



BROMELETTER



The Joy
of CHRISTMAS
CELEBRATE THE SEASON

**THE OFFICIAL JOURNAL OF
THE BROMELIAD SOCIETY OF AUSTRALIA INC.**

Issue: Volume 51 Number 6—November/December, 2013

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and January.**



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P.O. Box 340, RYDE NSW 2112.**

Please Note

**BROMELIAD plants will be on sale at the Club
from 12.30 p.m. before the monthly meeting.**

MEETING VENUE AND TIME
SECOND SATURDAY OF EACH MONTH AT THE
BURWOOD R. S. L. CLUB,

Cnr. Shaftesbury Road and Clifton Avenue, Burwood.

**Meetings commence at 1.00 p.m. in the First Floor Conference Rooms/
Auditorium.**

MEETINGS PROGRAM

- | | |
|--------------------------|--|
| November 09, 2013 | Show and Tell Members.
Talk: Travels. Michael Ferenczi. |
| December 14, 2013 | Show and Tell Members
Christmas Party. |

EVENTS CALENDAR

- | | |
|----------------------|--|
| May 3/4, 2014 | BSA Autumn Show, Burwood RSL Club. |
| October 28/19, 2014 | BSA Spring Show, Burwood RSL Club. |
| April 16 to 19, 2015 | 16th Australasian Bromeliad Conference, Parramatta. NSW. |

B.S.A. Website
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0408 202 269

LIFE MEMBERS

- | | | |
|--------------------------|---------------------------|---------------------------|
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- Payment details (membership renewal, book purchase, postage, etc.) with \$A amounts for each item.



SPRING SHOW

OCTOBER 12/13. 2013

GRAND CHAMPION OF SHOW TERRY DAVIS *TILLANDSIA CF BELLOENSIS*
RESERVE CHAMPION KERY MCNICOL *xNEOPHYTUM 'GALACTIC WARRIOR'*
SPECIES AWARD ROBYN FIRTH *QUESNELIA MARMORATA 'TIM PLOWMAN'*
NOVICE CHAMPION KERY MCNICOL *xNEOPHYTUM 'GALACTIC WARRIOR'*

CLASS RESULTS

1. Pot of Aechmea

1st Terry Davis
2nd Carolyn Bunnell
3rd Robyn Firth

Aechmea orlandiana
Aec. recurvata var recurvata
Aechmea nudicaulis aureo-rosea

2. Billbergia Specimen

1st Terry Davis

Billbergia 'Hallelujah'

3. Billbergia Colony

1st Robyn Firth
2nd Robyn Firth
3rd Terry Davis

Billbergia 'Virginia'
Billbergia 'Domingos Martins'
Billbergia 'Improposa'

4. Pot of Cryptanthus

1st Robyn Firth
2nd Lydia Hope
3rd John Cornale

Cryptanthus 'Pink Starlite'
Cryptanthus 'Blood Red'
Cryptanthus bivittatus

5. Neoregelia Species

1st Terry Davis
2nd Lydia Hope
3rd Carolyn Bunnell

Neoregelia guttata
Neoregelia lilliputiana
Neoregelia olens cv. 'Marie'

6. Miniature Neoregelia

1st Carolyn Bunnell
2nd Robyn Firth
3rd Carolyn Bunnell

Neoregelia 'Golden Jewels'
Neoregelia 'Shamrock'
Neoregelia olens cv. 'Marie'

7. Pot of Neoregelia Hybrid

1st Robyn Firth
2nd Robyn Firth
3rd Terry Davis

Neoregelia 'Meyendorffii albo marginata'
Neoregelia 'Groucho'
Neoregelia 'Mini Skirt'

8. Nidularium/Canistropsis

1st Carolyn Bunnell
2nd Robyn Firth
3rd Robyn Firth

Nidularium innocentii
Nidularium cariacicaense
Nidularium Red Queen

SPRING SHOW, OCTOBER 12/13/2013

CONTINUED FROM PAGE 4

9. Tillandsia Specimen
 1st Carolyn Bunnell *Tillandsia ionantha* hybrid
 2nd John Cornale *Tillandsia streptophylla*
 3rd Terry Davis *Tillandsia plumosa*
10. Tillandsia Colony
 1st Terry Davis *Tillandsia cf belloensis*
 2nd Terry Davis *Tillandsia tectorum*
 3rd Rona Bolton *Tillandsia fuchsii* forma *gracilis*
11. Vriesea
 1st Carolyn Bunnell *Vriesea* 'Sweet Red'
 2nd Carolyn Bunnell *Vriesea racinae*
 3rd Robyn Firth *Vriesea* 'Highway Beauty'
12. Foliage/Variegated Bromeliad: (**Not in Flower**)
 1st Carolyn Bunnell *Neoregelia* 'Wango Tango'
 2nd Carolyn Bunnell *Neoregelia* 'La Nina'
 3rd Terry Davis *Neoregelia carolinae* forma *tricolor*
13. Other Genera.
 1st Robyn Firth *Quesnelia marmorata* 'Tim Plowman'
 2nd Terry Davis *Racinae multiflora* var. *tomensis*
 3rd Rona Bolton *Dyckia* 'Warren'
14. Pot of Intergeneric.
 1st Robyn Firth x*Guzvriesea* (Vriesea Belgian hybrid x
Guzmania wittmackii
 2nd Robyn Firth x*Anagelia* 'Minnie Belle'
 3rd X
15. Mounted Bromeliad.
 1st Carolyn Bunnell *Tillandsia ionantha* x *capitata*
 2nd Carolyn Bunnell *Tillandsia tectorum*
 3rd Carolyn Bunnell *Tillandsia fuchsii* forma *gracilis*
16. Terrestrial Bromeliad.
 1st Terry Davis *Dyckia* 'Little Red Devil'.
 2nd Terry Davis *Dyckia* 'Keith Ryde'
 3rd Terry Davis *Dyckia* 'Dark Chocolate'
17. Artistic Arrangement..
 1st Carolyn Bunnell '37 degrees'
 2nd S & L Astill 'Oriental Garden'
 3rd S & L Astill *Cryptanthus* and wood.
18. Novice.
 1st Kerry McNicol x*Neophytum* 'Galactic Warrior'
 2nd S & L Astill *Neoregelia* 'Shamrock'
 3rd Kerry McNicol *Neoregelia* 'Hot Tips'.

THE BSA SPRING SHOW

2013 RESULTS

Our Spring Show went well with enthusiastic visitors/buyers and the sellers were generally happy with their sales. There were lots of bargains to be had with well presented, healthy plants. Our new layout with the display in the gazebo area was well received and this allowed a much more open layout in the sales area

Where can we start with thanks due to so many members.

Kerry and Joy organized the display which was most artistic. They had a keen band of helpers, including John Cornale who transported our equipment from storage. There were some stunning plants provided for the display.

Chris Larson and Don Firth, with their helpers, organized our Show set-up on Friday evening and all was ready for our opening at 10 a.m. next morning, with Alan Mathew and Ron Farrugia ready to take care of sales and Gary greeting visitors.

We had outstanding entries for the Competition, with Terry Davis very ably acting as Show Registrar.

Laurie Dorfer and Edwina Caruana ably carried out the difficult job of deciding on the winning entries.

Our thanks go to Maureen Johns and Carolyn Bunnell who printed and collated the results.

Thank-you Graham and Christine who manned our Book and Pot sales and were able to join up some new members.

What can we say to adequately describe our Lucky Door girls?? Beautiful and smart, they made the whole thing very amusing and attractive to visitors to the extent we made a record amount.

Thanks again Gabrielle and Yvette and your helpers.

The Show was a great combined effort, with many others helping to set-up and pack down and it was obvious that members were enjoying communicating with each other, lots of laughter happening, and much talking with visitors. Thanks to all who took part.

RENEWAL OF SUBSCRIPTIONS

This is a reminder that subscriptions for membership of our
Society are due and payable on
January 1st, 2014.

Details of the amount of subscriptions will be found
on
Page 23.

A Subscription Renewal Form is attached to this issue of
Bromeletter.

SPECIAL GENERAL MEETING.

A Special General Meeting was held prior to the beginning of our monthly meeting on September 14, 2013, to adjust the wording of Clause 29 of the Constitution by replacing the word "audited" with the word "inspected".

The Clause will now read:

"The yearly financial Accounts made up to the thirty-first day of December of the previous year and duly inspected, shall be submitted by the Treasurer to the meeting. (See Rule 38.)"

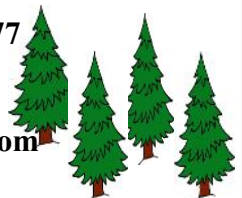
The purpose of the change is to ensure that each clause of the Constitution correctly relates to the need for the Accounts to be formally inspected, not audited.

The Motion was carried.

PINEGROVE BROMELIAD NURSERY

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SHOW & TELL SEPTEMBER, 2013.

Kerry McNicol commenced the Show and Tell proceedings with a query regarding *Aechmea capitata* which she acquired from Pinegrove many years ago. The plant is approximately 30cm tall and wide, with strappy leaves with fine spines. Its flowers in spring last about 2 weeks. It is relatively easy to grow in the Sydney area, but can develop marks in colder conditions. No-one was familiar with the plant, so further investigation was undertaken.

Kerry emailed Ross Little of Pinegrove Nursery, as this was where she originally acquired the plant. His reply was prompt with a solution to her query. The plant was imported into Australia in the late 1980s by different people, under two names, *Aechmea capitata* and *xNeomea Freca Rosea*. Derek Butcher investigated and found that these were indeed the same plant, which was believed to have been hybridised by Tom Davis in the US in the early 1980s. The plant was ultimately registered as *Aechmea Freca Rosea*.

(See BCR at <http://registry.bsi.org/> for more information)

Helga Nitschke followed Kerry with a medium-sized plant which she wanted to identify. It was a *Billbergia* and some members thought it could be 'Beryl Allan'. There was quite a lot of discussion about it but nothing definite. So, for the time being, it is still unknown.

John Cornale's contribution was a number of small plants which were unnamed and members agreed that they were all *Neoregelia ritci*.

Werner Raff showed a *Vriesea poenulata* which he had brought to our meeting three months ago. It is now in flower and he just wanted everyone to see it.

Ron Farrugia presented a weird-looking plant the identity of which was unknown. It grows to be very big and its narrow green leaves are really spiky along the edges. He has had it for eight years but it has never flowered. No one was able to help with its identity.

Mark Belot was next with a medium-sized, green-leafed plant which he bought from Sharon Song. It was identified as an *Aechmea* but its name escaped everyone. It is probably a hybrid but no one could take it closer to a positive identification.

Peter Fitzgerald had two plants for naming and was more successful.; one was *Aechmea kleinii* and the other one was *Billbergia nutans*.

Gabrielle Maitland concluded Show and Tell with an *Aechmea gamosepala* (Lucky Stripes) which President Ian had asked her to look after while he is away on holidays. It is an unusual plant because it has white stripes on the top of the leaves and he asked her to bring it back so everyone could have a look at it..

(Continued on Page 9)

Show and Tell—September, 2013.

Continued from Page 8)

Robyn Firth mentioned that there is a plant of this type called ‘Mardi Gras’ which is similarly striped but unfortunately Robyn has found that it is quite unstable and her plants have all reverted to *gamosepala*.

At the conclusion of Show and Tell everyone went to Afternoon Tea and when we resumed the meeting we were treated to an excellent talk by Laurie Dorfer on the subject of Carnivorous Bromeliads.

NEWS FROM SICK BAY

We heard at our last meeting of Margaret Draddy’s stay in hospital. She has not been able to return home at present but is currently being assessed to determine what assistance she may require to stay in her home. Our thoughts are with Margaret and hope her health will improve.

Owen Heaps, one of our committee people, is to undergo further treatment and is to be part of a research experiment into his condition. He is now not able to drive and we feel sure he would appreciate some assistance with hospital visits and transport for both him and Marilyn, our Secretary, who does not drive. Give him a ring, Owen likes a chat.

Some dates of upcoming events to go to...

14 December - Xmas meeting and celebrations, with luncheon and Bromeldip.

We will be asking for volunteers to organise extra special food preparation as well as the normal, always welcomed, plate of nibblies from each person.

The Bromeldip - anyone participating, please wrap a small gift. Boys please label your gift "boy", and Gals please label your gift "girl". Take one blue or pink lottery ticket when you drop off your gift.

Santa will later invite members to swap their ticket for a gift from his gift sack.

Ian.

Vriesea flammea versus *poenulata*

DD0707

by Derek Butcher 07/07

Over the years I felt I knew the difference between these two species. One was a small plant and the other larger and I did not bother to look at the finer points of identification. I had looked carefully at a *Vriesea* with a similar inflorescence which we know as 'Komet' with all its variations because of having been grown from seed in Australia. With the help of Peter Franklin we even convinced ourselves that the *Vriesea acuminata* was really a false name for yet another 'Komet'. Our view was vindicated when this species became a *Werauhia*!

So in September 2005 I was surprised to receive a photo of a *Vriesea poenulata* with yellow petals from my friend Oscar Ribeiro in Rio de Janeiro. Alarm bells rang because this did not link with what I thought was *V. poenulata*. A quick reference to Smith & Downs showed petals as white so I refuted Oscar's name. Oscar replied by saying that Elton Leme said petals should be yellow and had agreed with Oscar's identification.

Not to be outdone, I checked with Harry Luther who confirmed the error of white petals in Smith & Downs which should show yellow. So I had to eat humble pie and removed the Aussie photos of the alleged *V. poenulata* (with white flowers) from www.fcbs.org and replaced them with Oscar's. What we had as *V. poenulata* were really *V. flammea*! This broadened my view as to what could be a wide range in *V. flammea*.

What is interesting is that Baker in 1889 said petals were white, Mez in 1935 said petals were yellow and Smith went back to white. The Holotype is a Morren drawing – note drawing not painting, where colour may come into the equation! If we look at Smith's key we will see that we should really be looking at the scape bracts for the key difference and I ask you to look carefully at both drawings. (Page 13).

Subkey XI

Flowers in more than 2 ranks, polystichous. Inflorescence simple; stamens mostly exerted.

1. Inflorescence polystichous-flowered only at base, lax, elongate. Cuba (variety).

platynema

1. Inflorescence wholly polystichous flowered. Go to 2.

2. Leaf-blades ligulate, acute, 4-5 cm wide. Mexico. ***malzinei***

2. Leaf-blades narrowly triangular, attenuate. Brazil. Go to 3

3. Scape-bracts all bearing recurved elongate blades; inflorescence dense, few flowered, 4-9 cm long. ***poenulata***

3. Scape bracts bearing erect blades, those of the upper ones very short. Go to 4.

4. Inflorescence dense except at base; flowers in about 4 ranks, mostly sub-erect; floral bracts inflated. ***flammea***

4. Inflorescence lax; flowers in slightly more than 2 ranks, all divergent or spreading at anthesis; floral bracts closely enfolding the sepals. ***corcovadensis***



Competition Results

**POINT
SCORE**

YEAR — 2013

Plant of the

Month

September, 2013

Open

First
Second
Third

Judge's Choice.

Michael Ferenczi *Tillandsia deppeana.*
Ron Farrugia *Tillandsia 'Houston'.*
David Scott *Tillandsia cactiola.*

Open

First
Second
Third
= Third

Members' Choice

Ron Farrugia *Tillandsia 'Houston'.*
John Cornale *Neoregelia 'Cihpoticac'.*
S. Southwell *Tillandsia capillaris vincarna.*
David Scott *Tillandsia cactiola.*

Novice

First.
Second
Third

Judge's Choice

Kerry McNicol *Tillandsia complanata.*
Kerry McNicol *Neoregelia 'Wilsonia Royal Flush'.*
M Sargeant *Neoregelia 'Galactic Warrior'.*

Novice

First
Second
Third

Members' Choice

M Sargeant *Neoregelia 'Galactic Warrior'.*
Kerry McNicol *Tillandsia complanata.*
Kerry McNicol *Neoregelia 'Wilsonia Royal Flush'.*

Aechmea Freca Rosea



PLANT
OF
THE
MONTH
SEP-
TEMBER
2013

See Show & Tell on Page 8.
Kerry McNicol's report.



Neo. Wilsonia x Royal Flush.
3rd Novice Members Kerry McNicol



Tillandsia deppeana 1st Open

Til-



Tillandsia 'Houston' 1st Open Members
Ron Farrugia



Guzmania dissitiflora Members
Open Michael Ferenczi



Top: *Tillandsia belloensis*. Grand Champion of Show. Terry Davis.

Below: *Quesnelia marmorata* "Tim Plowman". Species Award Robyn Firth.

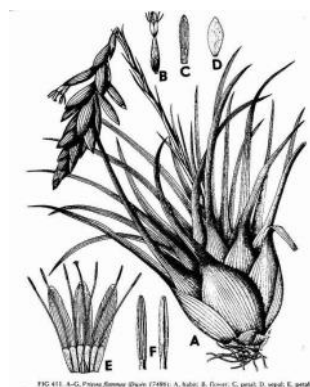


Top: Reserve Champion: Kerry McNicol
Neophytum 'Galactic Warrior'.

Below: Artistic Arrangement
Carolyn Bunnell.



Vriesea poenulata See Page 11



Vriesea flammea



Neoregelia princeps

Hechtia tillandsioides

DD 11/05

by Derek Butcher.

This plant has been in Australia for many years and is now widely spread from offsets due to its uniqueness in being a virtual spineless *Hechtia*. It has only just flowered in Adelaide in the collections of Derek Butcher and Len Colgan but is such a quaint plant that one wonders why so little has been written about it. Despite what the species name implies there are spines on the leaves although they are what Margaret calls 'jelly spines'.

Let us first look at what has been written about this plant. First there is the magnificent painting done for Andre in 1889 as a *Bakeria* of what appears to be a male plant with a bipinnate inflorescence and shows a bit of artistic licence in the size of the flowers and total colour of the petals. In reality the male petals are white with splashes of dark pink especially towards the tips even though Lyman Smith describes them as just white (for female flowers?). Smith also tells us that the plant flowers less than 1m high with an amply tripinnate inflorescence and is very graceful and delicate.

What does astound me is how taxonomists link the two sexes of a species because as John Utley points out, many seem to have differences in plant habit depending on sex! One can only assume that each of the sexes must be growing in the immediate vicinity so that pollinators can at least find it easy to transfer pollen. AND in these days of man's intervention in the insect and other wild life populations, it makes you wonder about their survival.

Hechtia tillandsioides was described from a painting and no information was given as to where the plant may have been collected. It is therefore an enigma as to how the taxonomists link it to live (herbarium!) material. There do appear to be other similar finely toothed hechtias found in Mexico. For example, we know that in 2004 in the Bromeliaceae of Mexico checklist Adolfo Espejo Serna proposed the resurrection of a *Hechtia purpusii* and linking it with *H. lindmanioides*. Smith had treated *H. purpusii* as a synonym of *H. tillandsioides*. While we do not know where *H. tillandsioides* was originally from, we do know that *H. lindmanioides* comes from Barranca de Consoquitla, Vera Cruz and *H. purpusii* comes from Barranca de Tenampa, Vera Cruz. Whether this proposal will be accepted by his peers we can only wait and see.

If we look at Smith's key to *Hechtia* we see *H. lindmanioides* at #20. and *H. tillandsioides* at #21, the main difference being in the size of the flower, said to be 3mm in *H. lindmanioides* and 5mm in *H. tillandsioides* whereas our plant is about 7mm. Now, Lyman Smith had treated *H. purpusii* as a synonym of *H. tillandsioides* and if you read the original description by Brandegees in 1920 it seems to be the right decision. If you treat *H. purpusii* as synonymous with *H. Lindmanioides*, then the combination of the diagnostic information makes this *H. purpusii* even closer to *H. tillandsioides*. I have had to scan my flowers at 1200dots per square inch so I can see what these measurements look like! Nothing is written about *H. tillandsioides* male plants and yet, as John Utley has pointed out, there can be substantial differences between male and female plants!

(Continued on page 15)

Hechtia tillandsioides

Why am I telling you this? Well, there is this possibility that our *H. tillandsioides* is wrongly identified and one easy way to find out identity is to ascertain where the plant was collected.

This leads me on the track of how our *H. tillandsioides* got to Australia and where it was collected. Only male plants seem to be in Australia although why it was left to South Aussies to pick this up I don't know! How do we know it is male? Well, it has 6 prominent stamens and oodles of pollen when the flower first opens. When you try to find the stigma lobes in the centre of the flower all you find is a little stub which is no use to man or beast! No wonder it is a frustrated plant and we must find it a mate! Did this plant in Australia start from seed because if so, then there must be a female plant around. Regrettably, I think they are all offsets from the same plant and all roads – so far - lead to John Catlan of Jacob's Well, Qld. John tells me he got his from Mary Nicholson who almost certainly got hers from Olwen Ferris. It did not appear in any of Olwen's catalogues that I can trace so it must have been rare in her collection. It is slow to offset and seems to need to form a clump to flower. What we do not know is how often it flowers once a clump has formed and John Catlan has promised to let me know. Because it takes 4-5 years to clump, there is much waiting for the plant to flower.

The key points to watch are:

1. Is anyone growing a female plant for my frustrated one?
2. Does anyone know where Olwen may have got her plant? I think it must have been when she was in Queensland because there are no NSW leads.
3. There may be a name change in the offing!

If you look at <http://fcbs.org> under *Hechtia tillandsioides* you will see a white petal-alled plant that is tripinnate and agrees more closely to Smith's description of the female plant. I wonder if Ken Marks checked for sex!

Treasurer's Report – (1):

Treasurer Alan Mathew gave the following details regarding our
Operating Account to August 31 2013

Brought Forward	\$8,647.61
Plus Income:	1,057.66
Less expenses	1,824.10
Bank Statement as at 31/08/2013	\$7,881.17

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SITTING ON THE FENCE!

by Joan Williams.

Editor's Note: I was poring through some old Bromeletters looking for something to fill up the last empty page of this issue and came across this article by Joan Williams which, I thought, was just as relevant today as it was when Joan wrote it back in the middle of 1993. Joan was a Committee member and Membership Secretary at the time and her husband Barry was Editor, without any computer skills, but very good on a typewriter. Some of her comments and predictions you have to take with a grain or two of salt,; where she says that "without help from its members the Society will slowly wither, totter and fall" have not come true. When she wrote it, thirty years had passed since it began, now we have just celebrated fifty years and are still going strong. I have not put it in from a sense of frustration, but just in the hope that many of you will take on board the feeling that "Yes, I really could write something about what I am doing and other members will be interested to read it." So, see what you think. My e-mail and postal addresses are on pages 2 & 3.

"Those of you who are now reading this article belong to The Bromeliad Society of Australia Inc. It is a large society and the first in Australia (the "Mother" Society, so to speak). Our membership covers local, country, interstate and overseas. We are thirty years old and a lot of water has passed under the bridge since it was started by a group of dedicated people back in 1963.

I feel proud to belong to it and I hope you do too. This is YOUR Society, YOUR hobby, YOUR interest, and you must feel that you want YOUR Society to be a success and flourish for the next thirty years. But without the help of its members this Society will slowly wither, totter and finally fall.

Our small Committee is elected to do the boring chore of managing the Society's affairs.

It is not a pleasant task, but I suppose someone has to do it and their hobby will not become a nightmare as long as the rest of the members who attend the meetings HELP !

It is difficult for the country, interstate and overseas members to help physically, but even they could send in a short note for Bromeletter to tell the other members how they grow their bromeliads in their different environments.

Let's face it, this is what the Society is all about! To promote bromeliads, to gain some knowledge as to how to grow these unique, beautiful and interesting plants and to 'spread the word', so that other people can join the Society and therefore enjoy a hobby that is different and exciting.

Of course we have the "knockers" who say the Committee are not doing their job (it's all the Committee's fault, etc). But it's YOUR Society, so it's just as much your fault when things don't go to plan. With shows, monthly meetings and a lot of other administrative tasks, a few Committee members can NOT do everything. If you sit at meetings with arms folded and say "entertain me!", you have the wrong attitude. Join in, lift a helping hand, and I'm sure you will get a warm feeling and feel that this Society is really YOUR Society.

So next time, when the Committee asks for volunteers to help at shows, meetings or whatever it may be, remember that they are not asking for themselves personally but for YOUR Society. Also remember that if you offer to help, it is a commitment, so carry it through to the best of your ability with pride.

Don't just sit on the fence and criticise, remember the dedicated people who started the Society. They didn't leave it all to the overworked and definitely underpaid Committee!

They got up and worked for THEIR Society, otherwise we wouldn't be where we are to-day.

So ! Get off the fence ! Roll up your sleeves and make a vow that you will help YOUR Society as much as possible in the future. No matter how small the help, it will be "Oh, so appreciated" and the Committee will thank you from the bottom of their hearts !!"

**PHOTOSYNTHESIS FOR BROMELIAD
GARDENERS.**
by Don Beard.

CAM Benefits

The shutting of the stomata during the day leads to greater water efficiency. This is particularly useful for seasonal and intermittent water supply.

- * The CAM pathway keeps the metabolism going in stressful conditions. This is a survival mechanism rather than a biomass or growth producer.
- * The pathway provides maximum CO₂ uptake, minimum photorespiration, and minimum transpiration.
- * There appear to be four CAM clades (a single ancestor and all its descendants), in the Bromeliaceae, which all have greater species richness and diversity than the C3 clades.

CAM plants are very tough and can survive extreme conditions leading to successful colonization of different habitats. They are very competitive and cling to keeping the metabolic processes alive.

CAM is the first case of a physiological attribute being a 'Key Innovation' in plants. i.e. evolution of the CAM photosynthetic pathway and the ensuing colonization of arid and other extreme environments, has promoted taxonomic diversification in the Bromeliaceae.

References:

In an attempt to explain the CAM photosynthetic pathway in mostly layman's terms (some technical terms are unavoidable), the article comprises information from the following scientific articles and internet pages. Just reinventing the wheel.

Black C. C. and Osmond C.B. 2003. *Crassulacean acid metabolism photosynthesis: 'working the night shift'*. *Photosynthesis Research* 76: 329–341.

Borland A.M. et al 2011. *The photosynthetic plasticity of crassulacean acid metabolism: an evolutionary innovation for sustainable productivity in a changing world*. *New Phytologist* 191: 619–633.

Crayn D.M. et al 2004. *Multiple origins of crassulacean acid metabolism and the epiphytic habit in the Neotropical family Bromeliaceae*. *PNAS* .101 No.10: 3703–3708.

Inorganic Nutrition *Continued from Page 18)*

Cushman J.C. and Borland A.M. 2002. *Induction of Crassulacean acid metabolism by water limitation*. Plant, Cell and Environment 25, 295–310.

Freschi L. et al 2010. *Specific leaf areas of the tank bromeliad Guzmania monostachia perform distinct functions in response to water shortage*. Journal of Plant Physiology 167: 526–533.

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Martin C.E. 1994. *Physiological Ecology of the Bromeliaceae*. Botanical Review, Vol. 60, No.1: 82

Nelson E.A. and Sage R. F. 2008. *Functional constraints of CAM leaf anatomy: tight cell packing is associated with increased CAM function across a gradient of CAM expression*. Journal of Experimental Botany, Vol. 59, No. 7: 1841–1850.

Nobel P.S. 1991. *Achievable productivities of certain CAM plants: basis for high values compared with C3 and C4 plants*. New Phytol. 119:183-205

Pierce S. et al 2002. *The role of CAM in high rainfall cloud forests: an in situ comparison of photo synthetic pathways in Bromeliaceae*. Plant, Cell and Environment 25, 1181–1189.

Quezada I. M and Gianoli E. 2011. *Crassulacean acid metabolism photosynthesis in Bromeliaceae: an evolutionary key innovation*. Biological Journal of the Linnean Society, 104: 480–486.

www.ag.unr.edu/cam/education.aspx

www.en.wikipedia.org/wiki/Crassulacean_acid_metabolism

www.plantsinaction.science.uq.edu.au/edition1/?q=content/2-1-6-crassulacean-acid-metabolism-cam

www.marietta.edu/~biol/biomes/photosynthesis.htm

www.wc.pima.edu/tucsonecology/plants/plants_photosynthesis.htm

[This concludes the four-part series on Photosynthesis for Bromeliad Gardeners, by Don Beard.](#)

NEOREGELIA. PRINCEPS

DD0608

by Derek Butcher

I have found this species the most elusive to find in cultivation, certainly in Australia and no doubt in the USA. All plants labelled *N. princeps* fall well short of the description and the closest ones I have found had the name *N. pineliana* to add to the confusion.

In 1946 the correctly named plant must have been in Europe because Dutrie describes it as a :- "Squat plant which has a dense rosette with leaves 4-5cm wide, bluish-green above, densely lepidote beneath, rounded and mucronate, slightly toothed. The bracteate leaves (now called inner leaves) are bright rose-red. A character which I have not noticed in any other description: the sepals and the small floral bracts are reddish-orange, while in other species they are dull green. Since they have the appearance of petals, the inflorescence looks like a round, reddish-orange skull cap set in the bottom of the rosette formed by the leaves, thus adding to the plant's charm. It should be noted that this characteristic is transmitted to its hybrids."

This description ties in very closely to the description in Smith & Downs, page 1547, with the added bonus of knowing that the outer floral bracts act as a sort of hood. As Dutrie says, this trait occurs in its hybrids as is evidenced to this day and is one of my quick checks to see if I am on the right trail for a true *N. princeps*.

There is another form of *N. princeps* which goes by the unusual name of *phyllanthidea*. Lyman Smith separates them by:-

1. forma *princeps* - Outer bracts of inflorescence smaller than the inner leaves.
2. forma *phyllanthidea* - Outer bracts of the inflorescence enlarged and foliaceous but bright red. (By inference this means that the outer bracts equal or exceed in length the inner leaves!)

I had always puzzled what this aberration of a plant could look like, with a description used nowhere else in the genus *Neoregelia*. Could it be a hybrid with *Nidularium*?

Recently I was able to obtain a copy of those BSI Journals out of stock (and very elusive!) for 1973. On page 133 is a photograph of *Neoregelia princeps* f. *phyllanthidea* by Raulino Reitz which is reproduced here (see P.13) and doesn't seem to fully link with Lyman Smith's description. There is a clue that this plant is only known from cultivation and at least something similar was alive in Brazil in 1973. Is this plant still alive? Could it be examined again to satisfy my curiosity now we know more about bigeneric hybrids?

So the plea is out to Brazilian growers. Is the true *N. princeps* still growing in the wild? If so, what are the chances of wild-collected seed being made available. An authentic photo would be great too!

MEET SOME NEW FACES!



WELCOME TO NEW MEMBERS.

We continue to attract new members into the Society and we would like to welcome
Gunter Blechinger, Newton Bishop, Joan Hayes, Stan Hopping, Ian Stapely and
Brian Smith
as our latest to come to admire, enjoy and learn about the wonderful world of
Bromeliads.

Things to Remember ...

Accept the fact that some days you're the pigeon and some days the statue.
Always keep your words soft and sweet, just in case you have to eat them.
Drive carefully ... It's not only cars that can be recalled by their Maker!
If you lend somebody \$20 and never see that person again, it was probably worth it.
Never buy a car you can't push.
Since it's the early worm that is eaten by the bird, sleep late.

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Raffle Sales	Helga Nitschke.
Pots, Labels, etc – Sales	Ron Farrugia
Plant of the Month	Terence Davis and Anne Bray
Show Registrar	Robyn Firth
Show Co-Ordinator	David Scott,

Treasurer's Report – (2):

Treasurer Alan Mathew gave the following details regarding our
Operating Account to September30, 2013:

Brought Forward	\$7,881.17
Plus Income:	973.03
Less expenses	1,819.70
Bank Statement as at 30/09/2013:	\$7,036. 50

LITERATURE

<u>TITLE</u>	<u>AUTHOR</u>	<u>PUBLICATION COST (\$A)</u>	<u>POST/PACK (\$A)</u>
Growing Bromeliads - 3rd. Edit- Ion.	Bromeliad Society of Australia Inc.	\$10.00	\$6.00
Bromeliads for the Contemporary Garden. Completely Revised Edition.	Andrew Steens	\$35.00	\$6.00
Bromeliads, A Cultural Manual.	BSI	\$5.00	\$2.00
Bromeletter Index—SeptOct,1979 -Nov/Dec 1989—Vols. 16 to 27.	Geoff Lawn / Derek Butcher	Contact Book Sales	
Bromeliads— The Connoisseur's Guide, 2007.	Andrew Steens	\$31.00	\$6.00



SEED BANK

The Seed Bank provides a service to members of the Bromeliad Society of Australia, supporters of the Seed Bank and other interested enthusiasts, for the collection and distribution of all types of Bromeliad seeds from local and overseas sources.

Seeds cost 50¢ per packet for Members and Seed Bank supporters (plus postage) or \$1 per packet (plus postage) for all other enquiries.

Enquiries for seeds should be directed, for the time being, to

Terry Davis

(02) 9636 6114 Or 0439 343 809

The following seeds are now available:

Aechmea bromeliifolia var *albobracteata*, *Aechmea rubens*, *Aechmea warassii*, *Alcantarea artensa*, *geniculata*, *heloisae*, *glaziouana* and *vinicolor*, *Guzmania sanguine* (Costa Rica form), *Puya mirabilis*, *Till. balbisiana*, *Till xfloridana*, *Till pohliana*, *Vriesea guttata*, *Vriesea saundersii*.

Thanks to Bob Hudson, Qld., Laurie Mountford, NSW, Chris Larson, Vic. Werner Raff and Terry Davis, NSW, Rick Cairns & Murray Corby, for their valuable contributions to the Seed Bank.

Thank you, Supporters of the Seed Bank.

A continued supply of fresh seed is constantly required by the Seed Bank to ensure that the Bromeliad needs of tomorrow will be met.

MEMBERSHIP APPLICATION:

ANNUAL SUBSCRIPTION: Renewal due January 1st for membership year January to December.

Membership: Australia A\$20

Overseas Membership: Asia/Pacific Zone A\$30. Rest of the World A\$35.

New Membership requires a \$5 joining fee, plus Annual Subscription. (Those joining after October 1st are covered for the following year.)

Note: Un-financial members add \$5 rejoining fee when re-applying for membership.

***If undelivered, return to:
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