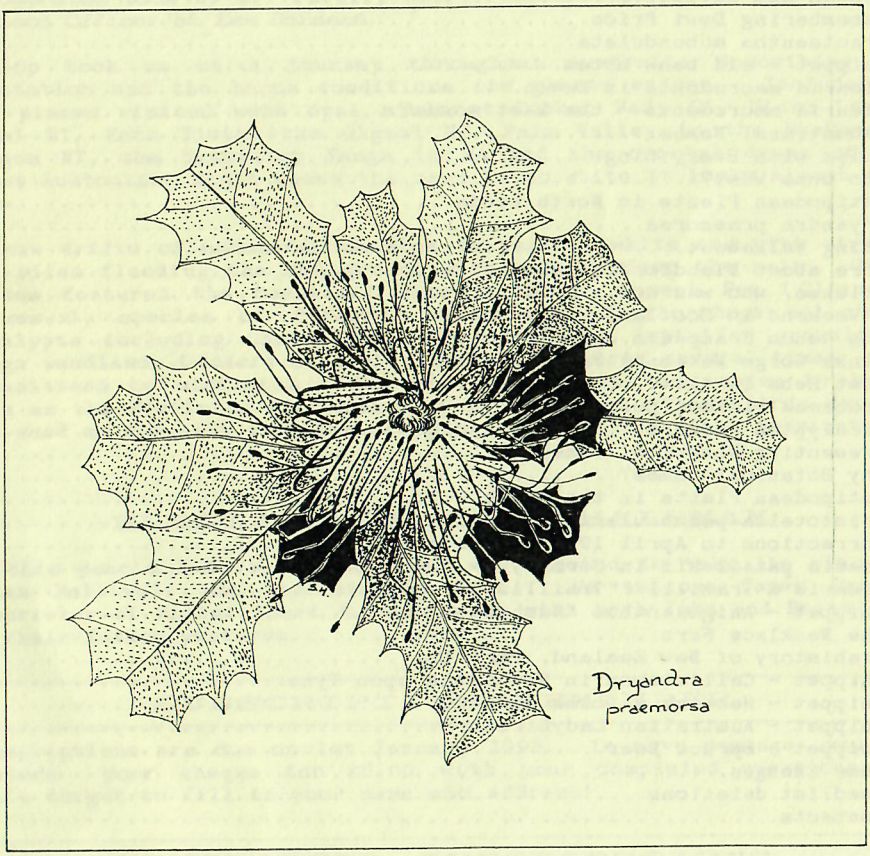
AUSTRALASIAN PLANT SOCIETY NEWSLETTER



ISSUE 9 NOVEMBER 1992

AUSTRALASIAN PLANT SOCIETY

NEWSLETTER NO. 9

NOVEMBER 1992

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EDITORIAL

Once again, the AGM was poorly attended; just six people from a membership of approximately 60. This is the second successive poorly attended meeting. Apart from the cost of holding the AGM, much time is taken by your secretary in looking for suitable and affordable venues and entertaining speakers. Before booking the 1993 AGM, it has been decided to canvas the views of members. Please take a few minutes to fill in the questionnaire enclosed with your newsletter. This will help the committee decide whether or not to hold such a meeting next year.

For those of us who did attend, we were treated to an excellent illustrated talk by Dr. Phillip Short, the current Australian Botanic Liaison Officer at Kew Gardens.

Philip took us on a journey throughout Australia describing the vegetation and the harsh conditions the plants endure. Included in the places visited were opal mines at Coober Pedy SA, Uluru [Ayres Rock] NT, Kata Tjuta [the Olgas] NT, Palm Valley in the MacDonnell Ranges NT, the Hamersley Range in WA and the coastal dunes of the Great Australian Bight where the sand is so white it looks almost like snow.

We saw drifts of ephemeral daisies in yellow, white and pink stretch for miles flooding the red ground with colour after the rain. Other slides featured the beautiful vibrant Sturts Desert Pea [*Clianthus formosus*], species of *Ptilotus*, blackboys [*Xanthorrhoea* sp], many eucalypts including Ghost Gums, *Eremophila* sp, spinifex grasslands, mulga woodlands [*Acacia aneura*]. Acacias featured several times, some parasitised by mistletoe. The mistletoe fruits are eaten by birds such as the Mistletoe Bird and some honeyeaters. These birds deposit the seed on a branch in their droppings - where the plant germinates.

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ELECTION OF NEW CHAIRMAN

At this year's AGM, a new chairman was elected to take the place of Brian Halliwell who has stepped down. We welcome James Harris, proprietor of Mallet Court Nursery. We wish both John and Brian well in their future ventures.

SUBSCRIPTION REMINDER

Subscriptions are due on 1st January 1993. To save postage, you can include your cheque for £5.00 with your completed questionnaire. Don't forget to fill in your name and address!

NEWSLETTER CONTRIBUTIONS

Many thanks to all those people, several of them new members, who have contributed to the November newsletter. If you have anything to put in the April 1993 newsletter, please send to me :

Sue Hyams, 100 Willowbank, Coulby Newham, Middlesbrough, TS8 OSP.

WINTER REPORTS 91/92

Jeff Irons sent me a photograph of two specimens of *Olearia frostii*, both grown from seed collected on Mount Hotham. He reports that in the winter of 90/91 one of the plants was uninjured but in the winter of 91/92, when temperatures were not as low, it was cut to the ground. The damage came after the January cold spell. Minima were around -4°C compared with -8°C in 90/91.

Visiting County Park Nurseries, Essex, in early March, Jeff describes what he saw as devastating. Graham Hutchins ascribed his losses to the fact that the early cold snap came when plants were dry, which seems to go against all conventional thought.

A specimen of *Olearia phlogopappa* which I had growing in a half barrel seemed to come through the winter okay, keeping its green-grey appearance, but after the cold spell in March/April, the plant assumed a desiccated look, with brittle branches which easily snapped. The plant never recovered.

NEW DEVELOPMENTS AT CELYN VALE

by Jeff Irons

In autumn 1991 Thomas Ross and I went to see Andrew McConnell at Celyn Vale Nursery and spent an interesting afternoon there. Andrew has two new projects.

One is that he has planted a field with Eucalypts which are in a new kind of bag. The bag has a solid bottom, and its sides are made from a plastic which appears to resemble a fibreglass mat. Apparently, when the roots reach the bag wall they grow through it, but the roots which go out are fine. Main roots do not develop. Consequently it should be possible to produce a semi-mature tree with a compact fibrous rootball. Andrew intends to sell his semi-mature trees when they are 3 to 4 years old.

The other project involves grafting a selected Eucalypt scion onto a rootstock. The graft is deliberately infected with a hairy root virus; after the graft has taken the plant can be detached from the parent and grown on.

Finding that his *Acacia* seedlings did not grow on well, Andrew commissioned an agricultural college to do some work on them. The college reported that the compost used should have a pH of 5.5 or less, along with high boron and iron contents. The need for boron is not new to us, for it is reported in Australian literature. The other two factors are new. However they are not surprising.

ADVANCE NOTICE OF ALPINE CONFERENCE '96

The 1996 Alpine Conference is to be held in New Zealand; the most likely date is between the end of December '95 and mid January '96.

Des Riach, the Secretary of the New Zealand Alpine Garden Society has invited members of the Australasian Plant Society to attend. He is interested to learn how many members will be participating, so if you are likely to be in New Zealand at the time, could you let me or your secretary know [addresses at back of newsletter]. In addition, any advice or suggestions members may care to make would be most helpful.

Other clubs invited include the Scottish Rock Garden Club, the Alpine Garden Society, and the Alpine Garden Club of British Columbia.

* * * * *

DUNCAN AND DAVIES

Duncan and Davies' main 140 hectare nursery is at Brixton, North Taranaki, North Island, New Zealand. It supplies the NZ market and major export markets, including the D & D [UK] nursery at Highleigh, West Sussex, 12,000 miles away, which was opened in February 1984.

This is a far cry from the days of 1899, when James Robertson Duncan established a half-hectare exotic nursery in the New Plymouth suburb of Westown.

Three years later, a 15 year old apprentice, Victor Davies joined the company and was to have a major influence on its future success.

Sir Victor's involvement spanned 75 years until his death in 1977.

By that time, his extensive knowledge, particularly of New Zealand native plants, had been recognised and honoured on many occasions, including the award of the Veitch Memorial Gold Medal, presented by the RHS of GB, for helping to advance the science and practice of horticulture.

Today, more than 2 million plants are produced each year derived from a continual harvest of cuttings for the propagation houses. Apart from New Zealand natives, D & D have their own world famous range of camellias.

D & D has established an enviable export record over the past 12 years, and now ships plants to all parts of the world : Japan, Korea, USA, Canada, Europe including the UK.

Most of the overseas customers are plant nurseries although the D & D [UK] Ltd nursery supplies a wide range of large container-grown products to garden centres and retail outlets throughout the UK and the rest of Europe.

For these plants the majority of the growing is carried out in New Zealand taking maximum advantage of the humid climate and rich volcanic soil.

In 1989, Duncan and Davies planted the Queen's garden at Windsor.

REMEMBERING DEWI PRICE

We were saddened recently to learn that Dewi Price had died. Dewi was one of those responsible for the setting up of this Society. Jeff Irons recalls that day, when they were at Dewi and Rose' home in Mumbles, Dewi said that he thought that they were probably the only two people in Britain who were interested in Australian plants as well as those of New Zealand. That chance comment led, some 18 months later, to an informal meeting of some six people. That meeting led to another, and subsequently to the formation of the Society.

Dewi always refused to take office with the APS, perhaps he knew that all was not well. A member of many gardening organizations, he will be missed by many.

* * * * *

BRACTEANTHA SUBUNDULATA

by Jeff Irons

There cannot be many plants that have had three names in less than a year. That has happened to the Hoary Sunray, sometimes known too as the 'Alpine Everlasting'.

Until recently books referred to it as *Helichrysum acuminatum.* Then in 1991 Anderberg reinstated the name *Bracteantha acuminata.* However there existed an even earlier name, so in April 1992 Wilson, Short and Orchard declared *B. acuminata* superfluous, and re-instated *Bracteantha subundulata.*

I have grown two provenances of this 10-15cm [4-6"] high evergreen perennial. One is a reliable perennial. The other [from Falls Creek, Victoria] behaves as a biennial, and dies after flowering. Though their leaves are different, the two have identical flowers. If picked when in bud the bright yellow everlasting flowers, about 3-5cm [1.2-2"] across, dry beautifully. They do need wiring, and 22 gauge wire is suitable.

My plants grow in a bed of 3 parts grit and one part soil, raised about 15cm [6"], which faces south east. They get sun until about 4pm. In spite of the position they receive no water other than that which comes from rain, or as dew. Australian literature states that in drought plants die back to the rootstock, recovering when rain arrives. British droughts are evidently less severe, for though at times they have wilted, my plants have never died back. A point in this species' favour is that slugs and snails do not attack it.

The only commercial source listed in the 1992/93 Plantfinder is Holden Clough Nursery.

SNIPPET

At the end of August, an Australian television crew for the programme 'Beyond 2000', their equivalent of 'Tomorrow's World', was filming at the recently opened Middlesbrough Botanic Centre. The interest was in the composting of shredded old bank notes, as a view to using them as a component of a new seed and cutting compost to replace peat.

OLEARIA MACRODONTA IN DEVON

The following report comes from Mervyn Feesey of Barnstaple, Devon.

'The terrible winter of 1977/78 with the lowest temperatures known [after the disastrous drought of 1976] cut a diagonal path through the garden from SE to NW and most trees and shrubs in this path were eventually killed by bark split including a 30 year old *Olearia macrodonta*, yet tender plants, trees and shrubs outside this path lived. Other *O. macrodontas* were untouched. Thus cold air must be an influencing factor in the survival rate. I've always thought of *O. macrodonta* as bone hardy in the SW and *O. nummularifolia* even hardier - quite untouched by frost and cold wet weather.

* * * * *

OLEARIA MACRODONTA - the last words?

Arrival of a book 'Field Guide to Trees and Shrubs of New Zealand' by Poole & Adams has given a clue as to why *O. macrodonta* has such a variable performance. It is not a species, but a hybrid between *O. arborescens* and *O. ilicifolia*. Consequently the name should be written *O. x macrodonta*.

The hybrid origin explains the existence of June and August flowering clones, also the existence of forms sold as 'Minor' and 'Intermedia'. It is the August flowering clone which is not too reliable in Wirral. 'Intermedia' is hardy, very slow growing and has not flowered in its time in my garden.

O. x 'Zennorensis' is another hybrid with *ilicifolia* as one parent. It is *O. ilicifolia* x *O. lacunosa*, and again is not too reliable.

Jeff Irons

* * * * *

PROMOTIONAL NAMES

We learn that in recent years the French too have been creating 'new' cultivars. Those of Australian species are not registered with the Australian Cultivar Registration Authority [ACRA].

When grown on in Australia, a French cultivar sold there as *Acacia howittii* 'Claire de Lune' turned out to be the species *A. vestita*.

CHIPS WITH EVERYTHING

by Steve Law

About July last year, I attended a course on plant propagation at the Tec. in Armidale NSW. The course was distinctly biased towards natives and I was excited by all the new possibilities.

We progressed uncontroversially enough on a standard diet of peat, sand and vermiculite [not alkaline presumably] until, one evening I was appalled at the suggestion that I should make a raised bed for my *Banksias, Correas, Acacias* etc from nothing but a 22-30cm [9-12"] thick pile of sawdust.

Naturally I was shocked. I mumbled objections about 'nitrogen robbery', but the tutor didn't seem bothered, suggested adding urea, but didn't seem to think it was crucial.

I was very put out. Of course my real objection was aesthetic. We English do not take easily to great piles of sawdust in the garden although admittedly the tutor did suggest a nice authentic aussie bleached log edging and wood chip mulch to soften the effect. But in essence there it was, a pile of sawdust.

And by all accounts it works; plants of the Australian bush revel in it, and once its settled in it doesn't look bad either. The sawdust goes a rich coffee-grounds brown and is quickly colonised by 'groundcover' and seedlings.

But what this highlights, I think, is the crazy way Australian gardeners have had to improvise. These raised beds were recommended for the hard baked rock and clay 'soils' so many Australians have to cope with. Trying to incorporate a little organic matter into typical Australian ground is a thankless task and there often seems to be precious little of it to go around anyway. Australians have had to use whatever came to hand to retain a little moisture and provide a layer plants could get their feeder roots into.

And the most commonly used materials, as far as I could see, were various forms of wood waste : woodchips for mulching, sawdust for raised beds and soil conditioning, and composted pine/gum bark [70:30 with coarse grit] as potting compost. There was even a proprietory fish waste/shredded bark soil conditioner called 'OR 90' available in Tasmania, recommended for growing veggies. Clearly its not just for plants that like a poor soil. There's something we could learn here.

In the first place, wood chip mulch is becoming common place here and needs no introduction from me, but hardly anyone uses sawdust. Why not?

Obviously for plants needing a fertile soil, composting is essential to avoid nitrogen robbery, but once the cellulose has been eaten up the remaining lignins more than pay for themselves in sheer humus-forming bulk which so many soils need. Besides this, as I mentioned before some plants thrive best in poor soils - nitrogen robbery becomes a bonus.

Either way sawdust is still cheap [although it rose in cost dramatically when gardeners in Australia cottoned onto it] and I think its worth a try.

The other thing I think is worth looking at is composted bark, mainly as an ingredient in potting mixes, as is common practice in many Australian nurseries. Peat is mostly used only for propagation.

Of course, we have our own proprietory brands of 'Forest Bark' etc and when I brought my little collection of bare-rooted Australian plants back last February, I wanted to use a similar material, and ICI 'Forest Bark' was an obvious choice. I'd used it for other things before and I liked it. How was I to know it was composted with lime? Silly of me, I know, to expect composted bark to have an acid reaction. A few of my plants are looking a little chlorotic but I don't have the heart to repot them all over again.

Still, if it could be done [and if the Australians can do it why not us?] non limey composted bark is an excellent material; free draining but moisture retentive [and easy to re-wet]. It has some plant-food value [and it smells likes Christmas cake!] and according to Hoitink, Van Doren & Schmitthenner [1977] it also suppresses foot rot, which is especially interesting as this fungus, Phytophthora cinnamomi is an absolute curse to Australian Proteaceae and others besides. [The above findings actually apply to hardwood bark [Yates - Foot Rot : A Fungal Disease, Page 258, AGS. Bulletin No.3, Vol. 48, Sept 1980, No. 201].

As with this whole subject, experimentation is needed. Australian methods would no doubt need to be adapted, but I feel certain there are things to be learned here, especially with regard to reducing our consumption of peat [preferably without destroying ancient hardwoods instead, as is happening in Australia].

Does anyone know of a source of raw shredded bark? ICI can't have bought it all up, can they?

* * * * *

WHO OWNS WHAT?

In a court case in New Zealand, Maoris are claiming sole ownership of all New Zealand native flora. This includes their 'ownership, protection, control, conservation, management, treatment, propagation, sale and disposal.'

Among species named are *Hebe* and *Clematis*. The granting of planting variety rights is also claimed to be a denial of Maori 'property and ownership rights' over natural resources, as defined in the Declaration of Independence and the Treaty of Waitangi.

If the case succeeds, Maori tribes would have the right to royalties on any New Zealand native plants sold, as well as on new varieties and cultivars bred from New Zealand native plants.

Since some of our own laws and treaties go back a lot farther than New Zealand's, certain nationalist groups closer to home could have some fun. The Welsh nationalists could lay claim to the daffodil, or the Scots to heathers.

ANTIPODEAN PLANTS IN NORTH LEEDS

by Thomas Naylor

We are situated about 160m [530ft] above sea-level and the soil is acid clay. I recorded temperatures down to -8°C during both the winters of 90/91 and 91/92 though it was probably slightly colder throughout the earlier winter during which we had both a moderately thick covering of snow and a succession of days when the temperature failed to rise above freezing. However 91/92 seemed to be even more blustery than the previous winter and the strong winds appear to have done at least as much damamge to many of the plants as did the low temperatures.

PLANTS OUT OF DOORS

ACACIAS. These were in 15-20cm [6-8"] plastic pots filled with ericaceous compost and all had survived the two previous mild winters unprotected. By the spring of 91, I had lost all of my plants of *baileyana, longifolia, melanoxylon* and *retinodes* but *verticillata*, somewhat younger and in a slightly less exposed position, survived almost undamaged. All six of these plants turned brown in December 91 after a sudden drop in temperature and by spring 92 they were looking quite dead. Only one plant subsequently showed any sign of recovery; it began to make some new growth in June.

Anigozanthus flavidus survived the mild winters but my three plants, two in pots and one in the ground, were killed during the winter of 90/91.

One *Callistemon citrinus* in a 25cm [10"] pot, grown from seed sown in 1986, survived both winters [cold protection Dec 90 - March 91] though not without some damage and it has not yet flowered. Small seedlings of *rigidus* did not survive last winter unprotected. Several *salignus*, but in pots and in the ground, were untroubled by the milder winters but only one of these survived into 1991. This plant is growing against a south-facing wall and was cut back almost to the base by last winter though it began to recover in May. Six *sieberi*, in 12.5-17.5cm [5-7"] pots, [protected 90/91] died during late winter 92. Two potted "Violaceus" got through to 91 but not 92.

Clianthus puniceus survives with no protection but lost all its flowerbuds over winter. *Cordyline australis purpurea* survived both winters. *Cordyline indivisa* was cut back by the winter of 90/91 but began to sprout back in June. Both of these were in 25cm [10"] pots and I brought the *indivisa* undercover last winter.

EUCALYPTS. Small plants of *coccifera, cordata, dalrympleana, gunnii, pauciflora* ssp, *niphophila, perriniana* and *rubida* survived well. Some *moorei nana* and *pulverulenta* survived; others did not. Most, though not all, *viminalis* seem reliably hardy; one tree, planted out in autumn 1990, is now 4.5m [15ft] high. Only one out of over a dozen *sturgissiana* survived and the same is true of some very young *glaucescens*. *Globulus* survived the mild winters in pots so in 1989 I planted one out against the south-facing wall of a 3m [10ft] high extension to the house. This tree is 6m [20ft] tall now; it has had adult foliage for a year and the crown is dotted with 19mm [¾"] across flowerbuds though I am still waiting for the lids [opercula] to drop off [Sep.92]. In 1990 I planted another ten plants in various parts of the garden; all but one were badly damaged, eight being cut right back to the ground. One plant, in deep shade, survived 90/91 with no damage but seemed to die quite suddenly in March 92 and has shown no signs of recovery. Another plant, between two apple trees, suffered considerable damage during both winters but is now about 3m [10ft] tall, still with its juvenile foliage. Most of those which were cut back sprouted back from the base in summer 1991 but only one has regenerated a second time.

A six year old *Eucryphia lucida* has withstood all the weather conditions and has just produced flowerbuds for the first time. *Kunzea ambigua* and *capitata* survived the mild winters but not 90/91 apart from one *capitata* which died in the following winter. Some small plants of *parvifolia* got through into 92.

In 1990 I put fifty small *Leptospermum scoparium*, in 10cm [4"] pots, outside; 25 'Nichollsii' and 25 'Gloriosa' [all from Chiltern Seeds]. The following spring I counted up how many were still alive; "one manuka, two manuka etc." There were four, all 'Gloriosa'; of these, two survived last winter, but they have not flowered yet.

Several *Melaleuca armillaris* survived the mild winters but none lasted into 1991. *M. decussata* and *squarrosa* seemed to be thriving until a sudden cold snap in December 91 when for the first time they showed signs of damage. By spring they were looking thoroughly brown and desiccated and the only *Melaleucas* which I now have [apart from this year's seedlings] were taken under cover in December 91 and not put out again until May [one *squarrosa* and two *decussata*].

A seven year old *Ozothamnus thyrsoideus*, planted against a south-facing wall, hasn't suffered from anything except for snow falling from the roof. Four out of five *Sollya heterophylla* survived both winters and have been in flower from July to September.

PLANTS UNDER COVER

[in an unheated place where the temperature must have fallen very nearly as low as outside and where water in the saucers was frequently frozen solid].

Small *Acacia melanoxylon* survived but *Acacia verniciflua* died. *Albizia lophantha* [now renamed *Paraserianthes lophantha*]: seven plants - three died but the other four seem to be doing well. *Anigozanthus flavidus* died. *Arthropodium cirrhatum*, *Araucaria heterophylla*, *Callistemon viminalis* and *C. linearis* survived. *Cassia sturtii* died. *Eucalyptus citriodora* was killed as was *E. eximia nana*. Out of nine plants of *Eucalyptus ficifolia* five were killed including all of the larger specimens. *Hardenbergia comptoniana*, *Leptospermum citratum*, *Melaleuca armillaris* and some tiny *Nothofagus cunninghamii* survived. *Stenocarpus sinuatus* was killed.

MORE PLANTS UNDER COVER

[with slight heat - though the temperature touched freezing point a couple of times.]

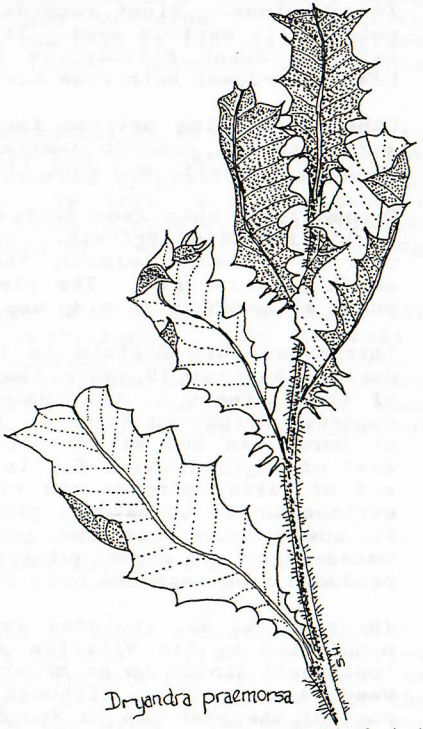
All of the following were survivors :- *Acacia dealbata* & *A. longifolia*; *Arthropodium cirrhatum*; *Callistemon viminalis* and *C. violaceus*; *Eucalyptus citriodora*; *E. ficifolia*; *Grevillea robusta*; *Hardenbergia comptoniana*; *Hymenosporum flavum*; *Leptospermum citratum*; *Pandorea pandorana*; *Swainsona procumbens* & *Xanthorrhoea resinosa*.

DRYANDRA PRAEMORSA [Cut-leaf dryandra]

The genus is named after Jonas Dryander, an 18th century Swedish botanist. There are over 50 species restricted to the south west of Western Australia. They range in size from prostrate shrubs to small trees, but the majority grow as small shrubs.

The leaves vary greatly in shape but are generally stiff, lobed or saw-toothed, and are often prickly. Flower colours are usually yellow, gold, orange and bronze. They produce large quantities of nectar, which makes them a favourite with both honeyeaters and insect-eating birds in their native Australia. The long-lasting blooms are perfect for floral decoration, in both fresh and dried arrangements.

Dryandra praemorsa is a very attractive shrub which grows to around 3m [10ft]. Its prickly leaves are deep green above and white beneath and look very much like holly leaves with blunt ends.



I have three plants, growing in the greenhouse, all produced from seed sown in January 1990. Sown in vermiculite, four seedlings were later transplanted into 9cm [3.5"] pots of ericaceous compost to which vermiculite had been added. Perfect drainage is essential. Young plants are particularly prone to damping off and require careful watering. They will not stand excessive humidity and are especially susceptible to the root rot fungus Phytophthora cinnamomi.

In April 1991, one plant suddenly wilted. This coincided with a very warm spell after the cool winter months. Liking a uniform soil temperature, I suspect the combination of overheated roots in a small pot and overwatering brought on its sudden death.

In summer 1991, two of the remaining three plants were repotted into 20cm [8"] pots. The other specimen was planted into a 45 x 45cm [18 x 18"] plastic container along with a *Banksia serrata* and a *Leptospermum epacridoideum*. In Spring 1992, this latter dryandra showed signs of flowering, when three buds, tinged with pink, formed at the end of the branches. Weeks later, they opened into large, showy lemon flowers, about 6.5cm [2.5"] across, with prominent stamens. The blooms lasted about a month, after which I pruned the plant to promote bushiness.

An annual application of sequestrene of iron, which I give to all my greenhouse plants, helps prevent any yellowing of leaves. My three plants are overwintered in the greenhouse with a minimum temperature of 5°C.

Sue Hyams

GOING WALKABOUT

by Sue Hyams

Dense thickets of Umbrella Trees [*Schefflera actinophylla*] have sprouted within eucalypt forests on Moreton and Bribie Islands near Brisbane. Such a thicket has also appeared in a forest in western Brisbane. Although a native tree, and growing naturally in damp forests in northern Queensland, it is rapidly becoming a feral species 1300K [800 miles] south of its normal range, its seeds spread by birds.

In Belair Recreation Park near Adelaide the Bluebell Creeper [*Sollya heterophylla*] from Western Australia has become one of the most common forest vines. First recorded there in 1952, it is now considered a potentially serious weed. It flourishes alongside two other misplaced natives, Sweet Pittosporum [*Pittosporum undulatum*] and Silky Hakea [*Hakea sericea*] both from eastern Australia.

Other travelling natives include the Common Kangaroo Apple [*Solanum aviculare*] of eastern Australia which now grows wild near Perth in Western Australia and Port Lincoln in South Australia.

Ornamental plants from Australia now run wild in many regions of the world, including Britain. Here, waterways are gradually being taken over by *Crassula helmsii*, the Australian swamp stonecrop, often sold as *Tillaea recurva*. The plant is usually sold as an oxygenator for ponds although it is also useful as a cover plant round the edges.

Introduced into Britain in the early part of the century, its only during the past 10 years that its become a problem, possibly because of the increase in the number of ponds being constructed. It first appeared 'wild' in Essex in the 1950s. Today the plant can be found at more than 300 sites throughout Britain, mainly in the south and east of England and a few in Scotland. It has taken root in the wet mud of lakes, streams and rivers, where it is thriving and posing a serious threat to natural plant life. It is spreading so rapidly that it now out-competes the previous alien, Canadian pondweed, *Elodea canadensis*. It grows quickly, even in winter, and new plants can be produced from segments only 2mm long.

The plant is not included among those whose release into the wild is prohibited by the Wildlife and Countryside Act of 1981, nor is any 'outbreak' liable to an order made by the Secretary of State under the Weeds Act of 1959. Although difficult to wipe out, advice on how to control the pest can be found in a leaflet produced by English Nature in conjunction with the Institute of Freshwater Ecology. Stapeley Water Gardens has decided to run down its stocks of the menace, although many other retailers have yet to follow suit.

In Southern Europe, 7 Australian wattles grow wild along the coasts and plains between Portugal and Romania.

California's wild roadside vegetation includes 5 Australian wattles and 3 eucalypts.

Hawaiian rainforests are being invaded by the Silky Oak *Grevillea robusta*.

The Silky Hakea [*Hakea sericea*] of eastern Australia has become a weed in Europe and New Zealand.

In Florida, the Paperbark Tea-tree [*Melaleuca quinquenervia*] and the Coast She-Oak [*Casuarina equisetifolia*], known locally as Australian Pine, are displacing native vegetation in swamps and along shores in the Everglades. The She-Oak also runs wild in Mexico, the West Indies and South America.

In South Africa, 3 Australian hakeas [especially Silky Hakea], 8 wattles and the Coast Tea-tree are choking out one of the world's richest plant associations.

This destruction, in South Africa, by the Australian hakeas was first recognised 60 years ago when prickly hakea thickets sprang up along the streambeds of the South African Cape Mountains. The problem became so acute that a Hakea Conference was held in 1961, and programs of burning and biological control were begun. However, the noxious weeds continue to spread.

Eight species of Australian wattle, introduced as ornamentals, dune-stabilisers or as sources of timber, tannins or firewood have become serious invaders, moving in on land disturbed by grazing and burning. By fixing soil nitrogen they enrich the soil, creating habitat unsuited to native plants. One of South Africa's rarest plants, *Homoglossum aureum* is actually threatened with extinction by choking thickets of the Golden Wreath Wattle.

Along South African coasts, Australian wattles are replacing the native Bitou Bush [*Chrysanthemoides moniliferum*]. In Australia, thickets of Bitou Bush are declared a noxious weed in Victoria where they are choking out stands of Golden Wattle [*Acacia longifolia*] along beaches in Victoria and NSW. It appears that the success of each plant in a foreign land is due to the absence of its predators and parasites.

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MORE ABOUT BLANDFORDIA PUNICEA

The June 1992 issue of Australian Plants includes a feature about the nutritional requirements of *Blandfordia* species. Trials were carried out using 9 month Osmocote and a liquid formulation with a ratio of 1.0N : 1.5K. It was chosen because that is the ratio in the tops of healthy plants collected in the wild. The Osmocote was N:P:K 18:2.6:10. The best results were obtained with 5kg. Osmocote per cubic metre of compost, and with the liquid feed used once a week. Very high dose rates of Osmocote dropped the pH to below the best range of 4-6.

When grown in low nutrient mixes, plants had pale leaves and fibrous roots. In rich compost they had dark green leaves and fewer, fleshy roots.

Nitrogen uptake efficiencies varied between 10% and 60%. Ficote is usually regarded as being better than Osmocote. It seems to be readily available from British outlets. Unlike Osmocote, it is made in Britain.

COLENSO, WHO WAS HE?

by Jeff Irons

You do not have to read very much about New Zealand plants before coming across the name colensoi. Most commonly encountered in *Leucopogon colensoi*, it occurs in many other name combinations. I can think of 21, so there must be at least that number.

The name ending in 'o' gives a clue about its origin. Sure enough, Colenso was a Cornishman, born in St. Austell in 1811. Those interested in names will like to learn that it comes from Co - wall. lyn - pool and so [or dhu] - dark.

There were, in fact, two famous Colensos. One brother went to Natal and became a bishop there. The other went to New Zealand.

By trade a printer, William Colenso went to New Zealand 'to work for the heathen', arriving at the Bay of Islands in 1834. He became a printer with the missionary station at Paihia. Immediately he set about learning the Maori language. By 1844 he had printed the bible and prayer book in the Maori language, along with a dictionary. He was able to achieve his ambition, be ordained Deacon, and become a missionary.

His territory covered about a quarter of New Zealand's North Island. Colenso travelled ceaselessly. Everywhere he went, specimens were collected. He had become friendly with the Australian naturalist Alan Cunningham [see Newsletter April 1992, Grevillea rosmarinifolia], and sent specimens to Sir Joseph Hooker at Kew.

Falling out with the church, Colenso became a settler, and one might add, a freelance missionary. In 1859 he was elected Provincial Auditor of Napier, so was obviously a man of some standing. By 1861 he was a member of the Opposition in the General Assembly.

In these middle years Colenso's plant collecting went into relative decline. When in his 70's, he was appointed Inspector of Schools. The task gave him the opportunity to resume collecting in earnest. Once again, specimens flooded into Kew. Not exactly liked by New Zealand botanists, his authority and knowledge were recognized in the dedication to Hooker's 1867 Handbook of New Zealand Flora, and by his election as a FRS in 1886. He died in 1899.

Refs: The Controversial Colensos; A.L.Rowse, Cornish Publications 1989.
William Colenso, Printer, Missionary, Botanist, Politician; Bagnall & Petersen, Reed 1948.

A WEEKEND IN SCOTLAND

by Jeff Irons

Last April the Wirral AGS visited Scotland. I was a member of the party, which started its visit at the Royal Botanic Garden, Edinburgh.

The visit began at the Alpine House, where the first thing to catch my eye was a patch of *Milligania densiflora* in the paving. I grow this member of the Asteliaceae in a woodland situation, in full shade. Here it was in a hot dry spot, in full sun. The situation resulted in small plants, but they obviously grew and multiplied.

Close by was a patch of *Brachyscome tadgellii*, labelled *B. nivalis* [it was formerly *B. nivalis* var. *alpina*]. The situation was similar to the one at Kew where I had seen *B. nivalis* [*B. nivalis* var. *nivalis*] growing in a hot dry spot on the rockery. Both species come from wet places. They tolerate, but do not like, dry conditions.

After visiting the non-public alpine areas our party split up. I began by visiting the glasshouses, which are adjacent to the Alpine House. On the way in I spotted a 0.9m [3ft] high *Olearia frostii* in a bed outside the new glasshouse. Inside, it was a plant spotter's delight. There were so many Antipodean plants that to name them would take up the remainder of this article. I single out only *Rhododendron lochae*, it was almost over, but I did manage to find a specimen of this Vireya rhododendron which still had a few blooms on it. It is the only Australian rhododendron. The sheltered area behind the glasshouses was almost as fruitful, and by the time I had finished it was too late for me to visit the rock and peat gardens. The *Celmisias* and *Richeas* will have to wait until another visit.

The next stop was at Branklyn. Here a few *Celmisias* were in bud, but none were in flower. *Raoulias* were used as ground cover on the scree. The scree was formerly infested with horsetail. In 1990 it was excavated down to bedrock and subsoil. That was seven feet down, and where roots ceased. After being surrounded with a double layer of polythene, the scree was filled and replanted. By its side a large plant of *Hebe lycopodioides* 'Peter Pan' grew between some rocks. This selection by Graham Hutchins was named because it keeps its juvenile leaves for many years. As soon as a specimen ceases to have the juvenile character it becomes plain *H. lycopodioides*.

At Glendoick the only thing of Antipodean interest was a gaunt *Olearia frostii* in a sheltered bay at the side of the house. Like those at Branklyn and Edinburgh it was unpruned and unattractive in shape. Presumably all are the same clone. The low growing form from Munich Botanic Garden makes a much better garden plant.

The final stop was at Wester Balruddery. On the way up from the road I was asked whether I could identify a 2.5m [8ft] high plant which was thought to be an Australian member of the Proteaceae. It was most probably *Telopea oreades* with *T. truncata* less likely. The situation was on the south facing side of a valley, several feet above a burn and sheltered. When we reached the house a large pot containing a *Prostanthera rosmarinifolia* in flower stood in the [open] porch. It is overwintered under cover. *Prostanthera cuneata* is fully hardy and grew outside.

All in all it was a very enjoyable weekend. I returned home with a plant of *Hebe epacridea* bought at Branklyn.

THE GENUS CRASPEDIA

by Brian Halliwell

Craspedia is a genus of non-woody, often short lived composites occurring in New Zealand and all Australian States - except for the Northern Territory [which is not a State anyway]. The common name for all species in New Zealand is Woolly Head and in Australia Billy Buttons.

The number of species is uncertain for much depends on the status which a botanist affords a plant; some now reclassified as sub-species or varieties were formerly species in their own right. The genus is in need of overall investigation by a botanist who ignores geographic and political boundaries.

Certain species are widespread geographically and altitudinally so there is considerable variation. Some extend from sea level to montane areas; at the lowest part of the elevation plants may reach a metre [3.2ft] in height whilst at their highest maybe less than 20cm [8"]. Habit of growth is equally variable being affected by soil type and depth; precipitation, the season at which this falls and if it becomes snow in winter; summer and winter temperatures and exposure.

Plants forming loose rosettes from a perennial rootstock have more or less oval pointed leaves. These may be glabrous, sticky or have varying degrees of hairiness. A flower stem to which is attached tiny leaf-like bracts supports a globular or hemisperical flower. This has no obvious petals and colour ranges from white through cream to yellow which can verge on orange.

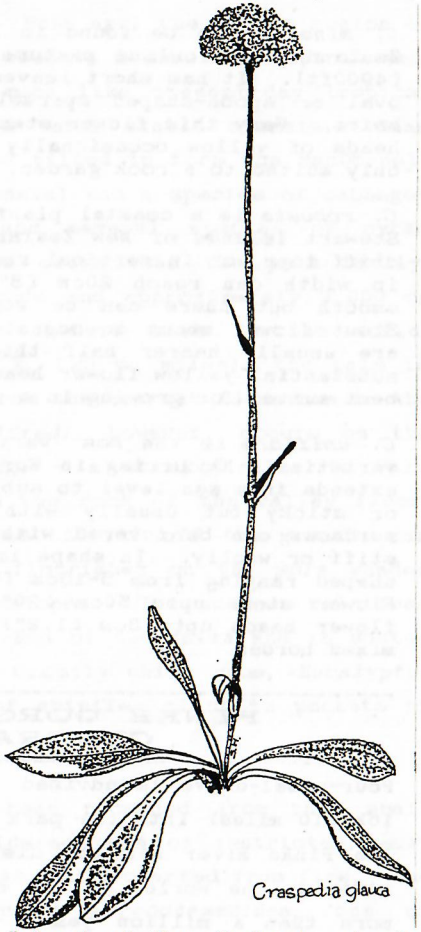
Plants are easily raised from seed which at Kew is set only rarely. In any sample received from the Antipodes there will be a high percentage of infertile seed. In the wild a fly lays a single egg in a developing seed and its grub feeds on the cotyledons. If suspect seed is examined under a magnifying glass, a tiny hole may be observed through which the larva escaped to pupate. Sow as soon as received for seed has a short viability. Seed can be sown in pots and placed in an unheated frame or given gentle heat in a glasshouse. As soon as seedlings are large enough to handle, prick off singly one to a small pot using a lime-free soil based compost; pot on before seedlings have filled their pots with roots. Seedlings and more mature plants are prone to infestation by root aphis and vine weevils can cause problems; to protect against both these pests add some lindane dust to the potting compost. Plant into their permanent positions before plants become root bound. Protect young plants against slugs and snails.

Seed from the highest altitudes is to be preferred, for plants raised from lowland collected seed must be expected to be more tender. At all times seedlings should be rogued to select the best in hardiness, form, flower size and colour. In cultivation in this country, plants are reasonably hardy surviving average winters but are liable to damage, even death when winters are very cold. Plants will tolerate more dry cold than when winters are both cold and wet. They dislike summer dryness of soil and atmosphere, which has been occurring with increasing frequency in many places in this country in recent years. Plants are better in a well drained soil and if soil does lie wet, spread a layer of gravel around the plant to keep the collar and the underside of the leaves dry.

The ultimate size of plants will determine position in a garden. The larger for a mixed border or island bed and the smaller on a rock garden although some of these can also be grouped in a mixed border.

C. alpina occurs in Tasmania and Victoria on mountain moorlands where there can be extensive drifts. There are narrow lance-shaped leaves upto 15cm [6"] long which are covered on both sides with white wool. Flower stems upto 30cm [1ft] have hemi-globose heads of white flowers some 25mm [1"] in diameter. This is better planted on a rock garden.

C. glauca is to be found throughout the southern States of Australia. This species is variable in all its parts. Leaves range from narrow, grasslike to broadly lance-shaped and from 10-25cm [4-10"] in length. Both surfaces usually green may be smooth, occasionally sticky and sometimes there is a light covering of grey or white hairs; the hairs are more abundant on young leaves but may be retained when these are mature. Flower stems range from 20cm to a metre [8"-39"]. There is usually a spherical head of flowers which may be white, cream or yellow. All kinds can be grown in a border but the smallest would be better on a rock garden.



C. incana is a plant of alpine screes and rock crevices above 1200m [4000ft] in South Island of NZ. Leaves which are oval or spoon-shaped can reach 10cm [4"] but are often only half this length. Flower stems rarely exceed 15cm [6"] and an often rather ragged flower head is yellow. Leaves, petioles, flower stems and buds are covered with a thick white wool. This is most handsome when grown for its foliage for its flowers can be disappointing. It is only suited for growing on a rock garden or perhaps on a raised bed or in a sink or trough. Unlike all other species this is herbaceous and aerial parts die back to a rootstock at the onset of winter.

C. lanata also confined to the South Island of New Zealand extends over a greater altitude range than the former; whilst both extend to almost 2000m [6500ft], this can go as low as 500m [1640ft]. Lance-shaped leaves which gradually taper into a leaf stalk rarely exceed 10cm [4"] in length or 25mm [1"] in width. Both surfaces, at least when young, are covered with cottony grey hairs; upper surfaces of mature leaves whilst remaining grey, can lose most of their hairs. Yellow or white dome-shaped flowers about 20mm [0.8"] in diameter are produced on stems upto 25cm [10"]. This species combines good foliage and pretty flowers. Whilst better for a rock garden, it can be grouped on a border.

C. major is to be found in North and South Islands of New Zealand from lowland areas, often along side streams, to montane grasslands at about 1500m [4900ft]. Leaves are variable being narrow, almost grasslike at one extreme and broadly lance-shaped at the other and upto 20cm [8"] in length. Often venation is evident through sparse greyish hairs. Slender flower stems range from 15cm to 40cm [6-16"] in height with a loosely globose flower head a little more than 15mm [0.6"] in diameter. The stronger growers could be planted in a mixed border.

C. minor is to be found in North, South and Stewart Islands of New Zealand from lowland pastures to sub-alpine meadows at about 1500m [4900ft]. It has short leaves, less than 5cm [2"] in length which are oval or spoon-shaped sparsely covered on both surfaces with stiff hairs. Very thin flower stems may reach 20cm [8"] with often nodding heads of yellow occasionally cream flowers. This species is really only suited to a rock garden.

C. robusta is a coastal plant from the wetter parts of the South and Stewart Islands of New Zealand. It can occur in extensive drifts on cliff tops, or in vertical rock crevices. Oval leaves upto 4cm [1.5"] in width can reach 20cm [8"] in length. Leaf surfaces are often smooth but there can be scatterings of rather short stiff hairs. Stout flower stems on occasions can reach about a metre [3.2ft] but are usually nearer half this height. There is an almost globose substantial yellow flower head which is 4cm [1.5"] in diameter. It is best suited for growing in a mixed border.

C. uniflora is the most variable of all species with four botanical varieties. Occurring in North and South Islands of New Zealand, it extends from sea level to sub alpine grasslands. Leaves may be smooth or sticky but usually with a fringe of hairs; in addition both surfaces can be covered with differing amounts of hair which may be stiff or woolly. In shape leaves can be oval, lance-shaped or spoon-shaped ranging from 5-15cm [2-6"] in length and upto 5cm [2"] wide. Flower stems upto 50cm [20"] support hemi-globose white or yellow flower heads upto 3cm [1.2"] in diameter. This again is best in a mixed border.

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FINKE GORGE NATIONAL PARK
CENTRAL AUSTRALIA

Four-wheel-drive is advised to reach this national park as the last 16k [10 miles] into the park follow the sandy bed of the Finke River. The Finke River has the distinction of being claimed as the oldest river in the world, on the basis that its course has not changed in more than a million years. The park is 19k [12 miles] south of Hermannsburg and 138k [85 miles] west of Alice Springs.

The most notable features of the park are the 50k [31 mile] long twisting Finke Gorge and Palm Valley. The red sandstone gorge was carved over time by the Finke River as torrents of floodwater poured down off the plateaus and through the narrow slots and gorges. Today

the scene is much quieter. Except during floodtime, the Finke River is a series of water holes with giant river red gums arching out from the dry banks.

At the heart of this 46,000 hectare/101,200 acre national park is an oasis called Palm Valley.

Palm Valley is an environmental relic. Eons ago, the entire region of the western MacDonnells was submerged beneath a shallow tropical sea. Where the land was exposed, it was much like present-day tropical Queensland - moist and fertile with a warm, stable climate. Seas receded and sediments were uplifted and tilted to form the MacDonnell Ranges. Trapped in the geological upheaval was a species of cabbage-tree palm called *Livistona mariae* and several species of cycad [*Macrozamia macdonnellii*], plants even older than the palm family. Palm Valley now hosts hundreds of cycads and approximately 3,000 or more relict palm trees which occur nowhere else in the world. Restricted to an area of about 60 sq.k. [23 sq miles], the palm is separated by about 1000k [620 miles] from the nearest *Livistona* in the north. The closest relative, *L. alfredii* however, occurs on the Fortescue River in the Hamersley Range - a stand similar to Palm Valley. Sprouting incongruously from the rock of the valley floor, their fiery green tops, often 30 metres [100ft] off the ground, fan the breeze. *Macrozamia macdonnellii* flourishes on the more shaded western and northern aspects of hill slopes. The nearest relatives live in near-coastal areas in the Top End of Australia and in south-western and south-eastern Australia. Ghostly white gums, *Eucalyptus papuana*, and the soft-yellow clumps of spinifex cling to pockets of soil in ledges on the walls.

A total of 333 plant species have been recorded from this small valley. About 30 of these are considered rare or restricted, most restricted to those areas fed by springs and protected from fire. One of these relict species is *Euphorbia sarcoctemmoides*, one of Australia's very few attempts at a cactus. A fauna survey undertaken by the Conservation Commission of the Northern Territory [CCNT] during 90-91 revealed 121 species of birds, 85 reptiles, 24 native mammals, 11 fish and 5 frogs.

Sue Hyams

WHAT HEBE IS THAT?

Three popular whipcord hebes are very similar. How does one distinguish them when they are seen in a strange garden, perhaps even the garden of a house that you have just bought? The table below should be helpful.

	H. armstrongii	H. ochracea	H. o. 'James Stirling'
Colour	yellowish green	ochre	ochre
Size	to 60cm x 60cm	to 60cm x 60cm	to 30cm x 60cm
Habit	upright mass of stems	open centre spreading	open centre spreading
Leaf shape	 pointed apex	 <the same>	 <the same>
Flower time	June	mid-late June [County Park stock]	early-mid May

Both species can be propagated from seed or cuttings. 'James Stirling' can be propagated only from cuttings. Often they grow one-sided. The tendency can be reduced by removing the top half of each cutting. It is then possible to produce specimens which grow into a circular shape.

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DODONAEA VISCOSA PURPUREA

by Jeff Irons

There are plenty of purple leaved shrubs for the garden, but they are nearly all deciduous. One that keeps its leaves all year is the purple leaved form of *Dodonaea viscosa*. Named after the Flemish botanist Dodoens, the family is almost entirely Australian. One species, *D. viscosa* is found also in New Guinea, America, Africa, and Asia. Its purple leaved form comes, however, from none of those countries, and was found first by the Wairau River, in the north-east corner of New Zealand's South Island.

As well as purple leaves it has large hop-like fruits, which are bright red in colour, and can be seen from June onwards. They do bleach in the summer sun, and in my garden have faded by the end of August.

The leaves have wavy edges, and can be up to 13 x 4cm [5" x 2"] though they are more usually about half that size. The bisexual flowers

occur on separate plants, so two suitable specimens are needed for fertile seed. Usually with two wings, the fruits can have three, and are up to 2.5cm [1"] across and long.

Seed raised plants can vary in form, and while my specimen is upright, others are low and spreading. They flower and fruit when quite small. As with all good things there is a snag. In this instance it is hardiness. In mild areas plants can be grown outside, in colder parts they are better under cover. My own experience is that leaf damage occurs below -4°C, and that severe damage occurs at -8°C. My soil is acid, and I have no knowledge of how the plant fares when grown in alkaline soil.

Several nurseries sell *Dodonaea viscosa purpurea.* Two mail order ones are Sunbeam Nurseries, and Burncoose and Southdown. A collection only nursery is County Park.

FOOTNOTE : the green leaved *Dodonaea viscosa* is worth growing too.

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EUCALYPTUS RECURVA

Some two years ago a newly discovered Eucalypt hit the headlines in the British press. It was said to be thousands of years old, and unable to reproduce. The species is *E. recurva* and this is its story.

In 1985 Ms. Robin Jean took a specimen for identification to the Australian National Botanic Garden. It grew on her property, which is on the poor soils of the Southern Tablelands of NSW. The specimen was of a Eucalypt, but a very unusual one. Its leaves did not hang down, but were erect and curved away from the stem.

After examination, and a trip to the site, botanists declared the specimen to be from a new species. They called it *E. recurva.*

The tree has a mallee habit [multi-stemmed] and is only about 1.5m [5ft] high. The leaves give it the appearance of a wax-flower [Rutaceae] rather than a Eucalypt. There are only 5 specimens, and when their leaves were given an enzyme analysis, they were found to be identical. This led scientists to believe that all five plants were of the same clone, and that they had arisen from decay of a single central lignotuber [swollen rootstock with adventitious buds.]

The species has many oil glands in its leaves but none in its bark. The closest relative is the Tasmanian *E. vernicosa.* Like the Tasmanian varnished gum, *E. recurva* sets little seed, and the seeds found often lack an embryo.

Initially botanists were unable to germinate seed. Then they found that stratification in a refrigerator for several weeks, followed by incubation, induced germination. Seedlings have not been found to grow vigorously.

Eucalyptus recurva is obviously on the verge of extinction. It is thought to be a survivor from an era when the climate of the Southern Tablelands was more severe than it is now. Its future looks bleak.

PRESENTING BOTANICAL NAMES

by Brian Halliwell

When gardeners begin to specialise, they will extend their knowledge by reading. Our readers will be reading the 'Australasian Plant Society Newsletter' or the journal issued by the Society for Growing Australian Plants, now called 'Australian Plants'. Books they may consult include 'The Cultivation of New Zealand Trees and Shrubs' by L.J. Metcalfe or the Floras of the Australian States or of New Zealand. In their reading they will find that botanical names almost totally replace common names. For our members it is useful to know how plant names should be presented and the meaning of any symbols which may be used.

Most plant names will be of two parts. The first word, the genus, will have its initial letter as capital/upper case. The first time the generic name is used it is spelled in full eg *Grevillea* but if there is repetition without intervention of another generic name then it will be abbreviated to *G.* The second word, the specific epithet which here is *alpina*, has its first letter small/lower case. There is one exception only to the use of a small/lower case initial letter : this is when Jesus Christ is included in an epithet, eg *Paliuris spina-Christi.* In older books, readers may find examples of specific epithets beginning with upper case/capital letters. This occurred when a specific epithet was derived from a personal name, eg *Helichrysum hookeri* [now *Ozothamnus hookeri*], or if a specific epithet had also been a generic name, eg *H. selago.*

All plant names will contain a minimum of two words but additional ones may be attached to a name to be more precise. A subspecies will become a third name whose first letter is small/lower case preceded by subsp. or ssp., eg *Acaena microphylla* ssp. *obscurans.* A botanical variety representing an even finer degree of difference is abbreviated to var. which precedes a name starting with a small/lower case letter,eg *A. microphylla* var. *robusta.* A variant which has occurred in cultivation is referred to as a cultivar which is abbreviated to cv. A cultivar will be presented in a modern language and in roman script. The initial letter[s] will be capital/upper case which may be preceded by cv., more usually appear in single quotes, eg *Leptospermum scoparium* cv. Red Damask or *L. scoparium* 'Red Damask'. A convention which is not adopted universally is to use single quotes for registered cultivars and double quotes for unregistered ones. Formerly it was common practice for nurserymen to use latinised epithets as in *L. scoparium* 'Nichollsii'. This was confusing for readers did not know whether the plant was a botanical variety or it had arisen in cultivation. The publication of the International Code of Nomenclature of Cultivated Plants in 1958 put a stop to this practice and from that date no cultivar must appear in latinised form. Latinised cultivars which had been published before that date were to be retained but preceded by cv. or put into single quotes.

When a species has produced a large number of worthwhile variants, the specific epithet may be dropped as with the florists cyclamen so instead of *Cyclamen persicum* 'Glory of Aalsmeer', *Cyclamen* 'Glory of Aalsmeer' is more usual.

If a plant is a hybrid between two species an x appears before a new specific epithet : *Corokia* x *virgata* is a hybrid between

C. cotoneaster and *C. buddleioides*. When a hybrid occurs between species of different genera, then a new name is devised, made up of parts of each genus and an x is placed before the new generic name which is followed by a specific epithet so the natural hybrid between *Leucogenes grandiceps* and *Raoulia goyenii* becomes x *Leucoraoulia loganii*.

There is a small group of plants known as graft chimaeras [incorrectly graft hybrids] which has arisen due to an abberation in grafting, when a layer of cells from the stock [lower part of a graft] has grown up and over the scion [upper part of a graft]. There has been no sexual union of different cells between the two plants. The best known example is the pink laburnum which arose when *Cytisus purpureus* was grafted onto *Laburnum angyroides*. A new name was coined from genera of these two plants and a new specific epithet was used. Because there was no sexual combination, the new generic name was preceded by a plus sign; thus + *Laburnocytisus adamii*.

When two species of the same genus are involved in a graft chimaera the + is placed before the new specific epithet, eg *Syringa* + *correlata* which resulted when *S. chinensis* was grafted onto *S. vulgaris*.

When writing or typing botanical names, genus, species, subspecies and variety are underlined but a cultivar is not. In published text, genus, species, subspecies and variety are printed in italics but cultivar names are in ordinary print.

When a genus comes to be used as a common name, eg cyclamen, rhododendron, crocus or narcissus, then it appears in normal print with the first letter in small/lower case.

WHY BOTANICAL NAMES?

by Brian Halliwell

Visitors to a garden are always asking for names of plants unknown to them. 'What is that evergreen shrub with spikes of white flowers?' you are asked; you reply *Anopterus glandulosa*. Your wife is asked to identify a sprawling leafless green-stemmed shrub which has pink pea-flowers, which she does with *Carmichaelia cunninghamii*. There are cries of dismay. 'Haven't they common names? We'll never remember those.' Your visitors are told that the white flowered evergreen is called laurel and the pink pea-flower is broom. Immediately there is disagreement. 'Its not a bit like the plants in my hedge' says the man whilst a lady tells you its leaves look nothing like those she uses in the kitchen and they smell quite differently. He then goes on to tell you that broom on the common near his home has upright stems and lots of quite large yellow flowers.

Whilst laurel is a correct common name for *Anopterus glandulosa*, it would be more accurate to append the adjective Tasmanian. The shrub used to make hedges, *Prunus laurocerasus* should more properly be cherry-laurel and what is used in the kitchen, *Laurus nobilis* is more usually bay laurel. To continue : in New Zealand, laurel is *Laurelia novae-zelandiae* which in North America is *Kalmia latifolia*.

Laurus nobilis is an evergreen tree of countries around the Mediterranean from which the Romans made laurel wreathes to crown

their poets. It was brought by them into England and it was the first plant known to English gardeners as laurel. When *Prunus laurocerasus* arrived early in the 17th century from Asia Minor, gardeners transferred to this newcomer the name of laurel because it was similar in appearance to the earlier arrival in leaf shape and fruit colour and form; more important it was hardier. The earliest English settlers in North America and the antipodes found completely alien floras in their new homeland. In order to be able to identify a plant, they used names which reminded them of plants back home.

Carmichaelia, *Notospartium* and *Chordospartium* all New Zealand genera in Leguminosae have been referred to as broom. Whereas in England we refer to many plants in Leguminosae as peas or having pea-flowers, early New Zealand settlers referred to them as brooms or broom flowers.

A plant name needs to be precise so that scientists and horticulturists, irrespective of nationality will know exactly which plant is meant. The lady of the house does not want to be fobbed off with cherry-laurel when she wants *Laurus nobilis* which is going to provide her with leaves to flavour her boiled ham. Her husband does not want to have to negotiate a bank loan to pay for 200 laurels for a hedge which he orders from his garden centre and he is supplied with *Kalmia latifolia* rather than *Prunus laurocerasus*.

From the middle ages, the language of science was latin when botanical names were unwieldly, consisting of several latin words. In his book, 'Paradisi in Sole' published in 1629, John Parkinson refers to the scarlet lobelia which we know today as *Lobelia cardinalis* as *Trachelium americanum flore ruberrimo.* In 1753 Carl Linnaeus, a Swedish botanist published 'Species Plantarum' which laid the foundation of modern botanical nomenclature with a binomial system. Each plant was given two names : a genus which correspends with a surname, eg *Laurus* and a species *nobilis* as with a forename. This system has come to be accepted throughout the world to provide to provide a precise universal language comprehensible to any botanist or horticulturist irrespective of nationality.

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ANTIPODEAN PLANTS IN THE HOUSE

There cannot be many people who have not come across that fine foliage house plant *Grevillea robusta*. How many know that it is a beautiful timber tree from Queensland, Australia?

Several other Antipodean plants are used in the house and conservatory. Some that come to mind are *Alocasia macrorrhizos*, *Archontophoenix cunninghamiana*, *A. alexandrae*, *Cissus antarctica*, *Curcuma australasica*, *Helmholtzia glaberrima*, *Hoya macgillivrayi*, *Peperomia tetraphylla*, *Schefflera actinophylla*, and the Lilly Pillies - *Syzygium spp.*

Do any members have experience of them or other plants, eg *Kennedya*, *Swainsonia?* If so, please write to me [Sue Hyams] and give others the benefit of your knowledge.

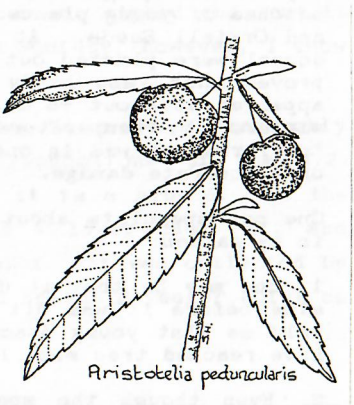
ARISTOTELIA PEDUNCULARIS [Purple Heart Berry]

by Jeff Irons

This genus of the Elaeocarpaceae has 5 species in Australia, New Zealand and South America. The sole Tasmanian representative is hardy in my garden where it has survived 8 winters. A different provenance is hardy at Rosemoor.

It is one of those useful plants which fits a small garden, or can be grown in a pot, likes shade, has attractive flowers in spring and equally nice berries in autumn.

The origin of the species name is indeterminate, but it probably refers to Aristotle. The specific name refers to the habit of the flowers, which hang down on a long stalk.



The 'Students Flora of Tasmania' refers to this plant as a weak straggling plant 2-4m [6½-13ft] high. In cultivation it is very open and responds to pruning. It can be made to adopt a closer denser habit by cutting off new growth just above the flowers, as soon as flowering is over.

Usually lanceolate, the dark green leaves are commonly about 3cm long and 1cm wide [1.2" x 0.4"]. However they can be as much as twice this in size. They are usually irregularly opposite.

The axillary bell shaped flowers appear in May, hanging on long slender stalks. They are about 15-20mm [0.6-0.8"] long, with lobed white petals, and red spots inside the bell. Often they are in groups of two or three. There are 4 petals. Usually purple, the berries can vary from almost black to white in colour.

The natural habitat is as an understorey plant in forests, usually on mountains. In cultivation a similar situation suits it well. Plants can be grown in pots, and if this is the preferred method it will be found that after 3 years the pot will be full of roots. Root pruning or repotting is necessary.

Propagation is from seed which has been kept moist or from autumn cuttings. Vegetatively raised plants will flower in their first spring and be a good size by their second spring. It is advisable to keep them compact by frequent pinching out. Excessive dryness will cause the berries to drop.

The 1993 APS seed list will include both English and Tasmanian seed of *Aristotelia peduncularis*. We have no knowledge of its lime tolerance.

CORRECTIONS TO APRIL 1992 NEWSLETTER

P.6. line 2 should read ....this clone was lost....
P.18. should be *Callistemon citrinus*, not *citrinum*.
P.20. should be *Diplarrena moraea*.

ACACIA PATACZEKII in GERMANY

by Thomas Ross

In the April issue of the newsletter of the Australasian Plant Society, Brian Halliwell reported on Kew's experience with *Acacia pataczekii*. Now, Thomas Ross gives us results of his trial plantings in Germany.

'After reading about the frost hardiness of this species in the Hardiness Survey by Ken Beckett [The Plantsman, 1983], I decided to try it in my garden, and over the following years I grew several batches of young plants from seed obtained from the Acacia Study Group and Orriell Seeds. At the age of 1 year, the seedlings [more than a dozen] were planted out on a south-facing slope. Unfortunately, they proved much less hardy than the plant at Kew: first damage usually appeared at about -8°C, and the plants were cut to the ground in most winters, by temperatures ranging from -11.5°C to -15°C. The best 'performance' was in one winter, when they survived -12/-13°C with only moderate damage.

One can speculate about the reasons why *A. pataczekii* fared so badly in my garden:

1. One may be that it did not have the opportunity to reach a larger size before it was hit by a heavy frost [an Australian nurserywoman told me that young Acacias are <u>much</u> more tender than older ones that have reached tree size.]

2. Even though the species has a very restricted distribution, it cannot be excluded that Kew got a hardier genotype than I.

3. When comparing frost hardiness of Australian plants in my garden with Jeff Irons', I find that in quite a few cases, plants were cut to the ground in Germany by temperatures they survived with little damage in the Wirral. Is this because of higher humidity in England, or because my garden is only a favoured spot in a general climate that is definitely colder in winter than England?

Brian Halliwell suggests that *A. pataczekii* may be the hardiest species of *Acacia* in Great Britain. After trying many other *Acacia* species in my garden, 2 seem to be hardier than *A. pataczekii* in Germany: one is *Acacia alpina*, the other *A. obliquinervia*. *A. alpina* has been growing here for many years and survived temperatures of -15°C, and very long periods of harsh frost. Considering its habitat, it is not astonishing that it should be very hardy. Unfortunately, it is not a very ornamental species. *A. obliquinervia* occurs over a wide area and has a wide altitudinal range in Australia. My trials have indicated that there is considerable variation in frost resistance. A form from Mt. Franklin with very attractive glaucous leaves seems to be quite hardy, and I am now trying a form from Guthega near Mt. Kosciusko, on which I am placing great hopes. It also has very attractive glaucous leaves.'

OLEARIA x TRAILLII [*"TRAILLII"*]

by Tim Longville

How better for a new member to introduce himself than by asking thoroughly irritating questions?! Here [after a brief preamble] come the questions:

A few months ago I was reading W. Arnold-Foster's 'Shrubs for Milder Counties' [Country Life, 1948] and came across a reference to *Olearia Traillii*[thus]. No sign of it being currently available according to the 'Plant Finder', so at the time I simply cursed, sighed and put it on hold. Since I discovered [and joined] the Society, however, I know a little more about it. In brief:

The name has an upper case 'T' in the Index Kewensis. Presumably because when he wrote of it in 1884 ['Transactions of the N.Z. Institute', xvi, 327], Kirk recognised that it is a hybrid. In the 'Flora of New Zealand', it is written with a lower case 't', and described as *Olearia angustifolia* x *O. colensoi*. It was collected by Kirk in places near the sea on Stewart Island and on Puysegur Point on South Island.

The Questions:

[1] Does any member grow it?

[2] Does any member have details of its appearance and performance as a garden plant? Arnold-Foster was enthusiastic about it and I've always found his judgements worth a lot of respect.

[3] Does any member have a source for it? Arnold-Foster presumably grew it in his garden at Zennor in the 40s; perhaps it still survives somewhere down there?

[4] If *O.* x *traillii* is *O. angustifolii* x *colensoi*, does the reverse cross, *O. colensoi* x *angustifolii* exist and, if so, what is *it* like?

Ed. notes: *O. angustifolii* is written nowadays as *angustifolia.*
: When the pollen parent of a hybrid is uncertain, it is usual to put the parents names in alphabetical order.

SNIPPET

The 1992/93 Plantfinder includes *Anigozanthos* 'Bush Dawn'. It is a cross between *A. pulcherrimus* and *A. flavidus* originated by Bush Gems Nursery. Hundreds of new *Anigozanthos* cvs. are appearing. Germany too is busy raising new cvs. of Australian plants. One 'new' strain of *Brachyscome multifida* looked quite ordinary to us.

THE NECKLACE FERN

by Brian Halliwell

Because ferns are not flowering plants, to all but enthusiasts, they are largely ignored in a garden. This is a pity for many are beautiful with most attractive forms and they will grow in uncongenial places in a garden: under dense shade of trees or on the north side of a wall or house.

Fashions in ferns reached a peak towards the end of the last century. Outside, a section in a shady part of the garden was reserved for the hardy kinds. These were mostly variants of British natives which had distorted or variegated fronds. Sometimes referred to as Victoriana, this group of plants like many other fads of the last century came to be utterly despised after the first world war. Their cultivation ceased and plants were grubbed up. During recent years there has been a resurgence of interest, and thankfully, it is the unadulterated species from cool temperate regions of the world which are being cultivated, at least outside.

Asplenium flabellifolium is native to the southern states of Australia and to New Zealand. It grows in organic soils, on trees both living and dead, and on and between rocks.

Lax fronds which can reach 30cm [12"] flop over the ground, rocks, branches and other plants. Fan-shaped pinnae about 12mm [½"] in length and breadth are arranged, most usually in opposite pairs, along the length of thin stems. These are pale green above and a dull green beneath with tiny bands of spore cases arranged radially.

As long as it is protected from cold winter winds, it is hardy over much of the British Isles. In the coldest areas it can be protected with unheated glass. In winter, plunge pots to prevent frost cracking or shattering clays and, compost from freezing. Outside choose a shady place and a moist, lime-free soil enriched with leaf mould or peat. Habit of growth makes the necklace fern suitable for cultivation on a peat or rock garden. A suitable place on a rock garden is in a crevice between two rocks as long as water can percolate.

Mature plant lifted in early spring just before new growth commences can be pulled apart. Frequently on the tip of a frond a new plantlet forms. Placing a stone near the growing tip of a young frond will help the formation of a new fernlet. Precautions against slugs and snails, which can devour a plant overnight, may need to be taken.

PREHISTORY OF NEW ZEALAND Part One

by Sue Hyams

New Zealand's history as a landmass starts in the Mesozoic Era [245-66.4 million years ago]. It was a time when the vegetation was dominated by Conifers, Cycads and Ferns. The Mesozoic is split into the Triassic [245-208mya], the Jurassic [208-144mya] and the Cretaceous [144-66.4mya].

Worldwide, the first half of the Mesozoic saw the stabilisation of Pangaea in which the united landmasses of the world formed a supercontinent which stretched from Pole to Pole down one side of the globe. There was one mighty ocean, Panthalassa, which extended round some 70% of the Earth at the Equator.

As a result warm equatorial currents were free to flow, and travelled polewards along the shores. There were no circumpolar currents and thus no polar isolation and cooling, and consequently little gradation in temperature from Equator to Poles.

Ancestral New Zealand was raised above the sea in the Late Jurassic. Up to that time its foundation had been laid down in marine basins and troughs on the edge of the Gondwanan supercontinent [great southern supercontinent]. The pieces of crust which came together to form Ancestral New Zealand were 'terranes', coming from several different sources and having different geological histories. During the Mesozoic the seafloor adjacent to the outer edge of Gondwana was complex with several spreading ridges and several convergent margins. Activity brought the terranes together and resulted in the Ancestral New Zealand landmass. This ancestral landmass was much more extensive than modern New Zealand.

THE TRIASSIC PERIOD 245-208 million years ago

Widespread aridity. A band up to 50° on either side of the Equator was intensely arid. Globally, temperatures were considerably higher than today, and temperature gradients from the Equator to the Poles were small.

The Gondwanan lands lying in high latitudes were in a comparatively humid belt.

The environmental barrier posed by the arid low and middle latitudes prevented the mixing of southern and northern floras in the Triassic.

Plants of the Triassic were subjected to several months of darkness each year, and to 'midnight Sun' for several more. They cast long shadows because of the low angle of the Sun, even in summer.

The *Dicroidium* Seed-ferns characterise the Triassic throughout Gondwana.

There was no New Zealand land. Triassic rocks of New Zealand are marine.

THE JURASSIC PERIOD 208-144 million years ago

Preparations were under way for the fragmentation of the supercontinents. Ancestral New Zealand started to rise above the sea in the middle of the Period.

By the latest Jurassic times the emerging landmass occupied an area from the Campbell Plateau off Antarctica in the south to New Caledonia in the north, and from the Lord Howe Rise in the west to the Chatham Islands in the east.

The Early Jurassic flora in New Zealand includes Podocarp Conifers, Horsetails, Cycadophytes and Ginkgophytes. *Cladophlebis* ferns and *Pentoxylon* leaves are abundant from the Mid to Late Jurassic.

The accumulation of Mid Jurassic tree trunks found fossilised at Curio Bay in Southland suggests that warm-temperate conditions compatible with luxuriant forest growth prevailed at the time.

THE CRETACEOUS PERIOD 144-66.4 million years ago

During the Cretaceous the break up of the supercontinents got under way and the continents began to move towards their modern positions on the globe. By late in this Period the fauna and flora started to change towards a modern-aspect biota to which flowering plants and mammals prepared to assume dominance. The movement of landmasses progressively changed circulation patterns and altered world climates. From this time on, the world was heading towards an ice age.

The plate tectonic movements which were starting to break the supercontinents resulted in a global sea level rise in the Early Cretaceous. The sea level reached its maximum height about 110mya and then fell rapidly. By the Late Cretaceous most of the land was above the sea again.

At the start of the Cretaceous there was a sudden cooling episode. Throughout the rest of the Period temperatures rose steadily. Mean annual temperatures were between 10° and 15° warmer than they are today and the temperature gradient from the Equator to the Poles about half of what it is now.

Tropical and subtropical conditions extended far further north and south than at present, possibly upto the 70° parallels at times, and there was a warm-temperate climate at the Poles.

The Late Cretaceous was the warmest time interval in the Phanerozoic Eon [Eon of visible life, from the Cambrian to the Present]. However, a sudden cooling episode at the end of the Period heralded the onset of fluctuating climatic patterns.

During the time when the sea level was rising, there was fluctuation in the amount of land which was flooded locally in areas where tectonic movement was active. Thus new local environments were waiting to be colonised by plants.

The tectonic movements which had raised the Ancestral New Zealand landmass above the sea in the Mid Jurassic intensified in the Late Jurassic to earliest Cretaceous times, when the landmass attained its maximum known extent.

In the Early Cretaceous, rapid river erosion reduced the height of mountains and uplands, and the extent of the land was further reduced by the progressive sea level rise which affected all parts of the world at this time. By 110 million years ago, all of the Northland region was under the sea as were the eastern sides of North Island and of Marlborough in South Island.

During the Late Cretaceous there was rifting between the south-western end of the Ancestral New Zealand landmass and Antarctica in preparation for the separation of the outer edge of that part of Gondwana.

Ancestral New Zealand remained attached to Marie Byrd Land, Antarctica, until the Late Cretaceous.

* * * * *

SNIPPETS

Jennifer McGrady has written to inform us of a *Callistemon* growing and flowering profusely outdoors in Newcastle upon Tyne. Thought to be *C. subulatus*, it is planted in a sheltered spot, south facing with a building behind and high fences on each side. It has been planted out for about seven years.

One of the most important of the New Zealand 'bush cures' is the use of *Hebe* species, particularly koromiko [*Hebe salicifolia, H. stricta,* and allied species], which is a well-known and authenticated remedy for dysentry. Koromiko is the only New Zealand native plant to have received recognition in British medicine, being listed as a remedy for diarrhoea in the 1895 Extra Pharmacopoeia, London. It is still valued as a remedy for dysentry and diarrhoea and, during World War Two, quantities of the dried plant were sent to the North African front, where it was used effectively by Maori troops. The value of the plant has been traced to its anti-peristaltic action, the active principle possibly a phenolic glycoside.

As a form of biological control, Australian ladybirds are being imported by Kew Gardens for use in their Palm House. Released every fortnight, they are proving valuable as mealy bug munchers.

During their stay at Dusky Bay, New Zealand, Captain Cook's men tried their hand at brewing using the leaves of the Spruce-tree *Dacrydium cupressinum* or rimu. Using a decoction of the Tea-plant *Leptospermum scoparium* or manuka, to correct its extreme astringency, it was acknowledged to be a good antiscorbutic and to be little inferior to the American Spruce Beer by those who had experience of both.

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CAN YOU PROVIDE A SNIPPET FOR THE NEXT ISSUE?

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NAME CHANGES

Several name changes have been published in the Asteraceae. Those that affect plants we grow are :

Helipterum - most are now *Rhodanthe*. Eg.

Helipterum anthemoides is now *Rhodanthe anthemoides* [Sprengel]. Paul G. Wilson.

Helipterum manglesii is now *Rhodanthe manglesii* [Lindley].

Helipterum humboldtianum is now *Rhodanthe humboldtiana* [Gaudich.] Paul G. Wilson.

Helipterum roseum grandiflorum is now *Rhodanthe chlorocephala* subsp. *rosea* [Hook.]. Paul G. Wilson.

Helipterum splendidum is now *Rhodanthe chlorocephala* subsp. *splendida* [Sprengel]. Paul G. Wilson

But, *Helipterum albicans* has been put into the new genus *Leucochrysum*. Eg.

H. albicans ssp. *alpinum* is now *L. albicans* ssp. *alpinum*.

H. albicans ssp. *albicans* var. *albicans* is now *L. albicans* ssp. *albicans* var. *albicans*.

H. albicans ssp. *albicans* var. *albicans f. purpureo album*
H. albicans ssp. *albicans* var. *albicans f. grampianum*
H. albicans ssp. *albicans* var. *incanum*

All three are *L. albicans* ssp. *albicans* var. *tricolor*.

H. albicans ssp. *albicans* var. *buffaloensis* is now *L. albicans* ssp. *albicans* var. *buffaloensis*.

Helichrysum acuminatum is now *Bracteantha subundulata*.

Helichrysum backhousei is now *Ozothamnus rodwayi*.

Helichrysum bracteatum is now *Bracteantha bracteata*.

Helichrysum cassinianum is now *Schoenia cassiniana* [Gaudich.].

Helichrysum subulifolium is now *Schoenia filifolia* [Turcz.] Paul G. Wilson.

In this year's seed catalogue Thompson & Morgan give *Lawrenciella rosea* as a synonym of the then *Helichrysum cassinianum*. *Lawrencella* [without the 'i'] has never been a synonym of the *Schoenia*. It is known now as *Lawrencella lindleyi*. We have ordered seed, and hope to grow the plant to flowering and seed. If that can be done it will be possible to identify it.

Other changes are on the way, including the introduction of a new genus - *Chrysocephalum*.

Work has begun on the revision of *Cassinia* and *Ozothamnus* - the latter being merely a temporary change.

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SEEDLIST DELETIONS

Acaena glabra, inermis
Agastachys odorata
Arthropodium milleflorum
Banksia canei, marginata, media, nitida, prionotes
Beaufortia micrantha, squarrosa
Bossiaea cordigera
Brachyscome diversifolia var. div.
Cassia hamersleyensis
Celmisia angustifolia, bonplandii, provepeus
Coprosma aff. pumila, nitida
Correa backhousiana
Dianella nigra
Dietes robinsoniana
Epacris virgata
Eremaea violacea
Gahnia subequiglumis
Gaultheria tasmanica
Grevillea brownii, drummondii
Hakea dactyloides, propinqua
Helichrysum scorpioides
Hypoxis hygrometrica
Pittosporum bicolor, elliptica
Pronaya frazeri
Telopea mongaensis
Crinodendron patagua
Escallonia florida
Festuca magellanica
Sophora macrocarpa
Ugni molinae

If you can supply the seedbank with viable seed, contact Jeff Irons.

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