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EREMOPHILA STUDY GROUP NEWSLETTER NO. 34

May, 1986.

Looking at previous newsletters it is apparent that this study group has provided a wealth of information. This of course is what it should be doing, however, the amount of information published depends very much on you the members. Fortunately three members have sent in articles for your enjoyment. Keep up the good work and lets have more for the next newsletter.

Geoff. Needham

Eremophilas and manure

by Noel Gane

My eremophilas are still thriving on the liberal use of stable manure and compost. The compost is made with household peelings etc., a little buffalo grass, a few handfuls of dolomite, stable manure but no prunings or weeds are used. Restricted by room I can only make approximately 1 cubic yard at a time. The soil added comes from the garden or from pots which contained failures.

Struck cuttings are usually potted into tubes then into 6" or 8" containers. Some cuttings taken on 5/10/85 have been re-potted into 8" containers. Now early Feb. when I plant out into the garden, fertilizer is used in the ratio of 7kg. Sulphate Ammonia, 4kg Superphosphate, 2kg Sulphate of Potassium mixed thoroughly, then sprinkled in and around the hole. It is then back filled with compost, with a top dressing of stable manure (not composted) nine to twelve months later.

Difficult species that I find hard to grow in the south west of Sydney are E. gilesii, E. macdonnelli (grey leaf form), E. christophori and E. latrobei. The latter species strikes easily but dies as soon as it is potted on.

Before replanting the last bed with Eremophila (last October) all unwanted material was cleared out and the bed raised approximately 6" this being done with un-composted stable manure. Species that are growing extremely well are E. mackinlayi dense form, E. viscida, E. maculata "Aurea", E. laanii, E. oppositifolia, E. purpurescens, E. alternifolia and one form of E. glabra, and a couple of small ones, E. microtheca and E. drummondii.

Eremophila sturtii from cuttings

by Tony Clark

In studying drought responses of eremophila in garden situations one notices several things. Some species like E. maculata and E. laanii shed foliage to the point where only a few leaves persist near the top of the bush making very unattractive specimens. They can be rejuvenated by being cut back very hard and fed a weak mix of nitrosol and iron chelates. Magically new leaves and branches

appear on otherwise bare stems and in three to four months the plants are looking young and fresh. I have a theory that a balance exists between the root water collection area and the area of foliage to photosynthesize and transpire. In hard times the plants shed foliage till they are transpiring at the rate water is being introduced through the roots.

Another group which includes E. subfloccosa, E. nivea, E. hillii and other furry leaved species, store water in the foliage in times of plenty (foliage looks soft and plump at this stage) and then as they dry out shrink. The whole plant in mid-summer appears to be a fraction of its former self. Plants in this phase seem to strike readily providing they are given a good drink the day before cuttings are taken. It also helps to stand cuttings in a weak formula 20 solution for a few hours.

A third group including species such as E. viscida, E. sturtii, E. saligna and E. duttonii exude a sticky substance which coats their leaves. Cuttings collected and wrapped in just damp newspaper go black overnight. The amount of this viscid coating varies with species and seasons but when plants have received ample water over a long period it is almost absent. This stickiness also seems to be more prevalent on fresh new growth and less so on older wood. Other genera such as Cyanostegia also exhibit this characteristic. Some Cyanostegia angustifolia collected for us near Kalgoorlie in January this year turned a water and methylated spirits solution milky when dipped in it. Subsequent cutting achieved over 90% strike in 3 weeks after treatment with Seradix 2 (IBA 3000/PPM).

With all these factors in mind and a generous spring rainy season we took cuttings of E. sturtii and E. viscida on 28/10/85. E. viscida leaves cut back by three-quarters made roots on 95% of the cuttings in 28 days after treatment with Seradix 2 and formula 20. Having had problems with E. sturtii before with the tips dying and then the whole cutting we cut off most of the new growth and prepared hardwood cuttings. Propagating medium was quartzite sand that would not pass through a 2mm sieve. Needless to say the mix was very open and drained quickly thus providing oxygen to the stem cuttings below the medium surface. The cutting medium was mixed with a fongaid solution at the rate of 4 teaspoons to one gallon of water till it was just moist. Cuttings were stood overnight in 5 drops of Formula 20 to 300ml of rainwater (I prepared them at night watching T.V.) and then dipped in Seradix 3 (8000 PPM IBA). Root formation was very slow (in retrospect I would have got a faster strike with say about 13000 PPM IBA). About 50 cuttings were tubed on 20/1/86 with a few having their brittle roots broken. At the time of writing this 12/2/86 all were making active growth in my polyhouse and presumably those with damaged root are growing new ones. Strike rate of E. sturtii under these conditions was over 90%.

I believe that with these species, once they are established in gardens growing in less arduous conditions than their wild state, they will be able to be propagated much more freely. Eremophila longifolia, another difficult species from stem cuttings can be propagated by cutting it back into fairly hardwood cutting (see Fig. 1) out the tip and treating with IBA 8000 or 13000 PPM. If hormone treatment is full length a root system will result at every node where a leaf has been removed plus on the base where cambium is exposed. A lot of difficulties experienced with propagating E. longifolia relate to soft tips dying and subsequently the rest of the cutting before roots are formed. If leaves are not heavily cut back botrytis attack can result where each leaf touches its neighbour. We have similar problems with Ricinocarpus cyanescens, R. bowmanii and R. tuberculatus before we took hardwood cuttings and increased the strength of the hormone.

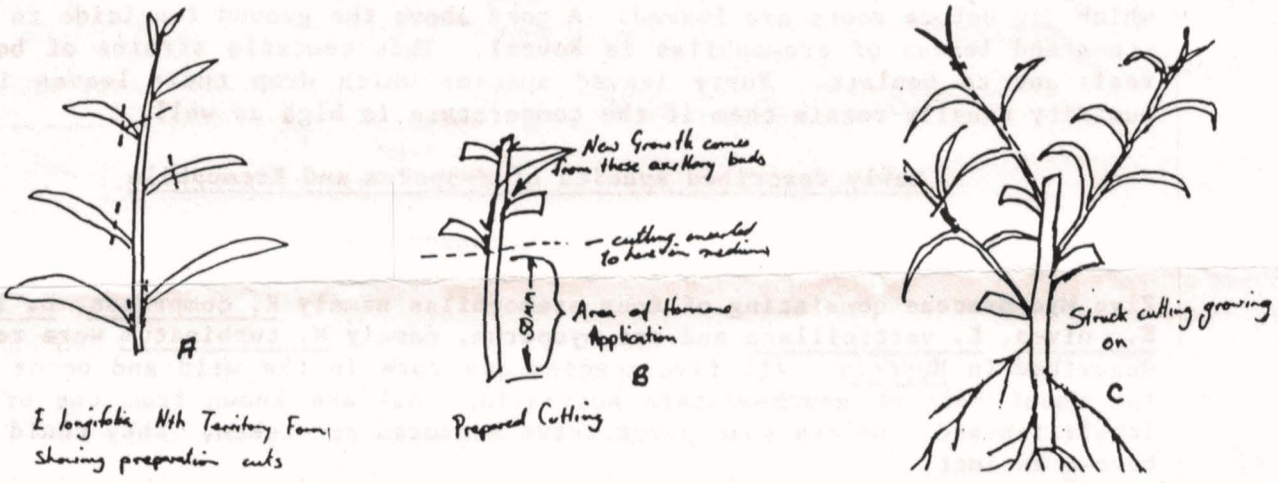

Fig. 1

Setting up a Propagation Experiment

by Tony Clark

In setting up an experiment to propagate plants from cuttings several things are necessary. The first is a source of cutting material, the second a cutting medium which is readily available and uniform in characteristics, the third a selection of hormones covering strengths from weak to very strong and the fourth a suitable tray into which to insert cuttings. Assuming the first and second requirements are met one needs to obtain a supply of rooting hormones. The easiest way to do this is by a batch of very strong hormone mixture and then cut it down by adding talcum powder (Baby powder will do) Pyco number 6 is 45000 parts per million IBA and about 6 times as strong as Seradix 3. Calculations should be based on volumetric measuring. That is, if one measure of talc is equally added and stirred to one measure of Pyco no. 6 the resultant strength will be 45000 divided by 2 equals 22500 PPM.

Most actively growing plants will strike at between 3000 and 8000 parts per million. Prepared powders should be stored in a refrigerator or at least a cool place because the active ingredient IBA (Indole Butyric Acid) breaks down under heat and strong light.

Pyco no. 6 is available from Cheetham Plastics, formerly Arthur Yates & Co., 54 Crittenden Road, Findon, S.A. and interstate branches. Assuming one has a selection of hormone powders available the next step is to have a tray to place cuttings in. Adrian's Nursery at Jandakot, W.A. manufacture a plastic multicelled tray which is divided into 48 inverted pyramidal shaped cells and which fits inside a standard seedling tray. Cuttings can be prepared and set as 8 lots of 6 replicates or 6 lots of 8 replicates. All things being equal if a broad spectrum of hormones are used, cuttings are prepared in the same way and cutting material is strikable at least one line of rooted cuttings should appear in each tray.

I do not believe in using untreated "controls" in these experiments because hormone treated cuttings make better, stronger root systems in less time. the shorter the time that dryland species are in the propagation phase usually the greater the survival rate.

When such experiments are conducted one needs to record the time of year (date) cuttings are prepared, hormones used, fungicides used, date of pricking out and strike percentage. Cuttings which take much longer than 8 weeks to strike may

need a stronger hormone, more bottom heat or could have a physical reason (i.e. water repellant stems) which prevents hormone penetration. Such problems can be overcome by roughening but not stripping the outer bark. Difficult species in some American nurseries have a cut made for some distance along the stem for applied hormones to penetrate. This would probably work with eremophilas too which die before roots are formed. A good above the ground fungicide to use on stems and leaves of eremophilas is Rovral. This controls strains of botrytis resistant to benlate. Furry leaved species which drop their leaves in high humidity usually retain them if the temperature is high as well.

Newly described species of Myoporum and Eremophila

by Bob Chinnock

Five Myoporaceae consisting of four eremophilas namely E. compressa, E. lactea, E. nivea, E. verticillata and one myoporum, namely M. turbinatum were recently described in Nuytsia. All five species are rare in the wild and occur within the wheat belt of south-western Australia. All are known from one or a few localities and, unless some preotective measures are taken, they could easily become extinct.

Through the efforts of this Study Group all five species are in cultivation and E. nivea in particular is extremely popular. So next time you look at your plant of this species remember that it is only surviving in the wild in Western Australia along a half kilometre length of road blocked in on both sides by cereal crops. A careless road grader or a fire could destroy this species.

R.J. Chinnock (1986). Five endangered new species of Myoporaceae from south-western Australia. Nuytsia 5, 3:391-400.

Articles are now wanted for our next Newsletter. Please write on alternate lines.

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