

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

Edition: May 2023

Agenda: General Discussion

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

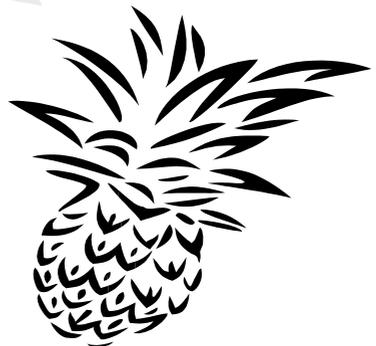
Study Group meets the third Thursday of each month
Next meeting June 15th 2023 at 11 a.m.

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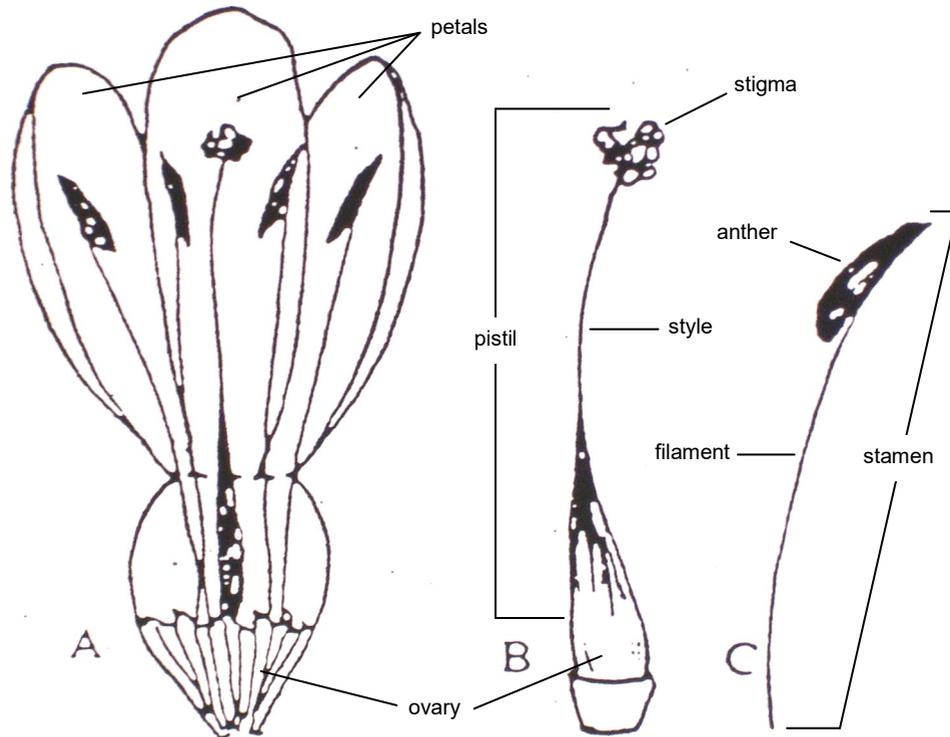
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Meeting 20th April 2023

The meeting for April was cancelled due to a covid 19 close contact.

Show, Tell and Ask!

Hybridising continued: So you've stored some pollen, hopefully it has been kept very dry and is viable. Your next step is to transfer your pollen onto the stigma and follow: 'Fundamentals of Hybridizing'



- A. Petals, showing pistil and stamens.
- B. Pistil, stigma and ovary.
- C. Stamen, showing pollen.

To put it very simply the pollen (male) must come in contact with the stigma lobes (female) for fertile seed to be produced. Pollen must be available when the stigma lobes are receptive. (one grain of pollen = one seed)

Just two reasons why self fertilization may not take place although there are many others.

1. Pollen may be viable before the stigma lobes are receptive.
2. Pollen may be available after the stigma lobes are receptive.

Just two reasons why species provide pollen for the same species.

1. Flowers would generally open at the same time of day or period.
2. Pollinators can be very specialized in which flowers they visit.

It would therefore seem to be a very general plan that the plant "wants" to set seed but "realises" that its best option for having adaptability is to seek cross fertilization but within what humans would call species.

If for example a change in climatic conditions occurs then it is possible for another closely related species to flower at the same time and, if cross fertilization occurs, a hybrid is born.

If there are sufficient of these happenings and the hybrids have the ability to cross pollinate by themselves and in comparative isolation then a new species would be evolved.

Suffice it to say Bromeliads are still evolving in the wild.

Perhaps you may wonder why, with all these restrictions, some plants are self fertile. Admittedly it is ideal for cross fertilization to occur but if fertilization does not occur then some plants do the next best thing. The stamens pull closer to the stigma lobes as the flower fades and if both are still fertile, pollination can occur. For a more detailed look at hybridization and the whys and wherefores of genetic makeup you are referred to David Benzing's Biology of the Bromeliads.

Humans, in their zest for improving on nature are inclined to want to hybridize; that is artificially bring pollen of one species to the stigma lobes of another.

Some general rules that should help you decide whether your hybridizing has been successful.

1. True species x true species = same true species.
- 1a. True variety x same true variety = same true variety.
2. True species x self (own pollen) = same true species.
3. True species x another True species = F1 hybrid
with consistent characteristics in each of the seedlings.
4. True species x Hybrid = F2 hybrid
with inconsistent characteristics.
5. Hybrid x Hybrid = F3 hybrid
with inconsistent characteristics.
6. Hybrid x Self (own pollen) = F2 hybrid
with inconsistent characteristics.
7. Hybrid x same Hybrid = F2 Hybrid
with inconsistent characteristics.

Therefore if you do raise seedlings in bulk from the one seed pod, the characteristics of the batch will lead you to what type the parents were. However just to add another variable, some hybrids have been under cultivation so long that they act like a species. Many of the old *Vriesea* hybrids are like this.

Some hybrids are sterile and it is impossible to get seed from them while other hybrids are self fertile. Seed obtained from **5**, **6** and **7** can produce some remarkable plants but a big percentage of them are weak and therefore not worth growing.

To obtain a hybrid where you know which is the father (pollen donor) and which is the mother (seed parent), the flower intended to be seed bearer must have its stamens removed they become pollen bearing. The reason for this is obvious. However I know of no hybridist in Australia who does this and the reason is equally obvious; bromeliads are well known for their bracts and the emasculation of a flower would be a very tricky business.

Action can be taken after the flower has actually opened. With *Billbergias*, *Vrieseas*, and *Cryptanthus* the stigma is exerted leaving the pollen anthers well below it and facilitating the removal of the pollen sacs. *Aechmeas* are the most difficult to pollinate with *Neoregelias* coming a close second. The stamens which hold the pollen sacs fold over the stigma like a dome. It is difficult to pull the stamens away (using a sharp pointed pair of tweezers) from the concealed stigma without dragging pollen on it. In some plants the petals are also closed over the stamens and pistil so two barriers have to be breached before the pistil and its stamens are exposed.

The technique appears to be such that if the progeny are unlike the seed parent, the hybridization has occurred! However, depending on how the pollen did its job or whether it came from different sources it would be possible to get self set seeds and hybrids in the same batch.

Hybrids in the accepted sense are rare in the "wild" because pollen is available at the, should we say, wrong time. This works against the Hybridist but can be solved in keeping pollen in a cold place such as a refrigerator.

When you have finally succeeded in doing all this, don't spoil it by forgetting what you have done. Clearly mark the mother plant with a label showing the pollen donor, so that if seed eventuates then you will know the parentage. If you have used more than one flower per mother plant such as *Neoregelia* then each flower will need to be marked. This can be done with a small triangular plastic tag carefully inserted between the floral bract and ovary.

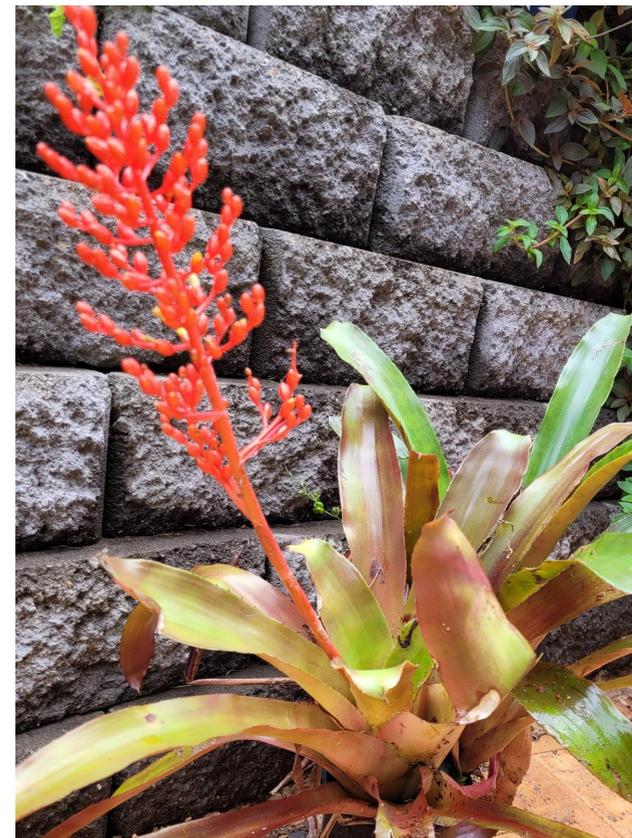
Reprinted from: Notes for the Hybridist compiled by Derek Butcher.

Show, Tell and Ask!

Some Show Tell and Ask! this past month was conducted via e-mail, thank you to those who sent in photos and a short note to go with them.

Top
Aechmea 'Flame'
grown by Debbie Smith

Below
Vriesea saundersii
grown by Shirley Smith.
A species found growing on coastal rocks in the vicinity of Rio de Janeiro and Sao Paulo (?) in eastern Brazil.



Remodelling Duck Creek

by Mitch Jones



What's happening at Duck Creek... This hill will be liquid weeded over the next few weeks and will be formally planted out with rows or blocks of common



Alcantarea such as geniculata, odorata, 'Faery Dust', extensa glaziouana, imperialis red form, 'Purple Skotak', 'Silver Plum' and 'Totara Burgundy Rose'. The lower half near the basalt rocks will be planted mostly with excess Dyckia, Hohenbergia and some xHohenmea.

◀ *Alcantarea acuminatifolia* is an excellent landscaping Alcantarea that has been circulating around Australia as *Alcantarea odorata* 'Muriae' and grows a lot larger than the typical odorata. This beast photographed here is growing in full sun in a 600mm pot.



The *Orthophytum lemei* photographed here has been grown in full sun outside on the black weed mat.

The contrast of the ivory white with the red rhachis and wine coloured floral bracts with the crisp white flowers makes it a stand out.

It's an easy to grow orthophytum that does like to be grown on the dryer side.



Spikey Obsession by Mitch Jones

A fascinating display of architecturally unique under rated Bromeliads can be made using Hechtia, Puya, Deuterocohnia, Dyckia, Bromelia and Encholirium.



These spikies are a must for any garden or collection and are some of my favourite extremely low maintenance Bromeliads. They love growing in fertile free draining soil or potting medium like cacti mix in full sun and are frost and cold hardy. They survive all elements, a good watering in the heat of summer keeps them plump and in winter their colours are at their best with nice hues of silvery blues. Slow release fertilizer or liquid fertilize once a month will keep them in peak condition. Be careful handling genus like Puya and Bromelia as the razor sharp teeth do lodged into skin or clothing.

The 21st Australasian Bromeliad Conference "Kiwi Broms"

The 2023 Conference was held in Auckland, New Zealand and hosted by the New Zealand Bromeliad Society at the Waipuna Hotel, Mt. Wellington on the 23rd to 26th March, 2023.

I've been to quite a few conferences now and have seen some pretty good displays - the 'Kiwis' certainly didn't let us down. Before checking-in we couldn't resist admiring the most amazing plants in the foyer display. The centre piece is a tree fern, perched high in its crown was a *Tillandsia eizii* showing off its pendulous inflorescence. These were amazing to see in their natural habitat in Mexico but to see one here in this display was fantastic, unfortunately they are difficult to grow in our east coast Australian climate. It is flanked by the red inflorescences of *Guzmania variegata*, on the pedestals were *Vriesea* 'Wild Jean' on the left and *Vriesea* 'Hawaiian Fantasy' on the right .



There was a smorgasbord of: Aechmea, Alcantarea, Ciporopsis, Goudaea, Guzmania, Neoregelia, Nidularium, Pitcairnia, Tillandsia and Vriesea in this display, more than enough to tantalise even the fussiest of collectors.

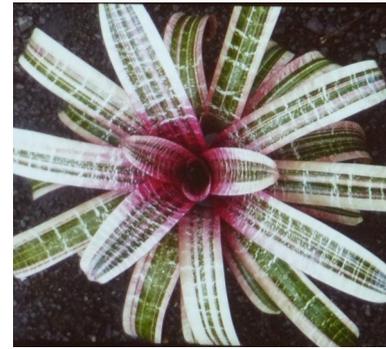




A local school group gave a wonderful performance to welcome us.

Andrew Devonshire from New Zealand spoke of his 'Variegation Obsession'.

He has a very structured hybridizing program, firstly trying to get red striations into his variegated Neoregelia hybrids, which he achieved. He is now working on getting marmoration into them which he has been successful in that field also.

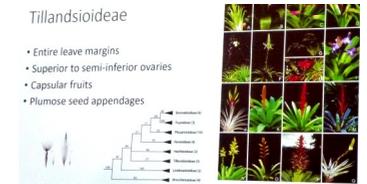


David Fell from Hawaii spoke of his achievements in creating variegated foliage Vrieseas. Some stunners were seen in the foyer displays.



What is a Conference all about, it's about meeting up with friends and of course learning about new things. Michael Barfuss from Austria gave a great lecture on: 'Understanding Tillandsioideae DNA Analysis'.

No, not everyone's cup of tea but I thoroughly enjoyed it and every chat I had with Michael during the Conference.



Tillandsioideae of Ecuador

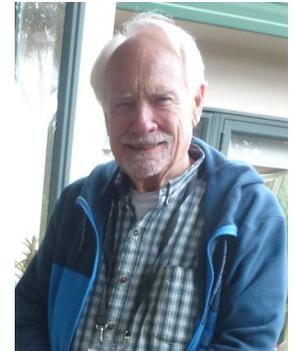
Part III-A	Part III-B
<i>Catopsis</i>	<i>Werauhia</i>
<i>Lemeltonia</i>	<i>Jagrantia</i>
<i>Wallisia</i>	<i>Goudaea</i>
<i>Barfussia</i>	<i>Cipuropsis</i>
<i>Racinaea</i>	<i>Guzmania</i>
<i>Tillandsia</i>	<i>Josemania</i>
	<i>Mezobromelia</i>
	<i>Gregbrownia</i>

José Manzaneres from Ecuador had his audience captured telling us of his adventures collecting plants in all parts of Ecuador. He needs to find all the species in their natural habitat to be able to complete the trilogy: Bromeliaceae 'Jewels of the Jungle'. Part III Tillandsioideae of Ecuador

José also showed photos of some amazing plants and wildlife in their natural habitat in Ecuador.



David Benzing from the USA is author of the must have book 'The Biology of the Bromeliads'. His presentation explained the diversity of the Bromeliaceae family by it possessing several key factors, epiphytism, trichomes and the capacity to store water in a tank. "Bromeliaceae, despite being one of the youngest in geological time of the approximate 450 families of flowering plants, it's become one of the most operationally and ecologically diverse, i.e. botanically successful of the lot."



Hiroyuki (Hiro) Takizawa from Japan the co-author of the book 'New Tillandsia Hand Book' enlightened us on his hybridizing journey with Tillandsias. He said "Since 1996, I made many field trips in Latin American countries. I love to discover rare species or new species in the wild. But not only that I love to create original new plant by hybridizing." One of his favourite species to work with is *Racinaea dyeriana*, he culls heavily, so only six of these creations have been registered with the Bromeliad Cultivar Registry (BCR).



Garden visits are always inspirational, they can give one some new ideas on how to better display your plants, which plants group together best, most of all when visiting gardens, 'look up', how much light/direct sun do these plants get.

◀ The garden of Pas and Jim Southon was truly amazing, every plant in these gardens, which surrounded the entire property, had obviously been given great consideration regards position because they were all grown to perfection. The colours of the foliage Vriesea simply took your breath away.

◀ Our second garden visit was to Margaret and Robert Flanagan's, here we saw garden plantings both outdoor and indoor. Inside a large shade house were plantings of palms, shrubs and various Bromeliads etc. The shade house next door which created the greatest of interest for many of the visitors housed the most immaculately presented Tillandsia collection we've ever seen.

◀ I've been a member of the NZ Society since 1996 and have read many articles about Eden Garden 'Bromeliad Glade' in Central Auckland. However this was my first trip to New Zealand so was pleased to visit these wonderful gardens and see the work the NZ Bromeliad Society volunteers have done there since 1973. Well I wasn't let down, it was magnificent, the hard yards put in by the volunteers was evident, a credit to them. I couldn't resist climbing a smallish rocky outcrop (with permission!) to get a better view and photo of a *Ochagavia litoralis* as I hadn't seen one in flower for many years.

◀ Garden four belongs to Lynette Nash which was a very pleasing garden to stroll around, again there was little overhead shade cover for most of the garden except for some trees around the fence line affording some shade for the less sun tolerant plants. There was a good mix of different Bromeliads spread right throughout the area making good use of tree stumps, logs and rocks. In one corner of the garden was a clear polycarbonate shade house with Tillandsias growing exceptionally well in it, mounted Tillandsias adorned many parts of the garden and walls of Lynette's home also.

◀ Garden five Peter and Jocelyn Coyle's - Totara Waters, almost a botanic garden in itself. Such an array of plants - one wasn't sure where to look first. Apart from Bromeliads there were palms, cycads, cactus, agave and sculptures, it has everything. A dream garden with so much to see that I don't think I did see it all in the time we had there.

What more can I say than wow and congratulations to all the gardens we visited.

The Conference began on Thursday afternoon with welcome party and cocktails, followed by a BBQ Buffet "Walk and Fork" dinner for the 158 registrants from Australia, Austria, China, Costa Rica, Ecuador, Japan, South Africa, USA and New Zealand. The first plant sales were on at the end of dinner, the rush was on and it was best to stay well clear if you were not buying plants to take home!



Champion of Show
Tillandsia crocata
grown by Lynette Nash

Shortly afterwards the Plant Show doors were opened, while the buyers are occupied this was the best time to check out the competition tables and see who won Champion.

Each day was filled with guest speakers: Dean Morman from New Zealand spoke about creating garden sculptures with Bromeliads.

Bruce Dunstan from Australia told of his exploring the pluvial forests of the Choco.

Martin Siaw, he is from Singapore but resides in China where he works and studies. He is researching the use of plants and nature to help improve peoples wellbeing/mental health when working in enclosed environs. I found this talk particularly interesting as I feel most of us use our plants to heal us in one way or another, whether you talk to them or not.

Saturday evening was THE Auction and wasn't some of the bidding fierce. One of David Fell's *Vriesea* 'Hawaiian Fantasy' was the hottest contested plant of the evening attracting a top bid of NZ\$4,500. It stayed in New Zealand!

The Conference closed late Sunday afternoon, we thank the Kiwis for a fantastic event, their hospitality and friendships.

On Monday we had the pleasure of visiting Graeme Barclay's collection and enjoying his hospitality for lunch and dinner, thank you Graeme and Jeanene. This was another garden with way too much to take in just one day.

Our final garden visit was to Peter Waters on Tuesday, wow. From front to back it was incredible with a beautiful fish pond flowing through part of the garden. Alcantarea, Neoregelia and more were everywhere, what to look at first. Peter's Tillandsia house was amazing with so many plants to discuss.

After lunch it was time to catch a ferry across the bay to Auckland city, have a quick look around the marina with just enough time to get to Grey Friars Hall for the Bromeliad Society of New Zealand's monthly meeting. Having joined the

Society back in 1996 I thought it prudent after all these years to attend my first meeting whilst I'm in the country. It was a very enjoyable evening, the meeting is conducted very much like our own. With discussions on general business, popular vote, a tea break, sales tables, library and a feature talk - the nights talk was Peter Tristram - Finding *Goudeae ospinae* var. *gruberi* in its natural habitat.

Once again we thank the Kiwis for everything, they looked after us well, taxi'd us around when necessary, Graeme getting us to the airport on time, many thanks.

General Business

Due to declining member numbers, mostly due to natural attrition, we asked members how they heard about our Group so we could best direct promoting the Group to others. Word of mouth to friends, notify other garden clubs and at local markets and garden shows have been the most suggested places. It is up to Group members to spread the word and invite a friend to come and join us.

From Kayelene:

I was always a regular visitor to the monthly Lismore Car Boot Market, it was there that I met Ross at his bromeliad stall during 2019.

I would always 'browse the broms' and often ask a bromeliad related question of Ross. He would always give me an answer - but with a little smile - and would consistently say "you need to join our local Bromeliad Study Group".

My answer was always "I cannot join - I work full time".

Finally, in January 2020 once retired, I joined the group - and have been a regular attendee on the 3rd Thursday of each month ever since. Bromeliads were not foreign to me, however, having joined the group I now have a better understanding of bromeliad types and how to care for them generally.

My favourites are the Neoregelias - I love the leaf colours and patterns.

The group meeting is really about information exchange and sharing.

So, if you are a bromeliad enthusiast or just a regular gardener with an intrigue for these rather unusual plants - come along to our Group study day, have a cuppa, soak up the advice, take part in the plant raffles and maybe bring along a friend and a plant for the competition.

It is a really informative and fun day.

Kayelene Guthrie

Open Popular Vote

1st
2nd
3rd
3rd

NO
POINTS

Tillandsioideae

1st
2nd
2nd
2nd

AWARDED
FOR

Decorative

1st

THE MONTH OF

Judges Choice

1st

APRIL

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 : <https://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 many with
Table of Contents Index and there's Detective Derek Articles.

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

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.