

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

Study Group meets the third Thursday of each month

Next meeting June 21st 2018 at 11 a.m.

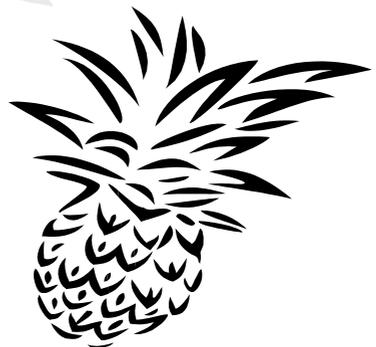
Venue: PineGrove Bromeliad Nursery
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Discussion: May 2018
General Discussion

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Meeting 19th April 2018

The meeting was opened at approximately 11.00 am
The 17 members present were welcomed.
A total of four apologies were received.

General Business

Most of the morning was taken up with a friendly chat about numerous subjects including plants, pesticides and internet sites. Apparently the BCR is the most reliable source of information regarding hybrids and cultivars. It was said that one objective of any club is to increase the knowledge of its members, this means questions are to be encouraged on all aspects of Bromeliad culture.

Confidor® was again mentioned. There seems to be a number of products that have imidacloprid as the active ingredient (a.i) at various concentrations and prices, however do consider the alternatives before using chemicals and their effect on the good bugs.

A new section in our Newsletter to be titled **Chores for the month** has been suggested and is to be trialled, its success will depend upon member co-operation. As our meetings are recorded please speak into the dictaphone to say what task you will be doing next month, one sentence is sufficient. Hopefully we will gradually build up a 'guide' for members to help with planning your gardening activities ahead of time.

Sue kept us up-to-date about Trish, apparently she is back on her feet, slow and steady at the moment and can't wait to come back to meetings again.

Ross passed around a new book "Tillandsias My Way" written by Bob Hudson, one copy is to go into the library with copies on offer for sale to members. This book has many photos for you to drool over and some text on care and tips, to pot or to mount, how to remove offsets, seed raising and much more.

Show, Tell and Ask!

Sue asked when should pups be removed?

Plants with various sized pups were then displayed indicating which is the more desirable size for removal and those that are too small. Pups attached to mother plants can be removed when one third to half the size of the parent. Preferably allow the cut end to heal for a day or two before potting. For us in the Northern Rivers area of NSW it is still warm enough in April to remove pups however greater care should be taken as the months cool down. Adventitious or grass

pups can be removed when quite small 20 to 30mm and community potted (several per pot), for good strong fast growth fertilise regularly. Occasionally a pup is cut a little 'short' or snapped 'short' when being removed, accidents do happen but there is a chance of survival. Place these 'short' pups in the water within a leaf axil of a large plant e.g. Alcantarea, in this environment there is a chance that the pup may produce roots. Once good strong root growth has been observed treat the pup as per normal, potting it in your preferred mix. For some pups the use of skewers to help stake the pup in place is beneficial for root growth, the more stable your plant is the quicker the roots will take hold of the potting mix. Before potting pups remove the basal leaves and bracts along the stolon, those that are covering the heel of the plant from where the new roots will emerge. This enables the roots to get into the potting mix easier which then helps the plant become stable much quicker.

When re-potting your Bromeliads remove only the dead leaves, remember with only minor defects (leaf tip burn) the leaf is still helping feed the plant. Whenever green remains in a leaf it is photosynthesising to the benefit of the plant. Plants withdraw all the mobile nutrients as the leaf decays *i.e.* K, N, Ca, Mg, P, S. The only minerals remaining in a dead leaf are the trace elements and their quantity is minute. Only cut out the dead section of a leaf. What is most satisfactory for the plant's physiology is to let the leaf gradually decay thus allowing abscission cells to gradually form and seal the separation. When trimming a leaf, cut to the natural shape of the leaf tip, thus making the trimming less noticeable.

Several Billbergias were shown this month, members acknowledging they look better grown as undivided clumps rather than single specimen plants. The more deprived of nutrition the more spectacular the colour becomes in a Billbergia.

John has found a most interesting commercial nutrient. It includes Potassium Sulphate. He will be bringing samples in next month. Potassium is the element most in demand by Bromeliads and Sulphate can be expected to be deficient in nutrient mixes. It is a complete high 'K', granular fertilizer with trace elements for winter called: Verde-Cal K-Plus 0-0-12.5

Chores for the Month

Preparation for winter should be in progress now. Increase as much as possible the amount of light to the plants. Full sun from May to August has insufficient heat to damage a plant. Plants of tropical origin will appreciate the light source being extended to 12 hrs/day and Wardell's (Northern NSW) lowest overnight temperature by mid-May on average is only 14°Celsius. Provided that the night temperature is above 12°C foliage nutrient sprays can continue.

The intention should be to build maximum carbohydrate. Nitrogen should be exclusively in the nitrate form. Potassium continues to be necessary and Phosphate hardens the plant for winter survival.

An occasional dilute spray of Potassium nitrate (KNO₃) and Mono potassium phosphate (MKP) with trace elements is recommended. If a commercial product is preferred then orchid growers use Campbells Yellow® that has no Urea and little Ammonium. Phostrogen® is another product that can be recommended. There would be similar products, it's just a matter of reading the Guaranteed Analysis: No Urea and little as possible Ammonium.

Now is a good time to remove old flower spikes if the seed is not required, this will enable additional food supply to be directed toward pup production. Don't forget, just because your plant has finished flowering, it doesn't mean you don't need to feed it anymore, pups are on their way next which means they will need feeding even though it is winter. Be observant in the garden and shade house, if there is a sign of growth, there is the need for food as your plants are growing. At the same time take note of plants that are dormant and adjust your watering for them accordingly. Allow the mix to become almost completely dry, the last thing you want is soggy roots causing root rot. Do not feed dormant plants.

Removing old leaves from around the base of plants now will help improve air circulation around your plants and also help with pest control. Check both faces of the leaves for pests and treat accordingly if necessary. Pest infested leaves should be put in the bin or burnt rather than added to the compost heap.

Winter temperatures can be savage on cold sensitive plants, have a location under cover prepared ready to move those plants to as temperatures drop. Maintain good air circulation but be mindful of cold draughts. Cold sensitive plants would benefit from a fertiliser high in K (Potassium / Potash) at this time to help strengthen plant cells.

Cooler temperatures also bring many plants into flower, take advantage of these during winter to brighten your home by taking some indoors. Guzmanias and Vrieseas are in abundance with long lasting inflorescences that'll brighten any room on gloomy days. Mist indoors occasionally but take outdoors and water thoroughly once a week or so.

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.

xAndrolaechmea 'O'Rourke'

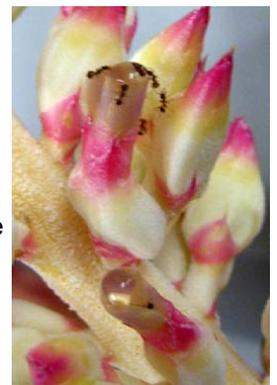
This is a somewhat unwieldy name but will remind us all of Fay O'Rourke who passed away in December 2003 and will be a loss not only in Florida but to the Bromeliad world. She was an active member for over 16 years of the Florida West Coast Bromeliad Society as well as being an office bearer in several positions. It is especially a loss to me because she was one of my 'Friendly Ferrets'. A 'Friendly Ferret' is one who helps me in my role of Registrar by asking questions about plants which are not recorded in the Bromeliad Cultivar Registry.



In the early 1990's Fay obtained a plant called *Androlepis skinneri* but when it flowered, her inquisitive mind told her that it was incorrectly named. Who else had got a plant from the same source and looked no further?! It has been hinted that this hybrid may be linked 40 years ago to Mulford Foster. If it is, then Fay's

action is even more meritorious. Fay consulted the current Floridian experts as to its proper identity. Clearly it was a bigeneric because there is only one species in *Androlepis*! No doubt it was called *Androlepis skinneri* because this was where the seed came from, BUT who was the bearer of the pollen ? The final consensus was an *Aechmea distichantha* of some sort.

Its photo featured for some time on <http://fcbs.org> "What is it section" and in November 2003 Mike Andreas finally bit the bullet and considered it should be registered as a bigeneric and acknowledging Fay's efforts. So *xAndrolaechmea* 'O'Rourke' came into existence and will be a reminder in the future to those who grow this plant that there is a bit of history behind some of the names given to cultivars.



Ants enjoy the sweet nectar being exuded from the flowers.

Photos by: Ross Little



Tillandsia disticha
grown by Dave Boudier



Tillandsia tectorum
grown by Gary McAteer



Goudaea 'Sons of Tiger Tim'
grown by John Crawford



'Holy Cryptonite'
grown by Dave Boudier



Tillandsia fuchsii forma *gracilis*
grown by Sue Mackay-Davidson



Tillandsia caerulea
grown by Keryn Simpson



Vriesea 'Speckles'
shown by Flo Danswan



Tillandsia fasciculata
grown by Coral McAteer



Neoregelia 'On the Fence'
shown by Coral McAteer



'Mini Me'
shown by Keryn Simpson



Neoregelia 'DeRolf'
1st Open Flo Danswan



Neoregelia 'Skotak's Tiger'
1st Novice Kevin Jones



Billbergia 'Poquito Mas'
Judges Choice Coral McAteer



Neoregelia 'Gift'
grown by Steve Davidson



'25 in a row - for **Winx**' 1st Decorative John Crawford



Aechmea 'Shining Light'
grown by Michelle Hartwell



Vriesea 'Tachete Gold'
grown by Sue Mackay-Davidson



Wallisia cyanea
1st Tillandsioideae Les Higgins



Aechmea 'Loreto'
grown by Ross Little



Billbergia 'Connie Timm'
grown by Keryn Simpson



Dyckia 'Silver Plate'
grown by Dave Boudier

Tillandsia near Santa Isabel, Azuay Province, Ecuador 2015

One would think of Ecuador being on the equator would be lush tropical rainforests, not entirely! We left the lowland rainforest and began to climb into the mountains where at first it appears dry and barren. As we proceeded into a valley our thoughts were "where on earth are we being taken to" when suddenly we began sighting large tank type Tillandsias, too far off to identify but the mood changed immediately. We were hoping to see *Tillandsia tectorum* in this region nothing but dry scrub and those large tank types were to be seen so far.



Over the next hill, then up and up we went again, it was so dry. Fortunately the weather was kind to us with clear skies and just a light breeze. Our bus came to a halt almost at the end of the road, the driver offering for us to stroll along the road back down the hill where he would collect us. Our guide told us we may see many Bromeliads along the roadside.

We hadn't! So we decided to cut across the barren looking hillside instead as we had noticed a large tank type Tillandsia easily accessible (circled) and we really wanted to know what it was. As we walked across this harsh landscape many hidden treasures began to appear which caused great excitement. The large tank type we believe is *Tillandsia lymanii* ▶



◀ *Tillandsia latifolia* were hiding among the scrubby bushes shimmering in the sunshine were virtually unblemished clumps. Some lessons to be learnt here about how to grow our plants at home.



Our first sighting of that highly sought after *Tillandsia tectorum*, wow! They were in flower and looked absolutely amazing growing terrestrially in the rocky ground. Any nutrients would be gained from fine dust particles blown in the wind as there appeared to be very little humus or detritus to be breaking down to feed these plants. Again we noticed the amazing condition all these plants were in considering their growing conditions. Moisture up here is gained from fogs flowing up the valley.

A glint of bright yellow further along the hillside caught my eye so no lingering around the *Till. tectorum*. As much as it was hard to leave them and move on it was obvious there were more hidden treasures to be found. Passing more clumps of *Till. tectorum* made us nearly forget about the bus and we really wanted to get to see those yellow flowers. A breathtaking sight, *Tillandsia disticha* ▶ as I had never seen them before, much taller and such vibrant colour. At home we only achieve smaller plants with a greenish yellow inflorescence not this vibrant bright yellow seen here, simply stunning.



Sprawling across this harsh landscape as if placed there for erosion control were clumps of ◀ *Tillandsia caerulea* in bloom.

The clumps of Tillandsia on this hillside were not only vegetative offsets but many tiny seedlings were seen also. In such a harsh environment growth must be slow, barely making life sustainable.



On our way down the valley we came across *Tillandsia tectorum* in great swathes. The steep hillside here was difficult to traverse as the ground was soft and loose, ash-like not solid as found on the previous hillsides. Here the Tillandsia and various forms of cactus were helping us keep our footing. Other Tillandsia seen growing in this area

were *Till. mima*, *secunda*, *cearulea* and *lymanii*.

From our vantage point high above the river below we could only wonder what those huge Tillandsia with pendulous spikes were hanging on the sides of this rocky outcrop.

Fortunately in this difficult terrain such magnificent visual feasts are still there



and haven't suffered from over collecting.

As we neared the valley floor we saw ◀ *Tillandsia fendleri* growing terrestrially and *Wallisia cyanea* ▶ in huge populations on the cliff faces of the roadside cuttings. *Tillandsia complanta* was among them in great numbers too.

By Ross Little and photos.



Tillandsia Part 2 - Husbandry

by Les Higgins 2018

The epiphyte 'silver' *Tillandsias* are CAM plants. Their stomates are closed during the light period and therefore there is no water movement during the day. The green *Tillandsias* are C3's and C4's that photosynthesize in daylight and utilize water during the day. (refer FNCBSG Newsletter August 2017 giving CAM, C3 and C4 details).

Tillandsias appear to grow more successfully when misted rather than watered. As temperature increases metabolic rate demands more oxygen, however wet trichomes can flop over stomates and limit their functioning. Both gaseous exchange and photosynthesis can be inhibited by over watering.

Tillandsias such as *Till. ionantha* and *Till. edithie* have dense leaves generously endowed with trichomes. This type of plant can quickly start rotting in hot wet conditions. A suggestion is that they are mounted rather than potted, kept under cover and given limited misting.

Caulescent types (Leafy stems) can be mounted or potted. Jamming a plant into a pot with a few pieces of chunky bark is very successful.

The most desirable and most expensive mount is *Quercus suber* cork bark. Other mounts must be thoughtfully selected. Poisonous substances exist in many barks to prevent epiphyte colonisation. Select a mount from trees known to support various native orchids. Mounts should have the potential to remain moist but not wet. If too old they can become alkaline and the *Tillandsia* will refuse to grow roots.

Terrestrials have the potential to develop extensive roots in a porous potting mix maintained between pH5.6 to pH7. The most ideal pH is suggested to be pH6.4.

Water pH can have a considerable effect upon growth. Rainwater (pH+5.0) can make an ideal environment. Tap water is usually above pH7.0 and may go beyond pH8. Both high and low pH can reduce nutrient up-take. (For details of pH of water, fertiliser and soil refer FNCBSG Newsletters April 2016 and May 2017).

Bulbous *Tillandsia* and 'silver' *Tillandsias* cannot survive prolonged wet conditions. An early indication of over wet condition is the leaf tips start to turn brown (die).

Although *Tillandsias* reproduce by off-sets and seed there are a few "nonconformists". *Tillandsia makoyana* and *Till. utriculata* are among those that don't produce pups. *Tillandsia dasyliirifolia* when prevented from making seed



may produce an off-set. *Tillandsia grandis* (now *Pseudalcantarea grandis*) as it prepares for flowering loses the ability to produce shoots.

Foliage of some *Tillandsia* turns red prior to flowering. Fragrance is detectable in many *Tillandsioideae* including: *Racinaea hamaleana*, *Tillandsia cacticola*, *Till. diaguitensis*, *Till. duratii*, *Till. dyeriana*, *Till. mallemonii*, *Till. purpurea*, *Till. streptocarpa*, *Till. straminea*, *Till. xiphoides* and *Wallisia cyanea*. Fragrance may only be apparent in the early stage of flowering. It could relate to the amount of specific minerals the plant has been able to accumulate.

After flowering there are *Tillandsias* that cease to grow and may die. As a consolation pups appear, therefore never throw away what looks to be a dying plant.

The Biology of Bromeliads states: “*All the mineral nutrients an atmospheric (Tillandsia) requires, regardless of origin or abundance in the environmental source, must be absorbed through the foliar epidermis*”. This is the generally accepted belief however the writer doubts that statement.

Epiphytes flourish in the tree canopy and create a tangled mass of roots of ferns, orchids, Bromeliads and other plants eventually forming a biomass. Dust, a decaying plant, a dead insect and bird droppings will ultimately become nutrient contained within the biomass. Should a *Tillandsia* become part of the biomass it's “*Foliar epidermis*” is above the biomass. Gravity ensures that biomass liquid flows downward, along branches and trunk, giving roots below the biomass the potential to become ‘Feeder Roots’ .

The general belief is that *tillandsia* roots are not strong. The explanation given is that the roots only function is to grip the host. In that case the description would be a ‘Hold-fast root’. This idea seems to be illogical. Surely the stronger the roots the better hold the *tillandsia* would have on the host. Also in a very deficient nutrient circumstances every possible attempt would be made to absorb nutrient. There are a number of *tillandsias* that no longer produce roots, however they have evolved in novel and secure surroundings. A plausible reason for poor root growth in cultivation is wrong pH of the host and/or nutrient and/or unsuitable environment.

Epiphytes are adapted to near sterile conditions. Known as **Oligotrophs** they survive and reproduce on extremely low amounts of nutrients. Terrestrials, known as **eutrophs** cannot survive in the Oligotrophs impoverished conditions. Controlled Release Fertilisers (refer FNCBSG November 2017 Newsletter) are very acceptable for the eutrophs. Using CRF's on Oligotrophs has danger. High heat has been known to split the resin coating of CRF's to spontaneously dump an excessive amount of nutrient.

Foliar fertilising enables cultured plants to grow faster and bigger than their wild counterparts. Oligotroph nutrient should be more dilute than that of the eutroph otherwise death by ex-osmosis is possible. (A dilute solution within the plant flows out into a more concentrate external solution)

A plant that has low carbohydrate in its tissue should never be given a fertiliser containing Urea/Ammonium. The result can be death. (Urea/Ammonium requires carbohydrate for its absorption)

Most growers prefer to buy a commercial nutrient product. Before purchase read the ‘Guaranteed Minimum Analysis’ that is written on every pack: Avoid as much as possible Urea and Ammonium. The advantage of these two chemicals is in making big growth. The disadvantage is soft and succulent foliage making plants susceptible to heat and cold. Nitrogen is best as nitrate, it makes a plant more resistant to disease, insects and temperature. As a rough guide, Potassium should be as much as 50% more in quantity than Nitrogen. Phosphate can be less than half the specified amount of nitrogen. (refer “Fertiliser Confusion” FNCBSG Newsletter March 2013).

Calcium is the third most important element for Bromeliads but it cannot be included in a mix containing phosphate. Individual applications of Epsom salt and Calcium nitrate provide Magnesium, Calcium and Sulphur. Commercial mixes are usually low in trace elements and a ‘Complete Trace Element’ can be occasionally added as a supplement.

A ‘make your own’ fertiliser that is cheaper and superior to a commercial product could be as simple as Potassium nitrate and MKP (mono potassium phosphate) plus trace elements. This supplies NPK (N as nitrate), potassium and Phosphate plus trace elements and allows percentages to be manipulated.

A “make your own” can be beneficial when used alternatively with a commercial fertiliser. Or the occasional use of a straight chemical to boost a specific growth. Sulphur probably needs to be increased in most Bromeliads. For this an occasional treat of Potassium sulphate or Ammonium sulphate (lowers pH) is helpful.

Three of the most important essential trace elements are: Molybdate (Sodium molybdate) this is the catalyst for nitrate. Boron improves fertility and flowering. Iron (Iron sulphate), Bromeliads have a higher demand than most plants for iron. There are other trace elements that help in size, colour and duration of flowering.

Note: past articles referred to in this article are available in **Club News** on the Bromeliad Society of Australia web site: bromeliad.org.au

Novice Popular Vote

1st	Kevin Jones	<i>Neoregelia</i> 'Skotaks Tiger'
2nd	Coral McAteer	<i>Billbergia</i> 'Poquito Mas'
3rd	Michelle Hartwell	<i>Aechmea</i> 'Shining Light'

Open Popular Vote

1st	Flo Danswan	<i>Neoregelia</i> 'DeRolf'
2nd	Dave Boudier	<i>Dyckia</i> 'Silver Plate'
3rd	John Crawford	<i>Goudaea</i> 'Sons of Tiger Tim'

Tillandsioideae

1st	Les Higgins	<i>Wallisia cyanea</i>
2nd	Dave Boudier	<i>Tillandsia disticha</i>
3rd	Sue Mackay-Davidson	<i>Tillandsia fuchsii forma gracilis</i>

Decorative

1st	John Crawford	'25 in a Row - for Winx '
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Judges Choice

1st	Coral McAteer	<i>Billbergia</i> 'Poquito Mas'
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A Growers Comments:

First in Tillandsioideae was *Tillandsia lindenii* now renamed *Wallisia lindenii*. The only difference between *Wall. cyanea* and *Wall. lindenii* is the flower stem/ peduncle of *lindenii* is longer than that of *cyanea* which is short. *Wallisia lindenii* has a single pink paddle 14cms long and 4cms wide. The blue flowers are 7cms across the petals and last about 4 days. On the first day of flower opening the entire shade house was filled with fragrance. By the time the fourth flower opened the fragrance is no longer detectable. For next season Les intends to increase the intake as much as possible of the two minerals the plant uses to manufacture fragrance. The most important mineral is probably sulphate. Hopefully this will extend the length of time that the plant can produce fragrance.

First in Novice was a spectacular *Neoregelia* 'Skotak Tiger' grown by Kevin Jones. It has very impressive spikes on the leaf edges. Its cultivation is early morning sun in a potting mix of Coarse River Sand, Charcoal and Pine Bark.

Coral was given the nod for Judges Choice this month with a magnificent clump of *Billbergia* 'Poquito Mas' she was growing in bright light.