EREMOPHILA STUDY GROUP NEWSLETTER NO. 3 SEPTEMBER 1973

It is six months since the last Newsletter and we have enrolled fifteen new members, with our membership now approaching 50. We have added several new species to the list of those in cultivation, and dispatched many parcels of cuttings and exchanged plants between members. The amount of work going on among the members whom I see regularly is most encouraging.

SPECIES BUILD-UP

There is no doubt that we have a difficult genus to distribute as there is still no answer to seed germination. The problems involved in collection and packaging cuttings and the uncertainty in striking many species, especially for beginners, are much greater than storing packets of seed on a shelf; yet despite this there are many more Eremophila now being grown than before the Group began operating. Even learners have been able to strike many of those suggested in Newsletter no. 2.

Since February we have struck E. pachyphylla, E. parvifolia, and some still awaiting identification from my W.A. trip, and have built-up numbers of those which were represented by only very few specimens such as E. battii, E. bowmanii (round leaf), E. eriobotrya, E. obovata, E. pentaptera, and E. punicea. It is unlikely that we will lose these species now. Added to the species list, but only represented by one or two plants, are E. gibsonii, E. spectabilis, and E. willsii.

Several members have set cuttings of many species which are either new to cultivation or in very limited numbers. Several of these resulted from a trip I was able to make to Innamincka and south-west Queensland, while other specimens have been sent from W.A. by Mrs. Armitage and Rodger Elliot. These include E. bowmanii (narrow leaf), E. christophorii, E. clarkei (in several forms), E. dalyana, E. duttonii var parvifolia, E. freelingii (the W.A. forms are quite unlike those from the eastern States), E. fraseri, E. georgei (possibly including hybrids), E. gilesii, E. goodwinii, E. interstans, E. lachnocalyx, E. latrobei (several forms), E. leucophylla, E. macgillivrayi (colour variants), E. macmillaniana, E. maculata (a deep cerise form from W.A. is spectacular), E. obovata, E. oldfieldii, E. oppositifolia (eastern forms which have lanceolate, alternate leaves), E. phillipsii, and E. viscida, plus quite a number I do not know.

I realise that it is important not to get carried away with a chase for new species, especially as it is going to take several years to eventually distribute them to all States, but until we have cultivated plants for trial we have no idea if they will adapt to cultivation or be an economic proposition for nurserymen.

From many of these collections we may gain only one or two plants but once we have a stock plant we can build up. As an example Geoff Needham has now struck the unstrikeable, E. duttonii, and E. sturtii, using cuttings from cultivated plants. The finding of good cuttings in the field, before the heavy viscidity of such species develops, presents a real problem. Other species with the same problem are E. fraseri, E. phillipsii, and E. cuneifolia.

At this stage I will also mention that a large parcel was recently sent to the Whyalla Council to propagate for street and park planting. From the good membership along the River Murray at Waikerie (2), Loxton, Annuello, Lake Charm, Piangil, and Mystic Park, early reports show outstanding results.

RECORDS

An outsider could be forgiven for thinking that there is a bit too much growing and not enough study in the Group. I would answer this by saying that in the past there just have not been enough plants around to study but this position is rapidly changing.

Growth data would have been of little benefit because of the number of cuttings taken from original plants, and anyway, growth rates are not of all that much importance. What we need to know is: adaptation to soil and rainfall, shape and habit, to what degree must we prune to promote flowering and foliage density, flowering periods, response to unseasonal conditions, and tolerance to conditions such as wind, frost, flood, or drought.

To illustrate, I have observed that species from temperate regions with reliable winter rainfall flower in a definite season: E. drummondii, E. densifolia, E. maculata (southern forms), E. glabra (southern forms), and E. santalina. The more northerly ones from uncertain rainfall flower a few weeks after rain, e.g. E. punicea and E. pterocarpa. Can we induce flowers by pruning or watering? These are the things we hope to find out and I will probably need a series of questionnaires over a period to establish some reliable answers.

But there are some points on which I would like answers if you have them:

Sudden Collapse. This subject is prompted by the fact that I lost healthy vigorous plants of E. mackinlayi (a northern woolly species) and E. weldii (a southern clean leaf species) following the big rain in February. They were only a few feet apart so perhaps some other factor was involved, but if you have had sudden death of established plants let me know, with your suggested reasons. Now, with a prolonged wet winter, forms of E. delisseri and E. glabra are obviously dying.

Frost Damage. We need to know the degree of damage (light scorch of tips, burning back, or death), and also an estimate of the degree of frost (light, moderate, heavy). It is recognised that E. freelingii, E. latrobei, and E. alternifolia, are damaged when small, and E. densifolia and E. dichroantha have suffered severe damage when semi-mature. Bert Curtis considers that an area of bare ground around young plants is an advantage and recommends that mulching should be left until frost danger is past. Any farmer can tell you how frost settles on straw and old bags while bare ground may be frost-free. So at this stage I would say **no** shelter or **full** protection; in between could cost you a plant. In wetter areas it is advisable not to mulch until after winter rains.

Allergies. Len Richardson reports severe skin irritation, even blistering, after contact with E. sturtii. The sticky exudate on the leaves may be to blame, and if so, there is a chance that many other species may have a similar effect. This is extremely worrying and I would like full details of any suspected allergies to Eremophila. We know that E. maculata contains cyanide under certain conditions, so the sooner we are aware of any health problems the better.

Flowering Periods. It should be quite simple to draw up a chart along the following lines, using three flowering grades of light, moderate, heavy, making a recording each two weeks, with a note on rainfall or watering:

Soil Moisture: D = Dry, M = Moist, W = Wet, A = Artificial Water

Flowers: N = Nil, L = Light, Mo = Moderate, H = Heavy

January		February		March		April		May		June.....Dec		
D	A	D	A	M	A	M	M	W	M	W	W	(Water Record)
N	N	N	N	N	L	L	Mo	Mo	H	H	H	E. maculata
N	N	L	Mo	Mo	Mo	H	L	L	N	N	N	E. punicea

EREMOPHILA SYMPOSIUM

The very active Maroondah group of Victorian SGAP have organised an Eremophila Symposium for November 23rd, 24th, and 25th. Reports from Melbourne show surprisingly good results with the genus and the Maroondah group are spreading the word.

Already their members are propagating large numbers of the proven species for sale, while it is hoped to have a few plants of many not so well known ones for trial.

EREMOPHILIA GLABRA

Dr. Barlow has informed me that he now has enough information to conduct a revision of the E. glabra complex. For years this complex, which includes E. glabra, E. glabra var viridiflora, E. subfloccosa, E. decipiens, E. hillii, and at least two unnamed species of prostrate habit, has caused much confusion and a revised grouping will be of great assistance.

While on the subject of E. glabra I can report that we have at last found that Mingenew, 320 km north of Perth, is the original location of the prostrate form with glabrous bright green leaves and brilliant yellow flowers. Mr. Wittwer, Superintendent of King's Park, has supplied this information.

Rodger Elliot collected an interesting form near Ouyen in western Victoria, one with a floccose tomentum (as in E. subfloccosa). This is only the second time we have found a red flower associated with this type of tomentum. The other was from near Blanchetown, S.A. Cuttings look very healthy and it shows promise of being a good foliage plant.

The prostrate species from W.A. with fan-shaped flowers, serrated on the outer end, short straight penduncles, small greenish flowers with bright pink stamens, and fruit with a flattened apex, grows on salty country aroung Pingrup. Previously we did not know the location. This is one which will probably be given specific status in the revision, in the meantime in correspondence it will be referred to as E. aff. glabra ex Pingrup.

MEMBERS' NEWS

Tom Fowler has planted a number of species at a C.S.R. Co. Ltd. works in an exposed area of clay and rock denuded of top-soil, where no artificial water is available. Tom grew the plants himself and is to be congratulated on his experiment.

During Easter I was able to visit Joy Noble at Arno Bay and to have a look at regeneration on 240 hectares of semi-cleared land. There were numerous seedlings of E. subfloccosa, E. crassifolia, E. glabra (3 forms), and E. weldii, some of which we potted up. Joy has propagated and given a number of young plants to the Whyalla Council and she is our leading grower on Eyre Peninsula.

Des Nelson from Alice Springs is studying suckering under natural conditions. We all know of E. longifolia with its thickets, and E. sturtii and E. bignoniiflora also sucker in the wild. A white-flowered E. laanii is doing it in my block. Des suspects that E. goodwinii also suckers on sand-hills and he is looking at other species as well.

Bert Curtis has been out bush collecting E. mitchellii, which, despite being a serious pest over 30 million hectares of N.S.W. and Queensland, is rare in cultivation.

Trevor Blake is in charge of a most interesting project at the Teachers College where he works. He has been commissioned to plant a large feature entrance built of huge boulders (1.2—1.5 m high), road metal, and soil, and hopes to use Eremophila on part of the area. Cuttings have been sent and we await developments with interest, as thousands of teachers of the future will see the result.

Len Richardson has lost count of the plants he has propagated and planted out in public gardens at Loxton. The Police Station, Viticulture Research Station, and the Railway Barracks are some of the recipients.

Geoff Needham must be our keenest member. Not only is he a top propagator and in charge of the seed bank, but he has kept annual growth and flowering records of his many plants. Geoff combats his clay soil by planting on 10 cm mounds of sand and the results show that this method is the answer to wet feet in young plants.

EREMOPHILA MITCHELLII

I recently enjoyed a long talk with Greg Beeston from Queensland, who is conducting research into the current population explosion of Eremophila mitchellii in that State and New South Wales. For some reason the past three seasons has seen a tremendous germination of seedlings over an area of 30 million hectares and the pastures are now threatened. Nothing else grows under dense stands of this small tree species which occurs from Forbes to Rockhampton and the Federal Government is alarmed enough to provide a research grant.

As a result of this talk I have obtained the names of other researchers in Queensland and must follow them up. E. gilesii is another species which is of sufficient economic importance to have warranted special investigation. And yet both these species are extremely rare in cultivation and proving difficult to multiply.

SEED BANK

Geoff Needham, 2 Stuckey Avenue, Underdale 5032, has agreed to maintain a seed-bank, but such a bank can only work if seed is sent in. If you can collect seed send it dry, carefully packed, and labelled, and if from a variable species such as E. maculata, E. glabra, E. latrobei, or E. macdonnellii, include a few notes on the parent bush and location. This bank can only operate with your co-operation.

A BUSH TRIP

In early August I participated in a trip to Innamincka and south-west Queensland returning via Broken Hill. It would take too much space to tell of all the wonders I saw but a few notes on the Eremophila collected should be of interest. The species in order of appearance were as follows:

E. scoparia. Seen in the open mallee country from Terowie to Yunta in moderately heavy loam soils.

E. sturtii. Very common in sandy soils over clay, from just north of Yunta to Wertaloona, and again in western N.S.W. Bushes were in early bud, and good health, although many were very straggly.

E. duttonii. In similar soils to E. sturtii, from Koonamore to Moolawatana. It reappeared north of Naryilco (Qld) and was very common in western N.S.W. where the form is more attractive than in S.A. Bushes were more shapely (at best a dense rounded 3 x 2.5 m) with finer more viscid foliage and waxy flowers. Numerous seedlings (or suckers?) were seen in places and more areas were in good flower.

E. freelingii. Appeared around Balcanoona, then again north of Innamincka on sand over stone, stony downs, or shallow watercourses. It was very widespread and in good flower and was invariably associated with stony soils. Again I noticed that the more easterly forms had smaller leaves.

E. maculata. Scattered for nearly the whole trip, usually in clay-pans or low-lying areas. The form growing in Queensland and N.S.W. was of larger and lusher leaf than the S.A. form.

E. alternifolia. A few plants on stony slopes around Balcanoona.

E. glabra. Not common in these dry areas, but was collected at Wertaloona and near Cobham Corner.

E. bignoniiflora. This species was confined to creeks and flood flats from the Strezlecki Creek onward. Often of very poor shape they reached their finest proportions around Cadelga, forming dense lush bushes up to 5 m high and 4 m wide. Flowering was variable, and suckers were seen in several places.

E. longifolia. Dotted about for the whole trip, I could see no real pattern to their distribution.

E. macgillivrayi. My first sighting of this species caused great excitement, but later we saw numerous colonies of it. It seemed less particular in choice of soils than most other species. Although common on low stony rises, I saw it in creeks, on flood flats, clay-pans, and sand. The one patch we really studied included two plants with pure yellow flowers; normally it is brick red with yellow throat. At its best this species was dense and rounded, 4 x 3 m, but more commonly a misshapen bush 2 m high. The main concentration was in the Cordillo—Arrabury area.

E. latrobei. Variable, and at its best a glorious shrub. The green-leaved forms were collected just north of the border between S.A. and Queensland, and were common in open mulga scrub from Orientos to Naryilco. Sandy soils, with a clay subsoil, were its home. The grey-leaved forms were not as common but were collected in a creek at Betoota and on low stony rises at Arrabury (Qld) and Morden (N.S.W.) where it had coloured sepals. Its occurrence was confined to stony areas.

E. dalyana. A broom-like shrub to 3 m high, it was confined to rocky slopes near Betoota and Nappa Merrie. Although untidy, it showed promise of being a most graceful shrub if pruned to remove old growth.

E. gilesii. The large bright blue flowers made this a beauty and it was common in red sand under mulga on Arrabury Station with a few plants on Orientos Station in association with the green-leaved form of E. latrobei.

E. goodwinii. As E. gilesii disappeared, this similar species replaced it. Soils were not as sandy and had a certain clay content. It occurred between Santos and Naryilco under mulga.

E. obovata. This was collected just north of the border between S.A. and Queensland, then at Arrabury and Orientos. A low spreading neat shrub with large blue flowers, it has a lot of promise. Sandy soils over stone seemed its preference.

E. oppositifolia. The Eastern States form with alternate, lanceolate leaves, was collected from a rocky creek south of the Warri Gate.

Cuttings of most of these species were collected and distributed to members in S.A. and Victoria. We hope in time, certainly by next autumn, to have plants to share.

This trip, which lasted eight days and covered 3000 km was outstanding for its scenery as well as for its botany. It is not possible to adequately describe the brilliance of the colour of vast areas of Senecio gregorii (a yellow annual daisy), the more subtle tones of Myriocephalus stuartii (poached egg daisies), the vividness of the green of Gyrostemon ramulosus against bare red sand-hills, and the purity of Eucalyptus terminalis (a desert bloodwood) white with masses of buds and growing on a bare red sand-hill against an unmarked blue sky.

It is also impossible to convey the eerie sensation of history surrounding the Burke & Wills DIG tree at Nappa Merrie, and the beauty and quietness of the water-holes along

Cooper's Creek, where first Wills, and then Burke, met their lonely deaths. You will have to see and experience these things for yourself, from the safety and convenience of a four-wheel drive vehicle.

EREMOPHILA SPECIES IN CULTIVATION

Key: 1 = plenty of cuttings available 2 = limited cuttings
3 = too small for cuttings C = cuttings set

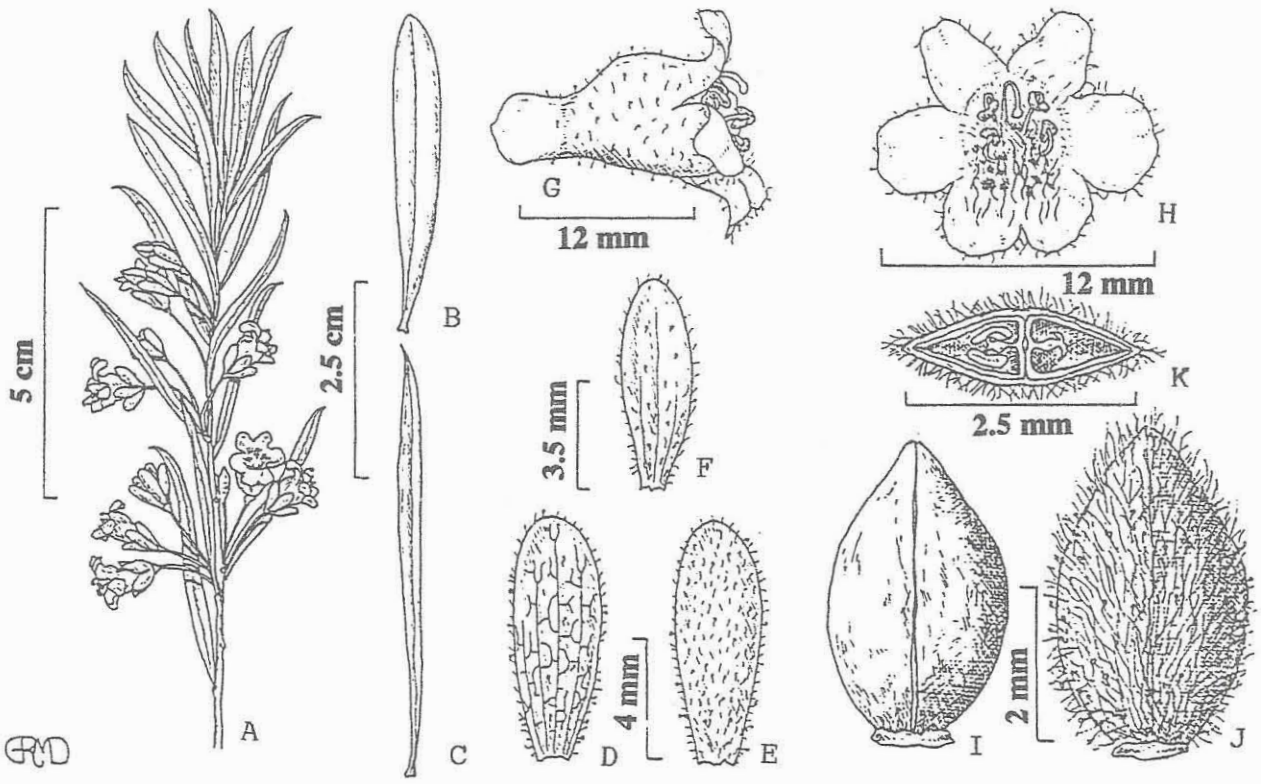
SPECIES	Approximate Mature Height x width in metres	Flower Colour	Key
alternifolia	2 x 2	pink; red; cream	1
"basedowneana"	prostrate x 2	green	1
behriana (2 forms)	0.2 x 1	blue	2
bignoniiflora	4 x 3	white; pink	1; 2
bowmanii (round leaf)	0.5 x 1	blue	3; C
calorhabdos	3 x 2	carmine	1
christophorii	2 x 1.5	blue	3; C
clarkei	1 x 0.1	bluish-purple	3; C
crassifolia	0.5 x 1	bluish-purple	1
cuneifolia	1 x 1	violet	2
dalyana	4 x 2	pale blue	2; C
decipiens (several)	1 x 1	red	1
delisseri (grey or gold leaf)	0.6 x 1	lavender	2; 3
dempsteri (2 forms)	0.5 x 2; 2 x 1	violet	1
densifolia (2 forms)	0.5 x 2	violet	1
denticulata	3 x 2	red; orange	1
dichroantha	2 x 1.5	violet	1
divaricata	1 x 1	lilac	1
drummondii (2 forms)	1 x 1; 2 x 1	violet	1; 1
duttonii	3 x 3	red, yellow throat	2
eriocalyx	2 x 1	pale pink	1
exilifolia	1 x 1	violet	3
exotrachys	1 x 1	purple	3
freelingii (various)	2 x 3	blue	2; C
georgei	1 x 1	lilac	3; C
gibbifolia	0.5 x 0.5	purple	2
gibsonii	2 x 3	pale blue	3
gilesii	0.7 x 1	pale purple	3; C
glabra (many forms)	various	red, yellow, orange, green	1; C

EREMOPHILA SPECIES IN CULTIVATION (continued)

SPECIES	Approximate Mature Height x width in metres	Flower Colour	Key
granitica	1 x 1.5	violet	2
goodwinii	1.5 x 1	violet	3; C
hastieana	1.5 x 1.5	pale pink	2
hillii (red, orange)	0.6 x 1.5	red; orange	2; 1
ionantha	1.2 x 1.5	blue; lilac	1
laanii (white; 2 pink)	3 x 3; 1 x 1	white, pink	1
latrobei (various)	max. 2 x 2	red; pink	2, 3; C
leucophylla	2 x 2	pink	2, C
longifolia	4 x 3	dull red	1
macdonnellii (various)	0.5 x 2; 1 x 1	purple	1
macgillivrayi	3 x 3	dull red; yellow	2, C; C
mackinlayi	1.5 x 1.5	deep violet	2
maculata (various)	2 x 2	red, pink, bronze, yellow	1
maitlandii	1.5 x 1	blue	2
mitchellii	5 x 3	white	2
obovata	0.5 x 1	blue	3, C
oldfieldii	4 x 3	red	2, C
oppositifolia (2 S.A. forms)	3 x 2	cream; pink	1, 1
oppositifolia (Eastern States)	3 x 2	cream; pale lilac; pink	C; 2C; 2C
pachyphylla (= psilocalyx)	2 x 1.5	lilac	3, C
pantonii	3 x 1.5	lavender	2
parvifolia	0.3 x 0.5	violet	3
pentaptera	0.5 x 1	purple	3
polyclada	3 x 3	white	1
pterocarpa	2 x 1.5	dull red	1
punicea	1 x 0.6	bright pink	2
santalina	3 x 3	white	1
scoparia	3 x 2	lavender	1
serrulata	1.5 x 1.5	greenish-brown	1
spectabilis	2 x 1.5	violet	3
sturtii	3 x 3	pink; mauve	2
subfloccosa	1 x 1	green	1
weldii	1 x 1	lilac	1

SPECIES	Approximate Mature Height x width in metres	Flower Colour	Key
willsii	1 x 1	violet, purple throat	3
youngii	3 x 2	pinky red	1
sp.aff.glabra (ex Pingrup) (prostrate)	x 3m	green	1
sp.aff.decipiens (prostrate)	x 3m	green	1

In addition cuttings of the following are set: E. fraseri, E. interstans, E. lachnocalyx, E. macmillaniana, E. viscida, and eight other species from W.A. We also have plants of three unknown species. Beard's "Descriptive Catalogue of West Australian Plants" was used to assist in compiling this list.



Eremophila mitchellii

A, habit; B-C, leaf variation; D-F, sepal variation; G-H, side and front view of corolla; I-J, side view of glabrous and hairy fruits; K, cross-section of fruit.