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

Edition: May 2020

Agenda: General Discussion

Venue: PineGrove Bromeliad Nursery
114 Pine Street Wardell 2477

Phone (02) 6683 4188

Study Group meets the third Thursday of each month

Next meeting 18th June 2020 at 11 a.m.
To be advised

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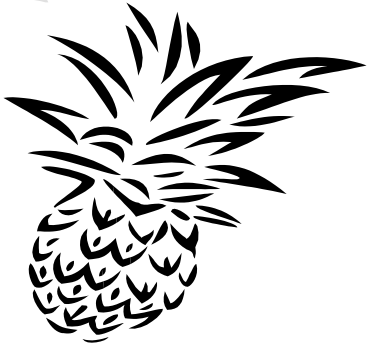


## Meeting 16th April 2020

There was no meeting in April due to coronavirus Covid-19.

Drew has been keeping busy writing a few articles for our Newsletter and he is keeping our index up to date.

Debbie hopes everyone is doing okay while mum (Shirley) is sick of being housebound but “she is behaving so far !”

Kayelene hopes you are all surviving 'house arrest' and says “it is however, a great time to be gardening. I miss the monthly outing - so hope its not long until all returns to semi normal at least!” Thank you to Kayelene for her article and photos pages 6 and 7.

Take care, stay safe and well everybody in these dire times and we’ll go back to basics here to answer questions asked by some newer members of our fold.

## Chemical Use Safety - Pesticides

When using pesticides remember to:

- Read the label instructions and follow them carefully.
- Consult the Safety Data Sheet (SDS) for safety instructions.
- Wear the appropriate personal protective equipment (PPE).
- Ensure weather conditions are appropriate for application.
- Consider high-risk groups and the persistence of the pesticide and use the product with the lowest toxicity.
- Never smoke or eat while mixing or applying insecticides.
- Always mix insecticides in a well ventilated area.
- Only mix as much as required for each use.
- Do NOT spray while bees are active.
- Do NOT contaminate waterways or ponds.
- Protect pets and livestock while spraying.
- Check the toxicity category:
  - Toxicity category I is Highly toxic and Severely irritating.
  - Toxicity category II is Moderately toxic and Moderately irritating.
  - Toxicity category III is Slightly toxic and Slightly irritating.
  - Toxicity category IV is Practically non-toxic and not an irritant.



A pesticide label will have the product name often followed by a number or a code e.g. EC, SC, SL, EC etc. If unsure about the codes and what they mean a simple google search for Pesticide Formulation Codes or appendix 2-oecd or Understanding Pesticide Chemical Labels will help.

The most frequently used Pesticides are mixed in water then applied as a spray, some water miscible formulations include:

**SL:** Soluble liquid concentrates are usually water based products that contain a dissolved active ingredient (maybe a salt). They mix easily in water and require minimal agitation after dilution.

**SC:** Suspension concentrate formulations are a solid active ingredient dispersed in water and require regular agitation.

**EC:** Emulsifiable concentrates are a blend of active ingredient, organic solvent, and surfactants, when diluted into water a milky emulsion forms.

**WP:** Wettable powder, water soluble powders are powders that dissolve easily into water much like sugar. This is a popular formulation in pest control because of ease of use since they usually come as pre-measured packets.

**WDG** or **WG:** Water Dispersible Granules are a solid, non-dusty granular formulation which disperses or dissolves quickly when added to **water** in the spray tank to give a fine particle suspension.

**SG:** Soluble Granules are a formulation consisting of granules to be applied as a true solution of the active ingredient after dissolution in water, but which may contain insoluble inert ingredients.

**CS:** Capsule suspensions are a stable suspension of capsules in a fluid, normally intended for dilution with water before use.

**SB:** Scrap baits are pesticides combined with an attractant (the bait) that lures the pest. Uses for baits include controlling insects and rodents etc.

References here have been gleaned from: https://apvma.gov.au/node/37 Australian Pesticides and Veterinary Medicines Authority as it has been noticed recently that chemical users are using products without understanding their chemical type and its consequences. It is up to the user of any chemical type to practice safe chemical use and store unused chemicals responsibly.

Thoroughly wash containers before placing them in the rubbish bin.

Check local councils for safe disposal of unused chemicals.

If possible source a biological alternative e.g. natural barriers and or predators (and that’s another story!).

Information compiled by Ross Little

## Fertilising

by Bill Morris, NSW (BSI Honorary Trustee)

My view is that most mature bromeliads do not need fertilising. You only need to fertilise plants that :-

- you want to grow rapidly (e.g. seedlings)
- you want to grow large (e.g. specimen plants)
- have small or no root systems (e.g. Tillandsias)
- are more tropical than your natural climate and thus have a short growing season here (e.g. Cryptanthus).
- green plants (i.e. Do not colour up in high light) which are mainly grown for their flower spikes (e.g. Vrieseas and some Aechmeas). With most bromeliads the bigger the plant, the bigger the flower spike.

The plants you should not fertilise (at least with fertilisers with appreciable nitrogen) are plants which are grown for high colour, produced by high light, heat and dryness. This includes most Neoregelias and Billbergias. These plants can go almost green in the shade will also lose their colour if fed with nitrogen.

Plants which are naturally coloured or barred (like *Aechmea miniata discolor* or other discolour type plants, *Aechmea fasciata*, *Aechmea chantinii*, barred Tillandsias, etc.) can be fed and will not lose their colour or barring.

Some variegated bromeliads should not be fed otherwise they may (almost) lose their variegation (e.g. Canistrum lindenii variegata, some Aechmea fasciata variegata clones, etc.).

Others (generally with clean white variegation) do better with fertilising, i.e. they grow bigger and faster (e.g. *Canistrum lindenii albo marginata*, *Neoregelia concentrica marginata*, *Aechmea coelestis albo marginata*).

Most yellow plants (e.g. *Neoregelia kautskyi*, *Neoregelia* 'Golden Grace', etc.) and variegated plants with yellow or yellowish variegation go green when fertilised with nitrogen (most fertilisers contain nitrogen).

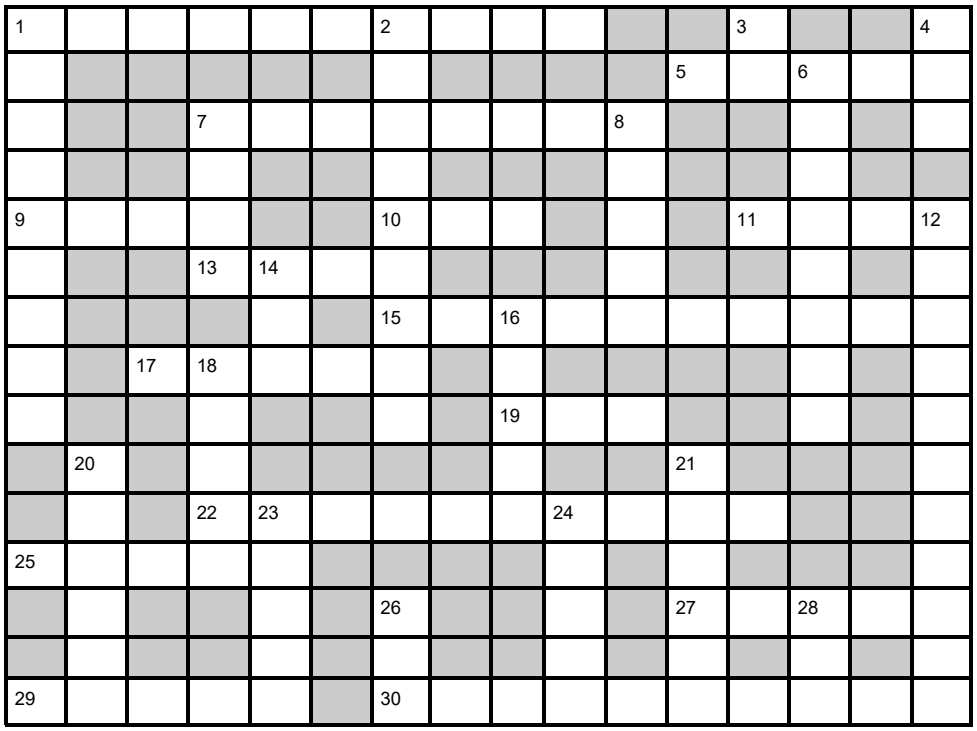
So, in summary my opinion is feed (if you want to) seedlings, Tillandsias (to speed up their growth), Cryptanthus (to grow them larger in a climate which basically doesn't suit them) and don't feed anything else unless you want them to grow larger or you are feeding for their flower spikes.

### Choice of Fertilisers

I prefer completely soluble fertilisers as they can be easily flushed out of the plant or pot. Organic based fertilisers usually have an insoluble component that leaves a scum, smear or mark on the plant (but not if just used in (or on) the potting mix. For slow acting fertiliser I prefer Nutricote.

Reprinted from: Bromeletter, The Bromeliad Society of Australia Inc. May/June 1989, Vol.27, No.3.





**Across**

1 Common genus
5 Neoregelia t.....or
7 Plants need this
9 Epiphytic ferns
10 Bees make this
11 Spanish .....
13 Could be in fish emulsion
15 Air plant
17 Pest
19 Something you turn on
22 Aechmea
25 Fern has it
27 Wax plants
29 After a fire
30 Tropical fruit

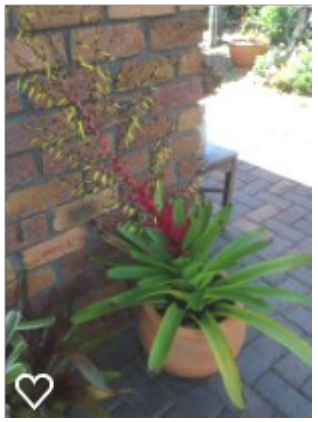
**Down**

1 Our first love
2 Most of us collect it
3 Cryptanthus
4 Party drink
6 Bromeliad genus
7 Ross is this
8 Spiny succulent
12 Cool places
14 Home of Victoria Padilla
16 Species of Tillandsia
18 Royal rot
20 Cactus genus
21 Living stones
23 Drew does it too
24 C..... Myrtle
26 Offset.
28 ...e tide

## ***Vriesea philippo-coburgi***

Kayelene Guthrie 2020

My pride and joy Bromeliad - I believe it is called *Vriesea philippo-coburgi* and requires bright light.



She is a little scrappy since the flower stem has emerged, however it has been a magnificent specimen plant and prolific 'pupper' .

The plant was given to me about 18 months ago taken directly from a friend's garden. Over this time, many pups have appeared, mostly simultaneously.

This is the one that I found particularly difficult to propagate once potted. Ross advised to create a little hot house using a polystyrene box with the base of each plant suspended within holes in the top of the box. I did this with four pups and after four months only two actually sent out little roots.

Two weeks ago I planted all four in small pots utilising PineGrove's potting mix and have placed them under my lilly pillly tree. They seem to be going fine at this stage.
So here's hoping!

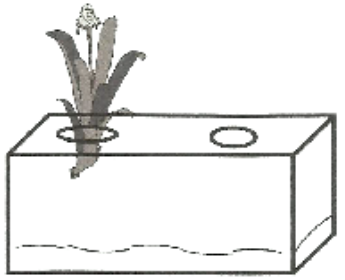
**From: FNCBSG NSW Newsletter February 2013**

Jeanette demonstrated a method for growing roots on rootless broms. It involved cutting a hole in the base of a styrofoam cup, inverting it, and pushing the plant through the hole. Then screw the cup with the bromeliad firmly down into a larger pot containing potting mix (this is for stability). Water when needed.

An alternative method suggested by Ross for larger plants without roots is to use an inverted terra-cotta pot with a hole in the base. This drainage hole may need to be enlarged to accommodate the bromeliad.



Another method incorporates plants pushed through holes in a styrofoam box lid, so that their base rests just above a thin layer of moisture in the box. The use of sphagnum moss in any of these instances is not recommended as it retains moisture and thus assists rotting. John Crawford places his *Alcantarea* 'grass' pups in a split thick-shake straw, which he then pushes into the potting mix. This of course provides stability while the roots grow for these difficult to handle smaller plants.



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Kayelene's second issue for sharing this month relates to experimentation with the positioning of some newly planted Bromeliads.

I don't have a lot of shade and attempting to find a 'happy' spot for each one means that I need to move them around until such time as the correct position is identified.

To assist in this process instead of planting directly into the garden bed I have potted them in small pots, then dug a hole in the garden bed, filled the base of the hole with some small rocks and pebbles then placed the pot on top of the rocks.

The reasoning behind this is three fold:

1) The plant looks like it is a part of the garden with the top of the pot at soil height and not just a conglomeration of pots all over the place.

2) Because the garden soil is heavy pug and holds on to too much moisture, the rocks and pebbles prevent the potted plant from becoming water logged.

3) If I establish the position is not ideal I can easily pick up the plant and move to the next likely spot.

I am sure that you seasoned Bromeliad gardeners have already identified a similar process, however for me it made sense to do so within my environment.

## ***Aechmea weilbachii* forma *pendula*** Reitz

by Drew Maywald and John Crawford December 2019

*Aechmea weilbachii* forma *pendula* is not a spectacular plant until it flowers. The long narrow leaves are soft and a mottled lime green colour, and have a grass like appearance. The leaves are 300 mm long and do not have spines they are entire (no spines) except at their base. The leaves are 20 mm wide at the axis and 37 mm wide at their widest point.

*Aechmea weilbachii* forma *pendula* has truly pendulous flower spikes that hang straight down about 700 mm from the base of the plant. This makes it ideal for a hanging basket.

The bracts are a rosy-pink colour and the tip of each petal has a crown of white with a pale mauve colour extending down to the rosy-pink flower stem. This lovely plant flowers for some months during the cooler winter months, and maintains the rosy-pink bracts throughout.

*Aechmea weilbachii* forma *pendula* is a prolific pupper with 4 pups in the photograph shown here, and two more on the way. All the pups grow on short, thin stolons.

*Aechmea weilbachii* forma *pendula* was named by Reitz 1975 and was also named *Aechmea weilbachii* var. *pendula* by Pereira and Moutinho in 1981, however Reitz took precedence.

Like all *Aechmea weilbachii* species they are endemic to Eastern Brazil.

This plant is grown in a loose potting mix with an application of 16-month slow release fertilizer. It is kept in a shade house with 50% shade cloth during the cooler months, with another layer of 30% shade cloth added during the hotter summer months for extra protection.



*Aechmea weilbachii* forma *leodiensis* has almost the same leaves and inflorescence as *Ae. weilbachii* forma *pendula*, except the inflorescence stands upright about 300 mm above the plant and the leaves have an orange/brown tinge.

References:

- Grower Jim, "*Aechmea weilbachii* var. *pendula".*
- "Bromeliads in Australia"
- Kenneth J. Brown, "*Aechmea weilbachii* var. *pendula*',

The journal of the BSI, Vol. 37 No. 3 May/June 1987, page 125.

- John Olsen, "Pendant Inflorescences in Bromeliads",

Bromeliaceae Vol. XLIX First Quarter 2015 page 5.

- Butcher, Derek and Gouda, Eric "The New Bromeliad Taxon List".

## Vale:

Unfortunately we have lost three good Bromeliad enthusiasts recently being:

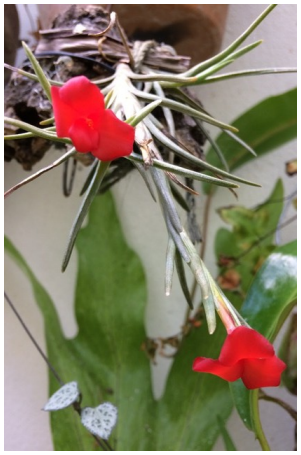
Neville Wood from the Illawarra Society who supplied us with articles for our Newsletter.

A Bromeliad legend John Catlan from the Gold Coast Society author of the articles in the book "Under the Mango Tree" which is a very informative book.

Also Ruby Ryde a long term member of the Australian Bromeliad Society, who was President of the society from 1985 to 1988 and a life member.

## My Growing Conditions In England

by Francis Chee



*Tillandsia albertiana*

I only use aged tap water (about 10 days) or rainwater to mist my Tillandsias, I don't dunk any of them. I mist them once a week during winter (if very sunny, if not, then about once per fortnight). During Summer we mist them every second day.

We must have about 50 to 60 plants, some inside the house, most are in a conservatory, a typical English setup sort of glasshouse off the back of the house, I also have a glass house with many other Bromeliads in it. Only during summer does the conservatory get full sun, the rest of the year it's just bright light. None see lower night time temperatures than 10°C during winter and a maximum of 27°C daytime temperature in the conservatory during the summer months and about 15°C during the night. My *Tillandsia albertiana* hangs in the conservatory, no direct sun but extremely bright light most of the time has more than doubled it's length to about 12-13 cm now in the short time I've had it.

All the really silver trichomed species get the full sun from sunny windows upstairs inside the house (yeah believe it or not we do get some full sun LOL) not grown in the conservatory during winter but some moved into that area during summer. Most are mounted on cork slabs or just held by wires. I have several *Tillandsia xerographica*, one I've had for about 10 years and it's in a large terracotta pot just sitting atop of charcoal and coco fibre. I've had it since it was about 10 cm wide, it is now about 28 to 29 cm sort of wide, in their scraggly way LOL. I have others just growing on wires but the missus gave one away (damn without my permission!).

All of our *Tillandsia schiedeana* are also flowering now as well (plants from Oz, my mums place). Some *Till. schiedeana's* I had flowering about June last year but they ended up dying (I've got loads of seeds though from them).



The relative humidity in the conservatory is quite low at about 45%, it's actually full of several tropical Ficus species and loads of ferns, Cyatheas etc., Orchids

and Nepenthes out of control not to mention blasted Monsteras LOL- that fruit too! I would like a much higher relative humidity for the plants, of course it's much higher when misting but I also use this area as part of my studio for filming stuff (that chamber though is temp controlled).

Finally the other way I grow some Tillandsias and a lot of Bromeliads are in largish vivariums with dart frogs, but I try not to put Tillandsias in them because they just don't get enough air movement whereas all the other growing areas for my Tillandsias get a lot of air movement.

*Neoregelia pauciflora* seem to really go crazy in the 90% RH of the tanks and make pups like no tomorrow. I also have them in the glass house and the conservatory anywhere in full light/sun. I cut them out of the tanks quite often and repot them on.

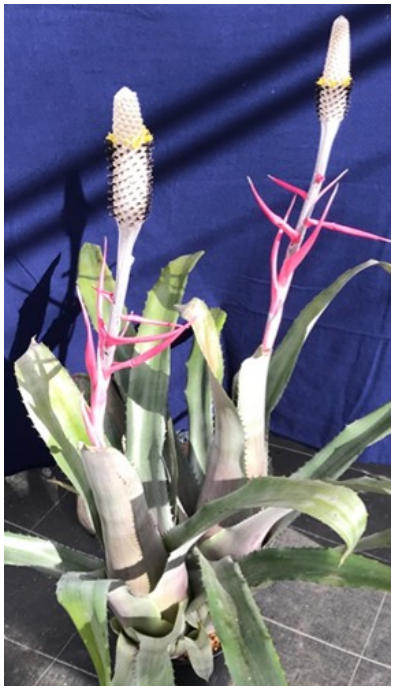
The missus said (years ago) she wanted "Swedish windows" in the house: LOL now we can not see out and no one can see in due to all of the plants either hanging on or on window sills LOL!

## ***Aechmea bromeliifolia* var. *angustispica***

**Now**

## ***Aechmea bromeliifolia* var. *bromeliifolia***

By Drew Maywald and John Crawford January 2020.



*Aechmea bromeliifolia* var. *angustispica*, according to Butcher and Gouda on the New Bromeliad Taxon List[1], December 8, 2019, *Aechmea bromeliifolia* var. *angustispica* has recently been reclassified/synonymous with *Aechmea bromeliifolia* var. *bromeliifolia.*

*Aechmea bromeliifolia* var. *bromeliifolia* is a compact vase shaped species about 600 mm across. It has coarse pale green leaves around 600 mm long, and 60mm wide, which are sometimes curved at the tips. The leaves have vicious upward facing spines varying from 10 to 25 mm apart. The spines occur more frequently closer to the axis.

The 600 mm tall inflorescence extends about 400 mm above the leaves, and has bright pinky -red bracts. The flowers bloom progressively up the tip of the inflorescence, leaving black berries below, as shown in this photograph.

The small yellow flowers are quite petite compared with the rest of the plant, being only a few millimetres across. It flowers for a number of weeks and stands out like a beacon in the shade house when in flower.

Ants love to get into the flowers for the pollen and nectar. John keeps his *Ae. bromeliifolia* var. *bromeliifolia* in his shade house where it is protected by 50% shade cloth in the cooler months and another layer of 30% shade cloth is added during the hot summer months. It is fertilised with 16-month slow release fertiliser.

This is a very prickly plant and must be handled with great care particularly when removing pups. The feature of *Ae. bromeliifolia* var. *bromeliifolia* is not its prickly, pale-green foliage, but it's beautiful inflorescence with lovely yellow flowers followed by rows of black berries. This is a plant not often seen in collections but one worth having.



## Bromeliaceae – A Layman's Guide Part 7

Compiled by Drew Maywald 2019

**Lindmanioideae Genera**

Pronounced lind-may-nee-oi-dee-ee , this sub family contains two genera. Prior to recent DNA evidence, Lindmanioideae were part of the Pitcairnioideae, sub family. At the time of compiling this article, there was very little information about this sub family and its genera.

**Connellia:** pronounced con-nel'lee-a, this is an endemic terrestrial genus found only in the isolated regions of Venezuela and British Guyana known as the 'lost world' and not in cultivation.

Connellia was named by N. E. Brown in 1901 for Frederick McConnell, English ornithologist and biologist (1868-1914). As of November 2019, there are six known species. Connellia are seldom found in cultivation.

**Lindmania:** pronounced lind-may-nee'a, most of the known species of Lindmania are native to Venezuela, with a few occurring in neighbouring Guyana and Brazil. The genus is named in honour of Carl Axel Magnus Lindman a Swedish Botanist (1856 – 1928). As of November 2019, there are 36 known species of Lindmania, with few found in cultivation.

References:


- Butcher, Derek, "Bromeliaceae and its eight sub Families"
- Butcher, Derek and Gouda, Eric "The New Bromeliad Taxon List".
- Far North Coast Bromeliad Study Group (FNCBSG) Newsletter Index Glossary.
- Wikipedia, "Connellia".
- Wikipedia, "Lindmania".
- "A Bromeliad Glossary" second edition compiled by Pamela Koide Hyatt, Bromeliad Society International 1998.


## Bromeliaceae – A Layman's Guide Part 8

Compiled by Drew Maywald 2019

**Brocchinioideae Genera**

Pronounced brock-in-o'-dee'ee, this subfamily was recently created after DNA studies and contains only one genus Brocchinia.

**Brocchinia:** pronounced brock-in'ea, this is a little-known genus, named to honour Giovanni Battista Brocchi an Italian naturalist (1772–1826). Brocchinia come from the fabled 'lost world' of Venezuela and British Guyana, with some species

extending into Colombia and northern Brazil. Brocchinia grow in one of the most isolated parts of the world, usually in large clumps in wet sandy areas or on exposed sandstone cliffs, with a few growing on granite. As of November 2019, 30 species have been identified, all of which are large plants, attaining a height of about seven metres.

Based on chloroplast DNA variation, Brocchinia appears to be a sister to all other bromeliads. Calibration of the molecular family tree of bromeliads against the known ages of various fossil monocots (flowering plants, the seeds of which typically contain only one embryonic leaf, or cotyledon), suggests that Brocchinia lineage diverged from other bromeliads nearly 20 million years ago, and that some of the living species of Brocchinia began diverging from each other soon thereafter.

Previously, Brocchinia was thought to be a member of the bromeliad subfamily Pitcairnioideae based on its possession of winged seeds like those seen in other members of that sub family. This view has now been overturned after the recognition that Pitcairnioideae, as originally circumscribed more than a century ago, represents several morphologically similar but independently derived groups that share only ancestral (plesiomorphic) characters, not true shared derived characters (synapomorphies).

Brocchinia includes some of the more unusual and highly picturesque bromeliad species to be found in the Guayana Highland area. Three of the species (*Brocchinia paniculate, Brocchinia micrantha* and *Brocchinia tatei*) are true giants among the bromeliads, attaining 5-8 metres in height and are often the dominant features of the vegetation of the locality in which they abound.

*Brocchinia tatei* has a tank-like habit of growth. Its giant stem is encircled by immense, strap-shaped leaves, spreading to ascending, yellow-green leaves lined with purple in the lower half and dark purple and chestnut- or black-brown at the base. These are filled with buckets of water. In shade the leaves are rather flat and spreading, but in the sun they become more infolded along the margins and somewhat tubular in aspect. Shade forms also have the leaves rich green within, whereas sun forms are more yellow-green with a more glaucous (covered with a bluish waxy or powdery bloom) coating within.

At least two species of Brocchinia are carnivorous. *Brocchinia reducta* and *Brocchinia hechtioides* have several adaptations that allow them to attract, trap and break down the insects so that they can be used for energy and growth. The first of these adaptations is their conspicuous colour. Both species are bright yellow and their rosette shaped, vertical leaves appear similar to flowers. This feature may attract insects initially, but they also have a UV reflective powder



coating on their leaves. This powder is attractive to insects that are sensitive to UV light. In addition, the inner surfaces of the leaves are covered with fine wax that readily exfoliates, the tank fluid is highly acid, pH 3.0 and the two plants secrete a sweet scent that may be appealing to insects.

Once insects (ants, bees and wasps) are drawn inside the plant's water filled tank most are not able to get a footing to climb out and they drown in the water that is always stored within. The insects decompose and make a "nutrient soup" that the bromeliad takes in through the trichomes on its leaves. Recently, it has been shown that at least *Brocchinia reducta* secretes a phosphatase (an enzyme that uses water to cleave a phosphoric acid monoester into a phosphate ion and an alcohol) into its tanks.

Both *Brocchinia reducta* and *Brocchinia hechtioides* are terrestrial and at times even lithophytic plants meaning they grow either in soil or on bare rock and use their roots as anchors on the ground. They are adapted to live in sunny, barren habitats in South America, such as rocky plateaus where few other large plant species are found. They are most common in the Guyana highlands.

The earliest divergent members of the genus (eg, *brocchinia prismatica),* lack tanks entirely and appear to depend solely on soil nutrients. Acquisition of the tank habit seems likely to have been the key innovation driving the evolution of specialized mechanisms of nutrient capture in Brocchinia.

*Brocchinia melanacra* is a species especially adapted to ground fires, with highly sclerotised (hardened) leaf tips that protect the single bud in unexpanded leaves but appear to be useless (often dangling limply in the breeze) in fully expanded leaves.

The flowers of *Brocchinia* are small and insignificant, usually white, and with petals and sepals only 4.5-7 mm long, and they are arranged usually in a few- to many-branched panicle (a loosely arranged branched inflorescence), or occasionally in a type of raceme (a loosely arranged branched inflorescence).

Brocchinia can be cultivated very similarly to many other bromeliads. They require a loose soil mix in a small pot, primarily to provide anchorage. Keep distilled water in the tanks to avoid saline build up. According to Barry Rice, the plant's foliage will maintain a dark green look and loosely, bowing foliage very similar to other bromeliads unless light conditions similar to their natural habitats are mimicked. Brocchinia thrive in the wild in almost constant bright, direct light and high heat conditions.

Because of their size, they are rarely seen in collections.

**References:**


- Butcher, Derek, “Bromeliaceae and its eight sub Families”
- Butcher, Derek and Gouda, Eric “The New Bromeliad Taxon List”.
- Far North Coast Bromeliad Study Group NSW (FNCBSG) Newsletter Index Glossary.
- Wikipedia, “Brocchinia”.
- “A Bromeliad Glossary” second edition compiled by Pamela Koide Hyatt, Bromeliad Society International 1998.
- Dearinger, Melanie, “Carnivorous Bromeliads”, Bromeliad.info Plant Care.
- Admin, “Brocchinia Bromeliads”, bromeliads.info.
- Steyermark, Julian A, “BROCCHINIA Genus of the Guayana” Bromeliad Society Bulletin 9(3): 35-41 1961


## Web Links for Checking Correct Identification and Spelling

Bromeliad Cultivar Register (BCR): http://registry.bsi.org/
Refer to this site for correct identification and spelling of your hybrid or cultivar.

New Bromeliad Taxon List: http://bromeliad.nl/taxonlist
Refer to this site for latest species name changes and correct spelling.

Bromeliads in Australia (BinA): http://bromeliad.org.au/
Refer to this site for its Photo Index, Club Newsletters, Detective Derek Articles.

Keep these web sites set as desktop icons for quick reference access.

## Where to Find Bromeliad Groups & Societies Meeting 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.