

**VERTICORDIA STUDY GROUP**

NEWSLETTER NO 38 -- August 2002.

**MEMBER REPORTS--CULTIVATION NOTES ETC.**

The following comprehensive report from **Darren and Louise Allen**, Abernethy, NSW, raised a few questions which I have attempted to answer, refer my return letter included later, which may contain items of interest to members generally. Darren says:- **Grafting.** "The information from Dick Mills and others has inspired me to resume grafting experiments with Verticordia. I'm propagating several rootstocks to try, *Homoranthus darwinoides*, *Calothamnus quadrifidus* (I think), and a *Thryptomene* hybrid. All rootstocks quickly are hardy here without any watering and have comparable stem thickness to a variety of species. Any comments about compatibility etc? I'm learning, but have had no success with the rootstocks mentioned, I think due to too much moisture and no control of disease.

I had some suggestions from Peter Olde about using some growth hormones etc. to give the grafts a kick along. I think I have the mechanics right, as a number of Grevillea and Eremophila grafts took and grew on, only to succumb during what I thought was a careful, staged hardening period. What are your thoughts on these chemicals and after care in general? I would like to keep it as organic as possible.

**General cultivation comment**

I agree with Dick Mills' comment about humidity being more of a problem at lower temperatures, as my propagating house gets very hot, but there were few failures that I could blame on humidity/fungal problems in the house. Outside was a different issue with many previously healthy struck cuttings, especially Verticordias, Beaufortias and Eremaeas and some Eremophilas failing in damp conditions, or after rain, although the mix could also be a factor here. I don't usually re-pot before planting, preferring to get them in the ground before the root system starts coiling, so the plants remain in the propagating mix until then. I would be interested in what other people do between leaving the greenhouse and planting as this is the period where I have most failures. Also I would welcome suggestions on mixes, as the one I use works well for most other genera, but not apparently for some Verticordia.

**Re spring planting and watering during summer.** Despite discouragement of watering during summer in many circles, I have found that many Verticordia planted in spring have almost always failed, regardless of watering or not. Those planted in autumn fared better but those not watered in the following summer invariably failed. I could say with some certainty that there have been no failures due to too much water, either rain or from supplementary watering. There was no sign of rotted roots on any of the dead plants. Can you suggest any symptoms to look for?

As autumn appears the only option for planting here, is there need to look at timing of propagation? The material I propagated in autumn/winter appeared ready for planting in spring, but fearing losses I held them over to the following autumn. Then I encountered problems maintaining them in the pots over summer. Is this another mix problem? Is there a suggestion for watering/care over the warmer months as I have more losses in the pots than in the ground over summer?

Although the long term effects of winter shading are yet to be seen, I am experimenting with an area on the southern side of the house which is partly shaded in winter, and in full sun during summer. This provides dry soil conditions in summer whilst retaining some moisture in winter. A breezeway between garage and house ensures good air

circulation. So far this garden has been most successful for growing *Verticordia*. Any evidence on growing in partly shaded conditions?"

Darren summarised the above as follows:-

Autumn planting is a necessity here

Beds built up to 40 cm are less successful than those of 25-30cm, due I think, to the lower rainfall here compared to Sydney.

Areas with heavier soil have been more successful, although watering in all areas of the garden was kept to a minimum, due to the losses in pots which I attributed to too much moisture.

Striking cuttings has generally been very successful with all the above species tried so far.

Most losses occur in the pots after removal from the greenhouse.

Experiments with potting mix, watering and pruning are ongoing.

#### **Propagation conditions are as follows:-**

Hothouse with 5 seconds mist each 15 minutes in warmer months reduced to 4 sec/20 minutes from may till august.

Mix: Coarse river sand with approx. 10% peat added and 5% perlite

Cuttings dipped in purple Clonex for 5 seconds; others for up to 30 seconds with no noticeable difference in results.

50 mm square tubes held in poly fruit boxes with a coarse sand bed"

#### **Species cultivation report.**

Darren gives the following species report prepared prior to last summer. After sustaining some summer losses however he included a later update, (March 02), of species that continue to do well. I have noted these later comments in smaller, bold print after each species where applicable.

*V. huegelii v. decumbens*. 100% strike rate resulting in 9 plants. Experimenting with various watering regimes whilst being held in pots resulted in several failures. Watering daily during spring/summer was fatal. Weekly watering was better although the mix appeared to be very dry after 2-3 days. condition of all deteriorated after removal from hothouse. Several planted in varying conditions, spring 2000, all failed within weeks of planting. Of three planted autumn 2001, 2 failed. One, in moist clay loam survived, although with some leaf drop.

*V. fastigiata*. Three plants resulted from early material and three from later batch. All remained healthy. Two planted spring 2000 from the first lot are looking healthy and growing steadily in clay loam amongst rocks with afternoon shade and some shade from the house in winter.----- **Continue to do well.**

*V. drummondii*. Two plants; 50% strike rate. One planted in conditions as for *Vert. fastigiata*. in spring 2000 put on such good growth that several cuttings were taken in April with 2 further plants resulting. One planted in drier sandy conditions, autumn 2001, survives but with less vigour than the former.-----**Doing well in heavier conditions near house.**

*V. densiflora v. densiflora*. Seven plants. All thrived in pots with some flowering. Planted 3 spring 2000. One in an elevated (40cm) sand bed put on good growth whilst being watered twice a week but succumbed in late december during a 2 week absence. One other in dry clay loam did the same but with less growth after planting. One in more moist conditions as for *V. fastigiata* remains healthy despite some leaf drop in late summer. In autumn 2001 I tried again in the (very) dry clay loam and this one is looking healthy although I plan to help it with some watering over summer-----**One only continues to do well; in dry sand.**

*V. densiflora v. cespitosa*. 2 plants, one failed in pot, 1 planted spring 2000 also failed, but I think autumn planting will be more successful.

*V. staminosa subsp cylindracea*. 3 plants, 1 died in pot. One planted spring 2000 in elevated clay loam with some moisture. The root development was minimal and the cutting

was small, but I felt it would be better in the ground. It put on some growth, but died in the heatwave conditions of Jan/Feb/. Another planted in elevated sandy conditions in April 2001 looks healthy with some new growth after rain.

*V. pennigera*. 5 plants grew on vigorously whilst being held in pots. 3 planted in conditions from dry sandy to moist clay loam. Only failure was in dry raised (40cm) sandy bed, planted spring 2000. Others growing strongly.-----**Continue to do well.**

*V. attenuata*. 7 plants, gradually deteriorated after removal from hothouse. 2 failures in pots. 2 planted spring 2000 failed. 2 others planted autumn 2001, 1 in moist clay loam and 1 in raised sandy conditions, dropped leaves but are showing some new growth. -----**One surviving in pot.**

*V. acerosa*. 4 plants appeared to deteriorate after removal from hothouse. One surviving in a raised sandy loam bed planted autumn 2001, although minimal growth since planting

*V. minutiflora*. Unable to maintain in pots despite various watering regimes. Possible problem with mix?

*V. longistylis*. Two plants growing since 1998. One in dry area with some root competition and one in morning shade with some subsoil moisture, have both flowered and remain healthy, although dropping leaves in late summer.-----**Continue to do well.**

*V. plumosa v. plumosa*. Doing well in several locations-----**Continue to do well.**

*V. plumosa* (Compact form ex Max). Propagated several but they don't seem to like the conditions here, nor are they thriving in the pots; may be another mix problem. Holding several in pots in the hope of planting autumn 2002.-----**OK once in the ground.**

*V. chrysanthella*. Several doing well but original plant has become leggy. Pruning suggestions?-----**Continue to do well.**

*V. monadelphica v monadelphica*. Performed OK for about 2 years despite strangled root system. Plant, (sourced from Victorian nursery), flowered, then gradual deterioration. Did not recover."

Darren asks:- "Is there a system within the group for cutting exchange, as he would like to try more species?"

The following is from my reply to Darren's letter.

I was very pleased to receive your comments which, I am sure, will be of interest to members generally. They will be used in the next Newsletter

In the meantime I will try to answer your questions, in the main, from my own or from local experience. Perhaps some other members of our group may be able to contribute here or improve on my answers to fill in some of the gaps? I think it may also be appropriate to include some thoughts on plant establishment in the next Newsletter, as they could well be of general interest and might also encourage further member comment

#### **Rootstocks for grafting**

I cannot comment on the suitability of *Homoranthus* and *Calothamnus* except to say that I would have expected the former to be acceptable, as it is very close to *Verticordia* in the Myrtaceae genera. *Thryptomene* (I believe sp *saxicola* or Paynes Hybrid), was used successfully by Peter Abel when he was working at the Royal Botanic Gardens, Sydney, in the eighties. From my memory the scion used was *Vert. chrysanthella*, which, at that time, before the genus revision by Alex. George, was included with *V. chrysantha*.

Doug McKenzie found *Darwinia citriodora* satisfactory for many species, particularly many of the narrow leaved ones. As a garden specimen my experience with it is that, while tenacious and hardy, it can require a season or two to establish sufficiently to maintain itself in vigorous condition through dry seasonal conditions. As a rootstock for grafting however, perhaps additional hand watering may be desirable?

Where incompatibilities did occur Doug found *Chamelaucium uncinatum* much more suitable. From my records I have you joining the Study Group during 1998, so I have enclosed copies of Newsletters 22 and 28, issued prior to that date, which you may find interesting in this regard.

#### **Growth hormones for grafting**

I am afraid I can't contribute anything useful on this subject or after-care with same but I would be interested to have your more detailed comment. (Particular hormone and how applied?).

#### **Potting on and after-care.**

I have had some very poor results after potting on in recent times as you would have noted from my Newsletter comments. The recent N/L included a comment from Pat Moyle to the effect that she had found only one commercial mix in W.A. suitable for *Verticordias*. In the recent N/L I referred to an earlier potting medium I found much more successful, namely merely quartz gravel. After experimenting with many different formulae for mixes as well as a variety of commercial mixes, I am of a mind to revert to this plain gravel mix.

I tend to agree with your statement that plants should be put out into the ground early. I adopted this practice earlier on, with considerably more long term success than I have enjoyed of late.

The following more detailed comments regarding this gravel mix might also answer some of your later questions.

The size of pot, I used for staging, was 150mm deep x 75mm diam. at top. Cuttings were generally potted up soon after some root development. Before potting up the cuttings were taken off the bottom heat for a few days while still being subjected to the occasional misting, automatically controlled by a mercury switch in conjunction with a gauze leaf. (On occasion also, with favourable seasonable conditions, struck cuttings were placed directly into the ground without potting up. (See later comment re this procedure)

Glasshouse staging. Potted specimens were generally held in the glass house until approach of planting time. For the first week or so they were placed on a south bench, and then transferred to the warmer north side. As they progressed they were protected from misting by placing below a north bench and hand watered only as appeared necessary.

Planting out. Generally planting out was done after specimens made vigorous new growth but before the roots had coiled at the bottom of the pot. Planting was done throughout the year, but summer plantings required a little more detailed attention.

Before actual planting they were sunk into the soil, while still in their pot, for a few days, or sometimes more, depending on weather conditions. Generally milder conditions were selected for this staging, but under very hot or dry conditions, while still in pots, they were watered as seemed necessary.

Because of the open nature of the potting gravel, special precautions were taken at planting out. The specimen was firstly watered in the pot and allowed to stand for 1/4 - 1/2 hour, until the water had thoroughly drained, leaving the gravel just damp. At this stage it held together reasonably during removal from the pot. On the few occasions when the gravel did actually collapse, bare-rooting the plant, very little serious effect on plant establishment occurred.

After planting, specimens were protected with a bell jar made from a 2 litre wine flagon with the bottom removed. Initially the screw cap (perforated) was left in place. As the plants progressed the cap was firstly removed, (during a mild weather spell). At a later stage, again under mild weather conditions, the bell jar was removed completely.

During this bell jar staging little watering was required, but when it seemed necessary it was done without lifting the jar. The water was then actually directed to the soil by the jar at its perimeter, leaving the plant stem region much drier. This tended to give some

protection against collar rot during summer/autumn and at the same time tended to encourage roots to forage further out

Under both hot and cold conditions the bell jar had the effect of modifying temperature extremes. This of course would be readily apparent under cold or windy conditions. On very hot summer days however the inside face of the jar was found to be considerably cooler than the ambient temperature outside, because the air inside was expelled through the top and replaced with cooler and moister air through the soil. A gravel mulch applied at planting tended to keep the soil surface from crusting and hence assisted the above air transference, and again contributed to collar rot control.

In later establishment following removal of the jars, watering, if considered necessary, was applied on days when the soil surface could be expected to dry quickly. In summer it was always applied early morning, again as a collar rot control measure. Later watering would have tended to maintain moister surface conditions over-night, increasing this hazard.

#### **Plant loss.**

You mentioned your failure, invariably, of *Verticordias* planted in the spring and also that there was no sign of rotted roots on any of the dead plants. I would suggest that in examining root systems of failed plants there are a number of useful observations which can be made.

Had the roots been allowed to develop during the pot staging period with coiling or other malformation due to restriction?

Was the root development predominantly spreading or deeply penetrating, either of which might suggest that the soil type and hence possibly the drainage, in situ, may not have been the most appropriate for the particular species?

Were both the leader and the fine root systems intact? If so, I would agree that root rotting could be ruled out.

If the fine roots are intact and development predominantly of a spreading nature and the top soil stratum open or light, excessive drying may be a hazard under some seasonal conditions. In such cases plant loss might be expected to follow a gradual decline as the soil dries out over an extended dry season as recently experienced. If the specimen is at a juvenile stage, the use of a bell jar as above, can be of assistance during the first summer. In the last Newsletter I referred to losses in my garden of recent times and suggested that these may have been influenced, not only by unusually dry seasonal weather patterns, but by my own practice, with some species, of concentrating on drainage provisions.

The other and most likely cause of failure in our eastern climatic zone is attack by one of the various collar rotting pathogens, resulting in destruction of the cambium layer at or near ground level. Examination by breaking the stems and roots will indicate a gradual change in colour of the sapwood from greenish towards extremities to brown or grey at ground level. As above the fine roots in such cases appear healthy. Obviously such examination must be done reasonably soon after plant loss before the fine roots have had time to break down naturally. Summertime plant loss could be expected to occur quickly in such an affected plant, during several days of excessively hot dry conditions. I have had *V. huegelii* v. *decumbens* fail from collar rotting above soil level when very favourable growing conditions have prevailed in the early growth stage producing dense lush new growth.

It should be cautioned here that some species may defoliate on occasion, giving an appearance of loss, but may recover later under different seasonal conditions.

#### **Verticordias in shade**

I do not have a lot on growing in heavily shaded conditions. One exception however is *V. plumosa* var. *plumosa*, which did very well at Baulkham Hills and also in a Melbourne suburb. Despite this I believe the growth form suffered to some extent in comparison with full sun situations. Parts of my garden receive less sun than I would have wished, particularly in

winter, and some species, though surviving, do not perform as well as corresponding plants in Ted and Pat's garden, with better sun exposure.

### Cuttings

At the present time things are a little difficult in this regard. As noted in the last Newsletter, Pat Moyle, who has been of tremendous help to me in the past, has had to sell her Mandurah property. I am now finding it difficult to come by the range of species I had earlier and it becomes a case of picking up the odd species when I can. As you would have noticed in the recent Newsletter my range here has taken quite a knock in recent times. I have bought a few from Phil Vaughan at the Mt. Annan plant sale but although they have looked very good they have all failed after a season. I believe Graham Eastwood's approach might be a better way to go with these.

I hope the above diatribe throws some light on some of your questions. As you will have noted, you are not alone in regard to potting mixes and establishment. I do feel strongly however about the use of bell jars, which have helped particularly to overcome difficulties with spring and summer plantings.

In the February Newsletter I included details of **Graham Eastwood's** planting and cultivation procedures in his Bateman's Bay, NSW, garden. In a recent telephone call he commented again on the difficult seasonal weather in our region of recent times. Two surprising losses occurred during mid autumn after plants had appeared to have been well established; viz. *V. attenuata* and *V. cooloomia*.

Graham is not alone in regard to recent losses of these species. **Ted Newman**, Dural, reported losing *V. attenuata* following the torrential late summer rain, which we had vainly hoped might presage the breaking of our drought patterns.

I also lost two mature specimens of the same species. Another probable loss in my garden is also *V. cooloomia*. A mature specimen previously deteriorated severely during autumn but staged a recovery from late winter so hopefully the wait and see principle may work yet again.

On the positive register Graham is pleased to report that his *V. grandis*, which has been the subject of a deal of previous N/L comment, has come through the seasonal weather and the last rather heavy pruning, very well. *V. fragrans* and *V. chrysanthella* are also looking very good at the moment.

A note from **Dick Mills** (3/02), Banjup WA, corrects an error I made in N/L 36, page 2, concerning a list of grafted specimens along his drive. My mistake had occurred when, in transposing I had skipped a line in the centre of his list.

Line 5 should read *V. albida x V. chrysostachys*

Line 6 is incorrect and should show *V. eriocephala* and *V. serotina* (pink form) as separate species.

My apologies to Dick for this remission.

Dick goes on to comment on N/L 37:- "Graham Eastwood's pre-planting technique sounds good. At least he would have no curling, strangulated roots to affect his plants down the track.

From my own experience, when potting up struck cuttings, they seem to establish better roots if left to harden off before potting up and then potted into a low fertiliser mix which encourages them to search for nourishment.

Re *V. fragrans*, blown over in my garden, the branches were actually split off from the main bush but remained attached, probably by less than half their thickness and although prostrate on the ground, have continued to flower each season, newer growth growing vertically from the horizontal branches."

Dick referred to my comments in N/L 37 regarding chlorosis. He questions if this, after the excessive summer rain could be related to leaching of nutrients from the raised garden beds? In the case of my small plant of *V. muelleriana* subsp *minor* I acted upon his suggestion trying various things such as chelated iron, a little fertiliser and drenching with a seaweed extract solution; Sesol, but to date the specimen has not responded. I am hoping it might show some improvement with the advent of warmer springtime conditions

The following comment from him regarding *V. huegelii* var *decumbens* is worth repeating, and seems to confirm my experiences with the species:- "it grows naturally in clayey soil on granite in the jarrah forest, where it goes into intense dormancy during our dry summer and revives quickly when the winter starts"

He says finally:- "My own garden is still patchy; some live, some die. I have been concentrating more on grafting the last year or two, intending to make sure I have the species available to propagate when I so wish"

In recent Newsletters I have mentioned some difficulties I have experienced in producing satisfactory development of struck cuttings after potting on. One factor I have questioned was the quality of our water supply. Another has been the potting medium used.

In May I was very pleased to receive a parcel of cuttings from recently joined Study Group member **Merrilyn Rossington**, of Scone, NSW, the species being *V.s fragrans*, *galeata* and *cooloomia*. The cuttings were all growing so strongly that I had to enquire further as to their cultivation treatment, particularly the last named, which has caused me some concern of late, as noted above.

She advised me that this plant is being maintained in a rather large pot rather than in the ground, as she is currently growing an extensive range of other Australian species and space does represent a bit of a problem.

On the subject of water she said that she only uses tank water on her potted specimens, as she has found the town water to be very unsatisfactory, resulting in rapid plant demise, although those growing in the ground seemed to be able to cope with it

She sent me the following details of her striking and potting on techniques which I find of particular interest in light of my own experiences, as referred to above:-

"The peat mosses I use for cuttings are 'Killarney' peat (from Amgrow; Big W stocks it), and Beresford Park German peat. All others I have tried have been too stringy and fibrous. My recipe is 1 part moss, (equal parts Killarney and German), 1 part clay sand and 1 part river sand. I have tried using coir peat bricks and mixing with sand, but most cuttings die very quickly in it..

After taking my cuttings I prepare them by stripping about 2/3 of the foliage, then standing them in a solution of Multicrop Plant Starter for about an hour- Active ingredients .05 gm/litre indole acetic acid, .05 gm/litre naphthalene acetic acid. I then dip the stems into Rootex cutting powder, (3 gm/litre indole butyric acid), leave approx. 15 minutes and plant in prepared hole. I have half a dozen sticks to make sure I get the right sized hole.

For containers my mixture is 1/3 Amgrow Native potting mix, slightly less of Franklin's potting mix and the remainder, (slightly more than 1/3), made up of equal parts loam, clay sand and river sand.

#### FINANCES

Credit balance 30/6/01	\$361.70
Receipts 1/7/01-30/6/02	171.00
Expenses 1/7/01-30/7/02	172.31
Nett Debit	1.31
Credit balance 30/6/02	\$360.39

**DONATIONS**

The following donations are gratefully acknowledged:-

Darren and Louise Allen-----\$2.00  
 SGAP Canberra Region-----2.00  
 SGAP Queensland Region----10.00  
 Gordon Brooks-----8.00

**FINANCIAL MEMBERSHIP at 30/6/02****New South Wales**

Peter Olde, Illawong  
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 Graham Eastwood, Bateman's Bay  
 Ted Newman and Pat Kenyon, Dural  
 Gordon Brooks, Castle hill  
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Members are reminded that \$3.00 subscriptions for period 2002/2003 are now due.

Prompt remission would be appreciated. A red tick  indicates you are **considered financial until 30th June 2003**. This takes account of some members who have made advance payments, reciprocal Study Group membership, or recognizes special contributions (other than donations), which have been separately acknowledged.

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