

VERTICORDIA STUDY GROUP

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NEWSLETTER NO 40 -- August 2003.

MEMBERSHIP

We are very pleased to welcome new members Bob and Dot O'Neill to our Study Group. Bob and Dot are proprietors of Katandra Gardens, 49 Hunter Road Wandin, Victoria 3139. Situated on an 8 acre property, the garden is expanding rapidly and currently contains some 500 + *Correa* plants, 300 + *Acacias*, 150 + *Banksias*, 100 + *grevilleas*, 400 + *Eucalypts* plus *Dryandras*, *Eremophilas*, *Hibbertias* etc.

Their *Verticordia* collection is as yet small, but from successes to date they believe they will be able to expand it very considerably and wish to feature them with *Lechenaultias* and *Eremophilas* as three major genera. They are on a north slope with good soil and drainage, plenty of space and sunlight. Current species include:- 2 *Vert. grandis*; one on a raised stone bed, the other on a raised bed of garden soil.

Vert. mitchelliana; growing well in well drained open position, unraised.

Vert. plumosa in an open position, moist but with fair drainage.

STUDY GROUP SUBSCRIPTIONS

As indicated in the last Newsletter **the annual membership fee for our study Group has risen from \$3.00 to \$5.00 per annum, commencing from 1/07/03.** See later in this Newsletter for further details of individual financial status.

PRUNING

I was very interested in a comment by Graham Eastwood, as reported in the last Newsletter:- Because of the continuing drought and severe water restrictions in his area at Bateman's Bay, he went ahead and gave all of his *Verticordias* a severe prune last spring. He added that no subsequent watering was done and that no specimens were lost as a result.

This subject of pruning is one that arises from time to time, but the most comprehensive treatment of the subject I have read is the following article by Audrey Gerber, New and Innovative Development Officer in the Department of Primary Industries, Ovens, Myrtleford, Victoria. It has been reproduced with her permission. The article was obviously written to assist commercial wildflower growers, but for many aspects of the subject it will be extremely useful to guide those of us who strive to achieve better results in our gardens. I have previously suggested that in our sometimes hazardous late summer climatic conditions in eastern Australia, when foliar fungal attack is evident on some species, it may perhaps be helpful to prune back to more mature wood in order to retard new growth and so to carry plants through this danger period?

Principles of Pruning, by Audrey Gerber.

Many Australian Natives and Proteaceae grow into large, straggly, extremely woody plants if left unattended. This growth habit is suitable in some landscaping situations where the plant is used as a screen, eg on roadsides and central highway strips. However, in a commercial plantation where we require plants to be productive and compact we need to develop strategies to manage plant growth.

Why do we prune?

- **To control growth and develop a suitable shape.**

Managing the shape of the plant ensures that each plant has sufficient space to grow, and enables easy access of machinery and personnel between rows. A good pruning programme also restricts plant height, thus making picking easier.

- **To encourage flower production**

In plants grown for commercial flower production, flowers are most commonly produced on current season's growth. Annual pruning stimulates production of new, flower-bearing growth. Exceptions are some *Proteas*, *Banksias* and *Waratahs* where the flower-bearing stem grows for 2 seasons before flowering. Pruning strategies for these must be adjusted to avoid removing seemingly unproductive stems which would produce flowers in the following year.

- **To promote plant health.**

An open canopy allows free air movement and light penetration which discourages pests and diseases. If chemical sprays must be applied they are more evenly distributed throughout an open

canopy. New growth from the centre of the plant following picking or pruning is stimulated by free movement of light and air, and vigorous, healthy growth is encouraged.

- **To remove diseased or damaged branches.** Shoots that have been broken by machinery or damaged by wind, frost or hail are removed to encourage new growth to replace the damaged portions. Branches with pest or disease damage are also removed to reduce the risk of infection spreading.

- **To rejuvenate old, unproductive plants.**

Plants vary in their response to severe pruning, which can be used to stimulate new productive growth. The best response comes from those plants with a thickened stem base, known as a lignotuber. Old, woody stems of these plants can be cut off at the base, resulting in young vigorous regrowth from the lignotuber.

- **How do plants grow?**

Shoot growth starts from growth buds, which are essentially compact, miniature stems

These buds can occur:-

- > On the tip of the shoot (terminal buds), and their growth results in elongation of an existing stem.
- > On the sides of the shoot, generally in the fork where the leaf meets the stem (lateral buds, or axillary buds). Growth from lateral buds produces new shoots at an angle to the stem.
- > On other parts of the plant (adventitious buds), generally mature stems and roots, often as a response to injury, such as occurs in pruning. Not all plants are capable of producing adventitious buds.

What techniques do we use?

Three techniques are used in structuring and controlling plant growth.

- **Pinching.**

The soft growing tip is pinched out between thumb and forefinger. This stops the shoot from growing longer and encourages side shoots to grow from the lateral buds of the uppermost mature leaves. Pinching is used widely to encourage branching of young plants for increased complexity.

- **Heading cut (heading, heading back, cutting back)**

Pruning to shorten branches is done after the heading cut. The top portion of the shoot is removed, and side shoots grow from the lateral buds on the shoot portion remaining, thus increasing plant complexity. In commercial flower production the picking cut is a heading cut, and the side shoots form the next season's flowering stems. A heading cut which removes less than a third of the shoot generally results in many short side shoots. A heading cut which removes more than 2/3 of the stem generally results in production of few, very vigorous side shoots.

- **Thinning out (thinning, thinning out).**

The thinning cut removes the entire stem at its point of origin. Thinning is done to reduce canopy and does not result in a growth response. Thinning is done to remove old, unproductive stems and reduce competition within the plant. Light and air penetration within the plant are improved following thinning.

When do we prune?

As mentioned before, the picking cut is a pruning cut, and is, therefore, applied at the time of flowering. Regrowth following picking forms the next season's harvest. If necessary a clean-up prune is applied after harvesting is finished. The shape of the plant is assessed and altered if deemed necessary. Branches blocking light and air movement through the plant, or trailing on the ground are removed with thinning cuts. The number of bearers is assessed and adjusted to balance vegetative and reproductive growth.

If pruning is done to correct or rejuvenate plant growth, it is best done in late winter. Pruning before spring growth starts takes advantage of the naturally vigorous growth at this time of year. Pruning in mid-late summer can retard plant growth.

What is the ideal shape for commercial production?

Complex for maximum productivity.

Clear base for weed control.

Picking at waist height

Open canopy for light and air

With the vast range of products grown in the Wildflower industry in Australia it is impossible to design a single pruning strategy which will apply to all plants. Developing pruning strategies requires a simple knowledge of the plant's growth, based on observations. You must have clear in your mind what you are trying to achieve by pruning, and some knowledge of what the plant is capable of. The flow chart (next page), leads through the questions and options, and gives broad indications of what action to take.

How does the plant grow normally?

OBSERVATION/ INFORMATION FROM BOOKS / ASK SOMEONE

How to find out:

Is this what I want?

Yes

No

ACTION:
Manage plant health.

What do I want?

CONSIDER:

Plant size

Plant shape

Density

Bigger?

Smaller?

ACTION:
Young plants:
severe pruning to encourage
vigorous new
growth

Mature plants:
light pruning
only to control
shape.

ACTION:
Severe repeated
pruning will
restrict growth
of young and
old plants.

More
upright
?

More
spread?

ACTION:
Remove outer
branches and
branches growing
horizontally, using
"thinning cuts".

ACTION:
Remove upright
branches with
"thinning cuts".
Encourage horizontal
growth by "heading
back" to outward
facing buds.

More
stems?

Fewer
stems?

ACTION:
Prune using
"heading cuts" to
encourage
production of
multiple lateral
shoots.

ACTION:
Prune using
"thinning cuts" to
reduce the number
of stems and
discourage growth
of new lateral
stems.

POST HOLE PLANTING ? PROGRESS SCORE.

Why? At an early age we were told not to do this because it encouraged poor drainage, The current experiment has been influenced in no small extent by the recent drought years although it should be said that droughts in Australia are really a recurring norm, even though they are sometimes less frequent..This planting procedure was mentioned earlier in N/L 39.

Our prime question was:- Can we devise a way to counter drought conditions to some extent, while still retaining some ability to cope with problems in our traditional Eastern Australian climatic pattern of extended wet and humid conditions in late summer? It is hoped that the answer to this question will be 'yes'. It is also hoped that the procedure may ultimately prove effective regardless of basic garden soil type and climatic pattern.

It is true that for Verticordias in Eastern Australia we are dealing with a genus that has developed under a climatic pattern, almost diametrically opposed to our own. It should be noted however, that some members of our eastern flora; e.g. some Boronias and Eriostemons, have proved, in our gardens, to be particularly vulnerable in our characteristic late summer wet. Sometimes on a bush walk, we find an occasional specimen which has succumbed to such, following several relatively drier seasons. Examinations of terrain often suggest that they picked the wrong place to grow, viz. potentially inferior drainage location.

It is not surprising then, that at times, some species, which have evolved in a summer-dry region, do present special problems in our gardens. In Verticordia homeland they have evolved to use this hot and dry, late-summer after-flowering period, as their rest time.

It should also be noted that our summers in Sydney are, generally less rigorous than in Western Australia. Some Verticordia species may, at times, respond to our relatively softer conditions to maintain some summer growth, or at least, carry through with lush green foliage, rather than adopt the grey/green form sometimes seen under the harsher summer conditions of W.A.

It is hoped that if this planting procedure does prove to be effective, or advantageous, at least for some species, it might be useful in situations Australia-wide, where garden hazards, other than from strictly climatic pattern, are at times encountered.

The following summarises in more detail, the procedure, our hopes and rationale:-

A-Planting Mix.

Generally 50/50 medium loam/quartz pea gravel, premixed and only slightly moistened. This latter is intended to minimise, in the establishment stage at least, any compaction or slumping, and so provide a relatively open soil character.

After having tried many species here previously in varying basic soil types, growing in medium loam has often seemed to have achieved superior growth.

Where this planting procedure has been tried to date, comparable growth has resulted in beds of basic soil type from sand to moderately heavy clay/loam.

Hopefully, extreme variations in soil moisture in root zones can be minimised and thereby, help cope with hazards sometimes attributable to same.

Early indications would seem to indicate that it may also be possible to reduce maintenance watering under very dry seasonal conditions.

B-Drainage

We hope to at least lessen soil moisture problems by:-

Elevating garden beds, except perhaps in deep sand areas, where only limited raising may be required to throw off excess storm water and counter scouring.

Carrying planting holes, using a 200mm post hole digger, below level of anticipated root development.

In heavier soils, avoiding penetration into very poor drainage strata such as impervious clay. Hopefully then dispersion at bottom of planting hole will exceed rate of water accumulation.

Limiting surface penetration of stormwater; refer mounding, mulching.

C-Mounding, Mulching

Small surface mounds used are intended to limit excess water penetration to the plant stem regions. Overall diam:- 500-600mm

The mound perimeter is lowered 50 to 75mm below bed surface level so that, in heavy rain, only limited water will penetrate back to plant stem regions, the excess discharging over the garden surface.

With moisture feeding back from the perimeter depression, the root system should then be encouraged to spread further out from the stem area.

This root development will hopefully, in turn, slow moisture penetration, thereby contributing further to limiting excess moisture flow into the vulnerable central stem zones. The mound is finally mulched with pea gravel. To date we have used poorly washed quartz with some clay particle coating. The surface weathers white, hopefully contributing to surface sterility and aiding collar-rot protection. The clay particles tend ultimately to form a sealing crust assisting throw-off of excess water as noted above.

The crusted surface contributes to plant stability.

A general garden mulch of decomposing leaf litter has been used between mounds and is allowed to spill across the perimeter depressions. This vegetative mulch contributes to weed control, helps stabilise soil warmth and general bed moisture.

Results to Date

In N/L 39 I mentioned some species which had appeared to have accepted or even shown improved growth form with the procedure. Despite the exceptionnally dry conditions, followed in May by an extremely wet week, most of these have continued do very well.

One exception however was *Vert. pennigera*. It had made exceptional progress through summer, but was lost after the May rain. This came as a surprise to me because it had proved previously to be one of the more reliable in Eastern Australia. Pat Moyle, W.A. once said to me she had found it one of the least troublesome of Verticordias to maintain.

It had been originally potted and grown on into clean propagating gravel, referred to earlier in my letter to Darren Allen; see N/L 38. Darren had questioned this potting on medium. Although I had used it successfully on previous occasions, I now also have reservations. Before attempting to suggest reasons for this loss, it might be educational to note in detail, the planting, subsequent treatments and responses:-

5/9/02-. A 650mm deep hole was dug through a bed of heavy, brown, clay loam improved in the top 150mm with sand and decayed leaf litter.

At planting, the specimen had bare-rooted, from collapse of the fine potting gravel. The collapsed gravel was allowed to remain in a small prepared planting hole. unmixed with the main planting soil mix My intention in doing this had been to provide aerated well drained conditions at the plant stem, as a counter to possible collar-rotting which, on occasion, has occurred here, apparently from lack of sufficient soil sterility in the stem region.

Coiled roots which had developed at the bottom were removed.

The weather was fine, warm and dry.

Height at planting-105mm

It was watered in with seasol and protected with bell-jar and perforated cap; see N/L 38.

8/10/02- Plant height- 110mm. A little lower leaf drop.

13/10/02-Plant height 115mm-bell jar removed-forecast warm/hot.

20/10/02-Belljar replaced without screw cap.

2/11/02- Plant height 120mm- increasing vigour-watered Seasol.

15/11/02-Plant height 150mm- weather mild-bell jar removed- watered Seasol

16/1/03- Piant height 400mm-vigorous.

March/03- A little rain.

Later March/03-Heavy wind-dry- a little wind-rock resulted in small air gap at stem.

19/4/03- Plant height 570mm- very vigorous and dense. Multiple stem branching full height.

17/5/03-After week of heavy rain. Upper leaves small and turning reddish-brown.

31/5/03- Apparently dead. Lifted and examined..

Result of root inspection-

Roots had developed at a downward angle of approximately 45 degrees, to a maximum penetration of 120-150mm. Contrary to what I had expected from the dominant central stem growth form, there was no corresponding central leader root penetrating below the general root depth noted. It appeared to have been

broken off with the initial coiling removal but had not progressed. The fine root system was well developed and intact.

The colour of the wood showed destruction of the main plant stem progressing upwards from approximate ground level, seemingly resulting from **collar-rot attack**.

Assessments and further comment:-

After the particularly good early development, despite drought conditions with minimal summer watering, rapid deterioration occurred following the May rain. Immediately prior to this the weather had remained comparatively warm and resulted in warm soil temperatures. Throughout the earlier drought conditions, and the little rain in March, the development suggested good acceptance of the general planting procedure, including the initial soil dampening.

In retrospect I believe a number of correctable factors contributed to the demise:-

A-The clay particles from the unwashed coarse gravel mulch would not have been adequate to stop the water entering the pocket of fine gravel. They would have passed through it to create a seal over the main planting mix. With continuous rain, it might then be expected that excess water could have been retained in the fine gravel pocket and probably contributed to the collar-rot attack..

B- The nature of the very good plant growth, with multiple and relatively rigid lateral branching of the entire central stem would, with the heavy rain, act like a funnel to collect excess water and track it to ground down the central stem, where some plants are most vulnerable in our autumn climatic situation

C-The air gap around the central stem due to wind rock probably also contributed to excess water penetration of the stem region. This air space could possibly have been guarded against or at least minimised, by staking.

D-The fine gravel potting medium used, while promoting satisfactory growth at the nursery stage seems undesirable, because of likelihood of total collapse at planting and also because it encourages rapid deep root development to bottom of pot. While some species will tolerate removal of this, I believe it is more desirable that planting should occur before this stage has been reached.

I believe staking should generally be considered highly desirable, but particularly so where plants may be particularly exposed to wind. Such conditions might apply where beds are elevated, where plant spacing is increased to encourage better development, where typical growth form is a single main stem supporting upper growth, or where exposure to wind may be influenced by local topography. Staking diagonally through the foliage, I believe, is better than using a vertical stake near the plant centre.

Ted Newman trialed two specimens of *Vert. chrysanthella* in their garden at Dural earlier in the year using the post hole technique as above. In this case, they were planted in a newer garden section where many other plant species had made spectacular growth, apparently due to good subsoil moisture from house drainage and relatively shallow soil profile. In both of these cases however, slumping of the mounds has occurred, necessitating lifting of the root ball and repacking. Early plant development furthermore, has not been as good as for the same species in my garden. It seems obvious that the reason can be attributed to the excess of subsoil moisture accessed via the post hole filling

I reported in N/L 39 the failure of two specimens of *Vert. fragrans* planted in early spring, and surmised that the cause might possibly have been due to the early seasonal planting? The other two specimens planted nearer Xmas have established well, but a recent planting in late autumn is reluctant as yet, to progress.

Another small specimen; *V. blepharophila*, is proving very slow to commence active growth, although it still retains green in its leaves. It was planted in February this year. I recall finding a specimen in the Eneabba area of W.A. many years ago in mid-spring. It was a mature plant but I was surprised that it was only at this late seasonal stage starting to grow out from complete dormancy defoliation. Perhaps my specimen may come good yet.

FINANCIAL MEMBERS TO 30/06/03**New South Wales**

Nich Derera, 5 Lister St. Winston Hills
 Gordon Brooks, 138 Ridgecrop Drive. Castle Hill
 Graham Eastwood, 16 Karoo Crescent, Malua Bay.
 Pat Kenyon & Ted Newman, 1057 Old Northern Rd. Dural.
 Merrilyn Rossington, 90 Barton Street Scone
 Darren & Louise Allen, 11 Stirling St. Abernathy.
 Peter Olde, 138 Fowler Road, Illawong (Reciprocal with Grevillea Study Group)
 Max Hewett, 11 Harvey Place, Cherrybrook

Victoria

Paul Niehoff, 24 Crimson Ave. Blackburn.
 David Lightfoot, 36 Arundel Cresc Surrey Hills
 Bob and Dot O'Neill, Katandra Gardens, 49 Hunter Road, Wandin.
 Martin Rigg and Diana Leggat, C/- Post Office, Yackandandah

South Australia

Gordon Curtis, 46 Maluka Drive, Happy Valley
 Max Ewer, "Stockdale" Avenue Range
 Ian Otto, Box 1486, Port Lincoln.
 Russell Dahms, Everest Avenue, Athelstone

West Australia

Alec Hooper, Zanthorea Nursery, 13 Watsonia Road, Maida Vale.
 Elizabeth George, 18 Halwest Way Alexander Heights.
 Alex George, 18 Barclay Rd, Kardinya
 Dick Mills, 54 Oxley Rd, Banjup.

Regional or Sundry

SGAP Victorian Region
 SGAP Canberra Region
 SGAP South Australian Region
 SGAP Tasmanian Region
 SGAP Queensland Region
 SGAP NSW Region
 West Australian Wildflower Society
 SGAP Maroondah Group
 SGAP Blue Mountains Group
 Royal Botanic Gardens Library Canberra
 Burrendong Arboretum Trust, Wellington

STUDY GROUP FINANCIAL POSITION AT 30/6/03

Credit Balance 30/7/02	\$360.39
Receipts 1/7/02 - 30/6/03	\$144.00
Expenses 1/7/02 - 30/6/03	\$306.59
Nett Debit 1/7/02 - 30/6/03	\$162.59
Credit Balance 30/6/03	\$197.80

MEMBERSHIP FEES

As noted on page 1 our annual subscription rate has been **increased to \$5.00**. Cheques should be made payable to ASGAP Verticordia Study Group. Prompt payment would be appreciated.

Where members have previously made advance subscriptions for periods beyond financial year ending 30/7/03 a red tick will be shown here:-(✓) to indicate financial membership for year 03/04.

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