

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

VERTICORDIA STUDY GROUP

ISSN-0811-5346

NEWSLETTER NO 28 -- AUGUST 1997

MEMBERSHIP

The Study Group welcomes new member Dick Macfarlane of "Delmore", MS/2 Mogriguy, N.S.W. 2830.

Members are reminded that subscriptions for the current year, 7/97 to 6/98 are now due. Prompt attention to same would be appreciated. The membership fee will remain at \$3.00 and advance subscriptions will be accepted if more convenient. Those who have not responded to reminders issued with N/L 27 will be considered to have resigned. It has been my desire to maintain the subscription rate at the above nominal figure since the inception of the Study Group, but this leaves very little margin above basic cost items. Our financial situation however has been considerably helped by those who have generously donated in excess of this amount and by photocopying assistance from Dennis Margan.

FINANCES 1.7.96 TO 30.6.97

Credit Balance 30.6.97-----	\$438.52
Receipts 96/97-----	293.50
Expenses 96/97-----	217.33
Surplus income for year-----	76.17
Credit Balance 30.6.97-----	514.69

DONATIONS

The following donations are gratefully acknowledged

Gordon Curtis-----	\$2.00
Cheryl Cameron-----	\$4.00
SGAP NSW Region-----	\$27.00
SGAP Queensland Region-----	\$17.00
Doug McKenzie-----	\$2.00

THE VERTICORDIA STUDY GROUP

Study Groups controlled by the Association of Societies for Growing Australian Plants have varied aims and methods of operation, so I believe it appropriate, from time to time, to restate what I consider the prime agenda for our group.

Since establishment I have stressed that our efforts should be directed overwhelmingly towards developing understanding of growing requirements, including climatic considerations for the various species of Verticordia. Unlike some Australian plant genera, where problems of establishment and maintenance do not assume major significance, Verticordias, rightly or wrongly, have inherited a reputation of being difficult garden subjects..

I am pleased to be able to claim however that we have made much progress to date and that many species can now be planted with a considerable degree of confidence. This is not to say that in such plantings, thought on matters such as soil type and structure, aspect, climatic suitability and other cultivation treatments may not be desirable. Many exotic garden plants, widely grown in Australia, also fall into this category, but this does not prevent enthusiastic gardeners from growing them successfully. If therefore you are inspired, at an Australian Native floral display or while travelling in the wild, by the undoubted beauty of our Verticordias, you should realise that a little more may be required than throwing them into a

hole in the ground and then standing back. Some gardens, for instance, may have soil or drainage conditions more appropriate to the growing of particular species than for others.

To continue to advance our agenda I would again stress the necessity for all Active Study Group members to keep me posted with their observations, not only of their positive results, but also of their less glorious achievements.

I noted recently, early comment by Arthur J. Swaby, the founder of our Society, in which he suggested the formation of Study Groups to research the "taming" of various plant genera. Perhaps it is significant that the first name on his list was *Verticordia*.

VERTICORDIA ETHELIANA-THE CONTINUING STORY

In an effort to develop better understanding of the growing requirements for *Vert. etheliana* var *etheliana*, this most attractive member of the genus, I summarised, in Newsletter No. 27, our reported experiences to date and noted my personal ambition to be able to grow and maintain it to a standard, at least comparable with plants in the natural habitat.

Members may also recall my comments in Newsletter No. 25, after visiting **Dick Mills** at Banjup W.A. during my recent trip and my being both surprised and envious of the standard of his developing garden. The following very welcome comments from him refer particularly to *Verticordia etheliana*, but also make some significant observations on general cultivation:-

"The recently received Newsletter No. 27 inspires me to make a few comments.

Re *Verticordia etheliana* var. *etheliana*

My own soil is white sand (Bassendean Dune System), and because of the extremely free-draining nature of this virtual beach sand, my plants require summer watering and probably would benefit from fertilising on a monthly basis.

It may be worth observing here that ALL plants, *Verticordia* or otherwise, require water and fertiliser to grow, or even to survive. It is only the **amount** of each element required, which changes. Roots must not dry out.

Plants in containers must be free draining and regularly watered, and because of the leaching this encourages, require regular fertilising to maintain vigour.

I would suggest that as most plants make good early growth (Ref. G, N/L 27) (possibly due to incorporation of fertiliser at planting, or due to natural elements in the soil and some early watering), the conditions prevailing at this time should be maintained.

Many of Western Australia's sandplain species grow in red or yellow sand, which have a substantial clay content, or in grey or white sand which overlies clay or laterite. These soils have quite good moisture retention properties without remaining WET except in winter. (Brickies sand may be a good substitute, as evidenced by the yellow sand pad at Moyle's, Mandurah)

Regarding frost, even at Yuna where *V. etheliana* var. *formosa* grows, frost sometimes hits the flower buds in spring after good winter growth. Frosts are usual in autumn and spring, not in winter. (Is it necessary to say lush growth is full of water and water expands at 4 degrees Celsius?). This expansion makes branches drop from Eucalyptus species, due possibly to damage caused to fibre and tissue.

Best time for planting out would be immediately prior to expected growth (Ref. A, N/L/27). This normally occurs in the winter/spring period here, or during summer if sufficient water and nutrients are available.

Fertiliser is necessary for all plants. If you grow any plant without fertiliser it probably means that the soil is already rich enough, or the plant has other means of obtaining its requirements. Freely draining sand is not rich in nutrients as they leach out. They must therefore be added frequently to encourage growth.

Finally, let me say, if you take a plant from its natural conditions, it is generally necessary to duplicate those conditions, at least to some degree, to achieve success, as with epiphytic orchids in Perth or Hobart.

We find that *V. pulchella* is better if kept dry during winter as this helps avoid the defoliation to which they are otherwise susceptible"

I referred in Newsletter 27 to my efforts on the home front, (particularly soil condition "W"), with **deep sand substrata and soil in the upper layer enriched with compost and loam.**

The climatic conditions during autumn this year in Sydney were extremely dry. In fact rainfall in April proved to be driest on record and followed a much drier than usual late summer. May also continued quite dry. During the first part of this seasonal drought I resisted any inclination to water so that observations regarding dormancy could be made.

Two specimens studied of *V. etheliana* var. *etheliana* had been planted out in late autumn 1995. As noted previously there had been alternating periods of slight growth, followed by a few flowers and then heavy defoliation, during most of spring and early summer but the plant dimensions had remained quite small. One is in a location where adjacent low shrubbery could provide some humidity and possibly tend to even out temperature extremes. The second is in an open situation. Both plants performed comparably until late in the recent summer, when the slight post-flowering growth of the second turned quite chlorotic.

After April this year I commenced artificial watering of the entire garden section, firstly at weekly intervals and then increasing in frequency to every 2 or 3 days, until by mid June, a change to wetter weather rendered regular hand watering unnecessary. With the commencement of hand watering in early May, new vigorous good coloured healthy growth started, the second plant, in the open situation, doing particularly well. Contrary to the first plant and to previous growing efforts with growth generally somewhat more erect, this specimen has grown in a rather saucer shaped form with branches radiating from the main stem at an angle of 20 to 30 degrees. By early July it measured 45 cm across, with all stems and branchlets maintaining good coloured new foliage and with heavily budded flower spikes. Perhaps it is a little too early, as yet for me to crow, but certainly this is by far my most promising result with this species.

With early to mid-winter remaining quite humid and relatively frost-free, hand watering was not considered necessary, but later in July, was again resorted to, in order to simulate, as closely as possible, winter-wet conditions. In case frosts do seem likely I have prepared a small frame to support some overhead night cover

To increase our understanding there are a number of questions which might be considered. Hopefully other members may have some thoughts or experience to contribute.

1- What is **the influence of the very freely draining substrata**? Perhaps this result confirms my comments in Newsletter 27. (In particular "P" to "V".) and confirms the desirability of such. Dick Mills' comments above would seem to support same.

2- Could it be that although it seems relatively easy to achieve some growth in the early stage, this species actually requires a **longer settling in period** than many other *Verticordias* before it could be regarded as satisfactorily established? Note the above plant is now over 2 years old in the ground. Alternatively, Dick's comments may be part of the explanation? (Reference to fertilising).

3- Is it desirable that plants go through a **late summer dormancy period** as a trigger for vigorous post-dormancy growth? Perhaps it is especially significant that in its area of natural distribution late summer and autumn is a dry seasonal period. If such a dormancy period is desirable does this relate to depth of root penetration, in that perhaps, advantageous root foraging is encouraged by the dormancy?

4. Is it merely coincidental that because Sydney has experienced **dry early-autumn seasonal conditions** this year the plants have performed better? It should be pointed out that in our more usual seasonal weather conditions in this period, root and collar rotting pathogens can be troublesome with some *Verticordia* species and watering in an effort to maintain growth can be risky. There also seems to be evidence of trouble with this species at this seasonal period of diminishing daylight hours, when lush growth induced by humid late summer conditions in Sydney, can be confronted with a sudden and extreme temperature change. Defoliation and at times complete losses have been noted.

VERTICORDIA GRANDIS

This well-known species has been the subject of many growing attempts, sometimes with little or only moderate success. When **Ernie Koch**, Matraville NSW arrived at my door recently, (May), with a potted specimen almost too tall to fit into his station waggon and carrying large and particularly good coloured foliage which I could only describe as dramatic, it was time to start asking questions.

He had grown it in a piece of 150 mm diameter PVC piping 450 mm long, fitted with a standard PVC bottom cap, drilled for drainage.

It had been planted in November 1996 from a nursery specimen, with a single stem 230 mm tall. Since planting it had branched into two stems from this point and these in turn were carrying new branchlets with very active growing tips and flower bud.

Initial treatment was to dip it into a bucket of water so that about one third of the original potting mix was washed away with hopefully, any nursery applied fertiliser.

His new potting mix was 2 parts of 'Defender' Seed raising Mix to 1 part of washed gravelly sand. 10 gms of 17--1.6--8.7 'Standard Osmacote for Native Plants' was incorporated into the mix.

Apart from watering when required to avoid complete drying out, additional post planting treatment has been:-

Approx. ½ litre 'Nitrosol' monthly, @ ½ recommended strength

Approx. ½ litre 'Plant Hormone 20' every 6-8 weeks @ 1 drop / litre.

Approx. ½ litre 'Trace Elements' every 6 months @ 5 gms/ 10 litres.

As two specimens in my own garden had long since shut up shop for the winter, I checked out the above plant in late July. There had been virtually no foliage drop or loss of colour of the older leaves which were the largest I had seen on a cultivated plant of the species. The total height was then 690 mm and there were 11 active branching tips carrying brilliant lettuce-green leaves and flower bud just emerging. The plant is placed in his garden in a reasonably warm situation with good sun and with good wind protection from south and west

Ernie commented that the only set-back had occurred in June with some slight insect attack to growing tips and developing flower buds.

GRAFTING UPDATE--JULY 1997

The following update from **Doug McKenzie**, Ocean Grove, Victoria concerns plants grafted 3-4 years ago using *Chamaelucium uncinatum* as a host. Doug. notes that most of the species mentioned (with roundish leaves), are in the Section *Pennuligera* of Subgenus *Eperephes*, and that all had proved incompatible grafted on to *Darwinia citriodora*.

Virtually no new grafts have been attempted on the above rootstock in the intervening period since his last report in Newsletter No. 22, as he feels it is wise to test grafted plants for a number of years to judge long term success, before proceeding to produce them commercially.

Several of Doug's observations are consistent with member's experiences with plants grown on their own roots and I have underlined these. In particular refer to some comments above re *V. etheliana*.

V. albida Unfortunately, plants of this combination have not been hugely successful in our garden, though some individuals just hang on. The problem has largely been with our climate I feel sure, since the graft union itself looks fine, and I believe that several plants of this combination that I sent to Phillip Vaughan at Pomonal in the warmer inland part of Victoria are very successful. I sent some plants of this combination back to W.A. and it will be interesting to hear if these have been successful.

V. attenuata. Plants continue to grow vigorously.

V. chrysostachys. I have lost all my plants of var. *chrysostachys* which just gradually faded in vigour, but two plants of var. *pallida* have grown more successfully, though not vigorously. I suppose that both come from areas of W.A. that experience warmer and drier conditions compared with Southern Coastal Victoria.

V. cooloomia. No plants of this species grafted onto *C. uncinatum* have survived. This, I feel sure, was due to incompatibility, and unfortunately none of the other rootstocks tried was successful.

V. dichroma. Plants of both varieties survive. The grafts of var. *syntoma* are vigorous, (surprisingly, since this comes from areas well north of Perth). Plants of var. *dichroma* have suffered leaf loss and plants have struggled to survive

V. etheliana. Unfortunately this has been one of the least successful species. The several plants that remain are fairly ragged and twiggy. When first planted out from pots they were beautiful plants but they have not thrived. I suspect this is due to our humid autumn weather followed by cold winter conditions causing loss of foliage and consequent lack of vigour.

V. fragrans. None of the grafts was successful. Since this is one of the less easy in this group to keep alive on its own roots, I am fairly certain that this failure was due to incompatibility.

V. grandis. I have about 10 plants that are 2-3 years old. They have all survived, but most are affected by leaf drop and stem dieback, especially in our cold and wet winter. Interestingly, the stems that appear to be dead on otherwise healthy plants often seem to regenerate with new buds bursting forth from leafless stems sometimes months after the leaves have dropped. One or two of them have been very successful, and several visitors that have visited the garden and are familiar with the plant growing on its own roots in the bush and as a cultivated plant in W. Aust. have remarked on its robustness and 'bushiness'. It should be said that *V. grandis* on its own roots is virtually impossible to grow in our garden at Ocean Grove. I have sent a number of grafted plants of *V. grandis* for trial to Phillip Vaughan at Pomonal in the Grampians area and he has reported that they are very successful.

V. insignis. I had three very vigorous plants that grew well until planting out. Soon after being placed in the garden they defoliated and died.

V. lindleyi subsp. purpurea. Very successful.

V. muelleriana. This has been moderately successful, though quite a deal of leaf drop has meant the two plants I have are far from vigorous.

V. ovalifolia. This has also been very successful. Several of the plants I have are over 5 years old and they have flowered well each year. The plants are small but very bushy and floriferous.

V. pholidophylla. This combination appears to be quite successful. Grafted plants are small but bushy.

V. picta. I had high hopes for this combination but the plants died. I am fairly sure that there is a compatibility problem.

V. plumosa. The one plant that is grafted onto *C. uncinatum* is quite vigorous and successful. Plants on their own roots are however relatively successful also.

V. venusta. This has been most successful, surprisingly. I expected this would be a difficult *Verticordia* to grow in our conditions, since the species comes from a fairly warm climate. I have two quite big plants that are 2-3 years old. These are quite vigorous, have flowered very well and have not lost any leaves or suffered any dieback of stems.

V. 'Wemm's Find' One small plant hangs on. I am sure that compatibility is not the problem- the lack of vigour is due to our cold winters.

Doug adds the following **Conclusion** :-

It is fairly certain that most of the above grafts were successful to the extent that grafting enabled some species of *Verticordia* to survive where otherwise they would not.

In the related genus *Darwinia*, that our nursery has grafted in large numbers, the resulting grafted plants, by and large, represent an improvement in vigour and horticultural potential over plants of this genus, even in their natural habitat. But by comparison, at least in the climate of Southern Victoria, the results with *Verticordia* grafted onto *C. uncinatum* are less spectacular.

Most of the species in the subgenus of *Verticordia* represented above are from warmer and drier climates than Southern Victoria and *C. uncinatum* itself does not thrive in our heavier soils. However in drier, less humid and warmer parts of Australia, the grafting of *Verticordia* using *C. uncinatum* as rootstock may prove to be a useful technique to tame this difficult group of plants.

Please refer to the earlier report (V.S.G. Newsletter No. 22) for successes with *Darwinia citriodora* as a rootstock for *Verticordia* species that are not in the same section.

THE "LETTUCE-LEAVED" SPECIES, (and others)

Doug McKenzie has drawn attention to a problem which has frequently shown up with members attempting to grow some species in *Subgenus Eperephes, Section Pennuligera* which have sometimes been referred to as the "lettuce-leaved" *Verticordias*.

He suggests that leaf-drop and frequent losses in Coastal Southern Victoria, of some members of this group, could most probably be attributed to the cold, associated with wet conditions, which generally prevail there in winter. He points out that these species hail from a lower latitude, with consequent warmer winter climatic conditions and that plant trials in a drier inland part of Victoria have been more successful.

The difficulties noted by him however have also been experienced in other climatic regions. In Sydney, for instance, similar losses have also occurred, except that here the defoliation has most often occurred earlier in the year, viz. during early to mid autumn, and soil temperatures then are not excessively cold.

Perhaps it may be significant that some species of *Verticordia*, other than those of *subsp. Eperephes, Section Pennuligera* have also shown a tendency towards seasonal leaf-drop, frequently followed by complete loss. Dick Mills, a little south of Perth, points out that *V. pulchella* reacts thus to wet conditions in winter.

There is also the case of *V. mitchelliana*. In Sydney it is common for plants to change suddenly in late summer, from profuse, almost succulent leaf appearance to a heavily defoliated condition followed by complete loss. This phenomenon seems to occur following a sudden change in weather pattern from warm-humid to drier-cold. Well known SGAP identity and VSG Study Group Member Rodger Elliot once observed that this species was very easy to maintain in good condition, providing it was grown more than 100 km from the coast. I note however that Doug McKenzie has grown the species satisfactorily for years in his Coastal Garden, but with the comment that nursery specimens frequently suffer from leaf fungal attack but that this does not persist after garden establishment. I should also note that the best plant

of the species I have seen was in the late Brian Crafter's garden at Sellick's Beach, south of Adelaide, in close proximity to the sea.

All of the above leads me to suggest that this phenomenon of leaf-drop is really a result of fungal attack on the foliage, which may well be influenced by climatic conditions, but which may vary in seasonal period from region to region.

In the case of *V. mitchelliana* and *V. pulchella*, which are taxonomically closely related, I have formed an opinion that fungal attack commences on the leaf pedicels. With the "Lettuce-leaved" species; especially those with larger leaves and less erect leader growth, it would seem significant that the leaf, by its shape, would tend to hold moisture at this location and that this excess moisture may be critical under certain climatic conditions. Pat Moyle once observed to me that regrowth from a rootstock of *V. oculata* emerged from the soil at a low angle from the horizontal, and that accordingly it had proved highly desirable, when potting on, to set the struck cuttings at say 45 degrees. I noticed, when visiting an early enthusiast, Les. Norton at Maida Vale W.A. many years ago that his cuttings of *V. grandis* were set for propagation at 45 degrees. The growing tips of many of the larger-leaved species in this *Verticordia* Section tend to droop when wet, which would seem to be a natural method of throwing off excess water.

Could it be, in the case of my own *V. etheliana*, which, as noted above, had grown in a rather flattened habit, that such growth form had contributed to its successful establishment?

If so what factors had induced this growth habit which, incidentally I have not encountered in its natural habitat, although some plants, in more exposed situations, certainly did tend a little more towards squat, rather than vertical development? In my case was the selection of a relatively more open situation of significance?

Some years ago a friend of mine, who ran a large nursery business, contemplated legal action against a supplier of potting mix because, as my friend explained, a batch of mix had contained excess quantities of a particular element (I do not recall which), with the result that all of the plants in same had grown prostrate, rather than erect. Does this open up possibilities for chemical research so that the *Verticordia* species in question may be induced, at least in the early stage, to develop foliage which could throw off excess water, rather than hold it, in a climatic situation where fungal troubles may develop?

Seasonal late summer climatic conditions in areas of natural habitat of these species are hot and dry and tend to induce plant dormancies with appropriately hardened, transpiration resistant foliage. Garden cultivation on the other hand or the less rigorous climate of Eastern Australia seem to induce continued summer growth. As noted above, this foliage seems to be vulnerable to excessive rain periods or sudden reversals of weather conditions, a fact which Sydney residents often relish, but which, I suspect, some of our *Verticordias* do not.

The question could possibly be :- How can we compensate for this situation? Would development of more robust specimens in the pre-summer period be the answer? In this regard I note comments by Dick Mills re fertilising and watering as quoted earlier in this Newsletter.

Could removal of new growth at this late summer stage by judicious pruning help, by removal of vulnerable foliage, thereby delaying plant development a little to a seasonal period less hazardous?

Alternatively could use of a chemical growth retardant in late summer help?

Need I say more except that there is much, "Active" Study Group members can do to advance our very worthwhile cause.

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Wildflower Society

SPRING FLING

SPRING FLING

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9.30 a.m. - 4.00 p.m.

SPRING FLING

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Perry House, (Town of Cambridge) is the home of the Wildflower Society and the RAOU and this special event is being held to display the activities of both organisations and provide members of the public with a wide variety of information about local flora and birds.

There will be displays, demonstrations and guided walks through Bold Park and Perry Lakes. There will also be activities for children.

Wildflower walks every hour from 10.00 a.m.

Bird walks every hour commencing 10.30 a.m.

SUNDAY 14 SEPTEMBER, 1997 - 9.30 a.m. - 4.00 p.m.
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A real family outing.

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