

Bromeliaceae



VOLUME XLVII *Second Quarter* 2013



The Bromeliad Society of Queensland Inc.

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GENERAL MEETINGS OF THE Society are held on the 3rd Thursday of each month except for December, at the Uniting Hall, 52 Merthyr Road, New Farm, Brisbane, commencing 7:30 pm.

ANNUAL GENERAL MEETING is held immediately before the February General Meeting

Front Cover: x *Anamea Raspberry Ice* Inflorescence
Rear Cover: *Vriesea Hybrid*

By John Olsen
By Pam Butler

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CALENDAR OF EVENTS FOR 2013

8th -18th August – EKKA Display – Volunteers welcome

24th August – Getting Started with Bromeliads Workshop

8th September – Judging School

14th - 15th September – Spring Show

The Brisbane Table Tennis Centre

27th October – Billbergia Day

5th December – Christmas Party

A Matter of Pies and Space

By John Olsen

To begin let me clarify this is not related to dessert pies or meat pies. Rather this relates to the importance of Pi - yes that mathematical constant relating to circles going round and round in your head in secondary school. As you will see below the value of Pi makes all the difference in limited shadehouse space.

I was recently showing some visitors around my shadehouse and they were taken with my arrangement of tillandsia seedlings on a frame – see Photo 1.

I have constructed a cylinder of plastic mesh joining the two edges of a sheet into a roll using shadecloth wire clips. I used a heavy gauge wire to stiffen the top and bottom edges of the cylinder and attached the mesh to the wire with shadecloth wire clips also. I then suspended the cylinder on a length of heavy gauge fishing leader material and a big swivel. I have found it necessary to also anchor the bottom using a swivel so that adjacent tubes don't rub together and the whole cylinder can rotate freely.

This is about efficiency of space utilisation so 25mm square mesh is best as that maximises the number of points at which you can attach seedlings.

A tillandsia seed capsule can have from 10-20 seeds in *T sucrei* to many hundreds in big seed producers like *T gardneri*. Germination of fresh seed is usually good and 50-90% germination is a reasonable result. One season's seed capsules soon amount to hundreds and hundreds of tiny tillandsia seedlings.

I germinate the seeds on shadecloth mesh and transfer seedlings onto individual mounts when they are around 3-5mm in size. This is the point where experience tells. More is not better. Depending on the species, a reasonable quantity of seedlings will be between 20 and 50 to mount. I keep those seedlings which I don't mount on the shadecloth for a few months as insurance against loss of mounted seedlings to grasshoppers or other calamity. I find that around 75% of the mounted plants survive. Some are lost due to rough handling getting them off the original mesh and a range of other factors. You certainly could mount more but the space demanded for hundreds of half grown plants will become a constraint.

So the maths to this point is as follows:

3 seed capsules have possibly 500 seeds of which over 200 germinate and 50 are mounted. 10 species producing seeds in a year means 500 seedlings to store.

And this is where the maths gets circularly complicated. For a space 2m wide, stretching the mesh out straight would yield 2 metres of hanging space each side. One side will (in my shadehouse) get good light and the other gets poor light but I would have 4 metres across both sides. However if I have 3 cylinders each of 55cm diameter they will hang Ok with suitable clearance at the ends and between cylinders. Now I have Pi times 55cm times 3 as my hanging space ie 5.18 metres of space. That is 30% more space, but that is not all that Pi does for you:

1. all plants get equal light access as the cylinder rotates;
2. plants aren't mounted back to back so air circulation is improved; and
3. the watering system can be set so the jets cause rotation and even watering.

Mounting of the seedlings is the next aspect. I use wine corks cut in half when I have a small number of seedlings to process at one time.

This is slow as the corks must be halved, fitted with a wire hanger and fitted with a label. The advantage is, though, that for many species the plants do not have to be remounted later. I have found the use of wooden clothes pegs to be a quicker process. I line up the pegs as they come from the shop and glue on a small piece of venetian blind. When I am ready to mount the seedlings I add a code rather than the full name of the species on each label going along the group of pegs as a production line process, add a dab of glue and a seedling to each and the job is done. Photo 2 shows both corks and pegs on the cylinder and Photo 3 shows a card of pegs ready for coding and mounting.

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Photo 1



Photo 2



Photo 3

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Cool Broms Conference

By Rebekah Trevor

My grandparents and I just got back from 22 days in New Zealand. We toured the North Island for 17 days and during that time had a really good look around. We went to the Bay of Islands and through the “Hole in the Rock”, did a bus trip up the Ninety Mile Beach, and Cape Reinga, then went for a cruise on Lake Taupo, but my favourite place of all was the thermal areas that we visited. I loved the boiling mud, hot water springs and geysers!

After returning our motorhome, we went to the Waipuna Conference Centre where the ‘Cool Broms’ conference was held. This conference was big, with around 260 attendees; people from all around the world attended, though a large contingent were from Australia.

We spent Wednesday and Thursday catching up with old friends and making new ones. That is one of the great parts about going to the conference; everyone is there for the same reason, and it is easy to make new friends.

On Friday, the judging was done for the plant competition, and as a

student judge I found it really interesting to look at the difference in growth and colour, shape and size compared to what we see in Australia. The plants in the competition were really amazing, and it was hard to choose the overall winners.

That afternoon was our ‘Welcome Party’ and plant sales opening. The opening of plant sales is always fun to watch, as people run around trying to find all the plants they want. Some of the plants for sale were just lovely!

On Saturday we listened to some very informative speakers; Michael Kiehl spoke about his Bromeliad journey, Jose Manzanares gave a fascinating talk on new classifications based on DNA studies of Tillandsioideae, and we also watched 2 power points of Elton Leme speaking on “Novelties in Brazilian Bromeliaceae”, and “A new approach to the taxonomy of *Cryptanthus*”.

After lunch, we all got on buses and went to Totara Waters, which is owned by Jocelyn Coyle and her husband Peter. They have a spotless garden with so much variety and character! We also visited Kiwi Bromeliads owned by Andrew and Rhonda Maloy. Mr and Mrs Maloy have a big nursery

with a huge range of some of the most spectacular foliage Vrieseas. I really enjoyed visiting these places. It was also a good opportunity to have a look around outer Auckland.

Some of us visited the Sky Tower for dinner that night. The view was great and lots of us got a real thrill from walking across the glass floor 328 metres up!! 😊

Sunday morning we listened to Nigel Thomson give a very entertaining talk about “Bromeliads lighting up your Life”, we also heard from Dennis Cathcart on “Singapore Gardens by the Bay”. Jose Manzanares gave another interesting talk about “Ecuador, land of Bromeliads, and then Andrew Maloy talked to us about breeding foliage Vrieseas. I learned a lot from this talk.

We did another garden tour in the afternoon and went to three lovely gardens on the south side of Auckland. That night we had the conference banquet and auction. Great company, plants and food... what more could you ask for!

Monday was our last day together; when you are having fun time really does fly! We listened to Hawi Winter talk about “The Simple Science behind Beautiful

Bromeliads”, and Michael Kiehl gave another wonderful talk about “The Don Beadle Legacy”.

Dennis Cathcart was back to talk to us about Tillandsias. Now I’m not a till fan, but I found this talk very interesting. Graeme Barclay talked to us about “Internet Bromeliads, and the benefits of being connected”. I was amazed to see that over 2/3 of the attendees use Facebook to stay up to date with the bromeliad world! For the very last talk of the conference we watched another power point by Elton Leme on “The genus *Alcantarea*”.

I always find the closing of a conference a sad event, especially when it comes around so fast! I would like to say thank you to all of the attendees for your great company and friendship.

A big thank you to all of the guest speakers for such interesting and informative talks, and lastly I would like to say a huge thank you to the conference committee for the 3 busy years, that you all put in to make “Cool Broms” run so smoothly! The next Australasian bromeliad conference is in Sydney in 2015 and I am looking forward to it already!

Cool Brom's Conference

By Olive Trevor

At "Cool Broms" the competition room was packed with loads of New Zealand's best Bromeliads. It proved a challenge to our Australian judges who were assisted by two BSI Judges from Florida. It proved to be a daunting task. We were able to split into two teams so my comments will be on the plants judged by my team.

The schedule of thirty classes covered all aspects of bromeliad growing. Four classes were given to Tillandsias and only one to foliage vrieseas although foliage vrieseas were entered into the class for flowering vrieseas. Foliage vrieseas were also entered into the class for variegated bromeliads. The class for foliage vrieseas proved a difficult one to judge with so many of New Zealand's best new hybrids. We chose a smaller plant with compact foliage, perfect conformation and beautiful colouring. Also suitably named Vrieseas 'Tasman Rose'. Foliage vrieseas also featured in the class for variegated bromeliads. As a judge and a collector, I thought these were the most outstanding specimens of the show. Photo 1.

The New Zealand grown tillandsias were of outstanding size and quality. Some of the larger specimens were chosen for the top table with a *Tillandsia tectorum* with eight heads forming an amazing clump of plants.

Another clump of *Tillandsia aeranthos* established on driftwood amazed the judges with its size and quality. Both were given awards. So many well grown and well presented tillandsias made our judging a difficult task.

A new trophy was donated by Patricia Perrott in honour of Grace Goode for the best miniature neoregelia (hand crafted by Doug Cross). This was presented to a specimen of *Neoregelia lilliputiana*. The plant was a group of many plants beautifully grown and presented.

The judges found that bromeliad growth habits are definitely different in New Zealand than here in Australia and it did make judging a little more of a challenge.

We congratulate all those who won prizes in the competition and thank all those who entered their plants as well. Thank you also to those who contributed plants, making such a great display of beautiful bromeliads.



Photo 1 variegated vrieseas, outstanding!



Below: T Tectorum



Special Awards clearly reflect the effort by participants.

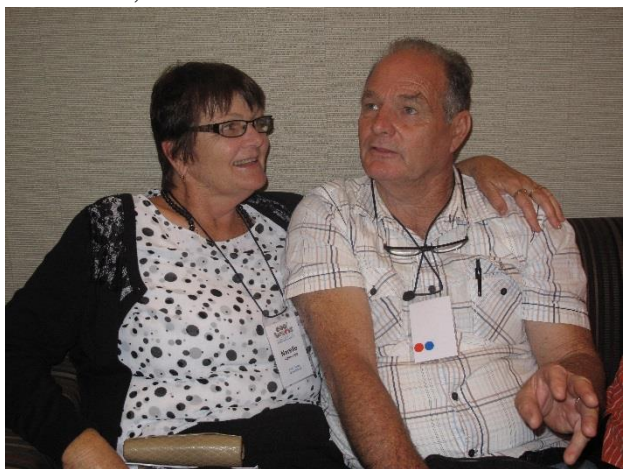




Mal and Michelle Cameron



Peter Ball, Mal and Michelle Cameron



Narelle and Greg Aizlewood



Was it any wonder the judges had such difficult decisions to make with such brilliant plants to judge!





Bromeliad Quarantine Update

By Bob Reilly

In Australia, bromeliads can only be imported, either as plants or seed, if they are approved by the Australian Quarantine Inspection Service (AQIS), which in turn relies on Biosecurity Australia (BA) for advice. Both BA and AQIS are Australian government agencies.

Plants that can be imported are on a list known as ICON. There are separate listings for plant imports (known as the “*Nursery Stock*” list) and for seeds, (known as the “*Seed for Sowing*” list). In practice, both lists are much the same, as when an application is made to add a bromeliad to those that can be imported into Australia, the application covers both lists.

For the past five years, I have been co-ordinating efforts to have as many bromeliads as possible on both lists. During that time, the number of bromeliad species that can be imported has increased from around 350, to over 1,500. Importantly, though, many hybrids can be imported as well.

Hybrids can be added to the lists in three ways:

First, they can be listed in their own right e.g, *Guzmania* Olive. As there are many thousands of hybrids, it would be a long, slow, process to obtain a listing of even a small percentage of them.

Second, if the “parent” species of a hybrid are all on the *Nursery Stock* list, then the hybrid can be imported, without having its own listing. This process helps a lot with certain genera e.g. *Tillandsia*, but in the case of some genera e.g. *Neoregelia*, the species’ parentage of many hybrids is often unknown.

Third, if **all** of the species, including synonyms, for a given genus are on the *Nursery Stock* list, then AQIS will allow any hybrid, of that genus, to be imported. While there is a lot of paperwork and effort involved in obtaining such listings, we have achieved them for *Neoregelia*, *Portea* and *Alcantarea*.

As a final complication, a bromeliad can be added to the lists through either of two “paths”:

First, if a bromeliad is in Australia, then it will be added to both lists with relatively little assessment by AQIS/BA. We have used this path to achieve the vast majority of current listings. They are quite strict though, as to the type of

evidence that they will accept to prove a particular bromeliad is in Australia.

Second, a detailed assessment is made of the potential for the bromeliad to become a weed species. If BA concludes that it will not become a weed, then AQIS adds it to the lists. There have been approximately 200 such assessments over the last five years. So, what are our priorities over the next three years?

First, we will continue to seek out, and then submit to AQIS/BA the supporting documentation for their inclusion onto the lists, bromeliads which are in Australia but not currently listed.

Second, we will prepare/submit the documentation needed to (I hope!) achieve listings covering all *Billbergia* and *Cryptanthus* hybrids. (This is because the species' parentage for many of the hybrids in these genera can be difficult to determine).

I would like to thank everyone who has helped on this project over the last five years. Without your efforts, we would be much more restricted in the range of bromeliads that we can import into Australia, than is currently the case.

Tillandsia Workshop

May 2013

A big thank you to all those who participated in the Tillandsia Workshop, held on the 26th May. It was an outstanding success with 59 attendees and over \$13,500 worth of plants sold on the day.

More details about this fantastic event in the next edition of *Bromeliaceae*.

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ROVING REPORTER

A visit to Arnold and Phyllis James

By Narelle Aizlewood

It was our great pleasure earlier this year to visit and spend time with Arnold and Phyllis James at their property at Narangba. We have visited there a few times previously and we always enjoy our time spent with them.

Arnold and Phyllis have a property at Narangba but their residence is at Edinburgh Castle Road, Kedron.

Both Arnold and Phyllis were born in Brisbane. Arnold grew up at the Grange and went to school at Wilston. He held many jobs - his first being a message boy at the age of thirteen years. He was then a Trainee Refrigerator mechanic, and a Hotel Porter. He was in the R.A.A.F. for eighteen months as an Armourer and was involved in World War II. After the war, he took part in a Reconstruction Training School where he studied as a Trainee Draftsman in Engineering and finished as a Computer Programmer for the Commonwealth Government. Phyllis grew up at Wavell Heights and she was pleased to tell us that

the house is still there. She attended Nundah State School and her jobs included Dressmaking, Shop Assistant and Home Maker Duties.

They married on the 1 May 1948 at St. Stephens Cathedral in Brisbane. Their family consists of six children – three girls and three boys. They have nine grandchildren and eighteen great grandchildren.

Their property at Edinburgh Castle Road has an area of 24 perches with town water supply to the property. In the gardens around the house they grow bromeliads and gerberas – some under shadecloth, some under dappled shade, and also some growing in the full sun. They have vrieseas, guzmanias, potted tillandsias, encholiriums and dychias growing in the gardens. The front yard is flat leading to a covered patio. It is terraced to the front of the house and they have cordylines and bromeliads growing in this area.

Their property at Narangba is where most of the growing and propagating of their bromeliad collection is done. They have a five acre property – 2 ½ hectares - and they have owned this block since 1982. They try to go to the Narangba property weekly to check

and tend their plants, although this is not always possible. They also own a holiday house at Amity Point on Stradbroke Island. They have owned this property for fifty years or more and spend the Christmas holidays with family there.

When we asked them what particular genera they preferred to grow Phyllis was quick to jump in and tell us that she particularly loves the genus *Neoregelia*. She appreciates and loves the colour in the neoregelias and she said that she just loves them all. Arnold's preferences were the Dyckias, Tillandsias and the big spiny Aechmeas. He made a joke and said that that suited his nature – BIG AND PRICKLY. Arnold said that before his introduction to bromeliads he used to grow ferns. They would go away for holidays, and when they came home the ferns would be dead – so he appreciates bromeliads for their hardiness and ease of growing.

They have one potting mix for the neoregelias and vrieseas. This is a very open mix and consists of one half soft fall bark, and one half composted bark with added Dolomite, sand and chicken pellets. The dyckias and alcantareas are potted in an enriched compost mixture which Arnold buys by half a cubic metre. He adds chicken

pellets, and Dolomite. He does use a slow release osmocote with a high "K" but he does not use any other fertilizer as he considers that there are enough nutrients in the prepared mix. They have town water supply to the property and they hand water when necessary.

They have a shade cloth structure under which the majority of their plants are grown and this provides 50% uv protection. Some of their plants are exposed to dappled shade and some are growing in full sun.

We asked if there were any pests that caused them difficulty with growing plants and their list was ongoing. They included possums, rats, crows, snakes, bats, and of course the scourge for everyone, grasshoppers. Arnold tries to maintain a regular programme every couple of months to eradicate scale infestations and he uses the systemic insecticide – Crown.

Arnold and Phyllis attended the Cactus and Succulent Society Meetings in the early 1970's and as part of their programme they would visit member's gardens. One of the gardens visited had bromeliads growing. Not long after this they visited the R.N.A. Show and found the Bromeliad Display and they were both besotted and of course

both were bitten by the same Bromeliad Bug.

Arnold and Phyllis joined the Bromeliad Society of Queensland in about 1985 when the meetings were held in the Valley near McWhirters Corner. They are also members of the Sunshine Coast Bromeliad Society, Bromeliad Society of Queensland, Bromeliad Society International, International Cordyline Society, and the Pumicestone District Orchid and Foliage Society at Ningi.

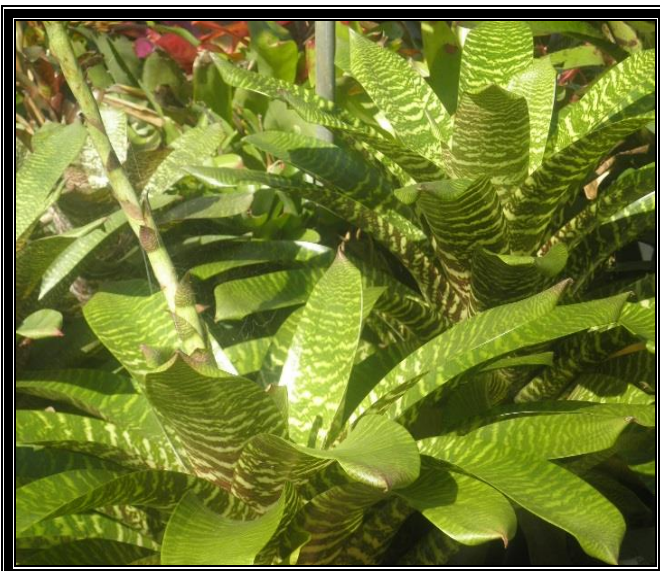
Arnold held the position of Competition Steward for quite a few years and well as being on the Committee for the B.S.Q. and Phyllis had been involved with Plant Sales also for many years.

With regard to other hobbies or interests, Phyllis told us that she has been collecting stamps since she was a child and has a wonderful stamp collection. Her dressmaking and cooking skills have fallen by the wayside since the children have left home and now her main interest is Bromeliads and other plants. Arnold fills in his spare time with solving Puzzle Books and in particular 'Code Crackers'. He still does a lot of work on the computer and of course his love of Bromeliads and gardens and plants generally keep him very busy.

They are very valued members of our Society and are always ready to help out and pitch in. They appreciate the friendly companionship and plant knowledge they have gained through being members of the B.S.Q.

They have pet nicknames by various members - Len and Sheryl Waite call them Ma and Pa and Rob Murray calls Arnold - Dad. They have been adopted by many people but we are happy just to know them as Arnold and Phyllis and are glad to be known as their friends.

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Blank labels or the next best thing!

By Derek Butcher

Some people like blank labels, some like a little information, some like a lot. I hope you will bear with me in this article. I hope you will agree that it is not worth writing information unless it is fairly accurate and I hope to give you some clues about solving your problem.

First, let us deal with a plant with no label. Wait until your plant is flowering and take it to a meeting and ask around. You should get lots of suggestions ranging from the certain to the not so certain. Many will take the most positive for granted but if you are a Doubting Thomas like me, read on.

I also like the pleasures of life. Do you like to get a warm fuzzy feeling when either you have proved someone else wrong or proved yourself right? Or helped someone to correct a wrong name? I do! Read on!

The answer will either be a species or a hybrid (Remember a Latin name generally signifies species).

If species check against the photo on fcbs.org and if you are really keen and want plant descriptions etc., contact WWW Bromeliad Society and join the Encyclopaedia of Bromeliads Project. If a hybrid check the Bromeliad Cultivar Register at:

<http://botu07.bio.uu.nl/bcg/bcr/index.php> and if it is not there you may like to contact the hybridist and encourage registration.

The only thing left is a formula where the hybridist has been too lazy to even think up a cultivar name and register it. When hybridists cross two plants and successfully get seed they generally record both parents for their own benefit. The seed parent should be recorded first with an 'x' between each name. This is the minimum requirement to identify a grex and should remain in the hybridists' records. It is when these youngsters are ready to leave the nest that the hybridists should decide if their hybrid was a success or failure. If a failure, plants should be destroyed; a hybridist should try to set a high standard. If a success, consideration must be made as to registration.

If undecided, the formula continues. This is the hardest problem to solve unless you know

the hybridist and can ask questions and perhaps encourage a grandfathering-in type registration, but if not then continue reading.

There are questions that need to be answered:

1. How accurate is the formula?
2. Where did the plant come from?
3. Has the formula been recorded previously? Check parentage in the BCR under Advanced Search to see if your hybrid has been done before. How similar is your plant? Should you discuss the problem with the Registrar?
4. Is the seed parent name shown first?
5. If you were certain in your own mind they are the same you could use the registered name.
6. BUT if in the slightest doubt stay with the formula on the label.
7. If the plant were really unique and you had pursued all avenues to trace the hybridist, albeit unsuccessfully, you are free to increase the plant by asexual means (offsets etc.,) and register with your own name.

Any of you who have read the S A Bromeliad Gazette will realise that I use unidentified or wrongly identified plants at meetings as inspiration to investigate their

history when home in my Den! The said plant has had its photo taken and is discussed in the next Gazette. I go through all available literature and internet and don't rely on just one source.

Other groups should be encouraged with this way of learning because it must be remembered that off-the-cuff decisions can often be wrong.

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Hope you are on the mend.

Plants with variegated forms named in Latin under the ICBN rules.

By Derek Butcher

Over the years we have seen these sorts of names used as either variety or forma and there are some 18 on record, be they “variegata”, “striata”, or “lineata”. Why the concern, you may ask? Several hundred have been named as cultivars under the ICNCP (International Code of Nomenclature of Cultivated Plants) rules so why were these 18 not treated in the same fashion? To my mind, the main reason was the fact that many botanists ignored the existence of the ICNCP rules.

What is also interesting is that although botanists have gone to the trouble to preserve herbarium specimens and formally describe these variants under the ICBN (International Code of Botanical Nomenclature) rules, they mostly ignore this taxon when formally reviewing the species. To my mind, all subspecies, varieties or formas should be dealt with at the same time. In recent years you must have noticed that where this anomaly has happened I have been involved in creating cultivar names

to cover this void – yes, that taxon has died out in the wild but it is still living as a culton in cultivation. We show just 2 examples.

Gone are the days of Latin names having a greater status. If any oddity is found in the wild that is not stale you should not speak of a form or variety. A cultivar name must be considered by botanists to be equally valid if the plant is under cultivation.

Examples of where variegates have been ignored by botanists in reviews include *Ananas bracteatus*, *A. comosus*, *Bromelia serra*, *Tillandsia utriculata*, *T. viridiflora*, and *Vriesea atra*. I intend to note any of these in any of the lists I maintain on the internet with the following: “A deviation that should never have been described under ICBN rules”. Regrettably, I would include *Guzmania monostachia* var. *variegata*, much beloved by Floridian growers, and which does not breed true from seed. But if someone can come up with an apt cultivar name, this could be duly recorded.

** International Code of Botanical Nomenclature.

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Krömer, T., A Espejo-Serna, A. R. Lopez-Ferrari, R. Ehlers & J. Lautner. 2012. Taxonomic and

nomenclatural status of the Mexican species in the *Tillandsia Viridiflora* complex (Bromeliaceae). – Acta Bot. Mex. 99: 1-20.

Vriesea pseudoatra Leme, Harvard Pap. Bot. 4(1): 162. 1999



Photo Caption:

When *T. macropetala* was resurrected from synonymy under *T. viridiflora*, *T. viridiflora* var. *variegata* was not dealt with. This is why *Tillandsia* Silver Candelabra came into being.

When *V. pseudoatra* was created by slitting two taxa under the name of *V. atra* no mention was made of *V. atra* var. *variegata*. This is now known as *Vriesea* Eureka.

BOOK REVIEW

Air Plants Epiphytes and Aerial Gardens By David H Benzing

For someone keen on tillandsias the title of this book is magnetic. The back cover suggests this book “is technically correct and a very stimulating read not only for the layperson but also for any biology student or biologist with an interest in epiphytes”.

Benzing reveals that there are around 28000 species of epiphytes with orchids accounting for 15,000 being over half the total. Ferns at 2400 species and bromeliads at 1500 species are the more numerous of the other groups.

The scope of the book covers everything from what makes an epiphyte to the evolutionary origins and aspects of water management, photosynthesis and mineral nutrition to reproduction. I found the discussion on why orchids are so spectacularly successful in creating species quite interesting. Benzing explained this arises from orchids;

a) having to expend minimal energy in seed production as while large numbers are produced, each seed is not parcelled with its initial supply of nutrition;

- b) having pollen packaged in a detachable delivery device with enough pollen grains to fertilise all ovules produced; and
- c) reliance on quite specific pollinators which leads to pollen exchange between members.

He points out that bromeliads lack the aspects of reproductive technology that prompt rapid speciation.

This is, as promised on the cover, a comprehensive treatment of epiphytes but the “aerial gardens” referenced in the title get scant attention. The facts are there but the reader has to focus and put in some effort to arrive at an understanding. By way of an example of the “thick text” the following is one section’s introductory paragraph:

How Epiphytism Evolved

Epiphytism is a derived condition that has evolved repeatedly from a taxonomically mixed ancestry that itself required different kinds of rooting media.Lithophytism likely preceded epiphytism on numerous occasions, and the species that currently exploit rocks and bark interchangeably almost certainly demonstrate what these transitions looked like midstream.

Progressions that began with accidental through facultative to obligate epiphytism were probably most common.

So it is clear that your reviewer struggled with a technical book. Almost at the same time help arrived in the form of a newsletter from an overseas society with a summary of a presentation to the Florida West Coast Bromeliad Society in March by Dr David Benzing. The notes are reproduced here to provide a summary of the aspects of evolution covered in greater detail in the book.

Dr. David Benzing’s presentation was titled *How Does Bromeliaceae Demonstrate the Reality of Darwinian Evolution?*

Evolution is necessary for life because it allows plants and animals to adapt to and survive changes that occur over time in their environment (habitat). How these adaptations are made is more a matter of error and trial, not trial and error. Cellular mutations or genetic accidents (errors) that occur can produce new traits or characteristics in an organism. Organisms that develop a new trait that allows them to deal with subsequent changes (trials) in growing conditions within their habitat are better suited to adapt and survive the changes. Such adaptations allow organisms to survive in a niche while others without those traits cannot.

Bromeliads are almost unmatched among plants for living in habitats that require drought tolerance and

dependence on alternative and often scarce supplies of key nutrients. And this is what makes them useful for demonstrating plant adaptations. The focus of David's talk was to refute four common misconceptions about evolution and he used examples of bromeliads to make those points, as follows.

1. It is not true that newer, more complex species displace older 'primitive' species. For example, the picture (at page 7 of the book) shows *Vriesea* growing beside a primitive plant form, a lycophyte (clubmoss). The genus *Vriesea* is no more than a few million years old and the lycophyte in the picture is essentially the same as its ancestors that lived more than 300 million years ago.

2. It is not true that characteristics or adaptations never evolve more than once. The leafy tanks of bromeliads have evolved repeatedly throughout their evolution.

3. It is not true that evolution always progresses from simple to more complex forms or structures and from less to more efficient functions. Tillandsias have minimized form and function by developing harder, fewer leaves, minimizing shoots, and being essentially rootless. These traits give them an advantage in stressful habitats. Tillandsias are the most successful in the family Bromeliaceae in adapting to a wide range of habitats.

4. It is not true that major changes in form and function require millions of years. Evolution does not always proceed in small steps and in some plants, such as bromeliads, different aspects of its body evolve at different rates.

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**A note the from Co-Editors
Jennifer & Chris Coulthard**

Hi and welcome to the second Bromeliaceae Co-Edited by the team of Jennifer & Chris Coulthard and John Olsen.

Thank you to all those who offered encouragement after our first publication; it's always nice to get constructive criticism.

We hope you enjoy our second publication, and yes we have got the font size right so you won't have to use a magnifying glass to read it this time.

To bring the aims of Bromeliaceae into focus it is useful to review the means the Society communicates with its members.

1. The Newsletter – which is emailed monthly to members reporting on competitions, events and the social side of the Society.

2. Bromeliaceae – providing extensive articles on the propagation and cultivation of Bromeliads; covering a wide range of subjects drawn from many contributors, and publications. The articles are selected to be of interest to all members, be they beginners or experienced growers.

3. Internet site – which draws together the newsletter and Bromeliaceae as well as providing a means of accessing past publications and so much more.

4. Finally, our monthly meetings featuring speakers drawn from different backgrounds who share their knowledge with our members.

This month it seems that Bromeliaceae is leaning heavily in promoting Tillandsias, but you must remember that our Co-editor and President, John Olsen, is a Tillandsia fanatic. Further editions will be a little more balanced, featuring genera Jennifer and I are interested in!

THE BSQ LIBRARY

Your attention is drawn to the Society's library. It is a service to its members. Members are able to borrow books from the library at any of our monthly meetings.

The Society also sells specialist books relating to Bromeliads – see the website for details.

**BSQ Polo Shirts - Place Your Order
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Plant of the Month Programme for 2013

July Intergenerics

August Pitcairnia

September Dyckia, Orthophytum, Puya

October Billbergia

November Neoregelia, Nidularium

Don't forget about the "Ekka". Volunteers are asked to help man the exhibit.
If you can spare some time to help out, please contact us.
We are, as always, grateful for your help.

Competition Schedule for 2013

July - MINI SHOW

Class 1 – Billbergia

Class 2 – Tillandsioideae not listed elsewhere in Schedule, species & hybrids

(*Alcantarea*, *Catopsis*, *Mezobromelia*, *Racinaea*, *Werauhia*)

Class 3 – Neoregelia up to 200mm diameter when mature, species & hybrids

Class 4 – any other flowering bromeliad species & hybrids

August - POPULAR VOTE

September - POPULAR VOTE

October - MINI SHOW

Class 1 – Neoregelia over 200mm diameter when mature, species & hybrids

Class 2 – Tillandsia species & hybrids

Class 3 – Pitairnioideae not listed elsewhere in Schedule, species & hybrids

(Brocchinioideae, Lindmanioideae, Hechtioideae (= *Hechtia*), Puyoideae (= *Puya*), Navioideae,
Pitcairnioideae (= *Deuterocohnia*, *Encholirium*, *Fosterella*))

Class 4 – any other flowering bromeliad species & hybrids

November - POPULAR VOTE

