Australian Native Plants Society (Australia) (ANPSA)

Eremophila Study Group Newsletter No. 139

June 2023

Eremophila longifolia growing wild in Victoria (Pics Merle Pole)

Contents

Letter from the Editor

It is great to see so many active members in this Study Group. Since the last newsletter there have been very successful meetings in Queensland, Victoria and South Australia. Reports on these start p.16. The NSW group, however, is at risk of being closed due to lack of support. I hope NSW members will find a way to support future meetings in that State.

The feature species, *E. longifolia*, starts p.3 – thanks so much to the members who responded to the survey. I have been experimenting with ChatGPT, and asked it to produce a short article on *E. longifolia*. It told me (confidently) that *E. longifolia* was only found in WA and produced striking purple flowers – so I didn't use what it gave me!

Our coordinators work hard to plan and run events for members – at only $5 p.a. members get amazing value (see p.23 for renewal info). There is plenty organised for the rest of the year, and I am looking forward to seeing some members, new and old, in Winton (Qld) in July. The trip that is being planned looks amazing – see p.21 for details.

Please support your Study Group, not only by your subscriptions, but by actively joining in where you can.

Eremophilas in the News

Those in APSSA have been pushing the Eremophila barrow recently. The Feb.'23 issue of their journal had four Eremophila-worthy articles:

- the Brinkworth group of APSSA visited Wilpena Pound and saw *E. freelingii*.
- Ken Warnes wrote about birds in Owen, SA, showing a Black Honeyeater perching in what appears to be an *E. bignoniiflora*.
- Ken's tribute to Bev Rice included Bev's famous Eremophila-flower Emu and
- Tim and Sandra Woods wrote about Yookamurra Wildlife Sanctuary and mentioned *E. glabra*.

Finally Yakka News, from Landscape SA Northern and Yorke Regions, featured Ian Roberts' work in Blyth on the new streetscape of native plants (see last NL for some of the Eremophila featured there).

A short summary of the fruit collections to date for our Queensland project was also published in the Native Plants Qld newsletter in March 2023. For more on this project see p.Native Plants Queensland Project15.

Academic Publications

Chen Zhang *et al* have published an article on chemical derivatives of *Eremophila microtheca*,[1] which produces diterpenoids – aromatic chemicals which can be used for chemistry studies, and tested against intestinal worms, malaria and HIV.

Vale Noreen Baxter

Yet another valued member of our Study Group has passed away, this time Noreen Baxter in Queensland.

Noreen was always ready to help and was deeply involved in our record-keeping. We know she will be missed by all members. Our sympathies go to her family and her husband Ray.

What's New in the Study Group

Welcome to new member Steve Cathcart (NSW) and Myall Park Botanic Garden (Qld).

[1] *Using a BioActive Eremophila-Derived Serrulatane Scaffold to Generate a Unique Carbamate Library for Anti-Infective Evaluations*. Jnl of Nat Products (pre-publication 2023)

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Feature species – *Eremophila longifolia*

Lyndal Thorburn, Ken Warnes and Russell Wait.

Description

Eremophila longifolia, also called Berrigan, is a widespread Eremophila, being found in all mainland States. In the west its northernmost range is near Exmouth, and it is found as far south as Geraldton in that State, and all points east of there to the border. It is found throughout South Australia and extends to about Ballarat in Victoria. From there its easternmost range passes through about Griffith and Inverell in NSW. In Queensland it is found from Goondiwindi in the south and edges into Cape York in the north. Completing the circuit, it is found right across the NT in a line southwards of Tennant Creek, approximately.

E. longifolia is a large shrub or small tree and in the latter form can grow up to 8m high (see cover pic) and 5m wide. According to Chinnock, it is found either as either dense clumps of suckering shrubs of medium height, or solitary trees up to 8m with a well-defined trunk (pic of a trunk below, from Merle Pole). Generally speaking, the bushy forms are found in the drier areas.

In the wild it is found in stony or clayey soils along both rises and water courses. In either shrub or tree form it generally has a single trunk. It may be found under stands of Eucalyptus or Acacia.

Its scientific name is a reference to the length of the leaves, which are long, alternate, 50-160mm in length and may be hooked on the ends. Their length gives the plant a weeping appearance. That, and its burst of flower in spring, makes it very distinctive when driving through drier areas.

In Queensland it is more often found as a medium shrub and is quite common along the side of the road (see pic below, near Morven Qld, by Lyndal Thorburn).

Rather surprisingly it is listed as a Protected Plant in SA. This goes back to the days of property owners being the only ones who could vote for the SA Legislative Council – the pastoralists knew that *E. longifolia* had value as a top feed in times of drought. So on the list it went, along with several other useful top feed species, none of them particularly rare or endangered.

Aboriginal uses

E. longifolia is widely used by Aboriginal people, particularly in Central Australia. It is a major plant used in smoking ceremonies and was especially used to

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"smoke" babies, presumably for disinfectant purposes. The fact that it is so widely distributed would lend itself to widespread use for traditional ceremonial and medicinal purposes. The species was also used in initiation ceremonies and for tanning water bags to make them waterproof.

Appearance

Flowers are brick red or pink, ranging to (rarely), orange or yellow and are found mostly in Spring and Summer, although respondents also reported sparse flowering in Autumn and Winter. Brown and Buirchell list the flowering period as March to December.

The petals fold back at the end of the corolla and the stamens are exserted (pic below Anthony O'Halloran). They may be spotted inside of the throat or on the outside. There are 2-5 flowers per axil, so in full flower it can be spectacular.

Respondents to the survey (n=18) grow mostly the darker pink/rust red form with green leaves (see table below).

	Grey-leaved form	Green-leaved form
Rust red	5	10
Pink	6	3
Yellow	2	3

Forms

Chinnock notes that *E. longifolia's* ability to grow in soils ranging from sand to clay has contributed to its wide range in Australia.

This, in turn, has led to considerable variability in form, with variations in leaf hairs, habit, leaf shape and sepal size. However, as a species it is very well defined and as result there are no formal subspecies. It is, however, known to contain both diploid and tetraploid forms, but these are indistinguishable from each other, although some differences in leaves and flowers is postulated.

Instead, two forms based on leaf differences are recognised.

Green-leaved form

The green-leaved form is common in southern WA, South Australia, NSW, Victoria and the southern parts of Queensland (pic below from southern Queensland, by Lyndal Thorburn).

The picture of the bright pink-flowering green leaved example over page was photographed on the southern side of Pilliga Forest Way, near the Newell Highway, by Anthony O'Halloran .

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Yellow and orange-flowering forms are also known (pics Lyndal Thorburn, at the ESG event in Warwick in 2021). Anthony O'Halloran also collected a yellow form from Narrabri Lake (NSW) but these colours are likely to be found more widely as well.

Grey-leaved form

The grey-leaved form is generally smaller in size and is found in the northern parts of WA, Queensland and in the NT. Leaves can vary in width, with those from central Australia being narrower than those in Queensland. The grey-leaved pink example below (2 pics by Russell Wait) were collected from the Eromanga-Nockatunga Road, Qld (but are living in Owen, SA).

Horticulture

E. longifolia tolerates clay soils and respondents confirmed this, with 15 of the 18 respondents growing their plants in fine soils including silts, loams and clays. The remainder grew their plants in sands or gravels.

E. longifolia will do well in either sun or filtered shade. Twelve of the survey respondents grew their plants in full sun, and a further four reported that their plant had sun for more than half the day. Only one reported growing it in dappled shade.

It is bird pollinated. Flowers are followed by round green fruit which eventually dry out. Pics of fruit young on the green-leaved form, below, are by Alice Newton.

The dried brown fruit (next page) are in Ken's garden in SA. These fruit are known to be eaten by emus and it is believed that this observation led to the overarching common name for the genus – Emu Bush.

Fourteen of the 18 survey respondents grew this species on its own roots, two grew grafted specimens and two had both grafted and ungrafted specimens.

Seventeen of the respondents grew their plants in the ground and one had a tub specimen.

Both forms of *E. longifolia* will sucker. Only 6 of the 18 respondents to the survey reported that they did not have any suckers growing from their plants.

Drought, rain, frost and wind

Like all Eremophila, *E. longifolia* is drought hardy.

E. longifolia is also quite frost hardy, both forms being tolerant of frosts in Canberra. Respondents grew this species in regions down to -10 degrees in winter. Only two respondents reported frost damage but these also said their plants recovered quickly.

Survey respondents mostly grow this plant in regions with less than 600mm p.a. rainfall, however two respondents grow it in areas with 600mm-800mm rain and one grows it in an area with >1000mm rain p.a.

Fourteen survey respondents reported no ill effects from periods of heavy rain, three reported damping off at tips and one reported damping off of lower leaves. Fungus can arise when there is excessive rain, particularly during winter, but shrubs will recover in spring.

Sixteen of the 18 survey respondents reported no ill effects from strong winds, with the remaining two reporting lost leaves. Strong winds have been known to result in broken branches, but its tendency to sucker (see more under Propagation) also makes it an excellent windbreak.

Longevity

According to survey respondents, plants can easily last for 20-35 years. Ken believes some of the wild specimens around Owen could possibly be 100 years old.

Pruning

E. longifolia is the only Eremophila species known to exhibit cauliflory – that is, the ability to flower directly from trunks and stems. This includes the ability to flower on old wood (ramiflory – as in, *E. ramiflora*). Thus, pruning needs to be done carefully.

Eleven of the 18 survey respondents did not prune their plants. A further three tip pruned, one reduced their plant by 30% after flowering and two had reduced their plants to stumps after insect attack. The latter reported vigorous new growth and the induction of suckering after these events.

Boschen, Goods and Wait suggest heavy pruning to rejuvenate old shrubs.

Pests

E. longifolia does appear to suffer from some insect pests. These include sucking mites (3 respondents), caterpillars (4), grasshoppers (1), wallabies/kangaroos (1) and rabbits (1). Other attackers mentioned included lantana bugs,[2] and termites.

Propagation

Suckers can be dug up and re-potted as an easy method of propagation (however for an apocryphal story from Ken on this, see the Box at the end of the article). The suckers are very strong and Ken has seen

[2] Introduced for biological control of Lantana, Lantana Bugs also damage Eremophila, Myoporum, Pandorea and Prostanthera. See Palmer et al, *Analysis of the non-target attack by the lantana sap-sucking bug, Aconophora compressa, and its implications for biological control in Australia,* 2011

them appear through an asphalt tennis court. Ken has one that must have come from seed but is now extending for many metres on both sides of the road, presumably having suckered underneath it. Thus, some hold the view that *E. longifolia* is really only suitable for smaller gardens and only if grafted.

Suckers, if used for propagation, are best lifted in autumn. The photo below is of suckers transplanted in 1973 in SA, still looking young and actively spreading.

Suckering may result in a line of plants, which have sprung up from a single root underground, as in the pic left of Tom Jordan admiring such a line in Cobar, NSW); or they may clump, as in the grey-leaved plant growing in Queanbeyan (below).

Boschen, Goods and Wait also say that it can be struck from cuttings, but these are often difficult and fail rapidly.

It can be grafted (and this too is difficult). Grafted forms would make a nice small specimen tree, as suckering would then be avoided. The two survey respondents who reported successful grafting had both used *M. insulare* as the stock plant.

Hybrids

There are two hybrids – *E. longifolia* x *scoparia* and *E. longifolia* x *youngii.*

E. longifolia x scoparia

This hybrid is of the grey-leaved form with *E. scoparia*. It is a medium shrub with felty grey-green leaves and a pinkish-mauve flower which is prolific in spring. The buds are maroon and are also felty. It strikes easily from cuttings, will tolerate part shade and is best kept tidy by light pruning.

This hybrid was found in Stirling North (and for a while was known by that name). It was grown by 9 of the 18 survey respondents. Respondents recommended it as a flowering feature plant, bird attractor and possibly for hedging, where it would need to be kept pruned.

Ken is aware of one plant of this hybrid suckering, but it appears that this is not normal behaviour. His 15-year-old garden plants have never suckered.

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E. longifolia x youngii

This hybrid by rights should have been included in the hybrid section of the *E. youngii* feature species, last Newsletter. However, it missed out for various reasons.

This hybrid is not generally available. It is a shrub to 4m high by 3m wide. It has grey leaves 70-100 mm long and 4-7mm wide. The corolla is red with at least two flowers in each leaf axis. It is wild collected (pic below by Russell Wait).

In appearance and flowering it is closest to *E. longifolia*, as can be seen above. It is, however, easier than *E. longifolia* to grow from cuttings and also has potential as a windbreak and for hedging. There are also indications it may flower on old wood in the same manner as the *E. longifolia* parent.

Conclusion

Those who grow this species recommend it as a bird attractor, and as a feature plant because of its showy flowers and general resistance to frost, wind and heavy rain.

However, its suckering habit limits it usefulness in the smaller garden and the fact that it can grow so large (pic by Merle Pole below) indicates that it is best used on a large site where height is not a problem, or suckering can be used to good effect to encourage hedging or a windbreak.

Acknowledgements

Thanks to the 18 members who filled in the survey, and to those who provided photos and assistance with the text.

E. longifolia – an apocryphal story *(Ken Warnes)*

Eremophila longifolia is very common on roadsides around here (Owen, SA). At its best it can make attractive dense thickets with subtle colour variations in the flower between clumps, one such approaching orange-red. It's at its best on the drier side of the district, around here it can get a bit scruffy by the end of a wet Winter.

Of interest is that on a piece of Crown Land there were two very old individual specimens. A farmer burnt the area to crop it to raise money for district projects and those two specimens went up like torches. There must have been flammable oils present.

Those two individual specimens are now two large areas of suckers, so the burning was counter- productive from a cropping view-point. Grazing and spraying generally prevent it from encroaching into paddocks.

My Sydney Garden Recovers after La Nina

Charles Farrugia

After the Sydney deluge in March 2022 (500+mm) and another 2 weeks of follow up rain & humidity, 80% of my beloved Eremophila succumbed. The ones still standing seemed to be slowly dying, stem by stem (below), and I reached desperation point.

I also lost all my self-germinated Scaevola (used a living mulch) and self germinating Sennas. My *E. subteretifolia* (below) suffered considerable dieback

E. warnesii however, pictured next column and expected would be one of the first ones to go, only had a bit of dieback.

I started tilling the clay garden soil with a large garden fork, hoping to dry the subsoil a little bit to give the plants a slim chance of surviving.

A friend, who used to live in a country town, warned me to be careful as I might destroy the soil structure – "farmers don't plough when the soil is wet" I was told. Ken agreed with this statement but was a bit hesitant if it applied to heavy clay soil.

After that I started using a small garden fork, just working (more like aerating) the soil to a depth of 8cm. And then I levelled the soil surface with the garden fork flat surface. I did this day after day after day.

I started noticing that the dieback was diminishing. *E gilesii* grafted onto Monaro marvel I had written off, as the rootstock looked dead (2cm below the surface). However, small shoots started to appear. The same happened with *E. glabra* x 'Pink Pantha', *E.* 'Summertime Blue', *E. divaricata*, *E.* "Yana Road', *E. nivea* x *christophorii*, and three *E. glabra* 'Kalbarri Carpet' around the edges of the front garden. I also managed to save four types of *E. maculata* (including from north Nullarbor) that looked like they were dead.

I am still carrying on with the soil forking method every time we have over 10mm of rain. I also mix a couple of large pots of potting mix, and a couple of handfuls of coir and two handfuls of blood and bone fertiliser with the conditioned soil. Once the clay soil in the planting hole is broken up and conditioned, I end up with three to four large pots of conditioned soil that goes around the planted shrub. Whatever soil is left over is spread around the shrub.

Quite a few of the survivors are responding quite well; others seem to be at a standstill but there is next-to-nothing dieback. The *E. glabra* 'Murchison Magic' at the lower part of the garden is starting to recover from the hammering it got, with plenty of bare stems still, but it is starting to send new growth in the inside stems. I am just waiting to see how much new growth appears before getting rid of the dead stems as some stems have appeared dead for a long time but now there's new growth.

Next to *E. warnesii* is *E. glabra* x *subfloccosa* – it is still struggling for survival. So far, my attempts to regrow it from cuttings have failed. There is still some dead foliage on the inside of the *E. rotundifolia* shrub (pictured below) but there is plenty of new growth emerging from the base of the main stem. *E. rotundifolia* would have had an overflowing gutter right above it.

Even the newly planted Eremophila seem to be responding to this method. Below are pics of *E. gilesii*, now recovered. It is also nice to see multitude of Scaevolas germinating and also the Sennas. Incidentally, I find the Senna a very good soil conditioner.

The 28 February 2023 photo (next column) shows a section of what the front garden looks like now – it is a work in progress –very slow progress. Before planting, I am hopefully improving the planting area clay soil using dolomite, sand and a lot of blood & bone to break up the clay. Before the plant goes in, I fill the hole with liquid cow manure until it drains

away. I use complete fertiliser and again plenty of blood & bone and water in with Seasol.

Keeping my fingers crossed that it works. In late March we had 80mm of rain overnight with a follow up of 10mm (a big difference from the 500mm we had the previous March). Only an *E. racemosa* got slightly uprooted but there was no harm done.

An *E. denticulata* ssp. *trisulcata* recovering, below.

Eremophilas at the Australian National Botanic Gardens

Lyndal Thorburn

My approach to the ANBG, via an introduction from Phil Trickett, has borne some fruit, so to speak.

I have now sent a de-identified list of who was growing what species in 2020 (from our 2020 survey) to the ANBG and have noted that we have a handful of members who collect from the wild (with the necessary permits) and will have good enough records to enable the ANBG to link any cuttings provided with their original wild location.

We have been told by ANBG that one of their horticulturalists, who manages some of their dry country sections, will review the list while doing some work with the Plant Records Unit. As the gardens is a scientific collection, its focus is on wild-sourced stock with provenance, but they have said they will also likely be interested in other display species that aren't currently in the collection and are expected to be sustainable to grow in Canberra. They will be in touch after the list has been reviewed.

ANBG is happy to approach members directly if cuttings are needed, but this will occur via the SG as they do not have members' contact details. There also may be a delay of some months as the Gardens are still planning the renewed Eremophila exhibit.

Australian Research Council Project

Lyndal Thorburn

After what seems like a very long time we finally have an agreement signed between ourselves (actually, ANPSA), Kersbrook Landcare Group, the Australian Genome Research Facility and the University of Queensland for our ARC grant.

A Steering Committee has been set up and had its first meeting on 8 June. Members will be kept abreast of activities as they occur! For more inf on the project scope see NL132 (Sept 2021).

The Myall Park Files

Ken Warnes

But in conjunction with Dick Harding's report in the last Newsletter, it started me thinking about my still-stored correspondence with Dave from many years ago. He still had mine in 1991, so unless there was a big cleanout when he died, they could still be there.

My collection has 43 letters between 1969 to 1994. Most are two pages on a medium sized pad. Also, there are Alf Grey's locations from WA, my list of ~250 plants purchased on Dave's behalf in 1981 (the pic below was taken when he and Dorothy visited Owen to collect them, and includes my three kids in the "Scrub") and a copy of my reported travels after leaving Myall Park in 1991. So, they are pretty comprehensive, especially if his can be matched to mine.

His last letter from 1994 says that mine are all still there and should be made into a book. The majority are dated and start off something like "in response to your letter of 4th April" so it should be relatively easy to match them up. I intend to go through my folders and see if there is anything that may be worth sending on to Myall Park because our letters were generally reciprocal and full of all sorts of dreams of building our collections and even talking of getting together in western Qld. It never happened but it could all still be there for someone to put together as a record of the early

How memory plays tricks. I would have sworn that I initiated the contact, but his opening letter proves that two others suggested that he get in touch with me: Brian Barlow, who was working on the chromosome levels as a cytogeography study of the genus; and Bruce Spiers, an optometrist based in Temora NSW and an early enthusiast. The name Tilley is also mentioned – this should read Tiller, a family who had land at Balaklava near here and also at Roma. I remember doing up a shoe-box of cuttings for them to take to Queensland and it is recorded in Dave's letters that they failed (probably packed too wet). We certainly tried.

My remembered approach to Dave must have been asking him to join the SG when it formed in about 1972 and he was only too keen to contribute what he could. His letters clearly show that he had limited success with cuttings. Seed, with plenty of patience, and bush seedlings were his main sources. Later on, Harvey Shaw's early grafting work gets very enthusiastic recognition. And I reckon that at least half of them record "another disastrous year" of low wool prices and failed crops. You would have to read them to understand.

I've also pieced together a bit more history from the words of Dorothy's sister in the book of her paintings which Dave posted to me as a signed gift "inscribed with pleasure" and also several letters from George Althofer from about 1974/5.

Their first big joint venture was in 1949 when Dave would have still been single (George was his Best Man when he married Dorothy in 1952 at, I think, the age of 53). They must have really hit it off as kindred souls. Oh, to have been along on that trip. They had many further visits, but this one goes right back to the original *E. maculata var aurea* collection. I suppose George's letters don't mean much to anyone but me, but perhaps they could go to "Myall Park" as well.

From Dick's article, it would appear that some of George's musings are still there and his flowery phrases were so typical of his style. They are well used in his Prostanthera book "The Cradle of Incense". In that book he talks of the range of *E. maculata* colours he came across (quoted in the article on Myall Park in the February 2023 Newsletter) and attributes them to hybrids with *E. glabra*. I suspect that is not the case, but it was his explanation.

I have checked with his book (p.35) and believe the *E. maculata* site could have been anywhere along the Cunnamulla-Thargomindah road; but, more interestingly, on p.38 he describes digging up a 20cm seedling with a 2m tap-root (must have liked digging) which is quite possibly the original *E. oppositifolia* ssp. *rubra* which we still grow. This was in 1949, on a trip set up by Dave Gordon. Hard to believe but that's 74 years ago.

The book was first published in 1978 so he was writing from memory and, no doubt, copious records. It was published by (the then) SGAP and I gather that he had a lot of trouble coming to any sort of agreement with Bill Payne, who was SGAP Editor at the time, about the lay-out.

I found Dick's report of great interest, I guess because I was the main link between those early days and today and I knew the people involved. They were indeed the leaders of their day. I can well imagine their problems with *E. bowmanii* when we recall that *E. bowmanii* ssp. *nutans* didn't even exist back then and *E. bowmanii* ssp. *latifolia* covers anything with flat leaves and, trust me, that covers a wide range. Once planted together there could well be hybrids and in Sydney they grow, or grew, a form that could well fit a *E. bowmanii* ssp. *nutans* hybrid origin.

My files will almost certainly be thrown out when I'm no longer around. If anything turns up that I think would add to the Study Group records I can set it aside and we can discuss it further.

The Queensland *E. macdonnellii*

Ken Warnes

The search for Eremophila fruit in Queensland generated an online conversation about the form of *E. macdonnellii* to be found in Queensland. The previous Feature Species report (February 2017) didn't address the western Queensland variety, but did mention several forms prevalent in the Northern Territory.

The Queensland form is found near Bedourie, which is at the same latitude as the Northern Simpson Desert, where it grew in the inter-dune swales in pure sand and yet seems to adapt to most situations in cultivation. I haven't been to Bedourie, but presume it must have been growing in sandy areas, perhaps following drainage lines. I say following drainage lines because this is where several forms can be found such as the that from Hermannsburg Road and also what we generally refer to as the SA form from William Creek, via Marla to Mount Dare (and which all could have seasonal inundation). And in the Simpson there could well be considerable seepage from the dunes. I can't speak for the Southern Simpson Desert, which I believe is the source of the narrow-leaved forms, which were the first forms cultivated, but seem to have been just about lost. I think Russell collected some a few years back, probably on his Andado trip, but I didn't succeed with them. The Victoria Group discussed them at their last meeting, perhaps I'll follow it up with Maree or Norma just to satisfy my curiosity.

I have a Qld/NT border *E. macdonnellii* in flower on the desk in front of me so the observations can't be more immediate than that. I have observed two features that have previously escaped me, but perhaps only because I have taken the flower at face value and never really studied it closely.

Firstly, there is a tuft of white hairs under the top broad, bifid lobe just as in *E. willsii*, and, secondly, the inside base of the floral tube is white with numerous purple dots.

Are these features peculiar to this collection or have I overlooked them in the past? The tuft of hairs referred to seem to be present in varying degrees in all the flowers I looked at, including the hybrid with *E. strongylophylla*. It's very obvious in the pic on p.260 of Russell's book, which happens to closely look like this later collection, right down to the spotted lower throat. This specimen was collected by Russell last July on the Plenty Hwy, possibly just into NT.

It has a low growing, tangled habit and is probably about .6m x 1m in size, (based on a very similar collection from between Chambers Pillar and Maryvale Station a few years ago). Those died out after a few years, so I can't make

the direct comparison, but it appears to be a very similar form.

The leaves are completely glabrous and are bright green in colour (superficially similar collections often have a few long simple hairs but I can see none on this – see below). The stems are bright green, the leaves sessile 4mm x 10-12mm and are also bright green. The pedicels are long – to 30mm (in some collections these are nearly sessile).

The calyx is cup-like with 5-pointed tips, the lowest broad, the side ones smaller and the upper tooth-like. Again, this varies between collections, but it is the only species with a calyx united for the majority of its length which is why Chinnock placed it in a Section of its own. The calyx is brown above and green below.

The flowers, picture in more detail below, are a rich purple/deep violet and are well displayed on the long pedicels. The corolla lobes are cut to half the length of the exposed tube. The corolla has a total length of 40mm, with the exposed section being 30mm.

Cuttings struck well and it can also be grafted. It is most likely to be relatively short-lived, so constant replacement is recommended. There has been no observed or recorded difference between cuttings or grafts.

Chinnock had a good look at the great variations within the species but could find no clear-cut, consistent boundaries so he decided to play it safe and leave it as a single species.

You will note a long list of synonyms recorded by those who have tried to split it up. Russell and I have discussed it and reckon we can roughly draw lines around the distribution of the various forms. It's of some interest IF Russell's latest collection is the same as the Chambers Pillar form, because they are quite a distance apart and the East MacDonnell Ranges would make continuity unlikely. My observation is that the various forms don't intermingle which is why we think we could map them fairly accurately. That tuft of hairs just makes me glad that it's not from *E. willsii* country.

However, to confuse things further, the numerous seedlings in my plantings would appear to be the result of cross-pollination within the species in cultivation. Release of these to general horticulture would totally destroy the rough lines we think we can draw on a map of Central Australia so that's something of a philosophical dilemma.

Speaking of cyanide…

ABC News reported on 11 May 2023 that 70 cattle had been killed during March by eating *Eremophila maculata*, which has levels of cyanide that they can't tolerate. The deaths were at Old Man Plains Research Station in the NT.

The cattle were grazing near an ephemeral wetland, where several species of Eremophila grew. However, while they had eaten all species, only the *E. maculata* had cyanide, when laboratory tested.

While the Eremophila had grown strongly in response to recent rains, authorities do not know why the poisoning happened this year and not in earlier years, nor why there had been no cases in adjoining paddocks, which hold the same Eremophila species.

Native Plants Queensland Project

Lyndal Thorburn

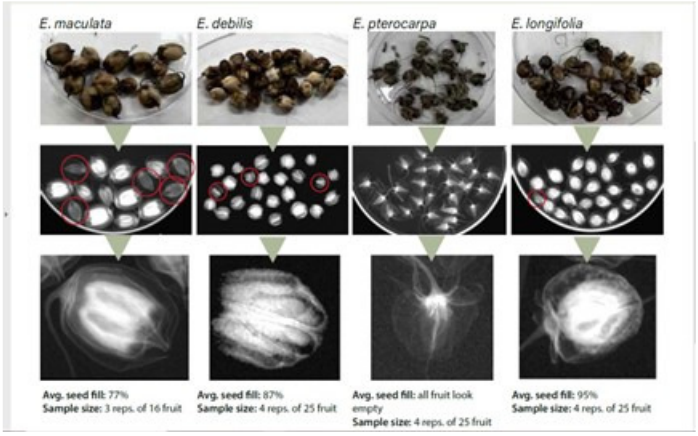
Thanks to those who provided 5,922 fruit from their gardens in 2021. We now also have a library of 2,134 wild-collected fruit from 13 Queensland species, gathered by members in 2022.

We compared the two collections and realised that we need more fruit to get samples that will provide statistically significant comparisons. In April 2023 I again asked members in NSW, Victoria, SA and the ACT to send in fruit from certain species, so we have enough to compare wild vs. domestic fruit on a species by species basis. We have received another 245 fruit of 10 species from this latest call.

Please continue to send them in! The address for postage is **Dr Robyn Cave, School of Agriculture and Food Science, Building 8117A, Gatton Campus, University of Queensland, Gatton Qld.**

Queensland members, in the meantime, have provided some useful information about the time between flowering and fruiting, and that will help with planning field trips. Thanks everyone for their support so far.

The UQ team has started x-raying the domestic collections and the images below show sample results for four species – *E. maculata*, *E. debilis*, *E. longifolia* and *E. pterocarpa*. Average seed fill was between 77% and 95% for the first three, and zero for the last one.



The UQ team is planning to visit known Queensland sites in July/August to collect pollen.

A Bit More on *E. youngii*

Andrew Brown

The Newsletter is a great read, as usual. I thought you might be in interested in my experience with *Eremophila youngii* in the Great Victoria Desert area (see Feature Species in the February 2023 Newsletter).

The type was collected from "Inter fontes Victoriae et Ularing" by Jess Young during the Ernest Giles' expedition from South Australia into Western Australia. This essentially means it was found between the two areas. Note that (Queen) Victoria Spring was not mentioned.

Bob Chinnock does state "Lectotype: Between Victoria Springs and Ularing" so he may have additional information that I am not aware of. "Fontes" equals "spring" in English so I can see where Bob got his information from.

Of course, this does not change the thrust of what I say above, which is that the Spring itself is not listed as the Type location.

I have been to Queen Victoria Spring on several occasions and during one trip found *Eremophila youngii* on a track running south between Kirgella Rocks and Mulga Rockhole. Plants, like the one above, were seen near a small saltlake just above Ponton Creek. This is about 50 km to the NW of the spring, and it is quite possible the species occurs even closer given it is not all sand dune country in that area.

Sub-Group meetings and events

NSW sub-group

Unfortunately, the meeting at Coolangatta, NSW in March had to be cancelled due to lack of registrations. This has led Ian Cox to believe there is no interest in local gatherings.

If you want to meet in NSW, you need to let Ian know, and also support the events he organises. Please contact him at **itcox (at) bigpond.com** to offer assistance and involvement.

South Australian sub-group

Tim Wood

The April meeting began by some of us following Ken Warnes on the Friday afternoon. We left the Arid Lands Botanic Gardens and drove to a roadside stop 62km north on the Stuart Highway (pic below). Here we saw *E. serrulata, E. latrobei, E. duttonii, E. scoparia* and *E. alternifolia* after passing *E. longifolia* and *E. maculata* on the way.

On Saturday, 27 members listened to Russell Wait give a talk and slides of his recent trip to Queensland. We welcomed Amy Morgan as a new member. Russell reminded us that Eremophilas *E. willsii* and *E. goodwinii* are both short lived, so keep propagating them. He said that stripping the seeds off *E. willsii* can prolong its life by sparing the plant the energy that would be needed to grow the seeds to maturity. *E. gilesii* was shown in many forms, one with a particularly nice pink flower. *E. hispida* was shown growing in quantity with *E. cordatisepala* and *E. bowmanii* so, naturally, hybrids were found. Russell then informed us that the chimera Big John has been used successfully as root stock for grafting *E. arguta* and *E. pallida* which are in the same (Chinnock) grouping.

After morning tea we had a 60 minute roundtable on growing Eremophilas in the garden. Everybody watered their plants for the first 12 months until established, however then consensus ceased. For established gardens there was a lot of variation depending on soil type, and drainage. Russell pointed out most of his plants are grafted onto *Myoporum insulare* and thus can tolerate more water. The ALBG water their plants twice a week in summer and the Lills in Renmark, on sandy soil, water weekly.

Then we moved on to fertilising. Members were split 50:50 but it was common at planting to put a few Bush Tucker pellets in the planting hole. Also it was used regularly for pots. Some members used it annually with a light scattering of pellets in autumn prior to first breaking rains. Some horticultural tips from larger growers then followed including a "Magic Potion for a sulking plant", namely Powerfeed, Populate, Seasol and EDDHA mixed in a watering can and poured over foliage. EDDHA reduces iron-induced chlorosis and has other benefits as it acts by locking up phosphorus and has been found to be beneficial for plants that seem to establish but seem to stagnate.

The next lively discussion was on pruning. Ronda Hall started by saying start early and tip prune when potting up cuttings and also when planting out (helps to reduce transplant shock and improve shape). We are copying nature as natural herbivore graze by tip pruning because the growing tips of our pungent Eremophilas are usually less poisonous (but, see p.14). Continue pruning immediately the bush has taken shape, taking off any long growth that does not fit with the desired form. *E. nivea* is an example where it is often not pruned enough. It was felt most Eremophilas needed pruning in either spring or autumn.

Tip pruning can also help with a mature specimen that has become too woody, as

repeated tip pruning can induce shoots on low wood, if you don't prune below the green.

An alternative to an overgrown bush is bold chainsaw pruning, where plants either live or die. *E. maculata* can be taken right back to the crown at a suitable time of the year, usually autumn in SA.

Some wispy Eremophilas like *E. complanata, E. dempsteri* and *E. interstans* are more difficult to prune – for these, consider partial pruning e.g. one side first, to test results. Remember Russell Wait has included detail on pruning in *Growing Eremophila*.

Then came lunch and a chance to swap material, as well as purchasing from Ian Roberts' collection of plants in the car park. Ian made sure his plants were not in competition with those from the ALBG nursery. Members then enjoyed a tour of the Botanic Gardens and its extensive Eremophila collection, with Perry Jones as guide (pic of the group below).

After an hour we then found our way to the propagation nursery where rarer plants, including grafts, were for sale. Perry is starting to use special plastic root pruning pots with holes in the side for keeping stock Eremophila plants. A particularly good specimen was a standard *E. flaccida* ssp. *flaccida* (see pic). Members spent a good 60 minutes and a little money and were appreciative of the chance to purchase plants.

Members then refreshed and enjoyed a wonderful meal at the Standpipe restaurant. Several tall tales and true were exchanged, and the food was excellent, as usual.

So we were ready for a 7.30am start on Sunday morning for a birding tour hosted by Peter Langdon and Brian Reichelt. I can highly recommend this tour, or even an early morning stroll through the wonderful garden. We strolled through the original 35-year-old plants. It was interesting to be told that Ken Warnes sourced the first 1100 plants for the garden from Peter and Ronda Hall!

All the birdy study group members seemed to end up in the Arid Lands Cafe for brunch, and another excuse for a chin wag. Special thanks to Russell Wait for travelling to Port Augusta. Our next meeting will be in spring in Kadina.

NEXT SOUTH AUSTRALIAN MEETING:

In spring, date TBC in Kadina.

For more info email Tim Wood: drspock52 (at) gmail.com

Victorian sub-group

Glenda Datson

Eleven members met at the garden of Drew and Bernadette Baglin at Kialla on 1 April. Pic of the group is below.

The 1.5-acre garden, developed on a very flat former farming-paddock, began 30 years ago when the perimeter was planted up with a mix of mainly Eucalyptus, Acacia and Allocasuarina. Garden beds and ponds evolved and the house followed, nestling in with a great outlook into the garden.

The house is constructed of bluestone blocks, some from Drew's grandfather's old home, some convict blocks from the old Shepparton gaol, and some from a quarry where Drew worked. Bluestone walls were also constructed by Drew to retain the garden beds.

Mounds were built up with clean-fill, then blue-metal stone-dust to stop weeds, then decorative stone in a range of sizes. The base of the large pond was also covered with decorative stone so that it remained attractive during dry times. Aquatic reeds and sedges along with swathes of Purple Loosestrife fill the pond so that it becomes a delightful ecosystem for numerous species of dragon and damselflies, various native bees and other insects during the warmer months. Birdlife abounds amongst this well thought out oasis of plant life.

Over 90 species and forms of Eremophila have been planted in this wonderful garden so we spent a wonderful time meandering through. Below is a photo of *E. youngii* in the garden.

John Upsher spoke on the importance of hygiene and his ongoing trials including the use of 'Napisan' to eradicate fungal plant pathogens because of their effects on grafting success. Others spoke of their methods of sterilising used perlite for reuse. Various grafting techniques were discussed. Ian uses mainly *Myoporum montanum* as rootstock and he mainly does 'saddle grafts'. He has fine-tuned his automatic misting/watering system to suit most of his propagation. YouTube videos on grafting are also useful. Members brought along plants as give aways or for sale, including some beautiful grafted plants. A cutting swap was enthusiastically received. Many thanks to Norma Boschen who was unable to come along, but who sent some give away plants.

After lunch we moved on to Kensington Gardens Lifestyle Village where resident Laurie Baglin (right) has made such a difference to the amenity of the large retarding basin area at the rear of the village. Laurie has about

70 Eremophila, of just over 50 species, in his garden.

The Village head gardener, Matthew Scaife, happily assists Laurie in ensuring the native plant areas are well presented for the benefit of residents.

Collins Walk is a walking track here, where Laurie has planted numerous native trees and shrubs, including Eremophila. Laurie is a highly respected member of our Group, and indeed of the APS of Victoria and beyond. We were very grateful to be given the go ahead to visit the gardens after hearing about this remarkable collection of rare and carefully chosen native plant species that Laurie was responsible for instigating, planning and planting. During Covid lockdowns Village residents were able to escape to this walking area which meant so much to them at the time and which kindled an interest for some in native plants.

Below shows the group admiring an *E. abietina*.

Below is an *E. calorhabdos* x *denticulata*.

We thank Laurie, Drew and Bernadette for hosting this wonderful visit. We are ever so grateful for their generous time spent with us and the warm welcome to their homes.

NEXT VICTORIAN MEETING:

Members have agreed to aim to meet at Melton Botanic Gardens on Saturday 7 October, commencing with morning tea at 10:30am.

For more info email Chris Strachan: doowop49 (at) hotmail.com or 0432 621 392.

Queensland sub-group

Lorelei Bartkowski

The April meeting was held at Laylee Purchase's place in Toowoomba and was the first run by me as new leader. The following members attended: Jan Glazebrook, Dennis Cox, Gail Wockner, Janet Schultz, Lorelei Bartkowski, Pam and Darell Fletcher, Ross and Chris Reddick, Peter Bevan, Chris Purchase, Laylee Purchase and Dick Harding.

Lyndal is collecting information on Eremophila seed setting for Queensland species for the fruit study project. We discussed the topic and concluded that no one has recorded the time from a plant flowering to fruit ripeness and are unsure of which time of year would give most success for a trip collecting ripe fruit in the wild. We think that flowering and fruiting often depend very much on rainfall. The time from flowering to fruit ripeness may also vary between species. We determined that we may collect some ripe fruit on the upcoming trip if available.

On a trip around my garden I noted the following fruit patterns on the Eremophila varieties in Lyndal's list:

E. bignoniiflora: most fruit already fallen; a small amount are on bush ripe or still green.

E. bowmanii: none of mine have set any fruit.

E. cordatisepala: mostly young very green fruit.

E. debilis: currently covered in pink fruit.

E. desertii: none have set fruit.

E. duttonii (pic right): no fruit set.

E. freelingii: many brown calyxes on bush but no fruit set.

E. gilesii: green fruit quite large.

E. glabra: some have young fruit, some no fruit.

E. latrobei: no fruit

E. longifolia: covered in black ripe fruit that hasn't fallen yet. Yellow flowering one – fruit are still green.

E. macdonnellii: young fruit.

E. macgillivrayi: no fruit .

E. maculata: lots of fruit has fallen but they also have ripe fruit and green fruit remaining.

E. mitchellii: my 4 ten-year-old bushes have never flowered so no fruit.

E. oppositifolia: no fruit

E. polyclada: very young fruit.

E. stenophylla: no fruit.

E. tetraptera: no fruit.

The meeting ended and attendees then toured Laylee's very large native garden. It was wonderful to see the plants after some rain, but the garden has also suffered losses from the long, wet spell of the previous year. The garden is full of Eremophilas and Grevilleas, as well as many other not often seen natives. Laylee lamented that it is getting a bit much for her but

I'm sure the birds, bees and other native animals, as well as we native plant lovers, appreciate it very much. Pictured at left is a hybrid we call Just Jan and above (top right) is *E. tietkensii*.

NEXT QUEENSLAND MEETING:

On Sunday 10 July, Pete's Hobby Nursery, 10 Patrick St Lowood, Queensland.

For more info email Lorelei Bartkowski: esgqld (at) gmail.com (new email address!!)

After the field trip in July/August (details over), the next meeting will be held at Lorelei's place at Glencoe on 31 October 2023.

ESG Trip to Inland Queensland 2023

Jan Glazebrook

This itinerary is now firm. At the time of writing, 18 people are expected on the trip. People are free to join or leave the group as their plans require, and also to camp at different areas if preferred. You will need to book your own accommodation where we stay overnight. Most caravan parks have cabins which you could share with other participants. Food for lunches and snacks are required on the road.

Day 1 Monday 31st July.

We will meet in Winton at the caravan pk at 5pm. Over happy hour we will look at the plans for the next few days. If you want extra time in Winton, leave home earlier. You may like a day in Longreach to visit the Stockman's Hall of Fame.

Day 2 Tuesday 1st August.

This will be a free day to look around Winton or do your washing/ shopping. We will meet again for happy hour.

Day 3 Wednesday 2nd August

We will travel to Bladensberg National Park. We hope to see *E. glabra, E. latrobei, E. alatisepala, E. cordatisepala* and *E. bowmanii*. Lunch will be at the camp area or the information centre in the national park. After lunch we head for Opalton and potentially find E. *hispida* and *E. woodiae*. *E. oppositifolia* ssp. *rubra* is also found in this area. We then head back to Winton for the night. People with caravans will be able to leave them in Winton for the day 3 trip, as we spend a total of three nights in Winton.

Day 4 Thursday 3rd August.

This will be a big day with an early start. We leave Winton at 8am and head 50km west to Old Cork Station, where we should see *E. tetraptera*. We stop for lunch at Old Cork and then travel south to Jundah, during which we hope to see *E. duttonii*, *E. cordatisepala* and *E. stenophylla* as well as *E. gilesii* close to the town. We spend the night at Jundah.

Day 5 Friday 4th August.

We will spend most of the day in Welford National Park where we are aiming to find *Eremophila maculata*, *E. linsmithii* and *E. latrobei* as well as other beautiful natives such as Dichrastylis. At the end of this day we head to Quilpie for the night.

Day 6 Saturday 5th August

We will head further west through Eromanga.. Along the way we may see *E. arbuscula*. As we get closer to the Grey Range we may see *Eremophila bowmanii latifolia*, *E. freelingii*, *E. dalyana* and *E. duttonii*. If time allows we will visit Noccundra on the way to Thargomindah for the night.

Day 7 Sunday 6th August.

We will head east to St George. Along the way we will hopefully see *E. goodwinii* as well as *Grevillea albiflora* and *G. juncifolia* near Cunnamulla. At St George there are some *E. maculata* to see. We spend the final night at St George.

Day 8 Monday 7th August.

We make our way home

ANPSA Biennial Conference 2024

The Victorian Region will host the Biennial Conference in Melbourne in October 2024 and already has issued newsletters to inform us of the theme, *Gardens for Life*.

Speakers are yet to be announced but the Region has indicated that the conference tours will include Melton Botanic Garden, which has lots of Eremophila (and a plant nursery!); Langwarren Fauna and Flora Reserve (Eremophila status unknown) and Karwarra Native Botanic Garden (has another nursery!).

To join the mail list go to https://apsvic.org.au/anpsa-biennial-conference-2024.

Snippets

Ainslee Lines (NSW): Over the years I've lost more Eremophila than I currently have, but it's still really interesting to read about what everyone else is up to. I'm really interested in the stories about chimeras, and also about the chemical properties of Eremophila. It is going to be interesting to see what they find in the future.

Long may you continue as leader. The Newsletter is always interesting.

Jeff Ellis (ACT) (Jeff has been looking for plants of *E. sturtii* and *E. mitchellii*)**:**

I have one very small plant, supposedly a cutting of *E. mitchellii*, that struck from a mixed bag of cutting material, but it is slow growing and is not yet confirmed as that species.

I shall try grafting next time I have suitable scion material. I maintain a bush of *Myoporum sp.*, recovered from the base of a nursery-bought *E. nivea*, for grafting but have had limited success in the past – three plants of *E. georgei* out of many attempts. I should be able to do better because I had vast experience of even more intricate tissue culturing procedures in my working life at CSIRO!

I was interested to read that the species is banned in WA. It probably worries them as a potential woody weed.

Your talk about the work of your study group that is on YouTube was (is) very interesting.

Ken Warnes (SA): I had a pleasant surprise in my main patch the in March when a couple of dead sticks about 50 cm long suddenly had a bunch of new shoots at ground level. It turns out that it is the *E. willsii* x *E. platythamnos* hybrid which I collected at Warrakurna back in about 2012. I've tried numerous times to graft further plants without success and had presumed it lost. It must be on its own roots to have shot the way it has. So, a couple of small pieces are already in the propagating system to see if I can utilise this "second coming".

My patch here in Owen is undergoing a major revamp, prompted by the need to try and eradicate a cute little Wahlenbergia which I introduced as a 3" pot. It has turned into a rampaging wall 3m across, swamping everything in its path including grafted Eremophilas. The bed has been turned into a barren area as I try to find the last tiny fragment of rhizome from which it can re-invent itself. Fifteen-year-old *E. muelleriana* and *E. decussata* may have to go for the greater good. It's a nightmare. Nearly as bad as the rats, which are still feasting on the drip-lines at the farm. These require hours of repair work every time that I want to water my plants out there.

I'm not sure how much longer I can keep it up. The new hip is working a treat, but the rest is getting very tired. But my plant racks are showing the results of Russell's travels so there's going to have to be a few holes dug.

Must away, there's things to do – as can be seen by the pics of the boxes of plants (over). No prizes for finding them all but it shows we are still "on the case". Will distribute them around a bit to give the best chance of general establishment: Roberts, Lill's, Kadina, AALBG etc.

Box 1 (next page): to the right are several "giant" *E. georgei* (possibly a hybrid); lower left the pink *E. gilesii* from Gem Tree NT; a red *E. latrobei* from Lake Gairdner SA; and *E. waitii*, the new provenance.

Box 2: *E. glabra* from our Scrub (one of the fire response seedlings); lower left is a very small *E. ballythunensis* (new provenance); extreme top left and just visible is an upright *E. prostrata;* right centre is *E. vernicosa* new provenance, *E. bowmanii* ssp. (Lill's) and the narrow grey leaf is *E. lachnocalyx* hybrid. At top Right is *E. willsii.*

Box 3 (next column): *E. macdonnellii*; *E. bowmanii* x *hispida*; *E. cordatisepala*; *E. obliquisepala* (Perry AALBG). At top right (obscured) is the pink *E. goodwinii* ex Windorah; and if you look very hard in there is also a tiny purple flower on *E. homoplastica*, one of four doing well.

Plus, plus, plus in about 8 boxes: four *E. physocalyx* flowering and fruiting well with its huge calyx and 11 *E. perglandulosa* which is a big win.

MailChimp

Lyndal Thorburn

I managed to cause my email address to be blacklisted by several internet service providers (ISPs) in March, when I sent the March newsletter out to everyone – these ISPs decided I must be spamming people. I had to get professional ($$) assistance to fix it, and so I have taken out a free MailChimp subscription (slow and awkward) which I will now use for bulk emails.

Unfortunately, this means I need to maintain two member databases. So, I am hoping there will be no slip-ups (by me) in keeping tabs on people on lists or not, as the case may be. Please let me know if you think I have mucked something up (my contact details are next page).

Next issue

The feature species for the next issue will be *Eremophila decussata*, including its hybrid "Nullarbor Nymph".

Renewals

Yes, folks, it's that time of year again! I have emailed (via aforesaid MailChimp) those whose memberships expire on 30 June 2023.

If you didn't hear from me directly, there is no need to send money (unless, of course, you want to make a donation!) – you are still financial.

As at the time of writing, I am still awaiting subs from **40** people! – **please act soon** so you don't miss out in 2023-24.

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) https://anpsa.org.au/study_group/eremophila-study-group/

Study Groups allow members with specific interests to develop that interest to the full and to contribute 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. Back issues of newsletters can be found at https://anpsa.org.au/newsletter/eremophila-study-group/.

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.

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

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.

For more general information about Study Groups, contact **Ms Jane Fountain** Coordinator, Study Groups, Australian Native Plants Society (Australia) (studygroups (at) anpsa.org.au)

NEXT NEWSLETTER when I have enough for 24 pages – probably Spring