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

Study Group meets the third Thursday of each month

Next meeting August 20th 2015 at 11 a.m.

Venue: PineGrove Bromeliad Nursery

114 Pine Street Wardell 2477

Phone (02) 6683 4188

Discussion: July 2015

General Discussion

Editorial Team:
Kay Daniels
Trish Kelly
Ross Little
Helen Clewett

pinegrovebromeliads@bigpond.com

Meeting 18th June 2015

The meeting was opened at approximately 11.00 am
The 18 members and one visitor present were welcomed.
A total of seven apologies were received.

General Business

Unfortunately our two regular scribes were unable to attend our July meeting so you have to put up with my ramblings this month. All those who attended were welcomed with many comments about our luck with the weather: “it’s not raining, the sun has finally decided to show itself, perhaps because it’s Brom Day”.

As Ross will not be here for our July meeting Jeanette has kindly offered to help with the meeting notes if required and Jennifer has offered to be photographer for the day. Please help them as much as possible as it is your Group too.

A plea, yes again: don’t forget we always need articles, these don’t necessarily have to be your own writings, they can be an article you have found that you feel may be of interest to others. Photos are always welcome, especially of your flowering plants, garden shots or even inside your shade house showing us how you grow your collection, add a few notes and we’ll make a article out of it. Do remember though I can’t always use every article and photo I receive in the very next issue. Sometimes I’ll hold these in storage until a more relevant time when we can use them to support a discussion had at our meetings. So don’t feel I’ve forgotten your article or photos as they will grace these pages eventually.

For the newer members in our ranks we do have a good selection of books in our library for you to borrow. Also we are gradually gathering a good supply of older/earlier issues of Newsletters/Journals from other Societies which are well worth borrowing from the library and trolling through. Some of these older publications may have articles you feel could benefit others and feel they need to be reprinted. If so let the editors know which Journal, year, Issue, volume and date so that we can follow through on your suggestions. Back issues of our own Newsletter are also available for purchase if you wish to start your own library.

Some more experienced growers may find repeat articles a little boring at times, however, I find it never hurts to brush up on your knowledge as we all do tend to forget bits and pieces occasionally. Newer members only need to ask for help if they can’t find certain information themselves and we’ll see what we can do to find it and perhaps publish it for them. This does go both ways as the more experienced growers may appreciate a more technical article reprinted one day.

Some discussion was had about ‘Beginnner Classes’, by all means tell us what you want to know/do and we’ll make it happen for you, be it potting mixes, pup removal, identifying the various parts of a flower or any other point of interest to you about bromeliads. It is up to the longer serving more experienced growers among us to pass on their knowledge to our beginners and you’ll be surprised what hints and tricks you’ll pick-up along the way yourself. There are members at all levels in every Group more than willing to pass on info., so don’t be afraid to ask any questions and if we hear a “I’m not at liberty to say” well you guys know my answer to that as **The aim of our Group** is**:**
Be friendly.
Pass on knowledge / share information.
Assist others.
Discuss growing tips.
Open discussions by all.
Ask questions.
To swap and sell bromeliads / price them fairly.

Show, Tell and Ask ?

Gloria and Tom brought along a box of Alcantarea pups etc. to auction off with all funds raised being donated to the Groups coffers was well received, many thanks to you both. Also in the box was a *Vriesea* ’Rafael’ ’novar’ and a couple of *Hohenbergia catingae* suitable to be grown in full all day sun. Gloria displayed a *Alcantarea extensa* showing how it gets purple / brown ends to its leaves. Also shown were some *Alcantarea vinicolor* which go very red in winter. Due to these **Show and Tells** there was plenty of good strong bidding with lots of laughter as bids were raised and outbidded. After the auction Gloria explained how best to start off adventitious pups in community pots as a space saving method. Congratulations and thank you to the lucky bidders.

Gloria had a very nicely grown specimen of *Tillandsia duratii* in flower for all to see. Shane explained for our newer members why the leaves are so curly, being so that they can wrap around branches and hang on and grow. (photo p.12)

A nice healthy looking clump of Neoregelia was offered up to be divided, well it looked healthy until it was knocked out of its pot only to show us a mass of root mealy. A good lesson for the newbies as not many people knew just what root mealy actually looked like, the plant was handed around for all to check it out. Some suggestions on how to control root mealy were made e.g. soak the root mass in water with a spot of bleach added, spray with Malathion or Confidor. Les suggested using diatomaceous earth (DE) in the potting mix. This confirms discussions held previously regarding quarantining your new acquisitions.

Ross showed a *Dyckia estevesii* in flower explaining there are two forms of this plant, this distichous form (arranged in two ranks, fan like) that was being shown and a spirostichous form (spiralled, round). *Dyckia estevesii* was found in the late 1980s growing as a terrestrial in Brazil. For Ross it is a slow grower, unfortunately the first time he flowered this plant the spike was eaten by pest unknown. Other growers have reported that this species is reluctant to set seed, however some humour abounded when discussion lead into pollinating the Dyckia with a Tillandsia leaf. We shall wait and see if we get a result. Some comments were made regarding it was good to see some more unusual plants on show for a change rather than just the pretties we normally see. (photo p.12)

Also shown was a narrow leaf form of *Portea alatisepala* in all its glory, showing off its vibrant purple inflorescence and reddish pink peduncle. (photo p.12).

Jeanette brought along a *Androlepis skinneri* which she considers is a incredibly spiky bromeliad that is great for a very bright position in any garden. These are a dioecious species, meaning there are male and female flowers on different individual plants. It grows as an epiphyte, from near sea level to 920 m altitude, from Guatemala to Costa Rica.
Jeanette showed a Margaret Paterson hybrid, Tillandsia 'Kybong' with its blue petals turning brownish, some felt this was not a particularly attractive trait, but would be quite happy to have one in their own collection. (photo p.12)

For the newer members and you longer attending members, remember this is your Group so it is up to you to bring **Show and Tell** plants and **Ask** questions. Bring plants along you need identified, hopefully somebody will recognise it, if not photos will be taken so your plant can be researched at a later date with the findings being published in the Newsletter for you. Bring along problem plants, we all have them so somebody should be able to advise how best to treat it.

Flyspeck Scale Treatment for Bromeliads

750 mls Canola Oil
3 tablespoons of Sil Detergent
1.25 ltrs of water

Mix in a jar: 300 mls (of above solution) with 300 mls vinegar

Mix into: 4 litres of water and spray affected plants.

In summer spray plants in the afternoon and wash off the following morning.

This is Grace Goode's non-toxic recipe supplied by Gloria and Flo.

Photos on pages 5 and 12 supplied by: Ross Little ►

Vriesea gigantea
1st Open Flo Danswan

Cryptanthus 'Satin Cascade'
1st Novice Les Higgins

'Brom. on a Log'
1st Decorative Jill Ashe

Neoregelia 'Bullis's Margaret'
Judges Choice Jennifer Laurie

Neoregelia 'Larnach's Enchantment'
grown by Keryn Simpson

Neoregelia Allan Freeman hybrid ??
grown by Dave Boudier

Beginner's Guide to Bromeliad Names by Derek Butcher May 2015

This is a general look at Bromeliad names because, as in life, there are always exceptions to the rule!

First let us look at plants found in the wild which Botanists are interested in and which are given two Latin names. One is the genus – or surname and the other is the species name - or given name. Plants have been given these names for some 300 years and there has been duplication and different interpretation which means that various botanists over the years have changed names and also have relegated some names to what we call synonymy.

See The New Bromeliad Taxon List at: http://botu07.bio.uu.nl/bcg/taxonList.php
This is a list of what I have recorded and the current name is in bold letters. If a botanists name is in brackets it means that he gave the original species name but someone later has changed the genus name.

The New Bromeliad Taxon List

by Derek Butcher and Eric Gouda, updated: 2015-05-20 06:09:17
for counts look at brackets after genus name and for total counts look at end of this list

INDEX - A - B - C - D - E - F - G - H - I - J - K - L - M - N - O - P - R - S - T - U - V - W - X - Y - Z

Search - New Names - Accepted Names - Recent changes - Cite as - Operation info - Accepted Names info

◁ Abromeitiella ▷
Abromeitiella abstrusa => *Abromeitiella lorentziana*
Abromeitiella brevifolia => *Deuterocohnia brevifolia*
Abromeitiella brevifolia subsp. chlorantha (Haum) W. Sch.-Mot. => *Deuterocohnia now cultivar \'Chlorantha\' on BCR*
Abromeitiella chlorantha => *Abromeitiella brevifolia*
Abromeitiella lorentziana => *Deuterocohnia lorentziana*
Abromeitiella lotteae => *Deuterocohnia lotteae*
Abromeitiella pulvinata => *Abromeitiella brevifolia*
Abromeitiella scapigera => *Deuterocohnia scapigera*
◁ Acanthospora ▷
Acanthospora conantha => *Guzmania strobilantha*
Acanthospora juncea => *Tillandsia juncea*
Acanthospora vittata => *Guzmania vittata*
◁ Acanthostachys (2) ▷
Acanthostachys ananassoides => *Ananas ananassoides*
Acanthostachys exilis => *Acanthostachys strobilacea*
Acanthostachys pitcairnioides (Mez) Rauh & Barthlott
Acanthostachys strobilacea (Schultes f.) Klotzsch
◁ Achupalla ▷
Achupalla => *Puya furfuracea*

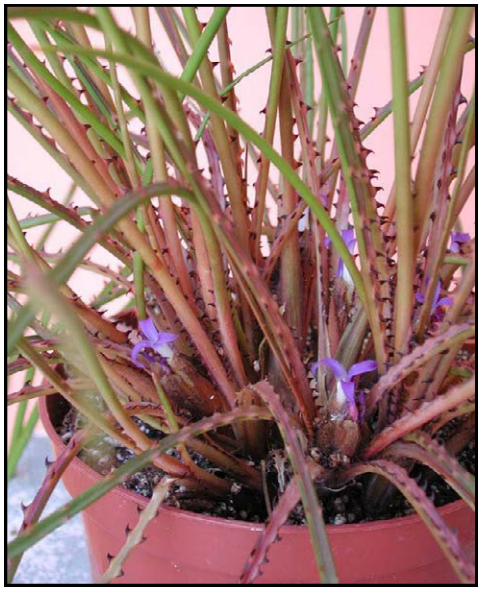
Whenever a new species is named you should have a herbarium specimen or equivalent and a written description.

AMPLA L. B. Smith, sp. nov. Ae. paniculata R. & P. atque Ae. huebneri Harms affinis, a priore axibus lanatis, petalis minoribus, a posteriore inflorescentia ampla, a ambobus foliorum spinis parvis distinguenda.

PLANT flowering 1.3 m high. LEAVES ca. 50 cm long, covered with pale appressed scales; sheaths elliptic, ample, merging with the blades and somewhat longer, dark castaneous basally; blades ligulate, broadly subacute, ca. 7 cm wide, the spines sublax, triangular, spreading, 2 mm long. SCAPE erect, 1 cm in diameter, pale-lanate; scape-bracts erect, imbricate and enfolding the scape, elliptic, entire, subchartaceous, pale-lanate. INFLORESCENCE erect, laxly pyramidal, ca. 70 cm long, amply tripinnate, pale-lanate; primary bracts like the upper scape-bracts, longer or shorter than the naked sterile bases of the branches; primary branches spreading, to 30 cm long; secondary bracts linear, shorter than the spikes; spikes spreading, 2-3 cm long, laxly and distichously few-flowered; rhachis nearly straight, angled, sulcate. FLORAL BRACTS suborbicular with the margins free from the rhachis, completely surrounding the base of the flower, 5 mm long without the 2 mm slender mucro, about equaling the ovary; flowers divergent, sessile. SEPALS strongly asymmetric with the right wing extending above the apex, 11 mm long, short-connate, unarmed; petals imperfectly known, over 18 mm long, bearing 2 lacerate scales at base. Pl. II, fig. 5: Spike; fig. 6: Floral bract; fig. 7: Sepal.

BRAZIL: BAHIA: Canavieiras, restinga, 29 January 1965, Lanna 742 & Castellanos 25491 (Centro Pesq. Fl. & Conserv. Nat. - Rio de Janeiro, type; photo US).

A couple of examples of species:
(note the **bold black** writing in **The New Bromeliad Taxon List**)

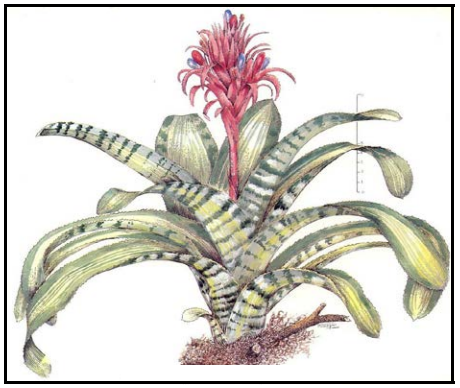


Acanthostachys pitcairnioides
Jose Donayre

Acanthostachys strobilacea

Now to a plant you should be familiar with - *Aechmea fasciata* and how the botanist sees it. You may first see the old names that have been used in the past. But let us concentrate on the bold black. You may have plants with two of the names but what about the other two. Here are some photos to remind you.

Aechmea fasciata
var. *fasciata*



Aechmea fasciata
var. *flavi-vittata*

Aechmea fasciata
var. *purpurea*

Now we come to an interesting bit, a plant called *A*echmea *fasciata* var. *variegata* which looks like a genuine species name but in this case has not been described according to the botanist's protocol, so is treated by them as nomen nudum or n. n. which literally means a naked name – i.e. not described. Such a name is ignored by botanists. A plant could be linked to *Ae*. *fasciata* var. *flavivittata* but you never see this in commerce.

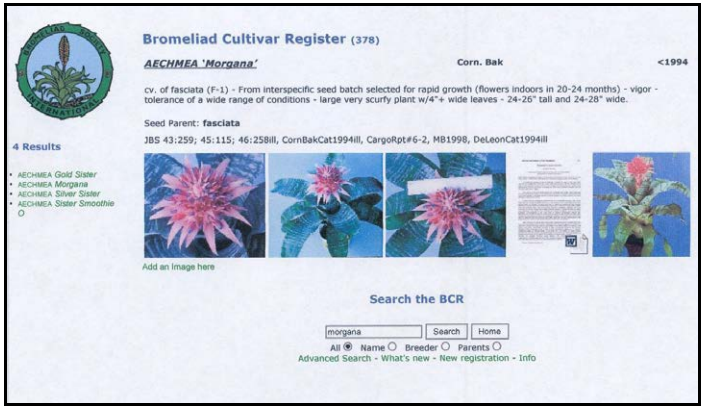
Aechmea fasciata (Lindley) Baker
Aechmea fasciata sensu L.B.Smith 1955 in part => *Aechmea dealbata*
Aechmea fasciata var. flavivittata Reitz
Aechmea fasciata var. pruinosa Reitz
Aechmea fasciata var. purpurea Guillon
Aechmea hamata => *Aechmea fasciata var. fasciata*
Aechmea leopoldii => *Aechmea fasciata var. fasciata*
Aechmea rhodocyanea => *Aechmea fasciata*
Billbergia fasciata => *Aechmea fasciata var. fasciata*
Billbergia fasciata splendens => *Billbergia pyramidalis var. pyramidalis*
Billbergia glaziovii => *Aechmea fasciata var. fasciata*
Billbergia rhodocyanea Lemaire => *Aechmea fasciata*
Billbergia rhodocyanea var. purpurea => *Aechmea fasciata var. purpurea*
Hohenbergia fasciata => *Aechmea fasciata var. fasciata*
Hoplophytum fasciatum => *Aechmea fasciata*
Quesnelia rhodocyanea => *Aechmea fasciata*

The problem here is that no variegated *Ae. fasciata* has been registered as a Cultivar either, unless you include *Ae.* 'Kiwi'.

We now move to cultivar, that is a cultivated form of *Aechmea fasciata* and there are lots and lots of these. First let us look at where you find these:

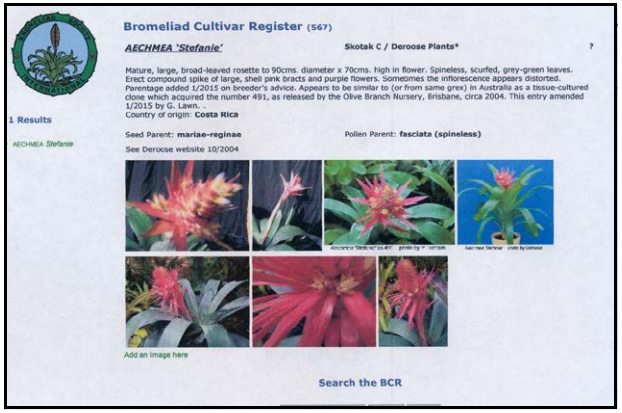
http://botu07.bio.uu.nl/bcg/bcr/index.php

If we do an Advanced Search on the BCR we can find forms of a species that originated in cultivation. Note that these are not hybrids.
I will just show you one so you can see what I mean - *Aechmea* 'Morgana'



For a better shot click on individual photos.

Now to man-made hybrids involving *Aechmea fasciata* as one of the parents. There are many of these and let us pick one – 'Stefanie'



For a better shot click on individual photos.

Aechmea 'Stefanie' as 491
P. Tristram

Now for a WARNING. Anybody can give any name to a plant, this is primarily done to sell it. If you are a person who likes to have a correct or nearly correct name on your plant then you can check details of an accepted species or of a registered Cultivar. There are almost as many of these so called named plants in the marketplace. One example in this *Aechmea fasciata* complex in Australia is called 'Felicia' which seems to have links to 'Stefanie' rather than 'Felice' which has close links to 'Fascini' ! Complicated – sure is! Because there is no recorded description, I call these NN which is short for Nurseryman's Names. Remember the lower case n. n. is used by Botanists.

Aechmea 'Felicia'
photo by R. Harper

Aechmea 'Fascini'
variegated
J. Catlan

Aechmea 'Felice'
W. Searles

Finally, you may see formulas such as (name x name). These are used by hybridists to remind them of parents used but the plants should remain under the control of the hybridist and because they have no recorded description they too are NN. Remember a formula only identifies the alleged parents and not the progeny. When such hybrids are released they should be named. Refer recommendations in the Bromeliad Cultivar Register. Formulas of assumed parents are accepted by Botanists as a temporary measure for plants found in the wild.

NATURAL HYBRIDS

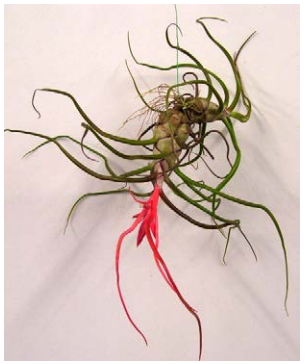
These are hybrids named under the ICBN rules and apply to plants found in the wild. They do not appear in the Bromeliad Cultivar Registry which follows the ICNCP rules. They may or may not appear in Harry Luther's Binomial listing. Should you find a natural hybrid in any literature given a latinised name or grex formula and not in this list please advise full details including a photograph if possible. Remember that grex formulae are acceptable under this system.
Note that putative parents are shown in alpha order for ease of reference and because actual seed parent would be unknown in the wild.

Genus	Parents	Name	Remarks
Aechmea	*aquilega x moonenii*	*xlanjouwii*	Gouda JBS 2002 p25-34
Aechmea	*chantinii x retusa*		Brom. Ecuador Manzanares 2002 p219
Aechmea	*tessmannii x tillandsioides*		fcbs.org /photo /programs/No2/Ecuador
Billbergia	*distachia x vittata*	*xclaudioi*	Bradea 4:314-6. 1987
Deuterocohnia	*longipetala x meziana*		Schutz in Phytotaxa 162(1): 26. 2014
Guzmania	*eduardii x rosea*		fcbs.org /Photo / Programs/No2/Ecuador
Guzmania	*kraenzliniana x longipetala*	*xamoena*	J Brom. Soc. 52(2): 54-5. 2002

An example of a natural hybrid *Tillandsia schiedeana* x *seleriana*

Knowing how the various names eventuate is interesting to me and I hope you too!

Tillandsia ‘Kybong’
grown by Jeanette Henwood



Tillandsia bulbosa
grown by Laurie Mountford

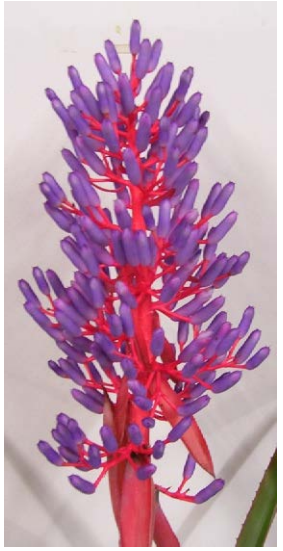
Tillandsia duratii
grown by Gloria Dunbar

Neoregelia ‘Gespacho’
grown by Kevin Jones

Guzmania ‘Apache’
grown by Gloria Dunbar

Dyckia estevesii
grown by Ross Little

Aechmea ‘Flame’
grown by John Crawford



Portea alatisepala
grown by Ross Little

Photos pages 5 and 12
by Ross Little

Pots and Plant Physiology

by Les Higgins 2015

One classification in taxonomy is Angiosperms, this embraces Monocotyledons and Dicotyledons. All Bromeliads are monocotyledons (abbrev. to monocots).

Some of the characteristics associated to monocots are:
1) The embryo is a single cotyledon (hence the name), usually hypogeal.
2) Floral whirls are trimerous.
3) The vascular system is scattered bundles (best described as having no cambium layer.
4) Linear leaves with parallel venation.
5) Thickened basal stems known as rhizomes.

Very important, monocots have a fibrous root system that is best accommodated in pots that have a large surface area and shallow depth. However, there are various monocot root forms that need a specific style of pot for best accommodation. A shallow pot with slotted sides is a good design for a small monocot.

Dicotyledon (dicots) differences compared to monocots include:
1) Embryo with epigeal cotyledons.
2) Floral parts pentamerous.
3) A cambium layer. (I’m sure that you have at sometime twisted the bark on a young branch and caused it to rotate on a wet surface under the bark, the wet is the cambium layer).
4) Dicots have a tap root and branched primary roots. (The standard pot gives depth for the tap and primary roots to descend).

Bromeliads are classified according to their original habitat and may be Mesophytes or Xerophytes.

There is a belief that plants breathe out oxygen during the day and carbon dioxide at night. The term breathing is incorrectly used. Breathing is the inhalation and exhalation of air by lung action. Plant equivalent to breathing is to respire by gaseous diffusion across a semi-permeable membrane. The skin of a plant is a semi-permeable membrane and can be described like a rubber sheet riddled with tiny holes. Leaves, stems and roots all have the semi-permeable membrane and respiration is continuous day and night. Confusion is caused by mesophytes (non-cam plants) using all their CO_2 production along with atmospheric CO_2 to photosynthesis. During the day only oxygen is released. At night, with stomates closed, only CO_2 is respired.

Root respiration is very basic. As the oxygen in the pot diminishes more is required to enter into the root area. As CO_2 becomes more concentrated it flows out of the pot. The pot should not just hold the plant it should be carefully selected to allow adequate respiration and drainage. To compliment the pot the potting mix must be below pH7, be of open texture and have good drainage while remaining moist. If respiration is limited then the growth never reaches its full potential.

There are better pots for growing Bromeliads than pots with holes only in the bottom. Water can drain away but placed on a solid flat surface air movement is limited. Net-pots are excellent for monocots in that they allow adequate air diffusion but their disadvantage is in rapid drying out. Putting a net-pot into a plastic pot solves the problem and increases root humidity.

Wire baskets lined with onion bag are good containers. Shallow, large diameters are best for monocots. Leave the deep bellied baskets for dicots. Exposure to summer sun has potential to make the wire very hot. Stolons and leaves that contact the wire are liable to be cauterised. Insulate the wire with a sleeve of rubber or plastic tube.

An earlier FNCBSG Newsletter (May 2014, p.9) shows a Tillandsia in a net-pot with roots growing through the net. This is a good way to grow roots on an epiphyte. Big chunks of bark or polystyrene can jamb an epiphyte into a net-pot, then put the net-pot into a standard pot. Wet substances such as paper, rag, rockwool etc. in the bottom of the standard pot will, as they dry, increase the humidity around the plant and stimulate root production.

There are pots in varied shapes, materials and sizes, all have their ideal uses. Outstandingly best for Cryptanthus is the plastic Vanda slotted basket available as 100 mm square, 200 mm square and 300 mm square, mesh lining is needed to contain the potting mix. Second and third choice could be either the net-pot or the wire basket. All three styles of container have the potential for good root aeration and excellent drainage. As a fourth choice there are plastic squat pots that have slots extending from the base to well up the side of the pot. A glazed pot is very low on the list of being a desirable container for plant growth.

It is said that Bromeliads have a preference to be under-potted rather than over-potted. This may be true but more logical is Bromeliads, as monocots, should be shallow potted rather than deep potted. The larger the surface area the more extensive the fibrous root can become. Ultimately what type of pot is selected affects the growth and appearance of the plant.

Glossary

Angiosperm: A seed-bearing vascular plant of complex reproductive structure containing a flower, ovule and anthers.
Cambium layer: Continuous sheath-like layer of meristem.
Epigeal: The two germinating cotyledons carry the Testa (seed coat), as a cap covering them as they break through the ground surface.
Mesophyte: A plant of optimum growth between the conditions required by Hydrophytes and Xerophytes. Temperature and moisture gradients should be moderate and reliable.
Respiration: The energy releasing oxidation of biosynthesised products to simpler compounds.
Xerophyte: A plant that evolved by modification of form and/or function to survive in hostile conditions.
Vascular system: The arrangement of water and solute-conducting tissues.

Novice Popular Vote

1st	Les Higgins	*Cryptanthus* 'Satin Cascade'
2nd	Kevin Jones	*Neoregelia* 'Gespacho'
3rd	- - - - - -	- - - - - -

Open Popular Vote

1st	Flo Danswan	*Vriesea gigantea*
2nd	Gloria Dunbar	*Guzmania* 'Apache'
2nd	Jennifer Laurie	*Neoregelia* 'Bullis's Margaret'
2nd	Keryn Simpson	*Neoregelia* 'Larnach's Enchantment'

Judges Choice

1st	Jennifer Laurie	*Neoregelia* 'Bullis's Margaret'

Decorative

1st	Jill Ashe	'Brom. on a Log'

Comments from the Growers:

Flo has had her *Vriesea gigantea* for 2years now which is grown at the back of her shade house under 60-70% shade cloth, fertilized occasionally.

Gloria bought her *Guzmania* 'Apache' from Ross several years ago, it is taken inside when in flower. It is grown under 75% biscuit shade cloth where it gets lots of good bright light and is watered and fertilised often.

Jennifer as with all her plants has grown this *Neoregelia* 'Bullis's Margaret' quite beautifully and it only gets watered sparingly.

Keryn one of our newbies tabled a *Neoregelia* 'Larnach's Enchantment', very nicely grown but asking if it needed to be grown in brighter light, general consensus was, yes it will take a lot of bright light to achieve best colour and shape.

Kevin acquired his *Neoregelia* 'Gespacho' from the raffle table 18 mths ago, it gets morning sun and only watered occasionally, Kevin says that he likes to add charcoal to his potting mix to help sweeten it.

Jill grows her 'Brom on a Log' creation in her shade house where it is regularly watered and foliar fertilised with a Dynamic Lifter solution.

Laurie had *Tillandsia stricta* on the table this month which he has hanging facing west under 30% mesh, the clump was started 3 yrs ago, is fertilised sparingly.

Les purchased his *Cryptanthus* 'Satin Cascade' from Margaret Paterson almost 2 yrs ago. The name suggests that eventually this plant will produce pups on stolons similar to the pollen parent. If so a shallow, large diameter wire basket, lined with onion bag, is a more suitable container. Pests can get through the bag's weaving to eat the roots but the addition of diatomaceous earth in the potting mix helps save this from happening.

The rosette shape is now over 40 cms in diameter. The leaf ends have extended beyond the container and the acerose (shaped like a needle) point is unable to bury into the substrate to rot-off. Before a pup emerged from the substrate the leaves were held high. Now the leaves are beginning to droop and I expect them to start recurving.

The container is a 30 cm square slotted Vanda orchid pot. A onion bag lining constrains the potting mix. The large surface area and shallow depth gives adequate air entry to the roots making this an ideal container for monocots and the best that I have for Cryptanthus. Plant movement is restrained by pebble mulch but stones make a pot cold in winter.

Green plants have chloroplast type 'A'. The photosynthesis of this form of chloroplast occurs almost exclusively at both ends of the visible spectrum: blue (4,000nm) and red (6,600nm). 'Satin Cascade' has been grown under 50% white shade cloth overlaid with 50% red shade cloth. White makes the light more reflective in the shade house, while the red induces sturdy growth on a green plant. A blue patch has occasionally been used to lift the leaves but causes rapid etiolation (to blanch as by the exclusion of sunlight, usually grown in darkened conditions, etiolated Bromeliads often have long thin leaves).

In winter the shade house night temperature sinks to 3ºC. Mid-May all plants were moved into the open where the night temperature is higher and the day light is more intense. When the ambient temperature falls to 12ºC all Crypts. will be taken into the house where hopefully the temperature won't drop below 15ºC.

My opinion is that all plants need a dormant period, even the most tropical plant benefits from at least six weeks rest. My plants receive no foliar feeding and very little water during the period mid-June until August. Some leaves may shrivel but provided the plant has adequate carbohydrate it will survive unharmed and grow more vigorously next season.

Nutrition has predominately been a "Home Made" combination of Potassium Nitrate + Calcium Nitrate + Molasses. Also individual Iron Sulphate and "Home Made" Magnesium Nitrate have been applied. The intention is to build a sturdy plant and to achieve this I don't use products that include Urea or Ammonia. Potassium Phosphate was finally given to increase cold hardiness and maturity.

So far no pests and diseases due to the use of Diatomaceous Earth in the potting mix. Pests foolish enough to walk on this get so lacerated they dehydrate and die. Eventually the DE breaks down making the nutrient Silicon available.