

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

Study Group meets the third Thursday of each month

Next meeting August 17th 2017 at 11 a.m.

Venue: PineGrove Bromeliad Nursery
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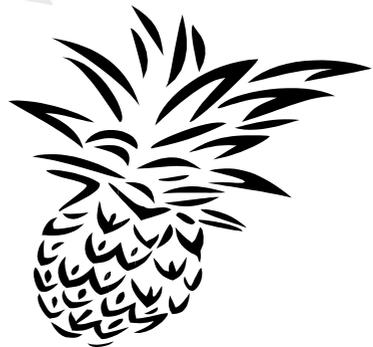
Discussion: July 2017

General Discussion

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Meeting 15th June 2017

The meeting was opened at approximately 11.00 am
The 14 members present were welcomed.
A total of six apologies were received.

General Business

Ross welcomed everyone and distributed another great Newsletter, again we're requesting short articles from the members, telling of their personal experiences growing Bromeliads in our region. Everyone has a story to tell, of very different happenings and experiences, from extreme weather events, hot, cold, dry to extremely wet, to animals invading your garden cropping everything off. Of course the best story of all when you take your prize plant to the local show and win the coveted prize. Please share it with us on paper, so everyone can read and enjoy your experience.

Ross discussed in short about an article by Derek Butcher on *Aechmea fasciata* and its variations and a comment by Adda Abendroth "how do you discern leaf colour in a herbarium specimen". In preparation for this article we have done the simple exercise of pressing and drying a leaf from each of four (4) different *Aechmea fasciata* species and cultivars to make our own herbarium specimens. The object of the exercise being to observe what the specimens look like after drying and to establish if the patterns and colour variations are distinguishable when the plants are pressed and dry!! (article ps 10, 11, 12)

We will report on our findings in coming Newsletters.
The *Aechmea fasciata* we pressed are:

Aechmea fasciata var. *purpurea*.

Aechmea fasciata a silver leafed form.

Aechmea fasciata a variegated leaf form.

Aechmea fasciata a very white albo marginated form.

After browsing the June Newsletter some discussion was had about Lesley's Ecuador article with readers wanting to know more. Ross spoke of seeing many different species of Bromeliads while travelling in Ecuador, one of interest was *Racinae fraseri* which many of us would be quite unfamiliar with was seen growing in lush river valleys whilst others were in very dry, dusty areas. This *Racinae* is one of the larger green plants with large spikes of deep red bracts and flowers with tiny white petals, very spectacular!

Ross informed us of current issues affecting Bromeliads and many other plant species. There is a scientific conference on Xylella virus being held in Europe in November 2017. The "main purpose of the conference is to bring attendees up to date with the latest Xylella research coming out of Europe, and provide a platform for in-depth discussion on the results of this research".

Show, Tell and Ask!

Keryn showed *Cryptanthus* 'Marble Green', a Margaret Paterson creation of 2007 crossing *Crypt. beuckeri* with *Crypt.* 'Florence' creating a plant with mottled, lime green foliage with some leaves having a dark green central stripe. A very showy plant when grown and allowed to form into a clump.

Dave, asked an interesting question, "why don't we find Bromeliads growing naturally on our trees in Australia ?" After a lot of discussion it was suggested that the following are contributing factors as to why we may not find Bromeliads en masse on our native trees.

- a) Continental separation and evolution.
- b) Our climate, seasonally is different, with less rainfall, altitude and being subtropical rather than tropical. We do not have the elevation and the cloud forests for the tropical species to survive, those rolling sea mists only happen here occasionally along the coastline
- c) The vegetation is quite different, we don't have the variety of semi deciduous rainforest species, our subtropical rainforest species have dense canopies of foliage, the trunks of some of our tree species shed their bark. The wet rainforests of their natural habitat can receive up to 10 metres of rain a year.
- d) Our winters are wet and cold and our summers are hot and dry which is opposite to their natural habitat.

However there are quite a few Tillandsia that quite happily set seed on our shade house walls and nearby trees. Occasionally *Aechmea*, *Alcantarea*, *Neoregelia* and *Vriesea* seedlings are found growing in unexpected places e.g. house roof on star pickets / fence posts etc. Many seedlings succumb in the extreme dry heat of our summers not allowing many Bromeliad seedlings to get a good foot-hold on our environment.

Can we suggest that you type into your search engine, Bromeliads, in the semi deciduous forests, wet and dry of South America, it will give you an indication of the climate and topography and the bromeliads and the specific needs of the different species.

Readers may have other opinions, please let us know your thoughts.

Keryn mentioned that she has some very large stumps of several Camphour Laurel trees that have just been removed from a near-by paddock and wanted to know if they are safe to grow Bromeliads on and around ?

We all suggested they be used in the landscaping of a new garden area making a feature of them. After allowing them to weather they should be quite safe to grow some of the hardier Bromeliads on. It was also suggested they clean up well around the site, collecting all the foliage and seed from the Camphour Laurels so nothing germinates and residue from the foliage does not affect the soil.

Michelle displayed a well grown *Quesnelia* 'Tim Plowman' which she has had for 18 months. It has flowered but needs repotting, Michelle's dilemma is one of the many pups had grown over and down the side of the pot. Michelle asked what she could do ?

Most thoughts were that Michelle cut off the pup and pot it separately, this will allow the placing of the mother plant into a larger squat pot so it can continue to spread into a larger clump. *Quesnelia* 'Tim Plowman' is definitely much more appealing as a well established clump rather than a single specimen. (photo p.9)

Michelle also spoke of her sad experience with her Bromeliads and the extreme heat of last summer. Lots of fried Bromeliads now down to their stumps, though some are finally showing signs of returning to life with tiny green buds / nodes developing. Many plants unfortunately had to be discarded as they totally rotted in the centre but thankfully Bromeliads are very tough and forgiving with some pulling through. Good luck Michelle!!

Dave's *Vriesea* from our May meeting was identified as *Vriesea michaelii* the correct name added to the photo p.9 June Newsletter. We have had a request from a reader of our Newsletter for seed of this plant if anybody has any, so check your *Vr. michaelii* plants and make a note the seed is wanted.

Trish had several *Neoregelias* from her garden displaying notable variation between the parent plant and the pups, mostly colour as a response to extra light on one side of the plant.

Coral displayed a *Neoregelia* 'Tom Wolfe' showing the considerable variation between mother and pup, one plant had been grown in bright light whereas the other in a shadier location. Some growers may have this plant in their collection tagged as *Neo. uleana* however the BCR states: "This species is little known and of doubtful origin - discovered in a Botanic Garden in 1896! In all probability this is a mis-spelling of 'olens hybrid' where it has clear links".

If you have this plant tagged as such change it to *Neoregelia* 'Tom Wolfe'.

The Succulent Bromeliads: Cultural Information

by Penrith Goff, S.E. Michigan Bromeliad Society (revised 2017)

One of the best-kept secrets among succulent enthusiasts is the existence of succulent Bromeliads. At least that's the impression I get after glancing at a few of the books on succulents. The fact that many writers give them very short shrift - or none at all - probably reflects a certain lack of appeal. Their flowers do not dazzle like *mesembryantheums*, there are no *elephantine caudexes* among them, and as to far-out form, they simply can't compare with the extra-terrestrial denizens of the African desert. Still, they do have an appeal of their own. Hybridizers have been enhancing this appeal, so that there are a number of very handsome hybrids available. In general, they are very tough, drought resistant plants which make ideal houseplants and which (properly acclimated) can be put out in the summer without fear of sun damage.

The following paragraphs will introduce a few of the major genera.

Bromeliads began as terrestrials. Most of them, in their struggle for light, moved from the dark forest floor up into the trees or onto open rock where there was no competition. Having adopted this epiphytic (or saxicolous) style of life, they developed a reservoir or "tank" in the centre of their rosettes in which they stored water from rain to rain. They began to depend more on their leaves than on their roots for the procurement of water and nutrients. The atmospheric Tillandsias, the true "air plants", began to use their roots *only* as a holdfast to bark or stone; some e.g. *Tillandsia usneoides* (Spanish moss) stopped producing roots at all under ordinary circumstances. Some Bromeliads, to be sure, were quite happy with their forest floor habitat. The beautiful earth stars (*Cryptanthus*) flourished in the dank and deeply shaded environment. They did not develop a tank because they didn't need one. One *Cryptanthus* species, however, *Crypt. warasii*, was forced to adapt to a more rugged way of life. *Cryptanthus warasii* survived under arid and sunny conditions that would quickly have killed off any of its rain-forest cousins. It adapted by developing thickened leaves (a tank would have been useless!) in which it could store water and armed itself with teeth to keep animals at bay. In short, it became a succulent.



Cryptanthus warasii typifies the succulent bromeliads. It is a rosette of many leaves spiralled around the central axis. It forms new offshoots in the leaf axils, soon forming a clump. It could be taken for an aloe or agave when it is not in bloom. However, instead of being hoisted on a lofty scape, its flowers are nestled in the centre of the rosette, like all *Cryptanthus*. Like *Crypt. warasii* the

succulent bromeliads often resemble an agave, aloe, or haworthia. One difference is in the leaf surface. The scales (trichomes) which produce the silver banding and the often velvety surface characteristic of many bromeliads are found also in the succulent bromeliads. *Cryptanthus warasii*, despite its tough-looking exterior, is velvety to the touch. The leaves of *Crypt. warasii* are edged with well-defined teeth (compared with the fine teeth of its rainforest relatives).

The leaves of succulent bromeliads are usually armed, often viciously. Unlike their epiphytic relatives the succulent Bromeliads develop a prodigious root system and require good-sized pots in order to grow well. Many of them tolerate full sun. Although they are succulent they require a good deal of water during the growing season. During the winter they are best kept, like other succulents, on the dry side at cooler temperatures. Some can get through the winter with no watering but most need to be watered occasionally, especially if they show signs of dehydration. They may be fertilized during the growing period but weakly as with other succulents. Their character is best developed under "hard" cultivation: lots of light, moderate water, little fertilizer.

The following list is limited to succulent terrestrial bromeliad species which can grow under the same conditions as cacti and other desert succulents, often growing in company with them in their natural habitat.

***Cryptanthus*:** 80 species - Succulents among the Earth Stars are the exception: *Cryptanthus warasii*, as described above, and *Crypt. bahianus*, which, though not as succulent as *Crypt. warasii*, flourishes in sun and sandy soil.



***Deuterocohnia*:** 17 species - *Deuterocohnia brevifolia* and *Deut. lorentziana* form large mats or cushions of small rosettes in the Argentinean and Bolivian Andes. Their tubular green flowers (1+ inches) emerge from leaf axils. *Deut. longipetala* has mat-forming rosettes with 4"-12" leaves, and flowers borne on a scape 2-1/2 plus ft high. The scape, if left uncut, will bloom again in following years (unique among bromeliads!)



Deuterocohnia brevifolia



Deuterocohnia longipetala - showing flowers borne on a scape



Species numbers up-dated 2017, photos supplied by Derek Butcher and from various web sites.

***Dyckia*:** 170 species - Native to arid regions of Brazil but also found in neighbouring countries to the south-west. Winter temperatures down to low 40°F (4° - 5°C). Clump or mat-forming with small yellow, orange or red flowers borne on a short scape (but *Dyc. remotiflora* has a 12-16 inch scape). Seed is borne in capsules.



***Encholirium*:** 34 species - Native to dry areas in north-east Brazil. Similar to *Dyckia* in habit. Flowers green or yellow-green. *Encholirium spectabile* named for its inflorescence, 16 inches long, covered with 1 inch yellow flowers.



Encholirium spectabile



Encholirium subsecundum



***Hechtia*:** 75 species - Native to Mexico and found also in southern United States, Guatemala and Honduras. Inflorescence intricately branched, carried on long stem. Flowers white, green, yellow-green, pink. Blooming shoot does not die immediately after blooming. This, together with prolific pupping, produces large clumps. *Hechtia tillandsioides* (around 12 inches diameter) has soft gray leaves and, like tillandsias, is epiphytic. No teeth.



***Orthophytum*:** 57 species - Native to Brazil and so-named (ortho + phytum = straight plant) because at maturity the stem carrying the inflorescence also bears normal leaves, giving the plant an upright appearance. *Orthophytum foliosum* grows to 2 ft high. *Orthophytum saxicola* does not develop tall scapes, but covers rocks with mats of 4 - 6 inch rosettes, its white flowers nestled between leaves.



Orthophytum foliosum



Orthophytum saxicola - bronze and green plants





Cryptanthus 'Satin Cascade'
1st Open Les Higgins



Neoregelia 'Blast'
1st Novice and Judges Choice
Keryn Simpson



'Logged On' displayed by Dave Boudier



'Basket Case'
1st Decorative Keryn Simpson



Tillandsia duratii



Cryptanthus 'Marble Green'
grown by Keryn Simpson



Neoregelia 'Sunday Light' unreg.
grown by Trish Kelly



Tillandsia bulbosa

grown by Laurie Mountford



Quesnelia 'Tim Plowman'

and



Neoregelia 'Perfection'

grown by Michelle Hartwell

Photo's supplied by: Ross Little

Aechmea fasciata (Lindley) Baker by Derek Butcher June 2017



This plant has been in demand since it was first named in 1828 and was a great interest to botanists in the 1800s as shown by the number of synonyms below:

Aechmea fasciata* var. *fasciata

Billbergia fasciata Lindley, Bot. Reg. 13: pl. 1130. 1828.

Hohenbergia fasciata (Lindley) Schultes filius in Roemer & Schultes, Syst. 7(2): 1253. 1830.

Billbergia rhodocyanea Lemaire, Fl. Serres 3: pl. 207. 1847. Type. *Van Houtte Hortus ex Van der Maelen Hortus* (no known specimen, so the original plate).

Hoplophytum fasciatum (Lindley) Beer, Bromel. 129. 1856.

Billbergia glaziovii Regel, Gartenflora 34:260, pl. 1203. 1885. Type. *Glaziou* in Petrograd Hortus s n (holotype, LE n v).

Aechmea leopoldii hortus ex Baker, Handb. Bromel. 58. 1889; nomen.

Aechmea hamata Mez, Mart. Fl. Bras. 3(3): 347. 1892. Type. *Berlin Hortus s n* (holotype. B: photo F 11314).

Aechmea rhodocyanea Wawra ex Mez, DC. Monogr. Phan. 9:255. 1896; nomen

Quesnelia rhodocyanea Wawra ex Mez, DC. Monogr. Phan. 9:255.1896; nomen

Aechmea fasciata* var. *purpurea (Guillon) Mez, Pflanzenreich IV. 32:152. 1934.

Billbergia rhodocyanea [var.] *purpurea* Guillon, Rev. Hortic. 55:453. 1883.

What is interesting to me is that there are no herbarium specimens in REFLOA but 28 of var. *fasciata*.

As Adda Abendroth says, see below, this variety is probably more common than the Type but then how do you discern leaf colour in a herbarium specimen.



Not only were botanists interested in this species but the nurserymen in Europe started to cross and back cross seeking plants with larger inflorescences. I quote from a letter from Adda Abendroth in Brazil to Olwen Ferris in Australia on June 17th 1968 "Years ago Dr. Oeser sent me some *Ae. fasciata* seed from Germany. Several plants raised from it flowered and put their wild sisters to shame. Mature plants are about twice as big, clad in a real snow-dress in winter, and have a larger and richer spike and more simultaneous flowers. The flower bracts are slightly curled. It is our light-green variety plus a successful beauty treatment. Our light-green form is faithful as to shape and size and habits. It blooms in early Spring, or a little later, sparingly. The plants grow on tree trunks or branches in virgin forest. The colonies are not large, to 3-5 shoots. Another variety has dark green leaves, sometimes tinged with red. Size about the same as the light-green form but not so even, colonies somewhat larger. Habitat the same.

The third form appears growing on nearly naked branches of old trees, mostly single rosettes 20-30cm in diameter. The colour is rosy, shape nice and even. This form, when planted in shade (tied to a branch or a trunk) has darker and longer leaves. The rosy pink seems to develop only high up in the trees, exposed to sun and wind.

The fourth is the variety *purpurea* which has wine-red leaves. Habit like the dark-green form. In deep shade the leaves get very long and fall over. The red is almost black making a striking contrast with the white bands. This is more common than the total of the other three."

It was not until 1981 that we see Adda involved in a new variety:

Aechmea fasciata* var. *pruinosa Reitz, Sellowia 33: 55. 1981

Leaves, scape bracts, and flowers white farinose; densely covered in scales forming a white skin.

Type: Brasil, Santa Catarina: Ipanema plant cultivated in the State of Rio de Janeiro, collected *Adda Abendroth s.n.* 14 Feb. 1981. Holotype HBR.

In 'Bromeliaceas' by Reitz 393-397, 1983 we read:

"Variety, so far, is only known by the type, from the interior of the forests of the State of Rio de Janeiro and possibly very rare; collected in State of cultivation, in Itapema, Santa Catarina by R. Reitz." This indicates it is rare in the wild but actively cultivated in Brazil and it seems strange that a plant with this name has not been quoted outside Brazil. According to REFLOA no further herbarium specimens have been lodged. However, it does seem to link to the cultivar 'Silver King' which is shrouded in mystery but emerged in this period.



Variegations have been reported in Seidel's Catalogue in 1976 but nothing has been described botanically other than the following:

Aechmea fasciata* var. *flavi-vittata Reitz, Sellowia 33:55. 1981.



Leaves with longitudinal lines alternately green and yellow.

Type: Brasil, Santa Catarina: Brusque, cultivated in the State of Rio de Janeiro, leg *J. Pehnk s. n.* (15.2. 1981), Holotype HBR.

Again we read in 'Bromeliaceas' by Reitz 393-397, 1983: "The variety, so far, is only known by the type, from the interior of the forests of the State of Rio de Janeiro; collected in State of cultivation, in Brusque, Santa Catarina, by R. Reitz." This indicates it is rare in the wild but actively cultivated in Brazil and it seems strange that a plant with this name has been rarely quoted outside Brazil. According to

REFLORA no further herbarium specimens have been lodged. In any event, variegated plants do not reproduce from seed and should be treated as cultivars. As such I will be adding *Aechmea* 'Flavi-vittata' to the BCR. Most variegations in cultivation have white stripes not yellow and we find reference to this in Seidel's Catalogue in 1976. Interestingly, they are not mentioned in DeLeon's article on variegates in Journal Brom Soc 35(1): 34-37, 1985. In fact nobody seems to have given them a proper cultivar name.



FNCBSG Chemical Fertiliser Discussion lead by Les Higgins

Bromeliad nutrient elements in descending order of value are: K, N, Ca followed by Mg, P and S. However the fertiliser Acts (circa 1900) declare the most important elements to be NPK.

There are "general purpose" fertilisers, "plant specific" fertilisers and fertilisers (and pesticides) for cold, temperate and tropical climates.

Gary brought in for Show and Tell a Tillandsia in its red phase, its nutrient supply is Campbells Yellow™ (Potassium nitrate and Ammonium phosphate plus a few grams of trace elements). This nutrient is formulated for orchids in temperate areas, if used on Orchids in England's colder climate the roots could rot off from Urea/Ammonium toxicity. England's orchid nutrient is Phostrogen™ (Potassium nitrate and soluble mono Calcium phosphate and a few grams of trace elements). The calcium and nitrate in Phostrogen makes this a better Bromeliad nutrient than Campbells Yellow while the ammonium in Campbells Yellow gives a needed driving force for Orchids. These are two good nutrients formulated for the same plant in different climates.

Fertiliser mixes, unless extremely dilute, can never be complete nutrients as some chemicals combine into insoluble compounds. The advice is: "separately use Calcium nitrate and Magnesium sulphate", combining the two chemicals makes Gypsum and Magnesium nitrate. A volunteer from the Group was asked to mixed the two chemicals in hot water, eventually it will separate, the gypsum sinks and the clear liquid forming at the top contains Magnesium and Nitrate. Magnesium as a nitrate has a greater take-up than Magnesium sulphate. Plants become increasingly green.

Calcium and phosphate grab together becoming Tri-calcium-phosphate to remain evermore as Hard Rock Phosphate. This occurs when lime or calcium is in the potting mix and liquid fertiliser with phosphate is applied. Tri-calcium phosphate was shown which was once used to stabilise pH in tissue culture. Another volunteer was called upon to make Hard Rock Phosphate using Soft Rock Phosphate as a Calcium source.

In the June 2017 FNCBSG Newsletter two formulas 'A' and 'B' are described on page 12, a third volunteer was asked to make formula 'A' which supplies the three most important Bromeliad nutrients: Potassium, Nitrogen and Calcium. A fourth volunteer was asked to make formula 'B' that supplies Potassium, Phosphate, Magnesium and Sulphur. Both formulas need trace elements and are improved with Les adding molasses and a pinch of seaweed powder into each formula. Neither formula has massive



For want of a term I will use *Aechmea* 'Albo-vittata'. Variegation is most likely to occur in cultivation via 'sporting' or mutation in seed raising so it's highly possible that this happened to one of the many infra-specific cultivars rather than a 'wild' species.

The list and photos below are infra-specific *Aechmea fasciata* cultivars:

- | | | | |
|------------------------|------------|---------------|----------------|
| 'Aton' | 'DeLeon' | 'Mackerel' | 'Smoothie' |
| 'Auslese' | 'Frost' | 'Morgana' | 'Snaakse Ding' |
| 'Big Mama Fasciata' | 'Ghost' | 'Primera' | 'Stalker' |
| 'Canvey Pink Surprise' | 'Ivory' | 'Sangria' | 'Supernova' |
| 'Checkers' | 'Leucadia' | 'Silver King' | 'White Head' |



'Clara'



'Kiwi'



'Sangria Blanco'



'Silver Queen'



◀ 'Supreme'

'Supernova' ▶



Photos supplied by:
Derek Butcher and the BCR

growth potential, for that intersperse with Seasol™ as it has growth stimulates, BUT remember Seasol is pH10.5. Seasol too dilute to be registered as a fertiliser has 12 elements from seaweed, Powerfeed is suggested/rumoured as being the added nutrient source.

Think of a plant as a building site, nutrients N, P, K, Mg, Ca and Sulphur are the building material, the equivalent of bricks and timber etc. Trace elements are the workers, without them the house doesn't get built. Trace elements as defined in the Fertiliser Act are Molybdenum (Mo), Copper (Cu), zinc (Z), Manganese (Mn), Iron (Fe) and Boron (B). Seaweed powder gives many lesser known trace elements including Iodide, Chloride (Cl), Cobalt (Co), Sodium (Na) and Silicon (Si) all of which are essential in minute amounts. On a dull day building work is reduced, plants cannot take up Nitrate (NO₃) while Urea/Ammonium (NH₄) continues to be absorbed at a loss of carbohydrate.

The "Law of the minima" states that plant growth is restricted to that available from the nutrient in least amount. During the growing period apply a seasonally balanced dilute liquid nutrient frequently to a moist plant. Uptake is by Osmosis (dilute flowing into more concentrate). Plants absorb their needs from a dilute nutrient soup, the closer the element % is to the plants requirement the better it is. Reverse osmosis occurs when the applied solution is more concentrate than the sap inside the plant. Leaves quickly droop and fall, death is inevitable.

As the weather becomes colder use an occasional Potassium nitrate with Potassium phosphate in equal amount plus trace elements and molasses. Another volunteer was asked to mix NO₃ with MPH. Nitrogen maintains life, Potassium looks after health and Phosphate gives cold endurance and Molasses maintains carbohydrate. During the coldest 6 to 8 weeks of winter it is better not to give water or nutrient to allow vernalising (the exposure of seeds or plants to low temperatures in order to induce or hasten flowering).

The law demands that every fertiliser package has a Guaranteed Minimum Analysis. We examined the analysis published by several popular fertilisers used by members. Simple arithmetic can tell us the quantity and cost of chemicals used to produce a fertiliser. Divide the stated amount of each element % by the nutrient % and then multiply by 1,000 (grams/kilo). The FNCBSG June 2017 Newsletter is needed for the nutrient %.

Over half of a popular fertiliser used by growers is Urea and Biuret is its deadly impurity. At the time of formulation Biuret was 1.5% maximum in agricultural grade, 1.0% max. in technical grade and .4% max. in food grade. The stated 0.4% in 570 grams indicates technical grade urea. Regular random checks are

made to ensure the product is not less than claimed in the product analysis and therefore the amounts are understated.

The popular fertiliser assessment: was that it is a formulation for a green leafy plant with a high level of urea / Ammonium which can drive a plant into succulent growth.

Used on Cryptanthus it would make large soft leaves susceptible to cold, heat and sunburn. The Nitrate, Potassium, Magnesium and Sulphur are inadequate while Calcium and iron are absent. Individual applications of Iron sulphate, Epsom salt and Calcium nitrate could substantially correct the deficiencies. The potassium would need to be increased by using Potassium-sulphate.

Although the fertiliser discussed is considered unsuitable for Cryptanthus it is never-the-less a good quality fertiliser for the right plant.

	Nitrogen (N) as nitrate	2.6%	
	Nitrogen (N) as ammonia	2.2%	
	Nitrogen (N) as Urea	26.2%	
	Total Nitrogen (N)	31.0%	
	Phosphorus (P) as water soluble	4.57%	
	Total Phosphorus (P)	4.57%	
Potassium nitrate	Potassium (K) as potassium nitrate	8.71%	
	Total Potassium (K)		
	Magnesium (Mg) as Magnesium sulphate	0.12%	
	Sulphur (S) as sulphates	0.064%	
	Copper (Cu) as copper sulphate	0.005%	
	Zinc (Zn) as Zinc sulphate	0.02%	
	Boron (B) as sodium borate	0.005%	
	Manganese (Mn) as Manganese sulphate	0.04%	
	Molybdenum (Mo) as sodium molybdate	0.002%	
Poison	Maximum Biuret	0.4%	

Ammonium phosphate

Trace Elements

To be able to read the Guaranteed Minimum Analysis enables us to select the most suitable pre-mixed fertiliser for our plants. To say a chemical fertiliser is "No Good" shows lack of understanding. All chemical fertilisers have an appropriate use. The Osmocote available at our meetings is N11 : P5 : K18 which is a good ratio for Bromeliads and Cactus.

Feedback Corner

As an editor it is always good to hear from readers and know the information that we compile and put into print is helpful to others, thanks for the kind words Herb. FNCBSG Newsletter April 2017, p.13 — a call for help from Les Higgins for cultural tips for growing and attaining the colour of *Cryptanthus* 'Lisa Vinzant'. After reading Les' request a reader has responded by asking the question on face book with the following response being offered: Lightly shaded with morning sun, too high nitrogen elongates the leaves and turn them more green. Slightly high potassium will help to strengthen the colour, however too high phosphorus will promote premature flowering. Light intensity variance also appears to help. Experimenting is a key factor as there are no fixed rules. Thank you Brian M. for following up on this request, let us know your findings as Les will also.

Novice Popular Vote

1st	Keryn Simpson	<i>Neoregelia</i> 'Blast'
2nd	Michelle Hartwell	<i>Neoregelia</i> 'Perfection'
3rd	Dave Boudier	<i>Neoregelia</i> 'Isabel Garnet'

Open Popular Vote

1st	Les Higgins	<i>Cryptanthus</i> 'Satin Cascade'
2nd	Laurie Mountford	<i>Tillandsia duratii</i>
3rd	-----	-----

Judges Choice

1st	Keryn Simpson	<i>Neoregelia</i> 'Blast'
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Decorative

1st	Keryn Simpson	'Basket Case'
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A Growers Comments:

Les brought along to support his discussion on fertilisers *Cryptanthus* 'Satin Cascade' - 'Satin' ('Peaches' x 'Cheerful') x 'Cascade' (a variety of *sinuosus*). *Cryptanthus* 'Satin Cascade' is a larger version of *Crypt.* 'Cascade'. It is best grown as a hanging basket plant in a plastic container as wire baskets become very hot and burn leaves and stolons that touch the wire. The plant on show was a pup taken from an unattractive parent with pups hanging far below the basket, a result of excessive Urea/Ammonium phosphate. The nitrogen for this plant has been exclusively NITRATE. The result is short stolons with pups rising above the plant.

As a basket plant when the stolons appear add a little Urea to formula 'A' and Urea or Ammonium phosphate to formula 'B' (June Newsletter). This makes the stolons extend and flop down outside the basket. Stop using Urea/Ammonium phosphate when the stolons are part way down the basket and then use only Nitrate. Before the stolons reach the bottom of the container they turn outward and the pups form an attractive garland.

Where do I Find the Dates ?

www.bromeliad.org.au then click "Diary".

Check this site for regular updates of times, dates and addresses of meetings and Shows in your area and around the country.