Australian Native Plants Society (Australia) (ANPSA)

Eremophila Study Group Newsletter No. 119


E forrestii – feature species – common colour form


Pink form, Canning Stock Route


Yellow form, Laverton, WA


Yellow form, Mt Augusta, WA

Contents

Letter from the Editor

Welcome to the February 2018 edition of the Eremophila Study Group Newsletter.

In this edition we continue to turn presentations from our field trip last September from word into print, with write-ups of the Great Grafting Survey and Bevan's presentation to us about nomenclature and keying. Given our emphasis in the last newsletter on images of hairs, I have also included a short item on low-cost microscopes that can produce such images.

I have had a couple of comments since moving the newsletter layout to two-column. These few people find it difficult to scroll the newsletter on their computers, from one column to another.

I moved to two-column from the previous one-column format for a number of reasons:

- shorter lines are easier for readers to scan;
- more text can be fitted on to a single page; and
- it is easier to manipulate photos in two-column format

For example, the current Garden Designs Study Group newsletter has the same number of pages as our November newsletter in single column. Ours would need a further ten pages to produce in single column, and would cost another $1 to print out, taking the per-copy cost of each printed newsletter to $6. So, two-column it is for the time being. If you wish to view your two-column newsletter electronically, I have found that if you reduce the scale to 60% and then choose full page you can read a "page to a screen".

Lyndal Thorburn

Leader and newsletter editor

What's New in the Study Group

New members

We welcome new members Fiona Johnson (NSW), Ross McDonald (Vic) and Graeme Nichols (Vic). It is great to see new members already contributing to the study group (Fiona through an article in this newsletter and Graeme through an article in the Vic APS newsletter)!

Biennial Conference Display

This Newsletter comes to you after the ANPSA Biennial Conference, held this year in Hobart. I could not be there but wish to thank Sandra Wood (SA) and Julie Nermut (Tas) who set up the Study Group display and looked after it during the conference (pics p. 18).

We greatly appreciate the willing assistance of members in these endeavours. My report to ANPSA on what we have achieved as a Study Group since the last Biennial Conference is later in this Newsletter.

National Library

I have uploaded old copies of the newsletter to the National Library of Australia. For some reason they have insisted our online copies have a different ISSN, the reason for the two ISSN's in the header for this issue (and forever more). The NLA will only make issues available publicly (I hope) 12 months after the publication date so members still have privileged access to material. Members should be aware that recent issues (plus the field trip presentations) are available on the members-only section of the ANSPA website, the URL for which was emailed with the November 2017 newsletter (if you don't have it, ask!).

Eremophilas in the News

The December 2017 issue of the APS Victoria Newsletter features *E. mackinlayi* on the cover and contains an article about that species by Graeme Nicholls.

The December 2017 ANPS Canberra Newsletter has a lovely photo of a frost-covered *E. maculata*, in an article called Wet and Frosty Foliage, written by ESG member, Ros Walcott.

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The Great Grafting Survey

Lyndal Thorburn – write-up of the presentation at the September 2017 field trip. Slides accompanying the talk can be found in the members' section of the website.

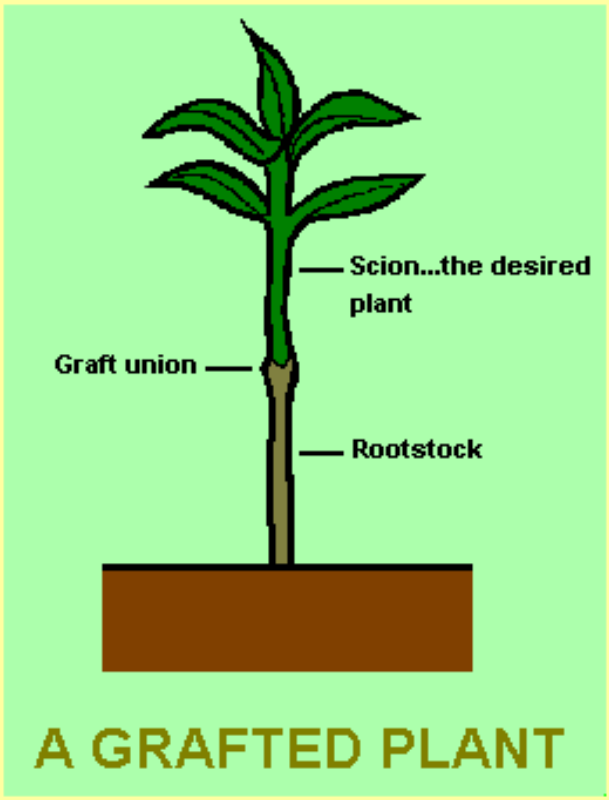
Thirty members responded to our grafting survey in mid-2017. The findings of this were presented at the Field Trip in Port Augusta in September and are now written up here.

Over 75% of respondents to the survey reported that they were moderately successful grafting or advanced, and a further 10% reported that they were expert, so I am hoping that means we can rely on the survey's results.

Why look at grafting?

Study group exists in part to promote horticulture and introduction of new species, BUT many Eremophilas won't strike from cuttings, so grafting may be the only way to promulgate new forms/species.

Grafts can survive better than species on their own roots, when in wetter climates (or for WA species, in soils in Eastern States)



Stock species

The survey asked questions about all possible stock species within Eremophila and Myoporum genera. The most frequently tried stock species were *Myoporum insulare* (88% of respondents), *M. montanum* (81%), *Eremophila* chimera (unspecified – 33%), *E. denticulata ssp. trisulcata* (31%), and *M. acuminatum* (28%).


M. insulare


M. montanum

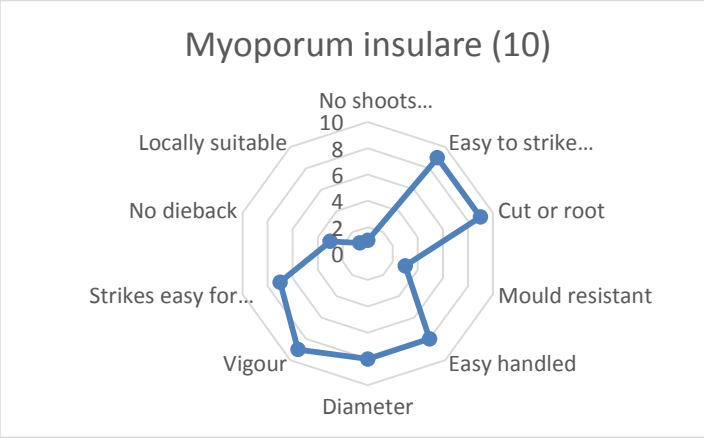

E. denticulata ssp. trisulcata

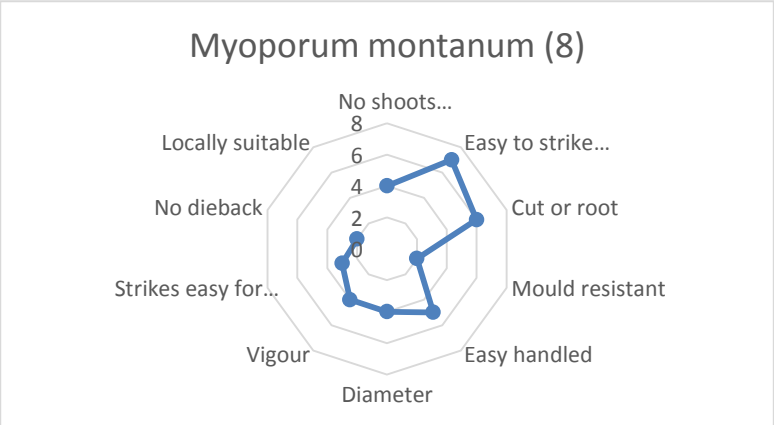
What makes a good stock species?

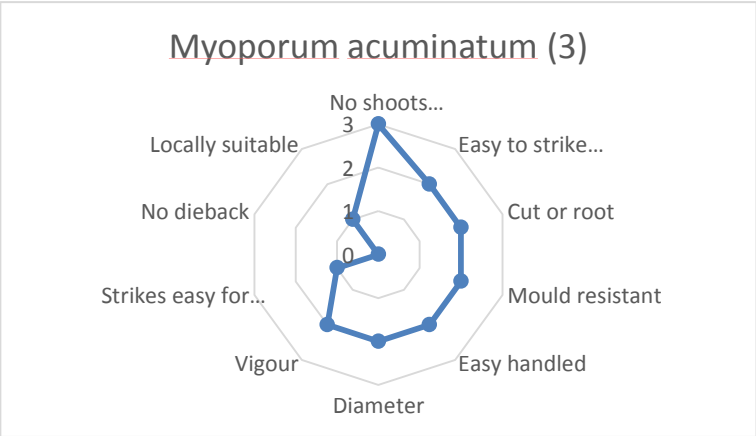
The survey asked about the characteristics that made a stock "good" for use in grafting. They key characteristics were:

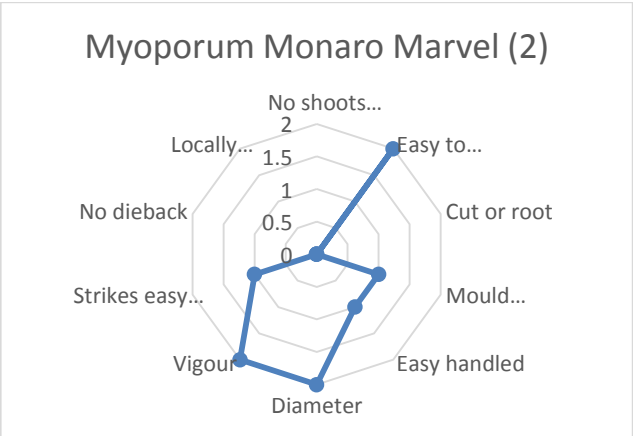
- easy to strike for cutting grafts (95% of respondents);
- suitable for both cutting grafts and rooted stock grafts (79%);
- vigorous growth (74%);
- easy to handle during grafting (71%);
- good diameter (for matching the scion to the stock during grafting) (68%);
- easy to strike for rooted stock grafts (58%);
- resists mould (33%);
- doesn't shoot below the graft (32%);
- less dieback at the join (24%).

These characteristics were then plotted onto star charts to show how each of the most favoured four species performed against each of the characteristics. You will see that out of our 30 respondents, 23 favoured one of these four species.









Note - numbers on each star chart are based on the number of respondents so for M. acuminatum, for example, max score is 3

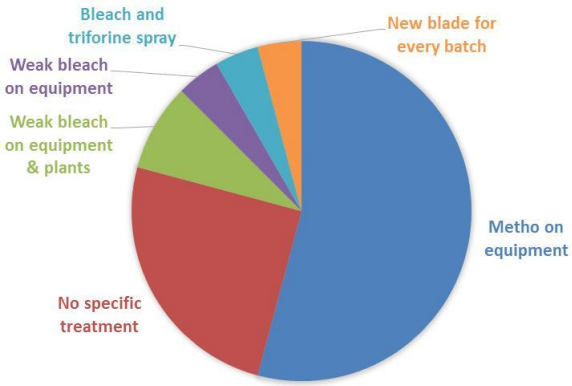
There was overwhelming use of wedge (cleft) grafts, pictured below (18 respondents) (photo Christine Huf). Seventeen respondents retained leaves on the stock with a further 7 retaining just one leaf (near the join – the theory being it forces the stock to continue to send nutrients up to that area

Thirty-nine percent of respondents favoured grafting in summer, 30% in spring and 24% in autumn. Only four respondents used bottom heat, and only with cutting grafts. Respondents reported that signs of success will show within 14 days in the warmer seasons.

The stock/scion join is protected with Nescofilm (available through the Study Group) or parafilm, and some use nursery clips to hold the join tightly.

Misting (overhead fine sprays) was used by 39% of respondents, but in these situations people also used snap-lock bags over every graft to keep direct sprays away from the join between stock and scion. Forty-three percent of people used only bottom-water.

The survey also asked about treatments of stock and scion to reduce mould. Fifty-four percent used methylated spirits on the equipment (none using meth on both equipment and plants). The other treatments favoured are shown on the pie chart next column.



As a final question, we asked respondents what increased their success rates while they were leaning how to graft. These were the results of that question:

- changing to a different season (presumably, a warmer one) (20%);
- more care in alignment of scion and stock (20%);
- change to the method of protection of stock and scion join (12%);
- choice of scion material (12%);
- using bleach to reduce mould (8%);
- using cutting grafts (4%);
- method of applying grafting tape (4%);
- change to heating regime (4%);
- choice of stock Species (4%);
- other unspecified (12%).

Conclusions

1. A cleft graft is the one used by most successful grafters.
2. It is worth trying *M. acuminatum* as a stock as it seemed to get the best score for not shooting below the graft and rated well on other criteria (from the 3 who used it).
3. Use bottom heat only if you are doing cutting grafts.
4. Graft in summer and look for success in a couple of weeks.
5. Protect the graft/scion join with a snap-lock bag and water from the bottom.
6. Use metho or a weak solution of bleach on the equipment but not on the plants.
7. Keep a leaf on the stock until the graft has "taken."

Happy grafting!! And thanks to the people who gave us all this good information!

More on Chimeras

Charles Farrugia

Ian Tranter recently was boasting about his chimera in full bloom. Mine only had one flower but it has something that I am sure Ian will get excited about.

If one looks closely at the right-hand stem (on the photo below) there is a line straight down the middle of the stem – one half is the chimera and the other half is myoporum. This division started around a quarter up the stem from ground level. This is the only stem behaving this way so far.

What happens if I take a cutting from this stem - will it grow as per the chimera or Myoporum?

Ian replies:

Whatever it is at the growth tip will continue in the cutting. So if it is half and half at the growth tip that will continue unless one side can grow faster. Cuttings from the chimera side will be chimera and will be insulare is taken from the other side. If you wanted to make sure it stays as a chimera you could cut off any pure insulare shoots.

With mine, flowering on the chimera and *M. insulare* parts has been increasing as the plant gets older/bigger (and perhaps more root-bound) so I suppose it is just following the normal *Myoporum* flowering signals. The puzzling thing to me is that the *M. insulare* side doesn't immediately outgrow the chimera part.

With a variegated plant, the unvariegated shoots are often much more vigorous and need to be removed or they will swamp the plant. It should be the same with the faster and larger growing *M. insulare* compared to the comparatively smaller and slower growing *E. hygrophana*. Yet the big bush at Ken Warnes' place had a third reverted to *M. insulare* and the other two thirds a happily growing chimera about 3-4m high. And the one that has an *E. mackinlayi* skin never seems to revert, other than those stocks owned by Charles and Rob that failed to properly form a graft and had pure *M. insulare* coming from the failed graft point.

Perhaps the *E. mackinlayi* cells divide faster at the growth tip?

An Introduction to Hybrids

Bevan Buirchell – edited transcript of his presentation to our field in September 2017. Pics also by Bevan.

Taxonomy is quite important when you are dealing with a species like this. It is the basis of everything the Study Group is looking at and it is the basis of life, if you like – the way that scientists talk about things.

So it is a very precise science – the description of species is very rigorous and only applies to things that are "self-generating" – where the species can establish itself and create populations; enough to pollinate and produce seedlings etc.

Hybrids, on the other hand, are usually sterile and they can't reproduce themselves unless their parents get back together again, or

someone comes along and takes some cuttings to grow them in pots.

Hybrids are usually not accepted in the nomenclature of our botanical world. Occasionally, a few species do get named but are later discovered to be hybrids. Sometimes this is due to lack of information available to taxonomists: they haven't been into the field to see the species, or the information from the person who has collected the material is insufficient or incorrect.

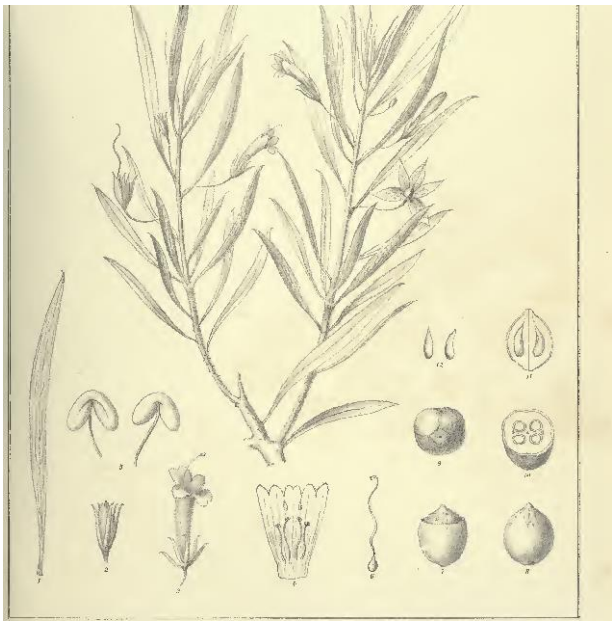
Having a look at the Eremophilas, there are five or six species that have been named but that are actually hybrids. I am in the process of having these removed from the agreed lists and a paper will eventually appear in Nuytsia.

The list is:

Eremophila eversa – a hybrid between *E. homoplastica* and an unknown pollen donor; it was single plant collected by someone from the Dept of Agriculture – he put a fence around where he collected the plant and the plant is no longer there but the fence is, and there is nothing else around there that looks like it.

Eremophila retropila – a hybrid between *E. lachnocalyx* and *E. phyllopoda*. There are quite a few of these around Meekatharra but it only ever occurs within the populations of the two parents and it is sterile.

Eremophila graciliflora – a hybrid between *E. oldfieldii* and *E. longiflora*. This was collected in the 1880s up in the Murchison. It was subsequently described by Mueller. People have searched for populations but have only ever found one or two plants.



Eremophila accrescens – a hybrid between *E. cuneifolia* and *E. phyllopoda*. *E. cuneifolia* is known to hybridise. Where it is found with *E. phylloda ssp. obliqua* the hybrids have small leaves and where it is found with *E. phyllopoda ssp. phyllopoda* the hybrid has larger leaves. Again, you only find it growing amongst populations of its parents.

Eremophila praecox – a hybrid between *E. scoparia* or *E. ionantha* and *E. parvifolia.* The interesting thing about *E. praecox* is that it is known from two sites, one in WA and one in SA. However, we think that there have been two hybridisations, both to *E. parvifolia* – in the case of WA, near Kalgoorlie, it has hybridised with *E. parvifolia ssp auricampa* and in SA it has hybridised with *E. parvifolia ssp parvifolia*. Probably the other parent in SA is *E. scoparia* and in WA it is *E. ionantha* (or possibly *E. scoparia*). Despite having two populations, this is definitely a hybrid.

There is also *Eremophila arenaria* which is believed to be a hybrid

In naming hybrids, normally you would write the female parent first and the male parent second in listing the parent species. It can be quite difficult to confirm which way around it is and hence the list above does not presume that the first-listed plant is the female.

Of Hairs and Microscopes

Lyndal Thorburn and Tom Jordan

The previous newsletter noted the need to get up close and personal with our Eremophilas if we want to key them out using Bob Chinnock's key. Here are some notes about our experiences with two types of microscopes that are suitable for viewing Eremophila hairs and helping to take photos of them.

USB Microscopes

For the presentations in Port Augusta, we used a little USB microscope we bought for around $60 a couple of years ago. These microscopes weigh almost nothing and look for all the world like a toy plastic microscope. You place the sample on a plate under the lens, just like an old-fashioned microscope. They are, however, bulky if you are thinking of taking them somewhere in a backpack – ours is about 20cm high by 13cm wide by 15cm deep, without its box.

In this style of microscope, a USB cable connected to the lens plugs into your computer. Software you install on to your computer allows you to view the image live and then "capture" still images. The camera on our little microscope was only 1.3 MPixels.

The microscope can take images up to 200x magnification but we found the 10x and 60x most useful. It was very hard to align the required bit of the sample and the camera at 200x and you also lose depth of field so focus is tricky.

While our USB microscope has its own light source, we found it worked best with two people: one to manipulate the sample and one to hold and adjust a torch as the light source, off to one side. The photo above right of *E. subfloccosa ssp. glandulosa* was taken with the aid of the torch.

Our USB microscope also has a backlighting option, which is great for showing a lot of hair detail (pic below of the same species, backlit).

There are plenty of USB microscopes available online and they seem to range from around $20 up to $120.

Macro lens for mobile phone

The other option for taking close-ups of those all-important hairs is a macro attachment for your mobile phone (you can also get fish-eye and wide angle kits for phone cameras, these won't be any use for hair detail). These seem to have a similar price range to the USB microscopes, with the cheapest we could find online at the moment selling for $15 and the most expensive being $130.

In this case, you just use the phone's normal camera but with the additional lens can get

much more detail. You then transfer pictures to your computer using the phone's USB connector cable.

The kit itself for macro attachments is very small and portable – simply a lens that clips on to camera lens on the phone.

Considerations in your choice

From our recent experience, these are the issues you should consider when buying either a USB microscope or a phone-macro attachment:

1. Where are you going to look at your specimens? The USB microscope works better set up on a table and you bring you samples to it; the phone macro option is better if you want to examine hairs *in situ* for ID in the field.
2. How much do you want to pay? Price range for both options is similar but you get what you pay for – check the optical and magnification capacities at the different price points and choose accordingly.
3. Be aware that bigger isn't better – 60x is as much as you need for ID (more than what is required in most cases) so don't pay for high magnification that you won't use.
4. Be aware that the quality of the photo will only be as good as your worst lens. Paying a lot for a macro lens won't help if your phone lens is low quality or if the photos it takes are low resolution. Similarly, a high quality phone lens won't be improved by a low quality USB microscope lens

Member comments and contributions on this issue are welcome!

You can order Nescofilm grafting tape from your Study Group leader - $2 per linear metre + $1 postage. Order by email or post; direct credit of payments preferred.

Feature species – *Eremophila forrestii*

Lyndal Thorburn with text contributions from Russell Wait and Ken Warnes. Pics by Russell Wait unless otherwise noted.

Thanks to the dozen members who responded to the E. forrestii survey, results of which provided some of the information in this article.

E. forrestii is a small to medium shrub (up to 2m tall). As shown in the pictures on the front page of this newsletter (all of which of are *E. forrestii ssp. forrestii*), flower colour is variable and ranges from cream through yellow to various shades of pink – however, pale pink is by far the most common. *E. forrestii* occurs mainly in West Australia, in a band between 21°S and 30°S, but also extends into SA and the NT. In most sub-species the leaves are grey, or yellowish, due to the dense covering of hairs on the leaves and stems. It is a very attractive plant in its natural location.

Ken has found *E. forrestii* commonly north and west of Giles Weather Station on rolling sand-plain among "spinifex" and various flowering shrubs. He has noted that when travelling south down the Sandy Blight Junction Road in 2004 he saw none, only a single plant north of the Rawlinson Range; yet in 2012 on the same road they were very obvious and in large numbers, especially the southern half. He assumes that in 2004 those that had been destroyed by fires in 2002 had not yet appeared above the other more responsive species.

Sub-species

The name "forrestii" was not in use until recently, with the species more commonly referred to as *E. leucophylla* (earliest common use in the ESG newsletters appears to be 2007, although there is one mention of *E. forrestii* as an alternative name for *E. leucophylla* in the February 1988 newsletter). Four sub-species were recognised by Bob Chinnock in his 2009 revision.

E. forrestii ssp. forrestii

E. forrestii ssp. forrestii is the most widespread sub-species and the one most commonly grown by Study Group members (75% of respondents). Both diploid and tetraploid forms exist. It has tomentose (hairy) leaves, with the hairs grey or yellow and covering the leaf surface so densely that the leaf is obscured. Branches are covered with fine hairs and the sepals are lanceolate to oblanceolate (more narrow than other sub-species).

E. forrestii ssp. forrestii is most usually found as a low spreading shrub (photos below from Brian Freeman's garden).

According to Ken, Chinnock's revision brought the form then known as *ssp. turtonii*, which has golden hairs, into this sub-species. Ken knows the *"turtonii"* form from around Sandy Blight Junction but has also seen it north of Rawlinna.

Ken reports a distinct break of at least 100km between the grey-leaved type and the *"turtonii*" populations but a strong level of inter-gradation between this form and others in *ssp. forrestii* is presumed to be part of the reason for the merger with *ssp. forrestii*.

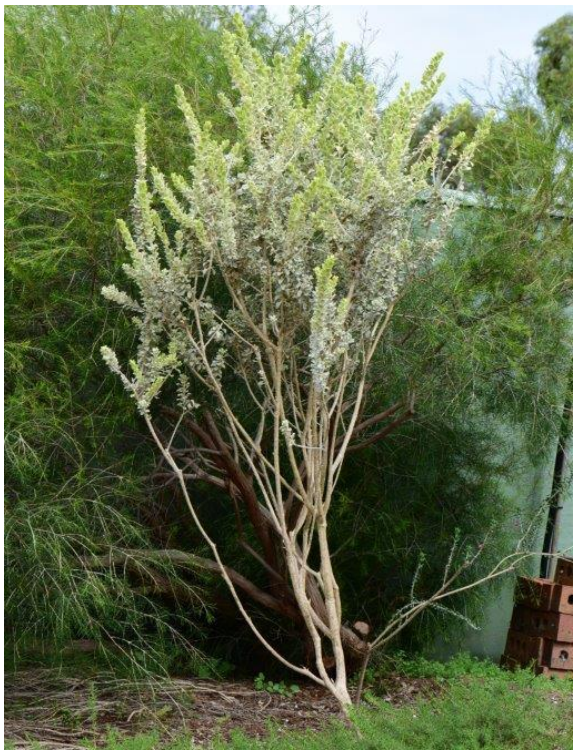
Flowers in the east of the range are smaller than from further west and it must have the ability to flower for extended periods judging from the length of branch showing mature fruits right through to young buds.

A form from the Canning Stock Route is shown below.

E. forrestii ssp. capensis

This sub-species was recognised prior to Chinnock's revision and has densely tomentose leaves but the blade of the leaf is orbicular to widely elliptic in shape and is covered with thick hairs (pic over page from Brian Freeman). The branches are also covered with thick hairs. It is restricted to the north-west cape of Western Australia.

From the survey, 40% of those growing *E. forrestii* have this sub-species. It is generally more upright in form, as shown in the photo below.



However Brian's example is much smaller (below).

E. forrestii ssp. hastieana

This sub-species is similar to *ssp. forrestii* but the sepals are obovate to widely obovate. It is found in the WA mulga. It is usually low-growing. Only one SG member reported growing this sub-species (photo below from Brown and Buirchell, with permission).

E. forrestii ssp. viridis

This sub-species has sparsely distributed hairs and the leaf surface is deep green. It is reported from the Great Victoria Desert and has smaller flowers than other sub-species. Only one member reported growing this sub-species.

There is some dispute whether this is actually a hybrid with a green-leaved *E. latrobei* due to its single known location.

Hybrids

E. forrestii is part of the Eriocalyx sub-group within Eremophila and all known hybrids are with other species in this group.

E. forrestii x E. latrobei

Hybrids with *E. latrobei* are very variable as they grow over such a large area and *E. latrobei* itself is a very variable species.. These hybrids can be green-leafed or grey-leafed (due to variation amongst the *E. latrobei* parent) and the flower colour varies from purple-pink through to pink. We had one reported of a member growing this hybrid.

Below, a form from Robert Range (WA) (photo Ken Warnes). This hybrid was a common *E. forrestii* x the white-leaved, large red-flowered *E. latrobei ssp latrobei* that grew on the sand-plains. Ken believes it is the only one he has seen of that cross.

Ken also provides a photo of what is possibly *E. forrestii* "turtonii" form x *E. latrobei ssp glabra* from somewhere on or near the Sandy Blight Junction Road (photos in next column and above taken at Ken's place).

E. forrestii x E. punicea

We understand this hybrid was collected by Maree Goods in 2008. It has felted, grey leaves and pale pink flowers intermediate between the supposed parents (pics below, from Maree's garden). No survey respondents reported growing this hybrid.

E. forrestii x E. glandulifera

A suspected hybrid with *E. glandulifera* has been around for a few years and which Ken and Russell called "*glandulifera,* 3rd form". It was discussed in Newsletter 116 (Feb 2017). The two species grow within a few hundred metres of each other, which contributes to the

hybridisation suspicions. We had two reports of members growing this hybrid.

This suspected hybrid is shown in the image below. Both Russell and Ken believe it is an *E. forrestii x E. glandulifera* hybrid because of its very bright flower colour, but as the colour is so bright Russell postulates that it has back-crossed again to *E. forrestii* to account for the leaves being like the latter despite the flower colour of *E. glandulifera*. According to Russell, this is also his most frost-hardy and long-lived specimen.

E. forrestii x E. conferta

The picture below is of one growing in Russell's garden in Victoria, and collected from Mr Vernon, WA. No other survey respondents reported growing this hybrid.

Horticulture

Survey respondents are growing this species in the Wimmera, SW Western Australia, Fleurieu Peninsula in SA, western Victoria, Melbourne, Sydney, the southern tablelands and the Brisbane Valley! From their comments, it seems to do less well in humid areas.

Many respondents mentioned its drought tolerance. It grows well in sun or light shade. Survey respondents reported plants in sun all day (62%) or dappled shade (30%) with sites also likely to be north-facing (70%) or east-facing (15%). Survey respondents also reported that their plants flower at last for 2 months but up to 6 months, depending on location.

Survey respondents reported little effect of frost, with only one reporting major areas of damage and none reporting death of the plant (see table below). However, separately, Russell reports losing both *E. forrestii ssp. hastieana* and *E. forrestii ssp. capensis* due to frost and Dave Bishop also reported his two specimens of *E. forrestii x latrobei*, originally growing strongly, succumbed to frost at his property at Yass, NSW after three days of at least minus 6 degrees. Likelihood of loss due to frost will depend on location including whether there is overhead cover.

Name	No visible effect	Damping off at tips	Damping off lower leaves
ssp. forrestii	8	2	0
ss. capensis	2	1	1
ssp. hastieana	0	0	0
ssp. viridis	1	0	0
unknown subspecies	1	0	2
any hybrids	0	1	1

Respondents to the survey reported only minor damage due to periods of heavy rain, with no major areas of dieback and no total plant loss (see table below).

Name	No visible effect	Minor tip burn	Burn to major sections of the plant	Death
ssp. forrestii	6	2	0	0
ss. capensis	2	2	0	0
ssp. hastieana	0	0	0	0
ssp. viridis	1	0	0	0
unknown subspecies	1	0	0	0
any hybrids	2	1	1	0

Garden specimens respond to light pruning and regular pruning creates a more compact shrub, which is desirable in the garden setting – if left unpruned specimens will lose their lower leaves. People reported tip pruning once or twice per year, or pruning off dead parts as they show. Pruning is sometimes used to

maintain bushes at around 600mm high so they don't get too leggy.

Survey respondents were asked about the effect of strong winds. A couple of people whose properties get very strong winds reported branches breaking off and one person moved their pot to a more protected position at windy times of the year. Given the fairly brittle nature of the plant it is likely that some wind protection is warranted in very windy areas.

Survey respondents were also asked about insect attack, reporting occasional trouble with brown scale, borers and the effects of blundering kangaroos.

Specimens over 20 years old have been reported in cultivation but members report shorter lives for this species in the garden, with the oldest plant reported at 15years. Brian Freeman reports one specimen lasting 10 years and between 5 and 8 years seems to be common (as the oldest specimen grown, not necessarily the maximum age of a plant).

Propagation

Most sub-species being grown appear to be *ssp. forrestii* as other sub-species are difficult to propagate. It is difficult to grow from cuttings although one survey respondent reports having done so. The majority of members report having grafted plants.

The *ssp. forrestii* form grafts reasonably well. Forms that would have previously been classified as *"turtonii"* are more difficult to graft. Ken has had success with material collected from roadside plants showing strong regrowth after fire.

Ken is growing *E. forrestii ssp. capensis* from material collected by Ronda and Peter Hall at their Pinery Nursery, where it was a handsome plant. He has had had trouble grafting both this and other collections and still has only a single specimen. He persists because, while the flowers verge on insignificant, it makes a striking foliage plant.

A new find in Victoria

Jocelyn Lindner

Recently I observed what I first thought was another Eremophila glabra growing at a reserve along the Mallee Highway on the outskirts of the town of Murrayville, Victoria. After a closer look and seeing it at flowering time It was identified as *Eremophila subfloccosa subsp glandulosa.* This has been confirmed by Russell Wait and Norma Boschen. According To Bob Chinnock it has not been recorded in Victoria, the nearest recording is at Murray Bridge SA in 1975.

Only one plant has been found so far. A slow burn was carried out in this area some seven years ago and I wonder if it could have germinated after that. There are a number of forms of *E. glabra* growing in this area. I have tried to propagate it from cuttings without success so both Norma & I are attempting to graft it.

E. Meringur Crimson vs E. Passionate Lady

Ian Tranter

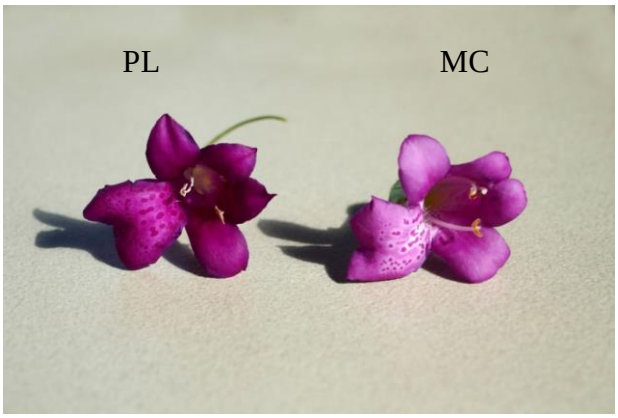
For years I had been coming across conflicting opinions about whether Passionate Lady (PL) is just an alternative name for Ray Schilling's Meringur Crimson (MC) hybrid of *E. bignoniiflora x E. alternifolia*.

A couple of weeks ago I found both flowering in Fiona Johnson's garden and they aren't the same clone but are very similar which explains the confusion.

To aid in identification:

Passionate Lady has a darker coloured flower with the tube about 20% longer and perhaps slightly narrower than that of Meringur Crimson. Its throat spots have a pale halo compared to the white halo around the spots of Meringur Crimson (first two photos below).

The throat of Passionate Lady is coloured through to the base, whereas with MC the halos on the bottom petal often merge to form a white background.



There are also small white hairs in the throat of the bottom petal of both forms, but those of Passionate Lady are visible against the dark pink background. With Meringur Crimson the hairs don't show up against the white background and you need to look side-on to get some contrast with the side of the throat or under a microscope against a dark background.


E. Passionate Lady


E. Meringur Crimson

Sub-group meetings

All our sub-groups have meetings pending:

Sydney: 10 February 2018 at the home of Ian Cox, 5 Ivy Place Kenthurst, starting at 10am. The group will discuss small showy long-flowering Eremophilas and Peter Olde's work as a botanist.

For more information email Charles Farrugia at eremgenus4719 (at) hotmail.com.

Queensland: April 2018 in Warwick. The topic is Eremophilas in shade. The following meeting will be in June 2018 in Lowood and the topic will be Eremophilas of the mackinlayi/hygrophana group.

For more information email Jan Glazebrook at janglazebrook (at) gmail.com

Victoria: The next meeting will be at the home of Bob and Margaret Blake, 39 Miller Street, Pimpino near Horsham, on Saturday 24th March 2018.

For more information email David and Sue Oldfield on dsoldf (at) netconnect.com.au.

Biennial Report to ANPSA

Lyndal Thorburn – this report was sent to ANPSA for the Biennial Conference.

The Eremophila Study Group has continued on its recovery since our previous leader Colin Jennings passed away in 2015.

A members' survey in late 2015, just after I took over as leader, indicated member priorities in plant propagation and horticulture (64%), followed by conservation (31%) and identification of new species and sub-species (5%).

These findings, plus reference to our charter, were consolidated into a number of key objectives for the SG going forward:

1. Update the newsletter: The Newsletter was produced in colour from mid-2015 and over 90% of members now get their NL by email. In 2016 we finished uploading the backlog of NL on to the ANPSA website and have commenced adding to that through member-only sections (e.g. to access slides from field trips and (soon) videos of presentations from). So the newsletter has expanded into a series of resource, available online via ANPSA. I have committed publicly to 2 newsletters per calendar year but aim to produce three.
2. Consolidate active membership: non-active members were removed from the member list in 2015 and more active recruitment started in 2016. We had 129 members as at June 2017 and maintain a policy of only admitting people who are also part of a regional ANPS and have email. Membership fees have been retained at $5 per annum and can be paid up to 4 years in advance. Member engagement has been increased by:
   a. Surveys of members to contribute to articles on feature species (e.g. *E. christophori*) or topics (e.g. grafting)
   b. Establishment of a Victorian sub-group in 2016. Our SA, Vic and NSW

sub-groups meet 2-3 times per year and run their own agendas but report their activities in each Newsletter

c. Continuing to subsidise 7% of members who can only receive the NL by post
d. Presentations to local groups (in 2017, Maroondah, Vic and Menai, NSW)
e. A field trip to Port Augusta in SA in 2017 – this attracted 42 members over 3 full days which also took in Ken Warnes' property at Owen.

3. Propagation: We have promoted propagation by:
   a. A "feature species" in each newsletter, collating information from members on growth and propagation
   b. A "great Grafting Survey" in 2017 to get information on the best stock – presented at the Field Trip in 2017
   c. The cutting swap was launched in 2016 but hasn't worked via the newsletter. However, it worked well at the field trip in September 2017.
4. Hybrids and species identification: hybrids are a fact of life with Eremophila, as they seem to come up in some members' gardens with amazing regularity, and have been identified in the wild. Hybrids are important as potential registered cultivars that have added "pluses" as garden subjects. Added to that is the need to accurately identify already-described species and sub-species, so that we know what we are dealing with when queries arise and can correct mis-labelling by nurseries. While reporting on new species was of low priority for members, over 20 have been described in the last couple of years and are appearing in nurseries or are distributed between aficionados. We have promoted discussion of hybrids and species identification by:
   a. Including information on known hybrids in articles on feature species
   b. Mining local experts' knowledge for all we are worth about the origin of known hybrids
   c. Including discussion of relative benefits of different hybrids in the newsletter
   d. Reporting on new species as described in the literature
   e. Launching a species gallery on the website – this will start with described species and registered cultivars but will be extended to hybrids over the next 12 months

Key statistics

Items	**2016**	**2017**
No. newsletters	February, June, November	February, May, November
No. pages	23 + 19 + 26 = 68	22 + 23 + 28 = 73
Feature species	*E. christophori, E. viscida*	*E. mcdonnellii, E. calcicola, E. calorhabdos*
Website initiatives	Finalised upload of back copies of NL Commenced use of website for special displays e.g. recovery from Pinery Fires	Uploaded field trip presentations in members-only area Launched "a photo of every Eremophila" project
Events	Commenced Victorian sub-group	Presentations to two ANPS groups Field trip to SA

In 2018 we hope to start an SA-based local group. We will also focus on expanding the online species gallery. A field trip in 2019 will be considered, if local members can offer to manage on-site organisation.

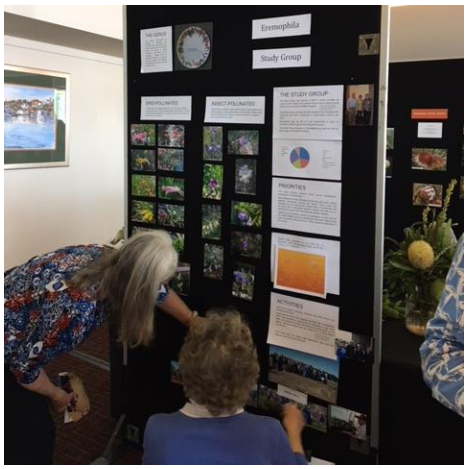
Acknowledgements

I'd like to thank a number of people for their support and contributions throughout the last 2 years (alphabetical order):

- Bevan Buirchell for giving us so much of his time and attention at the 2017 field trip
- Charles Farrugia, Jan Glazebrook, Sue and David Oldfield, as organisers of our local groups
- Bev Rice for her assistance with the field trip organisation, in particular programming and managing registration

- Ian Tranter for lots of useful information on hybrids and newsletter articles on a range of interesting subjects
- Russell Wait for an endless supply of great photos and advice on species identification
- Ken Warnes for ongoing support on plant ID and his work in planning and running the Port Augusta field trip, particularly the off-road day north and west of Port Augusta

Pics below of Julie Nermut and Sandra Wood at the Biennial Conference display in Tassie in January 2018 (photos Tim Wood)



E. maculata field photos

Ian Tranter – below are a couple of photos of *E. maculata* taken at wild sites west of Port Augusta during the September 2017 field trip.

Eremophilas in Cloudy Hill Garden

Fiona Johnson

Here is a summary of the Eremophilas I'm currently trying and those I've tried previously. With the greater availability of grafted plants I'm trying a few more now, plus I have learnt where in my garden Eremophilas have the best chances of success.

My garden is at about 960m elevation in the Central Tablelands between Blayney and Bathurst and has a long cold winter. I do not think frost of itself is such a big issue, but several months of relentlessly cold wet soil and cold air or wind is just too hard. This is what I think poses the biggest challenge for someone silly enough to want to grow plants from completely different environments. We are on a bit of a hill, not in a hollow, so our frosts are moderate rather than heavy.

Species	**Other**	**Position1**	**Position2**	**Comments**
adenotricha		Pot	Morning sun, afternoon dappled shade	Several years old, loses a little foliage in winter but recovers with warmer weather
alternifolia		Ground	Sun, some shelter from large shrubs nearby, moist	Planted early spring 2017, ok so far
bignoniiflora x alternifolia	'Meringur Crimson'	Ground	Sun, moist*	Well established, doing well
bignoniiflora x alternifolia	pale pink	Ground	Sun, moist	A year or two old, doing well
bignoniiflora x alternifolia	'Passionate Lady'	Ground	Sun, moist	A year or two old, doing well
bignoniiflora x polyclada	'Big Poly'	Ground	Sun, moist	Well established, doing well
biserrata		Ground	Sun and partly shady, moist and dry	Well established, does better beneath other plants which provide some shelter
bowmanii ssp nutans	grafted	Ground	Sun, some shelter from large shrubs nearby, moist	Planted late spring 2017, too early to comment
brevifolia		Ground	Sun and partly shady, moist and dry areas	Well established, does well but heavily browsed by wallabies in winter
calorhabdos		Ground	Sun and partly shady, moist and dry areas	Two forms, well established, wish I could remember to prune them more frequently
christophori	'Whitey' grafted	Ground	Morning sun, afternoon dappled shade, dry	Planted early spring 2017, ok so far
complanata		Ground	Sun and partly shady, moist and dry	A year or two old, flowers well in spring but

				looks a little sadder after flowering
cuneifolia	grafted	Pot	Unheated greenhouse in winter, moved into full sun after frost danger has passed	Potted autumn 2107, has set flower buds but none yet open, too early to comment further
debilis		Ground	Morning sun, afternoon dappled shade, moist and dry	Several years old, exposed plants lose foliage in winter but recover in spring, plants beneath other shrubs lose less foliage
drummondii		Ground	Morning sun, afternoon dappled shade, dry	Planted late spring 2017, too early to comment
foliossisima	grafted	Tank ring**	Morning sun, afternoon dappled shade, dry	Planted autumn 2017, ok so far
gibbifolia		Ground	Various, moist	Well established, but does better with some shelter
gilesii	grafted	Tank ring	Morning sun, afternoon dappled shade, dry	Planted early spring 2017, ok so far
glabra	'Amber Carpet'	Ground	Sun and partly shady, moist	Well established, but does better with some shelter
glabra	'Fruit Salad'	Ground	Sun and partly shady, moist	A year or two old, does better with some shelter
glabra	'Kalbarri Carpet'	Ground	Sun, moist	Well established, does well but gets scrappy if not heavily pruned
glabra	'Lime Gold'	Ground	Morning sun, afternoon dappled shade, dry	Planted early spring 2017, ok so far
glabra	low silver/orange	Ground	Dappled shade, moist and dry	Planted spring 2016, ok but not vigorous
glabra	'Mingenew Gold'	Ground	Dappled shade, moist and very dry	Several years old, does better with some moisture
glabra	prostrate burgundy	Ground	Sun, some shade, moist	Well established, doing well
glabra	'Roseworthy'	Ground	Dappled shade, moist and very dry	Several years old, does better with some moisture
glabra	'Silver Ball'	Ground	Dappled shade, moist	Planted spring 2016, ok but not vigorous
glabra	'Steep Point'	Ground	Morning sun, afternoon dappled shade, moist	Several years old, suffers during winter but so far has recovered in spring, still small
glabra	'Steep Point' grafted	Ground	Full sun, moist	Several years old, suffers during winter but so far has recovered in spring
glabra ssp carnosa		Ground	Morning sun, afternoon dappled shade, dry	Well established, heavily browsed by wallabies in winter but recover in spring
glabra x decipiens	'Red Desert'	Ground	Dappled shade, dry	Planted spring 2016, lots of growth but not too

				many flowers
gladulifera	grafted	Ground	Morning sun, afternoon dappled shade, dry	Two plants, planted late spring 2017, too early to comment (but very pretty)
laanii		Ground	Morning sun, afternoon dappled shade, dry	Established, suffers from winter and heavily browsed by wallabies but recovers in spring
latrobei	grafted, green and grey forms	Ground and tank ring	Morning sun, afternoon dappled shade, dry	Green form planted autumn 2017 and grey forms in early spring 2017, ok so far
latrobei	green form	Ground	Morning sun, afternoon dappled shade, dry	Cutting from grafted plant, planted spring 2017, ok so far
macdonnelli	grafted, Simpson Desert form	Ground	Sun and partly shady, moist and dry	Planted late spring 2017, too early to comment
mackinlayi ssp spathulata		Ground	Sun, some shelter from large shrubs nearby, moist	Planted late spring 2017, too early to comment
maculata	hot pink	Ground	Sun, some shelter from large shrubs nearby, moist	Planted early spring 2017, ok so far
maculata (x alternifolia?)	'Thunderbolt'	Ground	Sun, moist	Established, heavily browsed by wallabies in winter but recovers in spring
maculata x alternifolia	'Blue Thunder'	Ground	Sun, moist	Established, heavily browsed by wallabies in winter but recovers in spring
maculata x alternifolia	'Wild Berry'	Ground	Sun, moist	Established, heavily browsed by wallabies in winter but recovers in spring
nivea	'Gubburra Bells' grafted	Ground	Sun, moist	Well established, doing well
nivea x	'Beryl's Blue'	Ground	Sun, moist	Several years old, doing well
nivea x drummondi		Ground	Morning sun, afternoon dappled shade, dry	One plant several years old, flowered well, second plant planted late spring 2017
oppositifolia	'Hardy Harry' cream	Ground	Sun, moist	Well established, suffers from winter but recovers with warmer weather
oppositifolia	purple and pink forms	Pots	Sun, moved to more shelter in winter	Failed in ground but doing well in pots
ovata	grafted	Ground	Morning sun, afternoon dappled shade, dry	Planted early spring 2017, doing well so far
platycalyx	grafted	Ground	Sun, some shelter from large shrubs nearby,	Planted early spring 2017, doing well so far

			moist	
racemosa	'Peaches and Cream'	Ground	Morning sun, afternoon dappled shade, moist	Planted autumn 2017, doing well so far
racemosa x maculata	'Desert Passion'	Ground	Sun, some shelter from large shrubs nearby, moist	Planted autumn 2017, doing well so far
splendens x maculata	'Spitfire'	Ground	Sun, some shelter from large shrubs nearby, moist	Planted early spring 2017, doing well so far
subteretifolia		Ground	Sun and shade, moist and dry	Several years old, does better with moisture and shelter
warnesii	grafted	Tank ring	Morning sun, afternoon dappled shade, dry	Planted early spring 2017, doing well so far
weldii		Pot	Morning sun, afternoon dappled shade, dry	Planted late spring 2017, too early to comment
youngii		Ground	Sun, moist and dry	Well established, does better with some moisture
	'Yana Road'?	Ground	Sun, some shelter from large shrubs nearby, moist	Several years old, suffers from winter but mostly recovers with warmer weather

* Moist and dry are relative terms. The 'moist' areas retain moisture for some time before drying out whereas the 'dry' areas have competition from nearby eucalypts, which also provide frost shelter.

** Tank rings have been filled with native soil mix, and are located with morning sun and afternoon dappled shade provided by existing *Eucalyptus macrorhyncha*. They do not appear to receive frost.

Left, *E. cuineifolia* (potted) and *E. glandulifera* with its first flowers growing at Cloudy Hill

Field Trip Financial Report

Below are the finalised expenses for the field trip.

Income	**Actual 16/17**	**Actual 17/18**	**Notes**	**Subtotal**
Conference fees	$290.00	$6,377.00	StickyTicket purchases were paid to us in a lump sum in September 2017	**$6,667.00**
Expenses				
Air and ground transport	$786.72	$908.93	Includes speaker air fares, car hire from Adelaide and reimbursement of petrol	$1,695.65
Conference dinner, refreshments, room hire		$3,440.92		$3,440.92
Insurance*		801.11	Travel insurance and excess	801.11
Accommodation		$615.09	Speaker accommodation	$615.09
Bank and stickyticket fees	$0.01	$212.00		$212.01
GST paid		$434.56	Not claimable from ATO	$434.56
Conference fee refunds to members		$281.00	Paid but then couldn't attend	$281.00
Expenses sub-totals	**$786.73**	**$6,693.61**		**$7,480.34**
		Surplus (loss)		**(813.34)**

*Subject to insurance claim for damage to hire car. If successful this expense will reduce to <$300

From Your letters

Charles Farrugia (NSW): The other day I was observing a tiny native be at work. In a foam box I had an *E. hygrophana* in full bloom and a *E. latrobei* with a single flower. This bee went on the latrobei flower and stayed there for a fair while. Then it went to the *E. hygrophana*, and buzzed around every flower but not once did it go inside the flower. It just kept going time and time again to the flower tip of the *E. latrobei*. Can someone please explain this behaviour?

Charles has also provided photos of Eremophilas growing in his Sydney garden:

Hans Griesser (SA): I wanted to let you know how much I like the way you produce very interesting and informative newsletters. They are the reason why I am sticking with this Study Group, while living in a place better suited to many other genera. Ken Warnes once said to me that if the Good Lord had intended for Eremophilas to grow in the Adelaide Hills He would have put them there…

Margaret Lee (SA): Thank you for the newsletter. It did take a while to download but even longer to read! So full of interesting information. All those Eremophila growing together in gardens and subsequent hybrids are going to give us some headaches in future! Makes one wonder how many of the species we've identified were once upon a time hybrids in the wild.

I've wondered whether anyone has tried grafting onto Eremophila maculata? It seems hardy under many conditions, strong-growing and is very long-lived. I have the low-growing form which is now over 50 years old and each of the plants are many metres in diameter and very dense and healthy. It is one of the first we planted when we started Project Eremophila and has out-lived many of the other early ones.

Laylee Purchase (Qld): Thanks so much for yet another superb Newsletter, with links. I have only perused it and am really impressed - I will have to put aside at least a half day to read it and even longer to digest it all! Would have loved to be able to get to that Seminar.

Bev Rice (SA): Great newsletter. We all enjoyed the field trip weekend and it was so good to renew acquaintances and put faces to people who have been just names. Thanks to you and Tom for all the planning you put into the whole weekend – not exactly easy when we all live so far apart.

Goodness, the Hybrids list is getting longer and longer – is this natural evolution taking place? When I looked around my own garden I was really amazed to find just how many hybrids I have.

Very hot and humid here with thunderstorms around us but we were lucky enough to miss out on a storm yesterday that flooded shops in Angaston in the Barossa, we watched it go around us luckily.

Ross McDonald (Vic): My wife, Pam, and I live in Upwey, east of Melbourne, in the Dandenongs, on a rocky ridge - no frosts, and with good drainage. We have a number of Eremophilas growing on their own roots, some totally neglected in a very dry part of the garden, others in quite well watered areas also doing well.

We have put a number of grafted Eremophilas in large terracotta tubs, and in the ground near the house, so we can enjoy them without too much exertion. I have been a member of SGAP/APS Victoria for over fifty years, including as a foundation member of the Foothills Group, plus Victorian and National president many years ago.

Future Newsletter Themes

Feature species – Eremophila subfloccosa (pic at left from Alice Newton).

Corrigenda

It has been pointed out that the new *Eremophila regia*, described by Bevan Buirchell and included in the February 2017 newsletter (no. 116), was also shown labelled *E. latrobei* in the newsletter that featured that species, November

2015 (no. 112). We take comfort from the fact that this species was probably known as *E. latrobei* until Bevan's work was published in 2017.

Russell has also written: "Hi Lyndal, I see in the newsletter (November 2017) that you have a photo of *E. aff coacta* from the Kennedy Ranges. Well, Bob Chinnock told me when I collected in the 1990s that it was *E. aff clarkei*, mainly because of the toothed leaves. I have had a look under the microscope at it, but I don't have *E. coacta* flowering at the moment, but it does have an entire fleshier leaf than E clarkei. The Kennedy ranges are a hot bed of new species with about 7 undescribed species that I have found."

John Zwar's photo labelled *E. nivea* on the back page of November 2017 Newsletter is *E. delisseri* (thanks Ken).

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).

SUBCRIPTIONS

Membership is $5 per annum. Subscriptions for a financial year can be sent by cheque 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

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

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

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

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

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 Address: 3 Considine Close Greenleigh NSW 2620

Honorary members: Ken Warnes and Russell Wait

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

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

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NEXT NEWSLETTER MAY/JUNE 2018

E. forrestii
Brian Freeman