ISSN-0811-529X

Association of Societies for Growing Australian Plants

EREMOPHILA STUDY GROUP NEWSLETTER No. 90

April 2007

Congratulations to Bob Chinnock on the outcome of almost a lifetime of research on the Myoporaceae. The book is a magnificent publication and is a fitting reward for the years of work which Bob has put into the study of the family. We, the members of the ASGAP Eremophila Study Group, are indebted to Bob for the support and assistance which he has offered to us over the years in which we have been in existence. The publishers, Rosenberg Publishers, are to be congratulated on the quality of the book and its layout. The quality of the photography is superb; this is in no small part due to the time and effort which Bob has put into each and every photograph which he has taken, both in the wild and in private collections. The book will prove to be a valuable asset to academics and hobbyist alike.

Rosenberg Publishers were pleased to be able to assist the ASGAP Eremophila Study Group with the supply of 100 copies of the book. What started out to be a rather orderly procedure, suddenly turned into something a bit larger and moving a lot faster. I received a pre-publication copy from Rosenbergs, well before the expected delivery date, and I was able to prepare a review of the work and hence the letter sent to all members. At this time Bob was in New Zealand, so he did not see a copy of 'his' book until after others had seen the finished work.

We did not have the money needed to finance such an order and I am very grateful to Rosenberg Publishers for offering to provide them on a 30 day account. I am very pleased with the response which I received to the order form which was part of the letter sent out. The cost of the book has been worked out on the base cost at which we were offered the books plus a postage charge and a small amount to improve our overall bank balance for future use by the Study Group. As a result of the huge response I have had to increase the order to 140 books.

I received the books by road from Sydney around midday on Wednesday 28th March. Mailing of the book commenced that afternoon in the order of receipt of payment. With such a large number it was not possible to do them all on the same day, firstly because it was physically possible and secondly the local Post Office could not handle the volume. (Total weight of mail was a little less than 350kg). I did manage to mail the last order by 4pm on Thursday 30th March so that everyone who placed an order would have received it by the time this newsletter arrives.

Thankyou to everyone who supported the sale of the book through the Study Group!

That is the good news!

The bad news is that there have been extensive drought conditions over much of the continent, yet there have been severe floods in the Innisfail region of Queensland. What a diverse country this is! Members have indicated that their eremophilas have withstood the drought quite well, although the severe frosts of last year seem to have taken their toll on many established and older eremophilas in gardens across the nation.

With the increased need to use other than pristine water, it is timely that we consider the usage of grey water. I am fortunate to have an excellent contact in Kevin Handreck, who has written on that topic and has allowed us to use his article. Kevin is a retired CSIRO Soil Scientist who is well known for his publications on potting mixtures and garden soils etc.

Russell Wait has an extensive collection of eremophilas at his Natya (North East Victoria) property. During 2006 the area experienced one of the worst frosts seen. The results of his observations are included in this newsletter. Russell has been meticulous in his record keeping and he summarizes the results of these observations for us to compare with our own experiences. It would be interesting to receive some further reports from growers in other areas who experienced those severe frosts – I know of several of our members who had some very bad experiences.

Charles Farrugia (Sydney) has once again compiled an index of the last ten Newsletters, this time for numbers 80-89. To compile an index is not an easy task and I thank Charles sincerely for the time and effort he has put into this exercise for us.

MANUSCRIPT NAMES

For many years now we have been using manuscript names for many of the eremophilas which we have referred to in newsletters and on our plant labels. Manuscript names are used when the description of a species has not been published in a recognised publication. With the publication of the book and its release, we will no longer have to designate in a different manner the many manuscript names that have been in place, some for many years. There will be some, since not all new species are included in the book. A cut-off point had to be taken. Bob tells me that there are possibly another ten or so that will have to be described formally in the future. This is a problem faced by authors; there is always the likelihood of new species being found and new names introduced. A revision of the species complexes *E. glabra*, *E. maculata* and *E. clarkei* and possibly others could reveal an interesting Pandora's Box of new species and subspecies if a student was able to investigate them. There could be others which could be split in the future, based on DNA sampling.

FROM YOUR LETTERS

Lyndal Thorburn – Queanbeyan, NSW

After years of trying we have finally managed to get roots on some of our more resistant eremophilas. The trick has been to throw away any ideas of diluting the rooting hormone and apply it straight – IBA 8000 is what we use and we are able to strike cuttings of *E. pterocarpa*, *E. subfloccosa* var. *subfloccosa* and *E. maculata* 'Wendy'.

We have had an *E. miniata* in a tub – this seemed to be deciduous in winter – has lost all its leaves – then shot beautifully in late spring, only to be irresistible to the local possums – it is now covered in stubby leaves.

We have been growing *E. subteretifolia* for years in a dry spot on the road-side. Cuttings of this are doing well at present in the drought.

Beverly Rice – Truro, SA

Our house dam is dry and has been for the past two months. I have never known it to by dry at this time of the year before. With no reticulated water it will be interesting to see the results on losses of plants when the rains finally come. I wonder if there will be losses if we have enormous downpours in summer which sometimes follow such a dry winter; as in 1983.

I have lost a few plants from frost: *E. cuneifolia* and *E. phyllopoda* were two which were wiped out. Also numerous small, newly planted species succumbed. I believe that having eucalypts interspersed through the eremophila plantings helped to prevent some frost damage. We certainly lost count of the number of frosts we had and with no winter or spring rain it is amazing how these plants have survived.

For most eremophilas the flowering period was extremely short this year, but some of the *E. maculata* have flowered prolifically – especially the low pink form which flowers from late spring into summer.

I have not done any pruning this year as I feel the plants are under stress and to force new growth during this time may stress the plants even more. I am also wondering about cutting material! Will it strike as well from plants under stress? I guess that I will have some answers to this after it rains. (I would suggest that cuttings taken from plants under stress would not have the needed sap flow and might be more difficult to strike – it might also be difficult to find fresh, suitable new growth to work on. Colin)

My worst enemies in the garden are kangaroos that are looking for anything green and water. They are so destructive, just prune off the lower branches of the eremophilas and break down bushes. I think they have a midnight fiesta on my patch. Rabbits have been a problem this year and they are gnawing at the base of plants or digging down to the roots. So it is outright war on the rabbits and lots of nasty words said each morning, after inspecting the damage, to the 'roos. On the brighter side we are still having our visiting echidnas hiding somewhere and they leave a trail of freshly dug ground where they have been looking for ants.

Norma Boschen – Warracknabeal, Vic

We have only had 200mm (8 inches) of rain this year; our average is about 375mm (15inches).

There has been quite a good flowering this year because we had 400mm (16 inches) last year. It will be different next year!

We had a great trip to WA with Maree and Graham Goods in the winter. It was great to find species we had not seen in the wild before. Between us we have managed to get most of the species we brought back to grow.

Recently *E. falcata* has been flowering well. I have a broad-leaf and a narrow-leaf form, both have white flowers. Other collections from different areas flowered earlier with pink or mauve flowers. They will grow on their own roots or grafted and will grow from seeds and cuttings. They are very compact, slow-growing bushes and don't need any pruning. My tallest is just over a metre high at about five years old.

Another white one in flower at present is *E. paisleyi* subsp. *glandulosa* – we saw it growing under eucalypts just north of Kalgoorlie

My *E. delisseri*, collected by Russell Wait and Ken Warnes, has flowered for the second time. It is about 50cm high by about 50cm wide. It was nearly covered with mauve flowers – beautiful!!!

June Gotham - Chiltern, Victoria

I am very impressed with how well the eremophilas in my garden have come through the extreme seasons. The only losses I have had are by my own hand. Unfortunately I changed my laundry detergent, Dynamo: as I bucket the water over the garden, every new eremophila I had planted died. I now use Aware with no adverse effects. I mainly have *E. maculata* and these have sustained a pair of Black Honeyeaters, rare visitors to Chiltern, for a month or two. What a thrill!

USE OF GREY WATER IN THE GARDEN

Kevin Handreck is a retired CSIRO soil scientist. He is the author of many papers and books on soils and potting mixes, the one best known to most gardeners being *Gardening Down Under*. He has maintained a keen interest in native plants. Kevin and his wife Eleanor have established a bush planting in the drier region on the eastern side of the Adelaide hills. He continues to provide a valuable service to plants-people, especially to those in garden clubs in South Australia and is a member of the Australia Plants Society SA Region. This article is a summary of a talk which Kevin gave to the SA Begonia Society in February 2007. I thank Kevin for allowing us to use this article. It fits in neatly with the few comments made by June Gotham in the letter above.

1. Bathroom effluent will not cause any problems. The minor amounts of soap and shampoo will not adversely affect plants or soils.
2. Laundry effluent is a totally different matter, because of the damage that some of the components of laundry detergents can do to both plants and soils. The damaging components of laundry detergents are sodium, phosphorus, high alkalinity (and for a few, boron).
3. If you want to minimise or eliminate damage to your plants and soils you must use liquid detergents. Many powders, while they may be good detergents, contain so much sodium that they will eventually wreck the structure of your soil.
4. Lanfax Laboratories of Armidale, NSW (www.lanfaxlabs.com.au/sodium.htm) has analysed the sodium and phosphorus concentrations in grey waters produced when a wide range of laundry detergents are used.
5. With powders, the range of sodium concentrations in grey waters ranged from about 40 to about 710 mg/L. These concentrations are to be compared with the concentration in Adelaide tap water of about 100 mg/L and Melbourne tap water or about 4 mg/L. So you can see that already, with Adelaide tap water we are already applying a lot of sodium to our soils.
6. By contrast, liquid laundry detergents give sodium concentrations in grey waters in the range 1 to about 130 mg/L.
7. The main concern with repeated application of sodium to soils is that the sodium will displace calcium and magnesium from the soil. This will cause the soil to become what is called SODIC. A sodic soil is one in which there is a high proportion of sodium on the clay particles compared with the concentrations of calcium and magnesium. A sodic soil tends to set into hard clods on drying. Hard crusts form on its surface when it dries. More importantly, the rate of infiltration of rainwater into it is much reduced compared with when it was not sodic. You will not notice these problems while you are applying the grey water to your garden. In fact, you may well see excellent plant growth because of the extra phosphorus you will be applying in the grey water. The high concentration of salts in the grey water will prevent the sodium-rich clay from dispersing and blocking pores and producing crusts.
8. The problems start to show up on clay soils such as the red-brown earths of the Adelaide Plains with the first rains. Then, the low-salinity of the rain water allows the sodium-rich clay to disperse. If you have added a lot of high-sodium grey water to the soil during the summer, you could even notice that the water just ponds on the surface of the soil. If you see this, you have wrecked the structure of your soil. The only way to fix this is to apply gypsum at a high rate (probably 1-2 kg/m2). (The science is definite on this, but I also know from personal experience. When Eleanor and I first started to apply grey water to our garden in the early 1970s, we experienced

the adverse effects of using powder detergents. We had to apply much gypsum to the affected area of soil. It was then that we switched to liquid laundry detergents.)
8. So, while you may comment that your lawn, etc is showing excellent growth following four months of use of grey water containing powder detergent residues, in the longer term, you will see that your soil is of poorer quality. To save the expense of having to apply large amounts of gypsum, I strongly recommend that if you want to use grey water in your garden you use only liquid laundry detergents.
9. Here are a few listings from the Lanfax Labs website.

Powders of highest sodium content: Price Saver, Savings, Bi-Lo, Home Brand, Bushland, Omo, Dynamo.
Powders of the lowest sodium content: Planet Ark, Aware, BioZet Advanced, Amway (Most of these are still higher than are the liquid detergents.)
Liquids of highest sodium content: Cold Power, Omo, Dynamomatic
Liquids of lowest sodium content: Earth Choice, Home Brand Liquid

See the website above for the full listing.
10. The Lanfax site also lists phosphorus concentrations in grey waters from the various detergents. Some powders contain so much phosphorus that repeated addition to your soil may eventually produce deficiencies of trace elements such as iron and zinc. These grey waters will be lethal to any plants that are sensitive to phosphorus. Omomatic and Dynamomatic have by far the highest phosphorus concentrations. Grey waters from them were shown to contain a staggering 80 mg/L phosphorus. The highest amongst the liquids is less than 6 mg/L. Many products do not contain phosphorus.
11. Not listed on the Lanfax site is the alkalinity of the grey waters. Powder detergents are loaded with sodium bicarbonate. This raises the pH of the grey water to as high as 10. Repeated application of this water to any acid-loving plant will give it a severe dose of iron deficiency.
11. By the way, take no notice of the claim on detergent packages that the product is biodegradable. This claim applies only to the organic detergent material in it. In powders, this may be only a few percent of the total. The rest of the stuff is definitely not biodegradable. It will remain in your soil.

Conclusion:

For the least damage to the soil of your garden by grey water, use only liquid laundry detergents, and then only those with the lowest sodium concentrations and no phosphorus. There are still plenty to choose from. But if you must use a powder, the choice is between Planet Ark and Aware (Australian), BioZet (China) or Amway (USA). Planet Ark supports many environmental projects in Australia.

FROST AND ITS EFFECT ON EREMOPHILAS

I have made up a list of the *Eremophila* and the effects of frost on them and about 50% have had very minimal or no damage as a result of the bad frost in 2006. **This list is separately printed below.**

This can only be used as a guide as some small plants probably have not had a heavy frost on them. Position and genes (where the plant is from) can cause variation and to do it properly I would have to plant out each species and form for a few years.

How cold did it get? That I don't know but it got cold enough to split water meter ball valves, freeze oranges on the tree and even running water froze over. The frost in 2006 was not as cold as in 1982. Swan Hill had a temperature of -3°C, so it was probably about -5°C or lower here. The temperature in the poly-house got to -2°C where *E. magnifica* was killed. I did record 0°C at ground level on the 13/11/06.

Frost effect is not only caused by temperature but also the duration of the low temperature and how quickly the plant is warmed up. If a plant is warmed up too quickly the cells cannot adjust quickly enough and are damaged. In a wheat crop it is common to see the grains damaged only on the east side of the head. This effect could be seen on *E. oppositifolia* as there were no flowers on the east side of the bush and about half that were there should have been on the west.

The condition of the ground also affects what happens; with straw mulch the damage can be significant whereas if it is firm and damp there is a lot less damage. Once an *Eremophila* gets to about 2 years old and hardened up the damage is a lot less.

My 3.5m tall *Myoporum insulare* was cut back by a half. This has been another problem as plants have been lost because the root stock has died if grafted onto *M. insulare*.

Another interesting thing is, some plants of the same species are damaged and the one alongside is not affected. This happened to *E. complanata*; one plant was cut by 2/3, the next no damage and the next a limb died and all

were planted within 1.5m. It is possible they are all of different genes, as in most cases I get cutting material off a few different bushes in the wild in the one area. Two bushes of *E. virens* 50m apart and 2.2m high; one died and a graft of the dead one planted 300m away also died but I know these are of different genes. This also happened with *E. glabra* subsp. *albicans* with some bushes killed and others not damaged.

Other people who have had frost damage talk of the bark splitting, but this has only happened with *E. pilosa* and one bush of *E. aurievisca.*

I have had bushes shoot from the base only to die a month or so later. I can have a bush still green 6 months later but not growing at the tip, and when the bark is cut there is damage under the bark with what looks like globules of dry sap.

Most of the time I don't get flowers on *E. psilocalyx* as the frost burns them off, so the only one to flower is planted under a tree: in the wild they are mostly under trees.

The flowers of *E. lachnocalyx* are also burnt most years and most times it is out in the open in the wild.

Russell Wait, Natya, Victoria

SUMMARY OF FROST EFFECTS ON PLANTS AT NATYA

These *Eremophila* species stood up the best to the frost of 2006 mostly with no damage to all plants and with very minimal damage to younger plants listed below. Also the older and gnarled plants survive the best.

Eremophila adenotricha, arachnoids, arbuscula, arenaria, arguta, biserrata, bowmanii, brevifolia, caerulea, calorhabdos, caperata, chamaephila, clavata, compacta, complanata, compressa, dalyana, decipiens, decussata, dempsteri, dendritica, densifolia, denticulata, desertii, dichroantha, divaricata, drummondii, enata, eriocalyx, falcate, fasciata, foliosissima, georgei, gibbifolia, gibbosa, gibsonii, gilesii, glabra subsp. *glabra,* subsp. *carnosa,* subsp. *murrayana,* subsp. *tomentosa glandulifera, granitica, hillii, hygrophana, interstans, ionantha, laanii, labrosa, lactea, lehmanniana, linearis, longifolia, macdonnellii, macgillivrayi, mackinlayi, maculata* subsp. *maculata, malacoides, margarethae, metallicorum, micrantha, miniata, mitchellii, neglecta, oblonga, oldfieldii* subsp. *angustifolia, ovata, paisleyi, pantone, papillata, parvifolia, perglandulosa, phillipsii, physocalyx, pinnatifida, platythamnos, polyclada, praecox, pterocarpa, punicea, purpurascens, pustulata, racemosa, resinosa, rhegos, rugosa, saligna, santalina, sargentii, scaberula, scoparia, serrulata, simulans, spinescens, splendens, stenophylla, sturtii, subfloccosa, subteretifolia, succinea, ternifolia, veneta, verticillata, virens, viscida, weldii, willsii, youngii,*

These older *Eremophila* are hit by heavy frost but recover and can be also cut by a light frost but worth the effort to grow.

Eremophila alternifolia, aurievisca, battii, bignoniiflora, christophorii, conferta, crenulata, debilis, delisseri, duttonii, fallax, forrestii, glabra subsp. *albicans, hispida, hughesii, incise, jucunda, lachnocalyx, maculate* subsp. *brevifolia, microtheca, muelleriana, obovata, oppositifolia, platycalyx, psilocalyx, pungens, ramiflora, ringens, rostrata, setacea, shonae, spathulata, spectabilis, spuria, tietkensii, warnesii.*

These *Eremophila* are very badly cut or killed by heavy frost and some even with a light frost. The first one (*E. abietina*) could possible be in the group above but bees lower it resistance to frost.

Eremophila abietina, accrescens, acrida, alatisepala, annosocaule, barbata, canaliculata citrina, clarkei (no trouble before this frost), congesta, cuneifolia, elderi, exilifolia, flabellata, flaccida, fraseri, freelingii, glutinosa, goodwinii, homoplastica, lanceolata, latrobei, linsmithii, magnifica, maitlandii mirabilis, aff. *occidens, oldfieldii* subsp. *oldfieldii, pentaptera, phyllopoda, prolata, punctata, recurva, revolute, rigida, rotundifolia, viscimarginata .*

Russell Wait
Natya. Victoria

ASGAP Eremophila Study Group Leader
Colin Jennings
4 Kinnaird Crescent, HIGHBURY, SA 5089
Email: cje97694@bigpond.net.au

EREMOPHILA INDEX 80 - 89	
abietina	83:2; 83:6; 84:3; 86:2;
abietina var. 'ciliata'	81:5;
'acrida'	85:3; 85:4; 89:3; 89:4;
adenotricha	81:7; 89:2;
aff. *decipiens*	81:7;
alternifolia	81:5; 82:3; 85:5; 85:6; 85:8; 86:3; 88:2; 88:3; 89:5;
'annosocaule'	81:7;
'appressa'	80:4;
arachnoides	80:3; 83:2;
arachnoides subsp. *arachnoides*	80:5; 81:6;
arachnoides subsp. *tenera*	81:6; 82:3;
'arenaria'	82:3;
arguta	89:2;
'aurievisca'	81:7;
barbata	83:2;
battii	82:3; 89:5;
'Big Polly'	86:4;
bignoniiflora	81:5; 82:2; 84:3; 86:3; 88:3; 89:8;
bignoniiflora x (b/pink)	83:6;
bignoniiflora x *alternifolia*	86:3;
bignoniiflora x *platycalyx*	86:2;
bignoniiflora x *polyclada*	81:5; 83:6; 85:5; 85:6; 85:8; 86:3; 88:3;
biserrata	82:4; 84:3;89:4;
bowmanii	81:5; 86:3; 87:4; 89:8;
brevifolia	85:6;
brevis	81:4;
caerulea	82:5;
caespitosa	89:7;
calorhabdos	81:5; 83:6; 84:3; 85:2; 85:6; 86:3; 87:3; 88:3;
'campanulata'	81:7;
canaliculata	89:6; 89:7;
'caperata'	80:3;
christophorii	85:3;
'citrina'	86:4;
clarkei	80:2; 85:3; 89:4; 89:5;
clarkei x *spuria*	87:3;
'coacta'	81:7;
compacta	83:2;
'complanata'	81:7; 83:6; 84:3; 86:3;
crassifolia	83:5; 89:5;
cuneifolia	83:2; 83:6; 84:3; 89:3; 89:6;
cuneifolia x *macmillaniana*	87:2;
cuneifolia x *phyllopoda*	87:2;
dalyana	83:2; 84:3;
debilis	85:2; 85:5; 88:2;
decipiens	80:2; 85:5; 85:8; 88:2; 88:3;
decipiens var.' linearifolia'	84:3;
'decussata'	82:3; 82:5; 89:2;
'decussata' x *parvifolia*	82:5;
delisseri	81:5; 81:6; 82:3;
'demissa'	81:7;
dempsteri	80:3; 81:5; 82:5; 83:5; 83:6; 84:2; 87:3;
'dendritica'	82:3; 89:2;
densifolia	83:6; 88:4;
denticulata	80:5; 83:6; 85:2; 88:3;
desertii	83:3;
dichroantha	82:5; 83:5; 83:6;
divaricata	83:6; 85:5; 86:2; 88:2; 88:3; 89:7;
drummondii	81:4; 81:5; 82:5; 83:2; 83:3; 83:6; 84:2; 84:3; 88:2;
drummondii x *labrosa*	87:3;
drummondii x *nivea*	82:5;
duttonii	80:6; 81:5; 83:2; 83:6; 85:3; 88:2; 89:5; 89:8;

elderi	85:3; 85:4; 89:3;
elderi x *acrida* x *hughesii*	87:2;
enata	85:7;
eriocalyx	88:3;
exilfolia	89:5;
'Eyre Princess'	83:3;
falcata	80:3;
fasciata	89:3;
flaccida	89:3; 89:6;
forrestii	85:3; 89:5;
forrestii subsp. *forrestii*	85:3;
forrestii subsp. *turtonii*	85:3;
forrestii x *latrobei*	87:2;
fraseri	87:2; 87:3; 89:6;
fraseri x *abietina*	87:2;
fraseri x *phyllopoda*	87:2;
fraseri x *platythamnos*	87:2;
freelingii	85:2; 85:7; 88:3;
georgei	80:2; 80:5; 85:7; 86:4; 89:7;
gibbifolia	83:6; 87:2; 88:2;
gibbosa	89:7;

gibsonii	80:2; 82:3; 85:4; 86:2; 87:2; 88:4; 89:3;
gilesii	80:6; 85:2; 85:3; 85:8; 87:2; 89:4; 89:5; 89:8;
gilesii subsp. *variabilis*	89;5;
glabra	80:2; 80:5; 81:4; 81:5; 82:2; 82:3; 82:4; 82:5; 83:3; 84:2; 84:3; 85:3; 85:5; 85:6; 85:8; 86:2; 86:3; 86:5; 88:2; 88:3; 89:3; 89:4; 89:5;
glabra 'Brice'	81:4;
glabra subsp. 'psammophora'	80:4;
glabra (Roseworthy form)	84:2;
glabra (Rottnest Island form)	83:3;
glabra 'Burgundy'	82:2; 87:4;
glabra 'Kalbarri Carpet'	86:3; 88:2;
glabra 'Murchison Magic'	86:3; 86:5; 87:4;
glabra subsp. 'carnosa'	86:3;
glabra hybrid *3619-9*	80:5;
glabra x *georgei*	86:4; 87:2;
'glandulifera'	85:6; 85:7; 87:2; 88:3;
goodwinii	85:2; 85:3;
goodwinii x *hughesii*	85:3;
gracilis	88:3;
granitica	83:6; 86:2;
hillii	81:6; 82:3; 83:2; 84:3;
homoplastica	89:5;
hughesii	85:3; 85:4; 89:5;
humilis	89:6; 89:7;
hygrophana x *jucunda*	87:2;
hygrophana	80:3; 81:6; 83:6; 87:2; 88:2; 88:3;
inflata	83:6;
interstans	82:5; 83:5; 83:6; 87:3; 89:5;
interstans subsp. *interstans* x *dempsteri*	87:3;
ionantha	83:3; 83:6; 84:3;
jucunda	86:4;
laanii	84:3; 85:5; 85:8; 87:3; 88:3;
lachnocalyx x *spathulata*	87:2;
lactea	81:7;
lanata	89:7;
'lanceolata'	85:5; 85:6; 85:8; 86:4;
latrobei	80:3; 82:3; 83:2; 84:3; 85:3; 85:4; 85:5; 85:8; 86:2; 87:2; 89:4; 89:5;
latrobei subsp. *glabra*	82:3;
lehmanniana	83:6; 88:3;
linsmithii	88:3;

longifolia	85:4; 85:5; 85:8; 86:2; 87:3; 88:2; 89:5;
'lucida'	80:5; 83:2; 84:3; 85:7; 86:3; 87:4; 89:7;
macdonnellii	84:3; 85:5; 85:6; 85:8; 87:4; 89:5;
macgillivrayi	81:5; 88:3;
mackinlayi	83:6;
macmillaniana	87:2;
maculata	80:2; 80:5; 81:4; 81:5; 81:6; 82:2; 82:3; 82:4; 82:5; 83:6; 84:1: 85:5; 85:6; 85:8; 86:2; 86:3; 86:4; 86:5; 87:2; 88:2; 88:3; 89:8;
maculata 'aurea'	83:2; 86:3; 88:2; 88:3;
maculata 'Bricks'	88:2;
maculata 'Wendy'	88:2;
maculata 'Blue Thunder'	85:6; 87:2;
maculata 'Cerise'	86:3; 88:2;
maculata 'Winter Gold'	86:2; 88:3;
maculata var. *brevifolia*	83:3; 83:6; 84:2; 84:3; 86:3; 88:2; 89:5;
maculata x *alternifolia*	82:4; 87:2;
maculata x *duttonii*	87:3;
maculata x *racemosa*	85:6;
magnifica	89:3;
maitlandii	86:4;
malacoides	89:2;
margarethae	80:3; 86:4; 87:2;
metallicorum	80:2;
'micrantha'	80:5;
microtheca	80:6; 85:2; 85:6; 88:2; 88:3; 89:7;
miniata	81:5; 88:4;
'mirabilis'	80:5; 83:2; 86:3; 87:4; 88:3; 89:7;
mitchellii	82:5; 86:1; 86:3; 87:2; 88:3; 89:8;
muelleriana	83:2; 86:3; 86:4;
neglecta	80:3; 85:2; 85:4; 86:2; 89:4;
nivea	81:5; 82:2; 82:3; 82:5; 83:3; 84:2; 84:3; 85:5; 85:6; 85:8; 86:3; 86:5; 88:2; 88:3; 88:4;
nivea x *carnosa*	82:4;
nivea x *christophorii*	82:4;
nivea x *drummondii*	81:5; 82:4; 83:6;
obliquisepala	89:7;
obovata	81:5; 86:3;
'occidens'	80:5;
oldfieldii	84:3; 85:5; 85:8;
oldfieldii var. *angustifolia*	84:2;
oppositifolia	81:7; 83:2; 83:3; 83:6; 84:2; 84:3; 85:3; 85:5; 85:6; 85;8; 86:2; 86:3; 88:3; 89:5; 89:7;
oppositifolia var. *rubra*	88:2;
oppositifolia x *oldfieldii*	87:3;
oppositifolia x *polyclada*	81:5;
ovata	87:3;
paisleyi	82:5;
paisleyi subsp. 'paisleyi'	82:3; 85:2;
'pallida'	81:7; 89:5;
pantonii	80:5; 81:5; 83:6; 88:3; 89:5;
papillata	83:6;
parvifolia	89:2;
pensilis	81:7;
pentaptera	85:7;
'perglandulosa'	80:4; 81:5;
phillipsii	86:3;
phyllopoda subsp. *obliqua*	89:3; 89:6;
pilosa	81:7;
'pinnatifida'	83:6; 84:3;
platycalyx	80:4; 81:5; 83:2; 84:3; 86:4; 87:4; 88:3; 89:6; 89:7;
platythamnos	87:2; 89:3; 89:4;89:5;
platythamnos subsp. 'villosa'	82:3; 82:4; 89:5;
platythamnos subsp. *platythamnos*	85:3;
platythamnos x *gibsonii*	87:2;

polyclada	83:6; 88:2; 89:8;
polyclada x *bignoniiflora*	87:3; 88:2;
polyclada x *divaricata*	87:3;
'praecox'	83:6;
'prostrata'	85:2; 85:3; 89:4;
psilocalyx	80:3; 80:5; 84:2;
pterocarpa	85:6; 86:3;
punctata	89:5;
purpurascens	86:3; 88:4;
racemosa	80:5; 82:2; 83:2; 83:3 84:3; 85:2; 85:5; 85:6; 85:8; 86:2; 86:3; 88:2; 88:3;
racemosa 'Peaches and Cream'	88:2;
'Rainbow Beauty'	89:4;
'Rainbow Gem'	80:5; 80:6;
'recurva'	86:3;
revoluta	89:5;
ringens x *latrobei*	87:3;
rostrata	83:6; 85:6; 88:3;
rotundifolia	83:2; 85:3; 85:4; 88:3; 89:3; 89:4;
'rugosa'	80:2; 83:2; 83:6; 84:3;
salicina	84:1;
santalina	80:3; 85:7;
scaberula	83:2; 84:3; 88:2;
scoparia	80:2; 83:6; 84:2; 85:2; 85:4;
scoparia x *dempsteri*	87:2;
scoparia x *ionantha*	87:2;
serpens	88:3; 89:4;
serrulata	87:3; 89:5;
serrulata x *oppositifolia*	83:6;
'shonae'	83:2; 84:3;
simulans	87:2;
spathulata	87:2;
spectabilis	81:5; 83:2; 85:7; 88:3; 88:4;
'splendens'	80:5; 83:2; 84:3; 85:7; 86:3; 88:2; 89:7;
spuria	87:2;
spuria x *foliosissima*	87:2;
stenophylla	85:4; 88:3; 88:4;
strongylophylla	80:2;
sturtii	82:5;
subfloccosa	89:2;
subfloccosa subsp. *glandulosa*	80:2; 84:3; 85:8; 86:3;
'subteretifolia'	81:5; 83:2; 84:3; 84:3; 88:3;
'Summertime Blue'	83:6; 84:3; 85:5; 85:6; 85:8; 86:2; 86:3; 87:3; 88:2; 88:3;
ternifolia	86:3;
tetraptera	85:5; 85:6; 85:8; 86:4;
tietkensii	85:3; 89:5;
'veneta'	85:7; 86:3;
veronica	83:6;
verrucosa subsp. *verrucosa*	85:2;
virens	86:3; 87:3;
viscida	80:5; 81:5; 83:6; 89:7;
'warnesii'	85:7; 86:4; 87:4; 88:4; 89:3;
weldii	81:5; 83:6; 84:3; 85:5; 85:8; 88:2; 88:3; 89:5;
willsii	85:3; 89:4; 89:5;
willsii subsp. *willsii*	85:2;
willsii subsp. 'integrifolia'	82:3; 85:3; 85:6;
willsii x *platythamnos*	87:2;
'Winann'	85:4;
'Yanna Road'	83:3; 84:3 85:5; 85:8; 86:3; 88:2; 88:3;
youngii	83:6; 85:5; 85:8; 88:3;
youngii var. 'lepidota'	84:3; 86:3; 88:3;