth growing. Both have yellow leaves, a feature which makes them useful for the winter garden. I think that peregrinans is the better garden plant, because it has an orange stripe down the centre of each leaf, a feature which is absent from ixioides. It is also stoloniferous, so needs to be planted where this habit will not make it a nuisance. It grows well in dry or sunny places, and in sandy soils. Hard conditions make it colour better. Yet it will also grow in peaty soils. The foliage of L. ixioides colours best when grown in full sun, but the species will also grow and flower in light shade, under trees. Both can have leaves up to 45cm [18"] high, though my own stocks of peregrinans are only a third of that. Both species have an added bonus in the form of white flowers, in May; and in the case of L. ixioides the seed capsules are quite ornamental.

My third Libertia, L. pulchella, can be found in both New Zealand and Tasmania. In New Zealand it grows at forest margins, and the 15cm [6"] leaves make upright fans. I have not grown this form, but people who have say that it is not hardy. The Tasmanian form has much smaller leaves, no more than 5-10cm [2-4"] long, and the leaf fans lie flat. It grows at high levels. This form is hardy in my garden, which is about 1.6km [1 mile] inland from the Dee estuary. It will grow in shade, but to get a plentiful supply of the small white flowers, which look like star clusters, sun and a soil which does not dry out are needed.

Orthrosanthus laxus and multiflorus rejoice in the names of Morning Iris and Morning Flag respectively. Their flowers, which come in May

and June, are open by 5am BST, and they shut firmly by 1.30 BST. Having too many seedlings I put specimens of both in a sunny border. They had been grown as indoor plants, so I was somewhat surprised when they survived the winters, and flowered in their third year. Both species have the typical iris habit of making untidy clumps of grass-like leaves. In this case they are about 45cm [18"] long, and are evergreen. The redeeming feature is the gorgeous sky blue flowers. The flower stems, 38-60 cm [15-24"] long, bear a succession of 37mm [1.5"] blooms. The loosely branched stems of O. laxus carry flowers in groups of 2 or 3, while those of multiflorus are in groups of 4 or more.

All five of these plants can be propagated by seed or division. They grow well in pots under glass too.

ASPLENIUM BULBIFERUM

Known commonly as the Mother Spleenwort Fern, it can be found in Qld, NSW, Vic, Tas and S.A. Its grows in scattered colonies in rainforests and fern gullies in cool, humid, shady sites, often growing on the trunks of tree ferns and on rocks. An erect species, it has finely divided, semi-weeping dark green fronds to 120cm [4ft]. The fronds have a winged, scaly midrib and are bipinnately divided into many lobed segments, the lower ones may be deeply cut to give them a tri-pinnate appearance, and the upper ones are often only pinnately divided. They are thin-textured and produce small plantlets towards the tips of some of the segments. These develop slowly, and eventually are able to grow alone, independent of the mother plant. In nature, the fronds gradually lower to ground level as they age and under favourable conditions the developing bulbils will then take root.

Well developed bulbils can be removed from the parent plant and transferred to individual pots. Alternatively they can be pegged down into a pot while still attached to the parent and separated after the roots have developed in the new pot [similar to rooting strawberry runners].

Most ferns prefer a moist, cool root area. They take in moisture from the atmosphere through their fronds. Humidity will therefore help to supplement moisture intake from the soil and prevent the plants drying out. Epiphytic ferns grown in pots need excellent drainage, with a coarse potting mixture. A few granules of a slow release fertilizer can be added to the compost. They make ideal houseplants.

CASTANOSPERMUM AUSTRALE

We have been told that in the past year an Australian seed house has sold 20 tonnes of Black Bean seed to Copenhagen. The seed [botanically Castanospermum australe] is used to produce pot plants. They are said to be 'selling like hot cakes' in England. Here they go under the name of Jack and the Beanstalk Tree and sell for over £4 each.

Castanospermum australe will grow 0.5 to 1.5m [20 to 60"] in its first year. Plants withstand long periods of low light intensity, and are not harmed by low room temperatures. The seeds are poisonous, and the alkaloid in them is being tested as an anti-Aids drug.

THE WINTER OF 1993/94 IN ABERAERON

By Dr. Graham Sumner

Real winter happened in November, and then again in mid-February - that is, if you define winter from the usual Australasian plant perspective and dwell only on potentially damaging frosts [November] or severe wind chill [February]. Neither of these events seems to have had any particular impact on plants permanently resident in the garden. On two successive nights [22 and 23 November] the temperature dipped below -5°C [-5.6°C on 22nd]. These were the coldest nights of the winter season : February only produced four nights around -2 to -3°C.

There were some cold weather casualties however. Some plants in large pots, too big to make the winter migration into the conservatory, were put to the test, and, as expected, failed! A Lophostemon confertus soon bit the dust and defoliated, as too did a Syzygium australe left out as an 'experiment', and a Pittosporum undulatum. The last specimen was not completely killed, but subsequent gales ripped off the dead leaves and it has been consigned to the incinerator. A further casualty, now recuperating in the conservatory where it should have been all along, was a 2.5m [8.2ft] Acacia dealbata. I should have known better, given my climatological background, but I did not think the frost on 22 November would dip below -2°C...! The specimen is now sprouting along most stems, so I hope it will again grace the patio in high summer.

As I write [mid-March] the garden is in as sorry a state as I have seen in the eight years I have been growing Australasian plants. The reason is simply that during December and January we had frequent and severe gales. The night of 8/9 December was one I shall remember as being more terrifying that the infamous gales of 1990. This stripped a few small branches off eucalypts, and removed quite a large number of their leaves too. More damaging still though have been the numerous westerly and northwesterly gales which bring with them liberal quantities of salt off Cardigan Bay, only 200 metres [650ft] away. A cold northeasterly in mid-December enforced the moving of a recently exposed Prostanthera cuneata [it was previously sheltered by a dying shrub rose - now gone]. It has survived with leaves only on the former lee side, and is now against a southeast facing stone wall.

The list of trees severely damaged by the salt winds is a long one. It is easier to say that of the eucalypts, only E. paucifolia, E. regnans [though tattered] and E. glaucescens have come through with most of their leaves, and with relatively little leaf scorch. E. nitida is still in leaf on the sheltered side and E. aggregata has retained some green leaves, again mostly on the sheltered side. E. gunnii, E. viminalis and E. perriniana have lost most of their leaves, and the ones that remain are grey or brown at least around the edges. Two Acacia melanoxylon planted last summer in full salt wind blast [short-sighted I know!], have been largely stripped of phyllodes, though I am hopeful they will revive. These were specimens which had become too large for the conservatory, had grown used to its shelter, and so perhaps I was asking for trouble. Three further A. melanoxylon, grown largely outdoors since germination, and planted in the partial shelter of a 2.5m [8.2ft] high stone wall, have survived.

These even survived being flattened when a 3m [10ft] section of the wall collapsed on them after heavy rain in early January! Their phyllodes are browned at the tips, but one is resprouting enthusiastically. Unfortunately stone walls do not regenerate as easily, or as cheaply!

Not all is doom and gloom though. Low shrubs are sheltered from the worst of salt and cold winds. A 2m [6.6ft] tall specimen of Acacia riceana has survived, though it again has lost many of its phyllodes. Also strong and healthy are : Sophora tetraptera [not quite deciduous this year], Ozothamnus rosmarinifolius, Cassinia 'Ward's Silver' and C. fulvida, many Callistemon, Bursaria spinosa, Pittosporum tenuifolium and numerous clumps of Libertia grandiflora.

BE PATIENT!

Tim Longville reports that his Hymenanthera dentata, sown last year are germinating. This highlights the fact that wild seeds are not like cultivated ones. They have been programmed to germinate intermittently, often over several years. They may require vernalization or aestivation or both. Other factors may prevent germination. Pots of seed should always be kept for at least 2 years before they are discarded. The late Will Ingwersen once wrote of how he got something like 96% germination of some lily seed after 10 years.

TASMANNIAS

by Jeff Irons

The earliest plants did not have flowers. Among the flowering plant families one of the most primitive is the Winteraceae, which is represented in Australia by the Tasmannias and Bubbias. One of them, T. lanceolata is listed in the current Plant Finder by over 20 nurseries.

Because its leaves and fruit have a hot taste when nibbled, this Tasmanian species is known as Mountain pepper. It grows in high rainfall areas at sea level, and in other wet areas right up to the sub-alpine parts. Wild plants are variable in all their parts, but those I have seen in British cultivation are all very similar. Possibly there is just one male flowered and one female flowered clone in cultivation. Both male and female plants have dark green, evergreen leaves. They are lanceolate, about 5cm [2"] long and 8-12mm [0.3-0.5"] wide. Mostly the species is grown because its buds and young stems have a dark red colour, which makes the shrub attractive all the year round. However that is not all, for the young leaves too are dark red, and the pale yellow flowers are welcome early in the year. In a mild winter they can be seen in February, but March is a more usual time. They are at the base of the previous year's growth, and male ones are much showier than female ones. They have about 20-25 pale yellow stamens. The petals are up to 8mm [0.3"] long, and are also pale yellow. Unfortunately the male clone that I have seen is more tender than the female one, and can suffer quite severe damage in hard winters. Nevertheless it has survived many winters at County Park Nursery; winters there can be very cold.

Both the male and female clone are slow growing, and suitable for

small gardens. They are neat and compact, with an upright habit.

Seed is not easy to germinate, and propagation is easiest from cuttings of the current season's growth. As in the wild, female seedlings are more numerous than male ones. I use a lime free potting mix.

Tasmannia purpurascens is an unusual addition to this year's seed list. Illustrations indicate that when in flower it is much showier than T. lanceolata.

The species was described in 1937, as Drimys purpurascens, and since then has been transferred to Tasmannia. It is found only on the Gloucester Tops and Barrington Tops, in the Central Tablelands of New South Wales, where it grows in moist forests. Our seed was collected at 1500m [5000ft], under Eucalyptus pauciflora and occasional Nothofagus moorei thickets. The plants prefer the margins of Nothofagus thickets and will grow in deep shade. This is a summer rainfall area and N. moorei is a rainforest species, so T. purpurascens should grow well in humid parts. Frosts are common in the area, and snow is not unknown. However I would not expect this species to be hardy in the colder parts of Britain. Still, it could be worth trying in places that are sheltered from strong winds.

This should be a plant for year round interest. Its leaves are 10-20cm [4-8"] long, oblanceolate and 20-70mm [0.8-2.75"] wide about one third of the way back from the tip. They are a dark glossy green, and have a raised purple midrib. Young growth is coloured reddish-purple, as are the stems. The flowers have a creamy-white appearance, and are described as : petals close to orange yellow 9D, stamens orange yellow 14C on the 1966/78 RHS colour chart. Individual flowers are either male or female, but unlike those of T. lanceolata are borne on the same plant. They are in large pseudo terminal or axillary umbels. The blackish-purple berries stay on the plant for some time, giving additional autumn interest.

The ultimate height is about 4m [13ft] and the width 1.5m [5ft]. However the slow rate of growth makes this a good plant for small gardens. The attractive foliage and tolerance of low light levels makes it a good indoor plant, especially for ferneries. The species is pest and disease free, but can get mealy bug under glass and is known to have been attacked by thrips outdoors in Australia.

Tasmannias are difficult to propagate from seed. Possibly their seed contains germination inhibitors. T. purpurascens has been reported as germinating after 6 months or more. If there is no germination after this time pots should be kept for at least 5 years, and they should be given cool, but not frosty conditions in winter. A frost free greenhouse would be ideal.

The other Tasmannia in the seed list is T. insipida, so called because its leaves do not have the hot taste characteristic of the genus. It is another species with largish leaves; they can be up to 20cm [8"] long. The flowers are white, and appear in summer. Occurring in the rainforests of northern New South Wales and southern Queensland, this species needs to be grown under cover in Britain. Like T. lanceolata and T. purpurascens it cannot be recommended for Mediterranean areas.

TASMANIAN LAUREL

Think of a shrub with handsome dark green leaves, having shallowly toothed edges. This shrub produces showy, white, fragrant flowers in early spring. New leaves are pale green, and old ones turn dark red before they drop off. Related to Escallonia, the shrub's white flowers are up to 25mm [1"] across, and are displayed in an inflorescence 10-15cm [4-6"] long. Such a shrub ought to be a surefire winner, yet all too often the Tasmanian Laurel turns out to be a disaster.

The reason is easy to discover. Anopterus glandulosus is found as an understorey plant in the rainforests of Tasmania. It occurs not in the tall Nothofagus cunninghamii forest, but in the lower shrub rainforest, which has a much denser understorey. In this forest the atmosphere is always still and moist, and conditions are very equable. Our English gardening books say no more than that Anopterus glandulosus is hardy only in the mildest counties.

The species is, in fact, hardier than that, and grows well over much of western Britain and Northern Ireland. The keys to success are shelter and moisture. The plant does not thrive in dry areas. In such places, and in colder ones, it may be grown in a cold greenhouse. Under these conditions flowering takes place in late winter, and even small plants will bloom. Fresh seed is said to germinate well, but imported seed always seems to have been allowed to dry out. Such seed never germinates. Propagation is from layers and from autumn cuttings.

Mail order source of supply: Ballyrogan Nurseries, The Grange, Ballyrogan, Newtownards, Co Down, N. Ireland, BT23 4SD.

x KUNZSPERMUM

From New Zealand we hear of a new intergeneric hybrid. x Kunzspermum is a hybrid between Kunzea and Leptospermum.

x Kunzspermum hirakimata 'Karo Hobson Choice' was grown from seed collected on a specimen of Kunzea sinclairii, on Mount Hobson, Great Barrier Island. The putative male parent is Leptospermum scoparium, which grows in the same locality.

The hybrid has the multiple flowered cymes of Kunzea sinclairii and the larger flowers of L. scoparium. It should make a good indoor spring flowering shrub for the U.K.

SNAP, CRACKLE, POP

The following snippet, sent in by Nick Andrews, concerns the germination of acacia seeds. From Edward Hyams book 'Ornamental Shrubs; March & April Flowering' 1965 comes the extract: 'On a concrete floor light a fire of straw or newspaper - put the seeds into a fine seive which they cannot fall through and move this backwards and forwards through the flame until one or two seeds jump and crack.' Nick wonders what his neighbours would think if he followed this method!

NAME CHANGE - MUEHLENBECKIA

Books about plants of Australia and New Zealand list Muehlenbeckia axillaris for both countries and some of the more recent ones list M. complexa for New Zealand. Both are listed in the Plant Finder.

The New Zealand M. axillaris has had its name changed to M. complexa. A survey of several British nurseries indicated that the plant they were selling as M. axillaris was actually M. complexa. The easiest way to distinguish the two is by their leaves. Although there can be a size overlap, M. complexa always has small leaves, 3-5mm [0.12-0.2"] across. The leaves of M. axillaris are larger, 3-15mm [0.12-0.6"] across. Both are self infertile, so bought plants do not fruit in gardens.

THE 16 DAY INFERNO

The bushfires in Australia in January 1994 lasted 16 days, claimed the lives of 4 people, injured hundreds more, destroyed almost 200 properties, and wiped out more than 800,000 hectares [almost 2 million acres] of bushland. Areas affected included northern and southern Sydney, the Central Coast, North Coast, mid North Coast, Royal National Park and the Blue Mountains. About 25% of the State from the Queensland border to the south coast and Sydney was affected in some way by the fires, which raged out of control in record temperatures soaring into the 30s and 65kmph [40 mph] winds.

About 98% of the Royal National Park, the world's second oldest national park, was devastated. By the time the fire was under control, only five animals of the tens of thousands which lived in the area had been found. Entire colonies of koalas in the Blue Mountains and Grafton are believed to have been decimated. Other koala colonies in the Central Coast and in Sydney's north are also believed to have been severely affected. Those koalas which escaped the flames face a bleak future as supplies of eucalypt leaves, their sole source of food and moisture, have gone up in smoke. RSPCA Chief Executive Charles Wright said 'I suspect that up to 95% of the wildlife in the areas affected by the bushfires has been wiped out.'

The bushfires burnt out the Grose Valley in the Blue Mountains, an area where Epacris sparsa was rediscovered last year after being lost for 180 years.

FAILURE TO ACT

The NSW Government failed to act on an early warning it received about ground fuel build-up and inadequate fire prevention activity. Bush Fire Services Commissioner Phil Koperberg informed the Emergency Services Minister Mr Griffiths in his 1992/93 report that the community was relying too much on fire fighting instead of prevention and warned of a dangerous build-up of combustible material in bushland.

Mr Griffith replied that there wasn't enough time to act before the onset of summer. It was also revealed that a similar report was released about 12 months ago - no action was taken.

THE ABORIGINAL WAY OF FIRE-STICK FARMING

As the season becomes hotter and less humid, the grasses which have reached up to 4m [13ft] in height, start to dry. The stems collapse and the grasses form a tinder-dry mat. Added to the fallen litter from the eucalypts, the forests and woodlands become one of the most flammable habitats in the world. Each year 85% of the woodlands are burnt while the forests are burnt 2 out of every 3 years. These are deliberate fires, lit by Aborigines. This 'fire-stick farming' is used to geat effect to create a mosaic of varying habitats that provide a great diversity of plants and animals.

Fire favours species of plants which can tolerate heat, scorching and even being partly burnt, eg the eucalypts which can shoot again from dormant buds on their trunks and main branches or regrow from their root boles if their trunks are destroyed. Ground plants also survive as underground rootstocks or as seeds either in the soil or protected in fire proof capsules. There are fire sensitive species which can be killed and eliminated in fires.

As a rule, frequent fires do no lasting damage to the woods and forests, since the plants have already managed to adapt themselves to the harsh weather and gravelly, sandy soils. Every wet season they regenerate and the same species as before the fire grow vigorously again.

Carried out correctly, the Aborigines burn the woodlands, lighting the fires in the afternoon so that they do not burn during the hottest part of the day and race out of control. The evening coolness and dew extinguishes them. About a month later when the open forests have dried out, they too are burnt.

These fires, carried out in the cooler season may appear devastating but they do remarkably little damage. The trees are not affected; their crowns remain green and unscorched. Because the fires are extinguished at night and also because some moist areas resist them, the forests are not burnt uniformly. As the fires kill small saplings one to two years old, it is necessary for the regeneration of the forests to have unburnt sections where young trees can shoot up to a fire-resistant size. Fires of the cooler season are themselves cooler, about 250°C, and this combined with some reserves of soil moisture allow the forests to recover quickly and completely from the effects of cool season fires.

But fire at the wrong time at the wrong place can do great damage.

When the fires are set late in the dry when there is no soil moisture left, and when the grasses etc are completely dehydrated, when day time temperarures reach 40°C, when winds are stronger and there is no dew, it is a very different matter.

Unstoppable walls of flame 15m [50ft] or more high then sweep through forest and woodland at a terrifying speed. The wind whips the fire into an ever-widening front and while it quietens down at night, it continues to smoulder. The next day it rages on again. These fires are hotter, up to 550°C. They scorch the trees, killing all leaves, to the very tops of their crowns. Saplings several years old are

destroyed. There is no patchwork of burnt and unburnt country. As no moisture reserves linger within the soil, recovery is slow. Fewer animals escape. Hollow logs lying on the ground are burnt to ash where earlier fires would have barely singed them, leaving them intact as animal refuges.

CORYNOCARPUS LAEVIGATUS

Having the Maori name 'Karaka', Corynocarpus laevigatus can be found on both the North Island and the South Island as well as on the Kermadec and Chatham Islands. It is mainly a coastal tree, but can also be found in inland lowland forests in the North Island. In its native habitat it can reach a height of 9-15m [30-50ft], having a bushy top and a trunk 30-60cm [12-24"] in diameter. The leathery leaves are 7.5-20cm [3-8"] long and 5-9.5cm [2-3.75"] wide, elliptic-oblong to obovate-oblong, subacute to obtuse. They are glossy dark green above, paler on the underside. The greenish flowers, 4-5mm [0.15-0.19"] in diameter, are produced in stiff panicles 10-20cm [4-8"] long. The 2.5-4cm [1-1.6"] long drupe is orange when fully ripe.

Karaka berries were an important food item to the Maoris, but the kernels, containing a poisonous glucoside, karakin, had to be soaked and steamed before they could be eaten. The ripe flesh can be eaten raw but tastes rather of turpentine. Eating the unprepared seeds causes convulsions and permanent rigidity of the muscles, often followed by death. Apparently the fruit may also cause paralysis of the hind limbs and cessation of lactation in cows. The nectar is also poisonous to bees. Some of the chemicals found in karaka could have potential as insecticides.

Corynocarpus laevigatus makes a good specimen for growing in a tub, preferring a rich deep soil and plenty of moisture until established. Seed germinates well. There are some variegated cultivars which must be propagated by semi-hardwood cuttings. It is frost-tender.

CULTIVARS
Corynocarpus laevigatus 'Alba Variegatus'
Dark green leaves narrowly margined with white.

Corynocarpus laevigatus 'Moonlight'
Leaves irregularly splashed in the centre with pale yellow to greenish yellow, with occasional patches of yellow-green.

Corynocarpus laevigatus 'Picturatus'
Leaves have large yellow-green variegation with central yellow splash.

Corynocarpus laevigatus 'Variegatus'
Leaves are broadly margined with a golden yellow.

NEWSLETTER CONTRIBUTIONS

Thank you to all those members who have submitted an article or snippet of interest for this issue. Contributions are now required for the December issue. Please try and write a few lines over summer while sitting in your deckchair.

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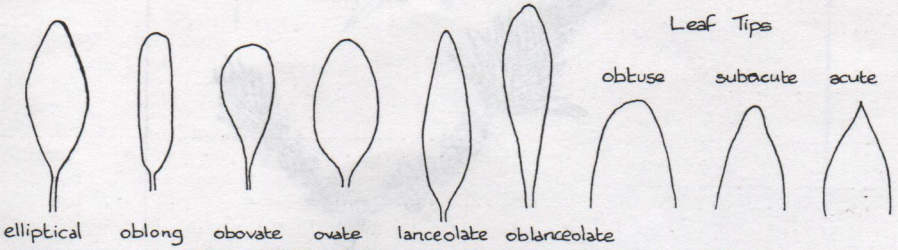
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GERMINATING LECHENAULTIA SEEDS

If you sow mature seed you will not have much joy. The experts germinate immature seed on agar, before the inhibitors are formed.

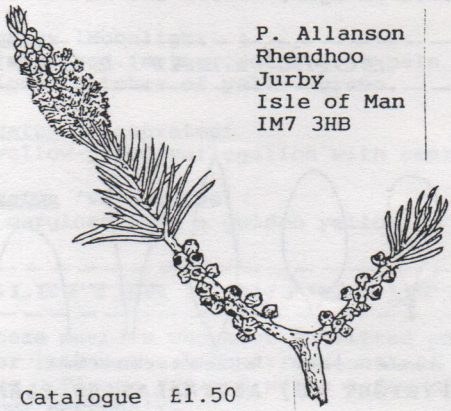
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