

# *Bromeliaceae*



VOLUME L

Third Quarter 2016



## The Bromeliad Society of Queensland Inc.

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**MONTHLY MEETINGS** of the Society are held on the 3<sup>rd</sup> 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: *Aechmea taylorensis*

By: Eloise Beach

Rear Cover: *Aechmea egleriana*

By: Peter Tristram

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## CONTENTS

|                                                                             |                                     |
|-----------------------------------------------------------------------------|-------------------------------------|
| CALENDAR OF EVENTS 2016 .....                                               | 3                                   |
| From the Editor – .....                                                     | 5                                   |
| BSQ Anniversary .....                                                       | 14                                  |
| Quizzical .....                                                             | 14                                  |
| SUNNY BROMS CONFERENCE 31 March – 2 April 2017 .....                        | 16                                  |
| Aechmea, its subgenera and history -how does taxonomy work? .....           | 20                                  |
| More Recent Cultivar Registrations Geoff Lawn, BSI Cultivar Registrar ..... | 28                                  |
| Tillandsia 'Bak's Noddy' by Butcher June 2016 .....                         | 30                                  |
| Aechmea tayoensis .....                                                     | <b>Error! Bookmark not defined.</b> |
| Bromeliad Crossword set by Len Colgan .....                                 | 34                                  |
| COMPETITION SCHEDULE 2016 .....                                             | 35                                  |
| Competition Results ( top 2 each category) .....                            | 35                                  |
| Plant of the month List for 2016 .....                                      | 35                                  |

## CALENDAR OF EVENTS 2016

Monthly Meetings 7:30 PM at Uniting Church, Merthyr Road, New Farm

|                                   |                                             |
|-----------------------------------|---------------------------------------------|
| September Meeting                 | 15 September                                |
| October meeting                   | 20 October                                  |
| November Meeting                  | 17 November                                 |
| January Meeting                   | 19 January                                  |
| February Meeting (and AGM)        | 16 February                                 |
| <b>Xmas Party</b>                 | 1 December Booroodabin Bowls Club, Newstead |
| <b>Spring Show</b>                | 5-6 November at Table Tennis Centre         |
| <b>50 Year Anniversary Dinner</b> | 4 or 5 February (venue tba)                 |
| <b>SUNNY BROMS CONF</b>           | 31 March – 2 April 2017                     |



Some spectacular inflorescences in *Aechmea*:  
 Clockwise from Top Left: *Aechmea* 'Blue Cone' (G Aizlewood);  
*Aechmea ornata* (L Randall);  
*Aechmea flavorosea* (G Aizlewood);  
*Aechmea hoppii* (B Murray)

## From the Editor –

Oh No! Not another bleating from the Editor. Well no, this edition shows we have lots of people with the potential to contribute to your magazine. Hopefully you will see your way to being a contributor soon also.

You should have noticed that recent issues have each had a focus on a particular genus. *Tillandsia*, *Vriesea*, and *Alcantarea* have all taken centre stage in recent issues. This magazine has a focus on *Aechmea*. I have canvassed members for *Aechmea* material, either text or photos, and have had great success.

My thanks to Barbara Murray who expanded her brief talk at our January meeting to provide an excellent overview on the genus *Aechmea*. This has been supported by photos from Barbara, Sharon Born, Greg and Narelle Aizlewood, Kerry Tate, and Peter Tristram. I got enough photos to run to a few extra pages in the magazine.

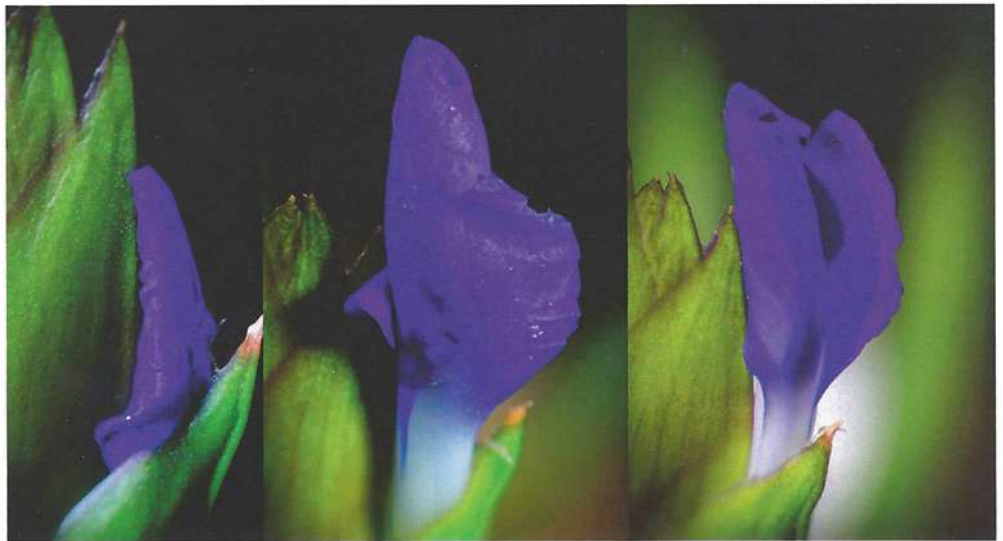
Other content includes Eloise Beach's photos of *Aechmea tayoensis* - a very unusual looking bromeliad. I noticed a Facebook profile picture of Eloise among the fronds of this plant and requested a copy of the photo in a form I could use for the magazine. Not only did I get that photo but a sequence of the flowering of the plant which is featured at p33.

Ian Cook has also provided a sequence of photos showing the opening of flowers on *Tillandsia lindenii*.

It has not been the practice of the magazine to publish obituaries. This edition features photos taken by the late William Paterson. While Margaret Paterson has been extremely busy as a hybridiser of note, Bill was the photographer who documented the results. Enjoy the little collection of Bill's work in the central pages.

This edition also includes a bromeliad crossword set by Len Colgan who has, on a few occasions, been a presenter at our meetings and at the *Tillandsia* Days. It is challenging but with a bit of research you should crack it. Send the editor your completed crossword by 14 October to be in the running for the prize! There is a prize of *Tillandsia* 'Bak's Noddy' featured at pp 30, 31 for one of the correct entries.

... so this month it is Thanks from him!



This great sequence of photos taken by Ian Cook shows the progression to flowering of what is probably the blue form of *Tillandsia lindenii*.

Top Left shows the immature inflorescence on 30 June 2016.

Top Right shows the final result of the plant with the flower on 11 August.

The panel of 3 photos in the centre show the progression over 24 hours:

Left 8 Aug 8:25PM, Centre 9 August 5:48PM, and Right 9 August 8:50PM.

Photos ©Ian Cook used with permission.

Aechmea is a very large and most diverse genus of plants found in the Bromeliaceae family and has been in cultivation since the early 1800's. Aechmea was named using a Greek word 'aichme' meaning 'a spear', some say it means 'a spear tip' referring to the shape of the flower head, others say it refers to the leaf which is lance shaped at the tip. The first Aechmea species, *Aechmea fasciata*, arrived in Europe in 1826. Ananas arrived in 1493! The Aechmea genus contains 283 species (*identified in The New Bromeliad Taxon List August 2016*) and all originate from Central and South America. They grow from sea level to high in the mountains. Some have adapted for growth in moist, shady forests while others prefer more arid regions. They grow in sun, shade, on rocks, in trees. They are relatively easy to care for and produce a bright, long lasting inflorescence whilst also offering a great variety in colour, foliage, and growth habits.

### Description:

Aechmea sizes vary greatly from small – less than 30cm, medium – 31cm-70cm, medium-large – 71cm-100cm and large – greater than 100cm.

The shapes are various and include vase like, bottle and tubular forms. All are epiphytic tank-forming plants, mostly with broad rosettes of arching leaves, a few are tall and tubular like the billbergias.

Aechmeas not only have a very long lasting inflorescence, but many varieties have attractive and long lasting foliage. Foliage coloration ranges from maroons, pinks, yellows, oranges, reds, silvers, and greens with markings such as bands, marbles, variegates and albomarginates. These stately plants may have wide, strappy green leaves that sometimes appear to be lightly powdered with grey scales. These silvery scales are pubescent hairs which protect the plant from the sun by naturally shading the leaves. Some may have fine and wiry leaves with a leathery texture. Others may have glossy leaves. Leaves may be rigid or reflexed. One disadvantage is the spines on their leaf margins – they can be ferocious. They range from small and sharp to gouging, backward-curving spines along the margins or outer edges of their leaves that can be painful, so be careful when working with them. Wise growers ensure they wear protective sleeves and gloves when working with these plants.

Although the plants themselves are beautiful, their inflorescences are stunning and usually long-lasting – up to 9 months. The inflorescence emerges usually in spring. The cylindrical, cone-like inflorescences always majestically rise up above the leaves on a long stem. Some inflorescences stay erect, whilst others are pendant. Large and brilliantly coloured bracts last for weeks to months - usually red, pink or orange. The flowers are often a different colour to the bracts, mainly purple, but yellow, white and blue are also seen. Finally, the berries produced after flowering offer another range of colours until finally fertilised berries turn black, soften and are easily removed if needed for seed raising.



*Aechmea* 'Blue Cone'



*Aechmea serrata*



*Aechmea*



*Aechmea* 'Del Mar'



*Aechmea servitensis* var. *exigua*



*Aechmea*



*Aechmea ramose* var. *festiva*



*Aechmea* Pie in the Sky



*Aechmea dealbata*

**Light:**

Many Aechmeas can take full sun, whilst others require a shaded environment. Aechmea with lighter or silvery leaves can be slowly adapted to higher light levels.

Indirect light or moderate shade is ideal. Do not expose to direct sunlight, but they can be acclimated to higher light levels. Aechmeas need bright light, preferably 2000 to 4000 foot-candles (6000 with high humidity). Some will grow in full sun (*Aechmea blanchetiana*). They can survive with less light but will be weak and may not bloom. Some will tolerate full sun in humid climates, while a few at the other extreme need shady conditions. Bright light brings out the best foliage colour in the banded and spotted species. Most will grow well outdoors under 40% to 65% shade cloth.

*[Since light intensity is the primary factor in the photosynthesis of plants, horticulturalists often measure and discuss optimum intensity for various plants in foot-candles. A foot-candle is how bright the light is one foot away from the source. Full, unobstructed sunlight has an intensity of approximately 10,000 fc. An overcast day will produce an intensity of around 100 fc.]*

**Temperature:**

The hard-leaved species are more cold hardy and a few can take temperatures down to -6° Celsius (20°F). Above that there is little or no damage. It's best to protect your plants from freezing unless you know that yours are cold hardy. Many are extremely sensitive to the cold and prefer a range from 10°C to 32°C. Foliage colour fades at high temperatures but no real damage is done. Inflorescence colour is more intense and longer lasting at cooler temperatures and lower light levels.

**Water:**

Water quality is less important than for most other genera, but the basic cultural methods are still recommended to prevent spotting and possible leaf tip burn.

Aechmea's foliage grows without a stem. The leaves grow together forming a tank at the centre of the plant. This enables an Aechmea growing in the wild, to store water, which is used by the plant when rainfall is sporadic. The tanks also collect nutrients from dust, insects, and other particles. For the home gardener it is better to maintain water in the central tank at all times. Weekly flushing out the water in the tank and replacing it with fresh water prevents the water stagnating in the tank. Stagnating water can lead to odour, bacterial infection, pests like mosquitoes, and build-up of salinity that can eventually lead to plant damage. It also encourages dogs to devour your plants as they love the aroma of the rotting bacteria. Filling the tanks with distilled water or rain water will help prevent the build-up of salts commonly found in tap water. Water the soil thoroughly but wait until the soil is fully dry before rewatering as leaving the soil constantly wet results in root rot. In winter, grow the plants a little on the dry side. Aechmeas do like humidity.



*Aechmea brevicollis*



*Aechmea pineliana*



*Aechmea Stefanie*



*Aechmea gamosepala*



*Aechmea gamosepala* var. *nivea*



*Aechmea bromeliifolia*



Mixed Aechmeas – *Aechmea tayoensis* in centre



*Aechmea triticina*

### **Potting & Mounting:**

Aechmeas are epiphytic meaning they grow non-parasitically on another host such as a tree. Aechmeas will do very well mounted on rough untreated wood, cork or pieces of drift-wood. *(Treated wood may contain copper which is deadly to bromeliads.)* Many Aechmeas produce offsets on long stolons. These plants are easier to grow mounted than potted since they quickly escape from their pots and the plant continuously falls over. In a few years, a large extremely attractive colony will multiply when grown this way. If you choose to mount an Aechmea do not select a mature plant, opt for a pup.

Aechmea roots are intended to hold the plant firmly upright so the tank can receive all the nutrients and water it needs to flourish. Therefore, these roots are strong and tough, anchoring the bromeliad to the host plant, but unable to absorb water and nutrients. But they can adjust their root system when potted in soil to take up water and nutrients from the soil, though the root systems are still not large. Don't replant an Aechmea deeply as this will kill the plant. Small plants are happy in 100mm pots but larger plants are better in bigger pots. If a bromeliad is unstable in the pot, it can be staked up until the roots grow. It is common for Aechmeas to become top heavy. Large Aechmea particularly in flower become top heavy and tend to topple over in strong winds which is very frustrating. Some growers put a heavy object in the bottom of the pot to try and prevent the plant from falling over.

### **Soil:**

Any soil mix with lots of drainage. These are technically air plants that use their roots for support. In the garden, they are happiest in moist, humus-rich soil.

### **Feeding:**

Follow basic rules for bromeliads. Don't over fertilize. Fertilize sparingly with a liquid fertilizer during the growing season.

### **Propagation:**

Most Aechmea species, after blooming, produce offsets (pups) on long woody stolons from the base of the plant. The toughness of the stolons plus the spiny leaves makes offset removal a strenuous and sometimes a painful experience. Gloves, long sleeves, and a very sharp knife, hacksaw or even a chisel should be the main tools in your toolbox. Pups are removed when they are around a third the size of the parent plant. The pups will flower in one to three years depending on the species. It is not essential to remove these pups as many species are attractive grown as huge colonies.

| THE OLIVE BRANCH                                                                                                                                    | BRISBANE BROMELIAD CENTRE                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 232 Canvey Road, Ferny Grove Q 4053                                                                                                                 | 34 Hutton Road, Morayfield Q 4506                                                                        |
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| Phone (07) 3351 1203<br>VISITORS WELCOME BY APPOINTMENT                                                                                             | Phone BARBARA and LORRAINE<br>(07)5433 0303<br>VISITORS by APPOINTMENT                                   |

**Disease:**

Aechmeas grown in airy environments with space around them rarely develop any scale. Insect problems are minimal but grasshoppers always munch on the leaves of my nicest plants.

**Seed Raising:**

There are more hybrids than species in Aechmea as they are quite readily fertilised. Seed has been easily available from overseas and imported to Australia, but if the seed was not wild-collected then the seed could not be guaranteed a species until grown and flowered and referred back to the species for confirmation. Hybrid seed is also valuable. If the seed is a hybrid and not a species, it may be possible to backcross.

For a first time seed raiser, Aechmea is a great genus with which to experiment. The inflorescence, if fertilised will produce a berry coloured from red, yellow, blue or purple. When mature this berry will be soft and usually black and can be easily removed from the inflorescence with a slight tug.

I used *Aechmea blanchetiana* for my first ever attempt, squeezing the seed directly into a small plastic container with peat moss on the base. The success rate was 100%. Every seed propagated! Quickly! Within weeks the seeds needed to be potted up because the container was way too small. Days were spent in the activity, resulting in around 200 potted plants, before common sense prevailed. The rest of the seed was offered to other bromeliad growers, and many of the potted up plants were re-planted around the perimeter of the property. Even then I had some left over and these I placed in their tiny pots in a polystyrene box and left under a tree. Years later they were happily growing, crowded and large, but not as large as they should have been, in the same box. The learning process was extensive as conversations with knowledgeable seed raisers quickly established that everything done was contrary to good seed raising practices. It was fun though.

**Considerations:**

If growing in a greenhouse, genera with similar cultural requirements are best grouped together. Aechmeas, Neoregelias and Billbergias need high light to develop good colour and form, they require enough water to flush out the central cup, and they need minimal fertilizer, so they grow well together.

There were 7 subgenera – *Chevaliera* (e.g. *Aechmea tayoensis*); *Lamprococcus* (e.g. *Aechmea weillbachii* var. *weillbachii*); *Macrochordium* (e.g. *Aechmea bromelifolia*); *Orgiasea* (e.g. *Aechmea organensis*); *Platyaechea* (e.g. *Aechmea mulfordii*); *Podaechea* e.g. (*Aechmea haltonii*); and *Pothuava* (e.g. *Aechmea nudicaulis*). (January 2005), but all of these subgenera have been reassigned to the Aechmea genus with only a few exceptions. (See Taxon List – <http://botu07.bio.uu.nl/bcg/taxonList.php>)



Photos elsewhere show the inflorescence of several aechmeas. This page shows some different forms of the plant. Top Left is *A. egleriana* with a bulbous centre from which leaves descend largely hiding the 'egg' in the centre. Top Right is *A. 'Blush'* a small plant of about 20cm height; Bottom Right is *A. bromeliifolia* also forming a bulbous vase. The red form of *A. blanchetiana* typifies a common Aechmea form of only 15-20 somewhat erect leaves - less numerous than many other vase forming genera.

## BSQ Anniversary

It is quite an achievement for a plant society to reach a 50-year milestone.

The rationale for the Bromeliad Society's existence has changed in some respects but the aim to gather together people with an interest in bromeliads remains at the core of the Society. In the early days the Society provided an opportunity for individuals to share plants and to grow their collections. Other than cadging offsets from a botanical garden, the Society really was the only opportunity for individuals to acquire new plants. Members imported seed and also expanded the range of plants available locally but, as we know, that is not a speedy satisfaction of one's need for that special plant.

One of the articles I have in mind for the commemorative issue of Bromeliaceae is to gather information and photographs of the plants available in the late 60s and to contrast them with some of the newly imported species and newly produced local hybrids which we have available now.

THIS IS WHERE YOU COME IN! We need volunteers to select a specific genus and gather together photos of the old and new in that genus. You may have to do a visit or two and take some photos but I have a list of people with substantial photo libraries who can assist.

The Committee is also looking for 2 volunteers to assist in putting together a guest list, sending invites and assisting me in planning the Anniversary Dinner. Please ring me on 3856 0265 with your offer of assistance.

## Quizzical

Do you look at the daily quiz in the Courier Mail?

One question was 'What fruit is crossed with a pineapple to create the pineberry?'

Answer: Strawberry

We all are aware that it is possible but tricky to make intergeneric crosses within bromeliads, but with a strawberry? I have taken to heart Wayne Bennet's instructions to his Broncos team to 'never die wondering' so off to Google and Wikipedia I go.

And the answer is that the pineapple (*Ananas comosus* to us) was not involved at all. A pineberry is an albino strawberry cultivar with white fruit, red seeds and a taste somewhat like a pineapple.

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Photos Opposite, Clockwise from Top Left: *A. chantinii*, *A. fendleri*, *A. capixabae* flowering with orange berries and ripe fruit below with yellow berries, *A. unidentified* (S Born Photos); *A. chlorophylla* (L Randall); *A. nidularoides* (JO)



## **SUNNY BROMS CONFERENCE 31 March – 2 April 2017**

### **19<sup>th</sup> Australasian Bromeliad Conference on the Sunshine Coast**

#### **OVERVIEW**

- ◆ Two and a half days of plenary sessions (presented by Australian and Overseas speakers including –
  - Keynote Speaker – Chester Skotak
  - Eloise Beach – (Florida, USA)
  - Peter and Jocelyn Coyle – (Auckland, NZ)
  - George Stamatis – (Elimbah, Queensland, Aust)
  - Peter Tristram – (Bonville, New South Wales, Aust)
  - Bruce Dunstan – (Brisbane, Queensland, Aust)
  - Dr. Theresa Bert – (Florida, USA)
  - Negotiations are continuing with several other speakers
- ◆ Two (2) half day tours of local Bromeliad Gardens and Nurseries,
- ◆ Banquet
- ◆ Optional Dinner – Followed by Rare Plant Auction
- ◆ Plant Sales
- ◆ Plant Competition
- ◆ BSQ Golden Jubilee Lunch – Co Sponsored by BSQ, and
- ◆ Numerous social activities.

The conference will be held at the Events Centre Caloundra situated on the southern part of the Sunshine Coast, Queensland. An ideal venue with ample space to accommodate plant sales and displays, numerous meeting rooms, Banquet room and a 300 capacity tiered theatre. The venue is fully licensed. There is plenty of accommodation to choose from within walking distance to the venue, from budget to luxury, motel, holiday units and apartments. Golf style also available. Prices range from A\$85 to A\$250 per night plus. IT IS GETTING CLOSE NOW TO THE CONFERENCE SO BOOK FOR BEST PRICES AND LOCATIONS!

#### **REGISTRATION IS NOW OPEN**

Registration will be limited to 300 Delegates. Considerable interest has been shown on a worldwide basis so early registration is recommended to avoid disappointment. Early Bird Registration Fees are set at \$300-00 (AUD). This is a considerable discount for what is on offer. The close off date for Early Bird Registrations is 31st December 2016. Registration Fees from 1 January 2017 will be \$350-00 (AUD).

Full Registration covers all activities EXCEPT for the OPTIONAL DINNER. The Optional Dinner is an additional \$50-00. Alternate options are available for Delegates / Partners: - Garden Tours at \$20 each, Banquet at \$70 per head and the Optional Dinner at \$50 per head.

## Glass Orb Terrariums

Hunter District Newsletter, August 2015-Plant Oddities, USA [oddplants@yahoo.com](mailto:oddplants@yahoo.com)

It is very easy to care for your Glass Orb Terrariums: there are just some very basic tasks to perform to keep your tillandsias -aka Air Plants- thriving in their new home.

**Lighting:** Place in your brightest location but not in direct sun. Early morning and late afternoon sun is fine but not middle-of-the-day direct sunlight.

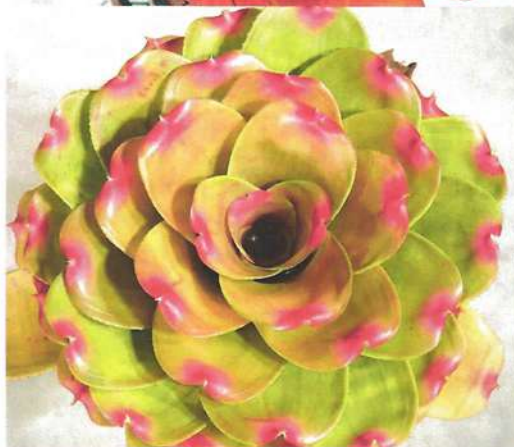
**Watering:** The most common mistake people make with tillandsias is they don't water them enough. The easiest way is to simply remove the plants from the glass globe and let the plants soak completely submerged in a bucket or bowl of water for an hour or so about twice a week. Remove the plants from the water, drain the excess from the plants, and place back into the orb. It is better to water too often than too little.

**Helpful Hint:** A pair of long-handled tweezers is a very helpful and downright essential tool for maintaining your hanging terrarium. Use the tweezers to position the plants after inserting them back into their home. Also, it is very important that when you first insert your plants into the orb that you push the plant through the opening root end first. That way the leaves will simply lay against the plant as it slides through the opening. Conversely, when removing the plants use your tweezers to position the plant so you can pull it out root end first. Again, the leaves will lay flat against the stem of the plant as it slides out of the opening. If you don't push or pull the plant root end first you will damage the leaves of the plant.

**Feeding:** It's a common misconception that 'air plants' just 'live on air'. Tillandsias need the same things as any other plant does: light, water, and nutrients: they just don't need dirt. Adding a food specially formulated for tillandsias is best but you can use fertilizers like Miracle Grow, but at quarter strength. Just mix the proper amount of fertilizer in with the water you soak them in. Remember you are watering leaves, not their roots, as all nutrients and moisture are absorbed by the leaves.

All tillandsias produce flowers when reaching maturity. In many species the foliage of the plant will change colour or 'blush' a vivid red, orange, pink or yellow when coming into bud. After blooming, the parent plant begins producing baby plants or pups, continuing the cycle of growing to maturity, blooming, and producing offsets, ultimately becoming a multi-plant cluster. With proper care your plants and their pups will eventually outgrow your orb. You can divide the cluster of plants, letting them grow on individually and restocking your orb or you can let the cluster continue into an ever-enlarging hanging clump that can live on for decades.

*Ed Note: I have seen that people growing Tillandsias indoors are very keen on 'dunking' the plants. Is this necessary or is misting indoor plants enough? Send me your comments.*



Photos from the late William Paterson

Clockwise from Top Left:

N. 'Cheating Heart',

N. 'ShirleyKay',

N. 'Cooloola Dazzler',

N. 'Orange Burst',

N. 'Passionate Liaison'.



Margaret Paterson's Tillandsia hybrids  
photographed by Bill Paterson  
Clockwise from Top Left

- T. 'Araluen'
- T. 'Coolabin'
- T. 'Gilldora'
- T. 'Noosa'
- T. 'Murgon'



*Hint: Tillandsias with locality names around Gympie  
can safely be assumed to be Margaret's hybrid.*

## Aechmea, its subgenera and history -how does taxonomy work?

By Mike Wisnev, San Fernando Valley Bromeliad Society Newsletters –July, August 2016

The article started out to be about Aechmea, and how we got where we are. But as it was written, it seemed to help explain (and conjecture and sometimes simply guess) how the taxonomic process worked. So it ended up with some of each.

Aechmea is the largest genus in the Bromelioideae subfamily. The Bromeliad Taxon List said there are 283 species, as of October 20, 2015 (another, *Aechmea xinguana*, has since been described). There are eight subgenera, though it seems few pay much attention to the subgenera. It has long been suspected that neither Aechmea nor most of the subgenera are valid. Smith and Down's Monograph on Bromelioideae (1979) said 'Aechmea includes some very discordant elements and is very likely of polyphyletic origin. Further research is likely to divide it with some parts becoming independent genera and others merging with genera at present considered distinct.' For this reason, some have called Aechmea the 'trashcan genus'.

### Latest Study.

The latest DNA study, in 2015, on the validity of the genera in the Bromelioideae subfamily suggests that very few genera will remain unscathed. In particular, like virtually every other study, it confirms what has long been suspected about Aechmea – this genus is a complete mess from a taxonomic standpoint. But because there are so many Aechmea, and the studies don't always agree, no one has suggested any changes yet, so it may be awhile before we have to relabel our bromeliads.

### Ruminations.

In some ways, the results of the study might not be so surprising. Those of you who have been in the hobby for some time are familiar with lots of species, and recognize by its binomial name, that is both the genus and species. But it is not so easy if you don't recognize the plant. Lots of times, when a club member brings in an unknown plant for an ID, even the more knowledgeable members can only say it is probably an Aechmea or a Quesnelia or maybe even a Portea.

Since this article focuses somewhat on history, it will try to show pictures of some of the first Aechmea described, although they may have been known by another name at that time. It appears the first actually described is *A. lingulata*, a plant I had never heard of, despite the fact it grows throughout the Caribbean and into northern S. America. It was described in 1703 and was then named *Bromelia ramosa* and *Bromelia racemosa*. I don't know why there were two names originally given in 1703. My guess is that there were two plants collected, and they looked somewhat different, so each was given a different name. Linnaeus later called the same species *Bromelia lingulata*; it wasn't until 1879 that Baker treated the species as belonging to Aechmea. It has lots of synonyms and has been treated as a Billbergia and Hohenbergia, as well as these no longer existing genera: Lamprococcus Hoplophytum, Chevalieria and Wittmackia.

Sometimes the members of a species all look very much the same, while in other cases, there is quite a bit of variation. One problem is that few of us have any idea which is which. This can make it hard to assess if your plant is a species or hybrid. Is the variation you may see in your plant, as compared to the description, consistent the variation in the species or not? How can you tell? I wish I had the answer. Geography is also important. If the modest variation is seen within the same localities, it is likely to be considered unimportant even to create different species or varieties. In contrast, if each locality is relatively uniform, and the localities aren't very close, then the different features might be considered to give rise to a different species or variety, depending on just how different the two populations are. Perhaps the most common reason to combine similar looking species is that later research reveals that the two plants grow together in the same or close locations.

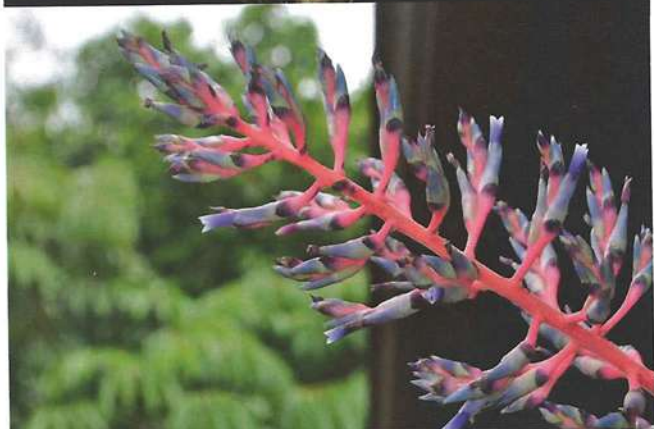
As a relatively new bromeliad hobbyist, I recall my bewilderment in trying to distinguish the genera with a tank habit, that is, those with fairly upright leaves that hold water. At first, almost nothing jumped at me, especially if there was no inflorescence. After a while, some things got easier. For example, *Vriesea* don't have spines and aren't even in the Bromelioideae subfamily. Neos are easy if you have an inflorescence – it is buried low in the tank. Billbergias also get easier due to their slim upright habit. But then you get to *Portea*, *Quesnelia*, *Androlepsis*, *Hohenbergia* – it still isn't very easy.

Early botanists and horticulturists were in much the same position – actually even worse since they didn't have any literature to study. Bromeliads grow in the Americas, and virtually all of the early studies of them were in Europe in the 17th and 18th centuries. So imagine various tank habit bromeliads showing up for the first time, with no books or pictures, and trying to figure out how to classify them. Many are rosettes with spiny leaves. Except for Neos, they all have long showy inflorescences. There were no experts to consult. In addition, often all that was available for study was a dried herbarium specimen. This might not have included all parts of the flower etc., and it may have been badly preserved, making comparisons difficult, or even worse leading to an incorrect description.

| MIDHURST BROMELIAD NURSERY                                                                                                                                                                                                                                                                                                                                               | M.J PATERSON                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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*Aechmea lingulata*, the first plant described now considered an *Aechmea*.  
Photo by Ludwig.



LEFT is the inflorescence of, *Aechmea dichlamydea trinitensis*.



Another inflorescence. It seems quite similar to that of *A dichlamydea*, shown above. But this one, while unlabelled, seems to match *Portea petropolitana extensa* perfectly. How can you tell it is a *Portea*, rather than an *Aechmea*? If you aren't familiar with the species, it is hard – the primary difference is that *Portea* have connate sepals! See the SFVBS December 2015 Newsletter for more information.

One of the first Bromeliads to be widely cultivated in Europe was *Aechmea fasciata*. It still may be the most commonly cultivated one. It was described in 1828, but was then considered a Billbergia. In fact, many of the bromeliads that were discovered early have synonyms in more than one genus. They weren't so easy to classify then, and perhaps not much easier now!

These reflections led me to this article – how did we end up where we are? We have many different genera and subgenera and many of them may be incorrect. So perhaps some initial (and interrelated) questions are: why bother to classify them anyway; how did the early botanists distinguish these tank bromeliads; and why were so many species treated by different folks as belonging to different genera?

Most of the articles I have seen don't provide much in this respect. This article provides a mix of history, taxonomy and a lot of guesswork.

### **Why classify?**

What motivated the early botanists to create new genera? I don't really know, and am really only guessing based on things I have read over the years. The obvious explanation is that they thought the plant in question was different than the others. But is this enough? Humans like to categorize things. One primary reason may be to simplify life, and in particular, communication. While it may seem simpler to have everything in one large group, this doesn't tell you much about the group. Even those of us with no interest in species names do this to some extent. When you look for something to plant in your yard, you don't ask for tall plants or short ones, but ask about some trees, shrubs, flowers or groundcover.

Moreover, as the number of known plants in a family or genus becomes large, it becomes too cumbersome to communicate and/or work with them without breaking them up in some way. Botanists have historically used plant and other features to group similar plants into genera. But which features? It might be charitable to say the answers aren't clear. A cynic might say we are really just guessing!

### **Communication and Language.**

Imagine how quickly or slowly scientific information was disseminated in 1800's. Say some scientific journal was published in Germany in 1812. How long before it gets to Spain, if ever? With no internet and no modern transportation, it might take months for publications to reach other countries.

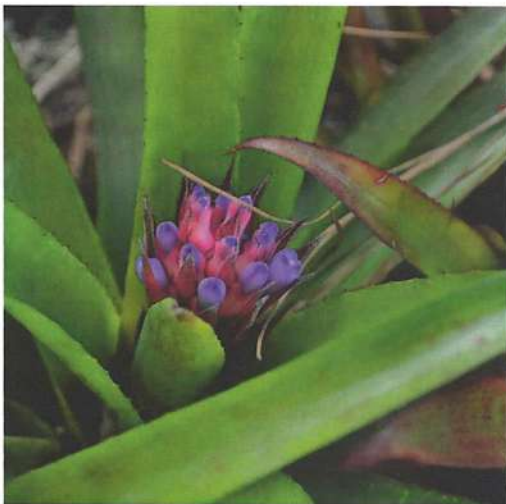
Even today, botanists in one country often seem oblivious to the works of others in different countries. For all the ways civilization has changed, language is still a critical barrier. Before 2012, a Latin description was required for a valid description; this existed for this very reason – to have a common language. The current rules require either a Latin or English description. In any case, it seems likely that many of the problems of the past were due to ignorance of the works of others, coupled with perhaps rather vague descriptions of the genera.



*A. paniculata*, the Aechmea type plant. Illustration from *Flora Peruviana, et Chilensis* (1802) by Ruiz and Pavon (From the Missouri Botanical Garden). Isidro Galvez, a prestigious botanical illustrator who went on the expedition did this lovely illustration. I can't find any pictures of this species – is it lost to history??

<https://archive.org/details/mobot31753003431746>)

Below Left is *A. orlandiana*. It is in subgenus Aechmea. It is one of my favourite species, along with its many cultivars. Below Right is *A. seideliana*. While its leaves look nothing those of *A. orlandiana*, pictured above, the form of its inflorescence seems quite similar. Is it in the same subgenus? No, it belongs in subg. *Ortgiesia*, which is known for its connate sepals.



### **Early Genera later combined into Aechmea.**

There are lots of strange names, such as Chevalieria, Pothuava, Macrochordion, Lamprococcus and Ortgiesia. I listed the five above in particular, since they are now names for five of the eight Aechmea subgenera. They were described from 1843-67 by Gaudichaud, Beer or Regal. Each of these is a genus described earlier that has now been referred to Aechmea. So I don't know what caused these individuals to describe these new genera, or how they got these names. However, based on later descriptions of the respective subgenera, one can make an educated guess, although it is possible that later botanists focused on different features than described in the original descriptions.

### **Bromeliad Monographs.**

Some of these genera were first described by J. G. Beer. Beer was the Director of the Berlin Botanical Garden and wrote the first bromeliad monograph in 1856. Called *Die Familie der Bromeliaceen*, it describes about 275 species and is 271 pages long. It is actually on the web, but is in German.

I also found what seems to be the second monograph on Bromeliads, which is in English, and lists most of the current Aechmea subgenera. John Gilbert Baker at the Kew Gardens wrote the *Handbook of the Bromeliaceae* – it was published in 1889. Only 243 pages long, it describes 31 genera and about 800 species, more than double of the estimated species only six years earlier. In the preface, Baker correctly said 'No doubt this is far short of the number that will ultimately be found.'

Another major monograph of Bromeliads was started around the same time by Dr Carl Mez, a German botanist. Apparently, numerous editions were published between 1891 and 1935. His first complete one, in 1896, listed 45 genera, and was a mere 990 pages. His final one, in 1935 with 49 genera, was much shorter, only 667 pages, but it has much smaller print. But both are in Latin! It seems Mez's works have been much more accepted than Baker's. The sheer length of it reveals it has a lot more information than Baker's. I have seen lots of papers mentioning Mez, yet until doing this article don't recall Baker. Smith and Downs's Monograph is quite revealing here. The list of literature cited in the Introduction doesn't mention Baker's Handbook or Beer's 1856 monograph. However, the very first three sentences of the Introduction to the S&D Monograph state:

'Carl Mez monographed the Bromeliaceae twice in full (1896, 1934-35). He brought order out of near taxonomic chaos and his system was basically so sound that the changes embodied here are largely quantitative. Even the few changes that I have made to in his system are largely due to the flood of material that was unavailable or subsequent to him.'

Of course, Smith and Downs is the most recent Monograph published from 1974 -79 and consists of a 64-page introduction followed by roughly 2300 pages of botanical descriptions of genera and species with virtually no narrative.

### Combining earlier genera.

Before continuing with the subgenera descriptions, used as a proxy to guestimate why the original genera were created, it is worth focusing on a more important feature of Baker's Handbook. Specifically, he combined these earlier other genera into *Aechmea*. What caused him to do this?

Baker had in fact combined these genera into *Aechmea* in 1879 when he published 'A Synopsis of the Genus *Aechmea*, R.&P.' But he didn't provide much information in this Synopsis, and had even less in his Handbook a decade later. His long one paragraph introduction to the Synopsis was instructive as to the state of Bromeliads in 1879. He says:

*'Although Bromeliaceae are so much cultivated, there is no order of Endogens that has been so much neglected. .... [A] great many ... have never been named or described. There is no recent synopsis of the genera, and a considerable number have been founded of late years in the horticultural journals and elsewhere upon one or two species alone. It became a question for consideration ... which genera should be adopted. Doubts on this head had regard mainly to the limits to be assigned to the genus Aechmea ... I have thought it best to define the genus in the sense in which I have understood it in the Kew catalogue, and at the same time to attempt a classification and synoptical description of the species that range under it. A good many of these are now described for the first time from specimens in the London herbaria. The species mount up to nearly sixty. There are several others species known by garden names, but these remain to be verified as to genus, and described by some competent botanist who gets an opportunity of seeing them in a flowering state.'*

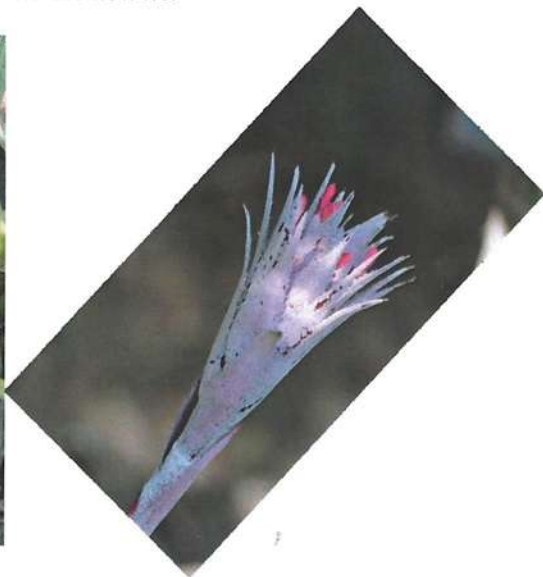
Baker then had a long 2 paragraph botanical description of *Aechmea* which concludes that the genus is distinguished from similar genera in the Ananasseeae group (other than *Billbergia*) by 'its free petals, conspicuously spirally-twisted stigmas and sessile leaves.' They differ from *Billbergia* by having much smaller flowers, flower parts and different flower bracts. The key in Baker's Handbook distinguishes *Aechmea* in a similar fashion – they have free petals that were not usually longer than the sepals, free or nearly free sepals that are generally mucronate, and long twisted stigmas.

### Basic Taxonomy.

There are two basic taxonomic inquiries. First what plants should be grouped together? Second, what rank do you give each group? The first question is the more important, at least in my view. As applied to *Aechmea*, the first question is whether botanists before Baker recognized that these other genera were related. It appears they didn't. In that case, Baker's combination into *Aechmea* was a real achievement (or disaster, depending on your point of view!)

The second question is even more subjective. Let's assume that botanists agreed that the five genera that Baker combined were closely related. In that case, it really doesn't make much difference whether you say there is a group or complex of five closely related genera, or there is a genus with five subgenera. The information conveyed is essentially the same – there is a large group of related plants that can be broken into five smaller groups. What you call each group arguably doesn't matter, though undoubtedly some would disagree.

Below is a plant at the HBG identified as *A. dealbata*. Again, its inflorescence shape is similar to *A. orlandiana* and *A. seideliana* shown above. Those two belong to different subgenera. Which do you think this is? Nope, it is yet a third one, subg. *Platyaechmea*, known for its floral bracts that form pouches around the flowers.



Below is yet another Bromeliad with a similar inflorescence to those above. Yet another subgenus? This is *Quesnelia arvensis*! Of course, there has been some confusion here as it was regarded as an *Aechmea* in many collections. However, the floral bracts of *Quesnelia* and *Billbergia* are never pungent, while those of *Aechmea* are. Pungent means the bracts have a hard sharp point at the end. Also *Aechmea* sepals are pungent while those of



*Quesnelia*  
(and  
*Billbergia*)  
are  
generally  
unarmed.

## More Recent Cultivar Registrations Geoff Lawn, BSI Cultivar Registrar

Ed: This list is but a sample of recent registrations and uses photos provided to the Registrar. These are numbered as shown opposite with some brief notes on each below.

Fig 1. *Neoregelia* 'Purple Phantom' (*carolinae* red variegated x *princeps*) x *smithii*, bred by Chester Skotak in Costa Rica, is a 'midi' to 26cm. diameter. Such spotted and centre-flushed parents produced the purple-spotted green leaves and dark purple, spotted hot pink-flushed centre with partial concentric rings, an unusual combination. Photo Eloise Beach.

Fig. 2. x *Aechopsis* 'Imposter' [(*Aechmea nallyi* x *tessmannii*) x *A. nallyi*] x *Canistropsis billbergioides* (pink bracts), a Skotak bigeneric cross, is a large, upright, russet red rosette to 60cm. diameter. The erect, star-like compound inflorescence of candy pink bracts, yellow sepals and white flowers was deliberately bred to mimic a *Guzmania* in bloom—but with spines, hence the cultivar name. Photo Eloise Beach.

Fig. 3. *Tillandsia* 'Red Torch', arrived unidentified in a wild-collected shipment in 2009 from Zion Plants, Guatemala to Tillandsia International Nursery, California, mixed in a batch of *T. velutina*. Thought to be a natural hybrid, it was released as *T. velutina* x *compressa* but other Tillandsia experts doubt this I.D. The stiff, recurving, scurled grey-green leaves (mature rosette 32cm.diameter x 20cm. high), hold a semi-recessed, short-branched, torch-like inflorescence of scarlet peduncle bracts and long, violet petals edged white. Photo Frank Messina.

Fig. 4. *Vriesea* 'Pink Goddess', ['Montezuma's Gem' x (*Kilauea* x *Princess Annique*)], was bred by Queenslander George Stamatis. A large, open rosette to 60cm. diameter, the arching, broad, glossy hot pink leaves have ripple-like, olive green tessellations. Photo George Stamatis.

Fig. 5. x *Neorockia* 'Susana', bred by Bullis Bromeliads in Florida, is a rarely-seen genus which is widely-grown as a *Neoregelia* in error. The large, open rosette to 70cm. diameter has leathery, strap-like coppery orange to bronzed pink leaves with sepia red spines and reddish leaf tips. The sunken, tightly-clustered inflorescence, surrounded by dark red leaf bracts, has inward-curving, green floral bracts and bluish white claw-like flowers, clearly bigeneric. Likely parentage is *Neoregelia* species or hybrid x *Wittrockia superba*. Photo Peter Kilpatrick.

Fig. 6. *Neoregelia* 'Star Wars' [(*carolinae* variegated x 'Hannibal Lecter') x 'Norman Bates'] x 'Punctate', another Skotak variegate bred circa 2005, has relatively-narrow, bronze green leaves, marginated white and cross-banded red / pink in strong light and with restricted feeding. Photo Mal Cameron.

More details and photos of these cultivars, together with nearly 13,600 others, may be seen on the BSI's Bromeliad Cultivar Register (BCR) at: <http://registry.bsi.org>



New Registrations clockwise  
from top Left:

1. *Neoregelia* 'Purple Phantom'
2. *xAechopsis* 'Imposter'
3. *Tillandsia* 'Red Torch'
4. *Vriesea* 'Pink Goddess'
5. *xNeorockia* 'Susana'
6. *Neoregelia* 'Star Wars'

## Tillandsia 'Bak's Noddy'

P Tristram & D Butcher

(PT Intro) The plant was imported by Peter Tristram in 2009 from Peter Bak in The Netherlands. Its semi-bulbous shape, with wavy, laxly spotted, triangular leaves was the attraction. The plant had no tag though was in a section with other Andean species and was thought to be either a *Racinaea* or *Tillandsia*. Following blooming in Australia, much messaging occurred between the two Peters in an attempt to trace its provenance and maybe get an identification. One thing for sure was that it wasn't a *Racinaea*, despite having *Racinaea*-like foliage. Unfortunately Peter B has been unable to find it in his collection and Peter T hasn't made a trip to The Netherlands to look for it again, either. A pup was given to Bruce Dunstan who posted pictures of it in bloom on Florapix (see Derek Butcher's article below, including comments by Walter Till). Peter T has examined the plant and does not regard it as *T. deflexa* as there are far too many differences. In-the-mean-time the ever vigilant Uncle Derek deemed it worthy of a name and a place in the Bromeliad Cultivar Registry (BCR).

### DB Article

This saga seems to have started in 2011 when Bruce Dunstan posted some photos. Walter Till suggested it seemed linked to *Tillandsia deflexa* but could add nothing further. This species (*T. deflexa*) is little known in cultivation and all we have is the description under *Tillandsia deflexa* L. B. Smith, Contr. Gray Herb. 154: 35, pl. 1, figs. 4, 5. 1945.

**Type.** Steyermark 37390 (holotype F), above Finca El Porvenir, Cerro de Mono, south slopes of Volcan Tajumulco, 1400-1700 m alt, San Marcos, Guatemala, 9 Mar 1940. **DISTRIBUTION.** Known from the type collection only.

*From protologue*

*In its hanging lax inflorescence, Tillandsia deflexa is reminiscent of T. standleyi, but it has nearly concolorous leaves with ligulate blades, larger floral bracts and connate posterior sepals.*

The plant in question was traced back to Peter Bak in Holland but he could not advise any provenance and there were significant differences! It grew well in Australia and produced offsets easily. It should have a name for identification purposes and Peter Tristram has suggested 'Bak's Noddy' which is apt because it not only indicates its source but one of its outstanding attributes. Depending on growing conditions the plant can vary from 30 -40 cm diameter, the peduncle to 30 cm long with the fertile inflorescence to 40 cm long.

| WILDFIRE GARDEN<br>BROMELIAD NURSERY                                             | FOREST DRIVE NURSERY                                                                        |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
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| VISITORS WELCOME BY APPOINTMENT                                                  | <b>Tillandsias to Titillate even the most<br/>discerning fanciers.</b>                      |
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|                                                                                  | E: <a href="mailto:ptristra@bigpond.net.au">ptristra@bigpond.net.au</a>                     |

T. 'Bak's Noddy' (Photo  
B Dunstan) Right  
with more Aechmea  
inflorescences below.

Photos by S Born.

*A. fasciata* 'Clara'

*A. gamosepala* cv Pastel  
Blue

*A. 'Pie in the Sky'*

*A. angustifolia*

*A. 'Seneca'*



## Aechmea tayoensis

This month's cover photo shows *Aechmea tayoensis*' inflorescence. It is hard to judge whether the size and form of the plant is its most impressive feature in the face of such competition from the inflorescence.

The main photo opposite shows the long petiole form at the top and a clone (lower left) which has shorter petioles. If you had the space, you would clearly choose the top plant.

I just happened to see the top photo as the Facebook profile shot of Eloise Beach who is a 'Facebook friend of a friend'. While it is somewhat annoying that Facebook interrupts me with lists of who I may also know, it was useful on this occasion. The photo of *A. tayoensis* immediately got my attention. I then 'messed' Eloise and asked for a copy of the photo. Generously Eloise responded with multiple photos showing the progress of the development of the inflorescence and flowers. (Have you got the message that I am Facebook savvy, hip, with it etc. using nouns as verbs like 'messed' and 'texted'. Actually I am a novice and would have no peace at home if I condoned the murder of the English language with the plethora of nouns becoming verbs. The Olympics commentators use of medal and podium as verbs also spring to mind.)

*Aechmea tayoensis* is endemic to Morona-Santiago Province in Ecuador.<sup>[1][2]</sup> It is a terrestrial whose natural habitat is found near Los Tayos in Amazonian mainland forest (500–1,000 m).

The IUCN website lists it as endangered citing the following:

*A terrestrial bromeliad endemic to Ecuador where it is known only from the type, collected in forests close to Los Tayos. This area has not been studied in detail due to the Ecuador-Peru conflict. The species is considered Endangered until new subpopulations are found as it is likely restricted to this geologically unique area outside of Ecuador's protected areas network. No threats are known. No specimens of this species are housed in Ecuadorian museums.*

It may be we are limited to looking at photos. Olive Trevor had this to say about this plant: *I have not been very successful in keeping A. tayoensis but I can tell you about my experiences with this plant. Eloise supplied six huge pups to Robert Reilly which I bought home from the conference in Chicago some years ago. I think I got them all through the quarantine period and Robert was kind enough to let me have one. I kept it in the hot house that was heated in the winter months. It managed to struggle on to flower in a couple of years but slowly died without pupping. I was also given a seedling from a friend in Sydney. It grew well in the summer months and seems to like a water holding mixture and fertiliser to succeed. The best plant I ever saw was growing at a nursery in Darwin. It was planted in the ground and had reached my height and still had not flowered. It was one and a half to two metres tall and quite wide. A beautiful unusual Aechmea for the tropics I'd say. Rob Reilly said his plants gradually went the same as mine.*



# Bromeliad Crossword

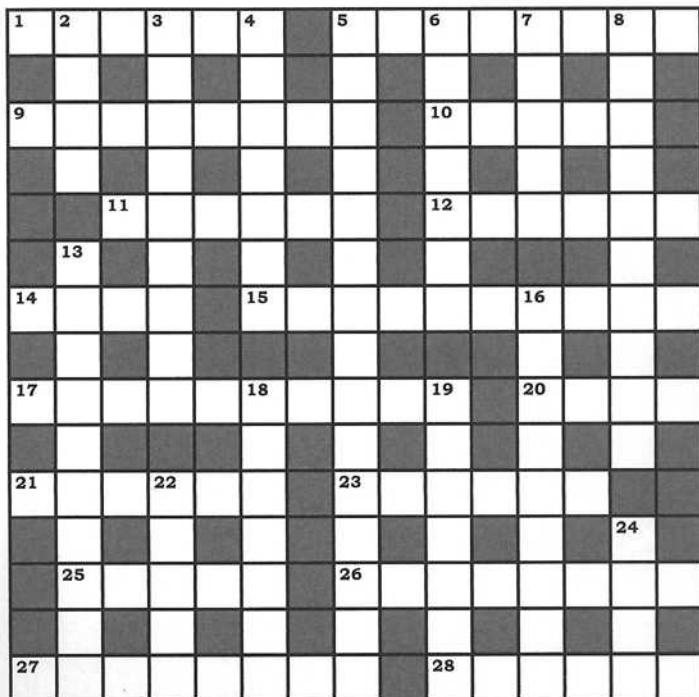
set by Len Colgan

## Across

- 1 Black dots indicating scale on bromeliads
- 5 Natural liking or attraction to someone or something
- 9 Sleep-inducing
- 10 Flat
- 11 Element with atomic number 76
- 12 Genus containing edible plants
- 14 Author of first monograph devoted to bromeliads, 1857
- 15 Eminent Australian bromeliad hybridizer (2 words, 5+5 letters)
- 17 What we collect!
- 20 A trichome on bromeliads
- 21 Self-centredness
- 23 Church ministers
- 25 Discover by studying
- 26 Eagerly, in an industrious and effective way
- 27 Genus mainly from Ecuador
- 28 Part of bromeliad flower

## Down

- 2 Genus from Andes Mountains
- 3 Genus from Brasil
- 4 Dinner table layout
- 5 Popular silver vase, urn plant (2 words, 7+8 letters)
- 6 "Bent like a scythe", as in leaves of *T. aethanathos*
- 7 Genus from northern South America countries
- 8 Widespread popular genus
- 13 Genus mainly from Brasil
- 16 Genus endemic to Chile
- 18 Genus endemic to Brasil
- 19 Leaf-like structures protecting bromeliad flower stems
- 22 Person from Baghdad
- 24 Colour of petals of *T. aethanathos*



## COMPETITION SCHEDULE 2016

### October - MINI SHOW

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

Class 2 – Tillandsia species & hybrids

Class 3 – Pitcairnioideae not listed elsewhere in Schedule, species & hybrids  
(Brocchinioideae, Lindmanioideae, Hechtia), Puya), Navioideae, Deuterocohnia,  
Encholirium, Fosterella)

Class 4 - any other flowering bromeliad species & hybrids

**November - POPULAR VOTE**— any genus species & hybrids + Decorative or novelty bromeliad display.

### Competition Results (top 2 each category)

| <b>Advanced</b>     | Popular Vote Aggregate | Mini-Show Aggregate |
|---------------------|------------------------|---------------------|
| Barbara McCune      | 35                     | 30                  |
| Barry & Ann Kable   | 22                     | 51                  |
| <b>Intermediate</b> |                        |                     |
| Ron Jell            | 25                     | 45                  |
| Dorothy Andreasen   | 15                     |                     |
| Maxim Wilson        | 6                      | 14                  |
| <b>Novice</b>       |                        |                     |
| Denice McLean       | 21                     | 17                  |
| Livia Doidge        | 21                     | 26                  |
| <b>Decorative</b>   |                        |                     |
| Denice McLean       | 16                     |                     |
| Janet Richter       | 11                     |                     |

### Plant of the month List for 2016

|           |            |
|-----------|------------|
| September | Billbergia |
| October   | Guzmania   |
| November  | Nidularium |

