

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

Edition: June 2021

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 15th July 2021 at 11 a.m.

Editorial Team:

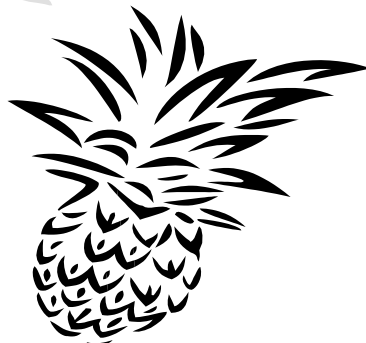
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Meeting 20th May 2021

The meeting was opened at approximately 11.00 am
The 13 members present were welcomed.
Two apologies were received.

General Business

Ross opened the meeting welcoming everybody on a lovely day to end autumn, fortunately the winter chills had not arrived yet. Sadly though we were brought the news of the passing of one of our long serving members:

Vale: Trish Kelly

A memorial service was held at Harwood Hall, Harwood to celebrate Trish's 80 years, Trish passed away peacefully on 16th April 2021. Trish joined our Group in March 2010 attending meetings regularly until her health issues made it a little difficult to continue coming, her last meeting attendance being our Christmas celebrations of December 2019. Quite often Trish gave input to our meetings of how she grew her Cryptanthus and foliage Vrieseas successfully. For many years Trish deciphered our meetings notes/minutes from the Groups recorder for entry into our Newsletter. Trish's efforts over the years were greatly appreciated and are surely missed.

Fire ants and yellow crazy ants are on the move again. A word of warning to members was given for anyone moving plants from the greater Brisbane area of Queensland that the fire ant zones have been increased. Any pots with soil from within the fire ant zones need to be checked before bringing them to meetings. Those yellow crazy ants were detected in April in Lismore, which is close to our local area, but these ants are being controlled by the local council. Just the same be aware they are around, any suspected sightings should be reported to NSW DPI or call the biosecurity hotline, 1800 680 244. Be mind full of moving any soil based products.

Derek and Margaret Butcher aka - UD, Uncle Derek, Aunty Margaret, Nanna

We at the FNCBSG NSW wish Derek and Margaret all the very best in their retirement from Bromeliads. As newsletter editors we have found their research assistance over the years has been invaluable in ensuring any technical details we publish were correct. For all your help, guidance and support over the years we are forever grateful.

Wishing you both all the very best for the future.



Show, Tell and Ask!

John informed us our May meeting day coincided with World Bee Day and that the United Nations has designated this day 20-5-2021 to raise awareness of the importance of bees. He explained how bees are under a continuous threat from human activity, which includes the introduction of invasive insects, pesticides, land-use change, and mono-cropping practices, which have continuously been destroying bee colonies over time. Drew has provided an article on pages 4-6 about the importance of bees.

In our May 2021 Newsletter we published an article on *Lepanthus duartei* written by Doug Binns, how coincidental that this month John brought along a flowering example of the plant to show us and Doug was at the meeting to see it. John's plant was a well grown specimen with many pups surrounding it.

John also brought along a flowering *Goudaea* 'Sons of Tiger Tim' photo p.9, the bright yellow branching spire/inflorescence of this plant was around 1mtr tall. He also had a nicely presented clump, photo p.10 of the same plant explaining a little of its history. This is a hybrid created by Peter Tristram using *Goudaea* 'Tiger Tim' crossed with *Goudaea ospinae* var. *gruberi* (select), selecting from this grex the mainly white marbled seedlings for registration. Others from the grex to look for are: 'Smudge Grub' and 'Scaredy Cat'.

John's clump of *Goudaea* raised the question about dividing the pups and what to do when these plants grow lanky trunks looking like small trees. Fortunately we were able to grab several overgrown lanky plants out of the shade house to have a practical demonstration with. Ross explained these can either be torn apart by hand retaining the roots with the stem/trunk and planted into a suitable sized pot, yes it sounds a bit brutal but it is effective and works. If the trunk is too long for the brutal method to be feasible, the trunk can be cut with a sharp knife or secateurs to a desired length. Allow the cut to dry/callous over for a day or so and pot as per normal.

Kayelene asked about removing hair/adventitious pups from Alcantareas.

Again a plant was acquired from the nursery to show how best this procedure is performed. Often the hair pups form below and slightly underneath the base of the main plant and within the root system, so care needs to be taken not to cut them short. It is best to clear any unwanted foliage to allow clear access, scrape away as much of the top soil/potting mix as possible to expose the base of the hair pup and carefully cut it away or sometimes a gentle tug will remove them safely, pot as per normal. Add some fresh potting mix around the mother plant and give it a little extra fertiliser and it may reward you with more pups.

The Importance of Bees

by Drew Maywald May 2021

Bees are important to our livelihood as they help to pollinate most of the crops we eat and many that feed farm animals. Nearly two-thirds of Australia's agricultural production benefits from bee pollination. Bees are a keystone species that play a vital role in preserving ecosystem health.

Globally, nearly 90% of wild flowering plant species depend, at least in part, on the transfer of pollen by bees and other pollinators. The healthy functioning of ecosystem services ensures the sustainability of agriculture. Bees and forest beekeeping, help sustain forest ecosystems by providing pollination that leads to improved regeneration of trees and conservation of the forest's biodiversity. Bees and other pollinators are thus vital to the environment and biodiversity conservation, as well as many other dimensions of global sustainable development.

There are over 20,000 species of bees that exist globally and Australia is home to around 2,000 species of native bees. Native bees have co-evolved with our unique native flora over thousands of years.

Some species of plants can only be pollinated by a particular species of bee. In the absence of pollination, the plant species cannot reproduce so if that bee species dies, so too will the plant.

The importance of bees in the pollination of plants is critical. Here is a snippet of information on the dependency of pollination by bees on selected crops as a percentage of yield⁽¹⁾:

Crop	Bee Dependence	Crop	Bee Dependence
Almond	100%	Kiwi Fruit	80%
Apple	100%	Blueberries	100%
Avocado	100%	Cabbage	100%
Mango	90%	Celery	100%
Macadamia	90%	Canola seed	100%
Cucumber	100%	Watermelon	70%

The vast majority of pollinator species in Australia are wild, including more than 2,000 species of native bees, and some species of flies, butterflies, moths, wasps, beetles, thrips, birds, bats and other vertebrates.

Australia is home to 5 of the 7 families of bees in the world, with one species only found in our country. Most of the 2,000 species of native bees in Australia are solitary bees and do not exist in hives. They nest in soil, small tree hollows and wherever they can find a secure place to lay their eggs.

However, some, like *Tetragonula carbonaria*, are social bees and live in hives. They look more like a small black fly and are about 4 – 5 mm in length, a quarter the size of a honey bee. The photo shows some *Tetragonula carbonaria*, on the side of one of my native bee hives first thing in the morning.



The social native bees like *Tetragonula carbonaria* produce honey, but in very small quantities, about 1 kilogram per year. Ongoing research into the benefits of this honey shows that it is equal to the best manuka honey for health and healing.

One of the best things about native bees is that they do not sting, so they are ideal for the home gardener and safe for children. Native bee hives are a quarter the size of a honey bee hive and do not require the maintenance required to keep honey bees.

Interestingly, the social native bees like *Tetragonula carbonaria*, do not come out of the hive unless the temperature is above 18°, so they cannot be kept in the southern states or too far below Sydney. Some species of *Tetragonula* and *Austroplebeia*, construct a fine, lacy curtain of resin droplets over the hive entrance each night, or in periods of inactivity⁽²⁾, to keep predators out and the warmth in.

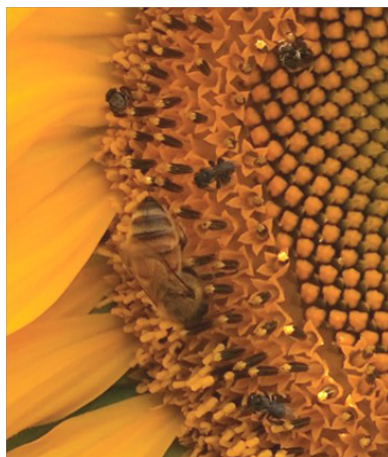


Australian native bees pollinating a dragon fruit flower.

From my experience, since getting my first native bee hive 12 months ago, the yield on my crops of vegetables like snow peas, blueberries, beans and passion fruit, has increased three fold. I recently planted some dwarf beans, and I have already had 10 pickings from them and they are still going strong. I have a dwarf lemon tree that is less than 2 metres tall and close to my native bee hives, and this year I picked more than 25 large buckets of lemons. The most I have ever picked from it in 30 years.

This last week my *Billbergia* 'Eipperii' had five flower stalks, in a lovely display and I counted up to 10 native bees on each inflorescence, and watched amazed at how they were able to pollinate the flowers.

It is believed that stingless native bees are more effective pollinators than honey bees, because they are so small they can get right down into each flower where honey bees cannot go. For example, many commercial blueberry, passion fruit and macadamia nut growers, are installing native bee hives around their orchards to increase yields. I have also noticed more native bees on my Bromeliad flowers than honey bees. A friend who lives in another suburb, had unpollinated passion fruit flowers dropping of the vine, while I have a video of around 10 or more native bees in my passion fruit flowers.



Last spring, I planted some sun flowers, and as you can see in the photo above left, the native bees loved them and the amount of sunflower seeds that I was able to harvest was astonishing, and they happily co-exist with honey bees as you can see in the photo above right.

Keeping native bees is easy and they are such enchanting creatures. It's very easy to sit and watch them for ages as they return to the hive laden with pollen, or bring out waste from inside the hive. There is lots that you can do to encourage them into your garden, but that's another story...

References:

1: When Bee Foundation for information from some of their pamphlets.

Link: <https://www.whenbeefoundation.org.au/about-bees-pollination/>

2: Heard, Tim, "The Australian Native Bee Book", Sugarbag Bees 2019.

Contact tim@sugarbag.net

Helen is showing her rather elongated *Tillandsia araujei* that had got lost among many other plants but did manage to keep poking its way out through them to get some better light. With improved growing conditions hopefully she'll get it to grow into a more compact clump.

Tillandsia araujei Mez in Martius, Fl. Bras, 3(3): 600, pl. 112, fig. 2. 1894.

Type: Glaziou 16457 (lectotype B, B photo 1191/31; isotype P), Copacabana, Rio de Janeiro, Guanabara, Brazil.

Distribution: saxicolous or very rarely epiphytic, lithophytic, from near sea level to 850 m alt, central eastern Brazil.

Etymology: named after the Brazilian river Araua.

Tillandsia araujei is a variable species which includes *Till. araujei* var. *minima*. It has a caulescent or elongated stem forming growth habit, growing across rocks as seen in the photo below borrowed from the internet.



The leaves are arranged in a densely polystichous habit, meaning they grow in a spiral along the stem all around its axis. They have a tendency to become secund, curve and turn to one side.





Neoregelia 'Lorena Lector'
1st Open and Judges Choice
Keryn Simpson



Tillandsia fasciculata 'Purple'
1st Tillandsioidea John Crawford

◀ *Tillandsia stricta*
shown by Keryn Simpson



'Mossy Stars'
1st Decorative Mitch Jones



Goudaea 'Sons of Tiger Tim'
shown by John Crawford



Guzviezea 'John Buchanan'
shown by Helen Clewett



Tillandsia 'Pinegrove'
shown by Helen Clewett



Tillandsia streptophylla
shown by John Crawford



Guzmania wittmackii 'orange'
shown by Dave Boudier



Goudaea 'Sons of Tiger Tim'
shown by John Crawford



Dyckia 'Clifton Snow'
shown by Mitch Jones



Tillandsia gardneri
shown by Dave Boudier



Tillandsia 'Druid'
shown by Gary McAteer

World Bee Day
20 - 5 - 2021
by John Crawford



'Shades of Pink'
by Dave Boudier



'Old Man Boot'
by Keryn Simpson



'A Bit-of-a-Dish'
by Helen Clewett

John brought this nice little cluster of *Hylaeaicum pendulum* var. *brevifolium* along for **Show and Tell** to show how long its stolons can get. He was asked about potting the individual plants and how best to start them, John advised to cut the stolon near to the base of the plant and nestle it not too deep into a coarse, free draining mix enough to help keep the plant upright. Use skewers if necessary or quite often, if hanging, the pot hanger itself will be sufficient to help keep the plant steady in its pot. Eventually new pups will form on long stolons, they too will gradually turn upright (geotropism) and form dense clumps.

Geotropism - the growth of the parts of plants in response to the force of gravity. The upward growth of plant shoots is an instance of negative geotropism; the downward growth of roots is positive geotropism.

Ageotropism - the absence of any tendency of an organ (e.g. root) to grow in a particular direction relative to the force of gravity.

Hylaeaicum pendulum* var. *brevifolium (L.B. Sm.) Leme, Zizka & Aguirre-Santoro previously as - *Neoregelia pendula* var. *brevifolia* L. B. Smith, Phytologia 9: 245. 1963.



Etymology: referring to the short length of the leaf blades.

Type: Peru. Loreto: Prov. Alto Amazonas:

High epiphyte, rainforest on lower north slopes of Cerros Campanquiz at: Pongo de Manseriche, right bank of the Rio Marañon, 300 - 550 m altitude, 19 - 21 Oct. 1962. Wurdack 2345, (Holotype, US; Isotype, USM).

This species is readily distinguished from *Hylaeaicum pendulum* var. *pendulum* by its elliptic rosettes, shorter and curved leaves with the inner ones bright red, surrounding the sunken inflorescence and the flowers have white sepals and petals where as var. *pendulum* has blue petals.

This is perhaps the most beautiful species of the genus for horticultural purposes due to the compact plant size, small rosette, bright red inner leaves and white flowers. It is relatively easy to grow and blooms throughout the year.

This genus has recently been reclassified from *Neoregelia* to *Hylaeaicum*.

Hylaeaicum that were Neoregelia

Leme et al. 2021a - *Hylaeaicum* - re-evaluation of the Amazonian *Hylaeaicum* (Bromeliaceae: Bromelioideae) based on neglected morphological traits and molecular evidence.

Authors: E.M.C. Leme, G. Zizka, J. Paule, J. Aguirresantoro, S. Heller, I.M. Ramírez, H. Halbritter, J.E.A. Mariath, J.D.T.D. Carvalho & R.C. Forzza.

Publication: Phytotaxa 430(3): 157–202 (2021) (Magnolia Press) DOI

Abstract: Generic status for the Amazonian *Hylaeaicum* is proposed within the Aechmea alliance, excluding it from the "Nidularioid complex" in general and from *Neoregelia* in particular. The monophyly of this new genus is supported by molecular phylogenetic analyses. The taxonomic circumscription of *Hylaeaicum* is based on the combination of geographical range and morphological characters, such as clonal growth, inflorescence structure, petal and corolla conformation, petal appendages, ovary, ovule, stigma, pollen, fruit, and seed, as well as seed anatomy, thoroughly documented and illustrated from field collected specimens that flowered in cultivation in the Rio de Janeiro Botanical Garden, the Marie Selby Botanical Gardens, and in Refúgio dos Gravatás. The presence of seeds with long bicaudate appendages on both chalazal and micropylar ends is reported for the first time in Bromelioideae and considered an important character to distinguish *Hylaeaicum* from the related genera in the Aechmea alliance. In order to support the morphological distinctness of *Hylaeaicum*, the most varied and complete documentation of stigmata, fruits, and seeds of Bromelioideae is also presented for the first time, covering 24 genera and 17 subgenera. Sixteen new combinations, including 12 species and four varieties, are proposed.

Published name changes from *Neoregelia* to *Hylaeaicum* (12 + 4 varieties) in The New Bromeliad Taxon List: <http://bromeliad.nl/taxonlist>

Hylaeaicum:

eleutheropetalum

eleutheropetalum var. *bicolor*

eleutheropetalum var. *eleutheropetalum*

levianum

margaretae

meeanum

mooreanum

myrmecophilum

pendulum

pendulum var. *brevifolium*

pendulum var. *pendulum*

peruvianum

roseum

stoloniferum

tarapotoense

wurdackii

Article obtained from:

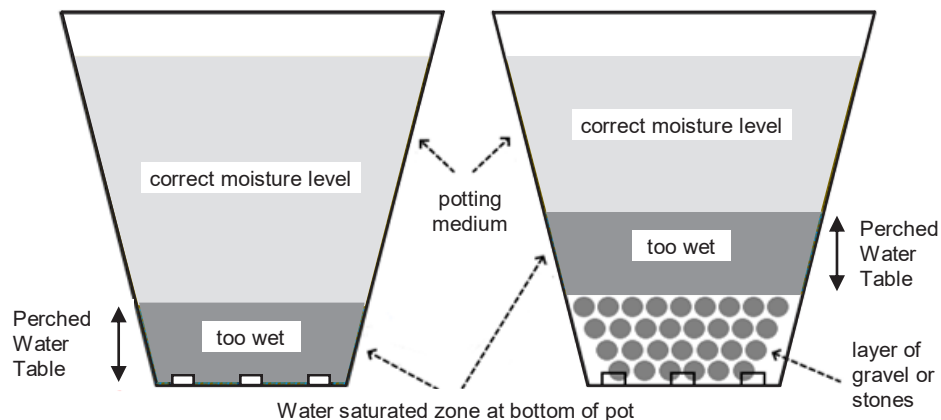
Gouda, E.J., Butcher, D. & Gouda, C.S. (cont. updated) Encyclopaedia of Bromeliads, Version 4. <http://bromeliad.nl/encyclopedia/> University Botanic Gardens, Utrecht

Crock in the Pot - The Perched Water Table

The effect of placing gravel at the bottom of a pot on the perched water table: would it make any difference if we placed a wet sponge upright in the sink, or on a layer of gravel in the same sink? Now that we understand how the forces of adhesion and cohesion within liquids create capillary action, leading to the formation of a perched water table at the bottom of an absorbent medium, we can see that it won't have any effect on these forces in any way at all.

Remember, the downwards force is due to gravity, which we can't increase, a lower layer of another material won't change the adhesive forces between the growing medium and the water molecules, nor will it alter the cohesive hydrogen bonds between water.

So what effect will adding gravel at the bottom of a pot below the growing medium have? It will reduce the volume of potting medium, and push the perched water table higher up into the pot, as shown in the diagram below.



Adding gravel in the bottom of a pot will create two potentially serious problems:

- 1:** Pushing the saturated water table layer upwards, closer to the plant roots actually increases the risk of root rot, as the roots will stay wetter, longer.
- 2:** Reducing the volume of growing medium available to the plant roots will reduce root growth space and overall root volume, as well as available moisture, thereby decreasing the plant's drought tolerance and potential maximum growth size.

There is no benefit to be gained by adding a layer of gravel or rocks to a pot when we examine the matter from scientific first principles!

The Correct Way to Increase Drainage in Pots and Containers:

If the same potting medium is used, irrespective of the size or shape of the pot, the perched water table always stays the same height because it is determined by the wicking ability of the potting medium, since gravity doesn't change.

The way to increase drainage of the perched water table is to add materials throughout all of the potting medium to increase the air spaces in the mix and reduce capillary action.

Some plants require extremely well draining potting mixes in containers. A lot of orchids for example are epiphytes (plants don't grow in soil but obtain moisture and nutrients from the air and rain and usually grow on the surface of another plant), and many grow in trees. Growers of Cymbidium orchids (and Bromeliads) use an orchid mix which is composed mainly of coarse 20mm (3/4") composted pine bark pieces. This mixture contains huge air spaces and drains extremely well, barely retaining moisture in the bark pieces, so there is no perched water table.

Cactus and succulent growing mediums for pots are coarse, open mixes made with some organic matter to retain a little moisture, and plenty of gritty material such as crushed quartz or other crushed rock, which act like a sandy soil and lets water pass almost straight through.

Perlite and vermiculite are materials which are used as soil amendments, and both are minerals that are made more porous by expanding them with heat, much like popcorn. Because they have large air spaces within them, they are used to increase the drainage and aeration in potting mixes. Perlite mainly increases drainage, while vermiculite will also hold some moisture and help retain nutrients too. Mixing either of these amendment materials right through a potting mix will increase aeration, improve drainage and reduce the height of the perched water table.

Hydroponic systems also use perlite as a potting medium, or 'clay balls' which are in fact clay coated pumice balls which are very porous and weigh almost nothing. These growing media have large air spaces both inside and between the particles, so they drain extremely well, but hold enough water to keep the roots moist.

We can see that the common practice in horticulture to increase drainage in pots and containers is to alter the composition of the potting medium to increase the air spaces within it, and not by making changes to the space beneath the pot.

Reprinted from: Australian Bromeliad Community - face book, in part from Deep Green Permaculture

Open Popular Vote

1st	Keryn Simpson	<i>Neoregelia</i> 'Lorena Lector'
2nd	John Crawford	<i>Goudaea</i> 'Sons of Tiger Tim'
3rd	Helen Clewett	<i>Guzvriesea</i> 'John Buchanan'

Tillandsioideae

1st	John Crawford	<i>Tillandsia fasciculata</i> 'Purple'
2nd	Dave Boudier	<i>Tillandsia gardneri</i>
3rd	Keryn Simpson	<i>Tillandsia stricta</i>

Decorative

1st	Mitch Jones	'Mossy Stars'
2nd	Keryn Simpson	'Old Man Boot'
2nd	Helen Clewett	'Garden of Joy'
3rd	Dave Boudier	'Shades of Pink'

Judges Choice

1st	Keryn Simpson	<i>Neoregelia</i> 'Lorena Lector'
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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.

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.