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Association of Societies for Growing Australian Plants
EREMOPHILA STUDY GROUP NEWSLETTER No. 46

May 1992

The past few months have been rather barren so far as letters from members of the Study Group is concerned, hence the delay in the preparation of this issue. I have been holding off for about a month now in the expectation of something 'newsy' to include, but alas little has come forth.

I must confess to having done little by way of propagations and with the onset of the cooler weather look like leaving the next attempts until after the winter months.

During January my wife and I travelled to north Queensland, on the way calling in to visit several members of the Study Group. It is always of interest to note the different conditions and hence problems faced by each and every one of us, be it rainfall, or lack thereof, temperature variations or just simply the soil type we have to cope with. Despite this we do seem to be able to cultivate a wide range of species and under what can only be described in some cases as totally unlike the natural habitat conditions for the species concerned. Maybe we should try to put to paper a few more thoughts about 'how we grow them', others in the Group would be interested in your attempts, successes and failures.

On a local note for those in SA, we had a very wide range of species on sale at the March 1992 SGAP Plant Sale, with a significant number of grafted plants provided by Ray Isaacson. There were altogether in excess of 50 species for buyers to choose from. It was also pleasing to see a number of different providers this time; we hope that they can continue to propagate such good quality material and hopefully a more diverse range as time goes on. There is certainly a significant interest from gardeners in this State for the genus.

Colin Jennings

STUDY GROUP BOOKLET

We still have plenty of these available at $6 per copy plus $2.75 postage anywhere in Australia. There has been an alteration to the postage rate for the prepaid envelope that we have been using.

If you have not yet purchased one, you can be guaranteed of a well presented, indexed collection of edited 1972-1985 Newsletters of the Study Group in one cover.

SHEPPARTON & DISTRICT SGAP FLOWER SHOW

David Randall, one of our members living at Cobram in Victoria, has asked for our assistance with material for display at their Flower Show. I have extracted from David's letter the relevant information.

> "The Shepparton & District Group Flower Show will be held on 12th & 13th September 1992. This date has been arranged to take advantage of the Shepparton Water Board's backing to the extent of $3,000 for advertising.
>
> This is the first time the Water Board has backed an organisation. They are going to send a brochure out with the water rates, put a 4-8 page lift-out in the local paper and advertise through radio and TV in a smaller way. This should be a great help to encourage the growing of Australian Native plants, especially the tougher ones like *Eremophila*, *Hakea*, *Melaleuca* etc."

David wrote to me last year about this and I offered to assist through our Group. During our holidays I called in to visit David and was impressed with the enthusiasm he has for propagating eremophilas and the wide range that he has available in his small nursery. Again I offered to give him whatever assistance I could through the Study Group.

Firstly, I would appreciate it if those members who live in the 'vicinity' of Shepparton could contact David in the near future if they can in any way assist. Potted plants and cuts for display will be required for a worthwhile display to be presented.

Those of us who live further away might be able to assist by forwarding cuts. I will be making a collection in

Adelaide about a week before the date of the display.

Maybe someone travelling that way might be able to help out as well. *PLEASE DO YOUR BEST TO ASSIST.*

More details will be presented in the next Newsletter.

SA REGION SGAP SPRING FLOWER SHOW & PLANT SALE

The SA Region SGAP Council has decided to present a particular Study Group display each year. Last year the Daisy Study Group was the first to do so.

This year we have been asked to present an *Eremophila* display, including plants growing in pots, cut flowers as well as an educational display.

In the near future we will have to decide on the format and the amount of space required.

The date of the Flower Show is 3rd and 4th October 1992.

This note is to advise you of our involvement; in the next Newsletter I will provide you with more specific details; but SA growers are encouraged to get some plants established in pots. Also we hope to have a better than ever supply of propagated plants for sale at the plant sales area. What better way to sell them than to have a display nearby to advertise the wares. We will also be asking for a good selection of cuts to display in vases; ideally we would like to have as many species shown as is possible.

FROM YOUR LETTERS

David Gordon, "Myall Park", Glenmorgan, Queensland wrote with a request for cutting material. David, probably our oldest member, is very keen to add to the already comprehensive collection of eremophilas at the "Myall Park" Botanic Garden, which David has developed with the aim of cultivating the rare and endangered species.

I have been able to provide him with a number of species from my own collection and with the help of Bob Chinnock. Maybe there are some members who might be able to help David with the remainder which I could not supply, largely due to the fact that my plants are too small or have 'passed on'.

The ones still wanted by him are:

Eremophila adenotricha
Eremophila lactea
Eremophila merrallii
Eremophila resinosa
Eremophila scaberula
Eremophila undulata
Eremophila veronica
Eremophila virens

Also he is after *Myoporum beckeri.*

I am sure he would appreciate any offers of material for propagation.

A letter from Tucson, Arizona arrived early in March from Al Guhl. He is keen to join our Study Group, so I have forwarded to him details of membership etc. He has been working in a native and arid-lands nursery and has experience of *E. glabra* and *E. decipiens*; being very keen to see them in their habitats when he visits us 'down under' later in the year. I gather that he is presently a member of SGAP/NSW, from whose bulletin he obtained information about the Study Group.

EREMOPHILA "MIRABILIS"

Colin Jennings

In late spring last year Guy Richmond sent a few pieces of *Eremophila "mirabilis"* to me. The material itself had been collected from plants grown under conditions that had not favoured strong new growth; instead the cuttings looked somewhat stressed from their struggles.

Some of the better looking cuttings were passed on to Ray Isaacson and he grafted a number of tip pieces onto *Myoporum* stock. He was most successful, in that nearly all of the grafts took and very quickly grew into presentable small plants.

Several of these plants were sold at the March SGAP Adelaide region plant sale, others have been distributed locally to get them established as garden plants. The one I have is growing well in a small pot and produced its first flowers about a month ago.

I attempted to grow some from the original cutting material but alas was unsuccessful, maybe the material was too dry for this treatment, but the grafting technique proved very satisfactory.

With a little luck we will be able to get some cuttings of fresher material in the spring from the established grafts.

It is indeed encouraging to know that we are able to 'tame' some of these more difficult species through grafting.

I encourage members to attempt some grafting, starting with the easier, more common species and then becoming more adventurous with the harder ones that don't seem to strike well using the normal methods.

SEED SET AND LONGEVITY IN *EREMOPHILA*

Guy S. Richmond

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Perth, Western Australia.

Little is known of seed set in *Eremophila*. Few studies have investigated seed ecology with the exception of Chinnock (1984) who recorded the presence or absence of seed within the fruits of a number of species. All germination experiments of *Eremophila* seeds occur whilst they are still in the fruit. In many instances zero percentage germination has been recorded but the obvious cause of these low values have been overlooked, with the resultant remarks that the fruits were not viable. A number of reasons accounting for low germination can be highlighted, namely parthenocarpy, seed abortion, dead seed and insect damage. Parthenocarpy occurs when the fruit matures but the ovules do not appear to have developed in any of the locules. This is most often seen in plants with numerous ovules in the fruit. It may result because the pollen tube does not reach the ovule. Seed abortion occurs where the ovules have started to develop after fertilisation but at various stages abort. Dead seed may occur when the fruits endocarp is eroded over time preparing the seeds for germination if adequate rains occur but also making the seeds more susceptible to moisture loss and death if extreme temperatures persist. Insect damage of fruits while they are still maturing on the bush is also a common cause of seed mortality.

Recent trials at Curtin University in Perth have shown that most fruits will have between 30-60% empty locules where no seed development has taken place (ie. no fertilisation) although seeds may have developed in other locules within the fruit. 1-6% of fruits were parthenocarpic (no seed development at all). The occurrence of dead seed within the fruits was low, with 1-5% being recorded. Insect damage was also low, averaging 2% though fresh *E. maculata* fruits collected on Ken Warnes property in Owen, SA (on the ESG workshop field day last September) recorded 11% damage. Fully developed seeds ranged between 10-65% and may be dependent on prevailing environmental conditions.

No information is available on seed longevity in *Eremophila*. Naked seeds have been excised from fruits and either germinated or tested for potential viability (by using a tetrazolium staining technique whereby the clear solution turns red on contact with live plant tissue). The viability of *E. maculata* ranged from 74-92% for the first 3 years then dropped markedly to 8% at 13 years old. Similar patterns have been recorded for 11 year old *E. goodwinii* with 3% germinability. *E. longifolia* viability recorded 30% for 1 year old seeds, declining to 18% at 8 years old. Though many of these fruits tested come from different localities, these preliminary results suggest that seed longevity declines rapidly over the first 10 years of a fruits life.

If attempting to germinate *Eremophila* fruits, first make sure they are under 5 years old (ideally 1-3 years old). Secondly cut a few open to check that the fruits actually possess good firm plump seeds. One other point is that the fruit apex should be cut to allow the uptake of moisture and oxygen. A warm sunny position (20-25°C) and cool nights is ideal for germination.

Acknowledgment

I wish to thank the Mineral and Energy Research Institute of Western Australia for financial support.

Reference

Chinnock, R.J. (1984). Taxonomy and relations in the Myoporaceae. Ph.D. thesis. Flinders University.

AN INTERESTING NEW SPECIES OF *EREMOPHLA*

Bob Chinnock

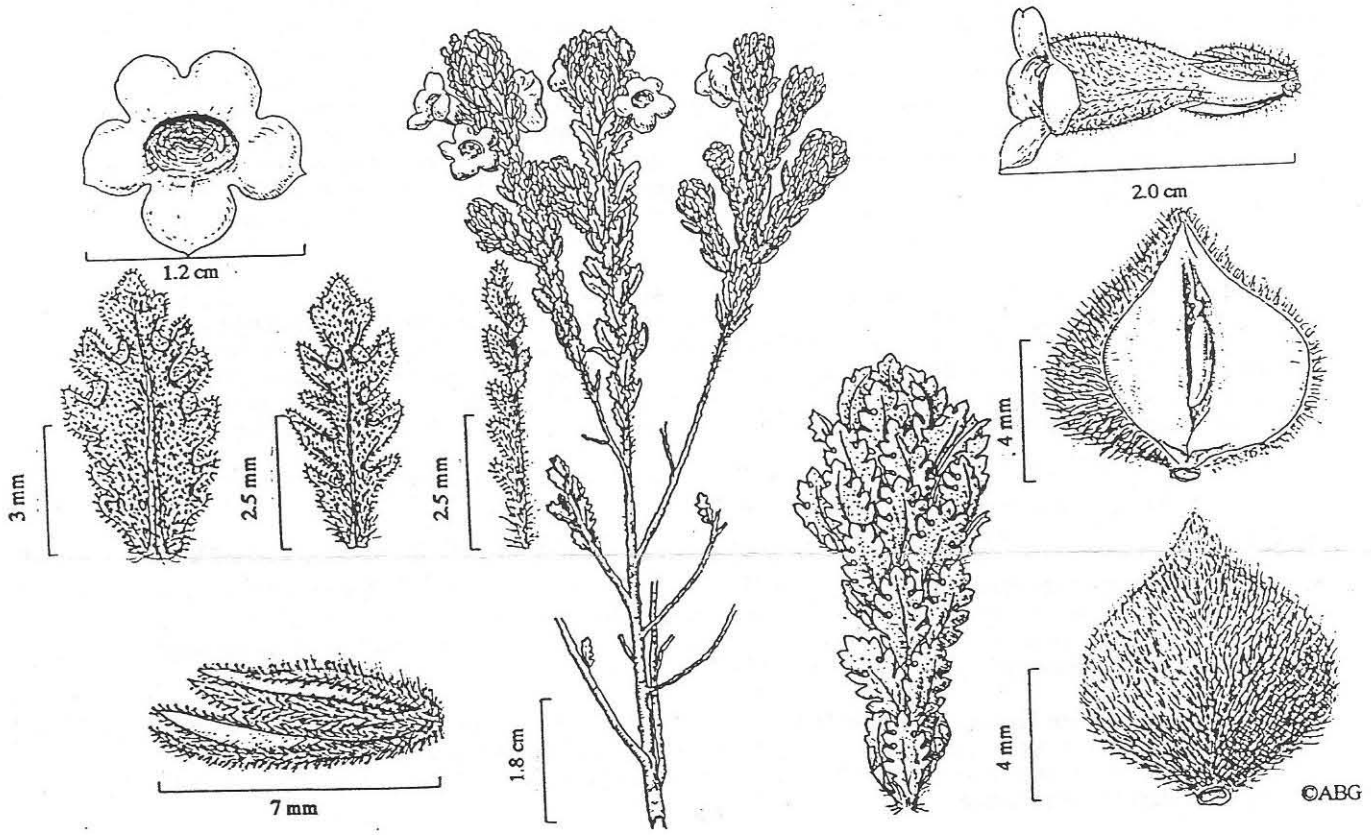
If you think of all the leaf forms found in the eremophilas growing in your garden the margins are either entire or toothed and the teeth are usually shallowly cut into the lamina. This was the case for all known species so it was a great surprise to find one with a different leaf form.

In 1990 I made a trip to Western Australia with Professor Gordon Orians and his wife to help him locate as many species of *Eremophila* as possible. His interest was to try and determine what were the factors determining the commonness or rarity of a species.

We had stayed the first night at Dallwallinu and the next morning when we were about to leave the car battery appeared to be playing up so we decided to wait until the local garage opened. To fill in time we drove around some back roads and on one I noticed a plant under some gums which appeared to be an eremophila.

When I walked up to it I decided it wasn't as the leaves were deeply lobed halfway or more to the midrib. However, all the other features of the plant and the smell suggested eremophila so I looked around and found more plants in flower confirming that it was in fact an eremophila. The leaves of this species which I intend to call *E. "pinnatifida"* are deeply lobed often with portions of the lamina between the lobes reflexed. The branch tips are also unusual in having a swollen appearance because of the crowded leaves. The plant is aromatic and the branches and leaves are densely glandular pubescent.

The good news is that this rare species is now in cultivation although not yet widespread. It appears to be easy to strike from cuttings as Colin Jennings had over a 90% strike rate with the original material I sent back.



Eremophila "pinnatifida"

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