AUSTRALASIAN PLANT SOCIETY

NEWSLETTER NO.7. NOVEMBER 1991

EDITORIAL

Dear Members,

As we approach the winter of 91/92, it is interesting to read how members' Australasian plants fared in the winter of 90/91. Several members sent in details of their losses and survivors. Its not only during winter that plants can die. Trying to grow alpines in a hot dry summer can be extremely difficult especially if we are prohibited from using hosepipes due to the prolonged drought and water shortage. Send us any news on your successes and failures, mentioning cultural information, weather details etc.

All articles should now be sent to me : Sue Hyams, 100 Willowbank, Coulby Newham, Middlesbrough, TS8 OSP.

OLEARIA RAMULOSA by Jeff Irons

The genus Olearia is named after Adam Olearius [1603-71]. It is found in Australia, New Guinea and New Zealand, and contains about 100 species. All are shrubs or small trees.

Olearia ramulosa [twiggy daisy bush] is a very variable shrub, native to the south eastern Australian States of South Australia, Victoria, Tasmania, and New South Wales. In size it varies from a small cushion on the coast to a 3m [10ft] high, open shrub in forests. Six varieties have been described. The form common in British horticulture is sold as *Olearia ramulosa 'Blue Stars'*. It was introduced by Graham Hutchins of County Park Nursery. He obtained it from the Tasmanian nurserywoman Margaret Kinsey. Unfortunately that it as far as the trail goes, for Margaret cannot recall from where, or when she got it.

Olearia ramulosa 'Blue Stars' keys out as *O. ramulosa var. ramulosa*. It is a fast growing shrub, erect, with many slender branches. They nd the under surfaces of the leaves are covered with a white indumentum of woolly hairs. The leaves 2-10mm [0,1-0,4"] long are crowded along the stems, and are of varying shapes. It can be restrained to any desired size by pruning in spring. The main flowering period is August to November, and it is smothered in flowers for the whole of that time. The flowers are small, and are borne at the ends of small branchlets, covering the bush when it flowers, often appearing to form a long spike. The actual hue of the blue colour varies greatly with the angle and power of the sun, plus the clarity of the atmosphere, but it is always attractive. After a mild winter there is a subsidiary flowering for about 3 weeks during May and June. This has no effect at all on the later flowering.

Olearia ramulosa 'Blue Stars' is an excellent plant for giving blue colour in late summer and autumn. It will perform in soils where *Caryopteris x clandonensis 'Arthur Simmonds'* does not. Although it will grow in wet soil, this reduces its hardiness. The plant is much hardier in well drained soil. It is quick growing and will reach 1,5 x 1,5m [4,5 x 4,5ft] in three years. Propagation is from spring or early summer cuttings. Fresh seed or seed stored over winter at 4°C will give a low germination.

In cold areas it is recommended that spring cuttings be grown in pots for one year, overwintered under cover [a cold frame will do], and planted out in the following spring. Large old plants can be subject to storm damage, with whole branches breaking off at the base. My own stock plant was cut right back to its base by the 1990 - 1991 winter, but produced new growth for the 1991 summer.

In the wild the forms with white ray florets are more common than those with blue florets. The insignificant disc florets are always yellow.

A point of passing interest is that blooms of *Olearia ramulosa 'Blue Stars'* were included in the bouquet given to the wife of the Australian High Commissioner when she opened the Australian Bicentenary Exhibition in the National Museum in Liverpool.

HOW AUSTRALASIAN PLANTS FARED IN DIFFERENT AREAS OF BRITAIN;

ABERAERON, coastal West Wales, by Graham Sumner, June 1991.

It is unusual for night-time temperatures to fall below about -4 or -5°C in Aberaeron, but the February cold spell brought five nights below -4°C in the thermometer screen ; on the night of 9/10 February it had been below freezing all day, and by 11.00pm it was -7,7°C. Cold air drainage down the valley inland from us stirred up the air a bit and stopped further falls, so that our coldest night ended up at -7,8°C in the screen, and -8,7°C on the ground. Overall during the winter we had 33 air frosts, against an expectation of less than 20. However, apart from a light sprinkling early one morning in February, we were spared snow.

Like most of us, I guess I am always pushing my luck and experimenting to see which plants survive and which do not. Last winter was the test, following the two mild winters which preceded it ; a period when even as a climatologist, I was throwing caution to the wind [literally?], convincing myself that global warming was upon us, and forgetting that even if it were, there will still be cold winters! Last winter also provided a variety of conditions, with a stormy, salt-laden spell in early January, and the cold, dry easterlies of early February. It confirmed me in my view that the salt is a bigger enemy to Australian plants from the colder part of that continent, than is frost.

The Casualties?

Two *Acacia dealbata* battered by salty gales in January and devastated by the cold in February. Both were sheltered to some extent under *Eucalyptus gunnii* and neither has shown any signs of regeneration as of early June. One *Acacia longifolia* had weathered the frosts of December, and valiantly put out a few flowers by the start of the February cold spell. That too is well and truly dead. The only other casualties were a *Cordyline australis [var purpurea]* and a few specimens of *Melaleuca squarrosa* which had hung tenaciously on through three winters, but finally gave up on this one. One has subsequently regenerated from soil level. Finally, one experimentally planted *Indigofera australis* ; the salt killed off this one during December.

The Survivors?

Much more numerous, starting with four 'normal' *Cordyline australis* which weathered the winter with no problems, along with all my bottlebrush [*Callistemon linearis, citrinus* and *rigidus*] and all my eucalypts. True, the latter were battered, but mainly by salt burn to the leaves. All are now regenerating fast. I have numerous different species [besides *E. gunnii* ; *E niphophila, archeri, cordata, aggregata, cinerea, dalrympleana, stellulata, urnigera* and *perriniana*, plus the two I have singled out below], all of which suffered serious salt burn below garden wall level [about 2 metres] as a consequence of the January storms.

I would hasten to add that my eucalypts are young [7 years at most], most of which I grew from seed. I have a small but crowded garden, which keeps weed maintenance to a minimum, and is great for birds and the local cats! In one sense the salt burn with which both I and the eucalypts have learned to live, provides an annual lopping and thinning of the tree tops ; in another, of course, it means that the most luxuriant growth is to be found in early autumn, and the most depressing time, with 'autumn' colours, is in March and April. At the end of the winters of 1988/89 and 1989/90 regeneration was rapid from early March onwards, so that a good leaf cover was obtained by mid-May, and the bottlebrush, for example, was in flower by mid-June. This year however, with continued cold and cloudy conditions well into June, the season has been put back by an estimated month.

Two species of eucalypt have surprised and pleased me however. The first is *E. nitida*, of which there are three in the garden. I had thought this species was generally not very hardy. I had no great hopes when I planted the saplings early last spring [1990]. True, they have been salt burned, but none suffered from the frost. They are a most pleasing species, being comparatively slow growing and small, and possessing delicate small leaves. I do not subscribe to the view that the young, immature *Eucalyptus* foliage is to be particularly valued, and this species possesses quite narrow leaves from germination. More of a disappointment, until recent regeneration, was *E. forrestiana*. Now, according to all my books, this will tolerate no temperature below about -2°C and likes arid conditions. Last summer saw this specimen put on a lot of growth, and by the autumn it possessed many flower buds. It survived the storms in January with little damage [it is mostly sheltered from the salt winds by a stone wall, and has a southwesterly aspect], but was rendered a brown shadow of its former self following the cold spell in February. Leaf damage occurred a good two weeks after the end of the cold weather, but regeneration was rapid from early April. It survived, and that was gratifying.

Other, smaller, survivors have been : Australians : *Kunzea parvifolia, Melaleuca bracteata, Bursaria spinosa, Pittosporum undulatum* [the latter survived only under protection in February]; New Zealanders : *Acaena microphylla, Phormium cookianum* and *P. tenax*. In the case of the Australian plants though, location in the garden has been a factor in survival or death. Some made it and others did not; all were from last year's seeds.

In the conservatory and indoors of course, I was able to retain adequate temperatures for those lucky plants in pots which can as a

THE WINTER OF 1990/91 IN THREE WALES, SURREY AND N.E. ENGLAND.

result migrate seasonally. My numerous specimens of *Syzigium australe* have proved to be tolerant of all sorts of conditions, from deep shade to bright sunlight through glass, and outdoors in the summer. My first flowers last summer bore fruit over the winter, and one seed has since been germinated. *Pittosporum undulatum* flowered indoors and have also proved tolerant of a wide range of light/heat conditions. I had good blossoms on *Acacia armata, longifolia, salicina* and *riceana*, on *Hardenbergia comptoniana* and on *Callistemon viminalis*, all of which flowered over many weeks in the late winter and spring. Also, five years on from germination, *Ficus macrophylla* make marvellous 'statement' plants.

SURREY by Ian Davies

Some notes on ANZ shrub hardiness following a relatively harsh winter with temperatures down to -15°C.

The location is 140m [450ft] up on the north slope of the Surrey Hills and is regarded as somewhat harsh and cold compared with the London basin to the North and the coastal strip 35 miles to the South.

Cordyline australis - five shrubs up to 1.3m [4ft] were topped but have come up from the root again, but we had to wait until late July for this! They had overwintered outside in 87/88, 88/89 and 89/90, having been topped in the spring of 87. They seem to be OK down to -10°C.

Leptospermum scoparium - wiped out; as were those at Wakehurst Place. However we had a five year old unnamed *Leptospermum* - possibly *Thymifolius* - which came through little harmed and produced flowers [white]. It would be good to cross this tough species with *scoparium* to get colour with hardiness!

Lomatia tinctoria and *L. myricoides* - both more or less unharmed and flowered moderately.

Pimelia prostrata - unscathed.

Hebes - we have a mess of cross bred *Hebes* which are the result of offspring popping up after previous hard winters. This time one or two sheltered derivatives of *'Midsummer Beauty'* type survived but others were lost. *Salicifolia* survived but we had lost the same variety in 87 and these were replacements. *Ochracea, albicans and Teschner* were unscathed.

Sophora tetraptera - our pride and joy had reached 3m [10ft] and although reasonably sheltered it lost its leaves and finally gave up the struggle to sustain new leaves in July. On digging it up we found the roots were OK - maybe it could have regenerated from the roots? Fortunately we had a cutting!

Sophora microphylla? - a seedling which in fact has less leaflets per leaf than our tree had - survived very well. Seems to me that someone should unscramble the names and descriptions of the Kowhai as the reference books are confusing. What is more, the wild Kowhais we saw in the hills of NZ one cool spring were leafless and flowering. There are probably fully hardy selections to be found!

Callistemon rigidus - our 3 year olds were badly hit and lost nearly all their tops. However we now have about 30cm [1ft] new growth from the base. They were wiped out in 87.

Eucalypts - one *gunnii* and one *moorei* were virtually unharmed. We lost one *gunnii* in 87.

Acacias - Four two year olds from Jeff Irons' seeds were in the cold greenhouse. Only *cubeanensis [?]* has survived and unhappily at that. Lost *retinoides, longifolia* and *terminalis*.

Olearias - have struggled up from the roots in the garden.

Anigozanthus flavidus - survived outside but not flowering this year.

Sollya heterophylla - this beauty on a west wall did not survive.

Pittosporum tenuifolium 'Variegatum' - bitten but fully recovered. We lost one in 87.

Drimys lanceolata - top growth taken off but sprouting from lower down.

Phormium tenax [purple form] - just survived but not flowering.

Hoheria sexstylosa - just survived but not flowering.

We have noted that at Wakehurst the following also came through well ; *Grevillea rosmarinifolia* and *sulphurea, Telopea mongaensis* and *truncata*. We assume Wakehurst is only marginally better sited than we are, though better sheltered from the NE. We have therefore invested in similar varieties.

MIDDLESBROUGH by Sue Hyams

Late December brought North-east gales to the region. One of my 2m [6ft] high 'frost hardy' eucalypts, sown from T&M seed, snapped its trunk, 30cm [1ft] above ground level. In June, regrowth appeared from the remaining stump.

There were 4 days in January when the temperature dropped below 0°C. February was the coldest month, and also the month when most damage to plants occurred. For 9 nights, from Feb 6th to Feb 14th, the temperature fell below freezing; the lowest temperature recorded was -4C on the 14th. For approximately 90 hours, from February 6th to 10th, the temperature remained below freezing. From February 7th to 13th, snow fell or lay on the ground; maximum depth of 35cm [14 inches].

The snow was the sticky big flakes kind, which clung to the branches of conifers, eucalypts, *Olearias* etc. Between heavy snow showers, plus first thing on a morning and last

continued over page

continued from previous page

thing at night, I would venture out to knock the heavy snow off as many tree boughs and shrubs as possible to prevent breakage of branches. The eucalypts, ranging in height from 5 feet to 10 feet were almost bent double after each heavy snowfall. *Olearia scilloniensis*, at 1,5m [5 ft] high, was also heavily weighed down, as was *Pittosporum tenuifolium* at 60cm [2 ft], and *Olearia macrodonta* at 1,2m [4 ft]. Shorter plants such as *Olearia nummularifolia, Cassinia vauvilliersii, Bursaria spinosa*, and *Melaleuca* [unknown species ; Chiltern Seed variety] were totally covered with snow and remained so for over seven days until it thawed. The snow obviously protected many plants, insulating them from the cold easterlies. Only the tips of Bursaria spinosa poking out above the surface of the snow were scorched in the north east gales which accompanied the snow.

Eucalyptus globulus surprised me by its resistance to both the snow and the east winds. Three specimens in my garden suffered very little wind scorch. There has been much regrowth since February of all plants, especially the eucalypts. The *Melaleucas*, growing beneath eucalypts, appeared to have died after the snow melted [they were green and healthy looking before the snow came]. The foliage was brown and easily snapped off. However, new foliage sprouted in May. 'Frost hardy' eucalypts grown from T&M seeds, and planted out at a year old in 1989 had their foliage browned in the cold north east winds during February. The other eucalypts didn't suffer this scorching.

PLANTS OVERWINTERED IN GREENHOUSE
minimum temp of 5°C maintained.

Callistemon speciosus, Grevillea robusta, Syzygium smithii, Bursaria spinosa, Kunzea baxteri, Dryandra praemorsa, Banksia serrata, Leptospermum [unknown species, Chiltern Seeds variety], *Melaleuca* [unknown species, Chiltern Seeds variety], Grevillea 'Canberra Gem', *Billardiera longiflora, Brachyscome rigidula, Correa decumbens, Olearia phlogopappa, Helipterum albicans, Prostanthera rotundifolia.*

PLANTS GROWING IN THE GARDEN

Melaleuca [unknown species ; seed obtained from Chilterns, planted 90], *Olearia nummularifolia* [planted 89], *O. haastii* [planted 83], *O. macrodonta, O. scilloniensis* [both planted 86], *Cassinia vauvilliersii* [planted 89], *Pittosporum tenuifolium* [planted 90], *Bursaria spinosa* [planted 90], *Eucalyptus gunnii* [planted 86], *E. pauciflora, parvifolia, coccifera, debeuzevillea, perriniana, niphophila* [all planted 88], *E. globulus* [planted 89 and 90], *E. viminalis* [planted 89], *Eucalyptus* [unknown species ; seed obtained from T&M planted 89], *Hebe 'Carl Teschner'* [planted 85].

CASUALTIES - BOTH UNDER GLASS

Helipterum albicans. Foliage became damp and mouldy and gradually rotted away. I overwintered it successfully the previous year. It was planted in a 15cm [6"] half clay pot in ericaceous compost.

In March 1991, one of my four *Dryandra* plants died after showing browned, wilted foliage. Like the other three, it was growing in a 10cm [4"] plastic pot with ericaceous compost. The plant was a foot high. I suspect that the increased sunlight leading to me giving it extra water, led to its death.

PEAT - a note by Jeff Irons

Young children have enquiring minds, and we are all familiar with the barrage of questions that comes from them. Older people tend to accept things and not to question them. Sometimes it pays to adopt the juvenile attitude, and to question statements.

We all know that peat is sterile. The gardening experts tell us that it is - over and over again. Is it really as simple as that?

When a loaf of bread comes from the oven it is sterile, but when left out in the air, mould grows on it, quite soon under some conditions. Wounds left open to the air can be infected. On the other hand, mould does not grow on the contents of an opened bag of peat, neither does it get invaded by insects - have you ever found woodlice or snails in your peat? Why is this so? Why does not peat succumb to the airborne organisms? Does peat contain something which kills things that land on it?

These are all legitimate questions.

In fact, peat is not sterile. As long ago as 1930 an article in the American Journal of Science presented data which showed that the oxygenated surface layer of a sphagnum peat bog [the top 50cm] contained about 100,000,000 cells/g of aerobic bacteria, fungi and actinomycetes. Actively rotting material has only about 100 times as many. Even the deep layers of peat contain about 100,000 cells/g of anaerobic bacteria. The peat is not sterile, but it does contain something which prevents bacteria from growing.

That substance is called sphagnan, and it decays into humic acid. Its special property is that it can lock up nutrients, especially nitrogen [as ammonium ion], so that they are not available to bacteria. The bacterial cells are not killed, but since there are no nutrients available, they cannot grow. That is a condition which is very different from death.

The sphagnol theory of anti-microbial activity recounted in the Encyclopaedia Britannica has been discredited.

MOUNTAIN RIBBONWOODS by Brian Halliwell

The peak of display from shrubs in British gardens comes in spring. Shrubs which flower in summer are especially welcome. From the South Island of New Zealand come 2 which are deciduous : *Hoheria glabrata* and *H. lyallii* which flower in July and August. The former which occurs on the wetter western side of the Southern Alps in forests, on their margins and in alpine scrub upto 1250m [4000'], has leaves which at maturity are glabrous. *H. lyallii* to be found on the drier eastern side amongst lowland and alpine scrub and along forest margins has mature leaves which are covered with grey hairs. It is doubtful if these are sufficiently distinct for both to warrant specific rank.

In the wild these make small trees upto 6m [20 feet] in which the old bark peels off in strips, which suggests the common name. When in cultivation in British gardens, they are usually shrubs which even when old, rarely exceed half the height reached in the wild. Alternate leaves are more or less triangular in outline on longish petioles and with double-toothed margins. Bunches of between 2 and 5 broadly cup-shaped flowers some 50mm [2 inches] in diameter produced in upper leaf axils are composed of 5 white petals. In warm summers, seed capsules may be produced.

Although hardy over most of the British Isles, their soft wood is liable to infections by coral spot fungus especially following spring frost damage or when wood is not properly ripened in a cold wet summer. When planting in a garden, avoid frost pockets; choose an open position in full sun where there is air movement. They will grow equally well in an acid or alkaline soil as long as it is well drained and supplied with organic matter. As flowers are produced on current season's growth, they benefit from hard pruning in March. Following pruning, apply a dressing of a general fertiliser at the rate of 25g per square metre of root run. Ensure that the nitrogen is balanced by potash; the former stimulates growth whilst the latter provides protection against disease infection and helps to ripen new wood. An annual mulch of compost or fine bark fibre is beneficial.

When seed is available it provides an easy method of propagation. As with many New Zealand plants, seedlings pass through a juvenile stage when leaves can be smaller, shorter and deeply lobed. More usual for propagation is to take stem cuttings of new growth in late May or June and root them in a closed frame.

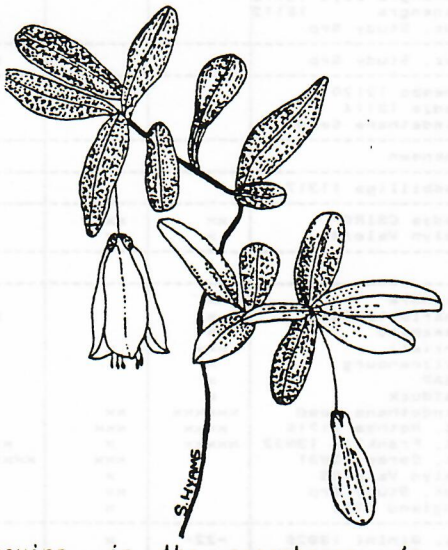
BILLARDIERA LONGIFLORA PURPLE APPLE BERRY by Sue Hyams
FAMILY PITTOSPORACEAE

Billardieras are delicate twining plants found only in Australia and named after Jacques Julien Houton de Labillardiere [1755-1830], an 18th-19th century French botanist who visited Western Australia and Tasmania in 1792-93, as part of the expedition with d'Entrecasteaux in search of La Perouse Strait.

Billardiera longiflora is widespread in Tasmania, in the eastern half of Victoria and in the southern coastal ranges of New South Wales. It is found generally in damp shaded areas of forests and gullies.

The purple appleberry is a twining shrub with wiry stems, climbing to 3-6m [10-20ft] high. The leaves are alternate, narrow elliptic to linear, dark green, 2.5cm [1"] long and 3.5mm [0.2"] wide. The flowers are greenish-yellow, sometimes tipped with purple, bell-shaped, 1-3 cm [0.4 to 1.2"] long, produced singly on long pendulous stalks. There are five stamens, sometimes protruding the petals, the anthers of which are blue. The fruits are purple, shiny ovoid berries about 2 cm across. Flowering occurs spring and summer.

My own specimen was bought as a plant in June 1989, in a 7cm [3"] pot and about 20cm [8"] high.



Now growing, in the greenhouse, in a large planter, 45cm x 45cm [18" x 18"], along with Callistemon speciosus and Bursaria spinosa, it has grown through the other plants to flower for the first time this summer. The flowers are a lovely creamy colour with purple veining towards the tips of the petals. Nearer the sepals, the creamy colour takes on a touch of green.

EUCALYPTUS HARDINESS TEST 1990/91 IN GERMANY by Thomas Ross

BAD SODEN/TAUNUS - alt 200m, LOWEST TEMPERATURE -13,5°C, without snow cover,

SPECIES	PROVENANCE/SOURCE	NO DAMAGE	TIPS ONLY	TIPS + LEAVES	MANY LEAVES	WOOD DAMAGED	CUT TO GROUND	DEAD
ARCHERI	Walduck	xxxxxxxx						
CAMPHORA	Aus.Seed Co			x	xxx bark split	xxx		
CHAPKANIANA	Euc.Study Grp						xxx	
COCCIFERA	Pine Lake 14819	xxxxxxx	xx	x				
	Orriell	x						
	Bot.G.Antibes		x					
	Euc.Study Grp	xxx						
	Great Lake/Walduck					xxxxx	xxxxxx	x
	Judd's Plains/Walduck					x	xxxxx	
	Thompson & Morgan		x					
	unknown	x						
DALRYMPLEANA	Walduck		x					
	Piccadilly C. 12190				x	xx	xx	x
	Celyn Vale/GB			x		x		
	Nindethana Seed				x			
	unknown prov.			xxxx				
	Miena/Walduck	xx		xxx	x	xx	x	
DELEGATENSIS	Ben Lomond 13089	x			x	xxx		
	The Pinnacle 13064	x	x	x		xxx		
	Mt. Brest 15053				x	xx	x	
	Island Bend 13069	x	x	x	x	x		
	Leura Gap 13054		x		x	x	x	
	Thredbo 13061				xxxx	xx		
	Walduck [?]						x	
FASTIGATA	Captain Flat 15055						xx	
	Gingkin 15111							x
	11811 and 15115 did not germinate satisfactorily							
FRAXINOIDES	Canberra 15309						x	
	Badja 12164							x
	Badja 11970 and Wadbilliga 11809 succumbed to -10°C earlier							
GLAUCESCENS	Mt. Guynear 15020	xxxxxx	x				x	
	Tinderry Pass	x				x	x	
	England [T.Bayles]		x	x				
	Walduck	x						
	Celyn Vale/GB	x						
	uknown	x						
GUNNII	Novella Neck/Walduck	xxx	x					
	Alma Tier 14806	xxxxxxx						
	Alma Tier/Walduck	xxxx						
	Pine Tier/Walduck		x	xx				
	Waddamana/Walduck		x	xxx	x	x		
	Orriell				x			
x IRBYI	Walduck/Tas			x				
KYBEANENSIS	Nindethana Seed	x						
	Smiggin Holes 12452		xxxxxxxx					
LAEVOPINEA	Scone 11591	eliminated by -10°C earlier						
MACARTHURII	Kanangra Boyd 15113						xx	
	Kanangra 15112					xx	xx	
	Euc. Study Grp						x	
MITCHELLIANA	Euc. Study Grp			x				
NITENS	Anembo 12120					xx	xxxxxxxx	
	Badja 12114						xxx	x
	Nindethana Seed					x		
NITIDA	unknown						x	
PALIFORMIS	Wadbilliga 11317						x	
PARVIFOLIA	Badja CSIRO	xx	xx					
	Celyn Vale/GB	x	x					
PAUCIFLORA								
SSP NIPHOPHILA	Kiandra	xx						
	Charlotte Pass	x		x				
	Ramshead	x						
	Orriell	xxx	x					
	Ivijnenburg	x						
	SGAP	x						
	Walduck	x						
	Nindethana Seed	xxxxxx	xx					
	Mt. Notham 11716	xxxx	xxx					
	Mt. Franklin 13832	xxxxx	x	xx				
	Mt. Coree 13831		xxx	xxxxxx				
	Celyn Vale/GB		x					
	Euc. Study Grp		xx					
	England [TB]		x					
SSP DEBEUZE-VILLEI	Mt. Ginini 13829	-22-	x					
	Mt. Gingera 13830	xxx	xx					
	Celyn Vale/GB		x					
	England/T.Bayles			x				
	Mt. Franklin 1750m	xx		xx	x			
PERRINIANA	Smiggin Holes 12442	xxxxxxxx						
	Thompson & Morgan	x						
	Tasmania/Callahan	x						
	Orriell	xxxxx	x	x				
	unknown	xxxxxx	x	xxxx				
	Nindethana		xx					
PULVERULENTA	Bredbo 11595				x		xxx	
	12769						xxx	

SPECIES	PROVENANCE/SOURCE	NO DAMAGE	TIPS ONLY	TIPS + LEAVES	MANY LEAVES	WOOD DAMAGED	CUT TO GROUND	DEAD
RODWAYI	Shannon 12153	x	x	x				
	Ctrl.Plateau/Tas	xxx	xx	x		xx		
RUBIDA	Walduck						x	
SAXATILIS	Euc.Study Grp					x		
STELLULATA	Cotter Flats 13956		xxxx	xx				
	Melb.Bot.G. 1000m		x	xxx				
	unknown	xx						
SUBCRENULATA	Walduck/Tas		xxx			x	x	
VERNICOSA	Walduck/Tas		x	x		x		

NCCPG COLLECTION OF DWARF HELICHRYSUMS held by Roger Stuckey.

'I hold the dwarf Helichrysum collection for the NCCPG, being mainly interested in alpine and rock garden plants. When first asked to be the collection holder, in my ignorance I thought that there was a collection somewhere and that I was being selected to look after it. Having accepted, I was then told to 'go out and get your collection'. I have been trying to do this for some time, and I notice that you were asking for reports on how members' Australasian plants had come through the last winter. Unfortunately I have lost several plants in my collection :

Helichrysum ericifolia, chionophyllum, scorpioides, argyrophyllum, confertum, pagophyllum [although I have just bought this one again], *arwae, sessiloides* [doubtfully named?], and *Silver Stream*. A seedling from *Silver Stream* survived however. These were all in the alpine house which has open ventilation all the year round, with doors and windows kept open. The plants were mainly in large clay pots, but were not sunk in sand - they were resting on the soil of the alpine house. The compost was kept on the dry side with only the occasional watering, and it is difficult for me to decide whether I kept them too dry or whether it was the frost that killed them. *Helichrysum lanatum* and *sessile* and a small *arwae* survived in the same alpine house, as did several Mediterranean plants. *Nardophyllum bryoides, Cyathodes colensoi, Hibbertia procumbens, Sophora prostrata* and another dwarf *Sophora* hybrid, and several *Clematis marmoraria* and *marmoraria x petriei* and *marmoraria x paniculata* crosses survived, as did several dwarf *Leptospermum* hybrids. *xClematis Fairy x carlmannii Joe* did not, and neither did the *Leucogynes*, nor a plant of *Carmichaelia enysii, Aciphylla subflabellata* died, and cuttings of *Acacia verticillata* survived in a frost free greenhouse, but a large one in a trough outside did not, although it was in a sheltered position.

Interestingly, plants that survived outside [some for several years], either in the open ground [slightly acidic clay soil] or in troughs were :

Helichrysum sessile [T], *plumeum* [OG], *frigidum* [OG], *selago* [OG], and [*tumida* [OG] and *macrophylla* [T], a variety of dwarf hybrid *Leptospermums* [OG] such as *Kotuka, Kea, nicholsii nanum, Kiwi, etc., Cyathodes colensoi* [T] and several other of the *epacridaceae* in pots, *Carmichaelias enysii* and *monroi* [OG], *Nardophyllum bryoides* [T], *Hibbertia procumbens* [T], *Cotula atrata luteola* [OG] and *Perezia recurvata* [OG]. *Coprosma petriei* has proved to be reliably hardy outside and *Billardiera longiflora* and *Grevillea sulphurea* survived last winter in a sheltered spot.

I find that it is difficult to grow many of the New Zealand plants outside in my garden, not always because of the cold in the winter although this does create some losses, but because of the summer drought and hosepipe bans. The last two summer's droughts have seen off nearly all of my *Aciphyllas* and every *Celmisia*.

My brother lives in Adelaide and after several entreaties finally went out and collected some native seed, but not being a gardener, he mixed the lot up and sent me a package containing a cupful of mixed seed. These are germinating splendidly, so I may in the future be able to either distribute plants or my seed to the Society. I recognised the *Leptospermum* seed pods and also something that could have been a member of the *Proteaceae*, as well as some *Leguminosae*, so it was very much a mixed bag.

If you are ever in Devon on holiday, please remember to look me up.

*Jeff Irons' *Clematis Fairy* survived in a cold frame.

TWO CRASPEDIAS by Jeff Irons

The name *Craspedia* comes from the Greek kraspedon - a border, and is a reference to the hairs on the leaf margins of the New Zealand *Craspedia uniflora*. The genus has about 60 species; 40 in Australia, the remainder in New Zealand. Naming is very confused and a complete revision is needed. The species all have flowers which consist of partial heads, each containing 3 to 8 florets. They are clustered together to make a compound head. The compound heads can be any colour from creamy white to dark orange. They differ from those of *Calocephalus* in that the achenes [seeds] are covered with small pimples called papillae.

A consequence of the muddled naming is that in Britain *C. uniflora* and *C. glauca* are usually regarded as being the New Zealand and Australian forms of the same plant. Even the 'Plantfinder' treats the two names as synonyms. That may be the case after revision, but at the present time they should be regarded as two separate species.

Craspedia glauca is the Australian plant, sometimes found in alpine and specialist catalogues. It occurs in all States of the country and has the common name of 'Billy Buttons'. *Craspedia macrocephala* and *C. gracilis* are synonyms. It is very variable, both in the leaves and in the indumentum found on them. Typically there is a basal clump of soft green hairy leaves ranging from 5-15cm [2-6"] long, narrowed into a petiole, and 2-2,5cm across [approx 1"]. Each flowering stem carries a single bright golden flower head, usually shaped like a hemisphere. Leaves on the 25cm [10"] stem are about 3cm [1,2"] long and 0,6cm [0,25"] wide, decreasing in size as they go up the stem. A good form from Tasmania's Cradle Valley has attractive pale lemon yellow flower heads on 18cm [7,1"] stems.

The following varieties are recognized:

var. alpina [formerly *C. alpina*. From Tasmania and Victoria, it has both foliage and stems covered with white woolly hairs, white flowers. The leaves are long not wide, as in the N.Z. *C. incana*. The latter also has yellow flowers and dies down in winter.

var. glabrata. Tasmania. Has narrow leaves which appear glabrous. White flowers 10-12mm [approx ½"] across. Found only in wet montane grassland.

var. gracilis. Tasmania. Has narrow leaves, whitish with glandular hairs. Yellow flowers 1,5-2cm [0,6-0,8"] across.



var. macrocephala. Tasmania. A robust plant, leaves up to 25cm [10"] long with short stiff hairs. Flower stems can be up to 1m [3ft] long and the yellow flower heads are 2,5-3,5cm [1-1,4"] across.

Craspedia glauca adapts to most soils and grows well in sun or shade. Though evergreen it will stand up to soil which is waterlogged in winter. Flowering is in May - June. This species does not have the marginal leaf hairs of *C. uniflora*. Propagation is from seed or by division. Young seedlings should not be planted out until they are a year old. If planted earlier they are likely to be eaten off by slugs or snails. Established plants benefit from a scattering of slug pellets in autumn, but seem not to be attacked in spring. Though this has never happened with mine, plants are reputed to die back in a drought, and put up new growth when rain comes. I think this must be a reference to the very dry conditions experienced in the Victorian summer. The soil there gets very much drier than even the gravels on the terraces of rivers such as the Great Ouse and Kennet.

Craspedia uniflora [Woollyhead]
This, the New Zealand counterpart of *C. glauca* has soft leaves 5-12cm [2-5"] long and up to 3cm [approx 1"] wide, their margins whitened by white woolly hairs. These hairs are an identification feature. Flower stems can be up to 45cm [18"] long, but in the forms usually available are more likely to be about 10-12cm [4-5"] long. The flower heads are more flattened than those of *C. glauca*. They are usually whitish or cream, but can be yellow, and are about 1cm [0,4"] across. The occurrence is usually in alpine and sub-alpine herbfields and in stony places. One variety is recognised:

var grandis has larger leaves - up to 15cm [6"]; [the usual var. has leaves about 7 x 1,5cm [2,8 x 0,6"]. The flower heads are about 2-3cm [approx 1"] across compared with the usual 1cm [0,4"].

C. uniflora is found in both the North and South Islands of New Zealand, but var. grandi is confined to the southern part of the North Island. In drier parts of the South Island it is replaced by *C. incana* or *C. lanata*.

continued on next page

Craspedias continued

Propagation is from seed or by division. The same precautions against slugs and snails should be taken as are recommended for its Australian counterpart. I have not found this species to be as easy as *C. glauca*. Neither has it been self fertile. If seed is required at least two plants should be grown, and fertilisation should be ensured by rubbing together flower heads from different plants. The best seed set comes from heads that are newly opened.

Both of these two *Craspedias* are attractive garden plants. They are hardy to at least -12°C, and withstand their roots being frozen. Their distinctive flower heads give an unusual touch to a rockery, and the May-June flowering time gives colour after the spring flush. Because the flower heads lose their colour on drying, they are not recommended for use as dried flowers.

HONEYBEES

A recent report in 'Australian Natural History' stated that honeybees are at the centre of controversy throughout Australia. A number of scientific studies has pointed to their deleterious effects on Australian native flora and fauna. The honeybees [Apis mellifera] were introduced to Australia about 150 years ago. Native to Europe, Africa and Asia they were brought to Australia to provide honey and pollination of crops in the early settlement days. However, they did not remain confined to the beekeepers' hives but escaped into the wild and it is here that they are thought likely to have an impact of native flora. This could occur in a number of ways.

1. The removal of pollen from flowers by honeybees may lead to a reduction in the amount of pollen picked up on the bodies of the plants' native pollinators and consequently to a diminished pollination service provided by them.

2. The reduced availability of nectar and pollen may reduce the numbers of native pollinators visiting the plants, which could also lead to reduced pollination of the plants. On the other hand, the presence of honeybees in addition to native pollinators could lead to pollination and resulting plant reproduction above natural levels. With either scenario, changes in plant abundance could occur.

3. Honeybees may visit different numbers of flowers per plant or fly different distances between plants than native pollinators. The patterns of pollen movement between plants and hence the patterns of plant reproduction or the genetic composition of the seeds may therefore be different for honeybees compared to native pollinators. This could also lead to changes in the abundances of some plant species.

4. As a result of differences in foraging behaviour between honeybees and native pollinators, the presence of honeybees may affect the future course of plant evolution in Australia.

A number of studies has indicated that honeybees have a negative effect on Australian native plants. David Paton of the University of Adelaide found that, as honeybee density on *Callistemon rugulosus* increased, the percentage of flowers setting fruit decreased. Another study, by Scott Mooney in the Manly Dam Reserve in the northern suburbs of Sydney, this time decreasing the honeybee density, found a higher fruit set in *Banksia ericifolia*. Graham Pyke, Australian Museum, comments that in some years, honeybees remove so much pollen from Christmas Bells [*Blandfordia nobilis*] flowering in the Barren Ground Nature Reserve near Jamberoo, NSW, that the effectiveness of pollen transfer by honeyeaters, the native pollinators, is reduced and seed production consequently reduced. Paton found the same effect for honeybees visiting *Correa reflexa*.

Sue Hyams

POMADERRIS APETALA
a note by Jeff Irons

In 1985 I received seeds labelled *Pomaderris elliptica* from Graham Hutchins, of County Park Nursery. He had collected them near the Prosser River in Tasmania, between Orford and Sorrell. A year later, when my seedlings were planted out, I told Graham that in in my opinion the seeds had been of *P. apetala*, not *P. elliptica*. That opinion was based on leaf shape and tomentum colour. The one plant I retained flowered in the summer of 1991. That flowering produced the insignificant green flowers of *P. apetala*, not the showy yellow ones of *P. elliptica*. My prognosis had been confirmed. Others less knowledgeable will have received similar seed, so there is a need for caution when shown any plant purported to be *Pomaderris elliptica*.

The plant in my garden suffered only slight leaf injury during the 1991 winter. Since the seed was collected at a low level, possibly near Buckland, that is remarkable. The flower heads began to form in March - or rather that is when I first noticed them, but they did not open till late June. They were unaffected by a spring frost which devastated many other plants. Nevertheless I believe that this is not a plant for anyone other than a collector of the uncommon. Although the leaves are attractive, the flowers and fruits are insignificant. The species has little to recommend it; it is not outstanding.

TROUBLE WITH ALGAE?

Does your garden pond suffer from algae? If so, a chance discovery by the Agricultural Research Council's Aquatic Weeds Research Unit should interest you. The Unit heard about a farmer who had been using barley straw as a hide for pigeon shooting. As it rotted, the straw fell into a lake, and cleared up the algae! Kew Gardens has experimented by putting a bag of straw into a water feature, and found that it did indeed clean up the water. The reason for the effect is still unknown.

A GIANT AND A DWARF by Brian Halliwell

Belonging to *Fagaceae*, *Nothofagus* is a genus of 35 species which are to be found in New Guinea, New Caledonia, Chile, Argentina, Australia and New Zealand. All are woody, either evergreen or deciduous but with the majority being trees. There is a similarity amongst some species with the beeches of the Northern Hemisphere, species of *Fagus*, a genus in which they were once included. *Nothofagus* means false beech but botanists over the years have suggested that this generic name was wrongly spelled when it came to be used for the first time. What was intended was *Notofagus* which means southern beech which has become a general common name.

Of species with a more southerly distribution introduced into British gardens, deciduous kinds have proved hardier than evergreens. All evergreens are somewhat tender and are only reliable in the milder parts of south western England, western Scotland and Ireland. In this article I am going to discuss the tallest and the smallest species of this genus both of which occur in Tasmania ; *N. cunninghamii* and *N. gunnii*.

N. cunninghamii which has a common name of myrtle or myrtle-beech is a common forest tree in Tasmania but is less common in Victoria where it is to be found in some southern cool shaded forests. It occurs as an understorey in rain forests where annual rainfall exceeds 1m [40 inches]. In deep soils in lowland forest this species can make a tree upto 62 metres [200 feet] in height. Myrtle can extend to the top of mountains at 1230 metres [4000 feet] where it will be no more than a small, much branched shrub. In the Styx Valley in Tasmania it occurred as an understorey beneath *Eucalyptus regnans*, a common association. These Eucalypts are forest giants and for a few years one of those in the Styx Valley held the record for the world's tallest tree until it was reclaimed by a new discovery in California of a taller giant redwood. At about 200 years *Eucalyptus regnans* reaches the end of its life, trees eventually dying and in the Styx Valley had left almost pure stands of *N. cunninghamii*, which were magnificent specimens over 62 metres [200 feet] high and nearly as much in spread.

N. cunninghamii is evergreen with reddish young growth and dark green leaves 12.5mm to 18mm [½-¾"] long which are oval or triangular in outline and with margins that are singly toothed. There are separate non-showy male and female flowers which when pollinated are followed by rather woody capsules like those of common beech, *Fagus sylvatica*, in miniature.

This species was named by Sir William Hooker, a director of Kew Gardens, for Allan Cunningham who had been sent out to Australia by Kew to collect plants. Although some plants were collected, more of his time was spent in exploration. He probably discovered the plant on a brief visit to Macquarie Harbour on the west coast of Tasmania in 1819, an area which even today has been little explored. The first plant had arrived at Kew in 1847 but in the next decade more seeds must have come to England for by 1860 planting of saplings was taking place in private gardens. Many of these failed to survive and there were only occasional subsequent plantings in gardens in the warmer parts of the British Isles. In 'The Trees of Great Britain and Ireland' by Elwes and Henry, published in 1906, there is mention of a tree at Fota which at 50 years old was 15m [48 feet] high. In the 8th edition of Bean's 'Trees and Shrubs Hardy in the British Isles' there are trees about 15m recorded for Wakehurst Place in Sussex, Caerhays in Cornwall, Stonefield in Argyll, Mount Usher in Eire and Rowallane in Northern Ireland.

Nothofagus gunnii, Australia's only winter deciduous tree is endemic to Tasmania. It is to be found where rainfall is high at between 925 - 1385 metres [3000 - 4500 feet]; at upper forest margins, amongst alpine scrub and in gullies on mountain moorland. Although at the lower part of its altitude range in a deep soil it is said to make a small tree upto 4 metres [12 feet], it is more usually a low growing, spreading, much branched shrub which rarely exceeds 2 metres [6 feet]. Plants growing in colonies become intertwined forming almost impenetrable barriers which has resulted in a common name of tangle-foot although deciduous or mountain beech are others.

In spring, sticky buds open to produce oval leaves upto 25mm [1 inch] in length which have prominent veins and crenate margins. In summer they are a light green but turn to brilliant gold before they fall at the onset of winter. Greenish unisexual flowers are produced in leaf axils and following pollination are fertilisation tiny woody capsules appear.

This was named for its discoverer Ronald Campbell Gunn who found it on Mount Olympus near to Lake St. Claire in Northern Tasmania in 1847. Sir William Hooker was a friend of Gunn to whom he dedicated Flora Tasmaniae which was published in 1860. They carried out a voluminous correspondence over many years and Gunn sent many Tasmanian plants back to Kew in Wardian cases.

It is doubtful if this species has ever been in cultivation. There are mentions of it with descriptions in a number of books including Bean and Elwes and Henry but no indication it has ever been grown in gardens. Mr K Gillanders, a plant collector, air freighted a plant to Kew in 1982 which is still alive. This is a delightful shrub which would be a highly desirable addition to any garden. It is hoped that enthusiasts will persevere to obtain plants and learn their cultivation. Even in Tasmania this species is not easy to grow.

REVISION OF MELALEUCA

Some sections within the genus *Melaleuca* have been revised over the past few years and other sections will be revised in the near future. Some name changes have already been made and there is a distinct possibility that further name changes will occur. One of the most significant changes is the inclusion of several species in the genus ASTEROMYRTUS.

Species which were previously *Melaleuca* and which are now in *Asteromyrtus* are:

A. angustifolia
A. arnhemica
A. brassii
A. lysicephala
A. magnifica
A. symphocarpa
A. tranganensis [this is a new species]

Some other changes are:

M. fulgens is now *M. fulgens subsp fulgens.*
M. steedmanii is now *M. fulgens subsp steedmanii.*
M. corrugata is now *M. fulgens subsp corrugata.*
M. tamariscina is now *M. tamariscina subsp tamariscina.*
M. irbyana is now *M. tamariscina subsp irbyana.*
M. sp 'Miles' is now *M. tamariscina subsp pallescens.*
M. erubescens is now *M. diosmatifolia.*
M. nematophylla is now *M. filifolia.*

There has also been some name changes in the genus *Callistemon:*

C. 'Tinaroo' and its various forms is now *C. recurvus.*

C. pungens is the name allocated to a species collected in the Severn River of S.E. Queensland. This is a purple flowered species and it is not known whether or not this is a separate species to that previously known as *C. 'Severn River'* which is generally regarded as having pink/red flowers.

C. macropunctatus is now *C. rugulous.*

Callistemon viminalis is being increasingly referred to as *Melaleuca viminalis* so it appears highly likely that it will end up in the genus *Melaleuca.*

GERMINATION OF NOTHOFAGUS GUNNII by Brian Halliwell

In Newsletter No.6, Jeff Irons mentions the difficulty of germinating seeds of this species. I have collected seed from the wild on a number of occasions and whilst at Kew I repeatedly received samples from several people. From only one lot of seed was there any germination ; one sickly seedling appeared, lingered briefly and then died. I read all I could find about seed production, viability and storage of Nothofagus in general. It was suggested that like northern beeches, there are only occasional good seed years; for *Fagus sylvatica* this seems to be about 1 in 7. Seed of *Nothofagus* have short viability and require moist storage rather than dry. I wrote to various friends in Tasmania asking that future seed consignments, as fresh as possible be packed with damp moss in plastic packets and air-mailed to Kew. Two years later seed received from 2 different people packed as requested gave good germination.

I think though, that germination is only one problem. Members of the Tasmanian branch of the Society for Growing Australian Plants, do not find seedlings easy to establish and subsequent plants when transferred to a garden are not easy to keep. Perhaps mountain beech needs a special symbiotic root fungus.

TELOPEA AND SLUGS

Last summer slugs invaded my greenhouse and siting themselves underneath the flower pots, their offspring began to feed on my seedlings. One seed tray contained *Telopea mongaensis, T. speciosissima* and *T. truncata* - [*T. oreades* is a flowering size plant in the garden]. The slugs attacked the leaves of *T. mongaensis* but went for only one plant of *T. truncata; speciosissima* was spurned.

Have I unveiled a new study area for would-be Ph.D students? Only time will tell.

Jeff Irons

MICROSTROBOS by Jeff Irons

Microstrobos is a genus in the southern conifer family Podocarpaceae. The genus name comes from the two Greek words micros and podos, meaning small cones. There are just two members in the genus. One of them, *Microstrobos fitzgeraldii* is found only in the Blue Mountains of NSW, Australia. Legend has it that this rare conifer grows on rock ledges, where it is drenched in the spray from one particular waterfall. The story was recounted as recently as 1990 in 'Australian Natural History ', Vol. 23, No. 3. Hillier's Manual states that it is 'usually found at the foot of waterfalls in the Blue Mountains'.

In reality *Microstrobos fitzgeraldii* is only found beside waterfalls where the 200m sandstone cliffs face southwards into the Jamison and Megalong Valleys, forming the abrupt edge of the Blue Mountains plateau. Here they are well shaded and have a constant supply of water dripping or blowing over them.

There are a mere 6 locations where *M. fitzgeraldii* can be found. The first systematic study of the distribution of *Microstrobos* was carried out in 1980 by researcher Jim Smith who discovered 203 plants. More recently Mr Wyn Jones of the NSW National Parks and Wildlife Service has been undertaking research into *Microstrobos*. He has discovered at least 300 plants; the difference in numbers being due to well-hidden and inaccessible specimens that were previously overlooked. It is also difficult to determine where one plant stops and another one starts, due to their creeping habit.

Canberra Botanic Gardens has found that *M. fitzgeraldii* 'does not need to be grown in wet or humid positions'. In a private communication Gordon Haddow of Kenwith Nursery has said that his stock plant grows in dense soil, and over 10 years has received no water other than rain. In a dry part of N.W. England my plant has been watered only in 1989 and 1990. Even then it was to a limited extent. These three experiences, in different places, indicate that the species does not need an atmosphere which is permanently saturated with water vapour. It could have a wide application in gardens.

M. fitzgeraldii makes an open rounded bush up to 60cm [2ft] high and up to 92cm [3ft] across. It has pendulous branchlets and has fresh green young growth. The leaves are very small, pressed closely together, and overlap like roof slates. Individual leaves are no more than 3mm long and 2mm wide [0,15 x 0,1 inch]. A 10 year old plant may be about 38cm x 51cm [15 x 20 inches]. It is an excellent container plant, coping well with confined root conditions. The spreading shape and pendulous branchlets combine to give an elegant and unusual plant.

The other member of the genus, *Microstrobos niphophilus* comes from Tasmania. Ultimately as much as 2,6 m [8½ ft] high, it is a much denser plant than *M. fitzgeraldii*, and slower growing. At 10 years old it will be less than 30cm [1 foot] high. The habit is tight, with short stiff branches. The natural occurrence is in the sub-alpine parts of Tasmania, around lakes and watercourses. My experience of this species in cultivation has led me to think that it is less tolerant of winter wet than is its relative. My own specimen was transplanted to be near to *M. fitzgeraldii*, but died two winters later. In a better drained spot it had survived winters colder than the one which killed it. These two species are found in places which are about a thousand miles apart. Consequently they must have evolved when Tasmania was connected to mainland Australia by a land bridge. They are hardy to at least 10°F [-12°C] with no snow cover. Propagation is from hardwood cuttings taken in November, preferably with bottom heat.

Sources of Supply

Kenwith Castle Nurseries Ltd, Bideford, Devon, EX39 5BE.

Thuya Alpine Nursery, Glebelands, Hartbury, Glos, GL19 3BW.

PROSTANTHERA CUNEATA 'ALPINE GOLD'

The late Bill Cane is commemorated by *Banksia canei*. One of his better known introductions is *Prostanthera cuneata 'Alpine Gold'*, which is a selection from the wild. Jeff Irons has grown this plant for several years, and in 1990 supplied propagating material to a wholesale nurseryman. The consequence has been that it is now available from some of the garden centres which cater for discerning gardeners.

Prostanthera cuneata 'Alpine Gold' is distinguished by the yellow edge to its leaves. As with many other yellow leaved plants, the intensity of colour is related to light intensity. In a sunny summer some leaves will turn completely yellow, while in winter the colour disappears. If plants are kept under glass, the yellow colour never appears.

The habit is more upright than that of the usual form of *Prostanthera cuneata*. Flowering begins about a fortnight earlier, though there is an overlap between the two forms. A moist soil which never dries out is needed.

In Australia a variegated form of *Prostanthera cuneata* is grown. It is reported to be intolerant of wet summers and to be susceptible to fungus attack. Jeff has been unable to obtain viable propagating material of it.

A NEW HEBE

A chance hybrid Hebe called 'Rosie' should be seen in garden centres next year. It was found at Bransford Nurseries, and is claimed to be the first truly hardy pink flowered hebe. The flowering season is stated to be from June to Christmas, with the main flowering June to August. The parents are thought to be 'Great Orme' and one from 'James Platt', 'Morning Clouds' and 'Walter Buccleuch'.

THREE MELALEUCAS by Jeff Irons

Melaleuca is an interesting name. It comes from two Greek words, melas - black and leukos - white. Two opinions have been advanced for this name. One is that is arose because the first *Melaleuca* described had white branches against a fire blackened trunk. The other is that it describes the contrast between the white bark and the very dark foliage seen in some species.

The family is related to *Callistemon*, but in general its members are found in moister places. Instead of being free, as they are in *Callistemon*, the colourful stamens are in bundles. They divide into two groups, the southern ones and the northern. The southern ones do not fare at all well in the northern, summer rainfall, areas of Australia. There they succumb to root infections. Most of those grown in Britain are of southern origin, and the best commercial source is Noël Kingsbury's Sunbeam Nursery. Hillier's Manual lists a few as being hardy outdoors in mild areas, and my growing experience is limited to two from that list.

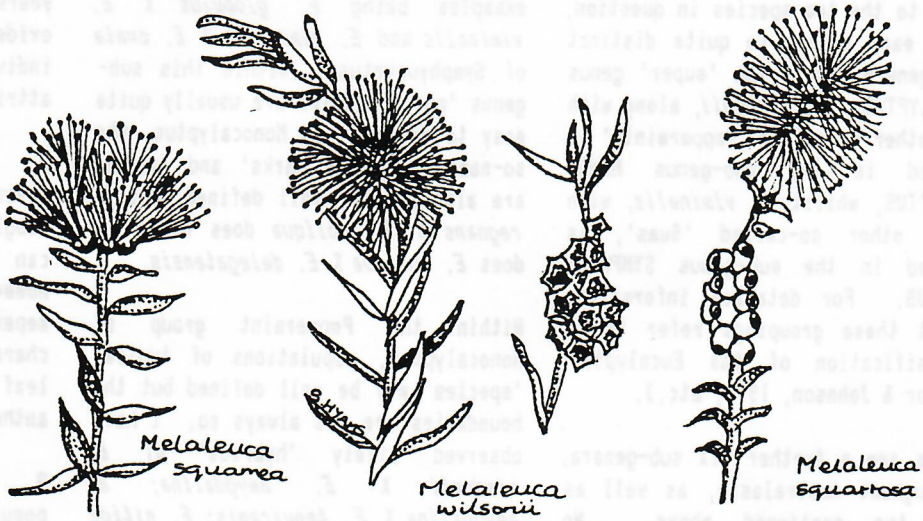
MELALEUCA SQUAMEA

My first seed sowing of this species was made in 1982. I was heartened to find that the 40 seedlings planted out survived the '83 winter, despite being frozen solid. Those that I planted in permanent positions flowered in '84 and '85 but died in the first cold windy winter. Subsequently I noticed one of my seedlings in a pot at Ness Gardens. The pot was at the end of an open polytunnel, and contained a 2m [6ft] high plant. Clearly it must have been frozen in the winter, but protected from the wind. I concluded that my plants had died from desiccation, when frozen soil stopped their roots replacing water which had been removed from their leaves by cold, dry easterly winds. When seed collected from plants on Tasmania's Tyndall Range was offered, I thought that it would be worth trying *M. squamea* again. The six seedlings that I kept were planted out in '89, and flowered in '91. I hope that their survival indicates that given a suitable provenance *M. squamea* can survive a severe British winter. The Tyndall Range stock is dwarfer than the plants grown before, and at their first flowering my specimens were about 0,4 to 0,6m [16 to 24"] high. They had survived two weeks of frozen soil and six weeks in waterlogged soil. Cold dry winds had not harmed them. In due course I hope to give English seed to our seed distribution.

M. squamea grows to a height of about 2m [6ft] and like all of its family benefits from pruning to keep it compact. It is not a wide plant, so can be pruned to a pillar shape, as little as 30cm [1ft] through. The dark green leaves are only about 4-8mm [0,2-0,4"] long and are close together on the leaves. The purplish flowers come in May and June, and are borne in terminal heads about 15mm [0,7"] long and across. Since extension growth does not begin till flowering is over, they are displayed well. Older plants have a peeling bark on main stems.

MELALEUCA WILSONII

We have been promised seed of *M. wilsonii*, and I shall be sowing some in 1992. This shrub is described as being 1-2m [3-6ft] high with flowers that are deep pink to magenta. The



MELALEUCA SQUARROSA

This is a very different plant from *M. squamea*. Like the latter it is erect, but the leaves are a fresh pale green, and the whole plant is much neater and tidier. Its habit is to make long upright stems, so the shrub has a nice elliptical shape. The specific name squarrosa means rough, and it refers to the ovate, concave leaves which are held away from the stems. Presumably they are thought to give a rough appearance. Perhaps the closest analogy is to a very open whipcord Hebe. The unusual leaves and stems make this a handsome plant in winter. The flower spikes are pale yellow, about 4-5cm [appox 2"] long and 2cm [0,8"] in diameter. They appear for about 3 weeks in June and July. The scent is strongest in the morning. Extension growth occurs before flowering, so they resemble a small bottlebrush. My only specimen flowered when it was 5 years old and about 1,8m [approx 6ft] high. It has been grown from seed of unknown provenance, and has suffered leaf and shoot damage in frosts of -14°C. It is a useful plant in flower arrangements, both in bloom and as winter greenery. It has not set seed. Perhaps 1991 will be different and see a seed set.

shape can vary from spreading to upright, sometimes covering the ground with a cushion effect. The leaves are pointed and at a wide angle to the stem in an opposite arrangement. Flowering should be in May. The special attribute of this species is its value as a cut flower. Even long stems are reputed to last at least a fortnight indoors. Hillier's Manual [1st edition] describes it as hardy in mild areas.

Reprinted from the Newsletter of the Tasmania Region SGAP

GALLIVANTING GUM TREES? by Alan Gray

[Or, The Hybrids you encounter, when you don't encounter Hybrids!]

In the last issue of the SGAP newsletter, Jan Parris gave an account of an enjoyable day she and others experienced in being shown how to 'sort out' hybrids between *Eucalyptus risdonii* and *E. viminalis*.

With respect to all concerned, I would like to point out that hybrids between these two species do not occur!

Unfortunately it has been, and in some circles still is, convenient to explain or dismiss INFRASPECIFIC and/or ECOTYPIC variation, particularly in *Eucalyptus*, as 'hybridisation' of one sort or another. Classic examples of infraspecific differentiation, attributed to hybridisation, can be found in 'A Survey of Eucalyptus Species in Tasmania', [Brett, 1937]. It's also worth pointing out that many 'new' *Eucalyptus* 'species' have later been shown to be hybrids between two compatible species! See 'A Key to the Eucalypts', [Blakely, 1937].

Back to the two species in question. They each belong to quite distinct sub-genera within the 'super' genus EUCALYPTUS. *E. risdonii*, along with the other so-called 'Peppermints' is placed in the sub-genus MONOCALYPTUS, whilst *E. viminalis*, with many other so-called 'Gums', is placed in the sub-genus SYMPHYOMYRTUS. For detailed information about these groupings refer to 'A Classification of the Eucalypts', [Pryor & Johnson, 1971, etc.].

There are a further SIX sub-genera, throughout Australasia, as well as the two mentioned above. No representatives of these occur naturally in Tasmania - an example of one is the widely planted ornamental 'Red-flowering gum', *E. ficifolia* of W. Australia, a species within the sub-genus CORYMBIA.

I would suggest that the apparent hybrids observed by Jan and others are ; either a range of variations of *E. risdonii* through forms of its closely related 'sister species' *E. tenuiramis*, OR a hybrid swarm resulting from interbreeding between *E. risdonii* and *E. amygdalina*, another 'peppermint' often found growing near or within populations of the former species.

It would be safe to say that, although *E. viminalis* is often associated with populations of the Peppermint species, it is an unlikely and innocent party in this instance of 'Hanky-Panky'!

The group commonly termed 'The Peppermints', the stronghold of which is Tasmania, consists of populations of trees which may yet be shown to be arguably 'stable' sub-species within a large and difficult-to-define super-species complex within the sub-genus Monocalyptus. This is a matter for some discussion, and I would prefer to leave it to the experts to make dissertation on this one!

I have observed a number of obvious *Eucalyptus* hybrids in the field and these have always been between species within Symphyomyrtus or between 'species' within Monocalyptus, some examples being *E. globulus* X *E. viminalis* and *E. viminalis* X *E. ovata* of Symphyomyrtus. Within this sub-genus 'good' species are usually quite easy to define. In Monocalyptus, the so-named 'stringy barks' and 'ashes' are also usually well defined, but *E. regnans* X *E. obliqua* does occur as does *E. obliqua* X *E. delegatensis*.

Within the Peppermint group of Monocalyptus, populations of typical 'species' may be well defined but the boundaries are not always so. I have observed likely 'hybrids' of *E. risdonii* X *E. amygdalina*; *E. amygdalina* X *E. tenuiramis*; *E. nitida* X *E. coccifera* and *E. tenuiramis* X *E. coccifera*. But here one must be careful as many of these apparent cases of hybridism may well be CLINAL variations of one sort or another, related to changes in geology [soil nutrition status] rainfall or altitude etc. This phenomenon occurs in the Symphyomyrtus as well, eg. the clinal variation of *E. vernicosa* through *E. johnstonii*, as demonstrated by Prof. Bill Jackson.

Although the Ashes and Stringybarks and the Peppermints belong to two distinct SERIES within Monocalyptus [OBLIQUAE and PIPERITAE], hybrids have been observed to occur between the two, eg. *E. sieberi* X *E. amygdalina*. The result of this was actually named *E. taeniola*, until its hybrid origin was demonstrated.

I know of a tree growing at Randalls Bay which appears to be a hybrid of *E. obliqua* and *E. tenuiramis*, both growing together there. The 'hybrid' has characters more or less between those of the two species and, of interest, the plant is apparently sterile. Buds, and fruit if these form, abort well before maturity.

In conclusion, I make 3 comments:

1. If *E. risdonii* and *E. viminalis* DO interbreed then by inference so, too, should other Symphyomyrtus interbreed with other Monocalyptus, for example *E. globulus* with *E. pulchella*, *E. vernicosa* with *E. coccifera* and so on. As an amateur student of *Eucalyptus* for over 30 years, I have yet to find any evidence in the form of isolated individuals, or hybrid swarms, attributable to such parentages!

2. To the casual observer, some juvenile and adult leaf forms of subglaucous trees of *E. tenuiramis* can resemble those of *E. viminalis*. However the two are readily separated in the field by such characters as smell [oils], adult leaf venation, as well as bud, anther and fruit details.

3. For two genetically compatible populations of individuals to interbreed they must be proximate, thus allowing the transfer of pollen. As well, their flowering periods must, obviously, coincide or overlap!

[Just for the record a 15 year study of flowering periods of Tasmanian eucalypts indicates that generally *E. risdonii* has a winter to spring flowering period whilst *E. viminalis* flowers in summer to autumn.]

DIFFICULT ALPINE PLANTS [in captivity]

To achieve success with some difficult New Zealand alpines [Haastia in particular], reference is made to an extract from the masterly 'Rock Garden Plants of The Southern Alps' [by Professor W.R. Phillipson with photographs and photographic advice by D. Hearn, 1965]:

J. Scott Thompson and G. Simpson had more success with difficult New Zealand alpines than any other growers and their experiences are reported in two most valuable articles in the Quarterly Bulletin of the Alpine Garden Society [Vols. 7 and 11]. In the first of these they list all three species [Haastia] as very difficult...with *H. pulvinaris* they could report remarkable success. The passage in which they discuss their achievements is worth repeating :

'Trouble in establishing this plant was expected, so a number of small cushions were collected from the Marlborough Mountains and these were duly planted in what, at the time, were considered suitable positions in the scree. During autumn the plants seemed quite happy, but later on, when winter-humid conditions prevailed, one by one they assumed a sickly hue and eventually damped off and died. To digress for a moment, never believe any authority who states that there is little difference between the appearance of a dead and a living 'vegetable sheep'. Just in time to save two small portions of the one remaining survivor, it was realised that this species could not tolerte continuous damp conditions and that, in its mountain fastness, it was protected from excessive moisture in winter by a covering of snow and ice...Hasty action was therefore taken, and the two small surviving pieces were separated and replanted on a slope in order to accelerate drainage from the leaf-rosettes - all had previously been planted on the more or less level portion of the scree - and the craven precaution of erecting a small glass roof over these remnants during the winter periods was adopted. Both pieces reacted magically, have never looked back since, and have more than quadrupled their original area in a period of three years. Later on, when risks can be taken, courage will no doubt reassert itself and the glass pane will be removed. During that fateful winter whenever the atmosphere happened to be charged with moisture, and though little precipitation was visible, it was frequently noticed that the densely woolly leaves of the Haastia were soon studded with minute drops of water, and the rosettes assumed a saturated and bedraggled state long before moisture was conspicuous on the majority of other species present. Furthermore, the plant retained the moisture for a longer period. It would appear then, that this multitude of fine leaf-hairs not only prevents excessive transpiration, but makes available to the plant every drop of moisture in time of drought. This, of course, is a great advantage when one remembers that this species occurs only in the dry mountain areas of the South Island; but conversely, this same multitude of fine leaf-hairs would ensure its 'liquidation' if transported to wetter climes. Recently we have found that these plants strike readily as cuttings. The leaves were stripped off the lower ends of the shoots and these sunk in sand with some peat mixed in with it. The whole pot was covered with a plastic bag, and copious roots soon formed. Although *H. pulvinaris* is the king of vegetable sheep, the plant which is most well known by that name to British Alpine gardeners is *Raoulia eximia*....The great cushions of the vegetable sheep may be seen in drifts, or should it be flocks, over the steep utterly barren slopes of the eastern Alps. Their whiteness stands out even against the pale grey screes, and with rain, where the wet slopes darken in a few seconds, they glisten even more obviously. The water from a shower will collect on them in great drops, unable to wet the hispid surface and these will run off like balls of quicksilver when disturbed by a sudden gust. Even in summer the air is rarely still. The plants are either dessicated by the hot west winds, or hidden by swirling mist driven against the crags by damp winds from the Pacific.'

Mervyn Feesey

CHELSEA FLOWER SHOW 1991 by Jeff Irons

It is frequently said that the Chelsea Flower Show never changes. That used to be my view, but after a lapse of five years, my visit to the 1991 Show has forced me to accept that Chelsea does change. It has been taken over by the flower arrangers and the bonsai enthusiasts! Another change has been the arrival of Noël Kingsbury. His small stand in the marquee attracted much attention from the media - newspaper gardening correspondents and B.B.C. T.V. Many of Noël's plants were antipodean, and a *Callistemon 'Violacea'* in bloom was a prominent feature in his display.

SWEDISH AND GERMAN NEWS

In June we had a letter from Thomas Carlsson in Sweden, letting us know that he had germination from seed list stock of *Acacia victoriae, A. languinosa, Lomatia polymorpha, Telopea mongaensis* and *T. speciosissima*. We look forward to being told how the plants fare.

Thomas Ross wrote from Germany advising that in his garden our stock of *Callistemon viridiflorus* has proved to be the hardiest. In England seedlings of this June/July flowering upright shrub have been uninjured by -18°C temperatures.

OLEARIA CHATHAMICA

Occasionally *Olearia chathamica* is seen in nurseries. If you come across it be very chary about buying a plant. Most, if not all, stocks have come from Ireland, and the taxonomist Charles Nelson is adamant that *O. chathamica* is not in Ireland. He says that all stocks there are *O. 'Henry Travers'*. The safest course is to assume that any plant not of known wild origin is *Henry Travers*, and not *chathamica*.

OLEARIA MACRODONTA
A REQUEST FROM JEFF IRONS

Olearia macrodonta is a shrub loved by flower arrangers. Its deeply toothed evergeen leaves are ideal for large arrangements, as are the massive heads of white flowers, which appear in August.

Regrettably in north west England it dies more often than it should, and is reliable only in a mild winter. Yet it is hardy in eastern England, and this Whitsun I was surprised to find flower buds on the specimen in the churchyard of a village in the Lincolnshire Wolds.

We would like to discover what governs the hardiness of this shrub. Is it an alkaline soil, a semi-continental climate, or some other factor? If you have any experience of it, please let us know.

DID YOU KNOW

that drugs and chemicals are now being obtained from the sea? In particular, B-carotene is currently in favour as a non-toxic natural colouring matter. At Whyalla, in South Australia, it is being obtained from the alga *Dunaliella salina*. In arid climates, in conditions of high salinity and high light intensity the alga produces high concentrations of beta-carotene - upto 20% dry weight. At Whyalla there are three cultivation lakes, covering a total of 260 hectares.

GREVILLEA ROSMARINIFOLIA 'THYRSOIDES' by Jeff Irons

Because no plant of this name is known in Australia, it has been assumed that the plant sold is *Grevillea thyrsoides*. Having seen it and spoken to the two nurserymen who offer it, I believe that the plant listed in the catalogues of Burncoose & Southdown and Drysdale Nurseries is not *G. thyrsoides*.

G. thyrsoides is a spreading, often prostrate, shrub. Its leaves are pinnate, and the branchlets have a Y-shaped cross section. The flowers form a long toothbrush-shaped raceme and are pink.

I am trying to find out the true identity of the plant sold here as *G. thyrsoides*.

DERMATITIS AND GREVILLEAS

An article in 'The Plantsman' [vol 12, part 4, 1991 p210] drew attention to the fact that contact with some Grevilleas can cause skin irritation. The parts causing dermatitis include leaves and stems, juices, sawdust and seeds.

Not all Grevilleas cause dermatitis. Except for *G. mimosoides* the problem is limited to species and hybrids with pinnate to pinnatisect foliage. As far as we can ascertain the only one of these sold in Britain is *G. thyrsoides*. This species has pinnate leaves and racemes of red flowers.

Some other popular species and hybrids which cause rashes and/or blisters include *acanthifolia, steiglitziana, x gaudichaudiana, 'Mason's Hybrid [syn. Ned Kelly]* and *'Robyn Gordon'*.

NAME CHANGES

Name changes in the Australian members of the daisy family continue to dribble out. One of the latest is that *Ozothamnus* has been reinstated for all shrubby *Helichrysums*. The reference is Arne A Anderberg, Opera Botanica [1991], No.104, p.89.

The species listed below are listed in the 1991-2 Plantfinder as being sold under *Helichrysum : diosmifolium, hookeri, ledifolium, rosmarinifolium, thyrsoideum*. Others known to be cultivated here are *alpinum, costatifructum, lycopodioides* and *secundiflorum*. Many name endings will have been changed eg. *H. ledifolium* to *O. ledifolius* and there may be some novel names. We shall give full details as soon as they are available.

SUBSCRIPTION CHANGES

At the AGM in London this July, the following decisions were taken:

1. The financial year of the Society will be changed from the present July 1st to January 1st.
Membership for 1991/92, which was due by July this year will now last until 31.12.92, ie. the next annual subscription will not be due until Jan 1st 1993 and every January thereafter. A red cross on the subscription form will indicate that a person has not paid their fee.

2. New members joining after Oct 1st each year will not pay a further subscription until the year after the one following ie. their subscription will last for up to 15 months. Those joining earlier than Oct 1st will pay the normal annual subscription but will receive a back-copy of the spring Newsletter if they have missed it. Subscription fee is £5 per year.

Hon. Sec.: Jeff Irons, Stonecourt, 74 Brimstage Road, Heswall, Wirral, L60 1XQ.
Treasurer: Dr. Entwistle, Ophrys, 113 Station Road, Delamere, Cheshire, CW8 2HZ.

Copyright © AUSTRALASIAN PLANT SOCIETY 1991