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Australian Native Plants Society (Australia) (ANPSA)

Eremophila Study Group Newsletter No. 133

December 2021

***Eremophila laanii* pale pink form at Burrendong Arboretum (pic Alice Newton)**

Contents

Letter from the Editor

Welcome to the final Newsletter of 2021. Soon after the last newsletter I was swamped by information generated by Charles Farrugia (NSW), whose excellent idea to set a theme for his Sydney Sub-group via email (before release from lockdowns) yielded great insights – now edited into four articles in this newsletter about growing Eremophila in Sydney, for this newsletter. Thanks to Charles and your contributors for so much useful information!

Almost at the same time, the indefatiguable and extremely organised Noreen Baxter (Qld) distributed a map of the new Eremophila beds at Myall Park Botanic Gardens, accompanied by a plant list with lots of added information. This has also been included in this newsletter, together with thanks from the Myall Park management and board members about the work done on that one weekend. An initiative by the Sub-group to trial different mixes of fertiliser are Myall Park also links nicely to the ongoing discussion about fertilisers, from our last newsletter (see page 13).

I hope all of you have avoided COVID19 and continue to remain well as the country opens up. At least those of us stuck at home for a period have been able to keep busy in our gardens. I have certainly been planting, as spring turned out to be very damp here. I have resolved to prune bravely and to fertilise more. I am trying a new fertiliser, not included in the survey, called Nutricote Pink – it has no phosphorus at all and contains 19% Nitrogen of which 5% is urea – if everything dies I will let you know!

Just before publication, I had the pleasure of meeting many Victorian members at their recent meeting at Fernihurst – more on that in the New Year. Happy reading! and stay safe everyone

Lyndal Thorburn
Leader and Editor

Eremophilas in the News

Judy Baghurst's Fleurieu Peninsula garden featured on Gardening Australia on 17 September and we saw her ground-covering *Eremophila biserrata* which tie together several parts of the garden.

Budawangia Newsletter (South Coast NSW) featured local Myoporum species in its issue 115 published in October 2021.

What's New in the Study Group

Website

Since the last newsletter I have started working on gathering **pictures of known hybrids for the Eremophila Image Gallery** on www.anpsa.org.au. Well, that is to say, I have collected some photos and Brian Walters has done the hard work of uploading them and working out how to place them effectively. I am working my way through the Feature Species from past newsletters first, plus registered cultivars.

The Registered Cultivars landing page is: http://anpsa.org.au/eremophilaSG/gallery/ESG-cultivars.html
The non-registered hybrids landing page is: http://anpsa.org.au/eremophilaSG/gallery/ESG-hybrids.html

Brian has also uploaded the **presentations and recordings from the 2020 Study Group meeting in Queensland** (the delay is all down to me) – this includes the talk by Rachael Fowler on her genetics work. Rachael has also provided a **copy of her genetic analysis** (the 1.5m long map of all the genetic relationships, grouped into clades and colour coded against the phylogeny published by Bob Chinnock in 2007). All this information is available through the same link that I emailed you to download the newsletter – just scroll down a bit more on the web page.

New Members

We welcome Jane and Paul Carey (SA), Hannes Griesser (SA) and Louise Wilson (NSW).

Feature species – *Eremophila laanii*

Lyndal Thorburn and Ken Warnes

Eremophila laanii, named after a Dr van der Laan from the 19th century, is a West Australian Eremophila that grows as a shrub to small tree 1m-3m tall (rarely to 6m) and has sessile, glabrous green leaves which are "appressed" along branches – this means the leaves are pressed close to the branches.

It is found in the wild along the Murchison and Gascoyne Rivers, where it grows on river beds and river flats on loams in conjunction with *Eucalyptus camaldulensis*. Chinnock describes it as occurring in the upper reaches of these rivers,[1] and in fact reported its discovery in ESG Newsletter 17, whereas Brown and Buirchell say it occurs along the length of these river systems. According to the latter, *Eremophila maculata* and *Eremophila longifolia* also grow in the area.

Flowers are clustered towards the end of branches (as shown in the photo above by Keith Boschen), with one flower per axil. Each flower is 20mm-30mm long, with exserted stamens.

Colours and forms

The colour forms are white/cream, pale pink and deep pink and each has different characteristics. Brown and Buirchell say all three colours occur together in the wild.

The white form, sometimes termed "cream", reaches 2m tall and forms a large dense patch from repeated suckering (pic below by Alice Newton). The suckers may appear several metres from the main clump but they come from very shallow roots and can easily be pulled up and don't reshoot, unlike so many other suckering plants.

The pale pink form has a with finely spotted throat (pic left by Lyndal Thorburn), is the least vigorous of the colour forms, and grows to up to 1.2m tall x 1m wide. While it does sucker, the suckers are not as prolific as those from the white/cream one and do not create a problem in the garden.

[1] First reported in ESG newsletter 17.

The dark pink form is also known as Milly Milly Station (after a property in the region, pic below by Phil James). Those of this colour in horticulture are from a specimen selected by Russell Wait because of its intense colour. It is not known to sucker nor, at Ken's, has it provided seedlings. Of all the colour forms, this colour grows the largest, reaching 2.5m high by 3.5m wide.

Chinnock considered recognising subspecies but decided against it. While he places *E. laanii* close to *E. longifolia* in his phylogeny, the more recent work by Rachael Fowler reports that it is most closely related to *E. pentaptera*, *E. polyclada* and *E. bignoniiflora*.

Horticulture

E. laanii is a very commonly grown Eremophila: 31 respondents to the What Are You Growing Survey (2019) reported growing it.

Of the 22 respondents to the latest survey, 91% grew the light pink form, 55% grew the white form, 18% grew the Milly Milly Station form and 13% grew the cream form.

E. laanii is happy in a range of soils, including clay soils. Most survey respondents seem to grow their plants in fairly heavy soils, with people reporting heavy loams, chocolate loams over clay, heavy red loamy clay, heavy alkaline soil and loamy sand. They seem to do better if they don't have a lot of competition from surrounding plants. Mulch is also used by most respondents. The photo below is a young plant of the white form growing in heavy loam in southern Queensland (pic Lyndal Thorburn).

Given its robustness (and size), it probably isn't surprising that 82% of survey respondents had their plants in the ground, with the remainder having specimens in both tubs and in the ground.

Plants also do best in full sun – 38% of survey respondents reported that their plants were in the sun all day, 43% in sun for half the day, and 19% in dappled shade.

These are long-lived plants – respondents' plants are up to 50 years old, with 30% having plants that were over 20 years old.

Flowering

E. laanii bushes look great in flower (pink form below, Fernihurst, Vic). The flower on the Milly Milly Station form is much more adapted to bird pollination with a curved corolla and exserted stamens whereas the "cream" has a straight corolla and inserted stamens.

Brown and Buirchell report flowering from June to December. Although drought tolerant, they respond to additional water, which stimulates more flowering. Boschen, Goods and Wait recommend planting it near the outflow of a tank for this reason.

Survey respondents reported heavy flowering in Spring, Summer and Winter. Some reported in comments that Milly Milly Station form has a much shorter flowering period but the survey question format did not enable them to provide these details across the whole survey.

Season	Prolific	Sparse
Spring	100%	80%
Summer	89%	80%
Autumn	0%	100%
Winter	80%	50%

Frost, wind and rain

Respondents to the recent survey reported rainfall from 600mm to 900mm p.a. Of these, 95% said that heavy rain caused no problems for their plants. Only one respondent reported damping off of lower leaves, and they lived in an area with >600mm rain concentrated in summer; others lived in wetter regions but did not report this issue.

E. laanii is known to be pretty frost hardy. Eighty-six percent of respondents stated that frost had no ill effects and a further 9.5% said that frost only caused minor tip burn. One respondent said that frost had killed their plant.

Wind doesn't seem to have a major negative effect – most respondents said that wind did not bother their plants but some grew in relatively sheltered positions. One person reported that windstorms had broken branches off their plant

Propagation

Propagation from cuttings is very straightforward and is preferred; hence over 90% of survey respondents had plants growing on their own roots. Ken reports that he has found that older leaves on cuttings drop very rapidly and the cuttings themselves look like sticks with green tips until new growth is initiated – rather disconcerting for the beginner.

Suckering is reported, and half of the 22 respondents to the recent survey had experienced suckering from both light pink and white/cream forms, but not from the dark pink. Suckers can be dug up and potted, as another means of propagation.

Seedlings were reported by some members from the pale pink form.

Pruning

E. laanii shrubs can look messy and members have various approaches to keeping them looking tidy with pruning. Charles Farrugia has reported that his white form is a very aggressive grower and over the years has been pruned quite severely trying to get some sort of uniformity to the plant. He says as soon as he drops his guard, off it goes again. He has also pruned the pink form severely, but in some years has had to sacrifice flowers to keep it looking good.

Pests

Most respondents had not seen any pests on their *E. laanii*. However, 4 reported scale (possibly worse on the white form) and one had had theirs eaten by rabbits and one reported black aphids on leaf tips.

Hybrids

Seedlings from Ken's pale pink form have been planted out along his drive and it appears that 7 are pale pink combined with the cream colour form and one is pale pink combined with the dark pink colour form. The suspected "pale" x "dark" is very showy when in flower.

Only one hybrid of *E. laanii* has been reported, with *E. pantonii*. This was grown by Ken and is only 05mH x 0.4mW after 25 years. He was not complimentary about its horticultural potential.

General recommendation

Respondents were generally complimentary about *E. laanii*, with recommendations commenting on its sturdiness, potential use as a low hedge, bird attracting features, fabulous flowering and easy maintenance.

Eremophilas in Sydney 1

Charles Farrugia

I have been looking at the ESG Newsletter 95 (2008) article by the Sydney Sub-group and I think the species mentioned in that article are still valid in 2021. I can, however, add a few more to this list – keeping in mind this is my own personal opinion and experience and is not that of the Sydney Sub-Group.

Other species, sub species and crosses I have/had growing on their own roots include *E. exilifolia x spathulata* (pic below), *E. vernicosa*, *E. nivea*, *E nivea* x *christophorii*, *E. tetraptera*, *E. dalyana*, *E. stenophylla*, *E. pterocarpa*, *E. clavata*, *E. complanata*, *E. weldii*, *E. aureivisca*, *E. divaricata* x *polyclada* 'Summertime Blue' and *E. divaricata*.

E. nivea white form (pic below by Lorelei Bartkowski of her plant) was grown on its own roots but was found to be very unreliable.

E. glabra inland

Note: *E. complanata* (pic below), *E. weldii*, *E. tetraptera*, *E. dalyana*, *E. pterocarpa*, *E. clavata*, *E. aureivisca*, *E. laanii* and *E. divaricata* are drought hardy species. *E. laanii* 'Milly Milly Station' needs occasional watering during dry spells.

Non grafted *E. decipiens* and *E. subteretifolia* are also quite hardy. My *E. decipiens* is ~10 – 12years old and *E. subteretifolia* ~5 years old. The latter got quite a lot of dieback during the wet spell, but it has recovered. An *E. decipiens* form at the local public school was left to its own devices and was there for close to 25 years, until a truck driver smashed it into the ground.

There are also many forms of *E. glabra* that will grow on their own roots here. These include prostrate forms, *ssp. tomentosa* (pic over page

by Andrew Harvie of a form bought as 'Grey Ghost'), 'Peak Hill', 'Kalbarri Carpet', 'Pink Pantha (with some watering during a dry spell), *E. glabra x subfloccosa*, 'Roseworthy', *ssp. carnosa* (2 forms, one pictured below).

Let us also not forget the different forms of *E. maculata* (pic at right by Karlo Taliana).

Soil Type

Depending in what area you live in the Sydney region, you are going to find different types of soil – clay soil to rocky shallow soil.

My area is heavy clay soil. In the past, I read clay subsoil was good for Eremophila. I am not an expert on soil, but I would say the reason is that clay subsoil retains moisture for a longer period – but – as occurred in February 2021 – 300mm of rain in 4 days, with re-occurring wet days week after week, turned clay soil into an Eremophila destroyer. At present I still have areas where the subsoil is wet even though my front garden is on a sloping block.


E. glabra Grey Ghost

During drier periods, clay soil turns to "concrete", making hand watering just about a waste of time and a waste of a precious resource.

In my early Eremophila days I used to dig a hole, fill it with water and let it drain, place the Eremophila in the planting hole, add some fertiliser, back fill and water the plant. Well, February 2021 highlighted my ignorance as I lost quite a few of my mature Eremophilas. These days I am adding a lot of organic material to my clay soil – well-dried grass clippings, dried pruning material, coir and blood and bone – well before I start planting.

The late Noel Gane had his Eremophila bed built about a 60+ cm off the ground, with soil enriched with horse manure straight from the stable. He used to stake each Eremophila and cut lower stem branches to improve airflow.

Gordon Brooks, another pioneer of Eremophila growing in Sydney, had his Eremophila in shallow rocky soil with very steep drainage. Sections of the garden were sheltered by large gum trees. One of our current members, Ian Cox, grows his on rocky heavily mulched soil. I think Robb Grundy enriches his clay soil with mushroom offcuts (see page 11).

Humidity

We know that quite a lot of Eremophilas need to be grafted to grow successfully and perform over a long period. Looking at Peter's survival list (next article, page 9) makes me quite envious.

But I respectfully disagree with Peter that they absolutely hate humidity. I believe (and am ready to be corrected) that humidity on its own doesn't affect Eremophila that much, though some dieback will occur. Humidity, together with a rainy period, is a different story.

My *E. fasciata* (which Peter adored) was doing excellently whilst it was under a clear overhead plastic cover. Humidity hardly affected it, though there was some dieback whenever water got under the cover, but it recovered. It went backwards when it got too high for the overhead shade cover, was heavily pruned just before the deluge came along and new growth never had a chance to mature. Or maybe after 15 years it had reached its use by date (pic below by Andrew Harvie, from Charles' garden in 2009).

Some woolly Eremophila will also have some dieback from excess humidity including *E. subfloccosa ssp. lanata,* and *E. glabra x subfloccosa.*

After the February rains I also thought I was going to lose *E. warnesii*, especially as, at this time of the year, it is in shade for most of the day. It got quite a bit of dieback, but it has survived (so far!). *E. nivea* was pruned quite hard after last year's flowering and was quite an open shrub when the rain arrived. It was hardly affected.

Watering

I water both the front and back garden with washing machine grey water (eucalyptus based laundry detergent). The watering hose is moved from one section to another after each wash – so sections of the garden have to wait long time between drinks. Eremophila can survive long dry spells and one can tell when a plant is stressing from lack of water as it starts shedding its lower foliage (not sure if this is correct – I leave it to the experts to correct me.)

Eremophila in pots are watered most of the time, by letting them sit in a tub of grey water (only hand washing) – small pots for a short period – large pots overnight.

Pruning

I belatedly discovered that regular tip pruning works a lot better than harsh pruning. I pruned hard quite a few times – sometimes it worked other times it didn't e.g. both *E. maculata* and *E. oppositifolia* pruned back close to the main stem responded well but a mature *E. dempsteri* pruned back heavily only responded with tip growth and eventually died. A younger *E. dempsteri* responded quite well to regular tip pruning (but was eventually lost to very wet subsoil).

E. laanii white & pink forms need regular heavy pruning to keep their shape and control the tangling branches, though I must admit that with the white form it is a lost cause. *E. laanii* 'Milly Milly Station' only requires pruning after flowering.

E. glabra 'Arrowsmith' is another species that requires quite regular pruning to keep in shape and reduce the tangling branches. My original plant used to be pruned by 25% to 50% to keep it in shape. Don't wait for the flowering to stop as it can flowers quite frequently over 12 months.

Eremophilas in Sydney 2

Peter Olde

Eremophilas in Sydney are a dicey proposition. They absolutely hate humidity but love dry weather. So, they did relatively well here during the drought, after which the flooding heavy rain accompanied by extremely high continuous humidity in February 2021 was a death warrant for a large number, even though they were grafted.

The late Noel Gane grew them magnificently at Revesby with lashings of stable horse manure, but I am not sure what his percentages were. It should be remembered also that many species prefer alkaline soils and do not flourish in acid soils. Let's face it, they all have to be grafted in Sydney for long-term success and, even then, the foliage can be decimated by fungal attack in summer and autumn.

One of the surprise survivors here at Oakdale, heavy soil and lowish humidity, was *Eremophila flaccida*. This species hates the cold, especially frost, but I have it up against a large, heat-reflecting rock. It is grafted onto *Myoporum insulare* and it is now several years old and c.60 cm high and wide. I occasionally have to break off bits of the rootstock as they grow out and threaten to overtake it.

Another surprising survivor is also one of the loveliest, *Eremophila spectabilis*, which flowers almost continuously. *E. oldfieldii* is an excellent plant, unencumbered by hairs. It seems that hairs on Eremophila foliage are designed to conserve moisture, but when it rains, they act like blotting paper.

Eremophila mirabilis survived, and so did *E. abietina*, *E. biserrata*, *E. calorhabdos*, *E. complanata*, *E. cuneifolia*, *E. delisseri*, *E. decipiens* (seems hardy on its own roots), *E. eriocalyx E. fallax*, *E. galeata*, *E. glandulifera*, *E. grandiflora*, *E. lachnocalyx*, *E. latrobei*, *E. muelleriana*, *E. oppositifolia*, *E. platycalyx ssp. pardalota* (very spectacular), *E. phyllopoda*, *E. polyclada*, *E. punicea*, *E. purpurascens*, *E. racemosa*, *E. reticulata*, *E. santalina*, *E. strongylophylla*, *E. subfloccosa*, *E. subteretifolia*, *E. tietkensii*, *E.* 'Summertime Blue'. Many of these were grafted by Marie Goods (what a champion!).

Eremophila warnesii succumbed (sorry Ken) but *E. nivea* seems to get through for around three years. I have seen one 5–6 years old in Camden. It prefers to be grafted onto Eremophila species, such as *E. bignoniiflora* rather than Myoporum.

E. youngii is somewhat unreliable, especially the yellow-flowered form (pink form in the pic below by Andrew Harvie). *E. splendens* died, as did *E. aureivisca*. *E. dempsteri* (or was it *interstans*?) did well until it blew out of the ground.

There is a very robust form of *E. mackinlayi* which does extremely well in cultivation here, We had to prune it back by ⅔ ever 2–3 years but it always bounced back. So does *E. denticulata*. *E. calcicola* is a weed. The plant of *E. psilocalyx* that Charles gave me is going along well too (pic left, by Andrew Harvie, at Charles' place, Seven Hills).

I suppose I should not complain too much about the ones that died. Plant them in full sun in well-drained moist soil. You can fertilise all you like. You may have to stake some of the bigger ones.

Eremophilas in Sydney 3

Ian Cox

I don't recall losing any Eremophilas after the rain following the drought. I stick to ones that I know from past experience will grow well here in north-west Sydney – ones that will survive drought, rain, humidity and frost. There's plenty to choose from. Right now in the garden I have:

Grafted: *E. muelleriana, E. cuneifolia, E. glandulifera, E. nivea, E. bowmanii, E. gilesii, E. mirabilis, E. pterocarpa, E. strongylophylla, E. 'Pink Pantha', E. 'Yana Road'.*

Ungrafted: *E. racemosa, E. maculata var. brevifolia, E. maculata 'Seven Hills', E. maculata 'Winter Gold', E. glabra 'Kalbarri Carpet', E. glabra 'Amber Carpet', E. glabra 'Canning Stock Route', E. glabra 'Murchison Magic', E. glabra 'Arrowsmith'.*

At the moment I'm trying two new ones with fingers crossed – 'Pinery Fire Gem' (pic below – see also page 19) and *E. fasciata*.

My soil is mostly sandy and well-drained and is mulched with woodchips. When planting I add 9-month slow-release native fertilizer and water regularly for a month. When the Eremophilas are young, sometimes I give them a boost of liquid from a worm farm, diluted 1:10.

When planning a new garden bed or filling a space, I like choosing Eremophilas on garden design principles – looking at how their size, foliage texture and colour, and flower colour, blend in with the other plants to give a pleasing overall effect. Below is *E.* 'Pink Pantha' budding up, with the foliage contrasting nicely with the background of Grevilleas.

In Sydney there's no nursery I know of where you can purchase a good range of Eremophilas, although Plants Plus at West Pennant Hills usually has quite a few. For new Study Group members, the answer is to learn how to propagate and graft your own.

As Peter said (page 9), Noel Gane was the pioneer of growing Eremophilas in Sydney. In 'Australian Plants' magazine for September 1989 there's a long article by Noel, with photos, about his garden and how he grew and propagated Eremophilas. This is packed full of information. It's apparent that Noel solved most problems with growing Eremophilas in Sydney (or anywhere else) over 30 years ago! And grafting wasn't widespread then.

His two favourites were *E. nivea* and *E. maculata ssp. brevifolia*. Others that grew well-included various forms of *E. glabra* and *E. maculata*, *E. decipiens*, *E. drummondii*, *E. oppositifolia*, *E. psilocalyx*, *E. racemosa*, *E. barbata*, *E. pterocarpa*, *E. pantonii*, *E. granitica*, *E. polyclada* and *E. gilesii*.

Noel built up his garden beds, above clay, by 30cm to improve drainage, with leaf mould, Casuarina needles and masses of stable horse manure. The horse manure was regularly applied to a depth of 10cm. The horses were not allowed to graze in paddocks, so there was little seed germination. He called it 'Condell Park Caviar'!

Noel also grew Eremophilas in containers and pots, in pure compost, and applied liquid fertilizer like Aquasol 2-3 times a year.

When planting out, Noel spread low phosphorus fertilizer around the bottom of the hole, then compost to cover the bottom, and backfilled with compost.

Eremophilas in Sydney 4

Robb Grundy

I built my house and garden 2015 in Appin on the outskirts of Sydney. The block had had everything stripped off of it, and the ground was shale and clay.

I brought in about 60 ton crushed sandstone, mounded it then covered it with 10 tonne premium garden mix. In the early days I was mulching with horse manure and it was pure poo, no sawdust, that I was getting from a farm. The farm is now houses. I now mulch the garden with mushroom offcuts and seconds – I have a mushroom farm just up the road.

We've probably averaged 3 to 4 frosts a week this year and it's been particularly dry apart from today. Most of my Eremophila are grafted. I am particularly interested in the silver grey leafed varieties. The three plants I have that aren't grafted and have been in the ground since I moved in, in 2015, are *E. maculata* Isaacson, *E. maculata ssp. brevifolia* light pink and *E. youngii*.

E. youngii was brought back from Perth by my wife in 2013 it stayed in a pot for two years waiting for our move to Appin. It's planted in the wettest part of the garden. In heavy rain the base of plant is under water so in my opinion it's extremely hardy. All three flower profusely: the rosellas and honeyeaters love them. I only have an average block and want to grow everything so the garden is crowded but everything looks healthy.

The rest of the Eremophilas are in pots (mostly 7-inch pots): *E. abietina*, *E. sericea*, *E. eriocalyx* lemon, *E. mackinlayi X punicea*, *E. punicea* pink and white, *E. spuria* x *E. spectabilis*, *E. glandulifera* light and dark pink, *E. glandulifera x forrestii* (just hanging on), *E. pantonii* x *youngii* (looking good), *E. gibsonii* (looks good), *E. physocalyx* (looks good), *E. denticulata ssp. trisulcata* ungrafted (looks good), *E. cuneifolia* x *tietkensii*, *E. maitlandii*, *E. macdonnellii* pink, *E. platycalyx ssp. platycalyx*, *E. prostrata* x *willsii*, *E. platythamnos* plus a few more I can't recall.

E. platythamnos and *E. glandulifera* x *forrestii* continue to hang on but never grow well.

Potted Eremophila are fed twice a year – spring and autumn. Currently I am trying a 3 monthly fertiliser Microcote Phytamin Plus for natives. I purchased this from SA. My belief is that though my potted Eremophila look ok, they would grow a lot better once planted in the garden.

Grafted Eremophila (unless stated otherwise) in in my garden are: *E. pterocarpa*, *E. pterocarpa ssp. acicularis*, *E. prostrata* x *goodwinii*, *E. tietkensii* grey & green leaf forms, *E. macdonnellii* (three forms), *E. hygrophana* (two forms), *E. maitlandii*, *E. margarathae*, *E. mirabilis*, *E. muelleriana* (gold and grey leaf forms, the grey form being the better looking shrub), *E.* 'Pink Pantha' and an *E. nivea* / 'Pink Pantha' as a double graft, *E. latrobei*, *E. bignoniiflora* x 'Meringur Midnight' and 'Meringur Ray' (ungrafted), *E. strongylophylla* (gold & green form), *E. cuneifolia* (small and large leaf form – the large leaf form I believe cannot handle the local conditions), *E. cuneifolia* x *fraserii*, *E. eriocalyx* (pink), *E. warnesii*, *E. conferta*, *E. decussata*, *E. glabra* 'Murchison Magic' and 'Canning stock Route', *E.* Weld Range, *E. glandulifera*, *E.* forrestii, *E. forrestii ssp. capensis*, *E. foliosissima*, *E. youngii* (pink & yellow), *E. youngii ssp. lepidota* (very poor bloomer), *E. punicea*, *E. georgei* (pink & pale pink), *E. georgei* x *glabra*, *E. compacta* (deep pink), *E. christophorii* (pink, white and blue), *E. jucunda*, *E. clarkei* (ungrafted), *E. delisseri*, *E. waitii*, *E. calorhabdos x splendens E.* 'Beryl's Gem', *E. bowmanii* (all forms), *E. abietina.*

There is also *E. fasciata* in a pot in the garden. Its roots have now gone into the ground and it has taken off, so it is staying as such. Also, a small *E. rotundifolia* which replaces a 5 year old one that died and *E.* gilesii x latrobei 'Yana Road'. I have a *E.* nivea (blue & white) hedge at the front of the house that has been here since the house was built (pic below).

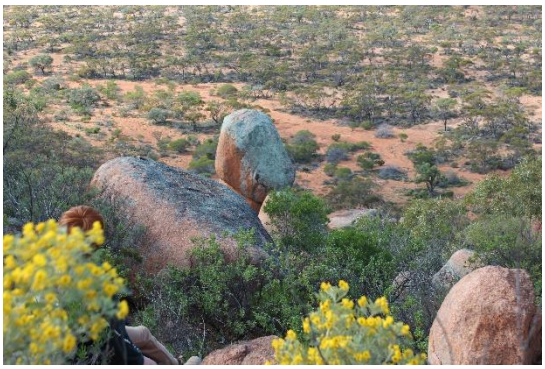
Dog Fence Driving

Ken Warnes

I've just had a quick trip to the Dog-Fence area about 150 km north of Streaky Bay with my son and grandson who, aged 9 years, was happy to miss a couple of days school to go camping.

The property we visited is being sold and there is no way of knowing if access will continue to be possible. I had built up a good rapport with the current Manager, but he has no idea what his future holds either. A great spot, but $4.5m+ is outside my pocket money range.

Tom (grandson) counted 11 different Eremophilas from Port Augusta onwards. His highlight was climbing Yarrana Hill and finding Grandpa's name in the book stored in the cairn on top. So, we added a 3rd generation to my previous 3 entries, each made with different company (view from the hill below).



We did find 5 young *E. platythamnos ssp villosa* on the graded track along the Fence (left), but as it is being rebuilt by contractors their future is bleak. Cuttings from two were brought back and it has propagated well in the past. There was no sign of larger plants of the same species seen in 2014.

Eremophila crassifolia formed dense clumps re-growing from past grading and *E. serrulata* and *E. glabra* were widespread. *E. oppositifolia* out there are pale-flowered, but stand out well on the lower slopes.

More on Fertilisers

Lyndal Thorburn

Following on from the report in the last newsletter,[2] Alan Lacey (whose article kicked all this work off) has pointed out that one of the missing bits of information is how sensitive Eremophila are to large amounts of nitrogen through Urea. He notes he has used Bush Tucker on Eremophila with some success (but he won't use it on Proteaceae). Also, the group on the Myall Park trip (reported in the last newsletter) commented that they thought Eremophila were more tolerant of products like blood and bone and as you will see from page 14 have set up an experiment to compare blood and bone with Osmocote.

Alan also commented that some manufacturers had told him "fibs" about products' urea content, but particularly about the presence of BIURET, which is a detrimental impurity in synthesised urea.

One member, Arthur Kelly, contacted me to tell me I was wrong about Neutrog's Bush Tucker, pointing to its endorsement by Angus Stewart and Simon Leake and referring me to the Bush Tucker brochure, which says that total N is 10% of which 9% comes from ammonium. Arthur noted that urea and sulphate of ammonia containing different chemical forms of nitrogen (NH_2 vs NH_3) and says this means the rates of release of the nitrogen in the soil would be quite different (urea releases its nitrogen much faster, as originally stated by Alan). He argued therefore that Bush Tucker would be a suitable fertiliser for natives. He was also concerned that I was advising people to stay away from Bush Tucker when, in all likelihood, it is a very safe fertiliser for use on native species. He has been fertilising with Bush Tucker for many years with no apparent ill effects.

My source of information for the original article was the Materials Safety Data Sheet – this is a sheet that all manufacturers have to publish and which is used by firies and hospitals to work out what is in the product in case of fires in the manufacturing facility, or ingestion (poisoning), respectively.

The MSDS for Bush Tucker[3] reports that the product has chicken manure 30% to 60%, ammonium sulphate 30% to 60%, potassium sulphate 10% to 30%, compost 10% to 30% and minerals or trace elements 0-1%. Now, you will note that these numbers can add up to more than 100% depending how you mix and match. At the time, I couldn't check with Alan, who was unavailable. I thought that the vague percentages either allowed the manufacturer to vary the ingredients depending on availability or price or were intended to obfuscate so competitors can't copy the exact formula. Neutrog has since confirmed that we should be referring to the label, not the MSDS, which means only 1% of N comes from urea/uric acid.

E. cuneifolia answers?

Ian Cox

In the last Newsletter (No. 132 Sept 2021) Sandra McKenzie (SA) wrote asked why 95% of her *E. cuneifolia* "flowers" this year have no corolla.

I've had a look at my *E. cuneifolia*, and about 80% of the flowers don't have corollas. They do fall off with age, but the 80% figure allows for that. You can see in the photo below that flowering has peaked, and the flowers are starting to go brown.

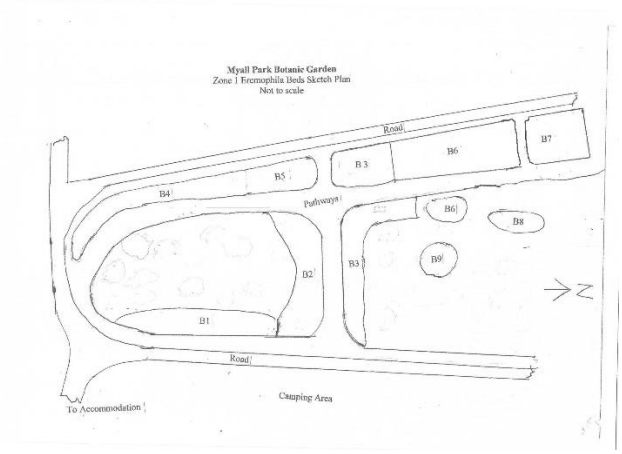
[2] Please also see correction in the Corrigenda

[3] https://neutrog.com.au/material-safety-data-sheets/

Some photos of *E. cuneifolia* on the internet, show an absence of corollas too. I was wondering if this lack of corollas is a feature of this species. Does anyone know?

…and more on Myall Park

Noreen Baxter, record keeper extraordinaire, has compiled a full list of the 46 Eremophila species planted at Myall Park Botanic Gardens, done in July 2021 (see over page), and has also provided references to where the species is described in Chinnock, and in which the Botanical Districts each is found in the wild. The list also records which plants got which fertiliser – this might provide some answers to unknowns about Eremophilas and fertilisers (page 6). The Bed number references relate to the Myall Park Bed Map below.



Dick Harding, who volunteers out at Myall Park and whose presentation to the Queensland sub-group got the whole ESG-Myall Park thing going, has written (of Noreen) "WOW!!! What a superb job you've done, from taking the field notes to typing them into the spreadsheet, to researching and adding the Origin and Comment information. The map is simply wonderful. I'm lost for superlatives. The group certainly knew what they were doing when they volunteered you for the job!"

He also sent a very sincere "Thank You" for all the work the group has done and for the attention to detail. Dick returned from another visit to The Garden after the Gardens' "Spring Day", which he estimates attracted 150 visitors on the Sunday. The new plants "are all doing well except for a single casualty. Some were flowering although still quite small. Several visitors commented on how great they were looking."

Joan Wilkinson, who is a Director of the Myall Park Botanic Garden Board, has also written to Noreen (see box):

Extract from Letter from Myall Park Botanic Gardens Chair, Joan Wilkinson:

"Thank you for a most professional list of plantings. The source of each Eremophila species and additional subspecies and hybrids, if applicable, is a great addition to the chart.

"The map is a work of art! Very clear and easy to follow in conjunction with the spreadsheet. I suspect that a lot of collaboration has gone into the layout of the chart, not to mention the sourcing of species for the plantings.

"Thanks to all those members who supplied the plants. There was a lot of comment on the new area created in a particularly difficult Division of the Garden. It will add such a lot of colour for the nearby campers.

"I might add, that at the sale on Spring Day, every Eremophila was sold out before the other species, with very enthusiastic buyers….On behalf of Myall Park Botanic Garden, we thank you and all of the Eremophila Study Group members for your contribution.

"We hope you enjoyed your stay and we hope to see you again…

Postscript:

Dick Harding has reported that the Hannaford Rose and Geranium Club had visited Myall Park and were so impressed with the Eremophilas that they were going to grow some and they expressed an interest in meeting with the ESG on their next trip to Myall Park,

	Species	Ssp or Hybrid	Common Identifier	Bed	Fertiliser	Plant Origin	Date Planted	Comment
						BD = Botanical District; C = Chinnock Distribution Map page		
Eremophila	glabra		Burgundy	1	Blood & Bone	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	1	Blood & Bone	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	1	Blood & Bone	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	1	Blood & Bone	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Roseworthy	1	Blood & Bone	C580: Roseworthy Agricultural College, SA	17.7.2021	
Eremophila	debilis			1	Blood & Bone	C228: NSW, QLD	17.7.2021	Widespread
Eremophila	subfloccosa			1	Blood & Bone	C603: SA, WA	17.7.2021	ssp glandulosa, lanata, subfloccosa
Eremophila	hygrophana			1	Blood & Bone	C473: SA, WA, NT	17.7.2021	
Eremophila	resinosa			1	Blood & Bone	C463: Avon, BD, WA	17.7.2021	
Eremophila	resinosa			1	Blood & Bone	C463: Avon, BD, WA	17.7.2021	
Eremophila	rugosa			1	Blood & Bone	C276: Coolgardie BD, WA	17.7.2021	
Eremophila	phyllopoda			1	Blood & Bone	C336: Rangelands inland from S of Karratha to N of Geraldton, WA	17.7.2021	
Eremophila	divaricata			1	Blood & Bone	C455: Murray, Darling & Murrumbidgee R	17.7.2021	Along the Murray and Darling River systems
Eremophila	hygrophana			1	Blood & Bone	C473 Different forms in WA, SA, & NT	17.7.2021	ID was a hybrid but no hybrids recorded
Eremophila	glabra		red	1	Blood & Bone	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra	ssp carnosa	"Fruit Salad"	2	Osmocote	C586	17.7.2021	
Eremophila	glabra	ssp carnosa	"Fruit Salad"	2	Osmocote	C586	17.7.2021	
Eremophila	lehmanniana			2	Osmocote	C288: Avon, Eyre, Darling, Roe, & Irwin BDs, WA	17.7.2021	Widespread
Eremophila	lehmanniana			2	Osmocote	C288: Avon, Eyre, Darling, Roe, & Irwin BDs, WA	17.7.2021	Widespread
Eremophila	calcicola			2	Osmocote	Coolgardie, WA	17.7.2021	
Eremophila	weldii			2	Osmocote	C236: Eyre Peninsula, SA: Hampton,WA Coastal	17.7.2021	
Eremophila	glabra	ssp tomentosa		2	Osmocote	C592: WA	17.7.2021	info on plant showed hybrid texts give ssp
Eremophila	glabra	ssp tomentosa		2	Osmocote	C592: WA	17.7.2021	info on plant showed hybrid texts give ssp
Eremophila	glabra	ssp tomentosa		2	Osmocote	C592: WA	17.7.2021	info on plant showed hybrid texts give ssp
Eremophila	glabra	ssp tomentosa		2	Osmocote	C592: WA	17.7.2021	info on plant showed hybrid texts give ssp
Eremophila	veneta			2	Osmocote	C598: Kondinin-Newdegate-Ongerup, WA	17.7.2021	
Eremophila	glabra	ssp elegans		2	Osmocote	C588: Irwin & Avon (BD), WA	17.7.2021	
Eremophila	biserrata			2	Osmocote	C576: Hyden-Forresstania-Lake King (BD Roe), WA	17.7.2021	
Eremophila	glabra	burgundy		2	Osmocote	C580	17.7.2021	A very complex species with many different forms
Eremophila	aureivisca			2	Osmocote	C310: SE end Rason Lake, WA	17.7.2021	
Eremophila	eriocalyx			2	Osmocote	C525: Austin, western Helms & Irwin BDs, WA	17.7.2021	Extends to near thye coast at Geraldton & Kalbarri, WA
Eremophila	nivea			2	Osmocote	C266: Three Springs, Avon BD, WA	17.7.2021	
Eremophila	glabra	ssp carnosa		2	Osmocote	C586: Port Gregory & Illawong, Irwin BD, WA	18.7.2021	
Eremophila	bignoniiflora x	alternifolia	"Meringur Crimson"	3	B, B & O		17.7.2021	
Eremophila	maculata	ssp maculata x racemosa	"Fairy Floss"	3	B, B & O		17.7.2021	
Myoporum	bateae x	floribunda		3	B, B & O		17.7.2021	M bateae Coastal NSW Sth of Sydney
Eremophila	macdonellii			3	B, B & O	C407: Central NT& SA, & SW QLD	17.7.2021	
Eremophila	ciliata			3	B, B & O	C211: Mt Ragged, Eyre BD, WA	17.7.2021	
Eremophila	veneta			3	B, B & O	C598: Kondinin-Newdegate-Ongerup, WA	17.7.2021	
Eremophila	glabra		"Bellalla Gold"	3	B, B & O		17.7.2021	
Eremophila	biserrata			3	B, B & O	C576: Hyden-Forresstania-Lake King (BD Roe), WA	17.7.2021	
Eremophila	glabra	ssp carnosa		3	B, B & O	C586: Port Gregory & Illawong, Irwin BD, WA	17.7.2021	
Eremophila	glabra		Green leaf Orange flow	3	B, B & O		17.7.2021	
Eremophila	polyclada			3	B, B & O	C435: Southern QLD, & NW NSW	17.7.2021	Also in restricted areas along Coopers Ck & Murray R in SA & VIC
Eremophila	rhegos			3	B, B & O	C509: Gascoyne, WA	17.7.2021	
Eremophila	divaricata			3	B, B & O	C455: Murray, Darling & Murrumbidgee R	17.7.2021	
Eremophila	divaricata			3	B, B & O	C455: Murray, Darling & Murrumbidgee R	17.7.2021	ssp divaricata & callewatta (NSW)
Eremophila	glabra		yellow	3	B, B & O		17.7.2021	
Eremophila	glabra	ssp tomentosa		3	B, B & O	C592: WA	17.7.2021	info on plant showed glabra tomentosa not ssp
Eremophila	forestii			3	B, B & O	C492: WA multiple ssps	18.7.2021	ssp capensis, forrestii, hastieana, viridis
Eremophila	denticulata	ssp trisulcata		3	B, B & O	C573: N &NW of Mt Ragged, Eyre BD, WA	18.7.2021	
Eremophila	denticulata	ssp trisulcata		3	B, B & O	C573: N &NW of Mt Ragged, Eyre BD, WA	18.7.2021	
Eremophila	glabra	ssp carnosa	"Fruit Salad"	3	B, B & O	C586: Port Gregory & Illawong, Irwin BD, WA	18.7.2021	
Eremophila	glabra	ssp carnosa	"Fruit Salad"	3	B, B & O	C586: Port Gregory & Illawong, Irwin BD, WA	18.7.2021	
Eremophila	oppositifolia	ssp oppositifolia		3	B, B & O	C412: Eyre Peninsula, & Gawler Ra SA, SE to SW NSW & NW VIC	18.7.2021	

Genus	Species	Ssp or Hybrid	Common Identifier	Bed	Fertiliser	Plant Origin	Date Planted	Comment
Eremophila	glabra		Burgundy	4	Osmocote	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	4	Osmocote	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	4	Osmocote	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	4	Osmocote	C580	17.7.2021	A very complex species with many different forms
Eremophila	glabra		Burgundy	4	Osmocote	C580	17.7.2021	A very complex species with many different forms
Eremophila	viscida			4	Osmocote	C641:Irwin, Avon & extreme NW part of Row (BD), WA	17.7.2021	
Eremophila	viscida			4	Osmocote	C641:Irwin, Avon & extreme NW part of Row (BD), WA	17.7.2021	
Eremophila	bowmanii		White	4	Osmocote	QLD, NSW	17.7.2021	ssp bowmanii; latifolia & nutans all from different areas
Eremophila	bowmanii			4	Osmocote	QLD, NSW	17.7.2021	ssp bowmanii; latifolia & nutans all from different areas
Eremophila	bowmanii			4	Osmocote	QLD, NSW	17.7.2021	ssp bowmanii; latifolia & nutans all from different areas
Eremophila	glabra		Green and gold	4	Osmocote		17.7.2021	
Eremophila	glabra		Green and gold	4	Osmocote		17.7.2021	
Eremophila	glabra		Lime gold	4	Osmocote		17.7.2021	
Eremophila	glabra		Roseworthy	4	Osmocote	Roseworthy Agricultural College, SA	17.7.2021	
Eremophila	denticulata		Mt Ragged	4	Osmocote	C572: Eyre BD, WA	17.7.2021	
Eremophila	deserti			4	Osmocote	C193	17.7.2021	E desertii is widespread in QLD, NSW,VIC,SA, & WA
Eremophila	bowmanii	latifolia		5	Blood & Bone	C489: QLD, NSW & NW SA	17.7.2021	
Eremophila	bowmanii	nutans		5	Blood & Bone	C490: Warrego district QLD, & across the border into Yantabulla ,NSW	17.7.2021	
Eremophila	interstans			5	Blood & Bone	C 213: Coolgardie BD, WA	17.7.2021	ssp interstans also in Austin, Avon, & Roe BDs & Uno Ra Eyre Peninsu
Eremophila	prolata			5	Blood & Bone	C329: Yarlarweelor Station, Meekatharra, WA	17.7.2021	
Eremophila	christopheri x	nivea	"Smoke Haze"	5	Blood & Bone	Waikerie, SA	17.7.2021	
Eremophila	hillii			5	Blood & Bone	C600: Restricted to a few locations on Nullabor Plain, SA; & one in WA	17.7.2021	
Eremophila	divaricata			5	Blood & Bone	C455: Murray, Darling & Murrumbidgee R	17.7.2021	ssp divaricata & callewatta (NSW)
Eremophila	divaricata			5	Blood & Bone	C455: Murray, Darling & Murrumbidgee R	17.7.2021	ssp divaricata & callewatta (NSW)
Eremophila	maculata x	ssp brevifolia x glabra	"Happy Mac"	5	Blood & Bone		17.7.2021	Tim Kolaczyk gave it to Peter Bevan as an E. maculata hybrid.
Eremophila	viscida			5	Blood & Bone	C641: Irwin, Avon & extreme NW part of Row (BD), WA	17.7.2021	
Eremophila	viscida			5	Blood & Bone	C641: Irwin, Avon & extreme NW part of Row (BD), WA	17.7.2021	
Eremophila	ciliata			5	Blood & Bone	C211: N of Mt Ragged, Eyre BD,WA	17.7.2021	
Eremophila	waitii			5	Blood & Bone	Merredin, Avon, WA	17.7.2021	
Eremophila	eriocalyx			5	Blood & Bone	C525: Austin, western Helms & Irwin BDs, WA	17.7.2021	
Eremophila	eriocalyx			5	Blood & Bone	C525: Austin, western Helms & Irwin BDs, WA	17.7.2021	
Eremophila	subangustifolia			5	Blood & Bone	near Eneabba, WA	17.7.2021	Considered a variant form of E microtheca until 2017
Eremophila	freelingii			5	Blood & Bone	C330: Sthn NT, N&E SA, W QLD south to NW NSW	17.7.2021	
Eremophila	? grandulifera			6	B, B & O	C496: Murchison, WA	17.7.2021	
Eremophila	bignoniiflora x	polyclada	"Sean's Solution"	6	B, B & O		17.7.2021	
Eremophila	divaricata x	polyclada	"Summertime Blue"	6	B, B & O		17.7.2021	
Eremophila	maculata x	viscida	"Silver"	6	B, B & O		17.7.2021	
Eremophila	glabra x	nivea	"Pink Pantha"	6	B, B & O		17.7.2021	
Eremophila	bignoniiflora x	glabra ssp carnosa	"Pink Cadillac"	6	B, B & O		17.7.2021	mistakenly labelled "Big Car"
Eremophila	platycalyx			6	B, B & O	C430: Widespread in Austin & sthn parts of Ashburton & Carnarvon BD,	17.7.2021	2 ssps: ssp pardalota restricted to Nthn Ashburton BD only
Eremophila	platycalyx			6	B, B & O	C430: Widespread in Austin & sthn parts of Ashburton & Carnarvon BD,	17.7.2022	3 ssps: ssp pardalota restricted to Nthn Ashburton BD only
Eremophila	vernicosa		"Red Desert"	6	B, B & O	C283: Only from Kalannie & Coorow, WA	17.7.2021	
Eremophila	christopheri x	nivea	"Smoke Haze"	6	B, B & O	Waikerie, SA	17.7.2021	
Eremophila	glabra		Yellow	6	B, B & O		17.7.2021	
Eremophila	glabra		Green and Gold	6	B, B & O		17.7.2021	
Myoporum	bateae			6	B, B & O	Coastal NSW Sth of Sydney	17.7.2021	
Eremophila	lucida			6	B, B & O	C644: Only from two small areas at Lakes Cronin & Cowan, WA	17.7.2021	
Eremophila	bignoniiflora x	viscida	"Big Vista"	6	B, B & O		17.7.2021	
Eremophila	bignoniiflora x	polyclada	"Meringur Isaac"	6	B, B & O		17.7.2021	Hybrid from deep pink E bignoniiflora
Eremophila	weldii			6	B, B & O	C236: Coastal from Mt Ragged, WA east across to Eyre Peninsula,SA	18.7.2021	
Eremophila	weldii			6	B, B & O	C236: Coastal from Mt Ragged, WA east across to Eyre Peninsula,SA	18.7.2021	
Eremophila	glabra	ssp carnosa	"FruitSalad"	6	B, B & O	C586: Port Gregory & Illawong, Irwin BD, WA	18.7.2021	
Eremophila	glabra		Green and gold	7	B, B & O		17.7.2021	
Eremophila	glabra		Green and gold	7	B, B & O		17.7.2021	
Eremophila	bignoniiflora x	polyclada	"Meringur Isaac"	7	B, B & O		17.7.2021	
Eremophila	glabra		Grey leaf, orange flowe	8	B, B & O		17.7.2021	
Eremophila	nivea			8	B, B & O	C266: Three Springs, Avon BD, WA	17.7.2021	
Myoporum	bateae			9	B, B & O	M bateae Coastal NSW Sth of Sydney	17.7.2021	

E. mackinlayi chimeras

Ian Tranter

Some of the large vigorous *E. mackinlayi* in cultivation have turned out to have a *Myoporum insulare* core and are hence chimeras. But no one has yet come up with a way to identify them. Whether you regard them as *E. mackinlayi* or not comes down to fine definitions. They have *E. mackinlayi* flowers and seeds and probably produce pure *E. mackinlayi* seedlings. The cuttings are true to the parent (chimera) plant.

Think of a grafted plant – it's is like someone having a leg transplant – so top half one person (scion), bottom half another (rootstock). A chimera is closer to a person having a spinal transplant – outside one person, inside another. With people, we would still regard both as being the original person. With plants it is a bit different.

Basically, plants are made up of three layers (skin, middle and core). The most common and stable chimeras have skin of one type and the middle and core of another. Chimeras are actually quite common with horticultural plants that are propagated by cuttings. For example, a sport giving a red fruit occurs on one branch of a normally green grape. These are often a mutation in the skin layer. Cuttings from that branch will generate plants that continue to have red fruit, but underneath the middle and core layers are the original unmutated cell types. The accepted designation would be RGG (i.e. RedGreenGreen) indicating the nature of the three layers.

Graft chimeras arise because sometimes a graft will fail but a shoot will come out of the mix of stock/scion cells at the graft union. On occasions, one of these shoots will have cells from both the stock and the scion. This can be stable if the stock and scion cells are in different layers since there is not much mixing between the layers. Generally, the most stable are those where the skin is different to the middle and core layers as there is less mixing of skin cells with the other layers.

The appearance of the plant will depend on which layer is which. The skin layer generally determines the surface, the hairs, glands etc. The middle layer mostly determines the form of the plant, leaf and flower shape and the seeds. The core layer can affect the size of the plant but often can be hard to tell.

There are two chimeras (Drysdale and Curlewis) that have *E. hygrophana* as the skin and *M. insulare* as the middle and core – designated EMM. There are pictures in ESG newsletter 117 (http://anpsa.org.au/eremophilaSG/eremoph117.pdf p9). The plant grows like *M. insulare* and the flowers are basically small and are grouped like an *M. insulare*. But the skin is that of a *M. mackinl*ayi and the mauve colour of the flowers presumably comes from the skin of the flowers.

The plant described by Tony Porritt (and I have it too) is EEM, with the skin and middle layers being *E. mackinlayi* and the core being M insulare. So, it has the skin, form and flowers of *E. mackinlayi* but the slightly greater size and vigour contributed by the *M. insulare* core. It does seem to be quite stable despite the fairly wholesale pruning often done to this form. There have only been two or three instances of an *M. insulare* shoot breaking out at the site of damage, or from the roots when the plant has died. These shoots can easily be removed.

There haven't been any recorded instances of an EMM shoot coming off this *E. mackinlayi*, however it is technically possible. The *E. prostrata* chimera (EEM) did eventually start putting out Myoporum shoots (MMM), and the shoot that is Charles' 'Echidna Hills' (pic below), which is EMM.

So, is it a *E. mackinlayi*? Is a grafted *E. mackinlayi* still an *E. mackinlayi* given that rootstocks can increase the vigour and improve resistance to root rot? If a plant is scraggy in the wild but lush and dense in cultivation, is it still a 'true' representation of the plant? I think it probably comes down to your own definitions of identity and what its purpose is for the grower.

Charles provides another pic of "Echidna Hill"– with the *E. prostrata* variant to the right, and in the background Myoporum stems with *E. prostrata-like* flowers.

A Guide to Eremophila/Myoporum Chimera names

Ken Warnes

"Drysdale" was named because of the town where it first appeared. It is definitely *E. hygrophana* and grows into an initially grey branching shrub 2.5 m tall and wide. The leaves are Myoporum like, the flowers a small-mid size pale blue tube: quite pretty but definitely nondescript. Not surprisingly it doesn't set fruit. Leaves can occasionally have green and grey on the one leaf, sometimes opposing surfaces and sometimes divided down the mid-rib.

The Branches themselves may be green on one side with Myoporum leaves and flowers, and grey on the other side with chimera flowers. On my initial plant the green stems were more vigorous and gradually took over the whole bush, (much as happens with variegated plants without selective pruning). Members have struck this chimera for use as a grafting stock and reported that it has worked well.

"Curlewis" came from Phil Vaughan's outlet in that western Melbourne suburb. This one we think is more likely to have arisen from *E. mackinlayi*, possibly *E. mackinlayi ssp spathulata* but we can't be certain. It "took off" when an employee took home a Nursery plant to her home garden, had it die off and re-shoot and it's been resurrected in slightly varying forms and is the plant which is causing considerable angst among those who care about such things. This is the one that Tony Porritt has bought as *E. mackinlayi* and is having to prune frequently (see page 234).

So why is it so vigorous and so like an Eremophila? See Ian's article. Certainly, it strikes easily and has been used in WA as a grafting stock but I have no reports on its effectiveness for that purpose.

"Warnesii" from my original grafted *E. warnesii*, which struggled along for several years and in its death throes threw up a chimera from the graft. I kept this one to myself, having seen the effects of the others. It is now 2m tall and is holding as a very similar plant to "Drysdale", with grey leaves and small blue flowers, but without the strong green shoots which caused the problems with that particular selection. Just not worth growing.

"Echidna Hills" is Charles' name for another one which "escaped" from my garden. This is *E. prostrata* on what we'll call a close relative of Myoporum "Monaro Marvel". Not exactly Monaro Marvel but probably the same cross. This *E. prostrata* chimera has done all sorts of weird things for Charles, Ian Tranter and for others. If it was left to me, I'd rip the whole lot out of the ground, but I suppose that they have proved a fascinating insight in plant development. I must admit to still having one, but it battles to survive and certainly hasn't done for me what it is doing for others in the Eastern States.

Pinery Fire Gem origins

Ken Warnes

Pinery Fire Gem emerged as a seedling which came up where I had previously grown *E. prostrata*, so I presume that this was the seed provider. *E. goodwinii* grew not far away and on the experience of these two species hybridising at Rainbow Valley and growing into a similar looking plant I presume that this is the parentage. (There seems to be lots of presuming going on here, but we can always make the findings fit the observable facts.)

My plant grew to about half the size of Ian Cox's plant before collapsing and rapidly dying. The original Rainbow Valley collection Ray Isaacson named "Rainbow Gem", so I coined the name "Pinery Fire Gem" to connect the presumed parental relationship to the Pinery Fire which prompted the germination.

Fortunately, I had put a few pieces in a bag posted to Charles and a couple of them grafted successfully (see pic page 10). I currently don't have it despite the best efforts of Charles, and I think Robb Grundy. A "taken" cutting graft posted to me was potted on and was growing reasonably well but didn't like being planted out and the Winter chills saw its demise. One day we'll try again because it is clearly a desirable addition to any collection.

Book review: Growing *Eremophila*

Catriona Bate

Members can order this book by emailing eremophilabook (at) gmail.com.

This long-awaited book by does not disappoint. It is a beautiful, glossy production worthy of a prominent place on any coffee table, not just the reference library. Much more than a gardening handbook, it is an invaluable compendium that is clearly presented and comprehensive in its scope. It covers not only every species and subspecies in Australia, but also every hybrid and cultivar, and even different forms (many as yet undescribed).

While the book is a personal offering from renowned *Eremophila* expert Russell Wait, he has brought in collaborators from academia and the plant world to contribute articles, editing and layout. Co-authors Christine Huf, Cathy Powers and Dr Jenny West deserve special credit for the excellent presentation of this book which, although large, is easy to read and navigate. The project has been supported by Dr R. J. (Bob) Chinnock, the botanical authority behind modern advances in *Eremophila* knowledge.

Few others could draw on decades of personal experience in the wild as well as in the garden, plus a photographic archive of epic proportions. Having observed him sprawled in the dirt or desert sand in the quest for the ultimate plant photo, it is no surprise that Russell had amassed over 30,000 shots to choose from. Just as Russell's dedication and tenacity are legendary, his escapades in the outback are too. The stuff of Leyland Brothers adventures, you will find entertaining glimpses in the early part of this book, especially from Ken Warnes, his partner on many of these journeys and himself renowned for his *Eremophila* expertise.

Within this large plant family there is a bewildering array of species, subspecies, hybrids, cultivars, and forms. This book makes sense of them in nearly 400 entries, one to a page. Under *E. glabra*, for example, there are eight subspecies and another eight hybrids, all with separate entries, plus, no less than 16 as yet undescribed forms of *E. glabra* featured. Each entry includes a concise description, brief propagation and cultivation notes, a distribution map, and a succinct author's note where Russell gives us his take. A major feature of this book is Russell's photographs, which take up most of the space in each entry. Selected by Christine Huf, the size and quality of these pictures are a highlight. There are three to each entry – a large close-up of the flower, a view of the foliage with flowers, and one of a plant.

A supplementary table summarises the main characteristics (size, flower colour, leaf colour) as well as garden characteristics (bird-attracting, frost and salt tolerance and propensity for fungal disease). This at-a-glance overview makes it easy to compare species, especially the use of colour coding to indicate flower and leaf colour.

Although the species and hybrid entries form the core of the book, the reader should not miss the introductory chapters which cover a range of topics including an overview of the family, its history and ecology. Dr Rachael Fowler gives an overview of the relationships between *Eremophila* species and how the smaller genera in *Myoporae* (*Bontia*, *Glycocystis* and *Myoporum*) relate to the core *Eremophila* species based on the latest DNA sequencing technology. Professor Han Griesser discusses what has been discovered about medicinal chemicals in *Eremophila*. The best use of these chemicals to fight bacteria, including superbugs like Golden Staph, is likely to be in antibacterial skin ointments.

In line with the book's title, the cultivation and propagation sections are especially important chapters. All *Eremophila* growers have different issues but, living on the coast, we took special note of the advice on how to deal with wilt disease. Successful propagation of *Eremophila* is difficult without knowing the tricks of the trade and it is here that Russell's expertise comes to the fore. He covers all the methods in detail, especially grafting, a technique in which he specialises.

It was some time after I first admired the front cover that I noticed the species featured is, fittingly, *Eremophila waitii*, a relatively rare species Russell discovered in WA. Bob Chinnock named this species after him in 2019 in recognition of the many new or rare species that Russell Wait has discovered and introduced into cultivation and the significant contribution he has made to our understanding of this genus. The evidence is all in this book.

Book Review: A Field Guide to the Eremophilas of Western Australia

Phil Trickett

Order forms for this book are at http://www.anpsa.org.au/eremophilaSG/ESG-resources.html

This update of the 2011 first edition is a superb publication, making it an essential purchase for lovers of *Eremophila*. Structured the same as the 2011 edition, this revised edition adds an amazing 22 named taxa and 16 unnamed taxa, a reflection of the enduring passion of authors Andrew Brown and Bevan Buirchell in their exploration of the WA bush. Andrew and Bevan are currently Research Associates at the WA Herbarium where they continue their taxonomic work on *Eremophila*. This taxonomic work, combined with extensive ongoing field work, has resulted in the formal descriptions of many new *Eremophila* species since the first edition.

While the majority of the field guide is devoted to the 238 species, 70 subspecies and 2 varieties currently recognised in Western Australia, the first 29 pages provides a detailed, easy to digest introduction to *Eremophila*. The initial discovery after European settlement is followed by the distribution and habitat of this genus, and all the various characteristics of *Eremophila* including flowering, pollination, reproduction and hybridization. The many threats to various species due to agriculture, mining and feral pests are noted, with a detailed list of the 136 species threatened or potentially at risk. Importantly for those looking to collect specimens, there is a useful outline of the WA State Government regulations relevant to the collection of plant material in the wild. A concise description of the various methods used to cultivate *Eremophila* is also included in the introduction section.

Then follows an amazing bank of knowledge as the guide devotes one page to each of the species, subspecies and varieties currently recognised. Importantly, each species is placed in alphabetical order of the species name, making navigation of the guide very simple. Each page comprises three photos, with at least one close up flower photo, one of the whole plant, and often a photo of the typical habitat of the species. The photos are consistently high quality and along with the species notes there is all you need to know to have a decent attempt at identifying a species in the field. The notes commence with an explanation of the derivation of the species name, followed by the flowering time, then a description of the species, including distribution and habitat, finishing with a paragraph on the species initial collection and

naming. Importantly, differences to similar taxa are included in the species description to help identification. There is an excellent detailed glossary at the back of the guide to help understand the descriptions of the characteristics of each species.

We are very fortunate in Australia to have many high-quality publications on some of our most iconic plant genera. *Eremophila* has been particularly well served since the publication of Bob Chinnock's encyclopaedic work '*Eremophila* and allied genera. A Monograph of the Myoporacae' in 2007, with three excellent publications on *Eremophila* by some of its most passionate and knowledgeable devotees. This update to one of these publications provides not just an essential reference when exploring the stunning Western Australian bush, but is a fascinating read for all *Eremophila* lovers whether in the garden or travelling. Note that this guide's value is not confined to WA only, given that many of the species in this guide are also found growing in South Australia and Northern Territory, making it useful when exploring these areas as well.

ESG sub-group meetings

Queensland

Noreen Baxter

The Queensland sub-group met on 2 October at the home of Laylee and Steve Purchase, Toowoomba. In attendance were Jan Glazebrook, Denis Cox, Laylee Purchase, Chris Purchase, Janet Schultz, Dick Harding, Darell and Pam Fletcher, Chris and Ross Reddick, Ray and Noreen Baxter. Apologies were received from: Janet and Jim Flanigan, Peter Bevan, Adrian and Gail Wockner, and Lorelei Bartkowski.

The meeting discussed the successful Myall Park Trip (see page 14).

The meeting discussed hybrids and their naming, a topic which was also covered in the last meeting of the sub-group. Since then Russell Wait has published "Growing Eremophilas" which includes hybrids. Hybrid names continue to be an issue that will only grow as more hit the market. Members were asked to document hybrids they are growing/have purchased and provide details of: name; suspected parentage (if known); and a photo to the next meeting for discussion. It was suggested that if the sub-group collect this type of information it may be able to be circulated through the ESG Newsletter for discussion across all states to try to get some uniformity (see also item on the ANPSA ESG website gallery page 2). However, there will always be issues relating to personal interpretation of colours even when photography is relied on unless the reference used is the botanical colour card. Hybrids discussed were called "Silver"; and "Blue Thunder" also believed to be called "Thunder Bolt" or "Wild Berry" possibly an *E alternifolia* x E *maculata*

The meeting concluded with a long, long walk through Laylee's very large garden of many native species, including Eremophilas and Grevilleas. Over the years the garden has suffered long droughts and Toowoomba's icy winters, yet the plants continue to not only survive but to thrive with many of the Eremophilas now small trees or very large shrubs, most of which were covered with masses of flowers. The attendees took cuttings as the Eremophilas were too good to pass up such an opportunity. Here's hoping many of these turn up at future meeting in the plant raffle. Thank you Laylee for sharing it with us.

The next meeting will be Saturday 14 May 2022 venue TBA and, following that, August 2022. The group also noted the **ANPSA Kiama Conference 11 to 16 September 2022** and the pre- and post-Conference tours.

South Australia

Tim Wood

Twenty-one members of the SA Eremophila Study Group were able to meet at Ken Warne's property at Owen for our October meeting. As it coincided with Ken's 80th birthday, a chocolate quandong birthday cake appeared to help the well-wishers congratulate Ken, who is now in his 50th year of ESG membership. Ken mentioned that the precursor to the ESG was Project Eremophila coordinated by Margaret

Lee in 1968 and Margaret's best wishes were conveyed to Ken on the day, much to his delight.

The day led off with Ken showing members some of his early plantings, which included specimens that are now 50 years old. Many had been collected on field trips from that period: Ooldea 1969 and Gawler Ranges 1967 among them. Some were grown from material collected by Bryan Barlow during his chromosome studies around 1970 and many more had varying historic associations. Members were amazed to see 4m tall specimens of species such as *E. youngii*, and *E. pantonii* and an *E. scoparia* 5m across.

Following lunch and a short business meeting members wandered through the main plantation of some 1500 mixed plantings and left with heads spinning and armfuls of cuttings to try.

We saw his 1970's *E. glabra* collection (W.A. to Kangaroo Island to Qld) and were then led through his large "Scrub" which had been severely impacted by fire in 2015.[4] There were many and varied seedlings of *E. glabra*, presumably having been cross-pollinated within the older plantings and the resultant seeds dispersed by the resident bird population. There were subspecies of *E. subfloccosa*. This also raised discussion as what constitutes *E. glabra* and how similar types get different names.

We saw an unknown seedling which may well be a *Myoporom-Eremophila* hybrid. Several of these seedlings have already been propagated and we later saw them in the main plantation.

We had our formal meeting and heard how the Adelaide Botanic gardens would welcome input on how to refresh their 20-year-old Eremophila garden. Margaret Lee and Ken were involved in its initial layout. We were asked to help propagate special species (WOW plants), not physically remodel the garden. Any suggestions from ESG members would be welcomed. I will formulate a plan to propagate such plants. As this is a two- to four-year project we have time to consider and manage this.

Hans Griesser updated the group on the proposed UQ research project on seed germination. To answer what triggers germination, first we need to know why many Eremophila fruit already forwarded by ESG members to the Uni don't seem have viable seed. This led to a discussion on pollinators and dormancy. Hans asked members to collect fruit and keep a note on how many have viable seed, to help inform the early stages of the research. Other questions discussed were why do some species germinate with green fruit, and what is the "attracting" role of the colourful calyx?

Before we took the "quick" 2-hour tour of Ken's Eremophila plantation, (it took us 3+ hours) we decided that the **next SA ESG meeting will be on 26th and 27thMarch 2022 at Renmark**. We will be visiting Don and Chris Lill's extensive plantation at an ideal time to take cuttings, cutting graft/graft material.

Members then wandered through Ken's plantation with much clicking of secateurs interrupting Ken's commentary. There were special forms of *E. lachnocalyx, E. laanii, E. phyllopoda* and *E. platycalyx* that struck me as WOW plants. Again the effect of the bushfire

[4] See bushfire pics at http://www.anpsa.org.au/eremophilaSG/pinery/pinery.html .

showed how some species did not germinate from seed after the event (e.g. *E. maculata*) but some species did (*E. hygrophana* and *E. strongylophylla*).

It was a thoroughly enjoyable day that had touched on early APS interest in Eremophilas, right through to today's understanding of the growing range of species that can add value to any garden. We even welcomed three new members - welcome Fiona, Lisa and Nigel. We look forward to catching up in Renmark where we will see how the cutting grafts / cuttings and grafts have bloomed.

Actions from members please:
1. Email suggestions for WOW plants for the Adelaide Botanic Gardens

2.Collect fruit from your plants and record viable seed to assist with the UQ work – send info to Hans Griesser

3. Forward expressions of interest to attend March 2022 SA meeting to Tim (**drspock52 (at) gmail.com)**

Victoria

The Victorians met on 27 November at Boort, north-west of Bendigo, Vic. Chris Strachan ha now take over a coordinator – thanks to Neil Duncan for all his work as coordinator up until this meeting. A report will be included in the next Newsletter.

From Your Letters

Lorelei Bartkowski (Qld): I have just been reading the new Book by Russell Wait (and loving it) and discovered there is a pink *E. lachnocalyx* and *E. nivea*. Be still my heart…..does anyone have some photos of these? Would love to see more of them. Here is my *E. longifolia* showing its first flowers. Love the spots!

Dave Bishop (NSW): Last winter has burnt a lot of the tips of my Eremophilas. *E. laanii* was hit bad and E. 'Meringur Midnight' leaves are very dark in colour but I'm hoping that now the warmer weather is here it will show some new shoots. Last winter they handled it without problems. Maybe the combination of a wet winter plus cold is the problem.

Ian Cox (NSW): This is Ken's Pinery Fire Gem. It's going well so far – fingers crossed. Grafted of course, it's been in the ground about 12 months, and is about 50cm high.

Margaret Lee (SA): Thank you for the latest very interesting Eremophila newsletter. It is so good to see so much happening and being recorded and encouraged.

The matter of propagation by seeds has been put in the "too hard" basket by most of us for a very long time. However, I can remember that when Project Eremophila first began there was a

watchmaker who lived "Back o' Bourke" somewhere who was the only one who had success. He used his tools of trade to extract the embryo from the seed capsule.

Tim Wood (SA): our garden this spring

Tony Porritt (NSW): I am getting a wonderful amount of information from Study Group discussions, particularly regarding what can be grown in Sydney.

As a relatively newcomer to Eremophila growing, it is great to hear about other growers' experiences. Here are *E. decipiens* (below) and *E. 'Fairy Floss'* (underneath) from my garden.

I also have *E. mackinlayi*, pic next column. It is about 2 metres high and was grown from a cutting so is not grafted. [Ed. *Note – subsequent discussion online has revealed this to be the E. mackinlayi chimera* *– see page 17*].

I prune the *E. mackinlayi*, *E. decipiens*, *E. glabra* (yellow) and *E. glabra* 'Kalbarri Carpet' quite severely whenever they get too large.

I got the *E. decipiens* and *E. glabra* from Lyndal as tubestock and I believe they were struck from cuttings. They all seem to recover very well from heavy pruning

I have not pruned the *E.* 'Fairy Floss' yet. My block is a sloping sandstone shelf with up to 1 metre covering of sandy soil. I mulch regularly with hardwood chips to retain moisture and I fertilise twice yearly using Neutrog Bush Tucker scattered randomly. The block dries fairly quickly after rain.

My garden consists mainly (80%) west Australian plants which seem to do quite well in this environment. I want to grow more Eremophila and I am just waiting for the current postal blockage to end so that I can order some from the Arid Plants nursery in SA to which Charles alerted me.

Lyndal Thorburn (NSW): I have been watching honeyeaters on our Eremophila in

spring – I have seen the Red Wattlebird going for *E. maculata, E. alternifolia, E. bignoniiflora* and *E.* 'Yanna Road'. Our wildlife camera photographed this Yellow-faced Honeyeater trying out the *E. glabra x E. subfloccosa* in its tub (below).

Phil Trickett (NSW): Catriona and I saw *M. insulare* growing out of a large, ungrafted plant labelled *E. mackinlayi* at Melton Botanic Gardens in April 2021, before we were all locked down. We were shown the plant by gardens staff, who told us that the huge forms like this one are chimeras and the true forms are much lower. The photo doesn't clearly show where the Myoporum growth comes from, but it is out of the shrub itself not the roots. The photo is only a small section of the plant which, was over 2m high.

We have a large grafted plant which is 6 or 7 yrs old but has never exhibited this behaviour…..so far.

Biennial Conference (2022)

Study Group leaders have been asked if they are available to speak or mount displays at the Biennial Conference in Kiama in September 2022. As 2022 is ESG's 50th Anniversary (!) I have my thinking cap on regarding how we can celebrate at or after the conference. I hope to have more information for members in the next newsletter. If you have any ideas in the meantime, please email!

UQ Research

Hans Griesser and I continue develop a submission to the Australian Research Council for funding to research Eremophila seed germination, with the University of Queensland. The fruit provided by members so far has been very useful, in more ways than one – I hope we can report on this more fully in the next newsletter. We have also submitted an application for a smaller project to the Queensland Geoff Simmons Bequest, administered by Native Plants Queensland.

Corrigenda

In the first paragraph of my fertiliser study report in the last newsletter I said that natives don't like high levels of phosphorus (true) but went on to say that some fertilisers "have their phosphorus supplied by urea…(which can)… release phosphorus very quickly" – those last two mentions should have been about Nitrogen! Thanks to Dick Harding for picking this up.

And thanks also to Chris Reddick for pointing out that the photo in the Myall Park article in the last newsletter labelled Darell and Chris, should have read Darell and Ross; and it was Dorothy Gordon (not Robyn) whose exquisite paintings adorn the gallery walls.

Next Issue

The feature species for the next issues is ***Eremophila georgei*.** There are several colour forms (purple, lavender, pink, blue and lilac). There are also at least four hybrids, with *E. clarkei, E. glabra* ('Murrin Magic'), *E. simulans,* and *E. homoplastica*.

I am also planning an article about how to identify Eremophila from photos (or not, as the case may be!) and I may survey you about what you think of this newsletter. Sounds like I have enough for another issue already…

About the Study Group

The Eremophila Study Group aims to further knowledge about the cultivation, propagation and conservation of the 200+ species of Eremophilas, an endemic genus of Australian plants. It is one of several Study Groups which operates under the auspices of the Australian Native Plants Society (Australia) (ANPSA).

SUBSCRIPTIONS

Membership is $5 per annum. Subscriptions for a financial year can be sent by cheque posted to **3 Considine Close Greenleigh NSW 2620** or (preferably) paid by direct deposit into the Group's bank account:

BSB: 105-125
Bank name: **Bank of South Australia**

Account No.: 013 751 340
A/c name: **ASGAP Eremophila Study Group**

Please put your surname and state/group membership in direct deposit details

ANPSA policy is that regional groups pay for two subscriptions in recognition that Study Group material will be used by several group members

New members, please download the application form from our website and send with your cheque/transfer (details below) http://anpsa.org.au/eremophilaSG/index.html

Study Groups allow members with specific interests to develop that interest to the fullest extent and to contribute in a practical way to the body of knowledge on the Australian flora. Active members collect information on the genus and send their observations to the leader who collates and publishes the information, in a newsletter or in other Society publications. The Study Group can record any aspect of cultivation, propagation and ecology of the preferred genus. Study Groups are expected to publish at least two newsletters per year.

In addition to paying annual fees, members must also be members of an ANPSA-affiliated regional society (http://anpsa.org.au/region.html).

This Study Group aims to study the cultivation and propagation of the genus *Eremophila*; to expand cultivation of *Eremophila* in gardens; and to examine the growing requirements of the various species to improve their reliability.

Leader: Dr Lyndal Thorburn, Life Member of ANPS Canberra. Contact her through lthorburn (at) viria.com.au or phone 0418 972 438. Address: 3 Considine Close Greenleigh NSW 2620

Honorary members: Ken Warnes and Russell Wait

Newsletters are available in Black and White by post and in COLOUR by email or CD.

For more general information about Study Groups, contact **Ms Jane Fountain** Coordinator, Study Groups, Australian Native Plants Society (Australia) (jlfountain5 (at) gmail.com)

NEXT NEWSLETTER when I have enough for 24 pages but not before February 2022