

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

Study Group meets the third Thursday of each month  
Next meeting 19th June, 2014 at 11 a.m.

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

Discussion: May 2014

## **General Discussion**

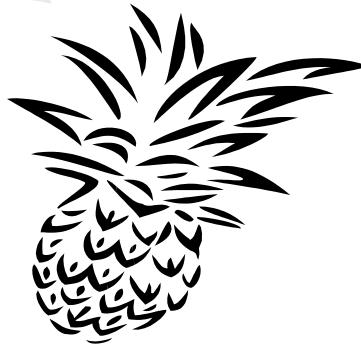
Potting Mix — What's in your mix ?

Removing Upper Puppers

### **Editorial Team:**

Kay Daniels  
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## **Meeting 17th April 2014**

The meeting was opened at approximately 11.20am.  
The 24 members and one visitor present were welcomed.  
A total of five apologies were received.

## **General Business**

The members were welcomed, as was Gloria who is renewing her membership on returning to the area. Apologies were received, including one from Shane, as it was his birthday and that of his mothers the following day. Happy Birthday, Shane and Mum, hope the celebrations were worth it!!

Ross wished everyone a Happy Easter and safe travelling.

Many of our members attended the Queensland Bromeliad Society Autumn Show and Sale on the 13<sup>th</sup> April stating there was a great display of Show and Sale plants with many satisfied purchases made to enlarge collections.

Lesley Baylis, one of our members is a very enthusiastic photographer and successfully gained second place last year (2013) in the photographic competition run in conjunction with the Show and Sale and this year very successfully won the competition with her photograph of *Tillandsia ionantha*. Lesley had entered the photograph in a collection of exquisite Pink flowering bromeliads in our Christmas Photo competition which was published in the February Newsletter. Congratulations and well done Lesley. It was overtly suggested that Lesley could give us all a lesson or talk on photographing bromeliads very soon!!!

A special thank you to Coral and Gary McAteer, for their very generous donation of packets of tea for the Group's use.

Library books and further acquisitions, Ross introduced the following books to the group with a recommendation to purchase, Bromeliaceae III, Francisco Oliva -Esteve and Jewels of the Jungle, Bromeliaceae of Ecuador Part 1 & Part 2, José M. Manzanares. It was agreed unanimously that they be purchased. Members now eagerly await the publication of Manzanares books on Tillandsias.

A copy of the Japanese publication, Bromeliads Handbook, Tillandsias and Friends, Fumio Fujikawa was donated to our library thanks to Peter Tristram. Members don't forget, these Library books, newsletters and articles as well as CD's are available to members at meetings for borrowing between meetings, one month per borrowing. See Lesley, our librarian, and if you are a new borrower you will need to show your licence and give your address and phone number. These are recorded, and you can then borrow up to 3 items for a month.

John asked about the Group purchasing the Fujikawa book and was informed that enquiries had been made and there were no savings to be made, with a show of hands it was decided to purchase ten copies, to be purchased through online booksellers at about \$35.00 each.

Ross distributed the newsletter stating there had been enquiries from members of the Group who could not attend meetings regularly but wished to have the Newsletter. In line with the \$2.00 attendant fee a yearly subscription of \$24.00 could be paid in lieu. With the printing costs of about \$4.00 per copy, subsidised by funds from our monthly raffle held at the conclusion of each meeting this subscription fee is good value. Each member will appreciate how important it is to continue to support the raffle with donations of healthy Bromeliads and other items at each meeting, raising the funds to support our Newsletter.

Gary kindly delivered Trophy covers expertly made by Dawn, who was unable to attend the meeting. These covers will protect our Trophies/Shields between the award ceremonies, unless the recipient likes displaying them on the wall, some of us are a little on the bashful side and reluctant to admit success hiding them in the back of a cupboard, this is what creates the very need for the covers. Thank you very much Dawn.

Favourable comments were made on the number of entries in both the Novice and Open sections of our monthly competition with the Decorative section needing more entries.

Ross indicated that there were plenty of 165 mm squat pots now available for sale along with pots ranging from 120mm to 300mm, Osmocote 'Exact' fertilizer, hangers, zeolite, potting mix and labels available.

An ongoing request from Ross for photographs and articles, specifically to those members who have the rarer species of bromeliads growing and in flower to please photograph them and note specific details in a short article.

Jeanette Henwood has an *Ursulaea macvaughii* in flower at the moment and we would love to see it and have photos of this rare species. (photo p.9)

John and Les gave us their findings on the acquisition, application, types and effects of using Diatomaceous earth on their Bromeliads. John uses food grade, while Les uses agricultural grade. Les, mixes his into the potting mix while, John, puffs his on with a specific puffer, both using the product to eliminate ants and mealy bugs, with both users reporting success. John stated one should not use the swimming pool diatomaceous earth product as it has other added chemicals and has also been heat treated. Les and John acquire the product from a source in North Queensland, both buying in bulk, much discussion followed on the pros and cons of its suitability.

Following the publication of an article on *Bromelia balansae* in our February 2014 Newsletter, Lesley was rather surprised by the response from various people in the Bromeliad world. Some question whether the plant being grown as this species in our collections is *Bromelia balansae* because it is believed not to be in Australia. It was interesting to note that comments made by an overseas reader were positive, affirming the identification.

Lesley is growing this *Bromelia* as a terrestrial not as a pot plant with the plant growing in very rich volcanic soils in a high rainfall (1800-2000mm per annum) area. Size does count in this matter, both the plant and the inflorescence are enormous and even the pups are large when very young. Lesley has pursued the *Bromelia*'s history unfortunately coming to an abrupt end when the last source, stated, it was purchased as a young plant in a 4" pot from Fergusons Nursery in Granville, NSW and travelled north, Lesley buying one of its progeny some 40 years later in Brisbane, several years ago. It was purchased as *Bromelia balansae* and one can only assume it was grown from imported seed being in such a small pot and at a time when Australia had very few Bromeliads of the less favoured species and genera.

### **Show and Tell**

Les spoke about growing his Cryptanthus in basket / net pots for root ventilation, using a 250mm basket pot with an upturned solid squat pot inside the basket pot to reduce the potting depth but retain the advantages of the basket pots surface ventilation. The Cryptanthus is planted into the potting mix growing in the area over the inverted squat pot. Les then places his pots on layers of wet newspaper lain over a brick floor which is kept moist.

Ross stated that the basket pots are ideal for growing Tillandsias in as they also prefer good root ventilation being mostly epiphytic. (photo p.9)

Ross displayed to the Group some of the new Neoregelias that were purchased at the Queensland Bromeliad Society Show and Sale. This is a worth while event to attend as there is always a huge variety of plants offered for sale. On the way home he also took time to attend the Gold Coast Society Bromeliad Show, more purchases, not only by Ross but mostly by those travelling with him, not many more plants could fit in the Hi-Ace van heading for home. (photo p.9)

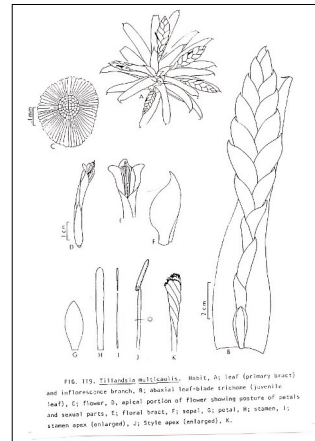
Our lecture for this month was given by Don, who had everyone's full attention when he discussed the Morphology of Bromeliads. We began with revision of the meaning of Morphology and continued with relation to Bromeliaceae.

Don's notes: **Simplified Morphology of the Bromeliaceae** begins on page 10.

***Tillandsia multicaulis*** Steudel Nom. Bot. ed. 2, 2:688, 1841, (fig. 119) based on *Tillandsia caespitosa* Schlechtendal & Chamisso, Linnaea 6:54, 1831(non Le Conte, 1828). TYPE: Scheide & Deppe 1007 (holotype B, isotype BM, photo GH n.v.) Jalapa , Veracruz , Mexico.

*Tillandsia multicaulis*, a soft-green-leaved *Tillandsia* native to Mexico and Central America, looks more like a *Vriesea* than a *Tillandsia*. The photograph shows it growing in open forest in Honduras, where it grows at an altitude ranging from 1676 to 1981 metres. The temperature here is from 1.1° to 28.9°C. on very rare occasions. Average rainfall in this area is about 940mm, but fogs occur almost nightly.

*Tillandsia multicaulis* is commonly seen in the flower stalls of central and southern Mexico. This plant might easily be mistaken for a *Vriesea* and has been so



(Fig. 119)



photo by Frank Mathews

called by several authorities in the past.

Its outstanding characteristic is that it has not just one inflorescence but any number up to six or seven and all appear from between the leaves, rather than from the centre of the rosette. The flattened inflorescence so resembles a goldfish that the name of "Gold Fish *Tillandsia*" has been given to this bromeliad. The plant is not large, seldom averaging over 30cm in dia. and height. Mr. Kubisch stated that of all the *Tillandsias* he collected, *Till. multicaulis* was found growing in the densest shade. He collected his plants in the state of Vera Cruz at an elevation of 1,524 mtrs.

Taken from:  
Bromeliad Society International Journal archives:  
BSI Journal - 1970, V20 (2)  
BSI Journal - 1960, V10 (6)



*Tillandsia multicaulis* photo by Lesley Baylis showing eight inflorescences / paddles.

## A Bit More on Hechtia

by Doug Binns 2014

As a follow-up to a previous article on *Hechtia*, I have just returned from a brief visit to Mexico where I had a chance to see hechtias growing naturally. This was my first visit to Mexico and the first time I have seen hechtias in nature. I chose to visit the states of Puebla and Oaxaca, because they are reported to have high diversities of *Hechtia* species and the state of Morelos, because it is conveniently close to Mexico City. I travelled by bus. This has the advantage of being cheap, eliminates any concerns about a hire car being stolen while one is looking for plants and avoids road accidents caused by someone like me who is not used to driving on the 'wrong' side of the road. The disadvantage of bus travel is that it is very inefficient if one is



looking for plants. A lot of time is spent in bus stations and one is restricted to investigating areas within walking distance or taxi ride of a town large enough to have a hotel. It is also a bit frustrating when you see interesting plants from the bus (as I did on several occasions) but can't stop. Although many buses in Mexico will drop you off wherever you wish along roads in areas remote from towns, they don't wait while you look at plants.

Fortunately for me, it seems that virtually any patch of natural vegetation of a reasonable size in Mexico has a *Hechtia* species growing somewhere within it or nearby.

Unfortunately, I visited at the end of a long and very dry, dry season, so no hechtias were in flower and some looked a bit dehydrated. In the absence of flowers, in most cases I was unable to identify the species I was seeing. Some of the species I saw belong to the *Hect. podantha* complex of species, which are superficially alike, distinguished by details of flowers and sometimes subject to varying botanical opinions on their taxonomic status, so are difficult to identify in any case.

One of the highlights was a species which was growing very abundantly, although over a limited altitudinal range, in an area near the city of Tehuacan, where it often formed the main plant species in the ground cover of an area of shrubland. This area was like a natural succulent garden. The hechtia occurred with a range of cactus species, several species of *Yucca* and at





least six species of the succulent genus *Agave*. Plants in locations exposed to full sun had striking red blotches, while those in shadier sites had more subdued coloration, as would be expected. This species has the interesting habit of producing off-sets on long stolons so that it develops much more extensive clumps than most other species. I have seen images of a similar looking plant identified in a journal as *Hect. glomerata*. The plants I saw were not this species (the old inflorescences had a very different structure to *Hect. glomerata*) and I don't know how many species develop such prominent red coloration, so I'm not sure what they were. This species was growing with a second, much larger *Hechtia* species with inflorescences well over 2 m high, which was less abundant but occurred over a wider altitudinal range. As far as I could tell, there were no hybrids present, although the second species was very variable in both vegetative characteristics and inflorescence size and shape. The only other bromeliads in this area were a couple of species of *Tillandsia*.



It was also very interesting to see *Hect. rosea* growing naturally. This was in a very hot tropical lowland area near Tehuantepec. If this is typical of where it occurs, it is not surprising that it is a little more cold-sensitive in cultivation than many other species of *Hechtia*. Also surprising, based on my previous experience of cultivated plants looking a bit unhappy in full sun, was seeing it growing in fully exposed positions in such a hot and dry climate, on limestone outcrops. Since *Hect. rosea* is a widespread and variable species, the tolerance of cultivated plants to temperature and exposure may vary depending on the location of their origin.

I was also very glad to have seen what I'm fairly certain was *Hect. matudae*, although unfortunately not flowering. It seems to occur in only a very limited area, growing almost exclusively on cliffs, with most plants out of camera range without a good zoom lens. Not far away but in a very different habitat on volcanic rocks in an ancient lava field, was a population of plants most likely to be the recently described (2010) Morelos endemic, *Hect. chichinautzensis*. I discovered when I returned to Australia that I had inadvertently photographed plants close to the type locality for this species.



It was very exciting for me to see hechtias growing naturally and I look forward to my next visit to Mexico to try to see more species. Next time I'll go at the end of the wet season and hopefully see a few in flower.



*Neoregelia* 'Dream Baby'  
1st Open - Kay Daniels



*Neoregelia* 'Laser' - Flo Danswan  
1st Novice and Judges Choice



Floral Arrangement  
1st Decorative - Wendy Buddle



*Tillandsia* 'Marron'  
grown by Lesley Baylis



*Vriesea* 'RoRo'  
grown by Marie Essery





*Vriesea* 'Kiwi Sunset' (seedling)  
grown by Trish Kelly



*Neoregelia* 'Magali'  
grown by John Crawford



*Ursulaea macvaughii*  
grown by Jeanette Henwood



Tillandsia roots grow through net pots



Group of Neoregelias purchased from  
recent Qld. Society Autumn Show

Photo's supplied by: Ross Little and Jeanette Henwood

## **Simplified Morphology of the Bromeliaceae** by Don Beard 2014

It is probably a good thing for us as gardeners to occasionally revise the terms/ words used to describe the physical characteristics of the Bromeliaceae, or in other words the plants' morphology. The word **morphology** derives from the Greek word morphe meaning shape, form, or structure and logos a study or discourse. Put simply the morphology of these rather special plants, is used to describe them in detail, to identify them, and as a consequence classify them and relegate them hopefully to their correct **taxon** (organisms defined as a unit within a natural system). Of course genetic similarities play the most significant role in **systematics** (the study of classification of organisms), but morphology still has a role to play especially for gardeners and collectors. It is planned that over the next 12 months the botanical and horticultural terms for the morphology of the various parts of the Bromeliaceae will be revisited in more detail. This current account is simply an overview preparing the way for that later infusion of detail.

Let us begin at the base of the bromeliad where we encounter the roots, which come in two basic forms.

1. **Holdfast roots** which keep the plant in its desired position. These are the tough thickened roots which keep the **epiphytes** (plants growing non-parasitically on another plant and making up the vast majority of bromeliads) attached to a particular **substrate** (underlying substance) (see Fig 1).

2. **Feeder roots** which provide nutrition to the plant, especially terrestrial bromeliads which have to grow in some kind of soil or nutrient (see Fig 2).

However it should be noted that epiphytes have the capacity to develop both types of roots, which comes in handy should the plant be accidentally detached from the original positioning and end up growing in some sort of soil. Some bromeliads have no roots and/or very limited root development. For example *Tillandsia usneoides*, *Tillandsia duratii*. Seedling epiphytes also use feeding roots.

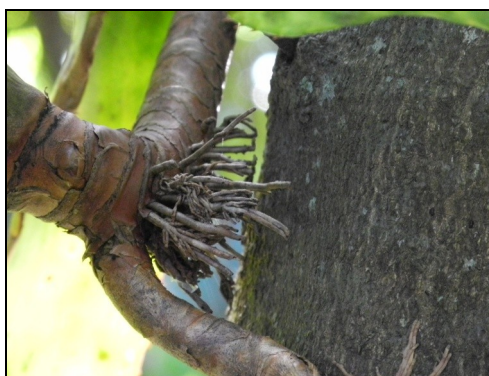


Fig 1. Holdfast roots



Fig 2. Feeder roots



Moving up the **axis** of the bromeliad, that is the central line or main stem, we arrive at the arrangement of leaves which for the majority of bromeliads is a **rosette** (see Fig 3). This is an arrangement whereby the leaves are attached spirally about the central axis and appear like the petals of a rose. Rosettes can appear with the leaves tightly or loosely packed or in any position in between. In a minority of bromeliads the leaves are arranged in two ranks called a **distichous** habit e.g. *Quesnelia* 'Tim Plowman'.



Fig. 3 Rosette

Leaves come with different **margins** (edges), shapes, colours and sizes, and comprise a **sheath** which is close to the axis and a **blade** which is away from the axis. The top or upper surface of the leaf is known as the **adaxial** surface (faces towards the axis) whereas the bottom or underneath surface is the **abaxial** surface (faces away from the axis of the plant). The upper angle between the leaf and the axis is known as a **leaf axil**, and it is in these leaf axils that the future buds/pups develop.

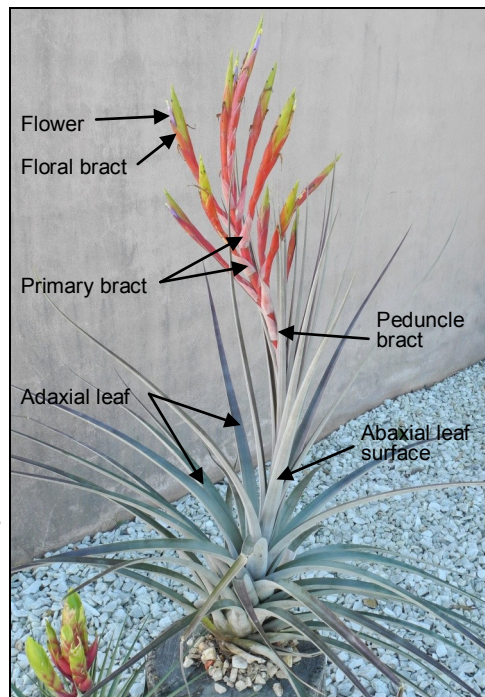


Fig 4. Inflorescence 1st order branching

Even higher the central axis develops into an **inflorescence**, which is a specialised shoot bearing the **flowers**, which of course are the sexual reproductive parts of these plants. It is the morphology of the inflorescence and its flowers which is of particular use in identifying and defining taxon limits. This stalk which carries the inflorescence in a bromeliad is called a **peduncle** and it may have leaves bracts and nodes along its length. Sometimes this peduncle is incorrectly called a **scape**. A scape is an inflorescence stalk with no nodes, leaves etc. Scares generally arise directly from the roots or rhizome of the plant, for example varieties of *Narcissus*, *Hippeastrum* etc.

There are a number of different **bracts** (specialised leaves which are generally brightly coloured, and containing limited chloroplasts) occurring on the inflorescence and its peduncle (e.g. peduncle, primary, and floral bracts) as well as a variety of **branching** within the inflorescence e.g. first order, second-order branching etc. (see Fig 4). The terms **pinnate** or **bipinnate** derive from fern frond morphology and should not be used for bromeliad inflorescence branching.

Finally, at the zenith of the bromeliad's life or at its **anthesis** (peak of flowering) it has developed flowers which comprise floral bracts, three **sepals**, three **petals**, six **stamens** (six **filaments**, six **anthers**, **pollen**), and one **pistil** (**ovary** divided into three parts, **style**, **stigma** in three parts) (see Fig 5). The observation and description of this multiformity of plant parts provide sufficient material to enable different bromeliad identifications.

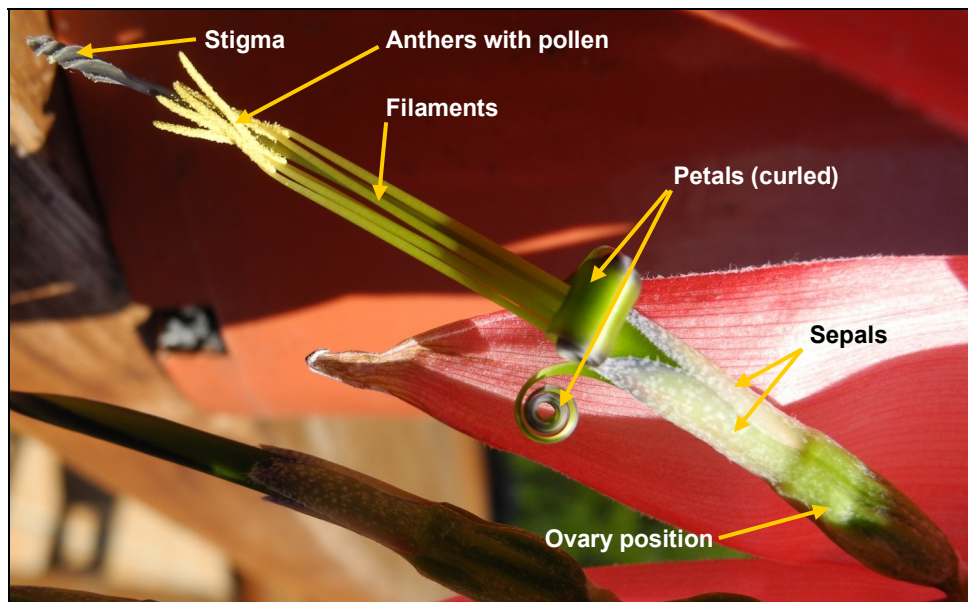


Fig 5. Bromeliad flower

A useful tool for the keen gardener or collector is a glossary of botanical / bromeliad terms (see Butcher D., 2009 "Glossary of Bromeliaceae terms") which is found on the FCBS web site [www.fcbs.org](http://www.fcbs.org) click on [home page](#), then click on [Bromeliad Information](#), then [Glossary](#). This provides a quick and easy reference to terms encountered without having to tax the grey matter too much. Watch this space over the next 12 months.



## **Nutrient Requirements Part 1 of 4** by Les Higgins 2014

Nutrients can be organic fertilizers (plant or animal matter) or inorganic fertilizers (salts). Organic substances decompose into inorganic elements (atoms) that are small enough to pass through the plants semi-permeable membrane. Both forms ultimately supply exactly the same nutrients.

Nine macronutrients make the plants structure. Carbon (C), Hydrogen (H) and Oxygen (O) create the bulk of the plant. The remaining macronutrients are K. N. Ca. Mg. P. Su. Micronutrients, also known as trace elements, build the structure.

More than 70 elements are essential or beneficial for plants, most are only of academic interest. Chemical impurities supply some required substances. Strontium, a magnesium impurity, is fundamental in initiating the calcium skeleton. Life cannot exist in the total absence of Arsenic, a sulphur impurity. Not all elements are required by all plants and unavailable elements have substitutes. There is no substitute for potassium. Lieberges 'Law of the Minima' (c1860) so loved by botany teachers and salesmen states: "The growth of a plant is restricted to that obtained from the nutrient in least amount". A modern explanation is: "The more elements simultaneously available the better the plant grows".

Twelve micro and macro nutrients in ascending order of required atoms for a typical plant (no such thing) are: Molybdenum 1, Copper 100, Zinc 200, Manganese 1K, Iron 2K, Boron 3K, Sulphate 30K, Phosphate 60K, Magnesium 80K, Calcium 120K, Potassium 230K, Nitrogen 250K. This knowledge allows calculation of nutrient ratios for each genus. Unwanted substances in a fertilizer mix can damage a plant or make nutrients insoluble. For a Bromeliad formulation delete copper, reduce zinc, increase calcium, potassium and iron.

Magnesium Sulphate (Epsom salt) and Calcium Nitrate are normally applied separately. Combined they swap elements transforming into Magnesium Nitrate and Gypsum. For example, add a spoonful of each chemical into one litre of water and it becomes 'milky'. The white is Calcium Sulphate (Gypsum) and it gradually sinks. The clear liquid above the white contains Magnesium and Nitrate. Carefully pour the clear liquid and when 500ml is obtained this is about 0.5 of a spoon of Magnesium-Nitrate.

Potassium takes precedence over Magnesium. Deficiency symptoms of Magnesium usually indicate Potassium excess. Potassium Nitrate (230K atoms and 250K atoms) gives more drive for Potassium to enter into a plant compared to Magnesium Sulphate (80K atoms and 30K atoms). Change Magnesium Sulphate to Magnesium Nitrate (80K atoms and 250K atoms) to make a force that drives Magnesium and overrides the plants choice for Potassium.

Bromeliads utilize more iron than many other plants. Excessive utilization of Iron Chelates can result in the E.D.T.A component migrating to another metal (Magnesium, Manganese, Molybdenum, Calcium, Nickel, Cobalt) preventing utilization by the plant. Dead tips of growing leaves and root caps may be caused by E.D.T.A obstructing calcium to young cells. E.D.T.A locking up Magnesium is one probable cause of a leaf emerging white and eventually turns green. These are problems more commonly seen in cymbidium orchids rather than bromeliads.

Leaf analysis of wild collected plants reveals low nitrogen and high carbohydrate. A cultivated plant invariably has high nitrogen and low carbohydrate. In nature Ammonium is an occasional gift from a passing animal. This is micro organism food and plants compete with micro organisms to take-up ammonium and urea.

Carbohydrate is squandered to enable rapid assimilation of Urea and Ammonium. Low carbohydrate increases the risk of sunburn, pests, disease and the plants demise in cold weather. Supplying Urea and Ammonium to plants in constant shade can kill the plant through total loss of carbohydrate. Temperatures below 20°C for several weeks cause Urea-Ammonium toxicity and roots rot off.

Biuret is a deadly plant poison that forms during the manufacture of urea. Maximum allowable Biuret in Urea is: Agricultural grade 1.5%, Technical grade 1.0%, Food grade 0.4%.

Nursery owners use maximum amounts of Urea and Ammonium to grow plants to a saleable size in minimum time. The nearer the tropics the more urea and ammonium can be used. Plants imported from Far North Queensland have carbohydrate levels below what is essential for survival in a New South Wales winter. Keep plants of tropical origin in warm conditions for the first winter. Foliar feed with Potassium Nitrate and Calcium Nitrate, each at 3g/10litres to increase carbohydrate. Carbohydrate in Molasses is used in lieu of the plants carbohydrate to convert urea and ammonium into plant tissue.

One source of Nitrate is waste product of five consecutive species of two genera of micro organisms consuming Urea and Ammonium.

The breakdown is  $\text{NH}_4\text{-NH}_3\text{-NH}_2\text{-NO-NO}_2\text{-NO}_3$ . The atomic weight of N is 14 and H is 1 therefore Ammonium has 14 N and 4 H atoms. Nitrate ( $\text{NO}_3$ ) has  $\text{O}_3$ , atomic weight of 16 x 3 and has N 14 and O 48 atoms. Nitrate is not a micro organisms food. Plants are the sole users of Nitrate and without competition plants absorb Nitrate only on a bright day. When compound fertilizers are applied on a dull day the Urea and Ammonium must be absorbed while the Nitrate is probably ignored.

To be continued: Part 2 of this article next month

### **Novice Popular Vote**

1st	Flo Danswan	<i>Neoregelia</i> 'Laser'
2nd	Lesley Baylis	<i>Tillandsia</i> 'Marron'
3rd	Les Higgins	<i>Cryptanthus</i> 'Corinne'

### **Open Popular Vote**

1st	Kay Daniels	<i>Neoregelia</i> 'Dream Baby'
2nd	Marie Essery	<i>Vriesea</i> 'RoRo'
3rd	Trish Kelly	<i>Vriesea</i> 'Kiwi Sunset' (seedling)
3rd	John Crawford	<i>Neoregelia</i> 'Magali'

### **Judges Choice**

1st	Flo Danswan	<i>Neoregelia</i> 'Laser'
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### **Decorative**

1st	Wendy Buddle	Arrangement Bromeliads/Floral
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### **Comments from the Growers**

**Flo's** *Neoregelia* 'Laser' acquired in Brisbane in September 2013. It grows in her small shade house under 60% beige shade cloth, receiving morning sun, mostly watered by the rain lately, otherwise twice weekly, no pests or diseases. Flo uses regular applications of Seasol on her bromeliads.

**Lesley's** *Tillandsia* 'Marron' was purchased from Laurie Mountford in 2011, now at six years of age it is flowering. Having survived a cyclone and hailstorms this *Tillandsia* now lives a relatively charmed life in Lesley's new shade house under 70% beige shade cloth, receiving lots of rain and if not, carefully watered. No pests or diseases.

**Les** states his *Cryptanthus* 'Corinne' appears over potted but is growing well now compared to when it was first purchased as it was riddled with Pritchard's mealy bug and other nasties which required a lot of attention to eradicate. Les finally succeeded in rescuing his little *Cryptanthus* and grows it in his shade house which has a proverbial coat of many colours, being red, black, blue and green shade cloth and white on the lower half. Les grows the *Cryptanthus* depending on the colour he wishes to enhance under the appropriate coloured shade cloth.

## **Comments from the Growers** continued...

**Kay's** *Neoregelia* Dream baby was purchased from the Queensland Bromeliad Society Show and Sale 12 months ago, Kay has grown it under 50% black shade cloth in her shade house where it gets sun most of the day keeping the deep pink colour. Kay, fertilizes using Osmocote exact, it gets watered as the weather demands, more frequently in the middle of summer if it is not raining. No pests or diseases.

**Marie's** *Vriesea* 'Ro Ro' was a well grown, beautifully coloured vriesea, Marie purchased the original RoRo from PineGrove and this is a pup from that plant. Marie grows her plants under 70% beige shade cloth where they get sun most of the day, being watered as the weather demands, fertilizing them twice a year with no pests or diseases.

**Trish** received her *Vriesea* 'Kiwi Sunset' seedling from her daughter who had purchased it at a market on the Queensland Sunshine Coast. The plant has been repotted twice as it had a tendency to grow upright so Trish removed the lower leaves and set it deeper in the pot making it a better balanced plant. Fertilised when repotted it is grown under 50% black shade cloth with sun most of the day. Watered, as required by the weather, no pests or diseases.

**John** bought his plant in October 2011 as a small pup, he grows it under 70% beige shade cloth and in John's words "grows them hard, with no fertilizer". John waters his bromeliads by fogging them for four minutes every second night, no pests or diseases and John really likes the lipstick red colour of his *Neoregelia*.

**Wendy** won the decorative section with her floral arrangement of *Aechmea* inflorescences and greenery. Wendy arranged the floral material in a vase given to her by her husband making a very interesting and colourful display, ideal for the autumn when there is not a lot of attractive floral resources available.

## **Glossary information**

A discussion was held in relation to a botanical glossary, there is one available in the library, **A Bromeliad Glossary**, Bromeliad Society International, or if you are online, a pdf form can be e-mailed to you. Most good books have a glossary in them to assist with the understanding of the botanical terms most often used. A good website for definitions, more language-based, to google is WIKTIONARY which has links to Wikipedia. You can build up your own Glossary quickly for terminology you come across there because similar words and subjects are all blue-highlight-linked. (WIKTIONARY information from Geoff Lawn)