SOCIETY FOR GROWING AUSTRALIAN PLANTS.

VERTICORDIA STUDY GROUP.

ISSN - 0811 - 5346.

NEWSLETTER NO. 4 - AUGUST 1985.

MEMBERSHIP.

The following additions as ACTIVE members of the Study Group are very welcome:-

Mrs. Elizabeth Berndt, 226 Grove Road, Lesmurdie, W.A. 6076.
Mr. Alex George, I3 Hawkesbury Cresc., Farrer, A.C.T. 2607.
Mr. Tony Clark, Nellie Nursery, 46 Randell St, Mannum, S.A. 5238.
Mrs. Jeanette Graham, RMB I305, Strathmerton, Victoria 364I.
Wildflower Nursery, Wanneroo Rd, Wanneroo, W.A. 6065.

The following additions to the PASSIVE membership list are also gladly noted:-

Ryde College of T.A.F.E., 250 Blaxland Rd, Ryde, N.S.W.2II2.
Miss Jo. Walker, Federal Study Group Co-ordinator, S.G.A.P., I6 Blundell St., Queanbeyan, N.S.W.2620.

I have regrettably to note the resignation of Kevin Stokes. Kevin has embarked upon a University course which will preclude him from devoting any time in the forseeable future to the pursuit of Verticordia problems. We wish him well with his projected studies.

In joining the Study Group Tony Clark says:-"I intend to become a very active member."He follows this up later in his letter with a piece of philosophy which appeals to me very much as it echos my own feelings as to the approach our members should adopt. He says:-"I personnally feel Verticordias have a lot of potential for general garden use, not just for enthusiasts. The old saying that I didn't have any luck with that plant is a fallacy. Give a plant what it requires,(the trick is to find out what that is), and it will grow well. Bad luck in gardening only applies to things such as kids stepping on plants and people running over them with lawnmowers etc..'

Tony operates what he describes as a small nursery in which he carries, though sometimes in limited quantity among the I200 or so Australian Plant species handled, many lesser known varieties.

He currently has good stocks of 8 species of Verticordia and limited quantity of I6 others.

He has outlined to me details of his nursery procedures and with his permission I propose to pass on to you a number of considerations that could have special significance, not only for the propagation, but the successful garden growing of Verticordias.

Although the subject of plant propagation has received much attention in S.G.A.P. publications, I believe when you read Tonys comments later in this newsletter on the striking of Verticordia grandis, you will agree there is still much to be learned. He admits that many combinations of circumstances will achieve a degree of resul but to keep strike rates of all species above 90% requires attention to detail at many stages.

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THE PASSING OF ROSS DART.

Those of us who have been fortunate enough to have seen the work done for Australian Plants in Casterton, South Western Victoria by the late Ross Dart will be very saddened by news of his death. His place will not easily be filled.

We extend our deepest sympathy to his widow, Helen.

VERTICORDIA STUDY GROUP SUBSCRIPTION.

I must draw attention to the fact that some members have, as yet, neglected to forward their 1985 $ 3.00 subscription. If a cross is marked here it indicates that your membership renewal has not been received and I can only assume that your interest in this study project has not been maintained.

I will therefore be reluctantly forced to discontinue issue of the Newsletters.

If my assumption is not correct I trust you will respond promptly as the Study Group needs your continued active support.

Cheques should be made payable to myself or the Verticordia Study Group. Please note the changed address at the end of this Newsletter.

CHANGE OF ADDRESS.

As many of you were aware Government requirements for roadwork forced me to face relocation from my property at Mount Kuring-gai.

My new address at Cherrybrook appears at the end of this Newsletter as noted above.

You will doubtless appreciate that this has represented a setback to what I have been striving to do with Verticordias at the personal level. Some well established garden plants have had to be sacrificed which will interfere with longevity records.

Most of this year has been taken up with preparations to move domestic establishment at the new address and preliminary work on the new garden.

The property was selected however to provide what I hope in the long term, will prove an advantage to my "Verticordia program".

There is much better availability of full sun areas than previously, the basic soil type is heavy brown loam which I have been anxious to personnally test Verticordia species in, and as the garden will be developed completely from "scratch" I will be able to allocate what I believe are the most favourable areas for this purpose.

DONATIONS.

The following donations in excess of the 1985 $ 3.00 nominal subscription are very much appreciated and will certainly be put to good effect:-

DONATIONS (CONTINUED).

Brian and Judy Crafter:-	$ 27.00
Elizabeth Berndt:-	$ 3.00
Phyllis Dadswell:-	$ 2.00
S.G.A.P. Victorian Region:-	$ 7.00
S.G.A.P. Maroondah Group:-	$ 2.00.
S.G.A.P. Canberra Region:-	$ 2.00.

TAXONOMY.

In this field I would like to make special reference to the participation of Alex. George and Elizabeth Berndt as active members of our Study Group. With the work they are doing on the revision of the Genus we are very fortunate to have such close contact at this level.

Alex. informs me he is well on with the work of revision although with the number of new species that have come to light, the preparation of descriptions is proving a more complex task than was previously expected.

The drummondii complex in particular still requires some field work and the difficult question regarding the generic position of wilhelmii still poses a problem. To quote his words however:- " the yellow group is now starting to make sense".

Elizabeth Berndt has drawn attention to several inaccuracies in Newsletter No. 3 insofar as the current state of the art applies. She says " the name V. preissii is not valid for our use because the plant is thought to be a variant of V. acerosa, but until this has been published it would not be correct, as I had stated, to say the name was not valid."

Of the chrysantha and grandiflora groups she said my comments " made it sound as though the bracteoles were the distinguishing feature, whereas the arther appendages, (grandiflora having distinct horns), are the main difference. The bracteoles are still a guide but secondary".

In my drawing of the drummondii flower petal she says " the fringing looks more like long denticulations than a fringe and is misleading though sometimes there is variation. Usually the fringe is longer and more hairlike at the ends".

Further to the matter of confusion over the name V. preissii Peter Bailey has also sent me some historical background which indicates differences between the works of early botanists Joannes Schauer and George Bentham. As Alex. George is delving into these matters however there seems little point in me including such information in the Newsletter at this stage.

AIMS AND ASPIRATIONS OF THE VERTICORDIA STUDY GROUP.

At risk of being accused of repeating the obvious, I think it may be appropriate at this stage of our endeavours to briefly re-state what our Study Group is aiming to achieve. This I hope will encourage all members to contribute whatever they can, be it ever so little, towards our bank of knowledge and documentation of the various species under differing conditions.

I hope the attitude :- What can I do for the Group ? will prevail over:- What can the Group do for me ?.

Our aims again are:-

To document best practices for the garden establishment of the various species of the genus under a full range of soil and climatic conditions.

To find the best ways to maintain stock plants in containers in good condition over the long term.

To be able to nominate the best procedures for propagation by cutting with particular emphasis on the traditionally difficult spp.

To be able to nominate best procedures for propagation from seed of as many species as possible.

To explore and document other propagation means such as Tissue Culture, Grafting etc..

To keep members advised by means of the Newsletter, of the latest Taxonomic information available and hence be in a position to give all species we are growing a legitimate name.

CONTAINER GROWING.

Dennis Margan reports the loss of many of his stock plants during this recent autumn following a rather wet spell of weather. They were in large containers and had done well for 2 years or so. Root examination suggested that development of inadequate drainage conditions over time was the most likely cause of the trouble.

I have found a few species particularly sensitive at this time of year under similar weather patterns.

Tony Clark has found that very few garden soils are suitable for container growing in the long term. He finds continued watering compacts the surface reducing water penetration.The soil body then dries and shrinks from the edge of the container allowing water to run across the top, down between the soil and the container wall, and hardly wet the soil ball at all. Plants are then put under stress, shed leaves and assume a sparse look.

For long term support of plants in containers he prefers a potting mix containing at least 60% organic matter which converts to usable plant food, holds moisture between waterings and slows the leaching of fertilisers.

I recall Pat Moyles comment that she uses a mix containing a high percentage of stone but with at least some bush sand.

She waters frequently by splashing the bottoms of the pots which stand on a brickpaved area, rather than by overhead watering.

I have not received a follow up report indicating longevity performances but wonder if she has solved the problem. When I saw the collection last year the plants were in very good condition.

Some plants I have seen at the National Botanic Gardens, Canberra were also in much better condition than I have been able

to achieve to date. They commented that they find plants in containers require at least some added fertiliser each year. They use I8-2.6-I0 nine months release Osmacote.

VERTICORDIA GRANDIS FROM CUTTING.

Tony Clark has provided some enlightening comment in continuation of discussion on this very interesting subject.

The cuttings he used were new tips about 4 inches long.

The leaves were carefully stripped for half their length and a fresh cut made on the diagonal just below a basal node. In stripping the leaves he uses a sharp pair of fingernail scissors taking care not to strip bark from the cambium.

The prepared cuttings were stood in a solution containing 4 drops of Formulae 20 per 500 ml of rainwater for about I2 hours.

Half the batch were dipped in Seradix 3 (800 p.p.m. IBA) and the other half 3500 P.P.M.IBA. The above dips were in powder form prepared by himself and cuttings weredipped to the full depth of the stripped sections. This is a matter he feels quite strongly about and is contrary to recommendations by hormone manufacturers who suggest tip dipping only. He finds many plants will produce roots even between nodes for the full length of the treated portion thus producing a more robust plant with a root system like a seedling.

The striking medium was a rather course rounded quartzite sand.

This was treated with one sachet of Benlate and 2 heaped teaspoons of Ridomil to 2 gallons of water, the solution being mixed with the sand in a concrete mixer to form a stiff paste.

Cuttings were tubed at 6 weeks after setting. Temperature of the heatbed was approx. 25 degrees C at the time.

Of those treated with Seradix 3, 60% made some roots and a further 20% showed swellings at the nodes which indicated the hormone was active on them. The swollen ones were tubed as though they were rooted and have since made roots in the tubes.

The cuttings treated with stronger hormone made good roots in all cases without being burnt by it.

Tony adds these final observations:-

Verticordia grandis appears to have a corky bark which is fairly thick. This possibly either inhibits hormone penetration or makes it difficult for roots to push their way through at other than nodal sites.

He also admits that the material used was in top condition from obviously vigorous plants and that this must also have been a factor in the success he achieved.

FUNGAL ATTACK ON FOLIAGE.

Earlier Newsletters have highlighted the necessity to find control measures for what I consider to be, in Sydney at least, one of the main hazards to the satisfactory growing of Verticordias. I refer to the mildew like attack on the new growth which has such a debilitating effect on a number of species that complete collapse of the specimen frequently occurs.

In Newsletter No. 3 I referred to a White oil treatment suggested by Geoff. Mountstephen and as indicated then I avoided the use of other more potent chemicalfungicides for the whole of the last summer season in order to give the White Oil a thorough test.

The result was very encouraging with good results on most species affected. The exceptions were nitens and grandiflora where I found the fungus a little more persistent. As other matters occupied much of my time, as noted above, I am not yet in a position to form a conclusive opinion on the treatment.

Dennis Margan reports some success with the treatment also. I will be very anxious to get follow up reports from other members who have tried it with either positive or negative results.

The other (apparent) fungal hazard still requires understanding. I refer to the sudden debilitation and if not arrested, complete collapse which has been suggested in earlier Newsletters is botrytal related.

I have used the word apparent above because I am not as yet sure that a separate fungus is the culprit. Verticordia mitchelliana in Sydney and coastal areas of Victoria has been particularly vulnerable.

I did have a partial attack on V. grandis in late summer, which responded quickly to Benlate treatment. I was not so fortunate with V. ovalifolia and lost the plant. Vert. forrestii is another that suffered but is currently showing a little tip vigour and I am hopeful it will grow out of it.

It is perhaps significant that the danger time for this hazard seems to be in late summer or early autumn with falling temperatures.

Tony Clark has included in his notes to me, some observations which could provide alittle more understanding of the problem.

He says"the problem has a lot to do with atmospheric moisture and temperature being right for spore germination of the infecting fungus. He confirms from his experience that most fungal problems on foliage occur in falling temperatures. He says" in mid summer our fungal problems disappear when air temperature is constantly above 26 degrees C, regardless of humidity. In our polyhouse we can grow ferns and desert plants side by side and for about 5 months we do not need to use any above ground fungicides".

He adds:-"In our experience there are not many fungal attacks on foliage which cannot be controlled with Benlate, Zineb or copper sprays".

He uses Benlate in the hothouse on Vert.grandis and V. stamin

He finds V. grandis shows a tendency to shed leaves when the plant becomes cold and wet but retains them when warm and wet. I ha noted this same characteristic with both potted specimens and cuttings.

I would like as much feed back as possible on this matter so that our understanding is increased sufficiently to make an objecti approach to the problem. For instance we need to know if plants grown in a warm full sun situation are as vulnerable as those given partial shade, other climatic considerations being equal.

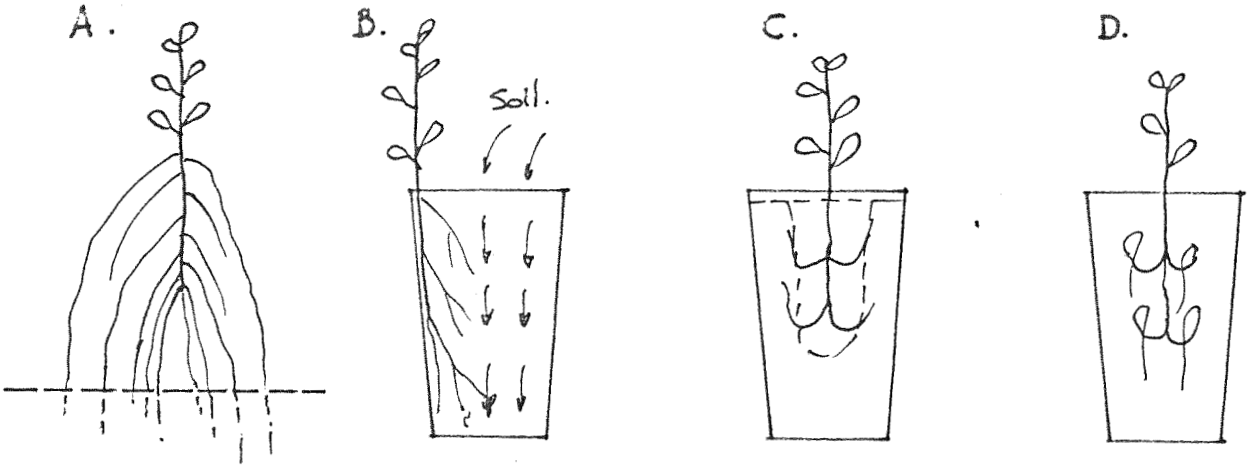
POTTING ON.

In referring again to comments by Tony Clark, I believe several matters deserve special mention.

The position frequently arises where struck cuttings produce roots which extend out from the bottoms of the propagation tubes. He finds it best to allow them to remain in the propagation area with the roots exposed for some time after disturbance so that the roots will air prune themselves and branch higher up in the tube.

The process of potting on in both commercial nurseries and by plant growers generally is one which has worried me for some time. Bad procedures are generally not detected until a post mortem is carried out on the root system of the dead plant.

The following sketches seem to me very much to the point and indicate what Tony considers are correct and incorrect procedures.



"A". Indicates excess roots cut off before tubing.

"B". Indicates correct tubing technique.The plant is held to one side. Soil filled in straightens the roots which then branch and grow through soil ball.

"C". Indicates wrong tubing technique. Tube is filled first and plant dropped into hole. Roots are bent upwards.

"D". Shows the consequence of "C". Roots grow downwards forming knots which result in plant strangulation with reduced lifespan similar to plants that have been very pot bound.

PLANTING OUT.

Another matter which has caused me great concern is the question of how best to handle plants which have developed secondary root coiling in pots, a syndrome which is all too common.

Tony suggests the coiled root sections should be cut away and the plant and pot stood in a Formulae 20 solution for 6-12 hours.

The foliage should be cut back slightly(to balance root pruning), and the plant put in the ground with no further root disturbance.

He has found pot bound specimens thus treated have usually made new growth and proceed to grow on satisfactorily.

While I have at times successfully adopted procedures closely parallel to the above in transferring specimens to larger containers I have not had the the same degree of success in transfer to a garden situation and I still have some reservations in this case.

Perhaps the answer lies in follow up control in regard to watering unless very favourable weather patterns prevail in the post planting period.

I think maybe I may have been guilty of the common failing of planting such specimens as I would have for non root bound ones, and after a time of initial growth response, left them mainly to their own resources. Perhaps other factors such as time of planting in relation to a species natural growing period and seasonal weather pattern for the area concerned may also be significant factors.

Perhaps also we are overlooking that four letter word LUCK.

You will recall my earlier comments in Newsletters on the use of inverted flagons or bell jars with juvenile plants in an effort to short circuit this problem. Tonys comments then have interested me greatly and I would welcome more feedback from your various experiences. Adaptability of particular species may also prove to be a variable.

In closing this subject for <u>this</u> Newsletter, may I emphasize again that the operable word is LONGEVITY of establishment.

<u>MEMBERS COMMENTS AND QUERIES</u>.

<u>Mrs. Leon Hopwood</u> asks if anyone has done work on Verticordias with fertilisers. Tony Clark finds slow release low phosphorus ones satisfactory on many natives including this genus. The National Botanic Gardens, Canberra use similar in their containers, see above I have had improved growth response with container grown plants of Verts. brownii and polytricha which had started to develop starved appearance.

<u>Frank Schubert</u> noted that last summer in Victoria was rather a non event with cold and dry weather. This adversely affected his Verticordias. In Newsletter NO. 2 I noted the adverse effect in Sydney of unseasonably cold summer weather periods and the apparent tolerance or even relish of warm humid spells. In this Newsletter under FUNGAL ATTACK ON FOLIAGE Tony Clark has provided some comment which seems to provide a very good answer to this phenomenon.

<u>Richard McFayden</u> reports that both his Vert. plumosa and mitchelliana are still surviving, but while the plumosa is still a good plant the mitchelliana has become very scraggly and has not flowered. Both these plants grow in introduced deep light sand with vegetative mulch and I am pleased to have his follow up report on their progress.

Jeanette Graham reported that her Verticordia plumosa had not been doing well in built up sandy soil. On reading my earlier comments on this species she transplanted it to a heavier soil bed which was not so elevated and is now pleased to note that it hasn't looked back in the new position.

Peter Olde reports a number of species doing very well. As his garden conditions were different in some respects to others I had observed I took the opportunity to make a personal inspection.

The Verticordias have been planted in built up sections of the garden adjacent to his swimming pool where the natural ground slope is steep with sandstone outcroppings. Railway sleepers have been used to retain up to ¾ metre of yellowish sandy loam from which most of th humus had been prewashed.

A little cow manure had been dug in and a little Osmacote had been distributed over the surface. A general mulch to approx. 40 mm had been used and comprised rounded basaltic gravel of about I2 mm max. grading as supplied to the building trade for concrete making.

Full sun exposure for much of the day provided a reasonably warm microclimate.

His Verticordias had been planted for about a year and all had made vigorous growth. Verticordia picta however was particularly good and about to break into heavy flowering. This particular specimen had been held in a container since I982. As I have noted the species tends to produce a very deep root system, it must surely have become root bound prior to planting. I will be very interested in the future performance of this plant. To date I feel it has reacted well to the availability of deep free drainage.

Of the others I think Verticordia oxylepis warrants special mention. Although I have found this species free from trouble except for attack by spider mite, The growth rate of Peters specimen has exceeded what I have been able to achieve.

A yellow flowered species about to break into flower intrigues me as about 90 % of the foliage is of the short leaved form common to many of the yellow Verts. in their natural habitats. This particular plant was grown from seed and although I am guessing, I will be surprised if it does not turn out to be chrysantha var. preissii. which I grew for many years in my earlier garden at Mt. Kuring-gai and also observed, on occasion in other S.G.A.P. gardens. In all these cases however very little if any of the stubby preflowering leaf form was evident although the profusion of flowering was not affected. I am not making any suggestion that the leaf form has any cultural significance except that I would like to know the factors influencing same.

I mentioned Peters interest in grafting of Australian plant species in Newsletter No. I. His garden has very many success stories with grafting of Grevilleas, the genus of which he is Study Group leader. To date he has not been able to pursue this subject with Verticordias to any extent due mainly to lack of suitable material of the more desirable species. He is very confident however, that when he has access to same he will achieve success comparable to that noted above.

Colin Thorleys Verticordia plumosa is looking as good as ever. I referred to it in Newsletter No. 3 as a specimen which received very little sun. Apart from a number of garden plants including a very good Vert. densiflora Colin is achieving some success in building a collection of Verticordias in large containers.

FLOWERING PERIODS.

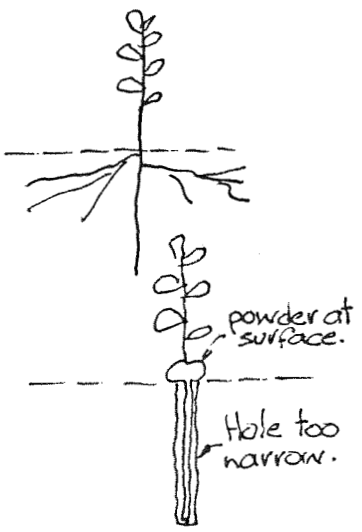
Verticordias must surely have great potential as a source of garden colour during midsummer when so many of our plants are going through a "quiet" period. I noted the following flowering periods this year in my stock plant collection:-

V. chrysostachys	6 weeks from early January.
V. densiflora	8 weeks from early January.
do. Southern form	7 weeks from early January.
V. lepidophylla	9 weeks from early January.
V. sp. aff. lindleyi	IO weeks from early January.
do. Robbs crossing form	9 weeks from early January.
do. form ex Victorian garden	8 weeks from mid January.
V. minutiflora	8 weeks from mid January.
V. sp. aff. minutiflora(dull red)	5 weeks from early February.
V. pennigera E. MT. Barren form.	9 weeks from early January.
V. drummondii form.	8 weeks from mid January.
V. pritzelii	IO weeks from early January.

As the weather last summer was not particularly rigorous in Sydney it would seem reasonable to infer that preflowering growth and hence flowering periods are influenced more by local seasonal conditions than by the Calender. In Newsletter No 3, I noted an observation by Pat Moyle to the effect that when the occasional dry winter season does prevail in W.A. her spring flowering specimens tend to adopt waiting tactics.

TROUBLE SHOOTING IN THE NURSERY.

The following comments are again supplied by Tony Clark:-
If cuttings are rooting only at the surface.



I. Cutting medium may hold too much water. Sieve to smaller particles or use less peat etc..

2. Hormone powder may be wiped off by pushing prepared cutting into too small a hole. Make larger holes, insert cutting, and water medium back against stems.

3. Fungi may be attacking lower stems of plants. Improve drainage as in "I" above and use a fungicide-i.e. Previcur,Ridomil, Fongarid, Alliete or Terrazole.

4. Roughness in removing lower foliage may be stripping bark causing death of lower part of cutting. Pay more attention to detail in cuttin preparation.

H. Maxwell Hewett, Verticordia Study Croup Leader,
II Harvey Place, Cherrybrook,
N.S.W. 2I20.