Bromeliaceae

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The Bromeliad Society of Queensland Inc.

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Front Cover:	*Guz.* 'Loja'	Photo by Ross Stenhouse
Rear Cover :	*Bill. alfonsi-joannis*	Photo by Ross Stenhouse

Contents

Important things to remember to do:

(1) Renew Your Membership Due - due 1st January 2008

(2) Attend the Bromeliad Society of Queensland's Annual General Meeting, Thursday 21st February at the Uniting Hall, 52 Merthyr Rd., New Farm, Brisbane, commencing 8 pm. Nominations for the management committee positions need to be received by the society's secretary 14 days prior to the meeting. (see BSQ web site for further info)

(3) Attend the Society's Autumn "Bromeliad Bonanza" Show and Plant Sale at Mt Cootha Botanical Gardens 5th and 6th April 2008. If you want to help setup then you can attend on the Friday (4th) preceding the show. (See BSQ Web site for more info)

Books For Sale

The Society has the following books for sale:

• Starting with Bromeliads	$18
• Pitcher Plants of the Americas	$60
• Bromeliads: A Cultural Manual	$5
• Back Copies of Bromeliaceae (2005, 2006 Editions)	$4
• Bromeliads for the Contemporary Garden by Andrew Steens	$36
• Bromeliads: Next Generation by Shane Zaghini	$33

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

Neo. 'Dawns Autumn' unreg

Guz. squarrosa

Neo. 'Pink Sensation'

Ae. nudicaulis

Ae. nudicaulis inflorescence

Guz. lingulata variegata 'Orange'

Saving Water with Bromeliads

(They discovered tanks before we did!)

There are over 5,000 bromeliad varieties and hybrids. They come in a wide range of shapes, sizes and colours. Many are drought tolerant and are well adapted to sub-tropical and tropical climates.

Some tips to make the most of these hardy, colourful plants when water is scarce are:

1. Plant selection

• The hardiest bromeliads have relatively thick, "hard" leaves, or have leaves heavily covered in silver "scurf". Bromeliads with thin leaves, which can be easily bent, are less hardy.

• Widely grown hardy bromeliads include *aechmeas, alcantareas* (great for situations where you want plants that grow to over a metre), *billbergias, neoregelias* (very popular, colourful, low-growing bromeliads) and *tillandsias* (these can be hung on walls and fences).

2. Growing tips

• Use a larger pot rather than a smaller one, as the plant will need watering less frequently.

• Use a potting mixture which has plenty of organic matter and water crystals in it.

• Many bromeliads can be grown on the ground, in material which drains readily such as fine pine bark. They will often need less water than those grown in pots.

• If you take the spout off the end of your watering can, it is earlier to fill the bromeliads "well" or "tank" (formed by the plant's inner leaves), and water the soil underneath their leaves. This reduces the amount of water you need.

3. Alternative water sources

• Bromeliads like rainwater, so use it in preference to town water.

• Many of the hardy bromeliads such as *neoregelias* and *acechmeas* can be watered, without ill effects, using the final rinse water from clothes' washing machines.

• If you use other sources of greywater, repot the plants at yearly intervals to minimise salt build up in the pots.

4. Watering schedules

• Many of the hardy bromeliads can get by with being watered once a month in winter and once a fortnight in summer, provided the soil around the plant's roots is thoroughly wetted when you do water them. Some bromeliads can survive on even less water, but they will not look their best.

• If you can, keep the "wells", (formed by the bromeliad's inner leaves), full of water.

• If you give the bromeliads a bit more shade than normal, then they will need less water.

5. More information

• Contact the Bromeliad Society of Queensland website:

www.bromsqueensland.com

or write to the Society at:

PO Box 565

Fortitude Valley Qld 400

• The Society has biannual shows at Mt Coot-tha where you can purchase a wide range of bromeliads such as those described here, and obtain free advice on how to grow them.

Rob Smythe's Solution to Sand Fly Bites

This will give you a laugh. My latest prevention for sand fly bites. On my patio sill there is an array of sprays, one of which is a blue can of Aerogard and another blue can which is clear lacquer. I can assure you lacquer to the back of the knees definitely prevents sand fly bites.

Neo. pauciflora

Neo. 'Royal Robe'

Neo. 'Strawberry Cream'

Bil. 'Windii' inflorescence

Ae. fasciata var. *purpurea*

Neo. 'de Rolf'

A few Interesting Points raised by a Country Member

Country members face a different situation and set of problems which those of us in the capital cities don't face. It's easy to be oblivious to their particular problems. It's also easy to fail to comprehend the problems that can beexperienced if you are the only bromeliad grower in the district.

The following email was received from a society member based in the country.

To make it easier to discuss I have added the dot points (Ed.).

Dear Ross

I have been a member of the society since Aug and like Nola Mauler {letter in current issue} live in the country and have experienced great difficulties in obtaining plants and the cost.

- *One nursery charged me $35 for a small pup of Portea petropolitana var extensa only to find weeks later a chap 60kms from me took a trailer load to the tip. I had travelled 400kms to this nursery.*
- *After making 3 long STD calls to Brisbane I discovered the society had a seed bank {Unfortunately the chap was in hospital at the time}*
- *Nola's letter started me thinking that maybe a Notice Board could be set up on the B.S.Q. web site. This would benefit all members, those with a surplus of pups, those in the market for pups, those looking for a specific plant and those who would like some verification on un-named plants.*

The Notice Board would not interfere with the nurseries that advertise as they do not cater for country people anyway. You have to know what you are after and being relative new to broms, I had no idea.

Seeing that the society has so may members now, and most are on the net, a Notice Board would be the best and simplest way for all members.

Hope to hear your thoughts on this

Kind Regards
Lea

With reference to the first dot point, nurseries are commercial entities and as such need to make money to cover what is an expensive operation. I have seen a number of well-known-brand nurseries in the Brisbane suburbs selling common bromeliads for $30-35 so I think the price you paid was probably OK. However what you are missing out on is the free plants that people living close by give to each other.

I think the lack of regular personal contact that many country members experience needs addressing in some alternative way.

The second dot point raises the subject of growing from seed - a slow and limited way to gain bromeliads. Unfortunately the society's Seed Bank Co-ordinator has been out of action, hopefully Doug Parkinson will be back on deck soon. However this point shows how important the function of the

The BSQ Web Site

Don't forget that the society has a web site. We place urgent and general information and information on the site. It also is a resource for smaller societies to get articles for their newsletters.

The URL is:
www.bromsqueensland.com

seed bank is to country members.

The third dot point raises a possible solution, not just for country members but for all members. To help overcome the difficulties that the lack of easy contact with other bromeliad enthusiasts creates, I have added a bulletin board on the Society's web site.

To use the bulletin board, visit the Society's web site at http://www.bromsqueensland.com. You will need to register as a user in order to use the bulletin board facility. I hope that as members become aware of the bulletin board and its ease of use, the board will become widely used by not just members, but bromeliad enthusiasts Australia wide. Please register as a user and support the bulletin board by putting up postings and answering questions raised by other users. This is particularly important in these early days of the boards existence. Without many postings to the bulletin board it will be boring.

As the use of the bulletin board increases the society will be looking for members to be take up the role of moderator. This role includes such housekeeping matters as deleting offensive postings. You don't need any special software on your PC to perform this role, rather a reasonable amount of experience with postings to bulletin boards so that you understand the usual standards that are employed to keep a bulletin board functional.

On the subject of the verification of un-named plants, that is a minefield. As you may have noticed in previous issues I have published accounts of my detective work to establish the identity of un-named plants I have.

The correct identification of plants is a difficult area within which to operate. I suggest that looking through the information and images published in this journal may be of assistance. Another way if you have an idea of what the plant may be is to look up the photo index of the Florida Council of Bromeliad Society at www. fcbs.org.

I find that site very useful and use it as a reference for plant name spelling. There are a number of Australian sites that have photo indexes including a very limited one run on the Society's web site.

Even the experts argue over the correct identification of plants. This is particularly true of Neoregelias where the difference between different varieties can be very small.

Bromeliads are described as perennial herbs. This means they do not have permanent woody stems above ground; and that individual plants persist for years and will reproduce without human intervention.

The Editors Desk

by Ross Stenhouse

Well, this is the final issue for this year so I decided to make it a bumper issue image wise. There are in excess of 100 images in the issue. Some of you may have seen me taking photos on the Sunday of the recent November "Bromeliad Bonanza". Of the plants I photographed, I have published one of the images in this issue.

Once again I would like to thank those who have written the articles contained in the issue. Without their articles this journal wouldn't happen. Putting together a journal is not an easy job, however those who regularly contribute are worth their weight in gold to me.

At the November meeting of the society I was talking to the society treasurer, Glen Bernoth. The subject of what Glen collects came up and he made the statement " I collect mainly species (tillandsias), at least there is a limit to the number of them". My own opinion on collecting is starting to swing that way (not that I am a great collector).

Collecting species does serve another purpose apart from the collection aspect and that is that by collecting species you are helping to preserve the gene pool for the future. In an article appearing elsewhere in this journal, Derek Butcher informs us that at the time of writing this article there were 4366 cultivars of neoregelias.

Derek has raised a number of interesting points in his article and has discussed the issue how the internet is influencing the breeding of plants. I find it strange that someone would consider naming a plant when there is only one in existence and then advertising it for sale. I find this an anathema and something I think should stop.

Pat Coutt's article on a collecting adventure in Equador makes interesting reading. Her article makes one consider paying a visit to Central and South America, the primitiveness of the facilities add rather than detract from the charms of those countries.

Finally I again urge you to consider writing a short article for this journal, supplying a few images to illustrate it would be an additional bonus

Bromeliaceae Production Crew

Editor: Ross Stenhouse
Proofreader, Custom Badge Collector and distribution manager: Roy Pugh
Regular Contributors: Derek Butcher, Rob Smythe, Rob Reilly, Peter Paroz

Neo. 'Bill Morris'

Neo. 'Muscat'

Neo. 'Gunpowder'

Guz. conifera

Ae. brassicioides

Neo. 'Parlour Pink' unreg

Plants at the 2007 Spring Show

(by Bob Reilly)

As always, there were many lovely plants on sale and display at the Show. As well as many of the old favourites, such as *Neoregelia* 'Muscat", 'Gunpowder', *concentrica* 'albo-marginata', there were new hybrids and rare species.

Some of the plants that I particularly liked are described below, although there were many others as well.

(Photographs of the plants described here appear on pg.10,12,14)

Aechmea brassiciodes - A few, pale green leaves form a compact, bottle shape about 30 cm tall. The top of the leaves fold tightly together. The 20 cm long, pink-red inflorescence "punctures" the plant's upper leaves. This plant is a real curiosity.

***Billbergia* 'Groovy' (unreg)** - A few 5cm wide leaves form a vase about 40 cm high. The leaves are a mixture of green, brown and white. The photograph on pg.16 illustrates how billbergias usually look their best when grown in a clump.

Guzmania conifera - Numerous, 5 cm wide, green leaves form a semi-erect rosette approximately 70 cm across. The cone-like inflorescence is red-yellow. This is a rare plant and has been used as a parent for quite a few guzmania hybrids.

***G.* 'Loja'** - Numerous, 5 cm wide, green leaves form an open rosette over 100 cm across. The 30 cm long, cylindrical inflorescence has red bracts and yellow flower buds.

***G.* 'Kendra'** – Numerous, 2 cm wide, thin, light green leaves form a semi-erect open rosette approximately 60 cm across. The 20 cm long, cylindrical inflorescence has orange-pink bracts shading to white near its tip.

***Neoregelia* 'Big Ben' (unreg)** – About 20, 10 cm wide, leaves form a flat compact rosette approximately 40 cm across. The green leaves have purple markings and tips. At flowering, the plant's centre turns violet purple.

***N.* 'Royal Robe'** – About 20, 6 cm wide, light green leaves with black spines form a flat rosette about 40 cm across. At flowering, the plant's centre turns violet. The photograph on p.22 of this plant illustrates how many neoregelias look their best when grown in a clump.

***N.* 'Criss Cross'** – Numerous, 10 cm wide, green leaves with purple barring and thin purple stripes, form a flat rosette approximately 80 cm across. At flowering, the plant's centre turns violet-purple.

N.* 'Fairy Tale' x *concentrica – About 20, 8 cm wide, green leaves with purple markings, form a 30 cm wide, flat rosette. At flowering, the plant's centre flushes violet-purple.

***N.* 'First Prize' (variegated form)** – Numerous, 5 cm wide, leaves form a compact, semi-erect rosette approximately 40 cm across. The red leaves have green bands and white, central, variegation.

***N.* 'Narelle (No 2)'(unreg)** – About 20, 5 cm wide, leaves form a flat, compact rosette approximately 40 cm across. The bronze-green leaves have purple shading. At flowering, the plant's centre turns violet-purple.

***N.* 'Old Love Letters'** – About 20, 4 cm wide, leaves form a compact rosette approximately 40 cm across. The yellow-green leaves have pink-red markings and tips. At flowering, the pink-red markings in the plant's centre intensify in colour.

***N.* 'Parlour Pink' (unreg)** – About 20, 6 cm wide, bronze leaves form a flat rosette

Neo. 'Old Love Letters'

Neo. 'Big Ben' unreg

Tillandsia fasciculata 'Yellow'

Pitcairnia species 'Minda Red'

Neo. 'Lola' unreg

Neo. 'First Prize' variegated form

approximately 50 cm across. At flowering, the plant's centre turns pink.

***N.* 'Rose Empress' (unreg)** – About 20, 7 cm wide, bronze-green leaves with brown-red tips form a flat rosette approximately 30 cm across. At flowering, the plant's centre turns red-purple.

***Pitcairnia* sp. 'Mindo Red'** – This plant has a distinct stem on which there are numerous, 10 cm wide leaves. They are green with yellow spots. The 30 cm long cylindrical, red inflorescence rises well above the plant's leaves.

Tillandsia flabellata* var *viridifolia– Numerous, 2 cm wide, red leaves form an open, semi-erect rosette approximately 40 cm across. The red, multi-branched inflorescence rises about 30 cm above the plant's leaves

T. lucida. – Numerous, 3 cm wide, green leaves form a compact, semi-erect rosette approximately 60 cm across. The multi-branched, lolly-pink, inflorescence rises about 100 cm above the plant's leaves. This plant can be difficult to grow. It often does best in moist, cool conditions.

***Vriesea* 'French Quarter'** – Numerous, 5 cm wide, green leaves form a semi-erect rosette about 50 cm across. The multi-branched, red-yellow inflorescence rises 40 cm above the plant's leaves.

V. lutheriana – Numerous, 8 cm wide, green leaves form an open rosette approximately 100 cm across. The multi-branched, orange inflorescence rises well above the plant's leaves. This plant was named in honour of Harry Luther, who is a prominent, bromeliad taxonomist.

Tillandsia usneoides is the most widely distributed bromeliad being found in a range of elevations and habitats from approx 23º north latitude to 23º south latitude.

Tillandsia 'Splitenz'

by Derek Butcher

Early in 2007 Gary May sent me a photo of a T. usneoides acting oddly. In fact it looked like a split stemmed form. Was it rare? We tried it on the Aussie Tilly Nuts AND on the world-wide web and the response was a deafening silence. Ergo, it must be rare! At the time I think I did suggest that while other Queenslanders were bending bananas Gary was busy with the razor blade making a neat longitudinal cut down the stem. Since then Gary has sent me a piece to prove a point.

Let me digress for a while. I also sent a photo to Jason Grant in Switzerland who tells me he has not seen this before. Why Jason? We know that T. usneoides is the widest spread Bromeliad species. About 10 years ago he was asking for Tillandsia usneoides (with collection data) from everybody. Surely, if you used DNA you could find where T. usneoides started and ponder over where Bromeliaceae first evolved. But alas, Jason seems as far forward as he was 10 years ago. But, to me he is still my T. usneoides expert.

Will my pieces of 'Splitenz' stay that way or is it just a Brisbane phenomenon? Gary has been checking his plants and finds that with a tug at the top end of the split you can find one separate leaf and one separate stem. Is this yet another sort of quilling when leaves get gummed up? I think not, as I hope to explain using the schematic drawing from 1964 when they really studied T. usneoides. To my mind a leaf and stem started off simultaneously and just grew side by side.

My only hope is that Gary is not a really tidy person and has been busy loosening ALL the leaves on 'Splitenz'.

Vr. 'French Quarter'

Neo. 'Rose Empress' unreg

Tillandsia flabellata var. *viridifolia*

Neo. 'Narelle No.2'

Neo. 'Criss Cross'

Neo. 'Mauve Star'

Times are a'changing

by Derek Butcher

Do you want the good news or the bad news? We now have 8821 names on the International Bromeliad Cultivar Register of which 4366 are Neoregelia. If you wanted to buy one of these plants how lucky would you be? Many of the older ones would be very difficult to find. With many of the newer ones you could try contacting the hybridist but even then you could have problems. Let me explain.

In the good-old-days, Nurseries printed catalogues and advertised their wares in various newsletters and journals. However, as Herb Plever from New York has already pointed out these catalogues are becoming few and far between and yet plants, especially hybrids, are still sold and purchased around the world.

Ever since I became Registrar in 2000 I have tried to point out the advantages of registering hybrids if only to give some way of identification compared to the names that just occur in Catalogues, which for want of a term I have always called nurserymen's names or NN for short.

Another reason for having a Cultivar Register is that anybody wanting such a plant could at least contact the hybridist and in the good-old-days this was a reasonable assumption. Catalogues were invaluable in this exercise because the nurseryman had to have sufficient stock before going to the expense of printing such a catalogue. Therefore he worked with propagating offsets. Having available stock is all the more important to the large wholesalers in Europe and some larger US concerns. Here, it can be said that the plants are truly being cultivated widely and need to be recorded in the Register. If I find out they are using a different name for this same plant this is also recorded in the Register whether the company concerned likes it or not. The same name for different plants is also recorded. So the Register is more than just a register because it gives extra information in any search for identity.

We have the rule for registering hybrids that the plant should be grown through a series succession of asexual reproduction to ensure that 1. There is a chance to look at stability and 2. There is a likelihood that there are sufficient numbers for circulation for it to be considered a plant in general cultivation. This is decided by the registrant/hybridist not the Registrar. If we return to the good-old-days there was no incentive to ignore this rule!

These days of Ebay and Websites it costs no more to have just one cultivar for sale , calling it unique, and claiming a high price for it. The purchaser is not fully aware that the onus is on him/her to propagate such cultivar and in reality it is unnecessary to be in the Register because nobody else has a chance of obtaining it or needing to know its identity. This uniqueness is a decision by the seller. This is where we have problems with Bromeliaceae because of their promiscuity and fecundity where every seed raised has the potential to be 'different' in someone's eyes. Culling is always urged but rarely put into practice because its meaning differs amongst individuals

The Registrar treads a narrow path between the thousands of named plants out there not registered and the few thousand that have been. How many growers keep the labels near their plants? I have had one nurseryman boast that over the years he had named and sold some 60,000 plants without registering one. What I find interesting is that NOT one has been referred back to me with

Neo. 'Orange Crush'

xNeophytum 'Gary Hendrix'

Billbergia 'Groovy'

Nidularium 'Ruby Lee'

Ae. palladus

Guz. 'Kendra'

an identity crisis. This means to me that the plants could not have been that outstanding in the first place for purchasers to want to propagate them further. This also shows that you do not need to register every seedling you obtain, and just one of my sayings is 'Quality before Quantity'

Bromeliad Societies around the world play a vital role in this selection process when they conduct Shows and issue Newsletters, and check the Cultivar Register to see if the plant name has been registered. How many registered plants turn up on Show benches?

Black Neoregelias

Author: Rob Smythe MSc

Preamble: This will be a most difficult article for me to write. I spent my whole working life as an Atomic Absorption Spectroscopist studying the interaction of light with specific types of matter. I'll do my best to simplify this topic which really is ginormous. Dealing with reflection, diffraction, polarization, wavelength change, colour expression and absorbance would make the journey nigh on impossible to follow. I will limit this discussion principally to the latter. Simply, the plant receives white light and absorbs some of the colours and transmits and reflects the remaining colours and the combination of these colours is what we see.

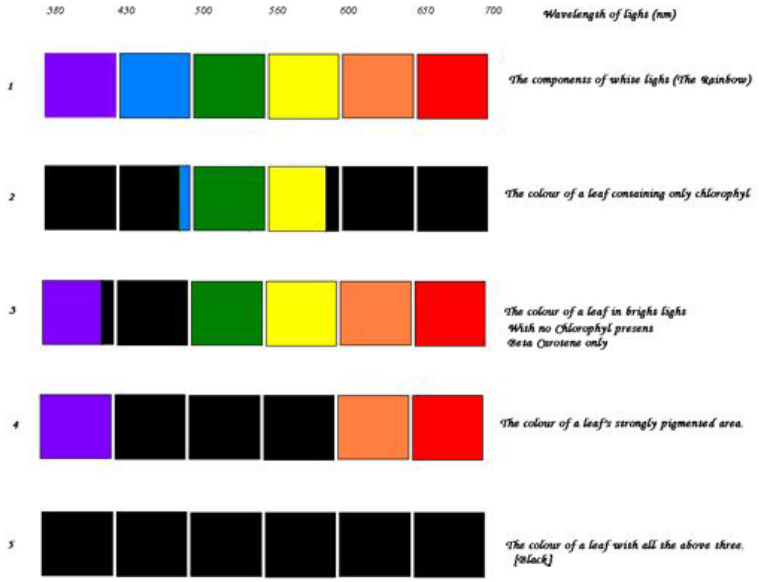
It has always been a rather big fascination with me as to how plants supposedly coloured black seem to not want to go black. I think I will answer this question at least in this article. I have taken off my bromeliad growers cap after seeing a plant named *Neo.* 'Black Bandit', which I named. Recently I have seen it in three other collections and in two of them one might wonder where its name came from. My plant grows green in the garden then blackens up from the tip down. Always seems to be some green left. I visited friends, hard growers, no fertilizer and their plants were neither green nor black but an almost translucent lavender (I'm a red, blue, green man so it may actually be lilac, amethyst or violet) colour. Then I visited a cooler area on the table lands and there it was pitch black all over. Right now this gives me something to work with—on goes the scientist's cap again. If science bores you jump to my advice at the end. If you are a scientist forgive my shown linearity of the spectrum colours and also at the time of writing I have incomplete spectra but having the extra data for the red end of the spectrum won't change the story line.

To deal with black broms we do not need diagram #3 below. I put it in for a related topic. All the same it could be the trick behind some plants going darker in strong light. We can quickly deal with diagram #1, it is the break down of all the colours in white light coming from the sun. Rain drops have shown us all this when light passes through these drops and forms our well appreciated rainbow. Just for the kids, it is safe to say there is a pot of gold at the end of the rainbow as no one can reach its end as it moves as you move.

To get a black plant we have to remove all the colours as shown in diagram #5.

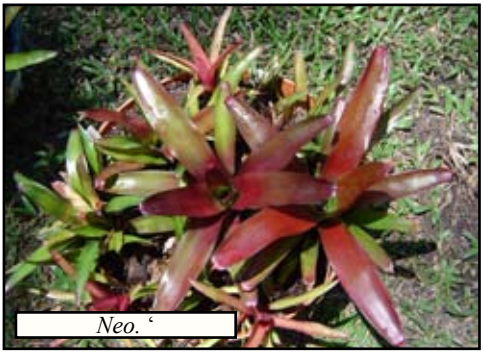
If we fertilize the plant, not heavily, we will get more chlorophyll. This removes the colours from both ends of the spectrum see diagram #2. Only blue, green and yellow are left so the plant appears green, blue green or yellow green.

Now let us jump to diagram #4. The coloured pigments of a plant (the cyanins) will knock out the blue green and yellow. These pigments seem to show up best with good lighting and low fertilizing. Photo #1 shows such a plant. From its genetics we



Neo.

Neo.



Neo. '

Neo. 'Grace's Babe'

would believe it has pigments absorbing at both ends of the spectrum. Notice that the green colour is not strong towards the centre.

Theoretically with an intense and even spread of chlorophyll and the right cyanins we can finish up with a black plant. (That is all the colours have been absorbed by the leaf). With photo #2 we now have the same plant as above but we have fed it more nitrogen. The pigmented areas have turned black as a result of the extra chlorophyll. Though this plant is not a concolour black, it best illustrates what I am saying.

If we under fertilize and bring up the colours our plant could change colour to a lilac, an orange red or even a combination of these colours. If we don't bring up the colours with light our plant will stay green. That has answered a lot of our problems we have with getting the plant to go black.

Diagram #4 –as it relates to plants in our gardens.

Let us look at diagram #4 in more detail. I don't have much literature on broms but I have seen a lot on orchids. There is an article showing detailed spectra published by me 1. Looking at this diagram #4 then looking around your bromeliad patch. You will see that almost all the Neoregelias have red/orange (violet end of light spectrum being absorbed by plants) and violet hues (orange red end of spectrum being absorbed by the plants). These colours, of course, must be superimposed on a green background. I have also observed that in my garden plants with obvious violet banding like *Neo.* 'Lilac Dreams' and *Neo.* 'Two Fairies' only hold the violet hue during the cooler, brighter months. This is not always true as another plant widely sold and incorrectly named as *Neo.* 'Two Tone' goes amethyst all over in summer, its flowering time. I think there is a difference between those plants having the initial lilac colours spreading from the centre to those not spreading from the centre. The former appear in summer with the latter appearing most strongly in winter.

All now becomes clear .

Based on the science above to breed and grow a good concolour black neo like *Neo.* 'Midnight' (Voo Doo in some Australian gardens) or *Neo.* 'Black Bandit'.

• Use a plant capable of developing a strong green colouration.(you would not use N. compacta for instance).

• Use a plant with a strong and evenly distributed pigmentation.

• Hedge your bets and use the two parents with one having a strong lilac hue and the other having an orange/red hue.

• Grow them cool so that the lilac colour does not fade.

• Grow in sufficient light to produce the necessary coloured pigments.

• Fertilize as needed to enhance the green.

• Choose a plant which is evenly coloured and the colour of the light seen coming from both top and bottom sides of the leaf is nearly the same. [This takes some explaining—see note at the end].

To Grow a black Neoregelia

So my conclusions are if you want to grow black plants you have to balance the fertilizer (green) and the amount of light (colour) and maybe grow them in a cool spot (to stop lilac from fading).

To breed a concoloured black Neoregelia.

To breed a black I would suggest crossing a highly coloured brom with an orange /red hue with another highly coloured plant with a violet hue. (hedging by bets there!) Don't use a plant with the violet hue appearing only at flowering time. Choose a plant which is evenly coloured and the colour of the light seen coming from both top and bot-

Neo. 'Blushing Bride' (3)

Neo. 'Blushing Bride' (1)

Neo. 'Blushing Bride' (2)

Neo. 'Gold Pass' Patterson

*Neo. '*Gold Pass Too*'*

*Neo. '*Gold Pass Too*'*

*Neo. '*Grace's Candelabra*'*

tom sides of the leaf is nearly the same. [This takes some explaining—see note at the end]. Pick ones with concoloured leaves rather than barred or blotched.

If you have one with colours strongly represented in bars it is worth a try but the reasoning above could be invalid. Going by the colours found in the garden, I would say Orange/ red is most common. I would probably choose *Neo.* 'Royal Cordovan', *Neo.* 'Red Rogue', *Neo.* 'Oh No' or *Neo.* 'Rosy Morn'. The plant with a tinge of violet would be the most important plant to look for. I can think of a few. *Neo.* 'Vulkan', *Neo.* 'Purple Star', *Neo.* 'Prince of Darkness', *Neo.* 'Purple Paint', *Neo.* 'Royal Flush', *Neo.* 'Grand Slam' and *Neo.* 'Amethyst Queen' and of course taking a step backward with shape *Neo. princeps*. There are several with lilac centers, *Neo.* 'Rain Cloud' as an example, but I don't think they will work. Some of the hybrids of the smaller species with a lot of purple in them such as *Neo .smithii*, Neo. pauciflora and some forms of Neo. ampullacea will become important sources of the blue/violet colouration.

A very experienced breeder of orchids once told me, "When you get in this deep the best thing to do is cross a black with a black."

The last spectrum #4 could be unrelated but it shows how the carotenoid pigments which, build up in hot sunny weather function. They overlap the chlorophyll absorption and in so doing protect the vital chlorophyll from excessive sun damage. Carotenoids are the plants natural sunscreen. They also assist with the photosynthesis carried out by the chlorophyll.

Pitch Black et al.

The story of *Neo.* 'Pitch Black' and its multitude of black descendants is yet another story to be told. Unfortunately its parentage

continued on page 23

Now That's Unusual

Ross,

I think these photos will surprise people.

A photo of a normal *Neo*.'Blushing Bride' colouring up and photo of *Neo*.'Blushing Bride' at its best (when fluting). At this stage plants usually go into flower and the centre dies out.

In the tropics it is usually not cold enough in winter to start the plant flowering so this plant starts to grow again. The third photo is one showing it in this regrowth state. One might imagine it as giving me the fingers for saying it was going to die. Sure looks a mess. Guess I will have to operate and cut away the old flute.

Rob Smythe.


Neo. 'Grace's Focus'


Neo. 'Grace's Focus'


Neo. 'Pussy Foot'


Neo 'Quoll'


Neo. 'Roundabout'


Neo. 'Sometimes'


Neo 'Tabby'


Neo. 'Tabby'

Continued from Page 21

is unknown but *Neo. concentrica* is in there somewhere. Some plant has been used which spreads the black bars when crossed with concentrica types. I believe this plant could be *Neo. princeps*.

Black Bandit—our example

Black Bandit = *Neo. wilsoniana* (Yellow in bright Sun) x *Neo.* 'Royal Flush'

Neo. 'Royal Flush' = *Neo. pauciflora* (Lavender colours) x *Neo. johannis* (variable mostly yellow but some have red pigments as well.)

So with low light, low but sufficient fertilizer and cool weather it would be expected to look lavender, lilac or one of the other related hues at that end of the spectrum. It would be black when the colours are in balance.

Note: The theory above depends on the laws of light absorption by coloured solutions. That is why I referred to looking at the colour on both sides of the leaf. If these laws of colour appearance were universal our clouds at sunset would be shiny white. Our sunset out to sea would possibly be just a darker area due to salt in the sea spray. The sunset over our red sandy deserts would be blue. Our sky would be white and when we mixed blue paint with yellow paint we would not get green but black. On a rainy day we would not see a rainbow. With plants the problem is that pigments are deposited as particles quite near the surface. Different rules apply when colloids or particles, coloured or not, are concerned. This is why I have suggested using the more translucent plants. I have not tested my theory but twigged to it when I saw the parentage of *Neo.* 'Black Bandit'. Colour This is further complicated by the plants themselves. Two plants may each be a different colour only because one is missing an enzyme to take the colour to the next phase. Cross such plants and the crossings become all the same colour as only one of the parents. A Study on the crossing of forms of the orchid *Cattleya trianae* is the source of this research.

Finally by way of an example see photo #3. This is a photo of some of my two year old seedlings bred to the above formula. Note a range of pigment colours is appearing. One plant seems to already have a good balance of these pigments. The colours are not as intense as I would like but the plants are very young. Soon I will add the fertilizer to boost the green and hopefully one or more will turn black.

Like rearing kids it's a case of Nature and Nurture. First the genes have to be there then the right care has to be given in order to get the desired results.

Hope this article helps with your hybridizing. If it does not work it is better than sailing blind.

1. R. Smythe, Phalaenopsis – The Botanicals Australian Orchid Review, February 1993 p10

Grace Goode's Miniature Neoregelia Hybrids.

by Derek Butcher

I am not particularly keen about saying this but consider it must be said. There is a culture in Queensland regarding Neoregelia hybrids where any name will do. Even a plant without a name seems to be given a name and circulated under that name whether they are the hybridist or not. I am not particularly concerned if you want this situation to continue where name and identity are purely coincidental. That is for each one of you to decide, but I am concerned with hybrids that

Grace Goode has done in recent years. In the good old days Grace would register her hybrids but after OBE (Over Bloody Eighty) she seemed to leave it up to others and needless to say they fell in a big hole."If you want a job done well do it yourself." In 2003 I started a list of unregistered Grace Goode hybrids with parentage based on Grace's studbook and this has grown to nearly 100. Back then I had many promises from budding photographers with super duper digital cameras to help me in my quest – but alas! I was lucky that any escapees to Western Australia were investigated by Geoff Lawn but nothing on the Queensland front other than what Rob Smythe picked up and he isn't into miniatures!

So I was pleased when a novice grower from Bundaberg sent me a CD of her collection. She is a keen Cordyline fancier who was willing to act to try to straighten out the chaos in Cordyline Cultivars in Australia but felt that she was helpless against the tide of Neoregelia hybrids. I can now concentrate on some 17 of Grace's hybrids and add them to the official register.

These are the ones I think I have solved and photos are included. Some names have had to be changed because the name has since been registered for another plant by another hybridist

- 'Avalanche' now 'Grace's Avalanche' is (*lilliputiana* x 'Winter Bloom')
- 'Grace's Babe' named by G Lawn WA. AU (?punctatissima x ?) <2003, 15cm x 8cm wide, originally named as 'Babe' but slight name change made to save confusion with Grace's other 'Babe' named in 1986, Reg Doc 11/2007, photo fcbs.org
- 'Bitzer' is (?*punctatissima* x 'Small World')
- 'Candelabra' should be 'Grace's Candelabra' is (lilliputiana x 'Winter Bloom')
- 'Chubby' is (?*punctatissima* x 'Bob')
- 'Cougar' is (lilliputiana x 'Winterbloom')
- 'Felix' is (*lilliputiana* x 'Winter Bloom')
- 'Focus' is now 'Grace's Focus' is ('Little Faith' x lilliputiana)

'Gold Pass' also incorrectly known as 'Golden Pass' (*lilliputiana* x 'Winterbloom') Apparently two different plants were given the same name, one in Cairns from Grace and an earlier one in Gympie from Grace. It would seem safer to call the Cairns clone 'Gold Pass too'.What is intriguing is that an identical plant to the Gympie clone was being grown at a commercial nursery under the formula of (*pauciflora* x *tigrina*) which has never featured in a registered hybrid. If this hybrid did have the correct parents as stated AND had been registered when the hybridist knew what he had produced, we would have known what sort of progeny to look for!!!

- 'Lili Marlene' is ('Little Faith' x lilliputiana)
- 'Pussyfoot' is (*lilliputiana* x 'Winter Bloom')
- 'Quoll' is (*lilliputiana* x 'Winterbloom')
- 'Roundabout' is (*lilliputiana* x 'Winter Bloom')
- 'Sometimes' is ('Aussie Dream' x ?)
- 'Tabby' is (?*punctatissima* x *lilliputiana*)
- 'Tassie Tiger' is (lilliputiana x ''Winter Bloom')
- 'Whim' is (?punctatissima x ?)
- 'Wild Cat' is (lilliputiana x 'Winter Bloom') OR (?punctatissima x 'Small World') Here we could have problems identifying because these parents could give similar looking progeny. In this case we will use (?*punctatissima* x 'Small World'). Should anyone have the other 'Wild Cat' from parents (lilliputiana x 'Winter Bloom') and can send me a photo we would register this as 'Wild Cat Too'!

'Willy Nilly' is (*lilliputiana* x 'Winterbloom') There is a plant being circulated as 'Willy Willy' which is very similar to this plant and suggests a misspelling.


Neo. 'Tassie Tiger'


Neo. 'Tassie Tiger'


Neo. 'Whim'


Neo 'Wild Cat'


Neo. 'Willy Nilly'


Neo. 'Bitzer'


Neo 'Chubby'


Neo. 'Cougar'

Note that punctatissima is a name used by Grace for many years, who just like many other growers, ignored Harry Luther when he wrote in J. Brom. Soc 33:224. 1983 "Known from type material only, all cultivated material is referred to *N. ampullacea*". All were prepared to follow Moir of Hawaii! The problem was that Harry left a vacuum which is why I have since suggested the use of the cultivar name 'Punctate'.

Note that there will be problems with 'Candelabra (um)' because in 2002 Grace sent a mixed bag of plants called (*lilliputiana* x 'Winterbloom') to Cairns and later told them the name was 'Candelabrum' - the problem being that she did not say she had already selected and named 13 other plants presumably from the same seed batch. In any event the name 'Candelabra' has already been used by Carrone so this plant will have to become 'Grace's Candelabra'.

In my wildest dreams I would not expect to solve all of Grace's identity problems but most will just disappear through time, will lose their name tag and/or be given yet another pet name. And so it goes on in ever decreasing circles. To me you cannot teach an old dog new tricks. Can I make a plea to the newer growers of Neoregelia?

I. Ask questions of the seller as to plant's identity.

II. Check names and identity against the Cultivar or species Register, which is as close as a computer.

III. Refer any queries you may have with formula names, to me or the Editor. We MAY be able to solve your problem!!

IV. If you have an unidentified Neoregelia hybrid please call it Neoregelia hybrid and don't give it a pet name.It is very difficult to link a Neoregelia with no label to an existing cultivar although with some that have outstanding attributes, this can be done by referring to the Cultivar database.

V. Here is a list of outstandings and if anyone is growing them and is prepared to take a photo please let me know

After Dark, Agog, Also, Babe, Baby Girl, Because, Begorra, Besotted, Best Dressed, Bits & Pieces, Black Heart, Black Tracker, Bright Future, Campfire, Cat Nap, Cat Scan, Chivas Regal, Coppelia, Danny's Blush, Deeply Red, Display, Enough, Felicity, Feral, Golden Oldie, Golden Sunset, Good as Gold, Gosh, Heat Wave, Hot Tips, Imagine, Leonie's Boy, Lindsay's Blush, Little Bits, Little Tart, Littlie, Livid, Maid of Ipswich, Making Waves, Maybe, Moon Tiger, More or Less, Night Watch, Party Dress, Patchwork, Pink Affair, Pink Snowstorm, Pipe Dream, Purple Past, Really, Red Horizon, Riot, Seduction, Simply Red, Sleeping Beauty, Small Talk, Speckles, Stairway, Sundowner, Sweet Habit, Symmetric, Teenager, Tickled Pink, Tiger Tim, Tonic, Tweedle Dum, Two Timer, Waltzing Matilda, Water Lily, Wedding Ring, Wild Cat Too, Wild Fire, World Vision, You'll Do, Zulu Maid.

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Roy Pugh
Membership Secretary

Neo. 'Felix'

Neo. 'Grace's Avalanche'

Neo. 'Lili Marlene'

Neo. 'Lili Marlene'

Tillandsia tectorum

Tillandsia tectorum

Tillandsia cyanea

Collecting Adventure in Equador - A Dream Come True

Author: Pat Coutts
Mt Elliot, Q'ld

This story could almost begin with 'Once Upon a Time'.

It was in May 1988 that we packed our bags for the trip to the International Bromeliad Conference in Miami Florida and a side trip to Equador.

The great Conference was over and the excitement of our collecting trip began to rise, I had read in the Journal of other Members collecting trips and hoped that one day it would by my turn.

We were supposed to be accompanied by an expert plantsman but he did not eventuate, we were met instead by Antonio Torres, an educated, English speaking Ecuadorian who was an admirable guide but knew nothing about Bromeliads.

Quito is situated in a valley at an altitude of over 9000 feet, surrounded by snow capped Mountains and Volcanoes, some active, a very picturesque area. Quite unlike anything one would see in Queensland.

Our headquarters in Equador was the Hotel Colon International, here we left our collected plants to be stored away after each foray into the unknown. The staff here accepted our damp presence and even damper plants with great aplomb, I think they secretly thought we were all quite mad.

Our first excursion began on Tuesday 24th May and we were to be away two nights. Our introduction to rural roads in Equador, indeed in a lot of South America, was an education in itself. They are mostly only the width of one vehicle, a lot unsealed, with dizzying drops into the river valleys thousands of feet below. When another vehicle is encountered, travelling in the opposite direction, the respective drivers somehow manoeuvre around each other. There are no guard rails. David, my husband, not good at heights, had several near heart attacks each outing. One day he was so unnerved he said "Stop the Bus, I'm getting off ". He did, and stood in the pouring rain at the side of the road until we returned.

I have to mention here that Bromeliads in habitat are not usually a pretty sight, all one can usually see is a splash of colour amongst the undergrowth, or high in a tree. Sunlight is a great help, but when the weather closes in they are much more difficult to see.

Each time someone on the bus spotted anything, there were loud calls of "STOP, STOP"!! so as we could get out, explore and collect. Most of the time we really had no idea how high we were, and lots of plants were collected as new treasures but doomed

Ross,

Don't know if you want a photo of a quadrule-headed *Aechmea* Strange coincidence but the day before I found it I was conversing with Derek about the large number of variegates appearing in my garden. I suggested it could be related to potassium. Potassium is to plants what salt is to us and they go through a lot of it. At the base of granite monolyths like castle hill where I live the soil is higher than normal in levels of radioactive potassium. Knowing Derek (Butcher) I half expected him to write back saying, 'You will be telling me your plants have two heads next'. By coincidence my plant beat him to the gun.

Rob Smythe

Rob

I guess your plant is a A. fasciata or hybrid of it and I believe the fault lies in too much meristemming. The odd plant or two doesn't realise it has a meristem and forms a cristate. Don't think

radio-activity has anything to do with it. But then again, two heads are better than one!

Uncle D

to succumb to weather conditions in our respective environments.

One of our fellow travellers, Sam Smith, had the foresight to bring along a long telescopic pole to dislodge plants that were otherwise out of reach. Where then were our native tree climbers, to be dispatched to bring down the out of reach prize specimens? IT WAS ALL UP TO US.

I found myself up to my waist in streams and hanging out of trees over them, once I came across a huge hairy black spider whilst looking at a *Heliconia* I'd never seen before, and couldn't get out of there fast enough. David had armed himself with a machete and he amused all and sundry by hacking his way through the undergrowth not unlike some famous actor in old movie scenes in darkest Africa, but instead, it was the present day, or almost, and we were in darkest Ecuador.

As a relative newcomer to Bromeliads then I didn't recognise a great deal on the first day. We saw and collected many *Tillandsias, Puyas, Pitcairnias*.

We spent the night in a quaint, homely, lodge type accommodation at Banos. The rain became more persistent and we had to get used to being wet although I can't remember feeling cold.

The next morning, Wednesday 25th, we were off again bright and early. Our destination this evening was a small town on the Rio Napo, we were at the head waters of the Amazon, no wonder it was raining. We then embarked (after the Ecuadorian Navy had checked our Passports) in long dug out canoes and travelled to an Island which we were told was the place they take rich Americans.

To say the very least, it was primitive. The accommodation consisted of thatched huts high of the ground. The steps were carved out of solid tree trunks and one mounted them somewhat like climbing a ladder, the flooring was split bamboo poles with large gaps between them. Our beds were hard pallets resting on large river stones, bathroom had modern fittings but unconnected to any infrastructure in the ground and the roof leaked, and how! The next morning I was curled into a little ball, thick grey blankets on the bed soaking, David said he woke at one stage and there was a cockroach on his face but he was at least dry.

Whilst checking out, next morning we saw a Mongoose chained under a chair, we were informed it was there to kill the snakes, we saw a small snake on the path, Antonio said it was a Viper, it was quite sluggish and nobody took any notice of it's presence on the path except we tourists, and gave it a wide berth.

Time to reload the canoes to return up river to the bus, the rain was constant and heavy. Plastic was provided to shelter us but I found it better to have my upper body in the fresh air. Today we would be travelling back to Quito, mid morning we were stopped for some reason, all were miserable and sat staring out into the rain, I was looking at a Guava grove and curled around the branches of the trees were *Neo. mooreana.*

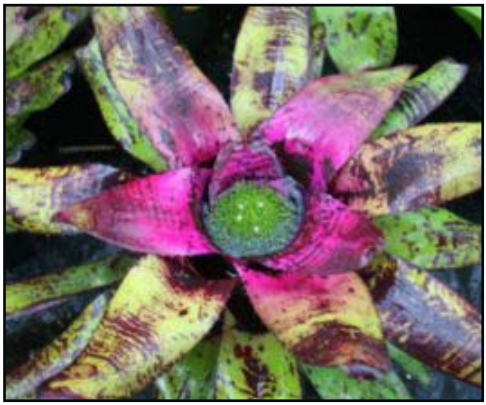
"We pass this way but once thought I", and left the bus, climbed through the barbed wire fence and into the orchard. The stolons of the *Neo. mooreana* were about a metre long and very tough, they were twined many times, around the branches. I cut all I could see without going too far into the field and threw them over the fence, by the time I got through the fence again, all were gone but one. It seemed some enthusiasm had returned to our intrepid group.

Later in the day a clump of *Streptocalyx* was spotted in a pasture, permission of the land holder was secured and part of our little group descended on the dead tree containing the plant. It was eventually coaxed from it's

Neo. 'Black Pitch'

What's a Bahrain Custom's Officer badge got to do with bromeliads. Well, the story goes like this.... Roy Pugh (you know, that guy that attends the monthly meetings that is about 7 foot tall and proof reads this journal and is the membership secretary) has a highly developed passion for collecting Custom Office memorabilia. It's strange what some people collect, things like bromeliads for example

Bil. 'Pink Champagne'



Hello Ross,

hope attachment comes through OK for you, if not, will try again. Just another Photo.. Lovely plant, came to me as Concentrica select.. questionable name for some I guess but beautiful plant, none the less. Definately not same as N. Cliff Sivverd. Wondered if anyone can do an ID? more than that. - Cheers Deb

Neo. 'Blast'

perch and was being divided into smaller portions for transportation when out came a colony of very angry, very large, stinging ants. One of our members did an amazing strip tease to be rid of the torment of them, much to the amusement of bystanders. Consequently a lot of the plant was abandoned in the field where it fell.

The rain continued during the day and we were returning to Quito by a different route collecting along the way when able. The roads were very muddy and there was water gushing everywhere. All were looking forward to a hot shower and food. Then the worst came to the worst and we came upon a line of stationary vehicles. The road had washed away and we were stranded.

This time I do remember being cold, we sat there in line for hours and finally around midnight a Bulldozer from a mine in the area was made available, the road temporarily repaired and we were rescued. We later found out that had there not been an executive of the mine stranded too we may have had to wait a couple of days, or return the way we had come.

The day not over yet though, we still had quite a distance to travel in the fog and rain, we noticed that the lights of the bus were dim and thought that the driver was utilising fog lights. How wrong we were, the hapless driver, Lucio, was forced to drive down the mountain side in appalling conditions on his parking lights, due to malfunction of the alternator. Finally the clouds parted and there nestled in the valley below were the lights of Quito, we arrived there in the wee small hours.

It was fine the next morning Friday 27th May, our itinerary was in chaos after such a late night. We were scheduled to leave at 8am for Cuenca, it was decided we take the 4pm flight instead. After sorting ourselves out we took an excursion to the edifice marking the Equator. As a child in school I remember our teacher talking about a city, situated on the Equator, where it snows. Little did I think that one day I would visit this unique place.

Saturday 28th May at Cuenca it was fine and sunny and due to re-routing because of an International Bicycle Race we were in more promising Bromeliad territory along smaller country roads. We came across huge clumps of *Tillandsia latifolia*, so amazing in size and colour, we collected some and I could not resist picking some of the beautiful frosted salmon inflorescences to admire at close range. I still have this plant today, it has never flowered, not surprising since we were in very high mountainous terrain and Townsville is at sea level.

Across the river valley along which the road was built, we saw entire mountain sides covered in *Tillandasia tectorum,* a sight to behold, it was quite impossible to get to the other side owing to the depth of the canyon so we had to be content to admire from afar, we did however collect *T. tectorum* in another, more favourable, for us, location. Looking down into the canyon David saw a brilliantly coloured plant in a tree fork and called out to me that there was a Neoregelia, we did not know then, that this type of Neoregelia is not found here.

It turned out, when brought to the attention of other, more knowledgeable members of our party, that it was Guzmania sanguinea. There were also vast mats of *Tillandsia disticha* scrambling around on the rocks, upon crossing to the high side of the road, in which appeared be a very dry pasture we found the *Guzmania* (though uncoloured and *Tillandsia cyanea* just lying around on the ground. I have those plants, or their descendants to this day and they bloom faithfully each year.

Guzmania sanguinea only ever replaces itself sending up a pup in the middle so there will never be large numbers of them


Vr. luctheriana


Guz. conifera


Vr. 'Skeleton' unreg


Til. fasciculata


Neo. 'Skotak Reverted' unreg

around, unless grown from seed. *Tillandsia cyanea* have multiplied greatly.

It had been a very successful day and in hindsight the best day of the whole trip. Isn't it amazing that some plants removed from habitat perform as they always have done, but others are a miserable failure?

On Sunday 29th May we were taken for lunch at a resort hotel at Uzupod, quite an amazing place in the middle of nowhere, not a tree or Bromelaid in sight anywhere.

I guess it would be best described as a Country Club with all the amenities one would find here. The plantings in the landscaped grounds were of what we call annuals here, very pretty but we as tourists would have been more appreciative of the native Bromeliads of Equador grown to perfection in their native land.

Funny that, we've found that visiting other countries in search of Bromeliads and other plants the general population think nothing of their native vegetation, referring to them as weeds and parasites. I don't think we Australians think of our native flora like that.

On the return trip to Quenca that day we came across one of the most amazing sights one could ever see and one I'll never forget. As the bus climbed yet another mountain range we became enveloped in mist, we were in the clouds, now I truly realized the meaning of "Cloud Forest".

Upon reaching the top of the range a stop was made and we walked around the area. Cool and moist, the rocks on the ground were filled with water in which a type of Spagnum Moss was thriving.

As one looked up the mountain we were treated to the beauty of thousands of wattle coloured inflorescences of *Guzmania diffusa*, this is one plant I could readily identify from a picture in the BSI .Journal.

It was like being in some huge dim cathedral, wisps of mist drifting around and the huge *Guzmanias*, in full flower, like candelabra lighting up the nave and giving a surreal effect. No one collected here, one could never reproduce such a habitat artificially, We were all genuinely in awe. What a truly magical memory.

Back in Quito again we dumped our belongings and prepared for the next two days which were to be spent in a place called Tinlandia. Supposedly this was a place with many Bromeliads growing in and around the hotel in what was described as unique ecosystem. This was the first time the lack of expertise of our Guide, as amiable as he was, turned out to be a disadvantage.

We searched diligently for more treasures to bring home, but little of difference was found and faced with a second day of the same all decided we should return to Quito, we all had loads of plants to be trimmed, cleaned and packed for re-entry into the United States. The USA has a form of quarantine, nowhere as strict as Australia, but plants must be clean.

Upon our arrival in Quito, quite a surprise was awaiting us, crowds of chanting, shouting people were in the streets. We had heard there was unrest over transport and now we were in the thick of a major demonstration. Armed guards were at the doors of the hotel, there was a lot of noise and tear gas in the air.

The next day Wednesday June 1 was our departure day and we spent much of the night, washing the debris out of plants and dipping them in an insecticide in the hotel bath tub, time well spent, for our plants were cleared by US Department of Agriculture and we were on our way. We had returned to Miami via the humid lowland city of Guayaquil, here, I thought, would be a better place for us to do our collecting for a better survival rate of plants coming to Townsville.

Quesnelia 'Farro'

Vr. 'Golden Thread'

Vr. 'White Lightning'

The collected plants from Equador and the purchased ones from the Conference would all face their moment of truth when treated with poison gas by the Australian Quarantine Service, they would then have to serve their mandatory time in a registered Quarantine Facility. Of course there were lots of casualties but we still have plants in the collection that it truthfully can be said, "We collected this in habitat".

We had a great time in Equador in spite of the above mentioned trials, our travelling companions were cheerful, friendly and co-operative and our Driver and Guide did their utmost to ensure our safety and satisfaction. There were absolutely no sour notes.

The collecting trip was organised as part of the Conference proceedings though not by the BSI, it was arranged by a Travel Agency, to anyone, interested in Bromelaids, I recommend a visit to habitat, the forests in South America, and most of the world for that matter, are disappearing at a frightening rate. It's sad to think that species as yet undiscovered will be extinct if the current rate of tree felling continues. All one needs is health, a strong constitution, a thirst for knowledge and possible adventure AND a guide who speaks the language of the country or countries you plan to visit.

Bromeliad Bonanza

5,6 April
Society's Autumn Show and Sale of Bromeliads at Mt Cootha Botanic Gardens.
Saturday (5th) 8am-4pm
Sunday (6th) 9am-3pm

Over 5oo species/varieties/hybrids will be on sale. . Admission $3.00 adults, children under 14 free if accompanied by adult. If you wish to sell plants, please let Nancy Kickbusch know (Telephone 3300 1704) so she can make some space for you.

Intraspecific Variation in Tillandsia: Selecting Superior Forms

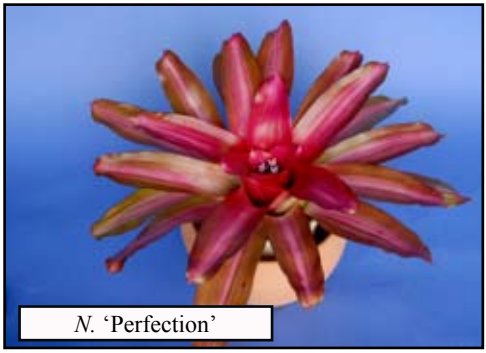
Mark A. Dimmitt, Tucson, Arizona

Reprinted from the BSI Journal Vol. XXXV #3 [Quality articles are timeless. Although written some 20 years ago, the sentiments expressed in this article are still relevant today; apply equally to other bromeliad genera, and the general principles to all plant families. Peter Paroz]

Most xerophytic tillandsias are easily grown to become large specimens, as described in the November-December 1984 Journal. That article did not cover one major point: superior varieties produce superior specimen plants. This article offers guidelines for selecting high quality tillandsias.

Almost all plants show great intraspecific (within-species) variation. This characteristic is reflected in a wealth of named varieties, hybrids and cultivars in well known groups such as roses and orchids. Such names are beginning to proliferate among the tank bromeliads. For example, *Neoregelia carolinae* is a common species with green leaves and a red center at maturity. *N. carolinae* f. tricolor, 'Perfecta tricolor' and 'Medallion' are different sports of the typical green species. Hybrids increase this variation much further.

Recognition of the variability of tillandsia species is in an embryonic stage as is indicated by the scarcity of named cultivars and clones, and the absence of any serious hybridization program. Most collectors seem to think that one *Tillandsia caput-medusae* is about the same as another. Some tillandsias, however, stand out prominently just as *Neo.*

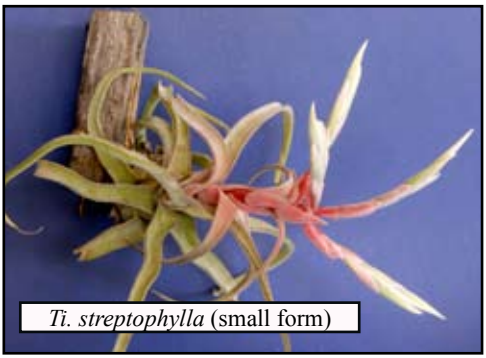


N. 'Perfection'

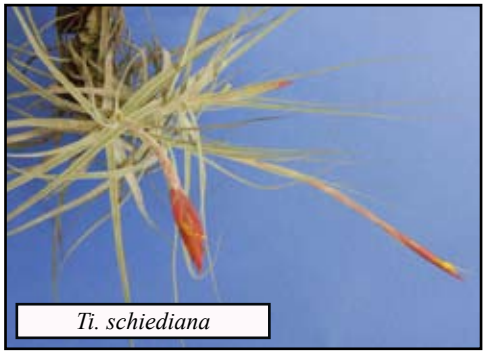
N. carolinae f. tricolor

Tillandsia tomaselli

Tillandsia. mallemontii



Ti. streptophylla (small form)



Ti. schiediana

carolinae 'Perfecta tricolor' surpasses its humble parent.

It is easy to develop a discerning eye if one has a large number of plants to compare. The main characteristics to evaluate are:

1. Plant size, form, and vigour.
2. Foliage colour.
3. Size of inflorescence, bracts, and flowers.
4. Colour of bracts and flowers.
5. Regularity and abundance of flowering.

Some of these characteristics are easy to see while others become evident only after several years of culture.

Plant Size, Form and Vigour

Rosette size varies greatly in many species. Mature rosettes of *T. ionantha* range from about 5 to 8 cm in diameter; plants of *T. seleriana* range from 8 cm (var. *pruinosai*) to 30 cm in length. When comparing size, be aware that as a plant grows into a dense clump, individual rosettes and their inflorescences generally become smaller because of crowding.

Look for form variations that please you. Typical *T. ionantha* leaves are nearly straight but some are curved. All the leaves of one variety (unofficially called var. stricta) are erect and tightly appressed, rather billbergia like. The var. van hyningii is caulescent.

T. latifolia is probably the most variable species. Its rosettes range from 5 cm to more than 30 cm in diameter and may be tightly clustering or stoloniferous. Leaves vary from thin-flexible to stiff, grass-narrow to quite broad; from forest green through numerous shades of gray. Inflorescences may barely exceed the leaves or be borne on 120 cm scapes; some are viviparous. Stems are nearly absent to several decimetres long. One could fill a large greenhouse with the different forms of this single species.

Another variation in form is shown by *T. circinnata* (= *paucifolia*) var. *prolifera*. One of the author's clones bears plants on the inflorescences, which hang mostly downwards and form graceful festoons nearly two meters long. Another clone produces plants which grow in all directions and form an unsightly tangle.

Vigour can be assessed only by growing for several seasons in one's own cultural conditions. An extreme example is shown in two of the author's clones of *T. caput-medusae*. Grown side by side for six years, one is now a clump of some 30 rosettes about 60 cm in diameter, while the other is but two mature rosettes and two pups. Such weak plants should be replaced.

Foliage Color

Some species, such as *T. bulbosa, T.brachycaulos* and *T. capitata,* turn red at maturity. There is considerable diversity in the extent, intensity, and duration of the colour. The variety 'rubra' of *T. capitata* is red throughout the plant's life cycle, but different clones vary from blush to deep maroon-red.

Trichome density also affects foliage colour. Most *T. caput-medusae* are deep green in their wettest, shadiest habitats to gray-green in brighter, more arid habitats. But in Sonora, Mexico where this species is at its ecological limits for sun and aridity, the trichomes are so dense that the plants are brilliant white.

Tillandsia exserta similarly changes from gray-green in Sinaloa Mexico, to snow-white at the northern limit of its range, where it grows on cacti in full desert sun near Guaymas, Sonora. These are genetic differences which do not change significantly in cultivation.

Size of Inflorescence, Bracts and Flowers; Colour of Bracts and Flowers

As with leaf-rosettes, inflorescence size of a given clone tends to decrease as the

Tillandsia fasiculata

Tillandsia bulbosa

Tillandsia ionantha cv stricta

clump becomes crowded. There are also great genetic differences among indi-vidual plants. The typical *T. stricta* in the trade has a spike 4-5 cm long. The flowers are about 5 mm in diameter and often shorter than the floral bracts, which thus conceal the flowers in side view. The spikes may be only one-fourth this size (in the former *T. rosea*), or up to 8 cm long with wider floral bracts. Flowers range up to 12 mm diameter, more than twice the typical size. In some clones, the flowers are well exerted beyond the floral bracts, creating a more showy bicolour inflores-cence.

Colours also vary. Flowers of *T. stricta* vary from pale blue to medium blue or purple. The typical *T. stricta* has floral bracts of a medium pink. Those of other forms range from mostly green with a pink blush to deep rose and occasionally blood-red. The back cover of the November-December 1984 Journal depicts a clone superior in most traits.

exhibits similar variation, with flower colour ranging from medium blue to deep indigo. The spikes of *T. caput-medusae, T. fasciculata*, and others vary from pure green to bright red. Anyone with an eye for quality can find such variation in almost all species.

Flowering Season

By careful selection one can extend the flowering season of some species. Usually a given clone in a given location will consistently flower at the same time each year, plus or minus a couple of weeks. Most of the T. stricta in the trade flower (in southern California and southern Arizona greenhouses) between mid-December and late January. A few clones extend this season a full month earlier and later, and some flower in midsummer.

When selecting plants to extend your flowering season, note that a plant will probably not flower at the same time outdoors in southern Florida as it will in a northern California greenhouse. Latitude and temperature have significant effects. When selecting among recently imported plants, be aware that the trauma of collection and transport often trigger unseasonal flowering. Also, plants from the southern hemisphere will bloom out of phase during the first year.

Regularity and Abundance of Flowering

It takes time to evaluate the traits of regularity and abundance of flowering, but it is worth doing, especially if growing space is becoming crowded. There are genetic and environmental factors governing all these variables. If you have several clones of a species and none ever blooms, your cultural conditions are probably the problem. However, if some bloom well and others don't, you are most likely seeing genetic differences. The author has two clones of *T. paleacea,* both eight years old and nearly identical in growth rate and form. One produces several flower spikes twice a year; the other has never flowered.

One *T. streptocarpa* has grown into a nice clump after several years and produces moderate inflorescences each year. Another clone grows much more slowly, presumably because it nearly flowers itself to death yearly; its inflorescences are three times the size of those of the other clone. This leaves it with enough energy to produce only one or two weak offsets. It will make a fine display when it finally attains some size.

Other Variables

Some not readily apparent traits can affect the form of a plant. Some *T. duratii*, for example, can grow into immense clumps; others cannot. Some simply don't offset freely. The clone pictured in November-December 1984 Journal fig. 2, is long-caulescent, fast-growing, and freely branching. The leaves are very prehensile and the branches are sturdy. This clone will, therefore, form large specimens, though its weight will eventually tear it apart. Another clone has stouter,

less prehensile leaves, and the branches are weakly attached. The branches usually break off of their own weight as they near maturity, so this clone doesn't form large clumps.

The Future of Tillandsia Selection

This article discusses only naturally occurring variants available in the United States. There are undoubtedly many superior variants yet to be discovered in wild populations. Only small parts of the geographic ranges of most tillandsias have been explored by horticulturists. Even in Mexico, which is fairly accessible to large numbers of U.S. bromeliophiles, new discoveries are frequent. Examples are the Sonoran *T. caput-medusae*, found within a day's drive of the inter-national border, and *T. elizabethae*, described from Sinaloa in 1979. South America is more remote and has fewer roads; it is virtually unexplored by tillandsia collectors. Whenever a new road penetrates virgin territory, explorers such as Professor Rauh discover several new forms.

I hope that this article will encourage collectors to be more discriminating. Don't grab the first plants you find. Spend some time inspecting the trees or cliffs, looking for that one percent or less of the plants that stand out from the rest. Instead of visiting a known locality, explore a nearby canyon. While dramatic sports such as variegated leaves are unlikely to escape notice, more subtle variations are also valuable, and these can be magnified in cultivation.

I encourage all growers to search constantly for natural differences among plants, both species and hybrids. The cultivars shown on the front and back covers and on page 141 are examples of selections made from thousands of imported plants. The same opportunity could be present among your seedlings. Whatever the source, remember to name the cultivar, to publish its description, and to register it with the BSI hybrid registrar.

The potential improvements from selective breeding of tillandsias is enormous. The surface hasn't yet been scratched. Species within the same subgenus can usually be successfully hybridized, and tillandsias are just as easy to grow as other bromeliads. Tillandsia breeding is about where neoregelia breeding was 20 years ago. Look at the mag-

nificent neos of today, such as on the cover of the September-October 1983 Journal. Plants of such quality are light years away from their ancestors which were pulled out of jungle trees. One can perhaps anticipate what tillandsias can look like 20 years from now.

How to Prepare a Bromeliad Specimen for Identification by the BIC

Author: Harry E. Luther

Reprinted from the BSI Journal Vol 39 #4. Please Note paragraph H. with few exceptions, it is impossible to identify hybrid bromeliads with any degree of certainty.

A. If the flowering plant is small and you have a plant to spare, send the entire plant.

B. If the plant is large and bulky or you do not wish to send the entire plant, you must include two complete leaves with leaf sheaths and the inflorescence including the scape.

C. Give as much information about the origin of the plant as possible. If wild collected, please provide the following data:

1. country
2. province or state
3. habitat
4. elevation

D. A photograph or drawing of the plant is often helpful but cannot substitute for an actual specimen.

E. Describe any features not apparent on the specimen such as corolla and calyx colour, whether or not it is stoloniferous, height and diameter, etc.

F. Please send US$5.00* to help cover the expenses of the determination.

Don't Forget Bromeliad Bonanza
5,6 April - Mt Cootha Botanical Gardens

G. Specimens should be sent by air to:

Bromeliad Identification Centre,
Marie Selby Botanical Gardens
811 South Palm Avenue
Sarasota, Florida 34236 USA

H. The procedures are for the identification of bromeliad species. With few exceptions, it is impossible to identify hybrid bromeliads with any degree of certainty.

M. B. Foster Bromeliad Identification Center
Selby Botanical Gardens
Sarasota, Florida

* The fee is still US$5.00 as of Dec.2007.

Tillandsia usneoides in Bio-monitoring

(Compiled from the abstracts of W.R.Bastos et al and C. M. Amado Filho et al by Peter Paroz)

The evaluation of mercury in urban air is a quite complex and expensive task since conventional sampling systems are fragile and need special attention if long-term sampling is needed. Tillandsia usneoides is an epiphyte that captures all its nutrients from the atmosphere, and concomitantly accumulates heavy metals, among them mercury.

The size and shape of the leaves and the absence of roots makes this species an ideal sampling media and, due to the high relation between surface area and mass, it has a high efficiency for mercury accumulation. Each basket contained 5 g of T. usneoides previously collected in a clean area. Only the younger parts of the plant were selected for the monitoring experiments.

One hundred systems of two baskets each with were distributed through Alta

Tillandsia streptophylla

Tillandsia stricta

Floresta city—MT (Brazil) and recovered after an exposure of 15 and 45 days during the dry season (August–September, 1995); and also repeated during the rainy season (February–March, 1996).

Samples were hung at height of 2–20 m in open areas, close to and in the surroundings of the gold shops as well as in control areas. Relative occupational exposure was also evaluated with systems installed inside gold dealer shops.

Concentrations of mercury in the exposed plants were remarkably high in the shops, reaching values up to 26 ppm (parts per million) or 300 times higher than that of the control plants.

[Studies by other authors, using a similar technique, refer to the use of T. usneoides to monitor mercury levels in a dentist surgery (where mercury amalgam fillings were used), zinc levels in the surrounds of a zinc smelter and mercury levels in a chlor-alkali plant.]

BSQ Plant Competition Results

The publishing of the monthly plant competition has been a problem for quite some time. Publishing in the pages of this journal was the traditional way of disseminating the results, however due to the publication dates for the journal varying because of to pressures of work on the editor, often the results were months old by the time of printing.

The most successful method is to publish them on the web site. This is a new addition to the web site and has a number of benefits. The intent is to eventually put previous years up as well. Currently there is only the 2007 results. We have Arnold James to thank for compiling the results.

see http://bromsqueensland.com

Bromeliads XV to be known as Bromadelaide

Hi Everybody

A subcommittee of the Bromeliad Society of South Australia is continuing our initial preparations for Bromeliads XV, to be known as Bromadelaide, to be held over Easter, 10-13 April, 2009.

We hope to be sending out the first flyers and early registration forms within the next couple of months to all Societies and Study Groups.

I am also trying to set up an email distribution list whereby I can quickly contact someone within each society.

My email address is:
len.colgan@unisa.edu.au

Yours sincerely,
Len Colgan,
President, Bromeliad Society of South Australia.

Annual Subscriptions

Membership fees ($15 - Single, $20 - Family, $30 Overseas) are due and payable as of 1st January 2008. Prompt payment will greatly assist the treasurer and Membership Secretary.

Post renewal fees to:

The Membership Secretary
P. O. Box 565, Fortitude Valley
Queensland, Australia 4006

Did You Know?

Water stored in the rosette of your bromeliads should always be fresh especially when its in it's flowering cycle. Materials such as pine bark, eucalyptus leaves, decaying flower heads, etc will all will send it off and cause the centre of your plant to rot.

(reprinted from Bromelia Post, the journal of the Central Coast NSW Bromeliad Society, pg 126, from an article by Vic Petroski, Perth)

The Book!

"Starting with Bromeliads" is 100 pages in length and contains over 200 colour photographs of bromeliads and covers such topics as plant descriptions, caring for bromeliads, and landscaping with bromeliads.

The book is available for purchase at a price of $18 plus $3 P&P. Discounts available for bulk purchases

To place your order please post a money order to:

The Secretary
Bromeliad Society of Queensland
PO Box 565, Fortitude Valley,
Queensland, Australia 4006

Results from 2007 Annual Competitions

Popular Vote

Adavanced	
1st	Olive & Len Trevor
2nd	Dorothy Cutcliffe
Intermediate	
1st	Anne Mc Burnie & Phillip Beard
2nd	Barry & Anne Kable
Novice	
1st	David & Evelyn Rees
2nd	Pat Barlow

Mini Show

Advanced	
1st	Len & Olive Trevor
2nd	Dorothy Cutcliffe
Intermediate	
1st	Anne McBurnie & Phillip Beard
2nd	Barry & Anne Kable
Novice	
1st	Helen Moriarty
2nd	Pat Barlow

Calendar of Events

5,6 April Society's Autumn Show and Sale of Bromeliads at Mt Cootha Botanic Gardens. Over 5oo species/varieties/hybrids will be on sale. Saturday (5th) 8am-4pm Sunday (6th) 9am-3pm. Admission $3.00 adults, children under 14 free if accompanied by adult. If you wish to sell plants, please let Nancy Kickbusch know (Telephone 3300 1704) so she can make some space for you.

May 18th [Sunday] 2008. Field Day at the home of Anne McBurnie and Philip Beard, 5 Timbertop Court, Capalaba. Ph. 32060807. The garden will also be part of the Open Garden Scheme in late November this year. One and a half acres of landscaped gardens, including beautiful, big bromeliads and fabulous bougainvilleas.Prize winning bromeliads for sale. Please bring a plate to share , a fold up chair and a coffee cup. Sales start 9am. Morning tea ongoing. Welcome and young students performing poetry on the garden stage at 10 am.

24-30 June 2008 - World Bromeliad Conferrence No. 18 - Cairns, Australia. For further details visit the event web site www.bromeliadsdownunder.com or contact the organizer Lynn Hudson at lynnhudson@bromeliadsdownunder.com or contact Greg Aizlewood on (07) 55461161 or if you prefer contact Lynn Hudson on phone (07) 40533913

GENERAL MEETINGS of the Society are held on the 3rd Thursday of each month except for December, at the Uniting Hall, 52 Merthyr Rd., New Farm, Brisbane, commencing 8 pm. Classes for beginners commence at 7.30 pm.

Plant of the Month Programme for 2008

FEBRUARY:	Ananus, Intergeneric Plants, Tillandsias and Full-sun Neoregelias.
MARCH:	Cryptanthus, Tillandsias, Full-sun Aechemas and Canistrums
APRIL:	Cryptanthus, Tillandsias and Succulents
MAY:	Spotted Neoregelias, Orthophytums, Tillandsias and Variegated Bromeliads
JUNE:	Alcantareas, Folliafe Vrieseas, Dyckias, Hechtias and Asterias
JULY:	Billbergias, Pitcarinias, Cerepegias, Hoyas, Nidulariums and Agaves.
AUGUST:	Billbergias, Filiage Vrieseas, Catopsis and Miniature Neoregelias.
SEPTEMBER:	Billbergias and Guzmanias.
OCTOBER:	Vrieseas, Neoregelias, Nidulariums, Guzmanias and Crassulaceae.
NOVEMBER:	Not often seen Bromeliads and Succulents

Competition Schedule for 2008

Novice, Intermediate and Advanced in each Class of the Mini-Shows and in the Popular Vote.

January: **MINI-SHOW**
- Class 1: Aechmea - species and hybrids
- Class 2: Vriesea - species and hybrids
- Class 3: Dyckia - species and hybrids
- Class 4: Any Other Mature (flowering) Bromeliad - species and hybrids.

February : **POPULAR VOTE:** Any Genus – species or hybrid, Novelty Bromeliad Display

March: **POPULAR VOTE:** Any Genus – species or hybrid, Novelty Bromeliad Display

April: **MINI-SHOW**
- Class 1:Bromelioideae not listed elsewhere in the schedule – species and hybrids.
- Class 2: Guzmania - species and hybrids
- Class 3: Pitcairnia and Pepinia - species and hybrids
- Class 4: Any Other Mature (flowering) Bromeliad - species and hybrids.

May: **POPULAR VOTE:** Any Genus – species or hybrid, Novelty Bromeliad Display

June: POPULAR VOTE: Any Genus – species or hybrid, Novelty Bromeliad Display

July: **MINI-SHOW**
- Class 1: Billbergia - species and hybrids
- Class 2: Tillandsioideae not listed elsewhere in the schedule – species and hybrids.
- Class 3: Neoregelia - species and hybrids – up to 200mm diameter when mature.
- Class 4: Any Other Mature (flowering) Bromeliad - species and hybrids.

August: **POPULAR VOTE:** Any Genus – species or hybrid, Novelty Bromeliad Display

September: **POPULAR VOTE:** Any Genus – species or hybrid, Novelty Bromeliad Display

October: MINI-SHOW
- Class 1: Neoregelia - species and hybrids – over 200mm diameter when mature.
- Class 2: Tillandsia - species and hybrids.
- Class 3: Pitcairnioideae not listed elsewhere in the schedule – species and hybrids.
- Class 4: Any Other Mature (flowering) Bromeliad - species and hybrids.

November: **POPULAR VOTE:** Any Genus – species or hybrid, Novelty Bromeliad Display

Note 1: Class 4 in each Mini Show schedule provides for any flowering bromeliad that would not be in its prime for the appropriate Mini Show.

Note 2: Class 1 (April), Class 2 (July) and Class3 (October) provide for plants from these subfamilies not elsewhere included in the Mini Show schedule.