

EREMOPHILA STUDY GROUP NEWSLETTER NO. 16 DECEMBER 1979

Once again we have been adding to the list of eremophilas in cultivation from collections made in Queensland and Western Australia. Several are new undescribed species. These finds seem to go on and on, with the resultant problem of keeping each new species separate, and this is a very good reason for using the E. numbers for identification. Recently some members have sent in lists of plants growing in their gardens or plantations; several listed 80 or more species, which is amazing when you remember that the big growers seven years ago listed something like 25 species, and grew many forms of the same species to fill up the garden area. Also minor variations in flower colour, etc. were eagerly sought after, and each new acquisition was grown regardless of whether it was a good form or not. Now we can afford to be selective as we often have several collections to propagate from and we would all do well to take note of our plants with the object of improving the quality of plants in cultivation.

G.N.

USE OF HORMONE IN PROPAGATION OF EREMOPHILAS

Warwick Pybus

Following the success of Gordon Brooks and Chris Lindsay in the use of hormone solutions for the striking of cutting material, we decided to try it ourselves when we got some eremophila material from Ray Isaacson.

The hormone used was Indol-3-Y1-Butyric Acid (I.B.A.) mixed at the rate of 1 gram with 250 ml of 1:1 water and methanol. This mixture is stable and can be kept in the refrigerator for some time.

In most cases the number of cuttings was divided into two lots, one for use with the hormone, the other to act as control without hormone. Each treated cutting was dipped 10 mm into the hormone solution for 5 seconds before insertion into the cutting medium.

The cutting medium used varied somewhat between batches, but was approximately 2 parts of perlite to 1 part of peat. A glasshouse was used, and the cuttings were placed in a hot bed at approximately 25°C with mist for 2 seconds every twenty minutes.

I must emphasize that this trial was conducted under commercial conditions with no special consideration of the particular requirements of eremophilas.

The accompanying table will give some idea of results, but quite definitely the subjective opinion I have formed was that those cuttings treated with hormone had earlier and stronger formation of roots.

The roots produced by the two rooting methods were different. Those treated with hormone had a massive bunch of shorter roots clustered in the treated area, and were very strong and well attached. If by accident some roots were damaged there were still plenty left. Roots on the untreated cutting material seemed longer and more delicate, but with only a few attaching points, making them much more vulnerable to damage.

If it is possible to substantially decrease the time taken to produce roots, then many species, which drop leaves or rot in the cutting frame, may strike before this can happen. It may also be an advantage to induce rooting in the cooler months of the year in those hairy species which object to the frequent watering necessary in spring and summer.

I suggest that all growers should endeavour to conduct comparative tests under their own conditions in the hope that greater success with difficult plants may be achieved.

EREMOPHILA	HORMONE	CUTTINGS	TUBED	COMMENT
<u>E. glabra</u> (yellow, wide leaf)	*	6/7 : 12 6/7 : 12	21/8 : 11 21/8 : 8	All strong 50% strong
<u>E. glabra</u> (yellow, narrow leaf)	*	8/7 : 32 8/7 : 32	21/8 : 23 21/8 : 24	All strong 75% strong
<u>E. glabra</u>	*	6/7 : 14 6/7 : 12	21/8 : 14 21/8 : 8	All strong All good
<u>E. glabra</u> (red)	*	6/7 6/7		Not ready Not ready
<u>E. maculata</u>	*	6/7 : 13 6/7 : 12	21/8 : 11	Most good Not ready
<u>E. maculata</u> (semi-prostrate)	*	6/7 6/7		Not quite ready Not ready
<u>E. maculata</u> (W. Qld.)	*	6/7 : 17	21/8 : 13	Strong
<u>E. bicolor</u>	*	8/7 : 31 8/7 : 47	21/8 : 19 21/8 : 18	Good Good
<u>E. calorhabdos</u>	*	6/7 : 32 6/7 : 32	5/8 : 32 21/8 : 23	Excellent Good
<u>E. subfloccosa</u>	*	8/7 : 7 8/7	21/8 : 5	Good Not ready
<u>E. macdonnellii</u>	*	6/7 : 24 6/7 : 12	21/8 : 13 21/8 : 6	Strong 75% strong
<u>E. decipiens</u>	*	6/7 : 9 6/7	21/8	Weak Not ready
<u>E. viscida</u>	*	6/7 6/7		Rotting Rotting
<u>E. densifolia</u>	*	6/7 : 15 6/7 : 18	21/8 : 10 21/8 : 9	Moderate Strong
<u>E. ionantha</u>	*	6/7 : 17 6/7	21/8 : 10	Weak Not ready
<u>E. biserrata</u>	*	8/7 : 12 8/7 : 12	21/8 : 12 21/8 : 12	Good Good
<u>E. weldii</u>	*	6/7 : 11 6/7 : 11	21/8 : 3 21/8 : 7	Weak Moderate
<u>E. exotrachys</u>	*	6/7 : 7 6/7 : 8	21/8 : 3 21/8 : 1	Moderate Small vestigial roots

IBA
Geoff Needham

Having access to Warwick Pybus's report and a sample of IBA, I tried some cuttings in the cold frame to see whether it would work in different conditions other than in a heated frame. No result was obtained in as much as both control pots and those treated with IBA had similar strike rates. This does not negate the results obtained by Warwick in the hothouse, but is mentioned for your evaluation, should you contemplate conditions other than those in the report.

Later comment: A pot of *E. pantonii* E820 (a nice deep coloured form) was prepared in November 1979 with 2 cuttings treated with IBA, and 5 cuttings treated with SERADIX No. 1. Both cuts treated with the IBA struck, the others died, not a big result but interesting.

FIELD TRIP TO WESTERN AUSTRALIA, 1979
PART I
Bob Chinnock

This year I made a trip, with a colleague, to some of the more remote parts of Western Australia to study *Eremophila*.

The first stage of the journey took me to Rawlinna (on the trans-continental railway) where I hoped to find an unnamed species related to *E. delisseri*. I was fortunate to find this just south of the settlement where it was growing on stony calcareous soils. The leaves of this species are orbicular and the flowers woolly.

From Rawlinna we headed north towards Neale Junction keeping an eye out for a piece of the American Sky Lab but all we found was *E. alternifolia* var. *latifolia*. On this stretch of road I was looking particularly for two undescribed species which I had tagged as *E. "falcata"* and *E. "undulata"*. The former is close to *E. paisleyi* but has falcate leaves, and the latter is very close to *E. serrulata* but differs in having oblong undulate (wavy) leaves, and long white branched hairs on the stem and flower buds. It forms a low shrub to 40 cm high on red sandy flats.

At Neale Junction we turned west and went on to Yamana where I wanted to locate an unnamed subspecies of *E. abietina*, which had flat linear leaves. However, before I found *E. abietina*, I located *E. homoplastica*, a low growing shrub which superficially looks like *E. gibbifolia*. A few kilometres further on I found *E. abietina*, *E. homoplastica*, and *E. exilifolia*, growing in abundance.

The further west we proceeded the faster the eremophilas came in: *E. battii*, *E. youngii*, *E. oldfieldii* var. *angustifolia* (syn. *E. angustifolia*), *E. georgei*, *E. fraseri*, *E. margarethae*, *E. abietina* (typical form), and *E. metallicorum*.

I should have mentioned earlier that the drought was still in full swing and there had only been very patchy rain between Rawlinna and Laverton, but fortunately most *Eremophila* were doing well.

From Laverton to Leonora and north to Wiluna it was extremely dry. However, I managed to find most eremophilas flowering. I was particularly interested to see *E. ramiflora*, which Bernie Dell described in 1975, as it was a segregate from the *E. fraseri* complex. I found it common between Leonora and Agnew. It is very easy to distinguish from *E. fraseri*, by its rich crimson flowers, which occur in the young and old parts of the stems, and also by the small sepals and the thick erect less-branched stems. The production of flowers in this species is interesting. Up to three flowers are produced in each leaf axil but only one flower develops at a time. The first develops near the apex, then at a later date perhaps the next season, or maybe two or

three years later, the second and third flowers will often develop and by this time their position may be a considerable way down the stem on the old wood.

In the Wiluna area the form of *E. pterocarpa* is quite different from elsewhere. It has small acicular leaves rarely exceeding 12 mm long, and these are not angled with the leaf margin parallel to the branch. I was also trying to find an undescribed species which I had nicknamed *E. "spinescens"*. I located this on stony flats and it formed a low spinescent shrub with almost no leaves as a result of the drought. Although it was not flowering here, I found it flowering in numerous places east of Wiluna.

From Wiluna we went east to Carnegie, via Windidda—Prenti Downs. *E. "linearis"* was the first species of note. This has been known as *E. duttonii* in Western Australia, but I am quite satisfied that it is a distinct species. It has a different growth habit, thinner branches, smaller leaves, smaller sepals which do not enlarge after flowering, and glabrous flowers outside. *E. "spinescens"*, *E. miniata*, *E. youngii*, *E. maculata*, *E. gilesii* (various forms), *E. glabra*, *E. fraseri*, and *E. margarethae*, were found in a number of places. Two new species, *E. "punctata"* and one related to *E. granitica*, were also found. This latter species produced a single stem about 2 cm diameter up to 2 m high and then branched. The branches were sparse and pendulous and the species very hard to see on the skyline.

Every year when I go to Western Australia I think that this time I will not find any new species of which I did not have previous knowledge. This time I did not even get to Prenti Downs before I found a new one. It formed a small compact shrub about 30 cm high and had bluish bell-shaped pendulous flowers (like the harebell *Wahlenbergia*) with exserted anthers. The flower type was quite different from anything I had previously known. South of Prenti Downs on the Von Treuer Tableland I found the species again, together with another new one, *E. "spinosa"*, a species allied to *E. georgei*. *E. "spinosa"* was also found in a number of areas, always on the slopes and in the valleys below breakaways.

When we reached Carnegie we drove 90 km out along the Gunbarrel Highway to the Fame Range as I wanted to check some Central Australian records of *Eremophila* for the "Flora of Central Australia".

After returning to Wiluna we went north-west towards Neds Creek and the Great Northern Highway. Near New Springs I found yet another species unknown to me. It was obviously related to *E. exilifolia* but differed in a more open habit, longer and less congested leaves, and features of the flower. Just west of Neds Creek I came across a very large clay depression where I found the Wiluna form of *E. pterocarpa* and *E. "spinescens"*. I was pushing through a soft leaved shrub when I realized, much to my disgust, that it was an *Eremophila*. Yet another new one, but unfortunately it was not in flower. It belongs to the *E. sturtii* group but from the size of a few almost mature buds, the flowers are very small (3–4 mm across). I grabbed a bag of rubble from under a bush and later on extracted about 100 hairy little fruits. These appeared to be quite distinct and if anything were very similar to *E. inflata*.

We then went north to Newman along the Great Northern Highway and the only species of note were *E. lachnocalyx* and a small low growing species *E. "incisa"*. This latter one is a new species belonging to the *E. georgei* group.

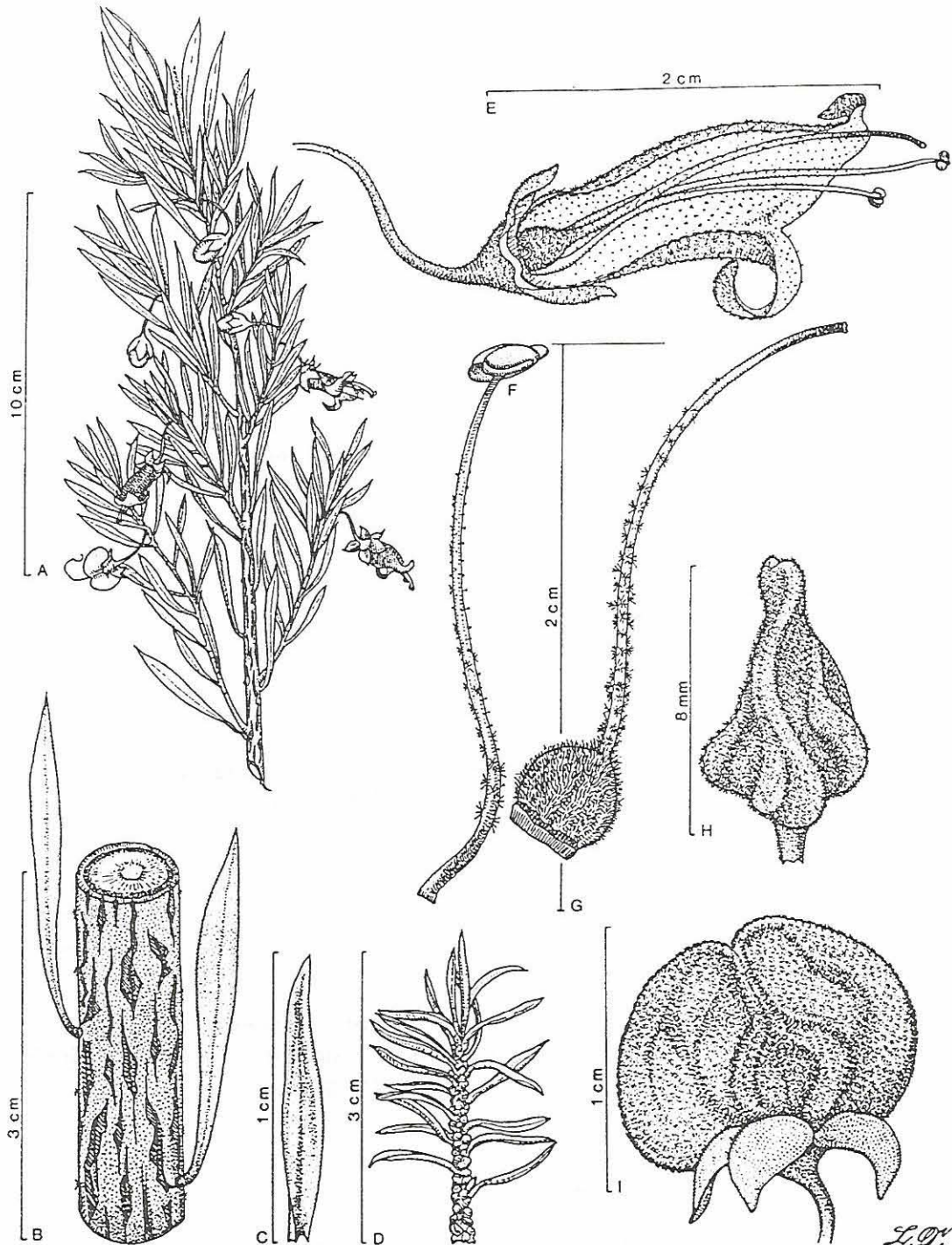
FLORA OF CENTRAL AUSTRALIA

Bob Chinnock

In 1981 the 13th International Botanical Congress will be held in Sydney. It is hoped that a "Flora of Central Australia" will be published to coincide with the Congress. This Flora, organised by the Australian Systematic Botany Society, will be unique in Australia. Firstly, it ignores State boundaries and provides a flora for the Central Australian region of W.A., N.T., S.A., QLD., and N.S.W. Secondly, it is a joint effort of

70 botanists and artists from Universities and Herbaria throughout the country and this number also includes a number of eminent overseas botanists.

I have done the Myoporaceae for the Flora and treat three species of *Myoporum* and 57 species of *Eremophila*. My trip to Western Australia this year helped considerably as I was able to confirm the presence of *E. cuneifolia* and *E. fraseri* in the region. In addition I added *E. oldfieldii* var. *angustifolia*, and *E. margarethae*. I have also included the new species *E. "falcata"*, *E. "linearis"*, *E. "punctata"*, *E. "spinescens"*, and *E. "undulata"* so I will have to publish these species within the next year to validate the names.



Eremophila pterocarpa

A, habit; B, enlargement of branch with leaves; C-D, leaf and habit of undescribed subspecies; E, longitudinal section of flower; F, stamen; G, gynoecium; H-I, side and front view of fruit.