

Region

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

## VERTICORDIA STUDY GROUP

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NEWSLETTER NO 29 -- FEBRUARY 1998.

### MEMBERSHIP

1998 is with us and I would like to belatedly wish all members a happy year and may all your Verticordias prosper..

We still have a few stragglers subscription-wise. Our financial fee period is from July 1 to June 30, the current fee was due on July 1 1997..If a cross appears in the following box  your 1997/98 subscription has not been received by me and if still unremitted by June 98 will result in cancellation of Verticordia Study Group Membership

### DONATIONS

I am very pleased to acknowledge the following donations in excess of the nominal \$3.00 annual subscription :-

Max Ewer-----	\$2.00
Elizabeth George-----	7.00
Phil. Strong-----	2.00
David Randall-----	2.00
Graham Eastwood-----	4.00
S.G.A.P. Victoria Inc.-----	7.00
S.G.A.P. Geelong Group-----	2.00

### GRAFTING UPDATE- FEBRUARY 1998

Members will recall Doug. McKenzie's comprehensive report in Newsletter 22 of his grafting trials, commenced 1980, on many Verticordia species and his reference to a large number of specimens forwarded via Elizabeth George in April 1993 and March 1994 for trial by Western Australian growers.. In recent Newsletter 28, we reported Doug's own grafting update with particular reference to Verticordia species in Section *Pemuligera* of Subgenus *Eperephes*. I would again draw attention to Doug's comment that he felt it wise to "test grafted plants for a number of years to judge long-term success, before commencing to produce them commercially".

I am pleased now to have received from Elizabeth, results of the above mentioned trials. She says :- "many of the grafted plants have done well, especially after the way they were tossed out of the boxes in which they arrived! Most of the losses could be attributed either to that or the fact that ***Darwinia citiodora* was not an ideal rootstock for some of the areas where they were trialled.** Those grafted on to *Chamelaucium uncinatum* have done really well and my *Verticordia galeata* has been beautiful for about 3 weeks now.(Sept. 97). The other species are budding up for flowering."

In the following report significant comments have been highlighted. Where, from my own experience comment seems appropriate I have included same with underlining. The grafted specimens in question were trialled by:-

Elizabeth A. George, Alexander Heights  
 Pat and Norm Moyle, Mandurah  
 Mary and Basil Smith, Manmanning  
 Judy and the late John Grows, Parkerville  
 Dick Mills, Banjup  
 Alec. Hooper, Zanthorrea Nursery, Maida Vale  
 Kings Park Nursery, Perth.

**April 1993 Batch. Grafted onto *Darwinia citriodora*. (Sent in 2" tubes and 3" pots).**

***V. brownii***

George----- Planted on yellow sand bank but died after initial good growth. ? **too hot and dry for rootstock.**

Moyles----- Planted in deep yellow sand, trickle watered in summer only. 90 cm tall but **subject to powdery mildew**

Grows----- Planted in laterite gravel, not watered. Grew for 6 months but then died in summer

Mills----- Planted in sand. 50 cm. Looks good but **leggy.**

Has done reasonably well in Sydney in clay loam, although, as reported above by Moyles, powdery mildew can be a slight problem in autumn causing a degree of defoliation. It recovers with new spring preflowering growth however which quickly compensates for the earlier foliage loss.

***V. densiflora (white form)***

George----- Planted in grey/yellow sand. Died slowly. Was never vigorous

Moyles----- Died early while still in pot.

Grows----- Surviving in pot but not as vigorous as normal form.

Mills----- Planted in sand but died.

Hooper----- Planted in built-up topsoil 45 x 45cm, growing well

This species on its own rootstock with a light sand topping, (say 10-20cm) over clay loam has proved tenacious and virtually trouble free

***V. fastigiata***

George----- Planted in sand/gravel, not irrigated, 45 x 45 cm, growing well and flowering

Smiths----- Planted in deep white sand, watered only during extreme conditions, 170 x 320 cm, flowering well and beautiful.

Grows----- Planted in laterite gravel, initially grew well and flowered, but then died in summer 1996.

Mills----- Planted in sand, 30-40 x 50 cm and thriving.

Kings Park----- Plant not found.

Hooper----- Planted in built-up top soil but died early.

This species on its own rootstock has proved very reliable in clay loam.

***V. galeata***

George----- One planted in grey over yellow sand, 45 x 30 cm. Another planted on yellow sand bank, 45 x 30 cm, Both trickle irrigated once a week in summer. Both growing and flowering well but **not as vigorous as plant grafted onto *Chamaelucium uncinatum***

Moyles----- One died. One planted in deep yellow sand is small and not vigorous but has self sown. Has also been repropagated from cuttings.

Growns-----Planted in laterite gravel, initially grew and flowered well but died in December 1996.

Kings Park-----Planted in elevated sand bed, trickle irrigated, fertilised once a year. 40 cm tall x 20 cm. Growing well and flowering.

Mills-----Planted in sand, trickle irrigated in summer, initially grew and flowered well but died 1996. Self sown seedling still growing.

Planted grafted specimen 1994. Compost + sand dug into surface stratum of clay loam. Suffers a little mildew attack during autumn but outgrows same in winter to flower spectacularly every year. Currently 58cm tall x 40 cm.

### *V. lehmannii*

George----- Planted in deep yellow sand, initially developed new growth, but died after a few months.

Moyles----- Plant in pot died early before it could be planted out

Growns-----Planted in laterite gravel but died. ? **position too wet in winter.**

Planted 1994. Light sand topping (say 15cm) over clay loam Died 1996. Suffered badly from mildew attack in autumn. Was never vigorous except for a short midsummer period. I suspect this is a species which will be difficult to maintain in Eastern Australian climatic conditions.

### *V. longistylis*

George----- Planted on yellow sand bank, trickle irrigated once a week during summer. Initially made good growth but died during first summer. ? **too hot and dry for rootstock.**

Moyles----- Planted in deep yellow sand, irrigated in summer. Vigorous and spreading. Flowers.

Smiths-----Planted in deep white sand but died early before frosts. **Consider rootstock unsuitable for local conditions.**

Growns-----Planted in laterite gravel. Growing well and flowering

Kings Park-----Planted in elevated sand bed, trickle irrigation, fertilised once a year. 40 x 80 cm Growing well

Hooper----- Planted in built up topsoil but died early.

Species has done particularly well in Eastern Australia (Hewett, Marriot, Kenyon & Newman, Eastwood) on its own rootstock grown in other than light sand. In sand (Koch) plant was slow and chlorotic. No reports of grafted trials.

### *V. mitchelliana*

George-----Planted on yellow sand-bank but died following initial growth. ? **too hot and dry for rootstock.**

Moyles----- Planted in grey over yellow sand, 60 x 40 cm. Irrigated in summer only. Vigorous and flowering.

Smiths-----Planted in deep white sand, watered only during extreme conditions. 22 x 60 cm. Surprisingly healthy and flowering, almost equal to Mt. Caudan form planted at same time.

Growns-----Planted in laterite gravel, 30 x 15 cm. Spindly with crowded foliage, hasn't flowered.

Kings Park-----Plant not found.

Mills-----Planted in sand, initially grew well, Flowered well last year (1996) but then died.

Hooper----- Grown on in pot, then planted in natural bush sand. 60 x 90 cm, growing well but rootstock thinner than plant stem.

Planted in clay loam but survived only one year after autumn defoliation. I suspect mildew attack on leaf peduncles. Graft appeared sound and host root system appeared healthy. This species has

frequently been difficult to maintain to reasonable longevity in coastal Eastern Australia, the demise generally seeming to commence with foliage deterioration in late summer/autumn.

***V. monadelpha var. callitricha***

George-----Planted on yellow sand bank amongst taller shrubs, trickle irrigated once a week in summer. 90 x 60 cm. Taller and more open than usual, but vigorous and flowers well.

Moyles-----Planted in yellow sand. 45 x 45 cm. Growing and flowering well, but not quite as good as plants on own rootstock.

Smiths-----Planted in deep white sand but died early ? **attacked by grasshoppers.**

Growns-----Planted in laterite gravel. Flowering well and equal to non-grafted plants.

Mills-----Planted in sand near leach drain. Was not successful and died early.

***V. monadelpha var. monadelpha (White form)***

George-----Planted high on yellow sand bank, trickle irrigated once a week in summer. 90 x 45 cm, vigorous and flowers well.

Moyles-----Planted in deep yellow sand, trickle irrigated once a week in summer only. 60 x 60 cm. Flowering well but not as good as plants on own rootstock.

Growns-----Planted in laterite gravel near easement. Grew quite well initially but then died ? **weed herbicide spray drift.**

Mills-----Planted in sand, grew well but then suffered 'bulldozer attack'.

Planted in clay loam in 1991. grew well till demise in 1996 from root rot. Suspect same caused by too frequent summer watering.

***V. penicillaris***

Growns-----Planted out spring with plants on own rootstock. Not watered. Grafted plants ? **too dry.**

Plants on own rootstock died early in sand. Suspect too dry as above. In broken sandstone rubble and warm situation. (Margan), grew and flowered well

***V. pritzelii***

George-----Two planted high on yellow sandbank, trickle irrigated once a week in summer. One grew and flowered for two years but then died in summer. ? **too hot and dry.** The other growing slowly and rather open, 30 x 25 cm. flowers each year.

Moyles-----Planted in deep yellow sand, trickle irrigated in summer only. Growing and flowering well, similar to plants on own rootstock.

Grew for two years and flowered in clay loam. Was never vigorous however due to frequent mildew attacks causing debilitation and probably the final demise I believe furthermore that the location selected; near a northern rockery edge, could have been a little too dry for the host species *Darwinia citriodora*.

Experience with *Darwinia citriodora* as a specimen plant in Sydney would seem to confirm that it does better where planted in, or where roots have access to, soils of slightly heavier bodied materials rather than in deep, freely draining sandy conditions. Perhaps the explanation lies in the better moisture retention factor of the former. I note the frequent references in the report to the necessity to trickle water in summer in the sandy cases.

*Chamelaucium uncinatum* on the contrary, seems considerably more reliable here under lighter soil conditions although precautions to guard against collar-rot attack are required in our wetter late summer climate.

March 1994 Batch. Grafted onto *Chamelaucium uncinatum*. (All sent in 2" tubes)

*V. albida*

George-----Plant in 25 cm pot on sunny/patio, repotted each year and given slow release fertiliser, watered till water drips through potting mix at basal drainage holes when mix there looks dry. 1 x 1 metre, fairly vigorous in warm season and flowers beautifully but is relatively dormant during colder months.

Moyle----- Two plants in grey over yellow sand in natural bushland but trickle irrigated in summer only. Both flower but one plant is just existing while the other is 90 x 30 cm, tall and slender but growing and flowering quite well, although not as bushy as plants nearby on their own rootstock.

*V. brownii*

George-----Plant in pot, repotted and watered as *V. albida* above. Grew and flowered well but then died in March 1996. ? **position too hot during extreme heatwave.**

*V. dichroma* var. *dichroma*.

George-----Plant in 25 cm. pot Repotted and watered as *V. albida*. 50 cm x 1 m , vigorous and flowers well.

Moyle----- Two planted in similar situation to *V. albida*. Both about 75 x 30 cm, growing and flowering well.

*V. galeata*

George-----Plant in 20 cm pot on sunny patio, 30 x 45 cm, repotted and watered as *V. albida*. growing well and flowering prolifically.

*V. hybrid-Wemm's Find*

George-----Plant in 20 cm pot on sunny patio, 45 x 75 cm, repotted and watered as *V. albida*. Similar growth pattern to same and flowers beautifully.

Moyle----- Two planted in similar situation to *V. albida*. Both about 75 x 75 cm; really nice plants.

**CULTIVATION NOTES.**

It is three years since I reported on the Verticordia progress of **Ted Newman & Pat Kenyon**, Dural N.S.W. As noted then, their soil is a shallow profile, medium loam, with some shale parentage and a profusion of smallish concretionary ironstone inclusions. It has been well worked and elevated to about 600mm which provides good, early, deep drainage. The aspect is essentially full sun and being in elevated terrain can be subjected to wind hazard under extreme conditions.

Their section of Dural is rural in classification and consequently provision of adequate space for their special plants is not the problem which many of us face. They have though, had a severe problem to solve; a rabbit invasion from adjacent properties. It had become so bad that many plants were not only pruned to virtual extinction, but many have been killed by attack on the root systems. Their gardening project then has suffered a severe distraction, but now, since the property has been completely enclosed by a rabbit proof fence, things are moving again.

Of the 1993 planting only three Verticordias have survived, and these with no fertilising, watering or other encouragement.

*Verticordia longistylis* has really flourished, currently producing its first flowers, but the real highlight is the compact, bluish foliage which makes this species a very desirable landscaping specimen.

Although this species is generally considered easy to maintain, (refer earlier Newsletter comment), it would seem that the soil type in Ted and Patsy's case, combined with the fully exposed plant location, have combined to produce the richer than usual lush blue foliage. It is not surprising that the species was earlier referred to as *Verticordia* 'Blue Spruce'.

*Verticordia minutiflora* is currently producing its first flowers, and again the growth form is a very compact mound to about 300 mm.

*Verticordia plumosa* var. *plumosa* has also thrived with rather spreading and dense growth habit, again proving quite wind resistant. This year's growth and flowering was particularly profuse.

Of the other species planted in 1993:-

*Verticordia chrysanthella* grew very densely but was heavily attacked by powdery mildew. It outgrew the attacks on consecutive years and flowered well but ultimately gave it all away.

*Verticordia huegelii* var. *decumbens* made very good early growth, but later suffered mildew attack on the lower foliage which seemed to trigger its decrease in late summer.

This is a common hazard with this species in Sydney when grown in medium to heavier soils which seem to encourage very lush summer growth. I believe some thinning of the lower foliage is desirable to allow better foliage aeration near the ground. I would also note that the species does not do very well here in soils of light, sandy texture, often becoming chlorotic.

A further group of *Verticordias* made very good early growth but were weakened ultimately by root rot, possibly encouraged by subsoil compaction and wet late summer and autumn conditions. A heavy wind storm in this period was also very destructive. Species in this group were:-

*Vert. plumosa* var. *grandiflora*

*Vert. chrysostachys* var. *pallida*

*Vert. brachypoda*

*Vert. hughanii*.

*Vert. citrella*

*Vert. fragrans*.

*Vert. acerosa* var. *preissii*

*Vert. muelleriana* subsp. *muelleriana*

*Vert. halophila*

*Vert. etheliana* var. *etheliana*.

As noted above it became futile to try to establish plants during the rabbit invasion and many of their specimens, held in nursery pots, became thoroughly root-bound. Drought conditions in Eastern Australia have been a problem for several years and middle to late spring in 1997 proved one of the driest on record.

After a little late November rain however, plantings have been recommenced in a different garden section, a little less exposed to storm winds, but still enjoying full sun and in an area having a little more natural moisture retention.

The root systems of the plants were opened up and plantings were made on small individual mounds with hollows left between to hold extra moisture. Collar rot protection at plant stems has been provided with 300mm diameter of decomposed granite gravel. Where appropriate also, up to about 20 mm at top of the existing potting mix has been replaced with same. With virtually no rain till late January this year, generally very low night humidity, and many periods of daytime heat-wave, a regular programme of hand watering has been maintained. There have been very few plant losses to date and nearly all plants are currently putting on good healthy growth.

Verticordia species included in the section include:-

*V. plumosa* var. *plumosa*, (several forms), *V. minutiflora*, *V. penicillaris*, *V. grandis* (not as yet vigorous), *V. galeata* (grafted, but also not yet vigorous), *V. pennigera*, *V. densiflora* var. *cespitosa*, *V. mitchelliana*, *V. plumosa* var. *brachyphylla*, *V. fragrans*, *V. chrysostachys* var. *chrysostachys*, *V. staminosa* subsp. *cylindracea* var. *erecta*, *V. monadelpha* var. *monadelpha* and *V. monadelpha* var. *callitricha*

Progress reports on this planting should be particularly useful as, among other things, it involves a soil type and general growing conditions a little different to others to date in the Sydney area. In addition, being elevated and fully exposed the area is subject to reasonably heavy winter frosts

### pH and ALL THAT

Perhaps it may have been more appropriate to head this item 'Here's Mud in your eye'. Since my initial interest in Australian Native Plants I have listened to and read discourses on a number of occasions concerning the importance of knowing the pH of one's soil. Having achieved reasonable success both here at Cherrybrook and in my earlier garden at Mount Kuringai, I have tended to place more store on soil texture and appropriate drainage than on chemistry, and so have not taken the advice seriously enough. After all, we are told most of our plants seem to prefer a soil in the slightly acid to neutral range and natural soils in the Sydney Region seem generally to fit this criterion.

We moved here to Cherrybrook in 1985 and commenced the new garden after much preparation including the eradication of a backyard of rampant Kikuyu grass and the moving around of an overburden of poorish subsoil clay, which the previous owner had brought in to even out the site. The depth of this varied from about 250mm minimum to about 900mm max. and completely buried the natural soil; a rich brown clay loam. In the early years the garden progressed reasonably. In April 1988 however under very heavy storm conditions, a brick boundary fence on the higher side collapsed and washed down an old boundary laneway which had been paved with a roadbase containing a high percentage of crushed basalt. The result was deposition at the bottom of our property, of a considerable quantity of what could possibly be described as a loamy gravel.

It seemed to present a golden opportunity to trial a number of Verticordias in a very well drained gravelly medium, so an elevated bed was duly constructed measuring about 3.5 x 2.25 metres and about 300mm deep. Early results were very encouraging.

Two *Vert. mitchelliana* survived from 1989 to 1993 reaching nearly 800 mm. Two forms of *Vert. pennigera* did well for three or four years as did also *Vert. lindleyi* var. *purpurea*, *Vert. fragrans*, *Vert. staminosa* subsp. *cylindracea* var. *erecta* and several others.

Also planted in 1989 were two specimens of *Vert. grandis*, a species I had been particularly interested to trial in a well drained gravelly situation, following a comment I had read sometime previously in Australian Plants by a West Australian writer, (before the formation of the Verticordia Study Group). These plants are both still surviving and have flowered regularly, but in recent years they have lost much of their earlier vigour and with leaf colour deteriorating to chlorotic, I had felt that their days were numbered. Last summer they looked particularly sick and I was resigned to their early departure.

About two or three years ago I was made an offer I could not refuse. My son had noted some building work going on near his property and there seemed a heap of dark grey

excavated sand ( a commodity becoming hard to come by in Sydney these days), was going begging. The owner agreed on enquiry and I finished up with two box trailer loads of same which I used for potting on etc. There was some evidence of old building materials in it, but I did not doubt its integrity until I noted that my potted specimens did not seem to be progressing very well, indicating chlorosis and lack of vigour.

It was about last June, thinking about this problem and seeing my *Vert. grandis* specimens not responding to any encouragement I threw at them, that I started to wonder about pH. Ted Newman was a 'keen believer' so I asked him to bring his testing kit down.

Firstly the gravelly garden bed was tested in several spots and registered pH 9, which actually is 100 times more alkaline than pH 7, the neutral value.

The stock of grey sand also tested pH 9.

Hydrangea bluing mix was tried firstly but after several weeks no appreciable improvement was indicated so I threw caution to the winds and applied a liberal dressing of flowers of sulphur over the garden bed; plants and all, and the stock of sand, and watered thoroughly. A nurseryman warned me not to expect too much in the way of results for six months.

My gravel bed currently reads pH 6½-7 @ 100mm and the sand stockpile pH 4½ @ 80mm, pH 7½ @ 150mm and pH 8½ @ 300mm. I believe the variation noted in the sand has been influenced by the very dry conditions of spring and early summer in Sydney in 1997 and I would expect that in time the effect will move down through the material to give more uniform readings. In the meantime I will obviously need to mix and monitor the material thoroughly to render it suitable for use.

Now for the good part. All of the surviving plants in the gravel bed have responded dramatically since mid-spring with vigorous, good coloured new foliage. One of the *Vert. grandis* specimens is now flowering on 14 vigorous leaders, with a further four looking particularly well. The second specimen, which had been reduced to about 155mm high, has also recovered and has 6 active leaders, although these are not yet to the budding stage. Another plant which last October was so chlorotic and sickly looking that I considered taking it out, was a dark blue, late flowering form of *Lechenaultia biloba*. As the roots seemed to show some resistance, I decided to give it another chance however and cut it back to 75mm high. It is currently vigorous, about 300 mm high, and bunched up with many good dark green leaders.

So much for my ignoring the spoken wisdom about pH. With the grey sand, I should have been suspicious when I first noted the evidence of earlier building use which could possibly have probably included some lime mortar or comparable material. In the case of the gravel bed the alkalinity was probably caused by the breaking down of the mortar from the collapsed brick wall. It is nearly 10 years since the bed was prepared and the trouble was not apparent early. I think it would be fair to say that the mortar had broken down progressively resulting in a gradual increase in alkalinity with consequent deterioration of all plants in the bed.

H.M.Hewett, ASGAP Verticordia Study Group Leader  
11 Harvey Place, Cherrybrook, NSW 2126  
Tel. 9484 2766.