

Australian Native Plants Society (Australia) (ANPSA)

Eremophila Study Group Newsletter No. 130

March 2021



Feature species – *Eremophila dempsteri* – showing three colour forms (pic Russell Wait)

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Letter from the Editor

Welcome to the first issue of the Eremophila Study Group newsletter for 2021. Nature never fails to surprise – we had a wet summer here in SE NSW, such a welcome relief from the terrible heat and dry this time last year.

Thanks, as always, to the many members who contributed to making this newsletter a reality. The feature species this month is *E. dempsteri*. I received essential input from Ken Warnes and Russell Wait on their experiences, and 15 SG members returned the survey I circulated in January – reporting on your experiences really helps others in the SG learn about this species and how it might perform in their own gardens. The Feature Species starts on page 3.

We have also lost a founder of our Study Group – more on Tom Loffler’s contribution on p.9.

I have also dipped into the What Are You Growing Survey for a second time, this time looking at the species that are most grown (p.10).

We also have three articles about chimera of Eremophila and Myoporum (starts p.11) and some interesting insights into fertilisers for native plants (recently published in the Victorian APS newsletter) (p.16).

With COVID restrictions easing, two of our sub-groups are meeting and both are organising events which may be of interest to other members. SA is meeting in Kadina at the end of March and Queensland at Myall Park Botanic Garden in July – if you are not living in those States but are interested in attending, please ensure you approach the organisers in good time as there are number and facility limits on both. See page 21 and 22 for more details.

Happy reading! and
stay safe everyone



Lyndal Thorburn
Leader and Editor



Eremophilas in the News

Thanks to those members who have each contributed one photo of their Eremophila flowers in Spring, grouped into the letters that form the word “Eremophila.” A contractor on AirTasker photoshopped this into a banner (tiny version below). This now graces our Study Group Home Page (thanks to Brian Walters for web support):

<http://www.anpsa.org.au/eremophilaSG/index.html>



“Gardening with Angus” has placed an arched version of this picture on their site to head up our general article about the genus – see <https://www.gardeningwithangus.com.au/eremophila-the-genus-as-a-garden-subject/>

Thank you to members for all this work (and for responding to my fiddly requests for changes) are: Lyhn Barfield, Bill Handke, Jocelyn Lindner, Bev/Ian Rice, John Upsher, Russell Wait, Jan Webster, Nev White, Tim Wood.

Another helpful person on AirTasker has now arranged the same set of letters vertically so I can print a vertical banner for our next display.

What’s New in the Study Group

Australian Plants Journal

The September 2020 issue of Australian Plants featured the genus *Eremophila*. We have had great success with selling this – many new members are ordering the issue when they join, and the Australian Arid Lands Botanic Gardens in Port Augusta and Australian National Botanic Gardens have ordered 55 copies between them, for sale in their shops.

We have about 25 copies left – if you missed out, email the editor. Once they are sold, there won’t be any more! Please ask for a postage quote if you want multiple copies.

New members

Welcome to new members Brent Dower (Vic), and Joan Hayes, Erica Nash, Tony Porritt (all NSW) and Ian Roberts (SA).

Feature species – *Eremophila dempsteri*

Lyndal Thorburn, Russell Wait and Ken Warnes

Eremophila dempsteri, also known as the Leafless Desert Fuchsia, is one of the *Eremophila* that is described as “broom-like”. This is due to its narrow base, which broadens into a soft crown 1m-4m high and almost as wide. A white form showing this habit is below (pic Russell Wait).



E. dempsteri grows naturally in Western Australia, between Kalgoorlie and Esperance, on red-brown sandy soils. Driving west from SA, the first specimens are encountered after crossing the Nullarbor Plain, soon after Cocklebiddy, and here they are limited to about 2m in height and are well-shaped, multi-trunked shrubs. Further west, they gradually increase in height and, for a considerable area around Norseman and some distance eastwards, are one of the dominant species, sharing that dominance with the closely related *E. interstans*. In these natural stands they are often whip-like but whether this is a natural single or few stemmed habit or the surviving stems of once much denser shrubs it is difficult to say.

Leaves are terete (circular in cross-section) and branches have sessile, linear-terete leaves with a distinct hook on the end. Leaves are short, only 7.5mm long x 1.3mm wide. The picture next column showing both the hooked leaves and hairy sepals and fruit capsule (see Horticulture

sub-section) on a pale pink form of the plant, below, is from Alice Newton.



The pic below is of a mauve form at the Burrendong Arboretum (pic Alice Newton).



The stems are termed “banded” by Chinnock – layers separate along furrows and form brown and green bands along the stem (pic below by Russell Wait).



Both the banded stems and hairy sepals distinguish the plant from the closely related *E. psilocalyx* and *E. interstans*.

Horticulture

According to Boschen, Goods and Wait, *E. dempsteri* can be grown in full sun or as an understorey plant. It does not need any additional water once established. They recommend it as a specimen shrub or as a screen. It is also useful in floral arrangements.

In cultivation it can become quite a large shrub, perhaps too large for many gardens. A plant in Ken's "Cottage" block, grown from a collection near Cocklebiddy, planted out in neutral sandy loam, has developed into a many trunked, large, wide branching specimen, some 7m across at over 45 years of age. It has held together reasonably well whereas a specimen grown from material collected closer to Norseman grew to over 3m high and 8m across before breaking apart at the base and dying branch by branch. Both of these specimens branched at ground level into multi-trunked, large spreading shrubs, lovely to look at but ultimately the spreading habit has proved to be a fatal flaw.

Fifteen members responded to the survey issued for this feature species. All plants were growing in the ground rather than in tubs and 80% received sun all day (13% had sun for part of the day and 7% had dappled shade).

Flowering

The predominant flower colour in the wild is blue, but Russell has found several colour variants and specimens with lilac, bright or pale pink, "normal" blue, silvery blue or white flowers are now in cultivation.

Flowers are unspotted and are up to 13mm long. They emerge in spring, with survey respondents reporting a flowering period of 1-3 months in that season. One respondent also reported sporadic flowering after rain.

Survey respondents were most likely to be growing the white form (8), followed by pink (7), then pinky-mauve (6), lilac (5) and blue (2).

The picture of the lilac form below is by Andrew Brown and that of the pink form is by Alice Newton.



Ken notes that his pink specimen is beautiful in full flower for two weeks but then the retained wilting flowers give it a "dirty" look. The white stays white and is attractive for longer, the silver also holds its wilting flowers. The blue simply

goes from full flower to the glorious fruiting branches shown below. Perhaps the generally darker general appearance of the bush hides the drying flowers to some extent.

The sepals of *E. dempsteri* are up to half the length of the corolla (pic below by Andrew Brown) and have hairs that become prominent after flowering and may be a darker than the corolla. They also stay on the plant long after the flower has fallen (up to 2 months, according to survey respondents).



Fruits are also hairy. The pic of these below is by Alice Newton. In fruit, the blue and the white are equally attractive, not so much the pink and the silver.



Frost and rain

Most survey respondents lived in rainfall areas of 400mm-800mm p.a., with only two living in areas with rainfall closer to that which occurs in the wild for this species (i.e., <400mm p.a.). One person lived in an area with >800mm p.a. Ninety-three percent of respondents reported no visible effects from heavy rain. One respondent said their plant died after heavy rain – this

person lived in a 400mm-600mm rainfall region.

E. dempsteri is reported (by Boschen, Goods and Wait) to be frost hardy with tolerance to -8°. Respondents to the survey supported this, with 93% reporting no frost damage and only one reporting minor tip burn. This person lived in a region with 10-20 frost days p.a. Most respondents lived regions with under 20 days of frost p.a. however three lived in regions with >50 days p.a. Average coldest day was about minus 3 degrees, however up to minus 8 degrees was reported.

Wind damage

While the plants grow well, mature plants can be broken apart by strong winds. This is probably due to growing them as individual specimens in gardens, whereas in nature they are generally more whipstick like and grow as a component of the understorey in Eucalyptus-dominated woodlands.

However, 78% of survey respondents reported no ill effects from wind; 14% reported damage to upper branches and/or flowers and 7% reported broken lower branches and severe loss of flowers (in season). Russell previously planted *E. dempsteri* as a windbreak in his former farm in Natya and it performed well there.

Longevity

E. dempsteri appears to be a long-lived species with survey respondents reporting plants living up to 36 years of age (average 14 years, noting that some respondents had young plants). Ken has grown plants up to 40 years old.

Pruning

Eighty percent of survey respondents did not prune their plants. Of those that did, one reported light pruning by kangaroos, one reported an occasional prune of about 5% and the third reported a prune of 20% every 3 years. A pruned specimen is shown below (pic Russell Wait).



Pests

Ninety-three percent of survey respondents reported no pests or diseases on their *E. dempsteri*. The final respondent reported finding white fly, but the plant was undamaged. Ken has had trouble with termites on his plants (attacking the crown, rather than the stem).

Propagation

Propagation from cuttings is reliable although a little slow; however, when compared to other closely related species, it is relatively easy. They do take a long time to strike (as do those of the closely related *E. psilocalyx*, where strike times of 12 months are not uncommon).

Boschen, Goods and Wait say that quicker result can be achieved with fresh new growth from young shrubs in summer. Prepared cuttings may be up to 15 cm long because of the broom-like growth (they look little trees). The tip growth can be almost succulent and should be trimmed back, hence the need for semi-mature wood at the base.¹ Cutting-grown plants were certainly favoured by respondents to the “What are you Growing” survey and were reported by 75% of those growing the species (20 out of the 62 respondents grew *E. dempsteri*). All but two of these respondents to the *E. dempsteri* survey were also growing cutting-grown plants.

The species also grafts readily. Grafted plants will grow better in heavier soil. Respondents to the survey had plants grafted on to *M. insulare*, *M. ‘Monaro Marvel’* and *M. acuminatum*.

As with most Eremophila, growth from seed relies on the right place and lots of rain. At Ken’s place, following a big rain, large numbers of tiny seedlings appeared in bare ground where there had previously been a specimen of *E. dempsteri*. Several were potted up and then planted around the property. Of those left *in situ* not one survived and there would have been possibly 200 of them. The drupes of all these Crustacea group species are small and thin walled and he presumes they didn’t survive for a second year as he has never seen another one.

Following the Pinery Fire in SA, numerous seedlings appeared under one of Ken’s white-flowered plants. Most of these were successfully potted up and planted. None have flowered yet.

Hybrids

E. dempsteri occurs in large numbers over large areas and with the huge number of flowers and subsequent seed set it is not surprising that occasional hybrids are found.

There are four hybrids known. The hybridising species are all closely related, with the hybrids generally part-way between the two parent species. All have been found naturally occurring in the wild. None are readily available.

E. dempsteri x *E. dichroantha*

This hybrid was collected by Russell Wait where the two species two species grow together where the Fraser Range crosses the Highway between Balladonia and Norseman in WA. The hybrid is a mix between the parents and grows to >2m tall and up to 3m wide and has slightly smaller and darker flowers than the “straight” *E. dempsteri*. It lacks the fluffy fruit. It will strike from cuttings.

The photos over are all from Ken Warnes.

¹ See also note from Dave Bishop in the letters section on general approaches to striking broom-like Eremophila



E. dempsteri x *E. interstans*

Blue and white forms of the naturally occurring *E. dempsteri* x *interstans* ssp. *interstans* can be found in quite a few places in WA. Ken found a blue hybrid, in a mixed population of *E. dempsteri* and *E. interstans*, and this is the one in common cultivation, often sold as “blue interstans” in SA.

Russell also found many hybrids in a stand on the Kalgoorlie Norseman road, identifiable from a distance by the habit of the shrub: *E. interstans* ssp. *interstans* is a more symmetrical, upright shrub and *E. dempsteri* is quite spreading –the *E. dempsteri* x *interstans* ssp. *interstans* is halfway in between.

The photo next column by Russell shows a white form of this hybrid. It makes a lovely, slightly weeping, specimen or light screening plant which flowers for a considerable period.



Russell notes that his *E. dempsteri* x *interstans* ssp. *interstans* (blue) is a spreading shrub. He suspects it may have crossed back to *E. interstans* ssp. *interstans* (pic below from Russell). Russell has found this hybrid in quite a few places in WA. It is a shrub that can get to 2.5 m H by 4m W and is prone to wind damage.



Most examples of this hybrid also show the stem banding which is diagnostic of *E. dempsteri*, but it is not as pronounced as in the parent.

This hybrid does grow well from cuttings. In preparing the cuttings it is obvious that the branching is different to that of *E. interstans*.

E. dempsteri x *E. psilocalyx*

This is also a naturally occurring hybrid, found by Russell Wait and Ray Schilling in 1998 along a track about 10km south east of Norseman among black box woodland.

It forms a shrub to 3m high x 4m wide and has a very pale lilac corolla that is the size of *E. psilocalyx* with leaves halfway between the two

sizes. It lacks the stem banding of the *E. dempsteri* parent. It does put on quite a good show when in flower as in Russell’s pic below.



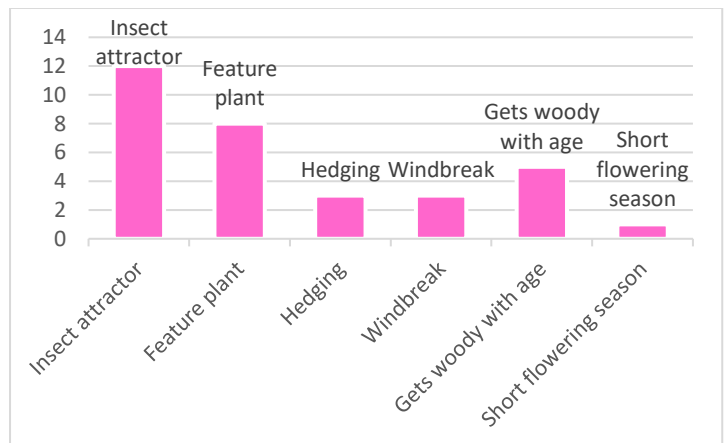
E. dempsteri x *E. scoparia*

E. dempsteri x *E. scoparia* is another naturally occurring hybrid. It is an untidy shrub to 3m with pale lilac flowers. It flowers for only a short time in spring but has persistent pink sepals and hairy fruit (shown in the photo below by Russell). It is not particularly useful from a horticultural perspective and does not flower as well as the parent *E. dempsteri*.

General recommendations

E. dempsteri is a large shrub which is frost and drought hardy and is generally resistant to pests and diseases. The range of colour forms provide variety, and the persistent fruits extend the useful “flowering season” to about 5 months.

Recommendations from survey respondents included use as a feature plant, a hedge or windbreak (see below). They are also concerned about it getting woody with age. It has a short flowering season when compared to some other *Eremophila* species.



All in all, it is a very desirable species to have in your collection provided you have the room. The immediate close relatives in *E. dichroantha*, *E. succinea*, *E. psilocalyx*, *E. ciliata* and *E. interstans* generally take up less space and all perform equally well but may be more difficult to propagate, *E. dichroantha* and *psilocalyx* being the more commonly seen in cultivation.

Vale Tom Loffler

Ken Warnes

I was recently made aware of the passing of Tom Loffler, a Foundation Member of the Eremophila Study Group. On the last occasion that I spoke with Tom we covered a broad range of topics and planned for a get-together when his health improved. Sadly, it won't happen now.

Current members of the Study Group may not be aware of Tom's contribution in the early days but *E. maculata* x *racemosa* (recently ACRA-registered as 'Fairy Floss') and *E. christophorii* x *nivea* (ACRA registration submitted as 'Smoke Haze' – pic below) come from his extensive plantings at Waikerie in SA.



We also have *Eremophila lactea*, which Bob Chinnock named from material that Tom collected west of Greenpatch in WA while on his honeymoon. That collection is acknowledged in Chinnock's list of specimens studied. A photo of this species by Bevan Buirchell is in the next column



Tom had a very sharp and enquiring mind, but it could safely be said that his record keeping was perhaps a little lacking. Further hybrids from experimental drupe and seed treatments may well be out there in his several acres of plantings.

Newsletter 31 includes a report from Tom on an experiment involving prolonged soaking of drupes in large volumes of water to leach out any inhibitors present. He is further referenced in Newsletter 37, 89, 106, 113, 116, 121 and 123, mainly in connection with his hybrids.

Vale Tom, thanks for the memories. Tom was rough as bags but highly intelligent and a good friend for over 40 years.

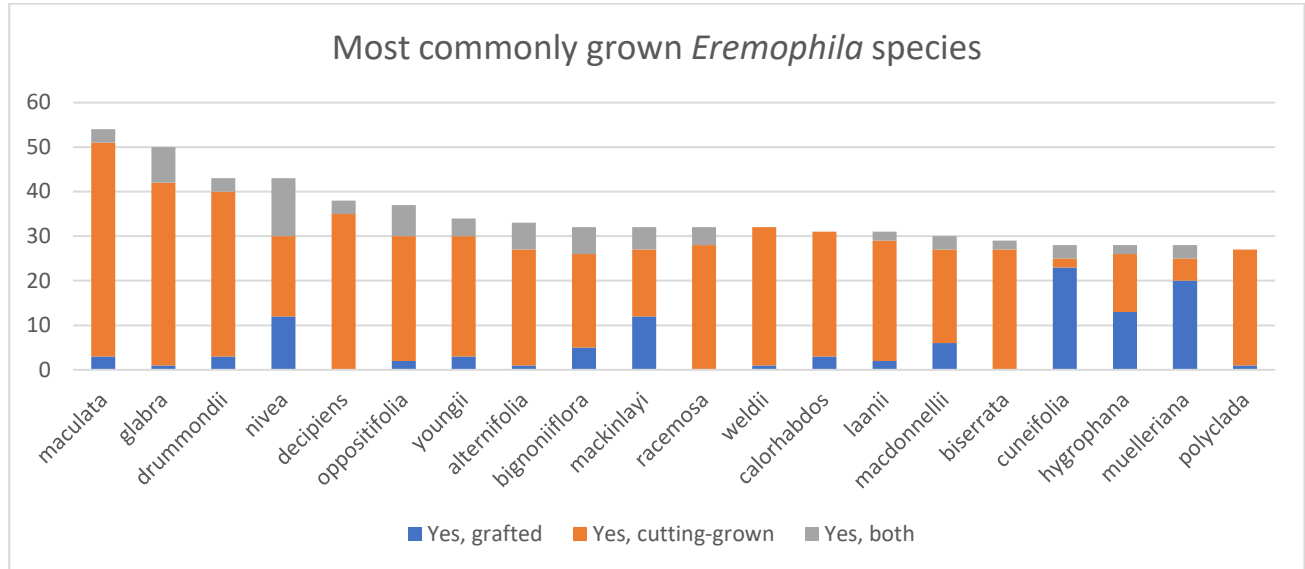
Seed Request

Member Hans Griesser is also curator of the SA Region's seed bank – he has asked for donations of seed (any genera/species, not necessarily Eremophila). If you can help him, please email [hansjgriesser \(at\) gmail.com](mailto:hansjgriesser@gmail.com).

What are you Growing? – More Results of the Survey

Lyndal Thorburn

I presented the first analysis of the What are you Growing garden survey in Newsletter 129, focussing on rare species. This time, let's have a look at the most commonly grown species.



The graph above shows the top 20 species grown by survey respondents. Unsurprisingly, *E. maculata* and *E. glabra* top the list with 54 and 50 respondents respectively (out of 62 – that's 87% and 81%). Cutting grown plants dominate here, as they also do for the third most-popular species, *E. drummondii*.

E. maculata and *E. glabra* are very closely related and it must be said are sometimes mislabelled in nurseries – I have an *E. glabra* Amber Carpet with an *E. maculata* label on it and I have seen *E. maculata* labelled as *E. glabra* – the main difference is flowers of *E. glabra* are sessile and those of *E. maculata* have a long S-shaped peduncle. *E. glabra* is also acknowledged as a bit of a 'grab bag' of species that are yet to be formally separated.

E. nivea ranks 4th, with grafted plants accounting for 58% of those reported – these perform better in wetter climates (e.g., Sydney) and are also widely available in retail nurseries.

It is interesting to see *E. decipiens*, *E. oppositifolia*, *E. youngii* and *E. alternifolia* next on the list – all becoming more readily available in retail nurseries. The survey didn't ask for

information on subspecies and hence I can't comment on prevalence of one subspecies over the other for either species.

Grafted specimens make their reappearance with the 9th and 10th most commonly grown species – *E. bignoniiflora* and *E. mackinlayi* (read Russell Wait's and Ken's article in this Newsletter on these for some insights into the latter, and also to *E. hygrophana* – ranked 18th).

The remaining species in the top 20 are still very popular, with the last, *E. polyclada*, still grown by 44% of respondents. It is also interesting to note how popular *E. cuneifolia* and *E. muelleriana* are, as they are both species where grafted plants predominate by necessity. Thirty percent of *E. macdonnellii* (ranked 15th) are also grafted – possibly because the roots on cutting-grown plants are so fragile (I have damaged lots of them!).

E. weldii, *E. calorhabdos*, *E. laanii* and *E. biserrata* make up the remainder – all reliable plants for the home garden and with attractive flowers and easily propagated.

Origin, Development and Propagation of Chimeras

Russell Wait

For those of us who enjoy the challenge of growing *Eremophila* in soil/climate outside the normal habitat, grafting is often the only option to ensure positive results. This is a popular approach by the public and the nursery trade for propagating new garden plants.

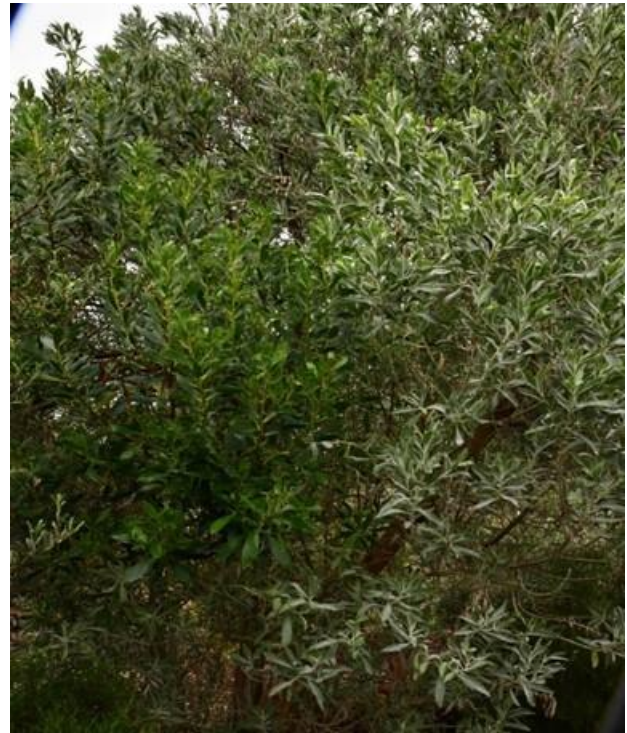
A chimera (ky-MEER-ə)² in botany is a plant or plant part that is a mixture of two or more genetically different types of cells. There is some thought that this mutation could be caused simply by a bite from an insect or even sun exposure on the stem causing damage to the cells. However, these assertions are not supported by scientific evidence and the reasons why this occurs remain unknown; however, it is common knowledge that pruning can initiate these changes.

An interesting growth, known as ‘graft-chimera’, can form within callus tissue at the graft union. Callus is a soft tissue that forms over wounds to help plants heal and it can become organised to produce stems and leaves.

In graft-chimeras, this callus contains a mixture of cells from both the root stock and the scion. The new shoots may contain different proportions of each cell type and hence will look quite different to both the rootstock and the scion, exhibiting intermediate leaf and flower combinations. If the chimera is stable, material from the shoots can be grafted onto a new rootstock to produce a novel plant. Chimeras occur in other plant families, either naturally, or contrived to produce improved ornamental features such as variegated foliage. Instances of chimeras also occur in the animal kingdom, including in humans.

One of the first reported *Eremophila-Myoporum* graft-chimera occurred in my friend’s garden in Drysdale, Vic. with a root stock from *Myoporum insulare* and the graft scion from *Eremophila hygrophana*. The new organism

began as a grey shrub with flowers that had a small lilac corolla. Then part of the shrub changed from grey to green with a white *Myoporum* corolla (see pic below showing both leaf types).



This chimera is now called ‘Drysdale’. As sometimes occurs, it is quite unstable, however it remains alive and now has mostly green foliage.

Subsequently, a graft-chimera was found at Curlewis, Vic. The *Eremophila* scion species is unknown, with details lost over time, but my impression is that it is either *E. hygrophana* or *E. mackinlayi*. The first new organism, growing from the graft union, looked like *Myoporum* but had grey foliage. The original grafted *Eremophila* scion grew to a massive size and was pruned hard which then produced an unusual large-leafed growth. Attempts to propagate from this growth were unsuccessful.

Although the original plant died, cutting propagation from the second *Eremophila* scion was successful and was eventually planted. The plant, which has beautiful purple corolla, looks

² Further reading
[https://en.wikipedia.org/wiki/Chimera_\(genetics\)](https://en.wikipedia.org/wiki/Chimera_(genetics)) and

<https://aggie-horticulture.tamu.edu/tisscult/Chimeras/chimeras.html>

like an *Eremophila* but is the result from propagating a graft-chimera (pic below).



It is 4.5m high by 6m wide (pic below). In contrast, *E. hygrophana* and *E. mackinlayi* only grow to about 1m high.



The sheer size of this plant suggests that it has some genetic material of *Myoporum* and makes it unstable for propagation. Cuttings taken from this plant, particularly when pruned, can produce green shoots which appear to be *Myoporum*. The plant is still growing at Curlewis and keys out in part to *E. hygrophana*; however, I have observed cuttings from this plant which key out more like *E. mackinlayi*. The instability is further indicated by the occurrence of three flowers in a leaf axil while at other times there is only one showing.

I have also observed a plant, labelled an *Eremophila*, which is a known cutting propagated from the Curlewis plant. Because of its size and close proximity to the house, it was pruned to a more manageable size. This process

resulted in green and grey shoots which appear *Myoporum* in size and shape (pic below).



The new growth (below, showing green *Myoporum* shoots growing off a cutting from the original chimera) is significantly more vigorous than that of the original plant and may indicate that the genetic material from the *Myoporum* may have become the more dominant.



Just to add to the curiosity and observed instability, I am aware of another graft-chimera on a plant obtained as an *Eremophila* and from the Curlewis plant. It is now displaying four types of foliage, all occurring after pruning (pic over page).



Unlike the selective removal of rootstock growth, removal of a graft-chimera growth is continual and repetitive and requires shoot removal from the graft union, which in turn could trigger ‘aggressive-growth’. Without due diligence, it can outgrow the original plant.

In my opinion, there are plants labelled and sold by some nurseries as either *E. hygrophana* or *E. mackinlayi* which have originated from the same plant at Curlewis, and that grows to an exceptionally large shrub (see p.17 for an article on this very topic!). These so-called *Eremophila* differ in the types of hairs on the sepals: sepals of *E. hygrophana* have glandular hairs and those of *E. mackinlayii* are without glandular hairs. One requirement for cultivar registration is the ability for the plant to be reproduced in the same, stable form – not possible with this chimera. A graft-chimera is not a hybrid, as these arise through cross pollination of two species. This graft-chimera, due to the inherent instability, is only a curiosity and should not be called an *Eremophila*.

Sharing plant material is a feature of belonging to a group of like-minded gardeners. I would suggest that care should be taken, when selling/trading/sharing plant material from a graft chimera or plants with the name *E. hygrophana* or *E. mackinlayi*, as cutting or scions from a graft-chimera could be used unwittingly. The plant described on the label might not be what you wanted, and you may be disappointed, especially after pruning, because of the graft-chimera instability.

Graft-chimera can also occur on *E. revoluta*, *E. prostrata* and *E. warnesii*.

Chimera Commentary

Ken Warnes

Russell has asked me to comment on the previous article.

It would appear that there is no way that we can trace the origins of the ‘Curlewis’ so we can’t be certain of the *Eremophila* component of it. We know that the ‘Drysdale’ chimera is a combination of *Myoporum insulare* and *Eremophila hygrophana*, but I would suggest that if it is *E. mackinlayi* then it would be *ssp. spathulata* based on the density of the flower heads. *E. hygrophana* and *E. mackinlayi* are separated in Chinnock’s Key by the types of hairs on the sepals and young growth tips, but the differences may well have been lost in the chimera production process.

We are aware that one major wholesale nursery is producing and supplying the Curlewis chimera as *E. hygrophana* based on its general appearance and that is quite understandable. There will almost certainly be further such aberrations in the future.

Russell reports on variable growth following pruning, in the extreme case reverting to almost a green bush; yet I have seen it grown and pruned into a hedge in Victoria with no sign of green. I can only suggest that a certain amount of luck in the purchased plant is involved with the degree of either parent lurking deep within the propagating material. It would seem that extreme care must be taken when selecting propagating material, ensuring that cuttings are only taken from “true” sections. I have seen no such reversion to green in plants in SA, admittedly from a very small sample which have not been pruned, but the seemingly insidious nature of cell distribution in the chimera may make it an ongoing problem.

My experience with the ‘Drysdale’ chimera is that it is very unstable. Originally my plant was totally grey, but over several years the green shoots have gradually overgrown the grey sections.

In the meantime, some branches had stems with leaves of different colour on the upper and lower surfaces; others had leaves divided in colour down the mid-rib (see example below); and some branches were green on one side with *Myoporum* flowers and grey on the other side of the same stem with small, lavender chimera flowers. When the flower heads grew into each other it was a strange sight indeed. To my regret I made no effort to prune out the stronger green shoots and it is now a green bush.



In contrast, I know of another plant in Owen which has remained completely grey. Again, is it simply a matter of the original selected cutting material or are there other, unknown, factors at work? These are all cutting grown plants. The Drysdale chimera in Owen is below.



My *E. warnesii* chimera only became apparent when a grafted plant went into terminal decline and as the top died off the chimera made its appearance some 3-4 years after the initial graft was done. I grafted a plant from it before the original was lost forever and it is now a 2m

shrub with no sign of green apart from a few leaves that have rubbed off their velvet coat (below).



My *E. prostrata* was grafted onto a *Myoporum* ‘Monaro Marvel’ or something similar and may have been a multiple graft because after a year or so of being a perfectly behaved *E. prostrata*, a series of variable growths appeared. These rapidly dominated the one remaining *E. prostrata* branch. In disgust I pulled it out but not before it “escaped” to NSW. Since then, it has resulted in all manner of strange growths, some of which have been documented by Ian Tranter and Charles Farrugia in earlier Newsletters.

I thought that I was well rid of it until I discovered a new plant in my plantation. I’m certain that I hadn’t propagated it so I can only assume that it has done it again on a further grafted plant. This one looks like a small, bushy *E. prostrata* with a half-size flower. Give me the real species every time.



So, chimeras are an on-going fact of life. If they can be harnessed to be reliable garden specimens, they could be of immense value. The plant illustrated in Russell’s article defies belief but what a plant it is.

Growing Eremophila from Seed

Russell Wait

This is a report of my recent seed-growing. I first sieved the Eremophila fruit to get the rubbish out and soaked some in water for 24 hours and left some without soaking. Both lots were sown on 8 August 2020 in a mixture of potting mix and 20% sand and were then smoked for 1.5 hours.

The first seedling appeared on 13 August and by 7 September they had slowed down so I put them back in the smoker for 1.5 hours again. The first seedling appeared after that on 13 September. More seedlings appeared in those trays that were not soaked.

I had a lot of rubbish left over from the sieving and still had room in the smoker so into a tray and through the smoker it went. It was a mixture of sand and mainly humus and seeds grew in this too - the first seedling appearing on 17 August. They were only tiny cotyledons tiny fruit which had fitted through the sieve, leaving the plumper ones on top and sown in seed trays. I do not know what species they were, and only guess what they are at this stage. If my guesses are right, I got up about 4 seedlings in the seed trays where most of the fruit were and about 20 in the rubbish tray.

So, what caused all the seeds to come up in the rubbish? Was it all the humus or the bit of soil or was there some mycorrhizal fungus that was present in the soil or humus that caused them all to grow? There was also a problem with damp off in the rubbish tray so, the seedlings were potted as soon as they appeared.

I also had some old (3 or 4 years) seed trays that had been smoked before, so I put them through the smoker on 28 August and the first seedling appeared on 4 September. There were 2 trays that had been treated with gibberellic acid and nothing appeared in those trays. All other trays had something appear. The only trouble is tags are missing or had fallen out so I will have to wait to find out what I have. One tray had 30 seedlings appear.

Cutting Experiments

Dave Bishop

I have just completed a small experiment with stripping vs non-stripping of basal leaves when doing cuttings. Many fine-leaved species are known to be slow to strike and it has been suggested that damage to the stem, when stripping, hinders rooting. I used ROOTEX GEL (4g/l indole butyric acid). The potting mix was 1/3 coco peat, 1/3 perlite, 1/3 vermiculite. Cuttings were housed in a large plastic tub, and (as it was summer), the lid was slightly raised.

I place wood shavings 25mm thick on the bottom of tub and around pots – they appear to keep the moisture level up. If I need to go away for a few days I just close the lid completely and they don't get watered until I return. This is more reliable than getting someone to water them.

E. dichroantha

8 cuttings non-stripped: first roots appeared out bottom of pot in 4 weeks; 4 more had good roots two weeks later (at 6 weeks); 3 remaining cuttings were still looking good and took another 4 weeks to develop roots (at 10 weeks).

10 cuttings stripped: 2 potted on with small roots after 7 weeks; 5 more potted on after another 4 weeks (at 11 weeks) (small roots); 3 more potted on at 15 weeks.

I have also tried this with *E. phillipsii* and, while there didn't appear to be any faster rooting, the roots of non-stripped cuttings were better than those of stripped cuttings. I think it's worth looking at this non-stripped system on other varieties like *E. interstans*, which appears to have much the same type of leaves. I am currently trying it on *Eremophila sargentii*, but



am unsure about this one at this stage. The pic shows non-stripped (left) vs stripped (right) of this species after 4 weeks.

Fertilisers for native plants

Alan Lacey

There are four main related issues re controlled release fertilisers for Australian native plants:

1. Low phosphorus (P) content.
2. Release rate.
3. Sensitivity and susceptibility of Australian plant genera in Proteaceae (grevillea, banksia, hakea, etc.) to too much available nitrogen - available too quickly.
4. Urea as the major source of nitrogen (N₂). Urea CO(NH₂)₂ is a colourless solid, very soluble in water; and rapidly decomposes in soils to Ammonium and Bicarbonate ions.

All of these factors interact. Other exotic and Australian plant genera may tolerate readily available high N₂ formulations.

My disaster, (and my fault) was caused by using controlled release fertiliser, "Grow" (3 month) where ~ 94% of its 21.4% N₂ was from Urea and therefore very readily available, too quickly.



Guaranteed Analysis		
Nitrogen (N)	21.4%	Calcium (Ca)
as Ammonium Nitrogen	0.7%	Magnesium (Mg) (3700mg/kg)
as Nitrate Nitrogen	0.5%	Iron (Fe) (17000mg/kg)
as Urea Nitrogen	20.2%	Trace elements - mg/kg
Phosphorus (P)	0.5%	Boron (B)
as Water Soluble	0.45%	Copper (Cu)
as Citrate Soluble	0.05%	Manganese (Mn)
Potassium (K) as Sulphate	13.7%	Molybdenum (Mo)
Sulphur (S)	12.1%	Zinc (Zn)
as Sulphate	7.4%	
as elemental	4.7%	
NPK 21.4.0.5.13.1		

This product contains <1mg/kg cadmium (Cd), <20mg/kg lead (Pb) and <0.2mg/kg mercury (Hg). Therefore this product may be used without restriction on food and animal feed crops.

This product states "All-purpose including natives" which is misleading. The product is a continuing Bunnings offering.

OUTCOME: The product ("Grow") was used as directed and I lost in excess of a hundred plants in 300mm pots. I saw the label "suitable for natives" but not, at first, the analysis – where 94% of N₂ was from Urea.

Another three-month formulation has a specific warning, "Not for Australian natives" and only 37% of its total N₂ is from Urea.

A much better result is obtained from Osmocote Pro, a slower release, 8–9-month, low P with NO Urea but, at time of writing, not yet available in small 2-5 kg buckets.

NOTES:-

1. UREA is the cheapest source of N₂ and is more likely to be used in cheaper products.
2. BIURET is a common impurity in synthetic urea; it is detrimental to plant growth and could be part of the problem.
3. READ the analysis data; avoid high Urea content products.
4. Some other fertilisers do NOT reveal their NPK analysis at all or hide behind " other organic N₂ " - perhaps to conceal the presence of excess urea.
5. Different plant genera may be more tolerant of the use of urea fertilisers; but awareness of this issue has not changed much over recent years.

Editors' note – Alan is chemist who formerly worked at RMIT Melbourne. A different version of his article was published appeared in the last APS Victoria Newsletter, which appeared after the discussion by the ESG Victorian sub-group about fertilising in ESG Newsletter 129 (December 2020).

I am planning a survey on fertiliser use so we can report on what works for Eremophila.

PLEASE TELL ME WHAT FERTILISERS YOU USE, TO HELP ME DESIGN THE SURVEY. So far on the list are native Osmocote, horse/chook/sheep manure, blood and bone, Grow, worm juice, Aquasol, Bush Tucker, Dynamic Lifter, Seamungus, Cock and Bull, Seasol, Strike Back. If you use anything else, please let me know by email.

E. mackinlayi at Melton a chimera

Anne Langmaid

At Melton Botanic Garden in Victoria, we have a form of *Eremophila mackinlayi* that is much more vigorous and floriferous than usual. We bought three of them on their own roots almost 7 years ago from Phillip Vaughan, who is very good at selecting excellent specimens from the wild, so we thought we just had a better variety.

About 18 months ago I had an email from a long-standing APS member, Laurie Baggins, who had bought one of this species as a cutting from our nursery. His plant had put on a shoot of *Myoporum*. He had initially thought it a seeding underneath, but not so. His son then took cuttings of the sport which ran true. Another customer spoke to me about something similar. Although I saw photos from Laurie's email I had seen no sign myself from the parent plant and, discussing it with others, I couldn't find a sensible explanation for it until now. It didn't fit the descriptions of chimera I had read.

In January, we were removing a clone from this original plant from a garden bed, as it was too vigorous for its surrounding plants, when we realized that there was a similar sport of *Myoporum* on it. I checked the parents again and



one of them had a sport as well (left). After reading through Ian Tranter's articles in Newsletter 120, I think it is an invisible Chimera, Level 3 *Myoporum* with level 1 and 2 *Eremophila mackinlayi*. If the circulation system and roots were *Myoporum* this may account for why our plants grow so vigorously.

A Level 3 chimera expresses itself in the core circulation and root systems. If I am correct in reading the articles Ian put together, it would be invisible that it is a chimera most of the time, except when the *Myoporum* section manages to break free within a growing tip to dominate. I can see no other possibility except for a chimera in the photo (above left). I have included another of the plant, it is flowering a bit due to the moist

summer (right).

Our *Eremophila mackinlayi* is a very vigorous, fast growing shrub. The remaining two parent plants (one has been removed one as they were



crowding each other), are around 2.5 metres tall and wide. We prune at least twice a year to keep it tight and to that manageable size, often removing up to a metre all around. All our cloned plants have been vigorous like their parents. They completely cover themselves with flowers in spring and sporadically at other times of year, depending on the weather. This is far outside what is the normal growth pattern for *E. mackinlayi* recorded in Chinnock.

It is possible that this is the first useful chimera on a native plant. It performs much better than a grafted plant, is super tough and flowers wonderfully. Yes, you would need to remove the odd *Myoporum* shoot before it dominates, but we got our first shoot on one plant after seven years so that may not be common anyway.

I realize that if I am correct, we may need to rename it *Eremophila+myoporum mackinlayi*. There is the problem we have sold hundreds of these plants in the past years. Phillip Vaughan may have as well, haven't spoken to him as yet. It may be another thing to look out for when trying to be true to species in the future.

I got very excited about this. It is wonderful to track down an anomaly and find out the cause. We are leaving the sport shoot temporarily, for interest and to make sure it is a chimera. We will have to remove it I assume so it doesn't dominate. Thank you, Ian, for your articles in the Study group newsletters, it meant I knew where to search out answers that would make sense of such a complex and interesting subject. I went down a rabbit hole, searching for information on plant chimera and I found out a bit about animal chimera and then human examples. Completely fascinating.

Of grubs and rain damage

Glenda Datson

This caterpillar is ferociously attacking my *E. maculata*, *E. bignoniiflora* x *alternifolia* forms, *E. calorhabdos* x *splendens* and *E. resinosa* as well as *Myoporum* ground cover in various places in the garden. A couple of years back it wiped out the *Myoporum* almost completely. I wonder whether others find the same on those or other species and how they manage it?



Below are photos of *E resinosa* which fell apart at the graft in Spring as I was standing in front of it as it was raining. I think the weight of the rain on the foliage was just too much. The stems just peeled off at the graft.



Dave Bishop's Garden

Lyndal Thorburn

Dave Bishop is a member of ESG at Yass, NSW. He moved to Yass in March 2015 and built a house on a large block of land on the town's eastern outskirts. He started to build his garden at the beginning of 2016. The photo at left below shows the original block looking south, and that at right is the start of the garden, looking north.



ANPS Canberra's Daytime Activities' Group (affectionately known as DAGs) visited Dave's garden in November 2020. We were astounded by the growth he had achieved in 4 years: Yass, like Canberra, is a dry place and we had been in drought the whole time Dave was developing his garden. However, he has access to bore water which has made a big difference.

Dave is an enthusiastic Eremophila grower, and regularly posts about Eremophila in the Yass Native Plants Facebook page. He is also a very careful gardener – everything is labelled, making it easy for our visiting group to identify plants.

The garden has several formal beds, with plenty of native *Bracteantha/Xerochrysum* daisies self-seeding along their edges, and grassed areas centrally (below left). A large *E.* 'Big Poly', approx. 1.5m x 2m, was in full flower in the front when we visited and received much praise (below right). The shed in the background below left is the same one that can be seen in the distance in the shot above left.



Personally, I was particularly struck by an *E. 'Meringur Midnight'*, planted on the south side of the house, in full flower and reaching almost 2m x 2m while still only a couple of years old (left). *E. glabra* were also abundant – the Burgundy form (below, upper) and Murchison Magic form (below, lower, with a *Myoporum parvifolium* under) attracting the most comment.



Myoporum was also used as an effective edging along one part of the circular drive (above left) and a large *M. floribundum* stood over a mix of *Acacia*, *Scaevola* and *Grevillea* elsewhere in the garden (above right). Dave has achieved an enormous amount in a very short time by enriching the soil and through ongoing pruning and shaping.

Queensland Sub-group Meeting October 2020

Jan Glazebrook

The meeting was held at Logan Village and was started at 10am

It started by discussing the success of the ANPSA ESG July/August gathering at Warwick, Toowoomba and Lowood, which had been very well received by all attendees, despite the difficulties of working around COVID19 restrictions. The Services Club turned out to be a good substitute venue. Jan thanked all the local members who assisted in running the event. The garden visits were great – the standout being Peter's Rail Trail.

It was agreed to aim for three meetings per year. Dick Harding informed those present that he was curating the Eremophila plants for the Myall Park Botanic Garden and was interested in collaborating with members regarding suitable plantings etc so one meeting developed into a trip to Myall Park. Given the distance to travel it was decided that this trip would run for 2 full days. Facilities will need to be booked in advance and Noreen Baxter is managing bookings. In conversation it appeared so many were interested that it would be best to book all the available accommodation and confirm the booking closer to the event. Jan suggested that ESG offer to assist Dick to access the Eremophila species (no cultivars or hybrids) required for Myall Park Botanic Garden.

For hosting the ESG Gathering Lyndal Thorburn had gifted the Qld ESG five plants. Jan has been minding the plants until the members could decide how to distribute them. Jan has already taken some cuttings. Members agreed that Jan should continue along that course until Peter Bevan is free to continue propagating them so they can be spread throughout our members and the community.

Lyndal had also sent a large bag of cuttings from her garden for sharing amongst members. At the conclusion of the meeting Jan shared these with all the attendees interested in propagating them. Those who took propagation material were Pam

Fletcher, Chris Reddick, Chris Purchase, Laylee Purchase, Dick Harding, and a set were saved for Peter Bevan. It will be interesting to hear the results of their propagating efforts.

The group discussed *E. glabra* and related species. These are in Chinnock's Stenochilus Section, which includes *E. maculata* ssp. *maculata* & *E. maculata* ssp. *brevifolia*, *E. calorhabdos*; *E. glabra* ssp. *glabra* and *E. glabra* ssp. *tomentosa*; *E. decipiens* ssp. *decipiens*; *E. subfloccosa* ssp. *subfloccosa* and ssp. *glandulosa* and ssp. *E. lanata*.

Jan led the discussion saying, prior to DNA analysis, species were distinguished by physical features, such as:

- *E. glabra* flowers have short to almost sessile peduncles;
- *E. maculata* flowers have long S shaped peduncles.

Jan then played the recorded address given by Dr Rachel Fowler to the Eremophila Gathering about her recent work on DNA of the Stenochilus group. This study is in the early stage of her research and already raises questions about some of species in this group. As usual when DNA studies are mentioned, a lively discussion followed. When COVID allows Rachel to progress her research it will be interesting to see how this develops.

2021 Queensland meetings

The next meeting is on Saturday 8th May 2021 at Peter Bevan's Rail Trail, 10 Patrick Street, Lowood. Topic: *Hybrids*. Growers are asked to bring photos of identified hybrids to the meeting.

The other meetings proposed for 2021 are:

- Friday 16th to Monday 19th July 2021: Myall Park Botanic Garden. Other members welcome by campervan or stay at Glenmorgan. Part of the time there will be spent planting out an Eremophila display bed on site.
- Saturday 9th October 2021: Laylee Purchase, 37 Rocklyn St., Darling Heights.

Contact Jan Glazebrook for info, especially re Myall Park: janglazebrook (at) gmail.com

SA Sub-Group meeting March '21

Tim Wood

Our Autumn meeting will be held at Kadina Australian Plant Society nursery at Lot 1866 South Terrace Kadina on **Saturday March 27th from 10am.**

The speaker will be Perry Jones from the Australian Arid Lands Botanic Garden, speaking on the huge topic of propagation. Whilst we will all want to swap ideas, we will be guided by Perry in our deliberations.

In a cooperative spirit, Perry has said anyone wanting plants can order them and he will bring them with him, so you can contact the Arid Lands nursery and order and arrange payment by emailing nursery (at) aalbg.sa.gov.au

Of course, we will again have our swapping table for material, and I would like members to contact me with their three top wish list plants so I can circulate this list. And Perry is welcome to add his top three to the wish list of course!

The next subject is to be a talk on indigenous uses of Eremophilas.

I heard a voice talking to me the other day, and it suggested we might like to consider a Riverland visit in September so please think about it. Thanks, Ken, for the suggestion.

Please RSVP to drspock52 (at) gmail.com to allow better planning. All welcome, but there is an overall limit of 29 due to COVID-19, and priority will be given to the 20 SA members – hence let Tim know as soon as you decide if you are coming.

From Your Letters

Andrew Harvie (NSW): For those of you that use *Myoporum insulare* as a root stock check this one out. For size comparison, keep in mind I am over six foot tall.

This is in the Hunter Wetlands National Park. The diameter of the trunk at the base is at least 50cm.



Don and Chris Lill (SA): We have found that the best way to keep cuttings while traveling is by misting them with 0.05 % Chlorine (12.5 ml White King in one Litre water), before wrapping them in moist (misted with Chlorine) kitchen paper towel, sealing them in a bag or closed container, and keeping them cool. (around 10 degrees).

Tony Porritt (NSW): Last September we visited a number of the national parks in the Bourke – White Cliffs area following all the rain they had. It was truly amazing with incredible numbers of wildflowers everywhere.

I have been trying to identify the 200 different plants we photographed, using “Plants of western NSW” and the internet. Over page are photos of *E. divaricata* taken at Nocoleche Nature Reserve north-east of White Cliffs and *E. latrobei* taken at Gundabooka near Bourke.



Ken Warnes (SA): Our SA group hopes to meet in late March (see p.22). Here in rural SA, we are pretty much free of COVID apart from following recognised precautions but it's not going to go away for some time yet. I hope that others can meet before too long, there's nothing like some face to face to encourage each other.

I have been reading the early newsletters looking for some specific information. They make fascinating reading, especially the reports from Bob Chinnock on his early collecting – the first mention of so many species which are now relatively common in our gardens. There's even a suggestion from me that perhaps we could try *Myoporum insulare* as a grafting stock, *E. maculata* having failed for Bob in a large trial.

I suppose that having led the Group and lived through those early days perhaps makes it more relevant to me, but I just kept turning pages as the memories flooded back. They can be accessed on the Net³ and Lyndal may even still

have some copies of the Bound Volumes 1-30 published by APS SA.⁴

If you make the effort to locate and read them, you will find them a real eye-opener to where we came from and what we have achieved. For a group of amateurs, we have done well.

I also live in fear at the thought of the “glabra consortium” being divided into multiple species. But it will happen; hopefully those who do it will look across the border to see what the other states have to offer. DNA may play a part but that won't be much help to the general public or the Nursery Trade. I also have trouble with certain of Bob Chinnock's sub-species and don't use them with certainty in many instances. *E. glabra* ssp. *elegans*, *carnososa*, *tomentosa* are OK, but then they become too broad. Variations such as “Mingenew Gold” appear to be glaring examples where speciation is justified but then it morphs into “Bellala Gold” just down the road and where do the boundaries get drawn?

The original collector of what is often called the ‘Brice’ or ‘Bev Rice’ form (sold as ‘Silver Ball’ or ‘Hello Cocky’) now tells me with some certainty that he brought it back from Cape Arid. This location, after 30 years??? But it makes some sense. It could certainly be sub-coastal and stand exposure to the wind. So, when we can again travel freely, Cape Arid should be on the itinerary. No-one has collected another *E. glabra* even close to this form and it would be great to track it down.

Tim Wood (SA): Just had first *E. aureivisca* cuttings take in our new polytunnel – setup copied from Arid Lands Botanic gardens – we have been trying this little rascal for 10 years. Always something to observe!

Next Issue

The next issue of the newsletter will be when I have enough material for 20-24 pages, so if you want a quicker newsletter, send me something!! 😊. Feature species will be *Eremophila subfloccosa*, which has several subspecies.

³ <http://www.anpsa.org.au/eremophilaSG/ESG-news.html> - the archive is searchable

⁴ Bound copies still available - \$5 each!!!

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](mailto:lthorburn@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) ([jlfontain5 \(at\) gmail.com](mailto:jlfontain5@gmail.com))

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NEXT NEWSLETTER mid-2021
(earlier if I have enough info to fill 24 pages!)