

Bromeliaceae



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The Bromeliad Society of Queensland Inc.

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

ANNUAL GENERAL MEETING is held immediately before the February General Meeting

Front Cover: *Billbergia* Hallelujah
Rear Cover: *Cryptanthus* Silver Zone

BSQ April Show 2014 competitor 167
BSQ April Show 2014 Cheryl Basic

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CALENDAR OF EVENTS

Tillandsia Study Group Sunday 13 July (email
treasurer@bromsqueensland.com.au for info)

July Meeting 17th July, Uniting Church, Merthyr Road, New Farm

August Meeting 21st Aug, Uniting Church, Merthyr Road, New Farm

The Ekka 8th – 17th August, RNA Brisbane Display

September Meeting 18th Sept, Uniting Church, Merthyr Road, New Farm

October 18th – 19th - The Spring Show Set up Friday 17th Oct

December – Xmas Party 11th December (2nd Thursday)

Australasian Conference 16 to 19 April 2015

For those who like to plan a fair distance ahead, the next Australasian Conference (Bromsmatta) will be held in Parramatta.

Vertical Gardening

By John Olsen

Space is always an issue for plant enthusiasts. We can't leave an attractive plant sit on the sales table. Sometimes it is simply a plant we don't have in our collection we have to add. The other motivation for architects and home gardeners is "the blank wall" which needs softening. There is a big range of vertical gardening for us to consider.

Options with growing media

At one end are the vertical gardens which involve structure and a growing medium for the plants these are "Green Walls" as seen at Toombul on Airport Link and various buildings around the world. These structural elements have more rigid requirements than the home garden. The media has to be enduring so organic materials which break down over time are unsuitable. Watering systems need to be automatic and provide the necessary plant nutrients.

Green walls typically use a variety of epiphytes. The Airport Link example seems to incorporate terrestrial plants as well, and among the bromeliads, the large alcantareas stand out with their tall inflorescences. The structural support for such large plants is mostly beyond reach of domestic gardens and not usually adopted for Green Walls. Photo 1 shows plants and structural elements at Airport Link during the construction and provides evidence of the scale of exercise and equipment beyond home gardeners. Photo 2 shows a section of a green wall within the Qantas building in Sydney.

A web search reveals lots of proprietary systems for architectural green walls.

Roma St Parklands has examples of frames made from aluminium screen door panelling with sphagnum moss inside as the growing medium for orchids and smaller bromeliads. Some gardeners have taken this approach as well using two weldmesh panels and shade cloth inside the panels to form a narrow vertical box filled with suitable growing media. While this won't have the life of the structural systems it is a lower cost approach suitable for domestic situations.

A web search or a visit to the nursery section of major outlets also evidences lots of proprietary systems of stacking pots in a vertical arrangement. YouTube also offers many DIY approaches using mesh, old pallets, old furniture etc. At the simplest end, wire and plastic hangers are available at our meetings and from garden supplies shops.

When I visited Koehres Nursery in autumn in Germany, many plants were in small pots of bark and hung using standard plastic 3 or 4 pronged pot hangers simply attached to vertical weldmesh frames. See Photo 3. In late autumn and winter, the pots are crowded into a glasshouse and summer the pots are hung outside from simple vertical mesh frames.



Photo 1a. Airport Link Green Wall under construction

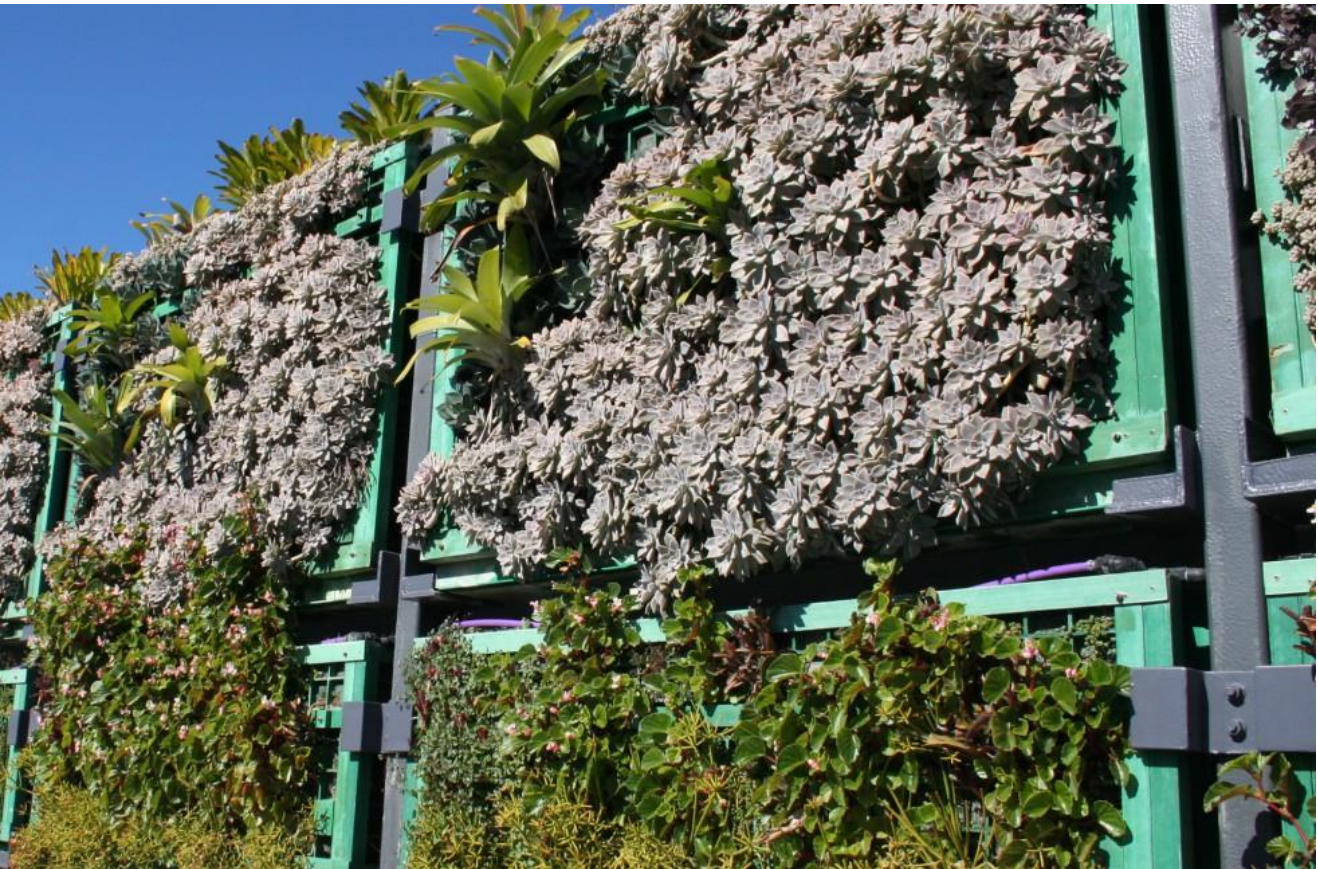


Photo 1b. Photo of a small part of Airport Link Green Wall showing variety of planting and supporting structure



On the right: Photo 2 - Part of Mark Paul's Green Wall at Qantas Sydney

Above: Photo 3 - German Glasshouse stacked with pots and cacti

Below: Photo 4 - *Tillandsia leiboldiana* nendant form



Hanging baskets have long been adopted as a form of vertical garden. With large green walls and suspended pots, there is a huge range of plant choice. My preference in hanging baskets is to select bromeliads with pendant forms of inflorescences such as *Aechmeas* – *contracta*, *filifolia*, and *weilbachii*; *Vrieseas* – *guttata*, *scalaris*, and *simplex*; *Tillandsia* – *leiboldiana*. See Photo 4

Options without growing media

This is largely the approach to vertical gardening I have adopted in my garden. I differentiate between my “garden” which I want others to also enjoy, and my “shadehouse” which I see as my collection more than a garden. I have 4 basic approaches to the vertical garden all without growing media. While my collection is strongly oriented to tillandsias, the need for variety and colour variation necessitates a wider range of plants in the garden.

One aspect of growing without media is that the plants do need nutrition and this is supplied as foliar fertiliser.

Our block is steep and we have a walkway which is 2-4m above the natural surface from the laundry to the levelled back lawn. The balustrade for the walkway consists of a timber top rail and – you guessed it – weldmesh panels below the rail. This is the first of my vertical gardening approaches. I simply attach plants to the mesh using wire ties, cable zip ties, or mount the plants on timber and hook them on. Photo 5 shows one section of the wall.

Along with tillandsias I have others for colour and shapes:

- *Billbergia* Afterglow and Hallelujah for strong colour
- *Neoregelia* Fireball, Fire Pixie
- *Vriesea vagans*, and *V ospinae*
- Other epiphytes include elkhorns, staghorn, and a few orchids.

The second approach I use is to suspend plants (tillandsias in this case) on fishing line. Photo 6 shows some examples. These plants are allowed to form substantial clumps. Tillandsias I have in this form include species (*funckiana*, *crocata*, *ionantha*, *juncea*, *duratii*, *butzii*, *scheideana*, *araujei*, *filifolia*, and *recurvifolia* v *subsecundifolia*) and some cultivars/hybrids (*stricta* x *ixioides*, Houston, Cotton Candy, Rio Hondo). This list is largely comprised of common and lower cost plants. Those plants which reproduce well are good candidates for forming clumps and this feature makes them readily available and lower cost. You will be able to afford to buy a few plants and give the clump a good start. Clumps can be started by mounting plants on good hardwood timber pieces. Coolite shapes can also be used as starters. Craft outlets have a range of cones, bells and rings which make useful starters. I paint the coolite with wood glue and attach cork sawdust which I collect when cutting up cork for mounts. This gives roots some grip and avoids white coolite showing.



Above: Photo 5 – Plants on balustrade wall.



Photo 6 - suspended
Tillandsia clumps

Right Photo 7 - *T. tectorum*
on driftwood



Photo 8 Right - Tillandsias on
tree fern trunk



With some species there is a limit on the size of clumps which are self-supporting. Keeping the plants well aerated helps keep the inside of the clump from softening up and rotting. The inside of the clump is often a twisted mat of roots intertwining and holding it together. In other cases (eg *T funckiana*), it is wise to support the clump. I construct a wire frame in the form of a grappling hook, ie a central spine with 4 arms coming out and bending up from the bottom. This is pushed through the clump from the bottom and the clump suspended off the top of the wire frame. Fishing monofilament of suitable strength is preferred for suspending plants. Wire alone or wire with swivels does not provide the flexibility for the plants to rotate and form somewhat symmetric clumps.

A third approach is to mount the plants on driftwood pieces and suspend that. This is useful for plants which tend not to clump such as *T gardneri* and *T brachycaulos*. It is also a useful way to include some more unusual and therefore more expensive plants such as *T tectorum*, *sprengeliana*, and *chiapensis*. Fewer plants mounted on twisted, contorted pieces of driftwood can still be effective. See Photo 7. For a couple of specimens I have mounted the driftwood horizontally. It has occurred to me that I could construct a mobile in this way but I fear the result would be a tangle after the first strong westerlies.

My fourth option is ground based. If you haven't got a suitable frame for suspending clumps or driftwood, trees (dead and alive) also present vertical gardening options. Old tree fern trunks are my choice. There is a tough outer skin which has good texture for roots to attach. They are also effectively hollow so mounting the dead trunk is simple. Drive a stake or star picket into the ground and fit the tree fern trunk over it.

At the top of the trunk, a plant can be inserted into the trunk and allowed to crown the whole affair. *T fasciculata* will readily attach and offset to form the top to the installation. Options for attaching plants to the trunk include:

- Wire around the trunk holding the plant in place;
- Mounting the plant/s on a timber lath and screwing the timber to the trunk;
- Using cable ties which have a screw hole at the end for attaching cable groups in place and screwing in.

Photo 8 shows some examples.

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John Arden, Hybridizer

By Robert Kopfstein

(Ed: Following on from the article on Tillandsia hybrids in the last edition, this article has been extracted from the San Diego Bromeliad Society Newsletter – The Bromeliad Blade May 2014. It relates to one of the most prolific bromeliad hybridizers of all time. You will note some US spelling in this article)

Anyone who has had the opportunity to visit the greenhouses and lath structures of John Arden cannot help but be amazed at the life's work of this amazing (and patient) man. The plants of course, speak for themselves. Hundreds upon hundreds of tillandsias and vrieseas splash across the benches and hang from above in waves of colour and form. The effect is that of an artist's palette, swatches of red, burgundy, yellow, green, colour after colour. And the variety of shapes lend a structural quality to it all—it is almost like entering a tropical Garden of Eden.

This remarkable display of bromeliads is the result of decades of painstaking labour, all done singlehandedly by what appears to be a very modest, soft-spoken and decidedly unassuming man. John always speaks of his work and his plants in understatement, yet whenever he enters any of his creations in a bromeliad show, be it local or at a world conference, he invariably places on the head table, and more often than not he wins best of show: hands down.

John Arden's love of plants began when he was very young. Born in 1926 on the coast of Latvia, his father was a government employee who was in the department of forestry. As a child John roamed the forests of Latvia, learning about the flora and the birds that were native to the area. But this idyllic childhood was interrupted in 1939.

World War II was about to begin, and in Eastern Europe the Soviets were on the move, invading Latvia in 1939, and taking over the government. Because he was a Latvian government official, John's father was sent to Siberia. With the German invasion of Russia in 1940, the Soviets were pushed out of Latvia; however, by 1943 the fortunes of war on the eastern front had shifted, and once again the Russian army re-invaded Latvia, and seventeen-year-old John fled west to Germany to escape the Soviets.

With the defeat of the German army in 1945, John went to work for the U.S. Army in a civilian supply depot. His co-workers were Latvians, so language was not a problem. By this time John had mastered German, and some Russian. He spent some time in a displaced person camp in Germany; these camps were set up to house the hundreds of thousands of Europeans who had lost nearly everything in the devastation of World War II.

By the end of 1949 (12/31/1949) John married Sophie, and a little more than one year later in 1951 he and his wife immigrated to the United States on a troop transport ship. He came to America by way of Ellis Island, along with many thousands of European refugees who sought peaceful, stable lives after the tumult of the 1940s.

Speaking little English John and Sophie travelled by train (in 1951 most people did) to Los Angeles because he had an aunt who lived there. He went to work for the May Company earning 90 cents per hour. This job gave him the opportunity to attend night school where he learned to become a machinist. His machinist skills landed him a job at a machine shop on Sunset Boulevard in Hollywood, a city not especially known for its machine shops.

After a series of jobs John became a specialist in the lathe, and he and his wife bought their first house in Culver City. Later, about 1970, they moved to a house in Torrance, California, and by this time some children John, Livia, and Jayne rounded out the family. The house needed landscaping so John began to check out the various nurseries in his neighbourhood. And because it was not very far from home, he went to see the newly created South Coast Botanic Garden where there happened to be a bromeliad exhibit. John had the opportunity to meet some of the members of the South Coast Bromeliad Society, including Charles Wylie, Kathy Doerr, Leslie Walker, Stan Oleson, and George Allaria. It wasn't long before he was hooked on broms, and of course the enthusiasm of the society members only added to the excitement.

Soon John went on two or three trips to Mexico to see bromeliads in habitat, and to collect some tillandsias. His interest at the beginning was in all of the bromeliad genera, and about one year after joining the bromeliad society John learned about hybrids. By this time he was thoroughly enamored of the plants. At first John knew little about the process of hybridizing— one of his early attempts was to cross a vriesea with a cryptanthus. However, bit by bit, he learned more – mostly by trial and error. He had help in growing bromeliads from seed from Stan Oleson, who had experimented for years with the best techniques to plant and care for the seedlings.

Eventually John attended a bromeliad hybridizers world conference in Florida where he met hybridizers Herb Hill and Don Beadle. While at the conference, John had his first serious encounter with vrieseas and he bought some stock for hybridizing. Back in California, the crosses in his greenhouse subsequently multiplied exponentially.

During some years there would be upwards of 1000 tags on his stock and the greenhouses would be filled with seedlings of vrieseas and tillandsias growing, growing, with John keeping a sharp eye on which of the plants in the various grexes showed promise. To grow out a vriesea or tillandsia seedling to a reasonably mature plant takes four to seven years, and a whole lot of attention and patience, not to mention record-keeping. John keeps spread sheets and photos on his computer, and he has logged in more than 5000 crosses which he has made.

According to John, what is it that makes a hybrid beautiful?

- It should be different – bigenerics often score on this point
- Color – the color should be vivid and pleasing to the eye
- Shape – symmetry counts for a lot in this category
- The leaves and markings – plain green is out

To achieve these goals requires, more or less, 40 hours per week of John's time, a serious commitment.

What John usually does not mention to his visitors is that hybridizing on this scale also requires talent and an artist's eye for beauty. Most bromeliad enthusiasts are fortunate if they have the skills to grow the plants well. Hybridizing, as practiced by John Arden, takes those skills to a level which most bromeliophiles can only dream about. His creations are truly gifts to all of us who appreciate beauty in nature.



Left is one of John's spectacular crosses – *Tillandsia* Bird of Paradise (*laxissima* x *dyeriana*)
Images below show some of his greenhouses





Wanna talk patience? After John made the *Tillandsia* Aristocrat cross, he had to wait 17 years for it to flower!

The one pictured left looks happy in my back yard.

Below left are a couple of the many bigenerics I acquired from John.

Blooming Vr. (*ensiformis* x *vagans*) x *Tillandsia multicaulis* (foreground) is flanked by big pups of *Vrieslandia* 'Twin Brother' (Vr. Sundance x *T. australis*) (upper right)

Bottom Right is John with his fabled T *superinsignis* x *leucolepis*



Billbergia Buchholtzii (the latest June 2014)

By Derek Butcher

Remember this is now treated as a hybrid as recognised by Carl Mez and not a species as recognised by Lyman Smith. It is recorded in the Bromeliad Cultivar Register

<http://botu07.bio.uu.nl/bcg/bcr/index.php?fields=&id=9647&search=buchh>

Over the last 15 years I have written widely on the problems with this plant and if it does survive in captivity. It is very rare indeed that there are herbarium specimens in existence for alleged hybrids and even rarer that they survived the devastation in Berlin at the end of World War II. These survived so why should not living plants. It is only recently that access to herbarium material has been available in electronic form in selected herbaria and we are lucky that Berlin is one.

In 1911 a herbarium specimen was lodged at Berlin called *Billbergia speciosa* or a hybrid of it. In 1919 it was noted by Mez as being *Billbergia buchholtzii*. Here the problem starts because there is another specimen noted by Mez as also being *Billbergia buchholtzii* in 1917 and this was the one used to describe *Billbergia buchholtzii* Mez, Repert. Sp. Nov. 1.6: 7. 1919. The following comment was made;

“Habitat unknown, probably East - Brazil. - I obtained examples from three different gardens under three different incorrect names. It is unanimous that it is a garden-hybrid; it is named in honour of the Garden-inspector Buchholtz, my co-worker in the cultivation of Bromeliaceae.”

Does this include the herbarium specimen that was lodged in 1911? If so why was *B. speciosa* not mentioned!!

Let us now move to the 1950's when we were growing a plant in Australia that looked like a small *B. amoena* but had the odd name of Windigig speciosa. Obviously it was a misspelling but from what? This was registered as Windigig Special. The reference to 'speciosa' could well link to the name on the 1911 herbarium specimen!

Let us now read what J A Giridlian said in Brom Soc Bull.11(1)12.1961

“After Mr. Atkinson's death these plants were widely distributed by Evans & Reeves Nursery of Los Angeles under the name of *B. enderi* hybrids, *enderi* being a synonym for *B. amoena* which now has been identified as *B. buchholtzi*. Since I have three very distinct plants all of which have been identified with the same name, I call this one *B. buchholtzi* No1. This particular plant is a low growing, slender plant with a very brilliant orange-red bract. It has been used many times in crossing with other species to impart this bright orange colouring to its progeny, which indeed it does. These characteristics are shown in the hybrid plant under discussion because it is lower growing than any *B. vittata* I have ever seen, and the colour of the bract is bright warm red, a colour I have never encountered in the true *B. vittata*, no matter how variable. Also, along with other hybrid Billbergias, it has the habit of blooming more than once a year.”

This described the plant we were and are growing in Australia and interestingly this plant is still being grown in California in 2014 as *B. Buchholtzii* even though the 'true' *B. 'Buchholtzii'* is a larger plant with a larger inflorescence. It seems the 'No.1' was considered unnecessary.

Let us now see what has happened in the early months of 2014

Vitaly Alyonkin of Moscow posted a photo on Florapix of *Billbergia nana* Pereira 1973 which I felt had to be what had been growing in Australia as Bill. 'Windigig speciosa' (now Windigig Special) from at least the 1950's. Vitaly's plant had come from Seidel in Brazil and Seidel is linked to *Billbergia nana* as the following shows:

"*Billbergia nana* E Pereira Bradea 1: 316-8 1973

translated from the Latin and Portuguese by Butcher

Plant very short stoloniferous, ca 22cm high, leaves ca 12, rosulate, forming a cylindrical utriculum.

Leaves ligulate, ca 20-25cm long, all purplish, the outside totally white lepidote.

Sheath oblong, 10cm long, 4cm wide, with hyaline edges, both sides inconspicuously lepidote.

Blades linear, 10cm long, 2-4cm wide, the tip rounded and emarginate, with a mucron added, besides being rolled back from the edge, spines sparse and minute on the edges, both sides white lepidote.

Scape erect, 19cm long, 5mm thick, white, glabrous, the lower internodes 4cm long, the upper ones 2cm long,

Scape bracts oblong-lanceolate, purple, glabrous, ca 6cm long, 2.5cm wide, tip acute and mucronulate, the lower ones appressed, internodes hidden in the erect sheaths, the upper ones ca 4-5, free, reflexed, internodes visible.

Inflorescence simple, ca 5 flowered, erect, 8cm long, exceeding the leaves.

Rhachis green, glabrous.

Floral bracts minute, scale-like, becoming acute.

Flowers 5-6cm long, sessile.

Sepals free, linear spatulate, 25mm long, glabrous, tip obtuse, the upper half violet, the lower green.

Petals linear-spathulate, the base with 2 fimbriate ligules, and in addition 2 longitudinal calluses, up to 4cm long, the limb violet the remainder pale green, erect before anthesis.

Stamens shorter than the petals, Filaments cylindrical, green, series II highly connate with the petals, Anthers linear, 5mm long, yellow, the tip rounded and very minutely mucronate, the base rounded and emarginate, dorsifixed below the middle, Pollen grains ellipsoid with one fissure, Style 45mm long, cylindric, green, exceeding the stamen.

Ovary cylindric, ca 15mm long, sulcate, green and glabrous, epigynous tube almost missing, Placentae linear affixed to the middle of the loculi, ovules numerous, obtuse.

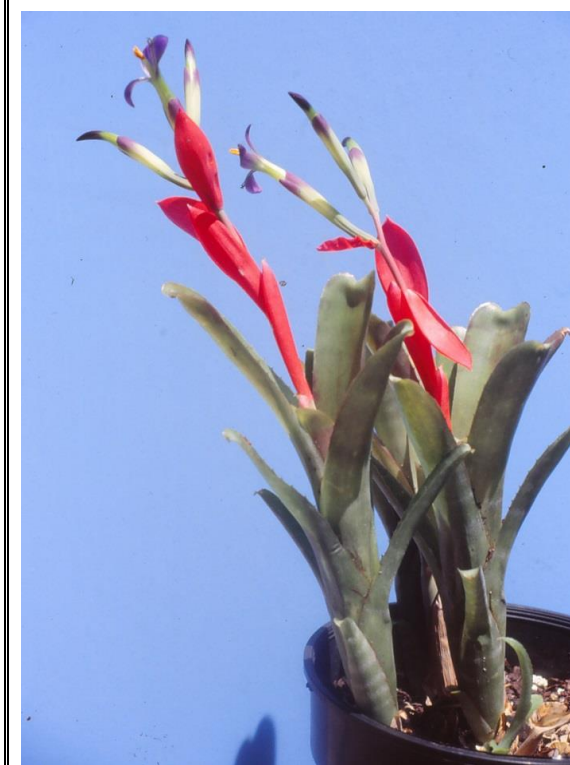
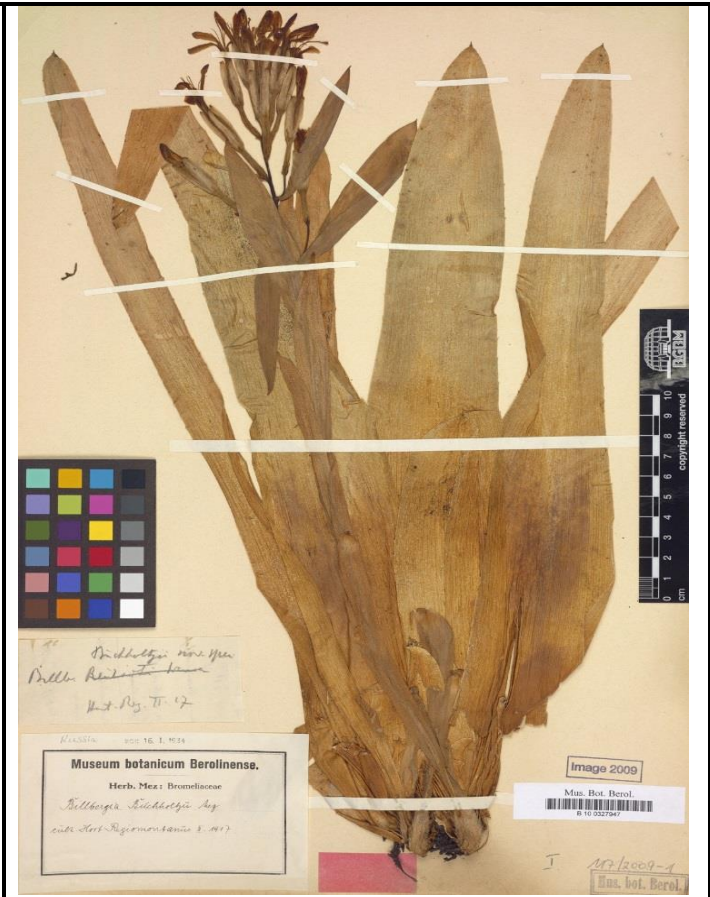
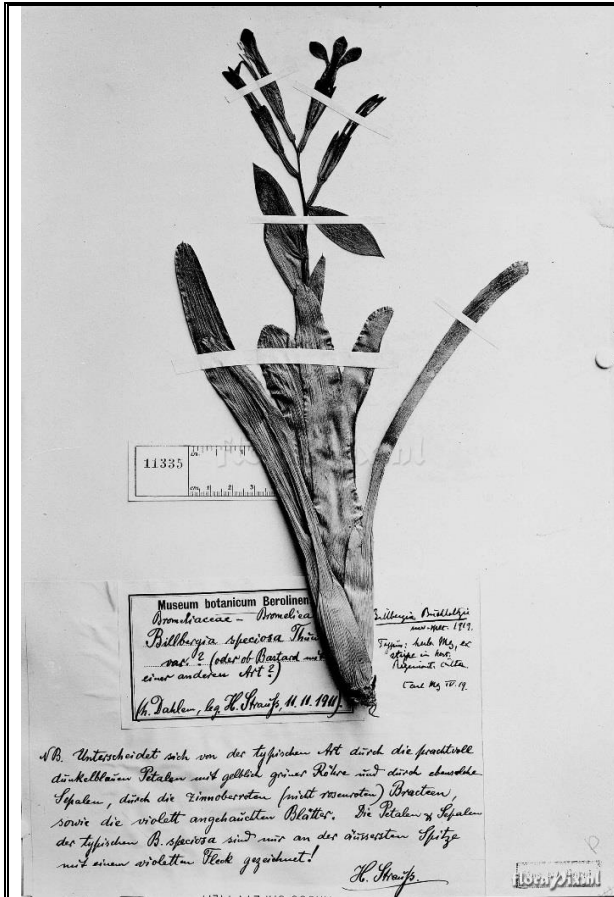
Habitat Brazil, Espirito Santo, Pedro Azul, Leg Alvin Seidel no. 642, 8 Dec. 1972
Holotype HB no. 52.248

This species has some affinity with *B. amoena* (Lodd) Lindl. but from this and its known varieties it is distinguished by the clearly simple inflorescence with very few flowers, by the very small size of the plant with entirely purplish leaves.

Being collected in Espirito Santo and cultivated in Santa Catarina, it is possible that this plant represents only another variety of *B. amoena*, but considering the discrepancies our plant presents, both from the typical form of *B. amoena* and from its known varieties, and for the lack of knowledge about the variability of this species, we prefer to consider it as separate species in order not to increase the confusion already existing in the *B. amoena* complex. It is true that the Bromeliads, especially the Billbergias, Vrieseas and Neoregelias are subject to great ecological

variations, due to the great capacity of adaptation and facility in hybridizing. In this case however the discrepancies are in my opinion too great.”

However, I had previously compared the Aussie plant (you may wish to do the same) with the description but because we had no links to Brazil we did have tenuous gardening links with Europe and I felt it needed to be treated as a cultivar rather than a species. I still have that opinion!



Top left: Bill buchholzii herb B 1911

Top right: Bill buchholzii herb B 1917

Left: Bill Windigig Special Butcher

THE BSQ LIBRARY

Your attention is drawn to the Society's library. It is a service to its members. Members are able to borrow books & magazines from the library at any of our monthly meetings. They also sell specialist books relating to Bromeliads – see the website for details.

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Family Pseudococcidae

Unarmoured Scale Pests of Bromeliads - Mealybug

by Les Higgins 2014

There are 262 genera of mealybug with about 2,000 species known. These pests can be divided into two groups: aerial mealybug and soil or root mealybug.

Aerial mealybugs: Until attaining adult stage all aerial mealybugs readily move into the soil for protection against adverse conditions such as low temperature. Two of the locally encountered aerial mealybugs infesting Bromeliads are:

Long Tailed Mealybug, *Pseudococcus longispinus* - Body colour varies light yellow to grey, pink or light purple. Usually ovoviviparous (live birth from eggs hatching within a body. Usually a dead body) occasionally eggs are produced. The eggs are pale yellow and darken in colour before hatching, 20 to 240 eggs or emergent young are produced depending on environmental conditions.



Citrus Mealybug, *Planococcus citri* - This insect has two forms, aerial and root. The aerial form lays between 300 and 600 eggs contained in an ovisac that can be twice the length of the female. When egg laying is complete the female lies moribund at the entrance of the sac. The huge quantity of eggs formed in the abdomen has compressed her vital organs into the thorax and she never recovers.



Soil or Root Mealybugs: These are white to light grey in colour, oval-elongate in shape that look like a small particle of perlite. When in doubt squash the particle to see if it exudes a pinkish body fluid. This insect is rarely seen at or above soil level. Root mealybug is extremely hard to detect and destroying them is both difficult and cumbersome. Infestations are slow to develop and it may be many months before they become apparent. Excessive watering can wash root mealybug crawlers out through the drainage holes of the pot, they then walk to new pastures.



Ant activity is usually the first indicator of root mealybug. Infested plants show numerous symptoms including declining vigour, change of colour, 'wobbly' in the pot or total loss of roots. Cryptanthus leaves curve downwards and their edges crinkle revealing the roots are no longer able to obtain water. Ants are the most probable source of infestation as they carry crawlers from plant to plant.

***Planococcus citri* (Root Form)** - This insect is associated with the fungus *Poly-porus* sp. Plant roots are encrusted with a greenish white fungal tissue. Citrus mealybug nymphs and adults are revealed when the tissue is peeled away.

There are at least 130 species of *Rhizoecus*, just one of the many genera of Soil Mealybug. Two of the local Bromeliad Mealybugs are:

Ground Mealybug, *Rhizoecus falcifer* - This insect resides within the substrate feeding on plant roots. Females are 2.1mm to 3.9mm long. Eggs are contained within a loose ovisac in clusters of at least six. A thin waxy white filament, similar to mycorrhiza (fungus root), gradually permeate the substrate and the inside walls of the pot. As the infestation increases the soil becomes tinted blue.



Pritchards Mealbug, *Rhizoecus dianthi* synonym *Rhizoecus pritchardi* - This is a devastating pest of *Cryptanthus*. It can be seen on sub-soil stems and never noticed when feeding between stem and clasping leaf. The leaves of earth stars (*Cryptanthus*) emerge from ground level giving this mealybug easy access between soil and plant. Ants mound soil up the stems enabling Pritchards mealybug to go ever higher up into the plant. Females are 1.6mm up to 2.1mm long.



Mounded soil up the stem of a *Cryptanthus*.



Mealybugs were hidden under the mounded soil between stem and pup.

Mealybug heaven is a moist (not wet) environment, high humidity, a loose substrate for root mealybug and an optimal temperature of 25° Celsius. Temperature below 2° Celsius is fatal. Mealybugs are capable of surviving without a host plant for 19 days.

Mealybug has a ‘piercing and sucking’ mouthpart. Large amounts of sap are extracted from the plant to obtain sufficient protein. Many species of mealybug salivate to facilitate the extraction of even larger quantities of sap. Saliva can be toxic and has the potential to transmit virus including Pineapple Wilt. Saliva will destroy cell walls. Honeydew flows from the insect and that attracts ants. Honey-dew is the nutrient source for the subterranean fungus Polyporus and sooty mould seen on leaves and stems.

Female mealybugs retain their legs and can be mobile most of their life. Once settled they usually stay in one spot for life. When disturbed they are capable of quickly moving to hide in a safer location.

Mealybug life cycle and reproductive frequency is governed by temperature. In ideal conditions larvae mature to adults in about 40 days. Both sexes go through at least two instars (a stage of an insect or other arthropod between moults). Males (where known) pupate to become tiny two winged insects without mouth parts. The life of the adult male is no more than two days. Females make at least a third moult before finally becoming adults. Adult females can live a further two to three months. Reproduction commences within 10 to 14 days after fertilization. In green house conditions up to eight generations per year has been recorded.

A newly acquired plant may not be root mealybug free. Take every ‘new’ plant from its pot and mealybug may be visible on the roots. Remove at least one bot-tom leaf off a Cryptanthus to search for Pritchards mealybug. A rootless pup immediately taken from a parent plant may conceal Pritchards mealybug within the leaves.

Two suggested ingredients that can be incorporated into a potting mix to deter soil or root mealybugs are:

- 1) **Coarse river sand** (Tabulam sand)
- 2) **Diatomaceous earth** (agricultural grade).

Diatomaceous Earth(DE) is composed of the fossil remains of phytoplankton and is not an earth. This is a near perfect organic pesticide. To insects the DE is microscopic razor sharp particles that lacerate the cuticle leading to physical disintegration. DE particles can be incorporated in potting mix to annihilate soil mealybug and earthworms.

The suggested combining rate is one tablespoon per kilogram of mix. De gradually breaks down making Silica available to the plant.

Ed: We intend follow up articles on scale insects and some control options

Growing Tips

Compiled By Bob Reilly 2007

- Treat your mounting wood for tillandsia with citric acid to acidify the wood and encourage shy-rooting plants to put out roots.
- Add one or two Nutricote pellets to the lower leaf axils of a favourite plant to encourage it to send out more pups.
- Mount or display your grey-leaved tillandsias in the position they grow in nature. An indication of the position can be found by looking at the base of the plant. If you position the base of the plant at a right angle to your hand, that will give you an indication of the plants natural position. In clumps, these plants tend to show their natural positions. If they go “every which way”, they don’t care.
- If you place covers such as newspapers, sheets etc. over your bromeliads to protect them from cold, check that they are still in position after high winds.
- When the leaves on *Tillandsia bergeri* start to become wrinkled, then it is a good indication that it is time to water your tillandsias.
- Why use sealant and not glue to attach bromeliads to supports such as rocks or wood? Glue sets hard and often the growing plant will force itself from the mount. Sealant stays flexible.
- Remember that it takes 24 hours for sealant to “set” properly so leave you tillandsia flat for this period before hanging them up.
- Branches and roots shaped by the weather can make great bromeliad trees but how do you stop them from falling over? One way is to place the base of the branch/root in a squat pot/bucket filled with quick-setting concrete. The finished article is pretty difficult to tip over!
- A quick way to obtain wooden mounts for tillandsias is to saw a well-seasoned branch of a tree diagonally, so as to get an oval shaped piece of wood about 2cm thick.
- Some tillandsias when allowed to clump seem to lose their inclination to flower and yet others need to be in a clump to induce flowering, such as *T. argentine*, so get to know your plants.
- Some tillandsia nurseries recommend that grey-leaved tillandsias’ leaves should be dry within four hours of watering to minimize the chances of rot occurring
- Diluted liquid fertilizer used frequently, is better than more concentrated fertilizer used infrequently.
- There is no use giving a plant plenty of liquid fertilizer, if it is not getting enough light, water, or carbon dioxide. So fertilizing when the plant is stressed due to drought is quite likely to result in damage.

A Note from the Co-editors

Chris and Jennifer Coulthard

The collective knowledge of any society is usually extensive, elusive and fragmented among many members. Unfortunately, we tend to be too busy to share our knowledge, our stories, or dismiss them as “everybody knows that”, or we are afraid to record it as others may be critical of our literacy endeavours. So, that knowledge, whether it is known by some or not, is usually lost in the passage of time.

Bob Cross, a long term member of our society recognised this just recently and brought an ‘old plant’ rarely seen today with him to a meeting to share its form and beauty with members.

In an endeavour to retain some of the knowledge and some of the wonderful stories that our members are willing to share, we will attempt to balance the magazine with both new and old articles suited to both beginners and the serious growers.

Additionally, we intend visiting members to record specific, and general stories of their experiences in growing bromeliads. Perhaps it is their first experience, hardships that may have been encountered or friendships that have been formed. We hope that you will enjoy these stories.

Society Tales, Facts, Successes, and Fun Tit Bits

Our first visit came about at a committee meeting when Olive Trevor was asked if there were any new plants ready for release. Olive offered to share a glimpse of some of the future plants and how after some very damaging storms took out several of their shadehouses, an alliance was forged and changes made to the nursery.

Olive is a well-known and respected grower, hybridizing from imported seed, and propagating from her own stock. She has learnt over many years that sharing knowledge, experiences, seeds and plants is an effective way for her to share her passion.

After storms ripped through several of The Olive Branch’s shadehouses, Olive and Len rebuilt under different conditions. With assistance from Michelle and Mal Cameron (affectionally known as M&M), an alliance was forged and a new learning process began between them. It is in some of the new shadehouses where new releases are grown. One of the changes made to the shadehouses was going from 70% to 50% shade. This improved the colour and quality of these plants.

Olive is quick to point out some of the facts about hybridization and the importance of correct identification. Knowing where the plant originally came from, what was crossed with what, and understanding the basic rules of hybridization are crucial. This is clearly important to her, and after a quick bit of research, it is clearly important to the cultivar registrar also.

Identifying your goal is another key element to hybridization. Things like ‘avoid contamination’, “emasculate the pollen”, “place onto the stigmatic surface”, are also very important. We found that hybridization took on a whole new meaning to us.

Understanding how the crosses work, and seeing them come to fruition is truly amazing.

Hybridization is complex, incredibly fascinating, and the experience of creating a new plant is both interesting and enjoyable. One can achieve a great deal of satisfaction producing something spectacular. Be warned, if you wish to become a hybridizer, you will invest a lot of time, money, and a great deal of energy to attain your goal and from what we have learnt it is not for the faint hearted.

Having said all of this, the fact is, hybridization does produce some stunning results and we felt very privileged to have been able to glimpse some of these exquisite specimens. These hybrids below were done by Chester Skotak in Costa Rica, sold to Michaels Bromeliads in Florida and imported into Australia by The Olive Branch. After years of expanding in volume and selection of the best variegated ones we were able to give them our own names by permission from Mr Skotak.



Neoregelia Aussie Red x Tiger



Left & above: *Neoregelia Harpo*



Neoregelia Banggereng Rainbow



Neoregelia Harvest Time variegated



Neoregelia carolinae x *N. Hannibal Lector*
x *N. Norman Bates* x *N. Tiger*



Neoregelia Quiz Queen



Above: *Neoregelia* Tiger Rose



Above and below *Neoregelia* Groucho



The Book

“Starting with Bromeliads”

This is 100 pages in length and contains over 200 colour photographs of bromeliads and covers such topics as plant descriptions, caring for bromeliads, and landscaping with bromeliads.

The book is available for purchase through our library or you may place an order directly to the society.

To place an order please post a money order to:

The Secretary
The Bromeliad Society of
Queensland
PO Box 565, Fortitude Valley,
Queensland, Australia 4006

Have you got information about forthcoming events?
Email the Bromeliaceae Editor using the email address below.
editor@bromsqueensland.com.au

SEEDBANK

Peter Ball is our Seedbank Coordinator
Look him up at the next meeting, he is always up for a chat.

Is there something you would like to share with us? Perhaps a photo, or something you would like us to discuss. Drop us a line, we will do our best to make it happen for you.

The Basic Needs of Cryptanthus

By Harry Luther

From The Cryptanthus Society Journal Jan-Mar 2014

Light – There are Cryptanthus which will grow in every light condition you may have. *C. beuckeri* is a lowlight plant and many of its progeny like to be shaded, moist and humid. This makes *C. beuckeri*, and its hybrids ideal plants for terrariums. Species such as ‘*C. beuckeri*’, “Cascade” and *warasii* can take full sun, but you will find the plants happier in diffused light.

For maximum colour in most Cryptanthus bright diffused light is necessary. Too much light will cause bleached spots on the foliage or a leathery, stressed look to the plant. In extreme cases, sunburn spots or holes will occur. On the other extreme, weak foliage and greening of colour suggests that the plant needs more light. Acclimate your plants to grow in as much light as possible. Your light may come naturally (in the greenhouse, outside with high shade, in a window garden) or artificially such as on the plant carts that many indoor growers use. Some growers line their walls with reflective material to provide additional light. In fact, the colours intensify under fluorescent light. This makes the Cryptanthus an excellent office plant.

Temperature – Cryptanthus are comfortable in temperatures the same as you, as are other bromeliads. 60 to 85 degrees F. brings out the best growing conditions. Most Cryptanthus can survive just above freezing, and some survive winter outside with a heavy mulch if water is cut back in the fall and the plants are allowed to “harden off”: Depending on how long it stays below freezing, even in the twenties, severe leaf damage results but the mulch protects the root zone and Spring brings abundant, beautiful offsets. On the other extreme, they can take temperatures above one hundred as long as there is adequate humidity and the mix is not allowed to dry out. Cryptanthus are easy to grow outside in temperate regions and make exotic bedding plants. They grow just as well or better in the controlled environment of any indoor grower.

BSI Conference – 8 to 14 September 2014

Just a reminder to those who may be interested that, the next BSI Conference will be held in Hawaii September 2014.

There is still time to make a registration and save, so why not consider giving yourself a holiday and taking in some information on bromeliads.

Check out the BSI web site for additional information – www.bsi.org

Competition Schedule for 2014

- January - MINI SHOW**
Class 1 – Aechmea species & hybrids
Class 2 – Vriesea species & hybrids
Class 3 – Dyckia species & hybrids
- February - POPULAR VOTE** – any genus species & hybrids + novelty bromeliad display
- March - POPULAR VOTE**
- April - MINI SHOW**
Class 1 – Bromelioideae not listed elsewhere in Schedule, species & Hybrids
(*Acanthostachys, Ananas, Androlepis, Araeococcus, Bromelia, Canistropsis, Canistrum, Edmondoa, Fascicularia, Hohenbergia, Hohenbergiopsis, Neoglaziovia, Nidularium, Ochagavia, Orthophytum, Portea, Quesnelia, Ursulaea, Wittrockia*)
Class 2 – Guzmania species & hybrids
Class 3 – Pitcairnia species & hybrids
Class 4 – any other flowering bromeliad species & hybrids
- May - POPULAR VOTE**
- June - POPULAR VOTE**
- July - MINI SHOW**
Class 1 – Billbergia
Class 2 – Tillandsioideae not listed elsewhere in Schedule, species & hybrids
(*Alcantarea, Catopsis, Mezobromelia, Racinaea, Werauhia*)
Class 3 – Neoregelia up to 200mm diameter when mature, species & hybrids
Class 4 – any other flowering bromeliad species & hybrids
- August - POPULAR VOTE**
- September - POPULAR VOTE**
- October - MINI SHOW**
Class 1 – Neoregelia over 200mm diameter when mature, species & hybrids
Class 2 – Tillandsia species & hybrids
Class 3 – Pitcairnioideae not listed elsewhere in Schedule, species & hybrids
(*Brocchinioideae, Lindmanioideae, Hechtioideae (= Hechtia), Puyoideae (= Puya), Navioideae, Pitcairnioideae (= Deuterocohnia, Encholirium, Fosterella)*)
Class 4 – any other flowering bromeliad species & hybrids
- November - POPULAR VOTE**
- December - No competition - Christmas Party**



