

# *Bromeliaceae*



*VOLUME XXXIX - No. 5 - SEPTEMBER/OCTOBER 2005*



# The Bromeliad Society of Queensland Inc.

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Front Cover: *Orthophytum* 'Warren Loose'

Photo by Ross Stenhouse

Rear Cover : *Neoregelia abendrothii* x *pauciflora*

Photo by Ross Stenhouse

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Authors are responsible for the accuracy of the information in their articles.

# Society Diary

NEWS

REPORTS

EVENTS

GENERAL MEETINGS are held on the third Thursday of each month except for December, at the Uniting Hall, 52 Merthyr Road, NewFarm, Brisbane, commencing 8 pm.. Classes for beginners commence at 7.30 pm.

## Competition Results

### July Meeting - Mini-show

#### Advanced

##### Class 3

First	J. Higgins	<i>Neoregelia</i> 'Red Waif'
Second	J. Higgins	<i>Neoregelia</i> 'Little Faith'

#### Intermediate

##### Class 1

First	G. & N. Aizlewood	<i>Billbergia</i> 'Super Grace'
Second	G. & N. Aizlewood	<i>Billbergia</i> 'Glory Be'

##### Class 4

First	G. & N. Aizlewood	<i>Canmea</i> 'Majo'
Second	B. & A. Kable	<i>Guzmania sanguinea</i>

#### Novice

##### Class 3

First	L. Grubb	<i>Neoregelia</i> 'Whim'
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##### Class 4

First	L. Grubb	<i>Guzmania</i> Hybrid
Second	P. Butler	<i>Tillandsia stricta</i>

### Raffle Results - Meeting 21st July 2005

Lucky Door - Beryl Batchelor
1st Draw - Marge Heinemann
2nd Draw - Bob Mann
3rd Draw - Barbara Pugh
4th Draw - Voila Hamilton
5th Draw - Barbara Murray
6th Draw - Gary Frahm
7th Draw - Jim Batchelor
8th Draw - Bruce Hansen
9th Draw - John Olsen
10th Draw - Anne McBurnie

### Raffle Results - Meeting 21st July 2005

Lucky Door Prize - Ingvar
1st Draw - Valerie Portley
2nd Draw - Val Gould
3rd Draw - Bruce Hansen
4th Draw - Phillip Beard
5th Draw - Janet Darrington
6th Draw - Phil Sears
7th Draw - Anne McBurnie
8th Draw - Wendy Hansen
9th Draw - David Brown
10th Draw - Frank Coleman
11th Draw - Phillip Beard
12th Draw - Neil Portley

## Notes for New Growers

### SEED RAISING

An important part of raising bromeliads from seed is access to fresh, good quality seed. A quick look at the sex life of bromeliads is in order! See page 9 in the 2005 May/June issue for a description of the anatomy of a bromeliad flower.

Pollination is the transfer of pollen from the anther to the stigma. In most bromeliads, the stigma remains receptive for only a short time after the flower opens -possibly only an hour or so-. While the stigma is receptive, it has a 'moist' appearance. If the fine hair structure of the stigma looks dried out or discoloured, it is unlikely that pollination will result in seed production.

Spread the pollen over the surface of the stigma as completely and evenly as possible. Successful pollination may require some early morning visits to the plants when the flowers have just opened; or a torchlight sortie to catch the night flowering species.

Pollen can be stored at ambient conditions for a short time - a few days- Wrap in a labelled sachet of uncoated paper.

In the BSI Journal 1991 #1, Don Beadle wrote about the storage of pollen. (Don is a noted grower and hybridiser of Billbergias). Pollen stored in labelled zip plastic bags in the cool section of the fridge went mouldy in a few days. When stored frozen in zip bags, good fertilisation was achieved after 90 days, but he felt the acceptance rate dropped off after 60 days. Some crosses were successful with pollen frozen for 18 months.

After pollination, a germ tube grows down the style to fertilise the ovules and initiate seed development. If seed is not re-

quired for propagation, remove the flower spike when flowering has finished. Seed development requires a substantial use of the plants resources- energy and nutrients- at the expense of offsets.

Some plants are self-pollinating, some self fertile - these plants will set seed with pollen from the same plant. A number of bromeliad species will only set seed with pollen from a different clone. Hybrids are obtained by using pollen from a different species or hybrid. When producing hybrid seed, it is important to avoid contaminating the stigma with pollen from the seed parent. Removal of the anthers prior to maturity of the stigma is strongly recommended.

Intergeneric hybrids are produced by crossing plants from different genera. To date, intergenerics have only been produced within a sub-family (ie *Bromelioideae*, *Pitcairnioideae* or *Tillandsioideae* ).

Keep accurate notes of your seed production (date, seed and pollen parent), especially hybrid seed and use only plants whose identity is well established.

Bromeliad seed take several months to mature. Bromelioideae seed develop in a pulpy berry which changes colour on maturity; generally darkening. If the berries detach with light finger pressure, this is a reliable indication that the seed is mature. Squeeze the seed out of the berry and wash free of the pulp.

Pitcairnioideae and Tillandsioideae seed develop in a three celled structure called a capsule. When mature, the capsules change colour (generally becoming lighter) and gradually dry out from the base. When the tips dry, the capsule springs open ejecting the seed for wind dispersal. Tillandsioideae seed have a coma of fine hairs which act as

Continued on page 13

**Vale: John Buchanan**  
(by Phil Hobbs)



Everyone who has enjoyed browsing around Pinegrove Bromelian Nursery will be saddened to hear that John Buchanan passed away on the 22/6/2005 at the John Flynn Hospital at Tugan.

John and June purchased a small nursery at Wardell in 1992 and moved a large collection of Bromeliads up from Sydney. Their collection started with a box of prickly looking plants at an auction at Mt. Prichard. They paid \$5.00 for them. That was the beginning of a fascination with the plants that was to give pleasure and inspiration to all who visited.

My heart goes out to June and her family at their loss.

**24 September**

Plant show and sale presented by the Gold Coast Succulent and Bromeliad Society (Inc).

Timings: 10am-3pm.

Venue: Southport Community Centre,  
Lawson Street, Southport.

Admission: \$2.

More information: phone Pat Ross  
(President) on (07) 5576 1186.

**CHANGED PLANT SALES  
ARRANGEMENTS AT  
MONTHLY MEETINGS**

(compiled by Bob Reilly)

Attendance at monthly Society meetings is currently averaging about 100 people. While it is great to see so many coming along, the number of people involved does create some management challenges.

One issue is plant sales. Currently, they only occur during the 30 minutes' "break", which occurs after the main lecture for the evening. In recent meetings, the number of people trying to buy plants in the limited amount of time available during the break, has caused crowding and congestion.

To help deal with this problem, plant sales will, for the rest of 2005, occur over two intervals. They are: 7pm to 8pm (when the main meeting starts) and during the break as is currently the case.

Please help our sales stewards by buying your plants well before the meeting starts (or resumes in the case of plants purchased during the break).

The Management Committee will review the outcomes of this trial in November 2005, to see if the revised sales' times will be made permanent in 2006.

**Photographers Code**

RS : Ross Stenhouse

DU : Doug Upton

RSm: Rob Smythe

BB : Beryl Batchelor

SU: Susan Reilly

KG: Keith Green

KT: Kerry Tate

# The Editor's Desk

Each edition of the journal that I do is a great but enjoyable challenge. I am very dependent on the contributors for content and each edition they come through with interesting content. You may notice that in this edition I have tried my hand at writing about bromeliads, however with my limited knowledge on the subject, I tend to stick to less technical subjects.

As editor I am looking to develop a certain style for the journal, one that is a combination of technical articles combined with general interest articles and reports on routine society business. I am sure that in that mix there is room for a few more contributors. I see a big role for the journal is education and as the saying goes, a picture tells a thousand words.

Photographs of species and hybrids of bromeliads help members to identify their plants, so as a consequence you will see an increasing focus on photographic content in the journal. If you have a small interesting plant in a pot that you feel should grace the pages of the journal, then I invite you to drop it over to my place for a few weeks so that I can photograph it. You may be a keen photographer and have a particular good shot of a plant, then send in a print or digital image. I prefer digital images to be

scanned at least 300 dpi and preferably TIFF or RAW. GIF's are acceptable, but can result in a loss of quality. The best digital image format is a big subject in its own right and one that I am studying at the moment.

Publishing for the society is a combination of two facets, one being this journal, the other being the web site. This journal by the nature of being a bi-monthly journal is not capable of disseminating late breaking news quickly, that is the role of the web site. If you have access to the Internet then you should be checking the associations web site on a regular basis. I realise it has been a bit static in recent times, but the management committee is addressing that issue.

## **BROMELIACEAE**

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### Bromeliaceae Copy Deadlines

November/December.....	October 5th, 2005
Jan/Feb.....	December 5th, 2005
Mar/Apr.....	February 5th, 2006

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Electronic copy RTF or MSWord 7.0 or earlier - Times New Roman

## Plant Labels

by Andrew Woods

In my opinion a correct name on a label is desirable, but a label changed on sketchy evidence is just as confusing as a label that may be incorrect. One of the problems that the Bromeliad growers have to cope with is that the Bromeliad Society International complies with the international rules for naming plants. To explain in as few words as possible I list the following:

a) The Bromeliad Society International registrar believes that in order to comply with the international rules it is not valid to acknowledge GREX names.

b) Most Bromeliad Hybridists DO use GREX names. [ E.g. In human beings of western culture the GREX in plant names equates to our Surname (e.g. Smith), for the novice grower the cultivar name equates to our Christian name (e.g. Derek). A GREX name can simply be the recipe name (e.g. Neo Carolinae X Neo Concentrica).] Due to the Bromeliad Society International registry recording only the cultivar name we do not have a central bank (or registry) of Bromeliad Hybrids.

c) The rules of International naming of plants do not prohibit the use of GREX names.

d) Many names that have been grandfathered into the cultivar registry were originally names of GREX origin. A good example of this is possibly a Grace Goode hybrid, made many years ago (1975), if we look at the old cultivar and hybrid register compiled by Don Beadle. If we look under *Neoregelia Charm* (N. *Marmorata* X *Chlorostica*) we see listed other cultivars, *Beezlebub*, etc, etc.

So in the past it was acceptable to mark your labels:



Neoregelia Charm

C.V. Beezlebub

Today it is suggested your labels are marked:



Neoregelia

Beezlebub

My suggestion is your labels are marked: (see figure on opposite page)

(This gives you the plant's history at a glance)

If you are unsure about changing labels simply mark the back of the label with new name and a question mark (?) until such time as you feel the new name is correct.

## Looking After Mother

by Gerry Stansfield

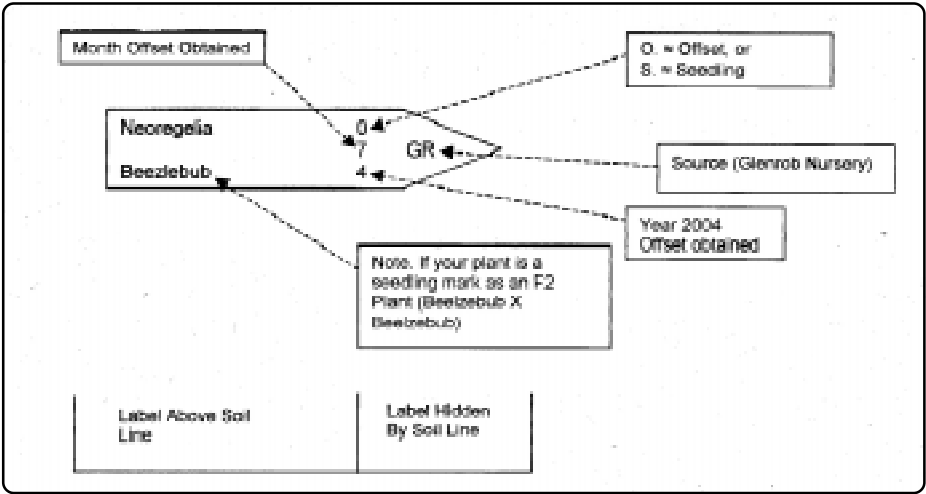
*Reprinted, with permission of the Bromeliad Society of New Zealand, from Bromeliad, June 2005, v.45(6), pp16-18.*

I have noticed that after a *neoregelia* mother plant has produced two or three pups, it can be relegated to the bottom bench or put outside. Perhaps some growers think the pups are more important and need looking after while the mother plant can be retired and ignored. But the mother is capable of producing more pups.

All bromeliads have a very strong desire to reproduce. They do so by two methods.

**The first is by seed, or sexual reproduction.** Whether a species or a hybrid, when the time is right, the flower head will try to achieve pollination. With *neoregelias*, the flower will rise sometimes above the water in the centre cup, and in its natural habitat of South America, it might be polli-





nated by perhaps a hummingbird. We do not have humming- birds but other birds are attracted to flowers for their nectar and bees will seek pollen. It has also been observed in the USA that at the point of stigma acceptance, it will move or bend to touch the pollen stamens. Climate is thought to be the reason why some neoregelias will self pollinate at certain times of the year.

Very little in-depth research has been done, but we do know that nature provides bromeliads with the ability to reproduce before they eventually die.

### The second method of reproduction is by pupping or asexual vegetative propagation.

A new pup is formed where the leaf is attached to the stem of the plant. The leaf actually protects the new pup as it grows. The pup starts out as a dormant node at the base of each leaf sheath, and each leaf of the bromeliad plant has one. If you have thirty leaves on your plant you could, theoretically, have thirty pups. This might not always happen because the plant decides which node is going to be the next pup, and it might not be the next one up the stem.

Nidulariums are notoriously fickle for sending up pups from all over the stem, even up to the floral bracts at the top.

Inducing a bromeliad plant to send up more pups is possible, and we will discuss this later, but first let us discuss the method of removing a pup. How this is done is very important, because it is possible to damage both the pup and the dormant nodes near it. The leaf should be cut off about 50mm out from the base, and then should be cut down the centre towards the stem just under the new pup. Each side of the leaf can now be pulled away, one side at a time. You might think you can just pull the leaf off but you could damage the dormant node next to it, and that means a lost pup. Another method that has been tried in the USA, with success, is to remove the lower leaves by cutting as described above, and then make up a paste with a hormone rooting power and brush it on to the area where you can see a node. I have not tried this method.

Removing a pup can be just as crucial and whether using a knife, small saw or a pair of secateurs, take care to inflict the least

damage possible to the stem if you wish to encourage the mother plant to continue pupping.

### **Giving 'Mother' Some Help**

The removed pups should be dusted with Captan / Flowers of Sulphur or some other such fungicide and then allowed to dry off for about a week before they are placed in your favourite rooting mixture. Make sure they have been given a drink of water.

Now, what do we do with mother? The pups are young and should be strong, and can look after themselves, but the mother is capable of producing more pups because it has the leaves on its stem to do so. We can and should try to help her do just that.

There are a number of tried and true methods for assisting asexual propagation. First, the plant should be knocked out of its pot and the old roots trimmed. It will not make a new root system, but its existing roots will continue to feed the plant. Carefully remove some of the lower leaves and then repot the plant a little deeper up the stem. We don't know where the next pup will come from but potting the plant a little deeper will allow the lower dormant nodes to sprout, should the mother plant decide to produce more pups. The re-potted plant should now be given pride of place and loving attention by watering, feeding and watching. I am sure you will be rewarded when you see many subsequent pups appearing. Remember, the stem of the plant will continue to send up pups as long as there are dormant nodes on it.

In photo (1) page 12, We can see a *Neoregelia* 'Royal Burgundy' that has produced thirteen pups and if you take a good look at the photo, you can see it has another five - two attached to the base of the stem and three coming from below the pot-

ting mixture. The moist potting mix is sufficient to initiate growth of the dormant buds. This is similar to air layering when damp sphagnum moss is held in by a plastic wrap to encourage the branch to send out roots which can be cut off and potted.

In photo (2) page 12, we see *Neoregelia* 'Dr Oeser' variegata. This is such a lovely plant that it is worth trying to get as many pups as possible. This plant has so far produced ten pups plus the two on the plant which can be seen coming from the base of the plant below the potting mix. These will be taken off and the plant re-potted deeper in the pot. You can also wrap sphagnum moss around the stem of the plant, but it must be kept moist at all times because it dries out very quickly.

If your neoregelia or nidularium has produced a long stem with no leaves, usually because it has not flowered, cut off the stem about halfway. Both pieces should be dusted in Captan or Flowers of Sulphur and left to dry off for a few days. The top half should then be placed in a jar of water and it will eventually produce a root system while the lower half left in the soil (or better still re-potted in fresh potting mix after cutting some of the old root system away and trimming up the plant), will sprout new pups. I don't know how long this takes because I have not used this method.

### **The Screwdriver Cure**

Finally, we have the screwdriver method which is really only carried out if you think your plant is about to quill and you cannot fix it or if your variegated plant has turned out to be an albino (all the new leaves are white or cream with no visual green) which can happen to many favourite plants, especially the albo-marginated ones. You must act to produce a good plant from the lower leaves that have some green

or red pigment in them.

First, remove the water from the central cup and using a long and narrow screwdriver, push it down into the cup until you feel the bottom. This is the Apical Tip of the growing plant and just below it is the meristematic tissue of the plant, and it is this you must destroy. Push the screwdriver into this tissue and twist it around and around.

The screwdriver must go into the tissue for about 15mm to 20mm to destroy the meristematic tissue to ensure there is no chance that the plant will start growing again from the centre cup.

The centre cup should now be treated with a fungicide such as Yates 'Bravo', washed out with fresh water twice a week and treated again. The bromeliad is now in serious trouble; it cannot continue to grow and because reproduction is its main aim, it will start pupping. The number of pups that you can get will depend on the type of bromeliad and its size. Photo (3) page 12, shows a *Vriesea fosteriana* (rubra). This plant started quilling when Margaret and I were away and so I was unable to save the plant. However it was given the screwdriver treatment and subsequently produced 25 pups from the base. The interesting thing is that some of the first pups were also quilled, but they sent up new pups which were OK.

I think you will agree with me that bromeliads are extremely resilient at reproducing and just need a little help from us from time to time. •

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**amoena:** Beautiful; charming; pleasing

**Variation:** The condition of a leaf when certain sections are reduced or totally devoid of green pigments with the result that the leaf has pale stripes, blotches or bands.



(1) *Neoregelia* 'Dr Oeser' variegata



(2) *Neoregelia* 'Royal Burgundy'



(3) *Vriesea fosteriana* (rubra)



*Neoregelia* 'Aurora'

RS

a parachute. Pitcairnioideae seed have 'wings' in various shapes to aid wind dispersion.

Seed capsules may open slightly at the base before the final ejection of the seed. At this time, the capsules are susceptible to moisture penetration from watering or rain; with possible 'fermentation' or mould growth. Seed with a sweet smell or the coma matted - not fluffed out - is likely to have been so affected. This seed is unlikely to result in good germination. For valuable seed, the best option is to plant/sow the seed and wash several times with a light spray of water.

Avoid handling seed with 'sweaty' fingers as the perspiration may aid mould development. Wash your hands; then dust lightly with talcum powder.

**Bromeliad seed are best 'planted' fresh. For storage, the seeds should be kept in small paper labelled envelopes, never plastic sachets.**

All bromeliad seed needs light to initiate germination and is planted (sown) on top of the growing medium; and well labelled. Bromelioideae and pitcairnioideae seed are planted on the surface of a fine potting mixture; a sieved version of the mixture used for adult plants is suitable. Keep the mixture moist but not sodden. For large scale operations, periodic misting is appropriate. For the odd lot of seed, the container can be placed in a plastic bag to conserve moisture. In both instances, the seed is exposed to sunlight.

Tillandsioideae seed from plants grown in a potting mixture are sown as above. Seed from epiphytic tillandsioideae -especially the extreme epiphytes- are best sown on an inert substrate which allows good air movement around the germinating seeds.

Coconut fibre from basket liners or old mattress padding is suitable. A useful precaution is to pour boiling water over the fibre to discourage any mould spores. The fibre pad should be at least 10 mm thick and will probably need a backing of wood or foam plastic for support.

I have had good success using a local version of 'the bundle of sticks'. This was developed by Dr.Oeser, a noted German bromelian of the 1960's using thuya twigs; and successfully introduced locally by Nez Misso, the first President of the Society. My version uses melaleuca twigs, mainly because I have a suitable tree on site. The bundle is built up around a central stick 12-15 mm in diameter for support; with the rest of the bundle made up of fine twigs < 2 mm. The bundle is tied very tightly with wire (iron, not copper); the bundle should be at least 70 mm in diameter when compressed.

In either case, the seed is spread as evenly as possible over the fibre or twigs and lightly sprayed with water. This causes the fine hairs of the coma to cling to any surface roughness. The seed are sprayed regularly but allowed to dry out between watering. Be alert for any low humidity winds especially the hot north-westerlies (S-E Qld) when the spray frequency will need to be increased.

For all seed, some sign of germination should be apparent in 2-4 weeks with the development of a small green spot. This is the first seed leaf and is followed by a small root, more tiny leaves and more roots.

The developing seed are sprayed with the weak fertilizer solution that I use for the adult plants from a very early stage. It's hard to prove that this is a major benefit but it does not cause any problems.



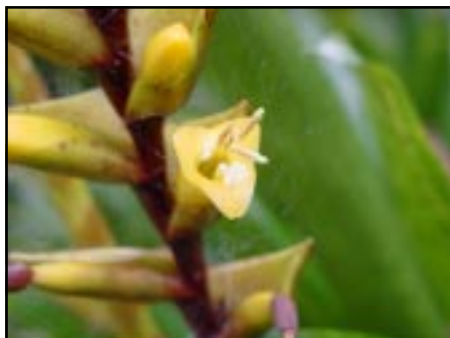
*Vriesea Elfin*

DB



*Vriesea Elfin*

DB



*Vr Natascha*

KG



*Vr Natascha*

KT



*Vr 'Elfi variegata'*

## **Vriesea ‘Elfi’ and ‘Elfi Natascha’**

by Derek Butcher, Cultivar Registrar

Oh! What a tangled web can be woven when little is written about a cultivar when it is released. This is just one example. While this may be a ‘Cold Case’ there are still plants being grown around the world that are in this tangle.

In the International Checklist of Bromeliad hybrids 1979 we find a reference to a *Vriesea* ‘Elfi’ and that it came into existence in 1970. No parentage was known.

In 1984 in Brian Smith’s Manuscript of Bromeliad hybrids and Cultivars we read that the parents of ‘Elfi’ are (‘*Viminales Rex*’ x *gigantea*) gleaned from some nurseryman’s catalogue. The use of the name ‘*Viminales Rex*’ suggests an origin in Europe. It is interesting to note that this name was coined by the Belgians nearly one hundred years ago to cover all *Vriesea* hybrids at that time because their pedigrees were such a mess. This would be the first recorded use of a Cultivar Group! It was not a Cultivar name but is treated this way these days and I personally can see no difference between it and a branched ‘*Poelmanii*’. Both quoted parents have branched inflorescences.

In 1991 ‘A Preliminary Listing of all known cultivar and grex names for the Bromeliaceae’ repeated this parentage.

In *J. Brom. Soc* 45(3): 106. 1995 G Samyn from Belgium again repeated this parentage.

In *J. Brom. Soc.* 47(3): 121. 1997 G. Samyn and E Thomas showed ‘Elfi’ as a ‘variegated’ chimaeric shoot from ‘*Natascha*’ whose parents were (‘*Poelmanii*’ x *fenestralis*) Note that

*fenestralis* has a simple inflorescence and ‘*Poelmanii*’ would probably have had a simple spike at the time it was used as a parent. These problems of changing identity but not name is partly explained in <http://fcbs.org> under ‘Uncle Derek says’ under *Vriesea* ‘*Van Ackeri*’.

In 1998 the Bromeliad Cultivar Register shows this new parentage, pointing out the previous error in parentage without realising it was referring to a different plant!

In 2004 we flowered a plant we had got from Ken Woods of Sydney called (‘*Viminales Rex*’ x *gigantea*). It was time for action! These days a cultivar cannot be identified by formula. Ken had not done the hybrid and the answer lay in Queensland. - we thought!

Olive Trevor was able to give me some clues. It appears that the plant had been imported into Queensland or Northern New South Wales in the ?1980’s under formula from the USA. Somehow, at least one of these was called *Vriesea* ‘*Gigant*’ but it bears no relationship to Richter’s ‘*Gigant*’ whose parents are (‘*Poelmanii*’ x ‘*Versaillensis*’). We have a photo on file of ‘*Gigant*’ from Gilbert Samyn of the Belgian Research Institute showing a single spike. Perhaps it was a typical Aussie abbreviation of the pollen parent *V. gigantea* - nobody knows - but we do know there are plants circulating in Australia under ‘*Gigant*’ AND the formula (‘*Viminales Rex*’ x *gigantea*). Perhaps the plant is still being grown under the formula in the USA!

To my mind this is the ‘TRUE’ ‘Elfi’ but we cannot have two different plants with the same name. The ‘Elfi’ which is a variegated form of ‘*Natascha*’ should be referred to as ‘*Elfi Natascha*’ to differentiate the two.

My guess that there was an old ‘Elfi’

was confirmed when John Arden sent me a copy of Kent's catalogue in 1979 in California where *Vriesea* 'Elfi Variegata' was on offer with parents shown as ('*Viminalis Rex*' x *tesselata*) – you may recall that the current name for *tesselata* is *gigantea* – and the price was ASK. This indicates a rare plant!!! To my mind this means that there was a non variegated *Vriesea* 'Elfi' in existence – somewhere! The name and quoted parentage suggest this hybrid was of European origin and well before the revelations from Belgium in 1997.

In the same catalogue *Vriesea* 'Natacha' (note the spelling) was also available and showing parents of (*Fenestralis* X *Poelmanii*) which indicates that in 1979 'Elfi' and 'Natascha' were in no way related even though both had variegated Sports. I would suggest that in those days plants sold as 'Natascha' had a single spike. Just to confuse matters, in those days all from the one seed batch would have had the same cultivar name and these were not primary crosses so some variation would have occurred! This is perhaps confirmed that on the same price list there was a plant with the formula *fenestralis* x 'Poelmanii' !!

Both the species used in these hybrids are from the subgenus *Xiphion* and with both hybrids there is a certain oddity in the floral arrangement. It is difficult to see what differences there are but I believe them to be.

*Vriesea* 'Elfi' has:

- Plant larger – difficult to assess because of feeding programs
- Leaves less tessellated
- Scape longer
- Floral bracts wider
- Floral bracts and sepals uniform ('Natascha' sometimes spotted)

So I'll be changing the Cultivar Register to read

*Vriesea* 'Elfi' see also 'Elfi Natascha'

*Vriesea* 'Elfi Natascha', ('*Poelmanii*' x *fenestralis*), Variegated, Sport from 'Natascha', Simple inflorescence but sometimes branched, at one time known only as 'Elfi' Refer J. Brom. Soc. 47(3): 121. 1997. Cargo Report describes it as 'A wide leaved hybrid with a purple spike. The leaves have bold cream-colored variegation up the center.' (Wurthmann developed a variegated form with this parentage 11/1991 unnamed as of 1998)

*Vriesea* 'Elfi Green' is 'Elfi Natascha' that has lost its variegation.

*Vriesea* 'Elfi', ('*Viminalis Rex*' x *gigantea*), hybridist unknown, long scape, large branched inflorescence, there may be a variegated form in existence. Refer BSI-ICBH-1979 and Prelim listing 1991 under 'Elfi' and in Kents Catalogue 1979 under 'Elfi Variegata'

## Flash Photography and Bromeliads

Author: Ross Stenhouse

Ever noticed that sometimes your bromeliads seem to be completely different colours in photographs using flash? This can be very annoying if you are trying to take photographs to illustrate magazine articles where the criteria 'Shape, Form and Colour'.

I have a theory that certain chemicals in the plants that give the plant some of its colour fluoresce under the high UV light present in the light from the flash. These chemicals may emit light of a different colour when they fluoresce explaining the radically different colours.

Have you ever noticed this?



## A Little Education

The following is an extract from information published on the Bromeliad Society International web site. It has been presented in this journal as a backup to the information given during the lectures given at the monthly meetings of BSQ.

Bromeliads belong to the family Bromeliaceae and are members of the Class Liliopsida (monocots). Monocots comprise one quarter of all flowering plants. The family Bromeliaceae is divided into three subfamilies: Pitcairnioideae, Bromelioideae and Tillandsioideae.

**Pitcairnioideae** This subfamily contains the most ancestral bromeliads and many resemble the grass family from which they evolved. Almost all are terrestrial and rely on an extensive root system for their moisture and nutrients. They are generally spiny leaved and have dry capsules with small wingless seeds.

**Bromelioideae** This subfamily is the most diverse containing the greatest number of genera (but the least number of species). Most species in this subfamily are epiphytic and characterized by a rosette-like form many forming a water holding tank. They generally have spiny leaves and berry like fruits containing wet seeds which are often distributed by birds and animals who consume the fruits.

**Tillandsioideae** This subfamily contains very few genera but includes the most number of species. Most of the members of this subfamily are epiphytes. All have spineless leaves and their fruit is a dry capsule containing winged seeds which are usually dispersed by breezes. The feathery plumes also help the seed to adhere to a suitable epiphytic surface for germination. This subfamily is probably the most

<b>BROMELIACEAE</b>			
<b>Pitcairnioideae</b>	<b>Tillandsioideae</b>	<b>Bromelioideae</b>	
<i>Ayensua</i>	<i>Alcantarea</i>	<i>Acanthostachys</i>	<i>Hohenbergia</i>
<i>Brewcaria</i>	<i>Catopsis</i>	<i>Aechmea</i>	<i>Hohenbergiopsis</i>
<i>Brocchinia</i>	<i>Glomeropitcairnia</i>	<i>Ananas</i>	<i>Lymania</i>
<i>Connellia</i>	<i>Guzmania</i>	<i>Androlepis</i>	<i>Neoglaziovia</i>
<i>Cottendorfia</i>	<i>Mezobromelia</i>	<i>Araeococcus</i>	<i>Neoregelia</i>
<i>Deuterocohnia</i>	<i>Racinaea</i>	<i>Billbergia</i>	<i>Nidularium</i>
<i>Dyckia</i>	<i>Tillandsia</i>	<i>Bromelia</i>	<i>Ochagavia</i>
<i>Encholirium</i>	<i>Vriesea</i>	<i>Canistropsis</i>	<i>Orthophytum</i>
<i>Fosterella</i>	<i>Werauhia</i>	<i>Canistrum</i>	<i>Portea</i>
<i>Hechtia</i>		<i>Cryptanthus</i>	<i>Pseudaechmea</i>
<i>Lindmania</i>		<i>Deinacanthon</i>	<i>Pseudananas</i>
<i>Navia</i>		<i>Disteganthus</i>	<i>Quesnelia</i>
<i>Pepinia</i>		<i>Edmundoa</i>	<i>Ronnbergia</i>
<i>Pitcairnia</i>		<i>Fascicularia</i>	<i>Ursulaea</i>
<i>Puya</i>		<i>Fernseea</i>	<i>Wittrockia</i>
<i>Steyerbromelia</i>		<i>Greigia</i>	



*Aechmea* 'Red Flame'

RSm



*Aechmea* 'Yellow Ochre'

RSm



*Aechmea* 'Smouldering Embers' RSm

## ***Aechmea* ‘Forest Fire’— Alliance.**

by Rob Smythe MSC

My garden is renowned for the hundred or so very large red, salmon or green aechmeas standing up to two metres tall when in flower. My bromeliad interest has always been neoregelias so why am I writing about aechmeas? Purely a case of serendipity. Spotted a red leaved *Aechmea blanchetiana* once and that was enough to break my resolve down but then seeing a slide presented by Thelma O’Reilly at the ninth conference of Australian Bromeliad Societies in West Australia was the pheromone setting me on the path to smelling one out. By mail I have tried to set up search parties to find her plant on the beaches in Rio de Janeiro. One of my friends a frequent visitor to such places said tongue in cheek, “My wife has forbidden me to pick up anything (anyone?) that I find on beaches, and I definitely can’t bring them home”.

You probably know that common folk like us acting like fully trained botanists stick ‘Rubra’ onto the name of anything more red than normal. Well—this lead to seed on the ‘rubra’ form on *Aechmea blanchetiana* coming my way. Growing these up in good faith I even wrote an article detailing the different colouring in the leaves of the young plants. In a later article I wrote about the flowering diversity. Not a species. After contacting the grower, my so called “Rubra” turned out to be seed from a hybrid. The seed-bearing plant looked like a red form of *Aechmea blanchetiana* but was actually found to be *Aech* ‘Forest Fire’. The other plants in flower at the time were *Aechmea* ‘Peaches ‘n Cream’ and the

bronze leaved form of *Aechmea blanchetiana*.

My seedlings are all different. Some key out as *Aechmea blanchetiana* others as *Aechmea rubens* but none fit the description of either parent. From my study of all the flowers I feel sure of an ancestor, *Aechmea blanchetiana* and I’m confident another ancestor is *Aechmea mulfordii* or a hybrid of the same. *Aechmea rubens* could be somewhere in the mix but now I am speculating.

So what do we know about this parent plant *Aechmea* “Forest Fire”, the so called *Aech blanchetiana* ‘Rubra’ ?

1) It definitely has a large amount of *Aech blanchetiana* genetics.

2) From what the owner has told me, knowing the breeder of *Aechmea* ‘Forest Fire’ is that it is almost definitely *Aechmea blanchetiana* x *Aechmea* ‘Peaches ‘n Cream’.

3) If there is an exogenous parent of the seed supplied it would most commonly be *Aechmea blanchetiana*, the bronze leaved form. The seed supplier never had the green form or the more recently discovered yellow or red forms large enough to flower. The existence of the yellow form needs confirmation. It turned up in a collection in Africa so could be a hybrid. I expect it to flower at the end of 2005. I believe I have suggested a yellow form in a previous article. The plant in mention, not the African, plant turned out to be a hybrid.

I’ll take off my academic hat and write about some of these now flowering plants. If you were interested in the above discussion on possible parentage see my earlier article going into it in more depth<sup>1</sup>. There is not room in this article to show all the named cultivars but they are all available for perusal on the <http://fcb.org/>



*Aechmea* 'Forest Flame' RSm



*Neoregelia* 'Wild Tiger' - some miniature Neos look good from both the top and underneath This allows them to be placed high and viewed from the underside. RS



[pictures.htm](#) site on the internet.

### **Plants with Salmon or Red Coloured Leaves**

From the 200 or so seedlings these were the ones I kept. Early flowerings showed that the green leaved forms usually had inflorescences unlike *Aechmea blanchetiana*<sup>1</sup>. Being hybrids this has not always been the case as I found out this year.

***Aechmea* ‘Fire Up’**: I believe this to be a selfing of *Aechmea* Forest Fire. So far it is the most red inflorescence that I have seen in any of *Aechmea blanchetiana* alliance. The developing inflorescence is deep red. This total redness is eventually broken by the emergence of bright yellow flowers. Plant is a salmon to red colour going more yellow in direct sunlight and more green in shade. Spikes rather clumped with inflorescence stately and erect. A top plant.

***Aechmea* ‘Golden Glow’**: Again I believe this to be a selfing of *Aechmea* ‘Forest Fire’ but it has a red rachis with red and yellow floral bracts giving a gold appearance. A very large and spreading inflorescence staying erect for more than six months. This is generally admired by all and generally considered the most beautiful of all these plants.

***Aechmea* ‘Red Flame’**: An exceptionally red plant when grown in bright light. Actually stays red in full sun. Inflorescence brightly coloured red and yellow but spikes unlike *Aechmea blanchetiana*, being short and clumped.

***Aechmea* ‘Smouldering Embers’**: This plant is most easily described as a miniature *Aechmea blanchetiana* so I expect it is an outcross with *Aechmea blanchetiana*. Looks like bright red and orange beads threaded along the spike. It surprised me by flowering smaller (1.3 m to top of inflo-

rescence) than the others so before registering I waited for an extra flowering. It was the same. Spikes are long and not clustered but unlike *Aechmea blanchetiana*, do not have the singularly most important taxonomical feature, that is flowers separated by visible stem (lax) at early flowering (anthesis) time.

***Aechmea* ‘Forest Flame’**: Flower contrasts with *Aechmea* ‘Smouldering Embers’. Very large stretching 1.8 m to the tip of the inflorescence. I describe it as a chunky inflorescence.

***Aechmea* ‘Yellow Ochre’**: A stunning large erect and stately plant (1.8 m). Gathers nearly as many votes of approval as Neo Golden Glow. Inflorescence is nearly all yellow as first flower breaks in November / December but now in May there is a lot of red showing in the floral bracts.

***Aech* ‘Pale Face’**: A very unusual flower. Bright red scape with spikes almost monochrome translucent yellow. Somewhat weirdly to my way of thinking, this plant, after going to so much trouble to develop an insipidly yellow inflorescence (rachis, spikes and all types of bracts this translucent yellow) suddenly, late in its life, develops red fruiting bodies. These fruits turn purplish black like all the others in this alliance when seed matures. Don’t the birds half like them!

### **Green Leaved Plants**

Most of these have to my way of thinking, not been worthy of a clonal name as the flowers of most have had very little colour in the very narrow congested spikes.

I have only registered two of these. These being *Aechmea* Orange Age which has a very flexible flower spike which goes orange as it ages and quickly becomes pendulous. This is very strange and must be an outcross with something like *Portea*

## Letters to the Editor

*leptantha* (a guess). The other is *Aechmea* 'Fatso' which is a shorter squat plant when grown in full sun. Leaves have water mark variegations. Such variegations are not white just thinning of strips of the leaves. I have one as yet unnamed plant which is green but does have a contrasting bright red inflorescence.

***Aechmea blanchetiana*:** I have included this photo to show the unique flower spike, see insert at the top left hand corner of the photo—note the stem is visible between flowers at anthesis.

The plants in mention, when out of flower, namely *Aechmea blanchetiana* and *Aechmea* 'Forest Fire' hybrids are almost indistinguishable to the untrained eye. If you mix them up the following may help.

General characteristics that I have found with my plants:

(1) Floral bracts shorter than flower internode—*A. blanchetiana* Floral bracts longer than flower internode—*Aechmea* 'Forest Fire' hybrid

(2) Spikes short rarely reaching 15 cm *Aechmea* 'Forest Fire' hybrid Spike long not less than 15 cm *Aechmea blanchetiana* and Exception *Aechmea* 'Orange Glow' (to 18 cm)

(3) Spikes in clumps over most of the inflorescence- *Aechmea* 'Forest Fire' Spikes in clumps only on lower branches *A. blanchetiana*

Rob Smythe MSc

1) R. Smythe "Aech blanchetiana 'Rubra' x self" Bromeliaceae Vol 36, No 1 May/June 2002 p 9 -13

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**Axil:** The juncture of leaf and stem: the upper angle that a petiole or peduncle makes to the stem that bears it.

**Peduncle:** Stem of a flower cluster.

**Petiole:** The stalk or stem of a leaf.

*Lynn Hudson replies to Bob Reilly's article on variegation and has supplied some further tips that she has come across.*

At the World Bromeliad Conference 2002, at St. Petersburg, Bob and I were delighted to meet the esteemed Nat DeLeon who spoke of bromeliad variegation and how he treats these plants to get as many pups as possible.

- He overpots the mother plant before she flowers and feeds her both from the top and bottom, the bigger the pot, the more plants he gets.

- He has drilled the meristem to produce more pups - yuk.

- If the spike has emerged, he cuts it off to release the hormone that induces pupping.

- He trims and even removes the outside leaves to allow more light to the buds and make more room for the pups to grow.

- If you are feeding heavily and your plant loses variegation, you are over feeding.

- Cut off any green plants and keep only the variegated pups.

- Place all variegated plants in as much bright light as the plant can stand to produce stronger variegation contrasts.

- On seeds - he finds they usually come up albino, then flake and die.

- "As rules are meant to be broken and nothing surprises me about bromeliads", he suggested we try anything, like self pollinating variegated plant flowers to see if they would produce viable seed.

- There has been a lot of talk about radiation producing variegation but Ralph Davis radiated seeds at Oak Ridge and the plants and pups distorted as they grew.

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*Pat Coutts of Mt Elliot, Nth Qld has submitted the following:*

With reference to "The Case of the Fading Variegation" by Bob Reilly July/August 2005, I wish to make the following comment.

Many years ago I imported, at great expense, some *Aechmea chantinii* 'Shogun'. As the years passed, other newer plants took up my time and interest. Over this period we moved the entire collection from the city to a rural area some 30 kms to the south of Townsville.

When requested by another collector for an *Aechmea* 'Shogun', I couldn't find any variegated plants at all. Now moving does involve a certain degree of neglect, it's just not possible to quickly handle all the plants that require attention and of course the softer leafed plants have to be tended first.

One day I noticed a yellowy green *Aechmea chantinii* with a strikingly beautiful variegated pup. Upon further investigation I found a number of these plants all looking alike. I repotted all and placed them in lower light (hanging under a bench, occupied by other plants) and gradually their variegations began to return.

They are true variegated beauties like the aristocrats that they are, with a strong green centre band, creamy albo-margined variegations and silver bandings on the underside of the leaves. They are not fast growers, nor do they produce numerous pups, but tend to their needs and you have a plant of which to be proud.

Also needing attention is *Vriesea* 'Grafton Sunset'. It has developed striated variegations from a green Mother Plant, in my green house. All pups are variegated. I believe this variegation has also occurred in Cairns.

Whilst the final plant, is not variegated it does exhibit a marked difference in colour from mplants grown in the south of the state. The plant is *Billbergia* 'Hallelulah', a beautiful plant made by Don Beadle in 1995, a cross between *Billbergia vittata* 'Domingos Martins' and *amoena* 'Ed McWilliams'. Tropically grown plants have a marked pinky colouration. I have a number of these now and all are the same, although plants given lower light conditions are definitely a little darker like one of the parents 'Domingos Martins'. No matter, ALL are beautiful, but it is a puzzle.

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Continued from page 13

Many seedlings have a similar shapes (for their genus) while small; and develop the characteristic adult shape in later growth. The seedlings are left in the original mixture or on the mounting until they are big enough to handle and transfer to community pots or individual pots or mountings.

Growing bromeliads from seed is not for the impatient. The faster growing species such as *Neoregelias*, *Aechmeas* or *Billbergias* may mature in 2-3 years while some of the slow growing atmospheric *Tillandsias* will take 4-7 years.

Watch the developing plants. Occasionally, there will be an odd one which is worth special attention - a variegation in a leaf or an odd growth habit. Some years ago, I grew a small crop of *Tillandsia ionantha* from seed. From a very early stage, it was apparent that there was one odd plant that grew more rapidly than the others and had a slightly different shape. When it matured, it was apparent that it was a hybrid, with pollen parent unknown but suspected to be *T. seleriana*.

Good Growing. - Peter Paroz



*BSQ Display at the Combined Show 2005*

BB

*Bromeliaceae*

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SEPT/OCT 2005



## **2005 COMBINED SHOW JUDGES REPORT**

(by Olive Trevor)

The quality of plants entered into the competition was high, although the number was less than last year.

There were entries in 17 of the 27 classes, which was similar to previous years. However, there were no entries in the Novice class. This was a bit disappointing, given the high quality of entrants in this class at the mini-shows which are held at the Society's general meetings each month.

The quality of entrants in the Cryptanthus, Hechtia/Dyckia, Billbergia, and various novelty classes was particularly high, and I congratulate the growers and "artistic designers" concerned.

I thank all of you who made the time and effort to exhibit your plants in the competition. This is an important part of our show. I look forward to more exhibitors and lots more plants for our Conference show, and the 2006 Combined Show.

I thank the judges, student judges and competition stewards for their time and effort, and for a job well done.

## **2005 COMBINED SHOW REPORT**

(by Bob Reilly)

The 2005 combined show of bromeliads, cacti and other succulents was held over the Queens Birthday weekend on 11<sup>th</sup> and 12<sup>th</sup> June. Nearly 3,000 people, from all parts of Queensland, interstate, and overseas attended the event, making it one of the most popular shows held throughout the year at the Mt Coot-tha Botanic Gardens.

Over 60 bromeliads were entered in the

bromeliad competition. Their quality was high, with the judges facing some difficult decisions. The quality of entrants in the cryptanthus, hechtia/dyckia, and the various novelty classes, was particularly high. There were 10 sections which had no entrants in them. So, if you have some of the less commonly-grown bromeliads, this is a great opportunity to show other growers, and members of the public, what they look like.

The displays were very attractive, attracting a lot of positive comment from everyone. A bromeliad tree, festooned with tillandsias, was the centrepiece of the bromeliad display. The tree was surrounded by a colourful array of guzmanias, vrieseas, aechmeas, neoregelias, and billbergias. Many of these bromeliads were added to the "wish lists" of the people who attended the show.

The sales area was well supported by growers, with over 1,000 varieties of bromeliads, cacti and other succulents on sale. Plant quality was high. These two factors resulted in record plant sales.

Over 100 people helped to organise and run this event and their contribution is much appreciated, as is the support of those growers supplying plants for sale.

## **BSQ Bromeliad Bonanza**

**5-6 November 2005**

Spectacular displays of bromeliads  
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*Gusmania* 'Red Star' - Entrant - Combined Show 2005 DU



*Vriesea hieroglyphica x fenestralis* - Grand Champion - Combined Show 2005 DU



*Dycia* 'Green Planet' - Reserve Champion - Combined Show 2005 DU



*Aechmea* 'Blue Tango' - Entrant - Combined Show 2005 DU



*Neoregelia* 'Passion' - Display - Combined Show 2005 DU



*Ursulaea macvaughii* - Combined Show 2005 in Gold Coast display DU



*Tillandsia jalisco-monticola* - Entrant - Combined Show 2005 DU



*Guzmania* 'Marian Oppenheimer' - Entrant - Combined Show 2005 DU

## 2005 COMBINED SHOW: COMPETITION RESULTS

(compiled by Bob Reilly)

Prizes awarded at the show are listed below.

### Class 1 – Tillandsia

1<sup>st</sup> *T. ehlersiana* R Reilly 2<sup>nd</sup> *T. disticha* v. *maxima* A&P James

### Class 2 – Tillandsia in flower or spike

1<sup>st</sup> *T. deppeana* G&N Aizlewood 2<sup>nd</sup> *T. fasciculata* hybrid L&O Trevor  
3<sup>rd</sup> *T. ionantha* ‘zebrina’ R Reilly

### Class 4 – Vriesea: decorative foliage

1<sup>st</sup> *V. ospinae* v. *gruberi* D&J Upton 2<sup>nd</sup> *V. fenestralis* G&N Aizlewood  
3<sup>rd</sup> *V. fosteriana* G&N Aizlewood  
Highly Commended *V.* ‘Highway Beauty’ R&M Dilling

### Class 5 – Guzmania

1<sup>st</sup> *G.* ‘Mini Belle’ R&M Dilling 2<sup>nd</sup> *G.* ‘Gisela Variegata’ Y Daniel  
3<sup>rd</sup> *G.* ‘Mango’ R&M Dilling

### Class 8 – Cryptanthus

1<sup>st</sup> *C. beuckeri* R Paulsen 2<sup>nd</sup> *C.* ‘Black Mystic’ R Paulsen  
3<sup>rd</sup> *C.* ‘Red Tide’ R Paulsen

### Class 9 – Billbergia

1<sup>st</sup> *B.* ‘Golden Joy’ A&P James 2<sup>nd</sup> *B.* ‘Los Manchos’ A&P James  
3<sup>rd</sup> *B.* ‘Strawberry’ G&N Aizlewood

### Class 10 – Aechmea

1<sup>st</sup> *Ae.* ‘Bert’ G&N Aizlewood 2<sup>nd</sup> *Ae.* ‘Dark Goddess’ A&P James  
3<sup>rd</sup> *Ae.* ‘Bert’ A&P James

### Class 11 – Neoregelia (200 mm minimum diameter)

1<sup>st</sup> *N.* ‘Everlasting’ Y Daniel 2<sup>nd</sup> *N.* ‘Painted Delight’ C Basic  
3<sup>rd</sup> *N. pendula* var *brevifolia* x *eleutheropetala* R Paulsen

### Class 12 – Neoregelia (200 mm minimum diameter)

1<sup>st</sup> *N.* ‘Pheasant’ R Paulsen 2<sup>nd</sup> *N. pauciflora* R Paulsen  
3<sup>rd</sup> *N.* ‘Gift of Grace’ A&P James

### Class 14 – Other Bromeliodeae

1<sup>st</sup> *Canistrum* ‘Leopardinum’ G&N Aizlewood 2<sup>nd</sup> *Quesnelia edmundoi* A&P James

### Class 16 – Hechtia or Dyckia

1<sup>st</sup> *D.* ‘Green Planet’ R Paulsen 2<sup>nd</sup> *D.* ‘Betty Farnhill’ R Paulsen  
3<sup>rd</sup> *D.* ‘Naked Lady’ R Paulsen

### Class 18 – Other Pitcairnioideae

1<sup>st</sup> *Deuterocohnia brevifolia* M D’Alton

### Class 19– Any Intergeneric

1<sup>st</sup> *Nidumea* ‘Midnight’ G&N Aizlewood  
2<sup>nd</sup> *Neophytum* ‘Galactic Warrior’ L&O Trevor  
3<sup>rd</sup> *Guzvriesia* ‘Marion Oppenheimer’ R&M Dilling

### Class 20 – Specimen: any genus

1<sup>st</sup> *Billbergia* ‘Afterglow’ G&N Aizlewood 2<sup>nd</sup> *Neo* ‘Mini Skirt’ D&J Upton  
3<sup>rd</sup> *Billbergia amoena* x ‘Glory Be’ G&N Aizlewood  
Highly Commended *Neoregelia olens* x *Manoa Beauty* L&O Trevor





*Aechmea* 'Bert' - Class 10 1st - Combined Show 2005

DU



*Cryptanthus* 'Black Mystic' - Class 8 2nd - Combined Show 2005

DU

**Class 22 – Bromeliad in a decorative pot**

1<sup>st</sup> *Vriesea hieroglyphica x fenestralis* L&O Trevor

2<sup>nd</sup> *Dyckia 'Suntan'* C Basic

3<sup>rd</sup> *Neoregelia 'Lillipet'* I&D Hole

Highly Commended *Billbergia 'Hallelujah'* G&N Aizlewood

**Class 23 – Bromeliad on a decorative mounting**

1<sup>st</sup> *Tillandsia magnusiana* P O'Dea

2<sup>nd</sup> *Tillandsia funckiana* M Windsor

3<sup>rd</sup> *Tillandsia streptophylla* P O'Dea

**Class 25 – Novelty bromeliad display**

1<sup>st</sup> *Neo pauciflora* M Windsor

2<sup>nd</sup> 'Small Bicycle' E Rees

**Best Tillandsioideae (Nez Misso Memorial Trophy)**

*Vriesea hieroglyphica x fenestralis* L&O Trevor

**Best Bromelioideae (Hudson Perpetual Trophy)**

*Neoregelia 'Everlasting'* Y Daniel

**Best Cryptanthus (Grace Goode Perpetual Trophy)**

*C. beuckeri* R Paulsen

**Best Pitcairnioideae**

*Dyckia 'Green Planet'* R Paulsen

**Reserve Champion Bromeliad of Show**

*Dyckia 'Green Planet'* R Paulsen

**Champion Bromeliad of Show**

*Vriesea hieroglyphica x fenestralis* L&O Trevor

**Tom Schofield Memorial Award (Chairman's award)**

*Guzmania wittmackii variegata* R&M Dilling

## BOOKS FOR SALE

The society has the following books and items for sale:

- A Bromeliad Glossary (1998 edition) by the Bromeliad Society International (BSI) \$13
- A Guide to Beautiful Neoregelias by Shane Zaghini \$20
- Bromeliads: A Cultural Manual by BSI \$5
- Bromeliads: Next Generation by Shane Zaghini \$33
- Bromeliads for the Contemporary Garden by Andrew Steens \$36
- Growing Bromeliads by the Bromeliad Society of Australia \$22
- Judges Handbook by BSI \$34
- Tillandsia Handbook by Hideo Shimizu & Hirouli Takizawa \$66
- The Book of Bromeliads (and Hawaiian Tropical Flowers) by Ronald W. Parkhurst \$77
- Back copies of *Bromeliaceae* (2005 editions) \$4
- Label-marking pencils \$3

Post and package extra. Unfortunately, we cannot supply overseas orders. Please telephone the Librarian, Mrs Evelyn Rees (07 3355 0432), to order books.

## FIVE Years On

by Derek Butcher

Ross Stenhouse reminded me that 5 years have gone by since my article on the role and aspirations of a newly appointed Bromeliad Cultivar Registrar.

To my mind the only way to succeed at this international level was via the Internet and having a vibrant Web-site. A Web-site provides a cheap way to hold photographic records which are the best way to link plants to names. Secondly, once the photographs are held in digital format they can be easily copied and back-up copies held. The Cultivar Register can be accessed in two ways.

1. From Cultivar corner on <http://BSI.org> or

2. **From the data base of Cultivars on <http://fcbs.org>**

Starting from scratch with no photographic records there are now some 4000 on file of the total 7400 cultivar names recorded. And the gap is closing even though obtaining authentic photographs of old cultivars is not an easy task. The last 5 years has also seen an improvement in the photography due to digital cameras.

There will always be problems with identifying plants from photographs because of different growing conditions but this is a great improvement to a written description. So, although the Register can be used to identify unnamed plants, its main thrust is in confirming that the name already on the plant is the correct one!

Much is said about the list maintained by AQIS to check on the weed rating of plants. But this is only a list. It has the same usefulness as a Dictionary without the interpretation of the word next to it. It has nothing to do with plant identity – just the

name on the label! What is intriguing is the attitude of AQIS with a ‘us versus them’ attitude and yet they could get meaningful results by encouraging participation by others with more specialist experience.

This attitude would fail with a Cultivar Register where you must encourage participation by others. As was pointed out to me by Dr Alan Leslie of the Royal Horticultural Society in the UK, a passive Registrar gets nowhere. This may mean treading on a few toes but at least the subject of cultivated plant identity gets discussed.

The Cultivar Registry for Bromeliaceae is getting more international with names coming in from Europe, Brazil, & Venezuela as well as the vast majority from the USA and Australia, with Florida being the most productive. One success story is in New Zealand where Gerry Stansfield is the Registrar. Much to Gerry’s chagrin some registrations come direct to me but as I point out, at least NZ growers are taking an interest which was not there 5 years ago.

I always think of Hawaii as separate from the USA for some reason or another and they could do with some encouragement. I had thought the Cultivar Award made to Sharon Petersen in 2004 would have provoked some rivalry but this has not yet happened.

The Philippines is a worry because of their cheap labour and good climate and a propensity to change names to suit international trade. So you can get the same plant under a different name. When this occurs I note the Register so anyone can check up on an anomaly.

Remember the Register is only as good as the information advised. Luckily it is on Computer so that errors can be corrected quite promptly.

— **Continued on page 40**

# GROWING GREY-LEAFED TILLANDSIAS IN POTS

Author: Bob Reilly

Grey-leafed, or atmospheric, tillandsias are often grown by securing them to “mounts” such as pieces of cork or wood. This approach has the advantage of effectively utilising a limited growing space, as the plants can be suspended from a shade house’s walls or roof, instead of using scarce bench space.

However, many grey-leafed tillandsias can be grown successfully in pots. Such plants are usually more symmetrical in appearance, larger, produce more offsets (pups), and have larger inflorescences, than their “mounted” brothers and sisters. Further, the shape and size of some tillandsias makes them difficult to mount successfully.

The approach I use in growing these tillandsias is outlined below.

The use of freely draining potting mixtures is important, as otherwise plant rot and death often occur. I use a mixture comprised of pine (*Pinus radiata*) bark chunks (such as is often used to grow cymbidium and dendrobium orchids), and charcoal. Six parts of pine bark are combined with one part of charcoal to form the potting mixture. The chunks vary in size, but most are about 15 mm in diameter.

Aeration of the potting mixture can be improved by using “open mesh”, rather than solid, pots. (Figure 3 shows such a pot.) The pots I use have diameters ranging from 50 to 200 mm. (The original design was derived from swimming pool filters).

However, some tillandsias prefer not to have any potting mixture around their

roots. In such cases, I simply place the plant in the pot where they appear to grow quite well – see Figure 4.

I live in a location where frost does not occur, so the plants are grown under shade cloth throughout the year. The plants are usually watered twice a week in summer, and once a week for the balance of the year.

The plants respond well to applications of liquid fertiliser. I use a fertiliser which has a Nitrogen (N) : Phosphorous (P) : Potassium (K) ratio of 14 : 4.4 : 22.5. No doubt there are liquid fertilisers with similar chemical analyses available throughout the world. I apply the fertiliser weekly.

When potting pups, it is important they are firmly held by the potting mixture, or growth is slow (perhaps non-existent!). It is difficult to hold tall pups firmly in the relatively “loose” bark/charcoal mixture. One way of dealing with this issue, is to place a plastic “hanger” on the pot. The hanger’s three “legs” help hold the pup in position—see Figure 5.

As I have a limited amount of bench space, I “hang” the pots wherever practical. I have seen several approaches used successfully:

- Pots can be suspended from the horizontal supports holding up a shade house’s roof using the plastic hangers referred to previously. However, the hangers can impede developing leaves on larger plants.

- Long wire “hangers”, with one end shaped so as to hold a pot can also be used—see Figure 2. However, larger plants can tilt outwards from these devices.

- Lengths of galvanised steel rod can be wrapped around a galvanised pipe placed in the ground. The outer ends of these rods are then shaped so as to hold a pot. The rods are positioned at various





Fig 1 A “forest” of hanging tillandsias (mainly *Tillandsia fasciculata*) SR



Fig 2 *Tillandsia fasciculata* suspended in wire hanger SR



Fig 3 *Tillandsia fasciculata* growing in pot without any potting mixture SR

heights and orientations on the galvanised pipe, so that the plants' leaves do not vertically overlap.

Depending upon how you grow your bromeliads, a large number of tillandsias can be suspended from a shade house's ceiling—see Figure 1. This approach maximises the number of plants that can be accommodated in the shade house.

Grey-leaved tillandsias I have successfully grown in pots include: *brachycaulos*, *carlsoniae*, *compressa*, *copanensis*, *ehlersiana*, *extensa*, *fasciculata*, *flabellata*, *hildae*, *jalisco-monticola*, *ortigiesiana*, *rhomboidea*, *rodrigueziana*, *rotundata*, *seleriana*, *subteres*, *tricolor*, *variabilis*, *vicentina*, and *xerographica*.

#### Acknowledgements

I wish to thank Barry Genn and Nev Ryan for the advice they have given me on growing tillandsias, and Susan Reilly for the photographs used to illustrate this article.

## ALBINO BROMELIADS

(by Bob Reilly)

Occasionally, variegated bromeliads (and much more rarely, non-variegated ones), produce a pup without any chlorophyll in its leaves. The leaves of these pups are usually completely white. This is a form of albinism.

Because their leaves lack chlorophyll, and thus cannot produce the sugars or “food” the plant needs, such pups will ultimately die if detached from the mother plant. So, if you wish to enjoy them, leave them attached to the mother plant and they may survive for several years. As the photograph on the page opposite of *Neoregelia* ‘Sheeba’ shows, these pups can be quite attractive.

If you do not wish to keep the albino

pup, then remove it as soon as possible, as it “drains” the mother plant’s resources, and reduces the number of pups it will produce.

Some pups have a few leaves which are not entirely white. Depending upon the amount of chlorophyll they have, such pups may be able to be detached, and produce a mature plant. However, they will probably need careful attention as they are usually much “weaker” than normal plants. Unfortunately, the extra stress associated with flowering often kills these plants before any worthwhile pups are produced.

## A little Education on the Genus *Canistropsis*

*Canistropsis* means “resembling *Canistrum*” that is, the name of the genus *Canistrum*, from the Greek kanos (= basket), is joined to the Greek suffix *opsis* meaning “like” or “manner of”. The name *Canistropsis* therefore arose from the apparent similarity of its species to *Canistrum*.

Within the “Project *Nidularium*”, the wealth of data that has led to a narrower circumscription of the nidularioid-complex genera (Leme 1997) also made the position of *Canistropsis* as a genus in its own right, intermediate to *Neoregelia* and *Nidularium*. We now know understand the historic vacillation of *Canistropsis* between the two genera, and believe that the elevation of *Canistropsis* to the rank of genus is fully justified.

(Compiled extract from ‘*Bromeliads of the Atlantic*’ by Elton M. C. Leme and available from the Association library)

**fasciculata:** In close bundles or cluster.

**punctulata:** Minutely spotted; spotted.

**recurvata:** With recurved leaves.

**streptophylla:** With twisted leaves.

**stricta:** Upright; erect; very straight



Fig 4 *Tillandsia streptophylla*  
growing in pot without any potting  
mixture DU



Fig 5 The plastic hanger's "legs" help  
to hold the pup of the *Tillandsia*  
*districha* firmly in position SR



Albino Pup growing Neoregelia  
'Sheeba' mother RS



Miniature neos can look good in  
clusters - *Neoregelia lilliputiana* RS

## Common Sense, Curiosity & Superstars, Flamingos and Rainbows.

Author: Lynn Hudson

Most growers will tell you common sense vanishes when they behold a sale table of bromeliads but it usually returns after the (much lighter) wallet is put away. Common sense should be with us once we recover from our buying spree and have our new plant or plants settled in pride of place, definitely within eyesight and perhaps within reach.

At this stage I want to know all about my new acquisition, so out come the books, then the Internet check as I compare my plant with any write up and any photograph to be found by that name. This is when common sense should be accompanied by curiosity. If the descriptions or photographs do not match the new plant, maybe the new plant is not the one written on the label. The reason could be one of several – maybe the label is wrong; maybe the label got mixed up; maybe the plant has been grown in bad or even better conditions etc.

If we know our species plants, the parentage can be recognised in the progeny of many hybrids. An easy example is *Aechmea* ‘J.C. Superstar’ – it is pink from the red form of *ramosa* and has strong, spined leaves with scurfed bands from *chantinii*. The inflorescence is open and more like *ramosa* than *chantinii*. *Aechmea* ‘J.C Superstar’ is not a dependable flowerer but it will provide many pups both before and after flowering. A large pink plant that gives many pups and tolerates ‘all day sun’ in Cairns - who cares if it never flowers?

*Aechmea* ‘Flamingo’ is being grown around Australia and called ‘Red Fla-

mingo’. ‘Pink Flamingo’ I would understand as the plant is a pink/mauve colour, but not red. What happened to curiosity and common sense? Curiosity would have found on page 30 of the ‘The Bromeliad Cultivar Registry’: “Red Flamingo cv. of *warasii*? x *weilbachii* f. *leodensis*”, made by Hummel before 1979.

Common sense would now say “*warasii* and *weilbachii* are each soft leafed plants, why are these leaves stiff? *Aechmeas warasii* and all forms of *weilbachii* have small spines so why are these leaves heavily spined? Neither of them have banding - *warasii* leaves are green with some red basal spotting and whilst *weilbachii* f. *leodensis* is a copper colour - from whence came this beautiful colour?” Common sense sadly says, “Humbug, keep looking”.

Curiosity would now mooch around the BCR and common sense would suggest looking for a Flamingo. On page 13 there are two! The first by Yamamoto in 1964 says “cv. of *fendleri* x *chantinii* – Large w/violet-bronze leaves and striking dusky lilac-red many branched inflorescence intermediate of the parents.” This is more like it, the leaf and inflorescence colours match my plant and there is *chantinii* type banding across the leaves. I have found *chantinii* usually bestows scurfy banding on progeny when used as a parent in hybridizing. There is also a reference to Baenssch p.76, so the very beautiful “Blooming Bromeliads” is opened and on one page is a picture of the lovely inflorescence of my plant.

The BCR is still open and curiosity reads the second ‘Flamingo’ entry – “cv. of unreleased *tessmannii* hybrid parentage – (see ‘Fantasia’) – Large *tessmannii* type rosette w/upright branched inflorescence w/

lax pink scape bracts and creamy yellow-white upturning branches and bracts.” Bullis, P. 1998. Sounds good.

Curiosity turns to the Internet and finds two sites [www.bromeliad.org.au](http://www.bromeliad.org.au) and [www.fcbs.org](http://www.fcbs.org) but there is no ‘Flamingo’. Frustration looks for ‘Red Flamingo’ and sure enough there is a plant almost identical to my ‘Flamingo’ – mine is tropically darker. Oh no, listed for all to see, that impossible parentage again! I emailed a few lines to the Cultivar Registrar, your Uncle Derek Butcher, and he agreed and said it would be changed on the website. No, that was not all: -

In March at the Sunshine Coast Society meeting I saw two flowering plants each identical in size and inflorescence but one did not have the violet/bronze colour but did have scurfy bands. One was named *Aechmea fendleri x chantinii* and the other *Aechmea* ‘Red Flamingo’. Can’t I get away from the red flamingo? I told the grower the plants were very well grown (they were) and that the mauve one was ‘Flamingo’. The answer is one I hear very often “That is the name I got with the plant”. I spoke of the parentage but he stayed with his statement. I hope he was later visited by curiosity and common sense.

It also happened at Cairns aechmea mini show when *Aechmea* ‘Rainbow’ was entered with *Aechmea orlandiana* on the nametag. The ‘I got it with the plant’ line was answered with “You grow *Aechmea orlandiana* in both the dark and light forms and you also have common sense which screams this magnificent plant is different.” It is very different. A beautiful dark plant that glows red in the central leaves in our hot sun.

I enjoy my books more than I enjoy the Internet for many reasons, one is that I can

open each one and fit them all on the table together and do a good comparison. There are six that never get put into the bookcase, they just live on the ‘randah where I and visiting society members have easy access to them.

I do enjoy the “Bromeliad Cultivar Registry” especially the older entries that discuss the plants. I have learned a lot of stuff from that book, a lot of good stuff that I use in my growing and talking. Sometimes I just go off on a trip when I see Jim Elmore’s hybrid names – through Egypt with Cleopatra, the Arabian Nights and I am just “Gone with the Wind” until commonsense says “back to the potting bench”. Reluctantly I close the BCR and take my sated curiosity and my commonsense wrapped with my new knowledge and prepare some more plants for new homes.

The BCR is currently out of print. I have been told it will not be reprinted, as the information is available on the Internet. There are still many people who for various reasons are not connected to the Internet. I hope commonsense prevails and the BCR is reprinted. I wonder if curiosity will check on the number of persons who want a copy of this book.

## Plant of the Month Programme - 2005

- Sept - Quesnelia, Racinaea,  
Ronnbergia,  
Steyerbromelia
- Oct - Tillandsia, Tofieldia
- Nov - Ursulaea, Vriesea,  
Werauhina,  
Wittrochia

## A Beginners Tale

by Ross Stenhouse

For a number of years, at home we had a number of clumps of bromeliads situated in various parts of the garden. These plants had been there before we purchase the house over 15 years ago. We didn't know what they were, but I asked Jan not to pull them up, I liked them. Well eventually the front retaining wall fell down and we had to have it replaced, and out came the broms. Jan decided to compost a lot of them, but quite a few were spared and were potted. These were shortly joined by more broms given to Jan by a friend and these usually carried labels like 'Pink Brom'.

To cut a long tale short, I became the editor of this journal and plant labels started to have some significance. Jan and I looked up references on the web and we tried to identify the plants in our collection, one we identified was *Billbergia brachysyphon*. Dutifully we labelled a number of pots and thus they remained. I photographed the flowers when they came to bloom and again labelled my photographs the same as the plants. Recently I was reading "Uncle Derek Says" on the web (<http://fcbs.org/butcher/dereksays.htm#index>) and I came across an article on *Billbergia nutan* and looked at the photos that accompanied the article.

It occurred to me that the my billbergias were similar to the photos on the web, however the names weren't the same, so it was a quick email off to Uncle Derek (BSQ member Derek Butcher) and a reply came back as follows "As far as I am aware *Billbergia brachysyphon* is not in Australia and is in the Helicodea group so its petals would really coil up. I am pretty sure yours is *Billbergia* 'Windii' a hybrid of *B. nutans*.

See J. Brom. Soc. 48(6):247-9. 1998"

Well, so I don't have what I thought, but now it's more exciting because I have the unexpected.

This detective work is interesting and what I have learnt is that there are people within our group who, by world standards, are experts in the true sense of the word. These people will freely give of their time to help a beginner to get established in the passion of growing bromeliads.

What it also shows is that identifying a plant by the photographs that appear on international web sites can be difficult. That difficulty is compounded by the very comprehensiveness of the sites and the minor differences between some species and hybrids. The excellent Florida Council of Bromeliad Societies' site (<http://fcbs.org>) being a good example of a great web site on broms. I think it's time that we had a web site that only listed the broms grown in Australia and was accompanied by photographs of Australian-grown broms. Obviously such a site would require continual maintenance, but that's another story and a problem easily overcome. Maybe this is a project the Society could undertake.

On the page over I have presented four photographs showing my *Billbergia* 'Windii' flowering over a three week period. Prior to taking the photographs, I didn't have much of an interest in billbergias as the flowers didn't last. Now I hold them in great regard and treat them with new respect. Taking photographs of the flowers over a period of time really gives a good appreciation of the significant changes that take place.

I would like to thank Derek for his help and for the interesting articles that he has written and have appeared in this and other forums.





A photographic sequence featuring *Billbergia* 'Windii'. In this sequence We are attempting to show the development of the bract and flowers. RS



I am in contact with Deroose, Corn, Bak and other large sellers of Bromeliads but it is interesting how few plants reach Australian shores. It is not surprising because they are produced from similar 'raw' material and rarely do you see one which is distinctly different. Hybrids in Australia tend to stay local – what is common in Adelaide is rare in Perth or, say, Brisbane. Plants only seem to move in quantity when they are exceptional or have been specially promoted.

Remember that every seed grown has the potential to produce different looking progeny and there are many unnamed hybrids being grown and actively sold as 'landscape plantings'. Those that make it to the Show bench deserve to be identified with their own name. To my mind a plant sold without a name or a deliberate wrong name should be at half price – as are dogs without a pedigree! If we are not fairly confident of correct names whether hybrid or species, how can we discuss such topics in, say, 'Bromeliaceae'?

There is one oddity I must bring to the attention of Queensland readers of 'Bromeliaceae'. Whereas Queenslanders outside Brisbane seem dedicated to contributing cultivated plant identity to a central Registry those from Brisbane environs are very reluctant to tell others of their achievements in seed raising. Perhaps I have got the wrong perception from comments made by Brisbane members who seem more concerned with perceived errors in the mechanics of the Registration system than in actually registering.

I am optimistic that this trend can be reversed and we may even see the appointment of a Registrar for Queensland just as the New Zealanders have done.

## Unsung Heroes

In every society, there are a number of 'Unsung Heroes'. These are the people who work tirelessly in the background, often with little public recognition, yet performing a job/s that are of great benefit to each and every member. In my capacity as Editor, I have a small band of willing workers who write articles and send in photographs. These people get a bit of recognition as they are accredited for their photos and articles.

However buried in the background of the operation are those who proof-read the magazine prior to publication. This is a huge-sized task. As editor I have a number of people who have volunteered to do the proof-reading, Peter Paroz, Lynn Hudson, Bob Reilly and Roy Pugh. Each of these people has a specialist area of knowledge which is used to good effect. Peter, Lynn and Bob are plant specialists, they pick-up mis-spellings in plant names as well as general areas. Roy, on the other hand, goes through the text looking for punctuation and spelling errors. He has an eye for fine detail. Roy sets an early draft of Bromeliaceae to do the first pass on the proof-reading. I send Roy a PDF file via email and receive a word document back with the details of the corrections.

Roy also heads up the distribution department. He liaises with the societies secretary, Karen Murday to get the latest membership list and addresses the envelopes and stuffs them with Bromeliaceae. After that, he posts them in accordance with the post office's requirements.

For Roy's outstanding work in the background with very little public profile, Roy, in my opinion, he is truly a 'Unsung Hero'.

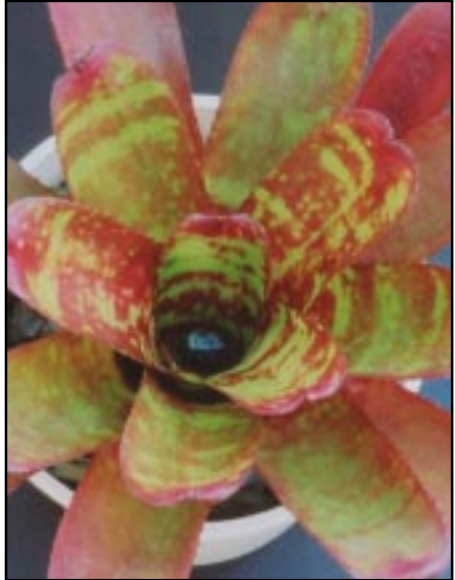


## Miniture Neo's

In the March/April edition of this journal we featured miniture Neo's In this edition we decided to present photos of a few more as a mini-feature.



*Neoregelia* 'Coral Fire' RS



*Neoregelia* 'Bits & Pieces' RS



*Neoregelia* 'Alley Cat' RS



*Neoregelia* 'Wee Willy' RS

*Bromeliaceae*

## Darkest Delights

by Geoff Lawn.

No bromeliad is truly devoid of leaf colour (i.e. black), but some come close with predominant or solid shades of indigo, magenta, mahogany and aubergine purple, to deepest ebony. These dark beauties can be loosely grouped into two categories of those with rather fixed pigmentation and others of very variable foliage hues. Anthocyanic pigments, which mask or combine with the green undertone and serve several purposes, produce this foliar attractiveness.

Some bromeliads have inherently-high amounts of anthocyanins, such as *Cryptanthus zonatus* forma *fuscus*, many of whose progeny hybrids are dark to a degree, even in moderate to low light. Excessive light can turn them an objectionable muddy brown shade. Characterised by thin, shiny leaves, in this group the bicolored-leaf Aechmeas, notably *Ae. victoriana* var. *discolor* and *fulgens* var. *discolor* are parents to 'Belizia', 'Betty Pfeuffer', 'Black on Black', 'Black Jack', 'Black Flamingo', 'Black Tiger', 'By Golly', 'Chocolate Soldier', 'Dark Crystal', 'Ebony Glow', 'Grape', 'Jean', 'Lullaby', 'Mirlo', 'Nightlight', 'Pica', 'Perez', 'Prieto' and 'Tonado'. Cultivars or hybrids of *Aechmeas orlandiana*, *nudicaulis*, *recurvata* and dark-leaved clones of *chantinii* are 'Blackie', 'Black Beauty', 'Black Marble', 'Black Panther', 'Black Prince', 'Jackson' (syn. 'Bill Barrett'), 'Nigre', 'Pickaniny' and 'Shadow'. In other genera of forest-dwelling ancestry are *Nidularium* 'Nana', *Canistropsis* 'Plum' and a host of *Cryptanthus*—*acaulis* var. *ruber*, 'Black Cherry', 'Black Magic',

'Darkling', 'Deep Purple', 'Don Garrison', 'Genuineus', 'Gillian's Joy', 'Mason Congo', 'Out of Africa', 'Sangria' and 'Witches' Brew'.

The other category have thicker or more leathery leaves and tend to require direct sunlight or bright diffusion. Reliant on the daylight length and intensity to induce this seasonal "suntan" effect, they revert to greener tissues if available light is inadequate. Of course during the growing phase poor light (such as constant cloud cover) and overfeeding particularly with Nitrogen can result also in excessively-long, narrow leaves, affecting rosette shape. In many cases species name forms with the invalid term "rubra" added (e.g. *Aechmea lueddemanniana* 'Rubra') may be simply not different genetically to "normal" (unless the extra redness is transmitted by seed) but rather are more light-exposed specimens, whose foliage colour soon fades in lower light.

Examples are *Alcantarea* 'Black Cinders', *vinicolor*; *Dyckia* 'Cherry Coke', 'Dark Chocolate', 'Dark Night', *encholirioides*, 'Gypsy', 'Port Wine', 'Red Devil', 'Ruby Ryde'; *Billbergia* 'Black Gem', 'Clyde Wasley', 'Sangre'; *Neoregelia* 'Black Bandit', 'Black Devil', 'Black Magic', 'Chocolate', 'Dark Delight', 'Dark Diva', 'Dark Horse', 'Darkest Hour', 'Dexter's Pride', 'Fosperior', 'Little Black', 'Little Africa', 'Mandela', 'Midnight' (Wurthmann), 'Pitch Black', 'Plum Sheen', 'Popolo', 'Prince of Darkness', 'Purple Princess', 'Royal Flush', 'Voodoo Magic', 'Thor'; *Werauhia sanguinolenta* 'Rubra'. Among bigenerics are X *Cryptbergia* 'Red Burst', X *Neomea* 'Magenta Star', X *Nidumea* 'Midnight', X *Neophytum* 'Burgundy Hill', 'Shiraz' and X *Ortholarium* 'Burgundy'.

Over 4000 different plant pigment compounds called flavonoids are known, present in all higher-ranked plant families' foliage, roots, stems, flowers, bracts, fruit, berries, seeds and even bark. Flavonoids are sub-divided into chalcones, flavones, flavanols, flavanones, isoflavanoids and anthocyanins.

To date there are nearly 600 different anthocyanins discovered in the plant kingdom. Their main purpose in bromeliads is to shield or screen the upper leaf surfaces' DNA and photosynthesis process from excessive sunlight damage. This function applies especially to sun-exposed, sparsely-scuffed wild species in the thinner atmosphere at high altitudes, particularly if stressed through moisture and nutrient deficiencies. Comparable foliage colouring nearer sea level is not always possible in cultivation. In deep shade-tolerant species in forest habitat it seems likely that dark red or purple anthocyanins in the foliage reverses (e.g. *Canistropsis burchellii*) gather and reflect unabsorbed light back into the mesophyll, effecting photosynthesis, since solar radiation is proportionally enriched in red and far red light by selective absorption of the shorter wavelengths as it passes through leafy canopies. Anthocyanins in bromeliad foliage are sometimes more pronounced at flowering, as per *Billbergia* 'Penumbra' whose outer leaves turn more inky blue. Many types have castaneous inner leaf sheaths (e.g. *Aechmea caudata*) or blackish outer leaf bases (e.g. *Vriesea erythroductylon*) which are thought to encourage small fauna to hide and defecate there, nourishing the plant. Dark blue "fingernail" leaf tips (e.g. *Vriesea bituminosa*) are considered as possible cue markers for pollinators. Pronounced blackish horizontal crossbands

(e.g. *Vriesea splendens*), vertical cyanic pinstripes (e.g. *Guzmania lingulata*) and deep purplish foliage spots (e.g. *Neoregelia pauciflora*) may enhance autotrophic performance (carbon gain).

A select group feature blackish inflorescences in part. A number have navy blue or black petals, including *Pitcairnia nigra*, *Tillandsia atrovioleacea* and *Puya humilis*. Such species' flowers attract pollinators by either bright scape or leaf bracts, or in the case of *Puya coerulea* var. *violacea*, scarlet-branched rhachis (stems) with prominent gold stamens protruding from black petals. *Vrieseas* 'Negro' and 'Van Ackeri' display amaranth scape bracts with contrasting yellow flowers. In many species (e.g. *Aechmea bracteata*) mature fertile ovaries or berry sacs change to blackish pods when ripe, a signal for seed eaters that they are edible, ensuring the viable blackish seeds within are distributed once excreted.

Another theory maybe applicable to bromeliads as with other plants is that certain foliage anthocyanins are bitter-tasting, repelling predators. Obviously more detailed field studies are required for definitive answers specific to bromeliads.

The solar radiation used by plants to manufacture carbohydrates is photosynthetically active radiation (PAR). Most if not all bromeliads convert this energy by the complex C3 type photosynthesis pathway. Four primary classes of leaf pigments utilising the full light spectrum, often in tandem, are:

1. **Chlorophylls.** Chlorophyll *A* absorbs visual light spectrum wavelengths other than green (particularly red and violet) and reflects blue-green light. Similarly, Chlorophyll *B*, an accessory pigment, reflects yellow-green light.

2. Carotenoids. Absorb blue light and pass the energy over to Chlorophyll A molecules. They also protect against short wavelength visible and ultraviolet radiation. Reflect orange-yellow light.

3. Xanthophylls. Associated with carotenoids and assist chlorophylls. Reflect yellow light.

4. Anthocyanins. Reflect red, violet and blue light rays.

In cultivation at least, particularly responsible for foliage burn is ultra-violet (UV) light, which is outside the visible light spectrum of 400-700 nanometers (nm). Based on wavelengths, it is divided into UV-A, UV-B and UV-C. The longer wavelength UV-A has less energy and causes little or no damage to humans or plants. UV-C is absorbed by atmosphere oxygen and rarely strikes the Earth's surface.

UV-B is absorbed by ozone and as the Earth's ozone layer has depleted in the last 40 years, UV-B damage is potentially more harmful when it strikes upper leaf surfaces, releasing energy. UV-B radiation can rupture the cell membranes and chloroplast organelles, interrupting photosynthesis. UV-B can cause the plant's paired strands of genetic material in the DNA double helix to become cross-linked, preventing cell division and other vital cellular processes such as protein production. Damaged leaf tissues can become discoloured and die. Generally, healthy plants can grow through the UV-B irradiation damage if it's not severe. In bromeliads anthocyanins act as stress markers and these water-soluble pigments accumulate in the vacuoles of the epidermal or sub-epidermal cells but possibly in the leaf mesophyll also.

A number of plain green and grey-leaved bromeliad species and cultivars simply will never redden no matter how intense

the light exposure—anthocyanins are absent. Their foliage bleaches and may even sunburn, particularly if shifted suddenly from low light positions to maximum exposure. Others at best “bronze up” or turn pink but don't achieve dark red to purplish-black tones. Other factors influencing the outcome are the day length, diurnal temperature fluctuations, actual daily sunlight hours (minus cloud cover), relative humidity, shade cloth density and colour (60-90% beige cloth enhances red bromeliad foliage in tropical and sub-tropical climates at least) and growing medium nutrients. The modern polycarbonate sheeting (especially opal white colour) is ideal for many bromeliads not only for its diffused bright light transmission but as Winter protection and this UV-resistant roof cover helps prevent leaf-burn in Summer. Producing anthocyanic tints may be less attainable under artificial lighting indoors. Regular watering and high relative humidity in all seasons also helps prevent burning, as does adequate ventilation to prevent heat build-up. It's fundamentally true also that well-nourished, healthy plants withstand excessive solar radiation better than weak, starved or desiccated plants.

It could be perceived that these dark-leaved bromeliads look lifeless either en masse or singly and, indeed, they can appear sombre when shown this way. However, as companion plants in a mixed display or landscape design, these darkies provide the perfect backdrop by contrast and solidarity to forms with lighter-patterned foliage, notably variegates. In artistic arrangements requiring dramatic or bold simplicity, blackish rosettes or leaves can evoke themes of evil and mysticism. Glossy dark foliage in competition entries invariably needs extra cleaning or pre-wiping as in-

variably grime and salt/lime deposits show up more otherwise.

The preceding "black list" is not exhaustive and some are difficult to group as they change colour and markings according to where and how they are grown. Literally and figuratively-speaking, this multitude of dark-foliaged bromeliads, often with long-lasting, attractive inflorescences also, vie for a plum role in our collections.

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**BSQ Christmas Party  
December 8th**

## END OF THE COMBINED SHOW

(by Bob Reilly)

For over 25 years, our Society, and the Cactus and Succulent Society of Queensland have had a combined show (and plant sales) of bromeliads, cactus, and other succulents at the Mt Coot-tha Botanic Gardens, on the Queens' Birthday weekend.

While these events have been successful, the popularity of the two plant groups has resulted in large crowds of people attending the shows in recent times, especially on the Saturday mornings. This outcome has created a safety issue for our customers, and the Society members "staffing" the show.

Unfortunately, no viable long-term solution to this problem appears available, although some short-term measures could be tried.

The Cactus and Succulent Society of Queensland recently expressed a desire to cease the Combined Show from 2006 onwards. They sought our Society's view on the matter and were advised:

"...The Bromeliad Society of Queensland (BSQ), while willing to have a 2006 Combined Show, is also happy to have a separate BSQ show in early March 2006. This would leave the 2006 Queen's Birthday weekend for your (ie. Cactus and Succulent Society of Queensland) show.

For 2007 onwards, it is considered both societies should have separate shows. This would provide a long-term solution to the Saturday morning crowding issue. The BSQ would not seek the Queen's Birthday weekend for its show.

Needless to say, the BSQ wishes your society every success for the future, irrespec-

tive of what decision it makes on the Combined Show's future..."

Subsequently, the Cactus and Succulent Society of Queensland has advised that they wish to have their own show in 2006, and subsequently.

For 2006, the BSQ will have a show and plant sale on 4<sup>th</sup> and 5<sup>th</sup> March at the Mt Coot-tha Botanic Gardens, as well as its Spring show and plant sale in November. For subsequent years, we will try to secure a date in April, as this is a better time for running such an event. (4/5 March were the only dates available for 2006).

It is unfortunate the Combined Show has come to an end, given the enjoyment it has provided many people over the years. However, the new arrangements provide the best available long-term solution.

We wish the Cactus and Succulent Society of Queensland every success with their 2006, and subsequent, shows.

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## Do you think you might like to get Involved?

The Society has over 300 members but is faced with the normal problem most associations suffer from and that is a low level of people getting actively involved in the background work involved in running the society and helping out during periods of high activity at Association activities.

The Society does get the support from many of the long term members, however the management committee, with an eye to the future, wants to get some of the newer members involved. A little bit of help can go a long way at the right time.

If you would like to help out, even in a very limited capacity, contact any of the people whose names appear on page two of this journal.

## SCHEDULE OF 2005/06 MONTHLY MEETING TALKS

(compiled by Olive Trevor and Bob Reilly)

At each of the Society's monthly meetings there is a 45 minutes (approximately) presentation on a bromeliad-related topic/s. The schedule for 2005/06 is outlined below. **Please note it is subject to change, depending upon the availability of speakers.**

- **September 2005** Some neoregelia hybrids. Presenter: Arnold James.
  - **October 2005** Growing nidulariums/canistropsis. Please bring along any of these plants you may have. Discussion leader: Olive Trevor.
  - **November 2005** A South American Trip. Presenter: Greg Aizlewood.
  - **January 2006** Different forms of *Tillandsia fasciculata*, *T. jalisco-monticola* and their hybrids. Please bring along any of these plants you may have. Discussion leader: Nev Ryan.
  - **February 2006** After the Annual General Meeting, there will be a slide session titled: The Year in Review. Presenter: Doug Upton.
  - **March 2006** Variegation in bromeliads. Please bring along any variegated bromeliads you may have. Discussion leader: Bob Reilly.
- If you would like to give a talk/presentation in 2006, then the meeting programme co-ordinators, Olive Trevor and Bob Reilly, would like to hear from you.**

Their telephone numbers are:

- Olive Trevor (07) 3351 1203,
- Bob Reilly (07) 3870 8029.

## **BROMELIADS XIII CONFERENCE UPDATE**

(by Bob Reilly)

Over 160 people have registered for the conference, making it one of the largest, if not the largest, in the history of this event. However, as the venue can accommodate more people, don't hesitate to register if you are still deciding whether to come.

Due to popular demand, one day registrations are also available for the Saturday, Sunday and Monday of the conference. (They are not available for the Friday, which is primarily a registration day, along with a bus trip). Key points are:

- Cost is \$85 per day. This will cover refreshments (see registration form), lectures, and access to the sales area.

- Registration for the banquet and bus trips are separate.

- Please complete a standard registration form, but under the item titled "Conference" on the back page, cross out the Full Single/Full Double "rows" and insert the day(s) on which you would like to attend, and the rate (\$85/day).

- Mail payments to Conference Registrations, PO Box 565 Fortitude Valley, Qld, 4006.

All registrations close on 30 September 2005 and late registrations unfortunately cannot be accepted. (This is because we need to let the Conference Venue know numbers for lunches, other refreshments, and the banquet). So, to avoid disappointment, book early! We are also looking for lots of helpers to assist with a wide range of jobs which need to be done during the Conference. If you would like to help, please contact the Conference Convenor, Wayne Lyons (phone (07) 3202 8454, email [info@igardening.com.au](mailto:info@igardening.com.au)).

## **BROMELIAD BONANZA**

Proudly Presented by the Bromeliad Society of Queensland Inc.

**To be held at: Mt Coot-tha Gardens  
Auditorium**

**Saturday 5th November 8AM to 4PM  
Sunday 6th November 9AM to 3 PM**

- Spectular displays of bromeliads
- Over 500 varieties/hybrids of bromeliads on sale
- Refreshments available for purchase
- Talks on how to grow bromeliads
- Display of bromeliad photographs
- Monster bromeliad raffle
- Large range of Bromeliad books on sale
- Plenty of free parking

**Admission: Adults \$3.00  
Children under 14 Free**

**Public transport:** BCC bus 471 from city OR great Circle bus 598 or 599 from various suburbs

For further information:  
Ph (07) 3390 2214  
Mob 0428 157 777



# CALENDAR OF EVENTS: JULY – SEPTEMBER 2005

(compiled by Bob Reilly)

**15 September Society general meeting.** Venue: Uniting Church Hall 52 Merthyr Rd New Farm.

- Beginners' class topic: Growing aechmeas. Discussion led by Dorothy Cutcliffe. Commences 7.30pm.
- Main meeting topic: Some neoregelia hybrids. Presenter: Arnold James.
- Popular vote: Any genus: species or hybrid.
- Plant of the month: Species and hybrids from the following genera; Quesnelia, Racinaea, Ronnbergia and Steyerbromelia.

**24 September** Plant show and sale presented by the Gold Coast Succulent and Bromeliad Society (Inc). Timings: 10am-3pm. Venue: Southport Community Centre, Lawson Street, Southport. Admission: \$2. More information: phone Pat Ross (President) on (07) 5576 1186.

**14-17 October Bromeliads XIII Conference,** Bardon Conference Centre.

**20 October Society general meeting.** Venue: Uniting Church Hall, 52 Merthyr Road, New Farm.

- Beginners' class topic: Growing medium sized neoregelias. Discussion led by Arnold James. Commences 7.30pm.
- Main meeting topic: Growing nidulariums/canistropsis. Please bring along any of these plants you may have. Discussion leader: Olive Trevor.
- Mini-Show Class 1: Neoregelia-over 200mm diameter when mature, Class 2: Tillandsia, Class 3: Pitcairnioideae not listed elsewhere in the schedule, Class 4: Any other mature (flowering) bromeliad. Species and hybrids are eligible for entry in all classes.
- Plant of the month: Species and hybrids from the following genera: Tillandsia.

**5-6 November Society's Spring show** and sale of bromeliads at Mt Coot-tha Botanic Gardens. Over 500 varieties/hybrids will be on sale. Saturday (5<sup>th</sup>) 8am-4pm, Sunday (6<sup>th</sup>) 9am-3pm. Admission: \$3-adults, under 14- free if accompanied by an adult. If you wish to sell bromeliads at this event, please let Nancy Kickbusch know (ph (07) 3300 1704) by 7 October.

**17 November Society general meeting.** Venue: Uniting Church Hall, 52 Merthyr Road, New Farm.

- Beginners' class topic: Growing miniature neoregelias. Discussion led by Arnold James. Commences 7.30pm.
- Main meeting topic: A South American trip. Presenter: Greg Aizlewood.
- Popular vote: Any genus-species or hybrid.
- Plant of the month: Ursulea, Vriesea, Werauhia, Wittrockia.

**8 December Society's Christmas party.** There will be a free barbecue and monster bromeliad raffle. Join with other Society members in celebrating the festive season. Commences 8pm, at Uniting Church Hall, 52 Merthyr Road, New Farm.

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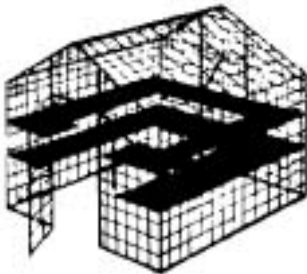
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*Neoregelia abendrothii* x *pauciflora* RS