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Australian Native Plants Society (Australia) (ANPSA)

Eremophila Study Group Newsletter No. 115

November 2016

Contents

Letter from the Editor

Welcome to the October 2016 edition of the Eremophila Study Group Newsletter. Close to this time last year, we were hearing about the fires that had swept through Pinery in South Australia. A year has now passed and we will catch up with what has been happening there.

Thanks to the SG members Joan Hubbard, Russell Wait, Norma Boschen, Mary Squire, Christine Strachan, Phil James, Jan Hall, Charles Farrugia, Jan Glazebrook, Hans Griesser, Dave Bishop, Bob Blake, Don Lill, John Nevin, Sue Oldfield, Laylee Purchase, Bev Rice, Ian Tranter, Bernie Shanahan and John Upsher. All of whom responded to the *E. viscida* survey or provided other comments – we have 35 responses from these people, a great data source, and which I have attempted to draw into a summary article in this Newsletter.

The big news, however, is that we are going ahead with an **ESG gathering**, in **South Australia**, in **September 2017**. An expression of interest form is attached for those of you without access to email – the remainder of you can you please respond to the survey poll that is being issued with this Newsletter – see pages 23 and 24. You are asked to respond to this an online survey so we can build up a mail list for the event and identify some key interests to help with planning. For our planning, it is important that you indicate interest as soon as possible.

Lyndal Thorburn

Leader and Newsletter Editor,
Eremophila Study Group

What's New in the Study Group

Study Group website

Further improvements have been made to the ESG website. Our wonderful Brian Walters has created an online form for inquiries and the Study Group application form can now be downloaded from that site (http://anpsa.org.au/eremophilaSG/index.html). This is part of attempts by Australian Native Plant Society of (Australia) (ANPSA – our parent body) to make it easier to find out information on study groups and make contact with Study Group leaders.

Some of you may have noted that there is information on our site about propagation, but this has not been updated for some time (e.g. the article on seed germination is dated from 1996!). Members' contributions are invited to update this section, please email the Study Group leader with suggestions and references.

Photos for the site's photo page (http://anpsa.org.au/erem4.html) are also welcome – these need to be high resolution (at least 1MB, preferably more), with good focus and taken in strong daylight. Photographers' names will be added to the list at the end of the photos page and credits provided in the same way as is done currently.

New members

Welcome to new member Glenda Datson (Vic).

New Victorian Group

A **Victorian sub-group of the ESG** has sprung into being, courtesy of Sue and David Oldfield, who live out near Bendigo. In Sue's words:

> *"We have been in Maldon, near Bendigo, just over 5 years and I have been madly planting in the 2 acre "pony paddock" (deep ripped) and a 2.5 acre garden in a different climate to our previous property in Rockbank, so it's another learning experience."*

The Victorian group had their first meeting in September 2016 (see report page 19). An email was sent in June to all online members of the ESG resident in Victoria, to get permission to provide your email addresses to Sue and David. If you didn't respond to that original email and now want to be kept informed, if you live outside Victoria and this is the first you have heard of this, or if you are a Victorian postal member and hence didn't know about it either, please contact the Study Group Leader to ask that your details be passed on to Sue and David.

Study Group Archives

Ken Warnes has delivered several boxes of Study Group archives to Canberra. These are being sifted! It is likely that clean hard copies of the newsletters will be donated to the library of the Australian National Botanic Gardens (ANBG). The previous Study Group leader, Colin Jennings, also started a dried/pressed species collection and the relevance of this to ongoing study will also be discussed with the ANBG.

The collection includes a box of **Nescofilm** (used for grafting). This was previously sold to members for $2 per metre plus $2 postage – and is again available!! Despite the long time in storage it seems to have retained its flexibility. If you would like a metre or two please email the Study Group leader. Payments can be made to the Study Group bank account by bank transfer or cheque (see back page for details).

Keeping Cuttings while Travelling

Members were asked previously about how they keep cuttings fresh when bringing them back from collecting trips (under the necessary permits of course) or when posting.

Russell Wait reports using green "Fresh and Crisp" vegetable bags to keep cutting alive for up to 4 weeks. The bags used to come in 3 different sizes but now there is only the medium size available. They are manufactured by ICD Pty Ltd 16 Yazaki Way Carrum Downs Vic and you can buy them direct in packs of six from their site ICDonline – www.icdonline.com.au)

Russell also uses multiple layers of newspaper to keep cuttings fresh. He gives each sheet 2 or 3 sprays with an atomizer spray bottle (filled with water) and then wraps one lot of cuttings and then another one and then another one so there is paper between each one. More lush cuttings need more water BUT it is better to be on the light side than too much, because of the risk of mould. Some species won't hold for 4 weeks (e.g. *E. miniata* and *E. pantonii*) and others will hold for quite a bit longer.

Several members have also reported rinsing cuttings in a weak solution of bleach every few days, to discourage fungus, while they are *en route*.

Ken Warnes has commented separately on handling the sticky species such as *E. subfloccosa ssp glandulosa* and those from *fraseri* group after a few days in the post.

Some solvent (e.g. methylated spirits) and a bowl of warm water to constantly rinse the hands is essential.

Post-Pinery Recovery

Ken Warnes has also written to provide an update on recovery of his plantation from the Pinery fires which swept through in November 2015 (almost a year ago!).

Ken Warnes

7 June: Would you believe that around 100 seedlings have appeared where I once had a large *E. subfloccosa ssp glandulosa*. They certainly weren't there earlier because I had looked on many occasions. This would tie in with Carole Elliot's germination temperatures for *E. glabra* and the fact that it is a local plant, or was until the fire. Self-pollinated or all hybrids? Only time will tell, I have 48 in pots and have clear weeded around a host more in the ground. I have one mature plant surviving and cuttings in from that plant. To date searches for volunteer seedlings on roadsides have proved unsuccessful but it's early days yet.

29 June: The whole patch is disappearing under soursobs and marshmallows and I really am having a struggle to get motivated to clean it up. Days are short, cold and often wet. Just keeping the weeds off the seedlings still *in situ* is a huge task in itself and now that Winter is here the growth rates have slowed right down. I'm not sure if I reported the mass germination of the local *E. subfloccosa ssp glandulosa* but I reckon at least 100 where I had a large cutting grown plant. I have 48 in tubes and the rest have been left. Only time will tell if they are self-pollinated or all hybrids. I also potted 24 *E. glabra ssp chlorella* and left a heap behind. These definitely only emerged only when the temperatures dropped to about those listed by Carole Elliot in her work on *E. glabra* (see article this Newsletter).

I have wandered through the burnt scrub where the only remaining *E. subfloccosa* grew and while I can find no sign of the bush I have marked a seedling which looks very like the ones in my pots. It will be exciting and remarkable if it is the real deal, I'd bet the rest of the world would have had trouble in spotting it. If there's one there's probably more but at cotyledons plus tiny first leaves they're not very big in 5 acres.

9 August: My regrowing *E. rotundifolia* was accidentally sprayed through a mass of weeds and it looks as if it won't make it. I have a second plant which missed the fire so all is not lost.

E. warnesii down here is very hard to keep going in winter and from the host of seedlings I would think that very few are self-pollinated and are true to type. Long hairs are so indicative and the seedlings don't have them. In fact, I wonder just how genetically different are the species in Section Hygrophanae and what we recognise as species are really only stabilised regional adaptations which now we have brought them all back together are very genetically compatible. That thought could stir up a hornet's nest of controversy but how else do you explain what's happening here with all these seedlings. I have the advantage of seeing the plants, but you have to believe me when I say that almost no two are identical and none are exact replicas of the seed source. And that's speaking from observing seedlings from at least 10 species or variants which may be species in the future. Once again I can only quote Russell when he says "Oh dear".

28 August: Today I finally finished planting out from my season's accumulations. Some had been in pots far too long with severe root damage through rotting but at least they can start the next stage of life; about 200 and all replacements, no new areas and not all fire losses. I'm pretty sure that a lot of species are not that long-lived in our relatively cold, wet conditions and termite attack doesn't help. And there's some 20 to 30 species looking tired that need replacing, mainly non-showy types that commercial businesses don't want to know about. It's all becoming too hard but at least the block is again looking like someone cares. The new ones include my own propagation, seedlings from 2015, plants via Arid Lands and donations post fire, especially from Russell (Wait).

My propagation unit's sides are bulging, 4 boxes of grafts plus 57 plastic bags with either 3"x3" pots or 6"x1" tubes, most with multiple tenants. I'm relying on Triforine to prevent fungal outbreaks. It's all very primitive but I've never managed to set up a better system because I have always steered clear of anything approaching a commercial system. Six parcels have arrived from various inland sources with a lot of repeats of *E. latrobei* and *E. platycalyx* but numerous things of interest and probably some further hybrids.

The 2016 seedlings have battled through winter and losses are mounting. Red-legged earth mites attack those in the ground despite dustings of insecticide and have killed many. The tribe of Section Hygrophanae seedlings have come through quite well but I increasingly think that pure species are very rare among them. My guess is that genetically they are all very close despite having developed different physical characters as their range has increased. I would say that the suckering *E. ovata* is the only one that hasn't joined the picnic, or should I say orgy. Time to call in a budding geneticist looking for a PhD subject.

Research news

Species new and missing

Two new species of Eremophila have been described in the July 2016 issue of Nuytsia, the Journal of the Western Australian Herbarium, 1 July 2016 issue (Volume 27 pp 211-216).

Eremophila buirchellii is from Mount Augustus and is a shrub 1-2m high by 0.8-1.2m wide with grey leaves and pinkish-white flowers from June to August. It is confined to the Mount Augustus and Gascoyne regions. It is within Section Eriocalyx and is distinguished from *E. forrestii* in that its leaves are clustered at the ends of its branches and its unspotted corolla. It is illustrated in *A Field Guide to the Eremophilas* of Western Australia (Brown and Buirchall), page 306

Eremophila calcicola is a low compact shrub 0.25-0.8m high by 0.6-2m wide. It has bright green leaves, green flowers from May to September. It is in Section Stenochilus and it is distinguished from *E. denticulata* by its low, spreading habit, form *E. glabra* and green, rather than red or pink, flowers. It is illustrated in A Field Guide to the Eremophilas of Western Australia (Brown and Buirchall), page 312. *E. calcicola* has been available in the nursery trade for some time as Eremophila Parmango Road and has also been sold mislabelled as a form of *E. glabra.*

Yet another undescribed species has emerged from Andrew Brown, from a 6-day trip to Kalbarri. The species was found north-east of Horrocks, WA and its photo is reproduced at right from Facebook.[1]

And from Ian Tranter:

In Nuytsia 27 (pages 139-164) Neil Gibson writes that an analysis of the Western Australian Herbarium collections has resulted in a list of 29 endemic taxa last collected between 1888 and 1965, and which are not currently on the State's Presumed Extinct schedule.[2]

Species that have been adequately searched for and for which there is no reasonable doubt that the last individual has died can be listed under the Wildlife Conservation Act 1950 as Presumed Extinct. This listing gives immediate Ministerial protection to these taxa if they are subsequently relocated in the wild, and is binding on both the public and the Crown. Three of these are subspecies of *E. glabra* and luckily each was photographed by Brown and Buirchell in their "WA Eremophilas" book, so the authors hope for future collections and that they can be conserved in the wild. The three unnamed Eremophila spp. are apparently extant but with no recent collections.

Eremophila glabra subsp. Morawa Prostrate habit; bright green leaves; yellow corolla. Most recent collection: 1945. While this species is only known from a single collection, Brown and Buirchell (2011) illustrate this taxon with recent photographs. Further collections would assist in determining its taxonomic and conservation status.

Eremophila glabra subsp. Rason Lake Similar to typical subspecies but has a lower, bushier habit and green rather than grey leaves. Most recent collection: 1956. Again, this is only known from a single collection, but Brown and Buirchell (2011) illustrate this taxon with recent photographs and a distribution map which indicates it extends along the Trans-Australian railway line. Their text indicates it occurs from Rawlinna north to Laverton. Further collections would assist in determining its taxonomic and conservation status.

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1 https://www.facebook.com/photo.php?fbid=1280683535277875&set=pcb.1280685828610979&type=3&theater

2 https://florabase.dpaw.wa.gov.au/science/nuytsia/787.pdf

Eremophila sp. Murgoo Grey-green, soft felty leaves 40-70 mm long; light green hairy sepals 15-20 mm long 7-9נ mm wide, with mauve-purple or bluish corolla 30-35 mm long; related to *E. clarkei*. Most recent collection: 1960. Also only known from a single collection, but Brown and Buirchell (2011) illustrate this taxon with recent photographs. Their text and distribution map indicates it occurs between Murgoo and Yuin Stations. Further collections would assist in determining its taxonomic and conservation status.

And finally a mystery! A member has sent this photo (right), of an Eremophila found along the Stuart Highway in northern SA. Ken Warnes initially suggested it might be *Eremophila pentaptera*, even though this species is not known from this area (but has been found not far east of there). On further review, Ken reports that the flowers of his *E. pentaptera* are glabrous whereas those in the pic have conspicuous hairs. Bob Chinnock's book (p. 404) says flowers of this species are glabrous and as Ken notes, "Bob was very particular about hairs". The colour pic in Bob's book shows *E. pentaptera* throat as white and unspotted but his line drawing shows spots. The find will be examined by Bob on his return from New Zealand we will report the results in the next Newsletter.

Antibacterial properties of E. alternifolia

An article in the Journal of Ethnopharmacology in June 2016, co-authored by ESG member Dr Hans Griesser, reports on the antibacterial properties of *E. alternifolia*.[3] This species is reported to have therapeutic properties as a traditional Aboriginal medicine. The recently published paper finds that four compounds isolated from a leaf extract are active against Gram Positive bacteria including methicillin-resistant *Staphylococcus aureus*. Two of these compounds, pinobanksin-3-cinnamate and a serrulatane diterpene are identified in Eremophila for the first time.

Adelaide Advertiser on 19 September 2016 reported a new species of "teddy bear bee" discovered in outback South Australia, near Roxby Downs, as part of the Bush Blitz initiatives. An Australian native bee, the teddy bear bee uses "buzz pollination", which involves grabbing on to the flower and buzzing rapidly. The technique allows these bees to release pollen which is held firmly by the anthers. Such species are important for the pollination of native plants as well as vegetables like tomatoes.

[3] Biva, I, Ndi, C, Griesser, H and Semple, S (2016): *Antibacterial Properties of Eremophila alternifolia - an Australian aboriginal traditional medicine plant*, Jnl Ethnopharmacology 182: 1-6

Seed germination

Ian Tranter has reported that the WA Herbarium had a post on their Facebook page (search for it on Facebook, filter for 29 September) saying that they had been germinating seed of the endangered *E. virens* to establish a population in a new location and had a 90% success (on GA3 agar). The herbarium staff use the scalpel blade like a wedge to force the seed open along natural fracture lines - the seed doesn't go all the way to the end of the fruit (see picture from the site, right). If you push down firmly 1mm or so from the end of the fruit with the tip of the scalpel blade it splits open easily (at least easily for this species) revealing the undamaged seed as can be seen in the picture. They get up to 4 seed per fruit for this species.

Bees and Eremophila

Dr Carole Elliott's article on germination of *Eremophila glabra ssp. glabra* seed has appeared in Australian Plants Autumn 2016 28 (226): pp218-225 "Unlocking Germination secrets: A method for *Eremophila glabra ssp glabra*". The article addresses the challenges caused by the physical barriers, chemical inhibitors created by the fruit and the requirements for temperature stratification.

The germination experiment cracked the fruit longitudinally to overcome the physical barrier and tested chemical and temperature barriers with gibberellic acid, smoke water, and different incubation temperature regimes. The findings showed that germination was most successful using gibberellic acid and day/ night temperature of $25^0/10^0$ C (62.5%). The author then used this regime to germinate over 51% of a collection of 3,200 seeds for a PhD project.

Feature species - *Eremophila viscida*

Eremophila viscida (common name Varnish Bush, due its shiny leaves) is found in Western Australia and is classified as rare and endangered. According to Russell Wait, who has collected *E. viscida* in the field, its prevalence since the late 1990s has reduced significantly, because it needs soil disturbance or a fire to get it growing.

It is a shrub up from 2m to 6m tall with sticky, hairless branches and leaves up to 10c cm long. There are two colour forms of *E. viscida*, one with a cream corolla with dark purple spots and white to pale cream sepals ("cream form" – left, photo Bev Rice), and the second has a pink corolla with deeper pink spots and pink or cream sepals ("pink form" – below, photo Bev Rice). Members reported growing roughly equal numbers of the cream form and the pink form.

E. viscida grows on its own roots or as a graft. Of the 21 *E. viscida* plants on which members reported, 12 were on their own roots. Those growing as grafts were on *Myoporum acuminatum* (3), *M. insulare* (2), *M. montanum* (3), and *M. platycarpum* (1) with one on an unknown Myoporum stock. Nearly all the plants, on own roots or as grafts, were growing in the ground rather than in tubs.

The species does seem able to live a long time in cultivation with two members reporting that their plants were 15 years old and a further 13 being between 5 and 10 years old with half of these growing on their own roots rather than grafted (see table). Two members reported losing large established 10-year-old plants to severe winds, when they blew out of the ground.

	Age of oldest plant			
Rootstock	**<5 yrs**	**5-10 yrs**	**10-15 yrs**	**Total**
Growing on its own roots	2	7	1	10
I have both grafted and cutting-grown plants		1		1
On a graft	2	5	1	8
Total	4	13	2	19

Most members reported that plants flower for 1-2 months starting in early spring, but some reported their plants were flowering throughout most of spring/summer and noted the persistent calyces (pic below from Bev Rice).

Members reported that that they either did not prune their plants or only tip pruned them – plants don't like being pruned hard.

Aspect and soils

The species, like many Eremophila, enjoys a sunny aspect with 60% growing in sites which receive sun all day, 25% in sites with sun for at least half the day, and the remainder in dappled shade.

One third of the sites were north-facing, with 25% on flat land and 20% west facing. Over two thirds of the growing locations had 600mm rain p.a. or less – but 7 members were growing this species in rainfalls of over 800mm p.a. (only one of these in a tub).

The survey asked members to nominate their own soil type – this has been roughly grouped with the surprising finding that 11 of the 20 plants in in some sort of clay or clay loam.

There was one report of "damping off" of young plants after heavy rain, but respondents mostly reported that damping off was not a problem and that plants responded well to rain with new growth.

Plants were growing in frost regimes ranging from nil to 100 days per year but only one person reported some tip damage following frost.

Most respondents who were enthusiastic about the species noted its vigorous growth, good foliage, good shape that can be kept by light pruning, prolific flowers and attractiveness to insects and birds – the latter coming in for the insects rather than nectar. While some thought it would make a good hedge, others noted that it does best in full sun, needs a lot of air flow, that they had lost large established plants to wind damage and that it became leggy if not pruned.

Pests and Propagation

Few pests were reported – one member reported her plant was chewed by something (kangaroo or bird) and another reported an attack by a rabbit (maybe more than one rabbit!). In relation to insect attacks there was one report of attack by a Lantana bug[4] and two by scale/mealy bugs. A couple of members also reported fungal attack if the plant was not growing in a well-ventilated site, or leaf curl affecting the lower leaves – with suggestions the latter only affects the cream form.

The fact that many members are growing this species on its own roots implies success with cuttings, however nine also reported that they had never successfully grown *E. viscida* from cuttings. Five members reported successfully using IBA 3000 or IBA 4000 to strike cuttings of both blue and pink forms.

Hybrids

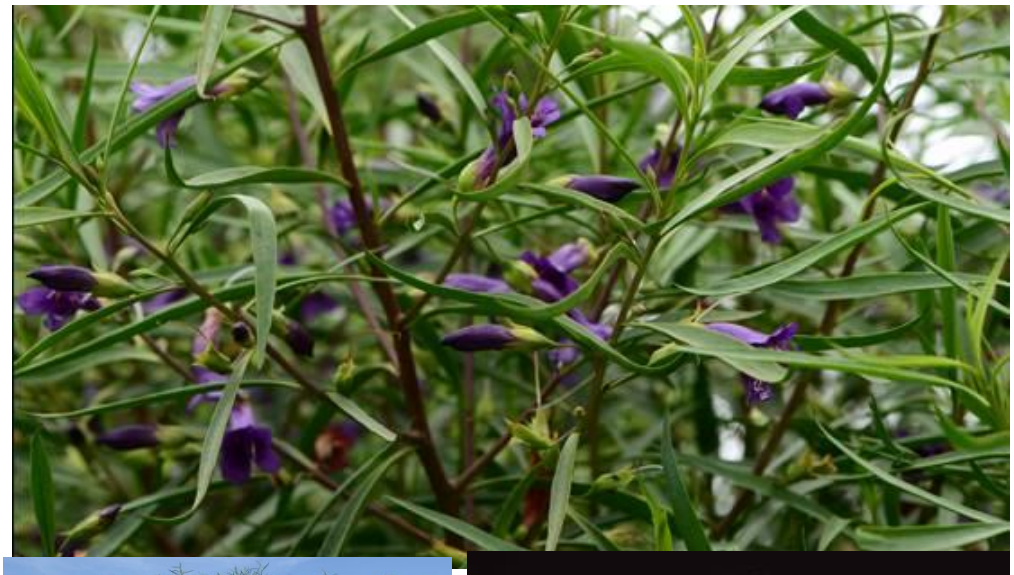
There are three hybrids known – two of these have emerged in cultivation and one has been found in the wild.

E. viscida x maculata was the first hybrid found and was grown by Frank Fitzpatrick at Walpeup and called "Walpy Glen". It has a steely blue flower with purple spots. There is another hybrid of the same two species called "Walpy Sean", similar and probably taller. Russell reports that he saw what he believed to be "Walpy Glen" growing at Walpeup in 2015 "under a Mallee tree with a lot of other plants and doing it hard and it didn't look to bad in flower". Members reported that their oldest *E. viscida x maculata* hybrids were mostly 5 to 9 years old with one being 10 years old. The species strikes readily and hence all records were for plants growing on their own roots. It is frost hardy, does well in dry areas and responds to pruning.

This hybrid is very vigorous and grows rapidly to a large bush. Russell Wait reports that his plant in the Victorian Mallee spread to 10m wide but rarely flowered so he pulled it out. He says "There is one person growing Walpy Glen down near me (Riddells Creek) and in poor stony soil and hers is only about 1.5 m x 1.5m and has been pruned a couple of time and it flowers quite well a couple of times a year. The plant also attracts moths when in flower, particularly at night" Photos over of Walpy Glen bush at left, and close-up of flower at right, from Laylee Purchase.

[4] A type of treehopper, for those of us that don't know it. See http://www.abc.net.au/gardening/stories/s929417.htm

An *E. viscida* x *E. bignoniiflora* hybrid is sold as "Meringur Midnight". Grown by Ray Schilling, it is a big shrub or tree (6-8 or more metres high, according to Russell, who supplied the two photos immediately below) and it has deep purple corolla (close-ups below right from David Oldfield). When growing lushly it can hide the corolla that is in the shape of a narrow *E. bignoniiflora*.



There is another form of this same hybrid that has pale cream corolla with purple spots, also from Ray Schilling (see photo over page from Russell); and one from Frank Fitzpatrick called Walpy Roy (illustrated over page).

According to Laylee Purchase, Walpy Roy flowers later than other *E. viscida* hybrids.


E. viscida x bignoniiflora cream form

Russell reports finding a third hybrid, with *E. miniata*, last year next to one plant of *E. viscida*. He describes it as "a youngish plant that was already 3.2 m high and 1.3 m wide, with vivid green leaves, a pinkish lilac corolla and darker spots with the cream sepals changing with age to pale lilac from the tips inwards" (photos from Russell Wait)

Pruning Experience

Some Eremophila species don't like being pruned and may not shoot again if pruned below the lowest existing leaf. Ian Tranter, being brave, has vigorously pruned a potted *E. maculata x glabra* in Queanbeyan. This is a plant from Russell Wait, who has Beryl's Lipstick from the same cross but with an *E. maculata ssp. brevifolia* parent. Ian calls this hybrid Mallee Lipstick and it has a longer leaf than Beryl's Lipstick). Below is the plant when pruned in June and below right here it is again, shooting strongly, in October.

A bit more on Eremophila christophorii hybrids

I realised I had been remiss in the previous newsletter in not providing proper photos comparing *E. christophorii* to its hybrid with *E. nivea*. Tim Kolaczyk has come to the rescue with samples of the *E. christophorii* which I have laid out at left in the photo below with the other parent *E. nivea* on the right, and the hybrid in between, for comparison. The other photo lower right shows the leaves off each specimen, with the hybrid again in the middle.

From your letters:

Bill Handke, ACT: In June 2016 we were down at our place near Tathra (NSW), after not being able to get there for over 3 months. Unfortunately, in the intervening period, some of the Eremophilas down there have taken a beating with the dry conditions. I fear I have lost the *E. arachnoides, E. brevis, E. pustulata, E. ionantha, E. dalyana, E. crassifolia*, 3x *E. lachnocalyx, E. densifolia ssp pubiflora, E. clavata* and *E. scaberula*, while the *E. tetraptera*, one of the *E. recurva* and *E. pantonii* are not looking good. A real shame.

Ken Warnes, South Australia*: Eremophila enata* has been around for some time, I don't know who first brought it back. It is a variant in colour from the normal blue and we actually had the pink one for several years before we had the blue one. I'm not even sure I have the pink at present, I grew and planted out a number last year but in the ensuing fire chaos I'm not sure if there's any left. The chap who regularly sold it from rooted cuttings has lost his stock plant as well. It would appear to be not long lived, in fact I'm coming to the conclusion that a large number of the smaller species only live a few years down South. It's certainly a very attractive small plant for rockeries, borders, pots etc.

Bernie Shanahan lists a white *E. punicea* (photo above, from Bernie) which is one I don't know about. *E. nivea* gets away with it because of the lemon bud but *E. rotundifolia* didn't work for me. As an aside, if it's a pure white it would be a bit unusual. Without going all scientific, in general terms the red colouring factor (flavinoids) when weak or absent go to pale pinks or yellow whereas the cyanins, (or is it anthocyanins), or the blue factors go to white. When the blue varies as in the *E. enata* it is invariably a mauve as in *E. clarkei* and *E. granitica*, the pure pink of *E. enata* and some *E. georgei* is unusual. Bernie notes his white flowering E. punicea has a furry calyx and has yellow buds, which also show in the pic.

Charles Farrugia, NSW has sent in some photos from his garden, including *E. cuneifolia* Blue Beauty, below.

Charles's other photos include, at right, a stunning photo of Rainbow Lorikeets attacking his *Eremophila maculata* and below a selection of *E. psilocalyx* (rear left), *E. muelleriana* (front left), *E. nivea* (rear, right) and white *E christophorii*.

Ian Tranter has contributed this photo of the pink and yellow forms of *E. youngii* flowering together in his garden in Queanbeyan.

Brian Freeman sends a photo of *Eremophila abietina subsp. ciliata* and says "I got this plant (below right) from Keith Pitman at one of our APS Fleurieu plant sales and he referred to it as the "Ron Dadd" form to separate it from the normal smaller spotted form of this species" The small spotted form is below left, which was collected by Ray Isaacson from the field. Brian notes that some growers just refer to them as fine spots or large spotted forms – the larger one being the one via Ron Dadd at Goomaling. Brian I regularly puts Eremophila photos on the APS SA Fleurieu Group Facebook site[5] or on his my Brian Freeman Victor Harbor Facebook site."

[5] https://www.facebook.com/apssafleurieugroup

John Upsher, Maribyrnong, Vic: I started my Eremophila collection early in Melbourne's ten-year drought and during that period, fungal damage due to rain or humidity was so slight that it passed almost unnoticed. This year has given the wake-up call that was needed to remind me that Eremophilas are really arid-land plants and we are privileged to grow them in coastal areas. During the dry years, not only was rainfall consistently below average, with generally only half of the average 30mm per month, but atmospheric humidity was also correspondingly reduced. Species like *E. mackinlayi*, *E. strongylophylla* and *E. ovata* grew vigorously and unhindered.

More recently, in the late autumn and winter of 2016 have recorded four successive months of above average rain and September is continuing that trend and some species have shown wet-susceptibility not seen before. Generally, it is the hairy leaved species and mostly the white- or silver-leaved types. Damage happens quickly and is characterised by rapid death of leaves and stems. For the record, I have summated the extent of damage shown by those and some other species.

Species	**Characteristics**	**Severity of Damage**
accrescens		Slight
conferta		Slight
nivea	Blue Velvet	No damage
delisseri		Nil damage
gilesii		Slight
glabra	Various types	Nil damage
lachnocalyx		Nil damage
mackinlayi	Ssp. spathulata	Severe
Nivea x christophorii		Nil damage
Muelleriana		Very slight
Ovata		Severe
phyllopoda		Nil damage
pterocarpa	Ssp. Pterocarpa	Nil damage
punicea		Nil damage
strongylopylla	Golden green, dense, bushy	Severe
strongylopylla	Open, low, silver-leaved	Moderate
subfloccosa		Slight
warnesii		severe

Where necessary some shrubs were severely pruned to below the damaged parts, but if recovery did not follow, some mature shrubs of *E. mackinlayi*, *E. ovata* and *E. strongylophylla* were removed and replaced – with other Eremophilas of course. The two photos below show John's *E. ovata* before and after the rain (the second post-pruning and with some regrowth).

Michael Beamish send this photo (below) of *E. longifolia*, found in the Bea Bea South Creek Gorge, about 200km south of Port Hedland on the Great Northern Highway during a recent trip.

Events

Our regional groups are taking off!! Thanks to the coordinators of these groups for these reports of their recent activities.

Queensland group regional meeting

The Qld group of the Eremophila Study Group met on 23 July in Warwick 16 April in Lowood with 16 members and four visitors present. T Adrian Wockner then discussed his "Eremophila Pruning Concepts". His approach was adjusted to the environment in which he gardens, and encouraged further discussion in the group. Peter Bevan also shared a large collection of cuttings from his garden, including: *Eremophila crassifolia; E. spectabilis, E. recurva; E. rostrata; E warnesii; E scaberula; E. clarkei; E. bowmanii & bowmanii* (white)*; E. rhegos; E. hygrophana; E.elderi; E. cuneifolia; E. decipiens; E. latrobei* (Welford)*;E. deserti; E. ovata; E. areneria; E. dalyana; E. subfloccosa; E. stenophylla; E. stenophylla; E. miniata; E. magnifica.*

At the conclusion of the meeting Barbara and Robert led the group on a walk through their garden and later the group moved onto the garden of Darrell and Pam Fletcher at 10 O'Leary St., Warwick. Both gardens were very interesting and demonstrated the grafting and propagation skills of the gardeners. The next Queensland group meeting is 15 October at Laylee & Steve Purchase's, 41 Rocklyn St., Toowoomba. Qld. Ph: 07 4630 2211. Topic: Mulching and Fertilising by Laylee Purchase.

Sydney group regional meeting

The Sydney group of the Eremophila Study Group is meeting on 2 July 2016 at 12 Grandview Avenue Seven Hills NSW (home of Charles and Leonie Farrugia) commencing at 10am. The subject was "Keying Eremophila" and the session was led

by Peter Olde. We had a difficult time, choosing to start with Eremophila maculata, which it turns out causes some challenges for the novice "keyer", particularly because of the importance of hair type to identification and the need to view these under a high powered microscope (*right*). We had more success with *E. gilesii*. The group was also treated to a tour around Charles' garden, full of the most interesting Eremophilas, many in containers – Charles has provided some recent photos (see page 16).

Charles also held a meeting on Saturday, 22nd October 2016 At: Tamara & Ian Cox's place, 5 Ivy Place Kenthurst NSW From: 10.00am.-12.00pm to discuss members' experiences of Eremophila propagation from seeds, cutting & grafting; caring for propagated plants from propagation to potting up stage.

Sydney group's next meeting is expected to be in the second week of February 2017.

Victorian group regional meeting

Glenda Datson

Thirteen exuberant members got together on a rather cold 11 September 2016 at the garden of Sue and David Oldfield, Maldon, for the inaugural Victorian ESG group meeting. A walk to see their large collection was a great opportunity to share information and learn about some different species. After lunch specimens were presented for discussion. We were all eager to compare growing experiences. Some of the specimens were:

Norma Boschen (from near Warracknabeal):

- *E. dichroantha* - finds it a super plant. Some forms of the same species are not as good as others. Will grow under Eucalypts.
- *E. phyllopoda x spathulata* – a stunning flowering specimen, an excellent garden plant.
- *E. platycalyx* –finds broad leaf form very a nice specimen plant.
- *E. youngii* – a very bright pink form, on a graft has no fungus but on its own roots is miserable with leaf dieback.
- *E. phyllopoda subsp. phyllopoda* – is slow growing but an attractive compact plant.
- *E. maculata* – Norma's very large pink form growing 2m x 4-5m.
- *E. miniata* – a form that is yellow in bud and comes out a very pale pink. It grows naturally on edges of salt lakes in the Great Victoria Desert.
- *E. sp.* Kalgoorlie (an undescribed species), not well known, light pink flowers. Norma's has only got to 1m.
- *E. decipiens* – will grow under trees.

Jan Hall (at Yarrawonga):

- Grows the more interesting species in 8" or 10" pots till a little more established before planting out.
- *E. fasciata* - finds it dies back on some branches which usually shoot again but is pruned back to the new shoots below.
- *E. flaccida* - in sheltered sites, e.g. against north facing wall, under eaves. It's OK with frost.
- *E. interstans x dempsteri* - is one of the best upright growing Eremophilas.
- *E. elderi* - under a 1m eave in a NW aspect, protected from frost. Finds a plant established for a couple of years will withstand fungal damage by shooting underneath.
- *E. punicea* – loves it because it is little with deep pink flowers.
- She also enjoys *E. platycalyx, E. phyllopoda, E. psilocalyx* and *E. oppositifolia*.
- *E. drummondii* - a very floriferous pale mauve specimen caught everyone's eye and another in full plant.

Jan finds grafted plants are better in her conditions of a modified, hard, red clay soil and hot dry winds. Neville found the opposite but his grafted plants were against forest with lots of root competition.

A discussion followed about growing Eremophila under Eucalypts as most species prefer full sun. Discussion ensued on the effects of waxes on leaves on the ground, which potentially make the soil water repellent. *E. ionantha* grows under trees in WA goldfields. *E. decipiens* seems to be OK. Ian Evans (Bendigo) said root barrier 900mm deep has worked for him.

Grafts

We exchanged our results with root stocks and the need to use reliable selections of *Myoporum* species to ensure longer living plants and to reduce likelihood of troublesome shoots and suckers from under the graft. Ian said that walking across pebble mulched garden beds will trigger suckering of rootstocks. *M. montanum* and *M. bateae* rootstocks seem to be going well.

Jan's garden needs shade from western sun for grafts on *M. bateae* and plants it where it gets extra moisture. One of these is OK after 8-9 years. *M. montanum* can handle wet but *M. bateae* is not long lived. Several members reported that *M. 'Monaro Marvel'* sprouts below the graft or else won't strike from cuttings when used as a stock. One member also reported that *M. insulare* shoots from the union or splits at the wedge union, whereas another uses it because it roots a little easier. There were several successful reports of *M. montanum* as a stock, which can root in 14 days in July with bottom heat. Neville has also grafted *E. splendens* on *E. lucida* and it is known that Charles Farrugia in Sydney favours *E. denticulata x trisulcata* as a stock. John has used *M. velutinum* from near Esperance, it doesn't sucker, has long internodes, good firm stems and may be excellent for standards; strikes in 3 weeks.

There was also discussion about how to prepare the graft. John cuts each bud off and from behind it. Neville grafts with parafilm, does a second wrap with plumber's Teflon tape, but once the union has taken, takes it off as it will strangle the union. John uses tomato grafting clips to hold the graft together ($2 per 100). Norma leaves 3 leaves on, but reports that Phil Trickett leaves one leaf right up at the cut which can make it difficult to wrap (Phil grows his Eremophila on the eastern seaboard). Norma takes low leaves off, but others do grafts with no leaves. Norma prunes one stem of

the stock plant really hard and uses that new wood cuttings for the rootstock. Sometimes if it won't root, score with finger nail.

Norma uses rooted cuttings – once roots are out the bottom of pot you can graft, with perlite and peat moss as a mix. Norma says choosing best form is important. Norma's rootstock will withstand a bit of wet feet. She reminded us we graft for vigour and because they won't root on their own. She gave a demo of wedge grafting. After care: covered box in hot house for 2 weeks, shade cloth over. She cuts 2-3" from base of stem just below a leaf node and uses a nice sharp, flexible razor blade. Some use a No. 11 blade in scalpel. Cuts down 1.5cm, slices off cutting stem to a wedge (on a board helps). Push in, matching 1 side. Neville noted that if you don't get top wedge meeting well you get a weak spot prone to wind damage. Stretch parafilm or florists' tape and wind around and below graft, stretching all the time, around 2 or 3 times but only ½ width of tape each wind, be careful not to put over graft too much as it will strangle.

Cuttings

Ian uses 25mm peatmoss plugs from Garden City, can fit 240 in a tray. His best effort is *E. biserrata x glabra*, rooted in 5 days. You will get roots right up the stem. He leaves cuttings in gel for 5 mins (in for 2, sit for 2-3). He places in plugs on upturned seedling tray on sand over heat bed for even heat. Maree soaks for 20 mins. Norma uses Rootex P powder. Neville uses 75mm pot with perlite & minimal peat which will take 25 cuttings from which he gets 22 well rooted but scores the bark to get roots up stem. Ian runs bed at 20 degrees C and mist on a controller 8 x day @ 10s to 1 minute (and grows Grevilleas on the same bed). Norma waters carefully with a teapot. Sue sits cutting pots in a crate with nothing beneath and waters over top.

Sue: planting deep using purchased tall grafts. Put graft underground depending on soil type.

Cuttings were shared and Norma offered seed of a small (1m) *E. maculata* from Scotia Sanctuary. John thanked David and Sue for hosting the meeting. The next meeting will be

Saturday, 25 February 2017

At: John Upsher's place, 87 Chifley Drive Maribyrnong Vic

For more info please email Sue and David Oldfield dsoldf (at) netconnect.com.au

Presentations

Your leader Lyndal Thorburn is speaking about the Eremophila Study Group at the November meeting of the Australian Native Plants Society – Canberra Region – Thursday 10 November, from 7pm – for more information see www.nativeplants-canberra.asn.au

ESG Gathering 8-10 September 2017

Plans are afoot to hold a whole-of-study-group meeting centred on Port Augusta in South Australia in September 2017. The location has been chosen because of the availability of reasonably priced accommodation in the form of hotels, motels and caravan parks; the availability of curated collections in the form of the Australian Arid Land Botanic Gardens (AALBG) and Ken Warne's property in Owen (3 hours' drive south); and wild-growing Eremophilas that are within driving distance and are likely to be in flower in early September. The organising group comprises Lyndal

Thorburn (Study Group Leader), the enthusiastic Tim Kolaczyk in Port Augusta and the highly experienced Bev Rice in Dutton, SA (with advice from Ken Warnes).

The dates are 8, 9 and 10 September – this is NOT a long weekend, and it is expected that participants will arrive in Port Augusta on Friday afternoon in time for an evening session on Friday in Port Augusta, and start their trip home Sunday afternoon from Owen.

The draft outline of events is as follows. No venues have been booked yet and this is indicative only – if you have ideas about places to go in this region and that would fit in the timetable please let us know.

1st draft - PROGRAMME TIMES & SPEAKERS

E.S.G. S.A. VISIT - 8th - 9th - 10th September 2017

Port August South Australia

	FRIDAY EVENING: 8th September 2017
7.00 - 9.00 pm	**REGISTRATION - Sign in, Name tags, Program details**
	Tea/Coffee available - biscuits - "Chat time"
	SATURDAY: 9th September 2017
8.00 - 8.30am	**REGISTRATION - Sign in, Name tags, Program details**
8.45 - 9.00am	**WELCOME - & OPEN CONFERENCE - E.S.G. LEADER** - LYNDAL
	Explaining the programme of events and introduce key people
9.00 - 10.00am	***Speaker TBD –***
10.00 - 10.30am	*Morning tea*
10.30am.	**Visit to Arid Lands & Nursery Complex – either self-guided or small group tours depending on numbers and what we can arrange; opportunity to purchase plants;**
	(own transport to AALBG)
12.30 - 1.15pm.	**LUNCH - Venue TBD**
1.30pm - 4.00pm	Bus or own transport to various sites suggested to see populations of Eremophila *in situ*.
4.15pm	ALL RETURN, first to own accommodation - directions to dinner Venue (or bus if distant)
5:00	**Pre-dinner cutting swap session? – TBD**
6.30pm	***DINNER: Venue TBD***
7.30 - 8.00pm.	***SPEAKER TBD***
9.30pm.	*Instructions for following day - all return to accommodation sites.*
	SUNDAY - 10th Sept 2017
By 8.15am	**Owen by private transport**
	(note it is a 3 hour drive, toilet stop at Warnertown; Toilets also available at Hall in Owen)
11:15am	Arrive at Ken Warnes' Property - *Morning tea in Shed*
11.45am	**Inspect Large Eremophila Patch -** *Opportunity to take cuttings*
1.15 - 2.00pm.	***LUNCH** in Shed - Warnes' property*
2.00pm	Final - Open Forum/Discussion - Closure of Conference
	Delegates can depart and visit any sites en route - suggested to be listed

A budget is still being developed. We expect to ask members to pay the Study Group for morning teas, one dinner, a bus for one field trip and some contribution towards travel for an invited speaker (to also be subsidised from SG funds). Participants will organise their own hotel/camping accommodation, and pay for their own dinners Friday night and breakfasts on Saturday and Sunday, and transport for the rest of the event. We are compiling a list of recommended accommodation to help people.

What you need to do: those of you on email need to respond to our Poll, a link to which is below and which was also provided in the email that brought you this Newsletter, to indicate if you are interested in coming or not. If you are not on email please complete the Expression of Interest form below and **post it back to Lyndal Thorburn by 31 December 2016**. We need your expression of interest by 31 December 2016 so we can finalise the budget in early 2017 and let people know the per person cost.

Poll is at https://www.surveymonkey.com/r/ESG_SA_2017

Please respond even if you do not intend to come –so we know who not to bother again (about this trip)**.** The poll asks whether you will definitely come to the meeting, may come to the meeting (that is, you are not certain yet but are interested in attending) or don't intend to come – we need everyone to let us know their intentions, as soon as possible. You will not have to make a firm commitment until around March 2017, so a "yes" now is still just an indication of intention.

EXPRESSION OF INTEREST

ANPSA EREMOPHILA STUDY GROUP GATHERING AND WORKSHOP –

Port Augusta, South Australia

Weekend of 8-10 September 2016

Yes I am interested in attending!

Name	
Address	
Phone	
Email address (preferred)	
Suggestions for workshops	

Future Newsletter Themes

Next feature species is *Eremophila macdonnelli* – this is an attractive species with either green or grey leaves (pic at right from Ken Warnes) but is often short-lived in the garden. Please send your experiences growing and propagating this species. A survey to gather your experiences will be sent out in November (approx.) with a view to producing a newsletter in February 2017.

Financial Report 2015-16

Opening Balance 1 July 2015	$3,821.23		
Credit (subscriptions)		$1,961.95	
Debits (postage, printing, envelopes, ANPSA conf day fee)			$398.62
Closing balance 30 June 2016	**$5,384.56**		

We currently have 111 members in the Study Group, which at $5 per person is total income of $550 per year. Forty percent of recent membership renewals were to June 2017, and a further 40% have renewed to June 2018 or 2019 – the remaining 20% have paid fees for beyond this date. Based on funds in the bank plus annual fees I have estimated ~$2000 to go towards costs of supporting the SA event in 2017.

About the Study Group

Thanks to those who renewed for 207-18 and beyond

SUBCRIPTIONS

Subscriptions can be sent by cheque and posted to 3 Considine Close Greenleigh NSW 2620 or 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

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). 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 plants being studied and forward their observations to the leader who collates and publishes the information, usually in a newsletter or in other Society publications. The Study Group can record any aspect of cultivation, propagation and ecology of the plants under study. All Study Groups are expected to publish at least two newsletters per year.

Each Study Group charges a small fee to cover expenses such as newsletter production and postage, and to cover the costs of specific group activities. Members must also be members of an ANPSA-affiliated regional society (http://anpsa.org.au/region.html).

The 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. For information about the Eremophila Study Group contact Dr Lyndal Thorburn, Study Group leader lthorburn (at) viria.com.au Ph: 0418 972 438 or 02 6297 2437

Honorary members: Ken Warnes and Russell Wait

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

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

Post to 3 Considine Close Greenleigh NSW 2620 or email lthorburn (at) viria.com.au

NEXT NEWSLETTER FEBRUARY 2017