

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

Study Group meets the third Thursday of each month  
Next meeting 17th January, 2013 at 11 a.m.

Venue: PineGrove Bromeliad Nursery  
114 Pine Street Wardell 2477  
Phone (02) 6683 4188

Discussion: December 2012  
Christmas Party

*Merry  
Christmas*

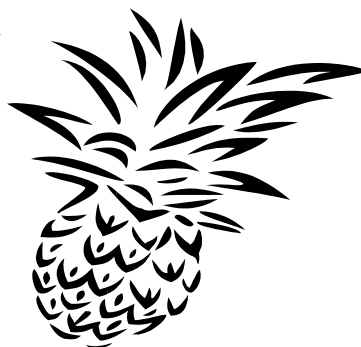


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## **Meeting 15th November 2012**

Ross opened the meeting at 11:08am with the distribution of last month's newsletter. Everyone was welcomed with special mention of guests Peter Tristram (Repton, NSW) and John Crawford (Gold Coast Bromeliad Society). A total of 29 members and three visitors were present and apologies were received for seven members. Last month's pleading from Kay and Ross certainly paid dividends and a large influx of competition plants had materialised, particularly from the novice category. Well done and thank you all competitors.

## **General Business**

The December meeting will be the Christmas party and no formal articles will be presented or demonstrations made. However the formal presentations to the annual winners of the various competition categories will be made.

Six to eight quality bromeliads will be drawn as a door prize (acquired by group funds). In addition to these plants a number of individual members have chosen to donate quality bromeliads to enhance the door prize drawing, this being their contribution to the spirit of Christmas.

Ron mentioned his annual tropical plant sale was to be held on the 25th November 2012 at his home. He also briefly described his recent visit to New Zealand and in particular the New Plymouth Garden Festival.

John Crawford briefly related some of his touring experiences in Ecuador with 'South American Nature Tours'. Anyone interested can get organized through the internet or by calling 0755649809.

The pre-meeting bank balance stood at \$661.05 and increased by \$151.00 contributed by raffle ticket purchases.

## **Members' Show and Tell**

Meg had two broms for ID. The first was probably *Vriesea* 'Pyjamas' (unreg), which Ross will check further; the second if it gets a red inflorescence was most likely *Vriesea* 'Ginoti' (*Vr. platynema* X *Vr. fenestralis*), Ross mentioned that if it gets a green inflorescence it is most likely *Vr.* 'Ginoti Verde'.

Tibby presented a plant which needs to be given much more light. It turned out to be *Neoregelia* 'Pink Spider' (*Neo. pendula* X *Neo. eleutheropetala*).

Carol had a *Vriesea* 'Bronco' (unreg) identified, which is in all probability out of the *Vriesea* 'Vogue' grex.

Kevin brought in two pups the first of which was identified by Peter Tristram as *Neoregelia* 'Predator', imported as a Skotak hybrid named and registered by Peter. John and Genny Catlan registered a similar/same plant (out of the same grex) as *Neo.* 'Hot Gossip'. The original registration was of albomarginated and media picta plants. Peter registered the 'reverse' as *Neo.* 'Predatress'.

The second was a *Neo. carolinae* hybrid, both very nice plants.

Lesley's plant for ID was a *Quesnelia edmundoi*, sporting a lovely yellow cone shaped inflorescence. (photo p.8)

At this juncture Ross again mentioned Marie's beautiful *Quesnelia edmundoi* var. *rubrobracteata* ??? which had won the Open Popular Vote as well as the Judges' Choice for September 2012 (see FNCBSG NSW, Newsletter Oct. 2012 p.16). The plant appeared questionable in that it displayed the wrong coloured petals and bracts, yellow and orange respectively, for the above named variety. The plant was back-tracked to Arden Dearden in Queensland, who suggested it was a cross the birds had done between *Ques. edmundoi* var. *rubrobracteata* and *Ae. orlandiana*. However there is still some uncertainty as the former has blue petals and red bracts, the latter yellow petals and red bracts. Ross still entertains the view that Marie's plant is related to *Q. edmundoi* var. *intermedia*, the fact that Marie's plant is a tall plant also supports this view.

Lesley also showed a green leafed *Tillandsia deppeana* carrying a pink and green multi branched inflorescence, also a *Tillandsia stricta* (large grey form) with five flower heads.

Lesley's show and tell culminated in a very creative placement of a variety of Tillandsias on a delightful piece of bush timber resulting in many oohs and aahs. However she actually transcended this spectacle at a later point in the meeting when she presented a framed collection of different *Tillandsia stricta* photographs, together with a framed assemblage of photos of old botanical prints.

Ross mentioned the on going enigma of silver Vrieseas becoming Tillandsias, and green Tillandsias becoming Vrieseas, when will it all happen? According to Peter Tristram it will be a number of years before the Tillandsias are reviewed, and DNA studies will be used in conjunction with the more classical morphological studies. It will be a long and continuing process and of course other genetic revision will have to occur. Peter pointed out that one of the biggest problems with the Bromeliaceae was the number of hybrids developed in cultivation as well as the hybrid swarms (a Luther term) occurring in nature. We have both specific and generic hybridization and additionally we have hybrids hybridizing. Of course a point to make here is that the naturally occurring hybrid swarms are in fact freely inter-breeding communities. This is a defining statement for speciation and we are, in fact, watching a relatively fast evolutionary process in action

Dave showed a plant which had been an Allan Ladd seedling and labelled as *Aechmea retusa* X *Aechmea weilbachii* which he thought was incorrect. Weight of opinion had it as an *Aechmea fasciata* crossed with something, which could be *Aechmea retusa*. Quite a nice plant.

Laurie presented a very attractive pair of *Neoregelia concentrica* hybrid conjoined pups. The plants are from his front garden, and are in all probability from a FNCBSG NSW raffle.

He also referred to an article in the November/December 2012 Bromeletter by Derek Butcher dealing with his Tillandsia 'Laurie'.

Ross mentioned the occurrence of some recent errors in Journals/Newsletters. The errors were incorrect references and wrong referrals to article contributors and associated information adding his name to an article written by another author. He was also credited personally for permission to use articles not the FNCBSG, apologies were offered to the Group for this oversight. Ross indicated a discreet approach to the relevant editor or secretary, often a quiet chat on the phone, will have the error corrected. No need to make a 'big deal' of it.

Kevin showed a well grown *Neoregelia* 'Lambert's Pride', a very distinct and easily recognized hybrid.

A discussion followed regarding the proliferation of hybrids throughout the industry. It was pointed out that so many of these hybrids are look-a-likes but with different names. The situation is getting to the point where hybridizers should exercise more self control, and unless the result of the crossing is a distinctly different plant, it should not be given a name. Additionally, if a name is given, the remainder of the grex, the not so good looking ones, should be trashed/culled. Because of this increase in numbers, many bromeliad groups are in a mess and require serious culling. Examples of plants in this predicament are: *Billbergia*, *Dyckia*, *Hohenbergia*, and *Aechmea blanchetiana* hybrids.

Apart from specific hybridizers, often a problem begins overseas as wild ??? collected seed and is transferred through the nurseries to the gardening public, still as seed or as small seedlings. The seed is often hybridized to begin with and individual members of the grex are thus scattered to the four corners of the earth with each individual owner wanting to name his 'baby'. It is a difficult problem to solve.

Laurie again mentioned his *Alcantarea extensa* plants are currently flowering after some 15-17 years. One is grown in his front garden, but he is a little concerned for it, as the local kids sometimes steal or destroy his plants. The following discussion on how to fix this situation can't be reported here!

All growers recognize the uncertainty and independence of bromeliad flowering, and that was well exemplified by Ross's *Billbergia alfonsi-joannis*, when it decided to flower on the Monday after the weekend visitation of two bus-loads of brom tragics. Typical.

Trish revealed a *Neoregelia* 'Blood Plum' whose flowers exhibited more than three petals. One flower displayed seven petals. A short discussion revealed that *Neo*. 'Blood Plum' was a serial offender in this regard.

Les spoke about his ongoing battle with scale. He acquired a *Neoregelia*, out of a garbage heap which was infested with scale. This was in April of this year. His intent was to put the plant aside and breed up the scale for later use in some experiments to kill off scale without harming the brom. He checked the plant in September 2012, but unfortunately found that all scale had disappeared. As a result of this occurrence Les believes that a continually elevated temperature of

around 40°C may be killing the scale. He knows that Californian Red Scale, which infects citrus trees, has a high mortality rate when the temperature is around or above 40°C and perhaps the scales infecting broms can be destroyed in the same manner. Les is looking for anyone with infected plants who would loan him the plants for one month. He would like to subject the infected plants to his particular 'hot spot' for 30 days, i.e. for approximately three quarters of the scales' 42 day life cycle. He believes this treatment may just do the trick. There are many broms which appear to be scale magnets such as *Neo.* 'Aussie Dream', *Neo.* 'Little Ol', *Ae. fasciata* etc., so someone should be able to fill Les's order. By way of extra information, Les pointed out that Brown Olive scale, which has a 90 day life cycle, can't survive without ants. Consequently, a bead of petroleum jelly around the lower part of the plant's trunk, usually prevents this particular scale.

Shane commented on the multiformity of flowering *Aechmea nudicaulis* occurring at the moment. Most members agreed to having seen this display.

Peter and Ross continued with last month's discussion of *Vr.* 'Highway Beauty', *Vr.* 'RoRo', *Vr.* 'Slow Lane' (unreg) and *Vr.* 'Laser' (unreg). After many visual comparisons of the plants on display and much discussion between these two expert growers and others, the following tentative conclusions were reached: Firstly that there was reasonable argument that *Vr.* 'Laser' (unreg) should be registered and it's actual registered name sorted out in the near future. Secondly, that *Vr.* 'Slow Lane' (unreg) was in all likelihood *Vr.* 'Highway Beauty'. However, the group thought as final confirmation of this position a couple of *Vr.* 'Slow Lane' (unreg) should be grown out side-by-side with *Vr.* 'Highway Beauty'.

The moral of this story being that members should check with the Bromeliad Cultivar Register prior to purchasing costly recently named and unregistered plants to check their authenticity. That said, given that only some 10% of hybrids/cultivars possibly less are registered (some disagree and say the figure is around 20%), one cannot ignore the wealth of beautiful unregistered plants available for purchase.

Don spoke of an example where he personally acquired plants from a reputable show where some 65% of the broms (13 out of 20) carried some form of error related to naming, or were recently named unknowns. The collection comprised six or seven little known unregistered names, five wrongly identified registered plants, and a couple of plants with a name tag in the pot-plant different to the name on the pot. Fortunately they were all attractive and desirable plants, and were all well groomed and presented. Just be cautious.

Ross gave a presentation on variegation. He began with the definition of variegation being generally accepted (botanically speaking) as plants with two or more colours in their leaves. The bromeliad community, however, because of it's great attachment to stripes, has refined the definition to suit it's own purposes. The basic variegated leaf comprises green and white longitudinal stripes.

However there are many variations on this theme. Ross presented many examples which demonstrated this tremendous variation. As we all know there are colours other than green and white included in the term variegated; there are specific forms of variegation such as normal and reverse variegation, albomarginated, media picta etc.

Variegates are extremely temperamental and sometimes it is very difficult to differentiate between them. Ross gave as an example some of the *Neo*. 'Aussie Dream' grex, *Neo*. 'April' (unreg), 'Dreamtime', 'Little Ol' etc. Minor variation from these named plants gives one a problem. So we have come full circle back to the problem which would be resolved if we only named sufficiently distinctive hybrids.

Variegated plants change depending on where they are grown and who has grown them. Defining the plant is often individual opinion. Now, just to make it a little more difficult we are seeing hybrids which combine variegation, zonation, and margination, such as *Neo*. 'Groucho' (photo p.8).

Another difficulty is the difference between variegated and striated.... and then add lineated into the mix! One thing for sure, you will never get two identical variegated plants. The examples that Ross has shown have given the members an introduction into the complexities of variegation, as well as an insight into the exceptional beauty of the variegate. (See articles this newsletter)

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### **Reflections of 2012** by Dawn Dennis

'Garden of Friendship' article FNCBSG NSW Newsletter August, 2012 is how my garden talks to me:

I have learnt so much about my bromeliads since joining the FNCBSG, asking questions, observing, making notes, reading from the Group library and News Letters.

Not having a computer - I know at 80 years old I could still learn - but my extra knowledge has come with friendship, a smile and sometimes a hug, something a computer cannot do.

The knowledgeable Guest Speakers, our own Helen and Ross always there to share their interest, makes our Study Group day a pleasure not to be missed.

Thank-you to all.  
Dawn

### **Poular Vote Growers Comments :**

Marie's x*Guzvriesea* "Happa" has been developed over three years. The original plant was purchased from the Brisbane Expo. A beautiful bigeneric. It has been grown under 70% beige shade cloth with good light, 60 -100 cm off the ground. It has not been bothered by pests, is fed slow release fertilizer and not watered in the wet season, but watered twice a week in dry conditions.

Shane's *Quesnelia marmorata* clump has been developed over the last three years with the plants being acquired over the last seven or eight years. The white quartz stones in the pot assist with drainage, ballast, and presentation. This species exhibits different markings on individual plants. It is grown in Shane's back yard in strong light under a golden cane palm. No pests, rarely fed, normal season no water, but some water this dryer season .

Carol's *Vr.* 'Vogue' (more recently *Vr.* 'Bronco' unreg.) with a lovely maroon and yellow inflorescence, was purchased a year ago from a Yandina market. Grows in an al fresco area with lots of light but protected from the wind. Fed with slow release fertilizer, and no pests.

Lesley's attractive *Till.streptophylla* has well established its roots on bush wood. Missed a recent hail storm, but the leaves have been straightened by over night rain. Receives the afternoon sunlight filtered through the leaves of a peach tree. It is foliar fed with a special *Till.* Fertilizer every couple of weeks. No pests or diseases.

Trish's *Neo.* 'Blood Plum' was won in the Feb 2011 raffle and hasn't moved out of its pot. It is a Skotak hybrid. It grows under 50% green shade cloth on the top shelf and receives morning sun. It is fed Osmocote Exact once a year, and watered three times a week in hot weather. No pests or diseases.

Kay's well grown *Neo. concentrica* was acquired in Dec 2011 from Wardell. It was shifted from the shade house into the garden where it thrives. It is under trees and receives good morning sunlight. It is watered now and then and has no pests or diseases.

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This segment had to be moved from it's regular position on the back page as our growers were a very chatty bunch this month, this may have been due to a questionnaire sheet being drawn up to help assist growers with their comments as this information is helpful to others in our Group.



*Guzvia* 'Happa' - Marie Essery  
1st Open and Judges Choice



*Tillandsia streptophylla*  
1st Novice - Lesley Baylis



*Tillandsia deppeana*



*Vriesea* 'Pyjamas' (unreg)



*Quesnelia edmundoi*



Tillandsia's on driftwood



*Neoregelia* 'Groucho' showing  
marginated variegation and zonation





marmorate blotch spot zonate albo variegate striate



Neo. 'Gift'

Neo. 'April' (unreg)

Neo. 'Dreamtime'

Neo. group showing difference in colour and variegation that often get confused.



Photo's supplied by: Ross Little, Lesley Baylis.

## **Variegation in Bromeliads**

The word '*variegata*' comes from the Latin *variegates*, *variegata*, *variegatum* meaning variable coloration with patches of different colours.

Variegation is a rather common phenomenon in the plant kingdom, and is found in many plant families. It is especially pronounced in ie: *Bromeliaceae*.

A Bromeliad is known as a '*variegata*' when it has two or more different colors. Over 60% of cultivated bromeliads have bands, dots, lines and streaks and can therefore be considered variegated. However, the term is accepted in horticulture when applied to bromeliads that have leaves with lines, streaks and longitudinal bands of contrasting colours, especially those that show differences in pigmentation between the green chlorophyll-containing tissues and the albino tissues.

On the other hand, of all the bromeliads that grow in the wild, it appears that all this variegation is a rare phenomenon. As a general rule, patently variegated plants are less hardy and slower growing than normal, and those that form spontaneously in nature normally survive the competition for space and light only when man intervenes, taking them from the wild for cultivation.

Variegation is rarely found in the subfamily *Pitcairnoideae*, and is not common in the *Tillandsioideae* genera. It does occur however, in the genera *Guzmania*, *Vriesea*, *Alcantarea* and in a few species of *Tillandsia*. In the subfamily *Bromelioideae*, variegation is quite common, especially in the genera *Aechmea*, *Ananas*, *Billbergia*, *Cryptanthus*, *Neoregelia*, and *Nidularium*.

## **Causes of Variegation**

Although there has been much progress in the scientific research on Bromeliads, little is known about the causes of variegation. As a general rule, botanists agree that bromeliads have a rather Mutable Genetic Structure, therefore... several different theories are possible. The first of these links variegation to a virus infection:

**A.** Viruses are common in plants and animals and may cause many harmful and debilitating illnesses. In nature, they provide a quality control system for living organisms. These viroids have the capacity to alter the genetic programming of plant cells by molecular inclusion or extraction of chromosomes. Bromeliads are known to host viruses, but the physiological mechanisms of virus infection in plants is poorly known.

**B.** Viruses may attack the plant meristem or main vascular system. Bromeliads are monocotyledons and as such, they mostly have parallel veins running lengthwise along the leaves. Beginning from a tissue with infected cells, as the plant grows the "problem" is transmitted down the entire leaf, producing clearly defined lines or bands. Variegation that appears in plants grown from seed can be explained by previous infection of the pollen grains. The viruses are often no longer present when the symptoms, variegation.. manifest themselves.

**C.** Chemical substances are also capable of producing variegation in plants. It is a well known fact... that flower inducing substances produce lateral buds of the 'variegata' type in adult plants.

**D.** Variegation is also thought to be frequently associated with environmental factors, but there is no scientific proof to back up this assumption. Some investigators support the hypothesis that natural radiation may cause genetic mutation. Laboratory experiments show that B- and X- rays lower the number of meristem cells, which may cause variegation.

**E.** Factors related to microclimate, temperature, humidity and light, are also sometimes mentioned as influencing variegation. Biological stress, such as prolonged dehydration or poor nutrition, is said to bring on variegation, as are ecological disturbances such as fire, flooding, freezing, cyclones, etc.

To sum up... variegation may be caused by genetic mutation or by virus infection, but it seems probable that a number of different causes can potentially bring on this effect.

## Types of Variegation

Plants with two different types of tissues... albino and chlorophyll - pigmented, Diploid and Tetraploid, are called Chimeras.

This definition can be applied to the 'variegatas'. Variegation may be fixed or mutable, temporary or permanent. Tissues with fewer chloroplasts leads to white or cream-colored tissues.

There are certain visible forms of variegation that are recognized botanically, although naming the forms is not always consistent or precise, and some are treated as synonyms...

**Variegata** -- The white or yellow bands have no clear organization, and usually do not extend to the leaf edge. The term 'variegata' refers generically to any form of variegation i.e: *Nidularium innocentii* var. *striatum*.

**Marginata** -- The central part of the leaf is green with the leaf margins being: white - 'albomarginata' ie: *Neoregelia concentrica* 'albomarginata'. yellow - 'flavomarginata' ie: *Aechmea nudicalis* var. *flavomarginata*.

**Lineata** -- Thin white or yellow lines run along the leaf i.e: *Nidularium innocentii* var. *lineatum*.

**Medio-Picta** -- Meaning "Painted Centre" this type is similar to 'variegata' but with green stripes in the centre of the leaf.

**Tricolor** -- Three-coloured; usually green, cream and rose colour ie: *Neoregelia caroline forma tricolor*.

**Quadricolor** -- Four-coloured; usually white, yellow, red and green ie: *Aechmea magdalenae* var. *quadricolor*.

The pigment group known as the Anthocyanins is present in many bromeliads, it is found in the epidermal cells and may hide both chlorophyll-pigmented and albino tissues. In *Aechmea orlandiana* cv. 'Ensign' anthocyanin produces a very beautiful red or rose colour in the albino tissue.

Reddish brown stripes and bands are found in several hybrids such as *Aechmea* 'Red Ribbon' and *Neoregelia* 'Amazing Grace'. Variegation is also found sometimes in the inflorescences, and in primary and floral bracts, such as with some *Guzmania* hybrids.

### **Propagation of Variegates**

Vegetative reproduction will lead to the replication of the mother plant, but this method is not totally reliable when dealing with variegates. Even the best lines, the so called "Fixed Clones" may occasionally show some alteration. Some however, have survived for decades without mutations, generation after generation.

As a rule, variegated plants are harder to grow than the all green plants. The inflorescences are smaller than normal and the tendency to bud laterally is also reduced. Some have definitely slower growth rates than normal plants. This is especially true of Vrieseas and Guzmanias, which are also slower to take root anyway. It is advisable to leave the lateral shoots on the mother plant for a much longer time than with normal plants. Experience has shown that shoots about half the size of the parent plant can be detached with no problem.

An important sign of shoot maturity is root emergence. To promote increased production of lateral shoots, the removal of the newly formed inflorescence is advised, so that the plant can channel its energy into the lateral shoots. Mutable variegate plants tend to produce either albino shoots or all-green shoots. True albinos are apt to die when separated from the mother plant, thus wasting reproductive energy. It is therefore best to remove them as soon as they appear.

*Courtesy of Bromelia 3(4),  
the Journal of the Sociedade Brasileira de Bromelias  
December, 1996 Rio de Janeiro, Brazil*

### **Nomenclature**

By convention, the italicised term *variegata* as the second part of the Latin binomial name, indicates a species found in the wild with variegation ie: *Neoglaziovia variegata*. The much more common, non-italicised, inclusion of 'variegata' as the third element of a name indicates a variegated cultivar of an unvariegated parent *Neoregelia* 'Meyendorffii' 'variegata'. However, not all variegated plants have this Latin tag, for instance many bromeliad species and cultivars have some zoned variegation in their leaves ie: *Neoregelia zonata*. Other types of variegation may be indicated ie: *Aechmea nudicaulis* var. *flavomarginata* has yellow edging on its leaves.

## **Variegated Foliage and Photosynthesis**

Bromeliads are grown as much for their floral variety, with a range of color variegation apparent for the bromeliad leaves. In nature, many forms of variegation have a specific function and aid in the survival of the plant, while other forms have no known benefit.

Of the many forms of variegation shown by plants, perhaps the most familiar is the white and green variegation of:

*Ananas comosus var. variegatus* (Pineapple). This arises from a fusion, or "chimera" of two very different cell types, with white cells arising from a genetic mutation in the growing point of the leaf (Bell 1991). Green sectors contain abundant chlorophyll, but white or pale yellow sectors contain much less pigment. This 'chimeral' type of variegation results in slower growth compared to non-variegated varieties, as only the greener parts of the leaf can photosynthesize sufficiently to provide the sugars and energy for growth and the white sectors consume these resources.

Consequently, chimeral variegation is rare in nature, although it persists in horticulture.

Other forms of variegation include the more functional 'developmental' variegation, or the appearance of coloration over time. Many *Guzmanias* and *Neoregelias* advertise flowers using developmental variegation, with younger leaves becoming red immediately before flowering. Variegation may also form bands of leaf hairs (trichomes) traversing the leaf or from variation in the structure of the leaf hairs over the leaf surface, although the function if any of these bands is not known. The only form of leaf variegation not shown by bromeliads is "Blister" variegation, in which an air pocket beneath the cuticle produces a paler patch; these structures also have no known function.

However, "discolor" variegation, in which the underside of the leaf is red and the upper surface is green, directly benefits photosynthesis and plant growth. Red undersides to the leaf are thought to act as 'red mirrors' reflecting light back up into the leaf and increasing photosynthesis and growth in shaded conditions. For example:

*Guzmania musaica var. discolor*, grows on the forest floor shaded by foliage and cloud cover, in the cloud forest at Cerro Jefe, central Panama. *Guzmania musaica var. concolor* (with no variegation), is also found in the same location, but usually grows as an epiphyte. On the lower slopes of the hill, these forms are replaced by a variety with a different form of variegation (i.e. a set pattern determined by particular genes). This pattern is made up of darker and lighter green portions, often also mirrored by the red anthocyanin pigments on the underside of the leaf. As the principal function of leaves is to capture light and carbon dioxide gas, producing energy and structural materials for the plant, any variation in leaf coloration will affect the absorbance of light and the photosynthetic process.

Reprinted from: *Collecting Bromeliads and Orchids in Florida*  
Jack's Florida Bromeliads.

## List of Latin Colour Terms

Compiled by John Catlan 2012

Taken from Lindley (1832)

G. W. Bischoff in 1830 produced a annotated list of colour names for botanical use and in 1832 John Lindley published a translation into English of Bischoff's lists which summarized nineteenth-century usage, and the following information has been selected from this source.

Colour is difficult as people's perception varies, and because of this, when viewing live material and matching it to colour plates it should be by at least two people. Women in general have a more finely trained colour sense than men. Out of the ten colour-menus I have selected just two, as being the most relevant to bromeliads and of understandable interest. White is usually expressed by *albus*, colourless and white 1 - 9 attempts to give more precision. Variegations, markings and quality 87 - 101; this section consists of terms implying colour, but not mentioning the particular kind.

I find these menus of terms far easier to use than the normal alphabetical glossary, because of the menus layout I find this helps to add a concise meaning.

### **Colourless and White**

- 1) **Snow-white** - *niveus* - as purest white
- 2) **Pure white** - *candidus* - very pure, but not as clear as snow-white.
- 3) **Ivory white** - *eburneus*, *eborinus* - cream coloured, white verging to yellow with a little lustre.
- 4) **Milk-white** - *lacteus* - dull white verging to blue.
- 5) **Chalk-white** - *cretaceous*, *calcereus*, *gypseus* - very dull white, with a little touch of grey.
- 6) **Silvery** - *argenteus* - a little changing to bluish grey, with something of a metallic lustre.
- 7) **Whitish** - *albidus* - any kind of white a little soiled.
- 8) **Turning white** - *albescens* - changing to a whitish cast from some other colour.
- 9) **Whitened** - *dealbatus* - slightly covered with white upon a darker ground.

## Variegations, Markings and Quality

- 87) **Variegated** - *variegatus* - the colour disposed in various irregular, sinuous spaces.
- 88) **Blotched** - *maculatus* - the colour disposed in broad, irregular blotches.
- 89) **Spotted** - *guttatus* - the colour disposed in small spots.
- 90) **Dotted** - *punctatus* - the colour disposed in very small rounded spots.
- 91) **Clouded** - *nebulosus* - when colours are unequally blended together.
- 92) **Marbled** - *marmoratus* - when a surface is transversed by irregular veins of colour; as a block of marble often is.
- 93) **Tessellated** - *tessellatus* - when the colour is arranged in small squares, so as to have some resemblance to a tessellated pavement.
- 94) **Bordered** - *limbatus* - when one colour is surrounded by an edging of another.
- 95) **Edged** - *marginatus* - when one colour is surrounded by a very narrow rim of another.
- 96) **Discoidal** - *discoidalis* - when there is a single large spot of colour in the centre of some other.
- 97) **Banded** - *fasciatus* - when there are transverse stripes of one colour crossing another.
- 98) **Striped** - *villatus* - when there are longitudinal stripes of one colour crossing another.
- 99) **Ocellated** - *ocellatus* - when a broad spot of some colour has another spot of different colour within it.
- 100) **Painted** - *pictus* - when colours are disposed in streaks of unequal intensity.
- 101) **Zoned** - *zonatus* - the same as ocellated but the concentric bands more numerous.

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### **Novice Popular Vote**

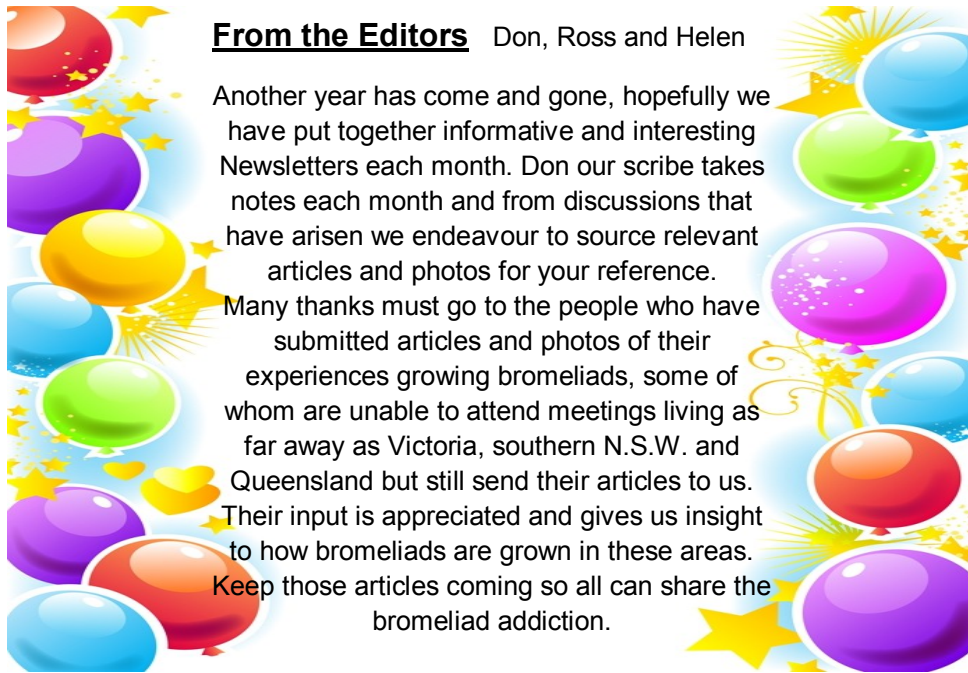
1st	Lesley Baylis	<i>Tillandsia streptophylla</i>
2nd	Trish Kelly	<i>Neoregelia</i> 'Blood Plum'
3rd	Kay Daniels	<i>Neoregelia concentrica</i>

### **Open Popular Vote**

1st	Marie Essery	<i>Guzvriesea</i> 'Happa'
2nd	Shane Weston	<i>Quesnelia marmorata</i>
3rd	Carol Buckman	<i>Vriesea</i> 'Vogue'

### **Judge's Choice**

1st	Marie Essery	<i>Guzvriesea</i> 'Happa'
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#### **From the Editors** Don, Ross and Helen

Another year has come and gone, hopefully we have put together informative and interesting Newsletters each month. Don our scribe takes notes each month and from discussions that have arisen we endeavour to source relevant articles and photos for your reference. Many thanks must go to the people who have submitted articles and photos of their experiences growing bromeliads, some of whom are unable to attend meetings living as far away as Victoria, southern N.S.W. and Queensland but still send their articles to us. Their input is appreciated and gives us insight to how bromeliads are grown in these areas. Keep those articles coming so all can share the bromeliad addiction.

# **HAPPY NEW YEAR**

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