

# ***Far North Coast Bromeliad Study Group N.S.W.***

Study Group meets the third Thursday of each month

Next meeting June 15th 2017 at 11 a.m.

Venue: PineGrove Bromeliad Nursery

114 Pine Street Wardell 2477

Phone (02) 6683 4188

Discussion: May 2017

General Discussion

## **Editorial Team:**

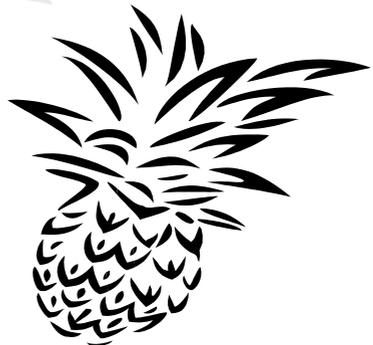
Kay Daniels

Trish Kelly

Ross Little

Helen Clewett

[pinegrovebromeliads@bigpond.com](mailto:pinegrovebromeliads@bigpond.com)



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## **Meeting 20th April 2017**

The meeting was opened at approximately 11.00 am  
The 14 members present were welcomed.  
A total of four apologies were received.

### **General Business**

Ross opened the meeting welcoming the members also noting the apologies.  
The Newsletter was distributed which contained a great report by Lesley on the 19th Australasian Bromeliad Conference held in Caloundra during cyclone 'Debbie's' destructive journey down the coastline.

We discussed further the renaming of the Bromeliad Families after DNA testing, the splitting of some and renaming of others, giving us all much homework to familiarise ourselves with the new naming and classification system.

Ross introduced for discussion *Tillandsia fasciculata* and the variability of this species, drawing our attention to the April Newsletter article with an explanation of his *Till.* 'Dennis'. A timely warning about reminder messages we write on our labels, the so called reminder of where or when we acquired a bromeliad. The risk is plants then acquire the reminder name e.g. 'Dennis' or ex 'Dennis' rather than the registered name of *Tillandsia* 'Magnificent'.

Ross outlined the proceedings of the Conference, the plants sales, the topics of the lectures and the garden visits. A great time had by those attending making their bi-annual contacts and the weather managed to turn on a great welcome for all involved.

Ross spoke of many of the lectures, however, he made a point of discussing two in particular, those of Chester Skotak and Eloise Beach. Chester was acknowledged for his years of breeding and growing bromeliads. His second talk was a Last Hurrah Questions and Answers when he was asked many questions about the future direction of hybridising and what have we got to look forward to.

Eloise spoke of her collaboration in recent years with Chester and of her years of selective and rigorous culling in order to make the variegation patterns in bromeliad foliage stable. This process can take as long as 3 to 10 years per variety plus the additional years of pollination by Chester. Eloise feels we need to focus on plants with the highest potential but admits that some cultivars released have shown some instability in cultivation after a few years. She considers this to be very disappointing but says we can only hope growers, especially sellers, will discard the trash and keep only the first-rate plants to perpetuate the cultivar.

Ross emphasised to us the point made by Eloise, that it is up to us to help maintain the high standard and quality of plants we would like to have in our collections. Unfortunately we still have some growers, who are on growing variant unstable pups to the parent plants and selling them off as the registered plant. Disappointingly once these plants have left Eloise's hands there seems to be very little to no quality control or selective culling of plants just dollar signs. Buyer beware, photo p.9, tell us your thoughts, are they both *Neo*. 'Bottoms Up'.

The Conference Proceedings book was passed around for us to peruse, many of us wishing we had the opportunity to attend, however many oohs and ah's were heard as the pages were turned.

Ross kindly shared his purchases with us, we were allowed to look on in envy, maybe he is baiting us for the next Conference on the Gold Coast in 2019.

Our discussion turned to John and Julie Crawford's open garden visit, due to bad weather in our area some members made the decision not to attend, others were unable to attend. Yes it was pouring down when we left home until we arrived in sunny Queensland, John and Julie welcomed us with open arms and smiles, we were taken on the grand tour around John's shade house. Wow what an experience, so much so that we spent much more time wandering about and looking at so many well grown plants that we nearly forgot our afternoon visit to the Carrara Markets. A huge thank you was offered to John and Julie for opening their garden to us and for their generosity. (photos p.9)

We also wish John a speedy recovery from his recent knee surgery.

A lengthy discussion was held about future garden visits, Gloria suggesting and most of us agreeing that we make these visits on a meeting day and pursue the same discussion and mini competition on the day along with lunch at a venue to be organised by the person/s organising the visit.

It was suggested that Ted and Trish have the next garden visit/meeting, both living in the Clarence River area, Trish in Maclean and Ted on the Ashby side. We could visit Trish's garden in the morning, lunch and meeting at the Harwood Hilton Hotel on route to Ted's garden in Ashby. We will discuss this further at the next meeting, setting a date suitable to most members. We seek comments and thoughts as we would like to make this a more regular event in our meeting calendar.

### **The 2017 Tillandsia Workshop**

Sunday 21 May 2017, 9:00am to 4pm.

Newmarket State School, Bank St, Newmarket, Brisbane, Queensland.

## **Show, Tell and Ask!**

Keryn had a bromeliad she had taken from her garden with what appeared to be a fungal growth, she wanted to know what was. The brown/grey substance was identified as a fungal growth, the plant had possibly been resting near leaf litter or decaying vegetation in the very wet weather and it had adhered to the underside of her plants leaves. It was suggested to Keryn, that she wipe the leaves clean with a soft moist cloth and to place her plant in brighter light with more air flow. The substance on the leaves of Keryn's plant differed to what we often see on our plants that we recognise as dried algae which does no harm to the plants and can easily be removed with a moist, soft cloth gently wiping the algae away. It rolls off like wet tissue paper.

Gloria asked about Orthophytums, saying she had lost one recently with rot. It was suggested to Gloria that she move her Orthophytums from the protected area they have been growing in, to a more open sunny position and in Summer protect them from the very hot direct sun.

Another suggestion to Gloria was that she look through our Newsletter archives for articles by Doug Binns on Orthophytums and look at the insitu photos of the wild growing plants to see the openness of their habitat and the terrain in which they grow.

Ross suggested, if you have spare pups of the same plant, keep one potted and cared for as you normally would, place a second plant in situation in the garden where it will get reasonable care. The third, place out in the hardest environment in your yard and leave it be. Several months later compare the tough grown one that has had no additional watering other than rain to the other two which you have nurtured and make your choice of the plants preferred growing conditions.

Helen showed several Tillandsias in flower namely *Tillandsia* 'Nigra' which was previously known as *Till. stricta* 'Nigra' and another tagged as *Till. tenuifolia* var. *strobiliformis* which is now a synonym of *Tillandsia tenuifolia* var. *tenuifolia*. It appears Helen has some label changes ahead of her as according to the BCR: *Tillandsia* 'Strobiliform' to be used as a cultivar name by those who follow the botanical synonymy. (article and photos p.6 and 7)

Trish had brought along two Tillandsias for confirmation of their naming, one the label could only be partially read with ease. The first part being *Till. ionantha* and the second faded section of the name appeared to be *baileyi* making Trish's label to read as *Till. ionantha x baileyi*. The second of Trish's plants was a very coarse looking *Till. usneoides* type identified as *Till. 'Nezley'* which is the hybrid of *Till. usneoides* crossed with *Till. mallefontii*.

In our April Newsletter there is an article on Light and Shade suggesting colour patches over individual plants can change their appearance. Les gave a talk and demonstration on the use of coloured shade cloth and the effect the different colours have on bromeliads from his experiences e.g:

Red is good for green leaf plants.

Green is good for a reddish leaf plant.

Yellow over *Neoregelia* 'Zoe' changed red to pink.

A purple patch can increase the intensity of 'black leaves'.

Blue causes etiolating and is best used in conjunction with red.

Blue liner in wire baskets gives better roots.

Violet has not yet been used, it will be first tried on 'high altitude plants'.

An interesting contradiction is *Cryptanthus beuckeri* a plant with mottled green leaves. My place is too warm for this plant, however when placed under green shade cloth and covered with a green patch the cooling effect dramatically improved the growth of the plant.



Les showing some of the various coloured bags he experiments with.

Retail shops throw away vegetable net bags of many colours, ask your local green grocer if you can raid his waste bin for bags and enjoy changing the colours of your plants and experimenting for root growth.

## **Next month: June**

Les will show and describe various chemicals at the June meeting. Members are asked to bring packets of the fertilisers they use. We can read the analysis and write on the white board the amount of each chemical in grams.

Members will be invited to make formulae. Combine calcium with phosphate and calcium with sulphur.

## *Tillandsia tenuifolia*

by Derek Butcher April 2017

Dare I say that this is a complicated species. In fact my file on this species now totals 21 pages of moves, countermoves and synonyms without a mention of DNA research. The latest Die Bromelie 1: 2017 has an article by Eric Gouda on this species and introduces us to two varieties. Details follow.

*Tillandsia tenuifolia* var. *glaucifolia* Gouda, var. nov. Die Brom 1: 19-23. 2017



This variety differs from the type variety in having a less robust habit, with slender and less stiff leaves that are often bluish-green, drying brown (vs. bright yellowish-green, drying ochreous), petals often white or pale blue to dark blue (vs. always white).

**Type.** Bolivia, Prov. Santa Cruz, Samaipata. L. Dijkgraaf s.n., cultivated and flowered at the Botanic Gardens of the University of Utrecht with accession number 2001GR01050 (holotype L, isotype LPB).

Additional material studied: **Brazil**, Parana, Vila Velha (near Ponta Grossa), epiphyte in a canyon about 30 m deep. Feb. 1991. A. L. Copijn EG#40, cultivated at the Botanic Gardens of the University of Utrecht with accession number 1996GR01299 (L); **Argentina**, Prov. Misiones, near Androsito. 15-11-1994. A.L. Copijn EG#96., cultivated at the Botanic Gardens of the University of Utrecht with accession number 2003GR01723 (L).

*Tillandsia tenuifolia* var. *nigrifolia* Gouda, var. nov. Die Brom 1: 19-23. 2017



This variety differs from the type variety and other varieties in having leaves colouring deep purple-red to nearly black when exposed to direct sun light (vs. green and not colouring), having salmon coloured floral bracts, paler to yellowish toward the base (vs. uniformly bright pink, green or reddish floral bracts).

**Type.** Brazil, Estado Piaui, s.d., C. Pfister s. n., cultivated and flowered at the Botanic Gardens of the University of Utrecht with accession number 2008GR01388 (L).

Photos supplied by: Derek Butcher, Helen Clewett and the BCR

You may already be growing some of these varieties, after all there are already 11 registered cultivars considered to be infraspecific to *Tillandsia tenuifolia*, namely: 'Amethyst', 'Bonsall Beauty', 'Emerald Forest', 'Green Goddess', 'Hoya Gorda', 'Minima Tenuifolia', 'Pink Cascade', 'Silver Comb', 'Strobiliform', 'Toripe', and 'Yacuiba'. Some originated at Rainforest Flora and one called 'Amethyst' reminded me so much of var. *nigrifolia* but I leave any decision of changing names on labels or just noting labels up to you.



*Tillandsia* 'Amethyst'



*Tillandsia* 'Minima Tenuifolia'



*Tillandsia* 'Bonsall Beauty'



*Tillandsia* 'Emerald Forest'



*Tillandsia* 'Strobiliform'



*Cryptanthus* 'Pink Starlite'  
1st Open and Judges Choice  
Les Higgins



*Neoregelia* 'Touch the Heart'  
1st Novice Dave Boudier



'Anzac Heroes'  
by Dave Boudier



'Lest We Forget'  
by Keryn Simpson



*Neoregelia concentrica* hybrid  
grown by Laurie Mountford



'Rosebuds for Mother's Day'  
1st Decorative Helen Clewett



*Neoregelia* 'Bottoms Up' ???



*Vriesea* 'Cardinalis'  
grown by Keryn Simpson



*Tillandsia* 'Nezley'  
identification query by Trish Kelly



Photo's supplied by: Ross Little and Lesley Baylis



Vibrant colour in John's shade house

## **Aechmea nudicaulis Revisited**

by Derek Butcher 2017

I was recently checking on old references for TAXON, the Bromeliaceae data base maintained by Eric Gouda when I stumbled across the following on page 1956 of Flora Neotropica (1979) - Excluded Names and Taxa:

*Aechmea nudicaulis* var. *capitata* Reitz, Sellowia 17: 42, pl. 1965.

From the characters of the leaf this would appear to be a natural hybrid with some other species.

*Aechmea nudicaulis* var. *plurifolia* E. Pereira, Bradea 1: 161 .1972.

From the characters of the leaf this would appear to be a natural hybrid with some other species.

Previously I had accepted these varieties without a query when compiling a key to the infraspecies and decided I needed to revise my thinking. Harry Luther did say I was wasting my time on such endeavours and I knew that in 1997 Tanya Wendt said as follows:

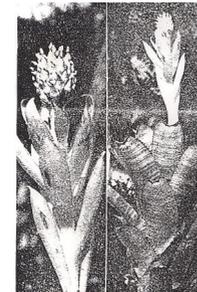
*Aechmea nudicaulis* by T. Wendt in Bot. Journ. Linnaean Soc. 125:245-7. 1997

The wide distribution and variation of *Aechmea nudicaulis* has led to the description of many taxa representing different forms in different parts of its distribution range. Considering that *Ae. nudicaulis* is an easily recognizable species, and these forms are not clearly delimited, for now it seems more appropriate to broadly delineate it.

So I checked as to how others saw this species:

The World Check list recognizes *Aechmea nudicaulis* and varieties, *aequalis*, *cuspidata* and *nordestina*. I then checked REFLOA to see how the Brazilians interpreted this species. This features 407 herbarium specimens of which some 350 represented *Ae. nudicaulis*. The remainder covered varieties *aequalis*, *aureorosea*, *cuspidata* and *nordestina*. There was one for Sucre 1791 which is the type for var. *plurifolia* but this had been amended to var. *cuspidata* by T. Wendt on 31/07/1987. This indicated to me that there was doubt as to the status of var. *plurifolia*. Overall it showed a reluctance to try to identify at infra-specific level.

If we follow the Brazilians the number of varieties will be reduced and if we accept these changes it will mean that several plants in cultivation with these obsolete varietal names PLUS variegates with just NN (nomen nudum) names will need to be registered. *Aechmea nudicaulis* var. *simulans* does not seem to be in cultivation. These names follow —



*Ae. nudicaulis* var. *capitata*  
with bicoloured petals  
now to be called  
***Aechmea* 'Capitata'**

*Ae. nudicaulis* var. *capitata*  
*albomarginata* NN  
with bicoloured petals now to be called  
***Aechmea* 'Capitata Albo'**



*Ae. nudicaulis* var. *flavomarginata*  
now to be called  
***Aechmea* 'Flavomarginata'**

*Ae. nudicaulis* var. *plurifolia*  
now to be called  
***Aechmea* 'Plurifolia'**



*Ae. nudicaulis* var. *cuspidata*  
forma *tabuleirensis* (variegated)  
now to be called  
***Aechmea* 'Tabuleirensis'**



*Ae. nudicaulis* *striatifolia* NN  
now to be called  
***Aechmea* 'Striatifolia'**

Photos  
supplied  
by  
Derek Butcher  
and  
Ian Hook

From the taxonomist point of view we now have a simplified key:

- |  |                        |   |
|--|------------------------|---|
| 1. PRIMARY BRACTS — almost white                               | var. <i>nordestina</i> |   |
| 1a. — red  |                        | 2 |
| 2. FLORAL BRACTS — kidney shaped and minute petals yellow      | var. <i>nudicaulis</i> |   |
| 2a. — triangular or elliptic, relatively conspicuous           |                        | 3 |
| 3. PETALS - wholly yellow                                      |                        | 4 |
| 3a. — red with yellow tip, sepals and ovary red                | var. <i>aureorosea</i> |   |
| 4. SCAPE BRACTS — smallish, evenly spread on scape             | var. <i>aequalis</i>   |   |
| 4a. — clustered beneath inflorescence petals and sepals yellow | var. <i>cuspidata</i>  |   |

From the growers point of view we are getting less and less access to plants from the wild and registered names of cultivated plants is booming. So while it may be easy to identify an *Aechmea nudicaulis* in the broad sense as commented on by Tanya for plants found in the wild, it takes an astute eye for detail to link a plant to a cultivar name.

Before giving a form a different name remember that a Cultivar has been defined as follows :

**cultivar:** produced in cultivation as opposed to one growing in habitat; – an assemblage of plants that has been selected for a particular attribute or combination of attributes and that is clearly distinct, uniform and stable in these characteristics and that when propagated by appropriate means retains those characteristics.

Because of the volatility of this species, different quoted parentage does not necessarily mean there is a difference.

Here are 23 registered cultivar names:

Big John	Good Bands	Silver Bands
Blackie	La Tigra	Silver Ghost
Candy Cane	Lightning (variegated)	Silver Streak Nudicaulis
Chiriqui Grande	Mary Hyde (variegated)	Telegraph Hill
Cranberry Frost	Parati	White Lightning (variegated)
Dee Butt (variegated)	Porto Limon	Xavante
Dragon's Blood	Rafa	Zebra
Frosty The Snowman	Rubra (now Xavante)	

## A Brief Study into How Plants Function Part 4: Potting Mixes, pH and Porosity.

by Les Higgins 2017

Late 1880s the John Innes Institute Potting Mix was published: Turf, 25mm thick (In Soil Science this is known as the OA level) is cut from dairy pasture. The turf, loaded with micro organisms, animal dung and decaying vegetation is placed face down and a heap accumulates. Nutrients such as blood and bone and hoof and horn are added between some of the layers. The heap, covered by a tarpaulin is matured for one year. As demand increased this excellent potting mix became unsustainable.

By the 1960s demand for potting mix was becoming insatiable. American sand miners gave the University of California a grant to find a use for 'Unsalable Sand'. The UC mixes of peat and sand were created. In Australia when using river sand and peat the UC mix separates into two layers. The sand goes to the bottom of the pot and the peat to the top.

The best peat was German Peat at pH4, peat mining for horticultural use was banned when found to be destroying the hanging peat beds. What is now described as peat is probably Sphagnum moss.

Crushed hardwood bark and sawdust has proved to be a good basis for a potting mix. Monstrous heaps of bark that had aged for years in timber mill yards no longer exists. Vandalising of old forests is now controlled and mature hardwood is in limited supply. Orchid Growers pay a huge price for hardwood bark that is harvested in the two coldest months of the year. This is when tannin and other poisonous substances are at their lowest level.

Coconut husk (coir) gave promising results until the impurity sodium debilitated plants. After several years absence coir has reappeared but possible danger remains. Before incorporating coir in a potting mix soak it in a solution of Potassium-chloride or other chlorides. Sodium and chloride combine to make common salt and the saline solution can be washed away. When pine bark treated with Iron-sulphate is mixed with coir there is the possibility of Sodium-sulphate forming. That is not good for plants!

Although not obligatory some coir packs disclose E.C = 0.5 Ds/m. That reads Electrical Conductivity = 0.5 Deci Siemens when the meter probes are 1 metre apart. The electrical conductivity is due to sodium salt. The statement absolves the seller from responsibility should plants die.

The most available potting mixes seem to be crushed pine bark sawdust and or coir. Summer cut pine bark oozes tannins. Black coloured bark suggests that it

is treated with Iron-sulphate to make tannins insoluble. Softwood and coir are both short life substances that heavily drawdown on Urea and Ammonium. Toad-stools (saprophytic wood destroying Fungus) can appear, these are harmless. The natural uptake of nutrients is through the roots. Include in a potting mix “slow solubles” such as Zeolite for Potassium and Soft rock phosphate for Calcium and Phosphate. Blood and Bone will give a low value slow Nitrogen release **BUT** use the “rough” stuff. Tan beads are the by-product of the pet food industry. The much higher NPK rating of beads is chemicals added to the residue of blood and bone after steaming.

Inclusions such as coarse river sand, boiler ash, polystyrene or Perlite can improve the porosity and texture of potting mixes. Even crushed eggshells, wetting agent and coffee grains are added. 'Organics' can be hazardous. Spent mushroom compost has the potential to become a nursery for pathogen fungi.

Diatomaceous Earth is essential protection against ants and insects that attack plants, D.E. also deters earthworms. Add one tablespoon of Diatomaceous Earth to each kilo of potting mix, the Diatomaceous Earth can be expected to protect the potting mix for up to 12 months.

Potting mix pH directly affects root growth and nutrient up-take. The ideal range for a Bromeliad potting mix is between pH6.5 and pH5.6. The pH changes over time as indicated by applied liquids. To determine the pH collect half a teaspoon of the potting mix, apply a few drops of Universal Indicator and mix the indicator and sample the paste. Lightly sprinkle Barium Sulphate onto the moist paste, the white powder changes colour to be compared against the colour chart. (p.15)

Determine the porosity of the potting mix by partly filling a flat bottomed straight sided clear cylinder. Gently bump it to take out air pockets but don't press down. Measure the height of the potting mix, then add water just to the top of the potting mix, this fills the air spaces. Drain the water into a holding container, ideally an identical cylinder, or clean out the clear sided cylinder used and return the water to it, then measure the height of the water. The percentage porosity of the mix is found by dividing the height of the water by the height of the potting mix.

Every environment is slightly different, there is an old rule to use as a guide: “The nearer the tropics the looser the pot”. The writer's location is hotter than most in the area and a suitable potting mix has 30% porosity.

Potting mixes made of softwood and or coir deteriorate into a consolidated air-less mass, this becomes obvious as plants cease to grow. Re-potting plants should be an annual event that re-establishes the air-water ratio and nutrients.

## Soil / Potting Mix and Water Testing

by Les Higgins 2017

Take half a teaspoon of soil or potting mix, place the sample on a mixing plate.

Add a few drops of **Universal Indicator** and make a paste.

Lightly puff **Barium Sulphate** onto the moist paste.

Determine the Ph by comparing the sample's colour against the colour chart.



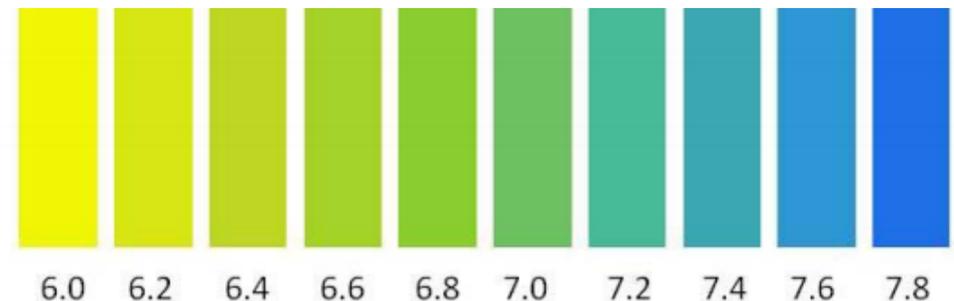
## Water Testing with Bromothymol Blue

Take your glass test tube, colour card, and pH test solution.

Fill your test tube with water up to the 5ml line.

Take your pH test solution and carefully squirt 3 drops (or follow the directions) into the test tube with the water in it.

Compare the result against the colour chart.



## **Novice Popular Vote**

1st	Dave Boudier	<i>Neoregelia</i> 'Touch the Heart'
2nd	Keryn Simpson	<i>Vriesea</i> 'Caramia'
3rd	-----	-----

## **Open Popular Vote**

1st	Les Higgins	<i>Cryptanthus</i> 'Starlight'
2nd	Laurie Mountford	<i>Neoregelia concentrica</i> hybrid
3rd	-----	-----

## **Judges Choice**

1st	Les Higgins	<i>Cryptanthus</i> 'Starlight'
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## **Decorative**

1st	Helen Clewett	'Rosebuds for Mother's Day'
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## **A Growers Comments:**

*Cryptanthus* 'Pink Starlite' by Les Higgins

The most disappointing thing about collecting *Cryptanthus* is the huge amount of plants that differ only by name, *Crypt.* 'Pink Starlite' - cultivar of *Crypt. bivittatus*.

*Cryptanthus* 'Pink Starlite' was registered in 1963, in those days hybridising was a science and *Crypt.* 'Pink Starlite' underwent an eleven years development.

B.L. Cobia of Florida holds the plant-patent-rights for *Crypt.* 'Pink Starlite', a synonym is *Crypt.* 'Coster's Favorite' by Paul DeCoster in Europe, it differs in the amount of leaf undulation.

*Cryptanthus* 'Amy' and *Crypt.* 'Coster's Pride' need imagination to separate them from *Crypt.* 'Pink Starlite'.

*Cryptanthus* 'Confetti Bush' is described as smaller than *Crypt.* 'Pink Starlite' with unstable colouration. If a bigger plant is required then there is *Cryptanthus* 'New Coster's Favorite'.

### **Where do I Find the Dates ?**

**[www.bromeliad.org.au](http://www.bromeliad.org.au)** then click "Diary".

Check this site for regular updates of times, dates and addresses of meetings and shows in your area and around the country.