

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

Study Group meets the third Thursday of each month

Next meeting November 21st 2019 at 11 a.m.

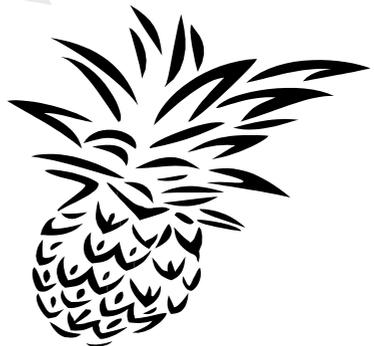
Venue: PineGrove Bromeliad Nursery
114 Pine Street Wardell 2477
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Discussion: October 2019
General Discussion

Editorial Team:

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Meeting 19th September 2019

The meeting was opened at approximately 11.00 am
The 7 members present were welcomed.
Seven apologies were received.

General Business

Ross opened the meeting on time to a greatly reduced attendance of only seven members. Unfortunately it's that time of year that orchids are in flower, with several of our members also involved in Orchid Society Show judging.

Ross gave the Group some positive feedback about our September Newsletter that he had received with respect to the accuracy of terms and names used in it. He thanked those who are supporting our editors with articles and photos etc.

Discussion was held about the spelling and use of the word color or colour. When used in a plant name 'color' is always used e.g. *Tillandsia tricolor*. At all other times it is up to the user whether they use colour or color. In Australia it is most common to use colour except of course in a plant name.

Ross also mentioned about the use of italics which is important when writing the plant name in articles or Newsletters but is not essential on your plant labels. The main issue for labels is that the writing be clearly legible.

We briefly discussed the contents of the Newsletter and articles contained within it. Ross and Drew spoke about the article regarding the new genus Karawata and the series of articles that Drew is writing about **Bromeliaceae, in Layman's Terms**. Drew also explained that as he writes about each subfamily and genera, that these terms will also be added to the glossary in the Newsletter index. Part 2 of the series will be about the Bromelioideae sub family and its genera. This series of articles compiled by Drew will be published over many months allowing for the information to more easily absorbed.

A tribute was given to the work of Herb Plever who passed away recently, and Ross referred the Group to the Vale for Herb on page 3 of the Newsletter, and an article about Herb on page 4.

Show, Tell and Ask!

Ross showed the Group *Aechmea recurvata* var. *recurvata* with its inflorescence and orange leaves glowing in the sun. He explained the differences between the *Aechmea recurvata* varieties - *ortgiesii*, *recurvata* and *benrathii* (article p.10)

Drew brought in a lovely *Tillandsia* for identification which was suggested as being *Tillandsia rodrigueziana*. The other two *Tillandsias* Drew brought along could not be identified until they flower. (photo p.9)

Helen showed four *Tillandsias* all in flower and at first glance all the same plant as the flowers are almost identical. The plants she had were *Tillandsia tenuifolia*, *Tillandsia tenuifolia* var. *tenuifolia*, *Tillandsia* 'Tagigan' (a hybrid from Margaret Paterson) and *Tillandsia* 'Confusion'.

Ross explained that to identify these plants with any accuracy it is necessary to examine them closely looking at:

- The petals to see if there are any subtle differences between them e.g. length, colour, shape etc.
- The trichomes on the leaves, has your plant got green leaves or is it very scurfy (covered in trichomes).
- The length and shape of the floral bracts.
- Whether the leaves are straight or curved.
- Consider the parents of your plant if it's a hybrid and their features.

Ross reminded the Group that plants grown from seed of hybrids may have variations and may not all be identical, similar to human beings where children from the same parents are different. Even in habitat plants can have different colour variations as often seen in recent travels.

Shirley asked about fertilizing and pest control of Bromeliads. The Group shared their experiences with effective fertilizers which included:

- For foliar fertilizing use Thrive Fruit and Flower, Power Feed or one of the Campbells Diamond Blue range.
- Put slow release fertilizer around the base of the plant and or mixed into the potting soil. A good slow release fertilizer is available at our Group meetings.
- Use of worm tea.

The preferred fertilizers for most Bromeliads are higher in Potassium (K) with a lower level of Nitrogen (N). For *Vriesea*, *Guzmania*, *Alcantarea*, *Cryptanthus*, *Dyckia* etc. a fertilizer with a more balanced NPK is suitable.

The Group also shared with Shirley what they use to control pests, the following were suggested:

- Use confidor or a confidor substitute e.g. Spectrum 200SC with the same active ingredient - Imidacloprid.
- Malathion.

For the more environmentally friendly options try one of the following:

- Neem oil.
- Pyrethrum.
- Canola oil based white oil which has a vegetable base rather than a chemical base found in commercial white oil which should never be used on Bromeliads.

Ross reminded the Group that now is a good time to spray your Bromeliads for pests as they are very active at this time of the year.

The recipe to make Canola oil based white oil by Rob Smythe in the April 2011 FNCBSG Newsletter is:

750ml. Canola Oil.

3 tablespoons dishwashing detergent.

1250ml. water.

I usually mix this in a two litre milk bottle and shake it violently. You can use a blender. Let the white oil emulsion rise to the top. Put a small hole in the bottom of the milk bottle and carefully open the lid. Drain off all the excess water and detergent then put the white oil into a new milk bottle. You will find it fairly quickly separates back into oil and water layers. It should be used fairly promptly when fresh. The message is to make big batches and store it. Each time you use it shake it well.

Drew has used the following recipe successfully:

1 cup of Canola oil.

¼ cup of dishwashing detergent.

Place the ingredients in a plastic milk or orange juice container and shake vigorously every time you use it. Add 15 ml of the white oil per litre of water + 5ml of Neem oil (if you have it) per litre of water and apply direct to the plant.

Also asked at this months meeting was the question “which Aechmea am I?” A very nice red banded plant was on show with an inflorescence but no petals.



These plants are easier to identify by petal colour as seen in these photos.



Aechmea 'Red Bands'



Aechmea 'Brillig'

Ursulaea macvaughii a collaboration by John Crawford / Drew Maywald

The *Ursulaea* genus of Bromeliads is endemic to Mexico. There are only two plant species in the genus, *Ursulaea macvaughii* and *Ursulaea tuitensis*. The *Ursulaea* genus belong to the *Bromeliaceae* sub-family *Bromelioideaea*.

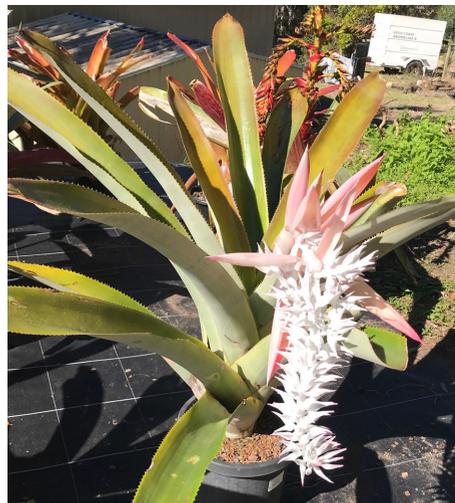
The habitat for *Ursulaea macvaughii* has a small range of native distribution from southern Jalisco through Colima to western Michoacán, in Western Mexico, where it grows as an epiphyte (air plant) or a lithophyte (grows on rocks and gets its nourishment from the atmosphere).

The Bromeliad Society of Australia web site states that *Ursulaea macvaughii* was named by (L.B. Smith), R.W. Read and H.V. Baensch.

Ursulaea macvaughii is a plant not often seen in collections due to its size with only a few Botanical Gardens in the world having it on display. John has three



Urs. macvaughii in his Bromeliad collection. They are a large plant standing over 1 metre tall. The leaves are more than 700mm long with quite large upward facing very sharp, spines at 10mm intervals, ending in a vicious point for the unwary. The leaves are quite thick and rigid and John's are rather yellow on the top and a powdery green underneath. John's *Urs. macvaughii* are in full sun and do not get watered except for rain.



The leaves on the plant above have been damaged by hail however, the plant still looks strong and vibrant, and is free of pests and diseases.

One of John's *Ursulaea macvaughii* is in flower and presents a spectacular display. The buds are a brilliant powdery, frost texture, and the pinkish bracts from which the pendant inflorescence emerges are elegant and something to admire.



The first few purple flowers began to open on July 23 and this majestic plant will flower continuously for quite some time. The curled purple petals resemble those of a Billbergia, and are beautiful set against the snowy-like white buds.

When the purple petals fall away they will be replaced by large showy berries.

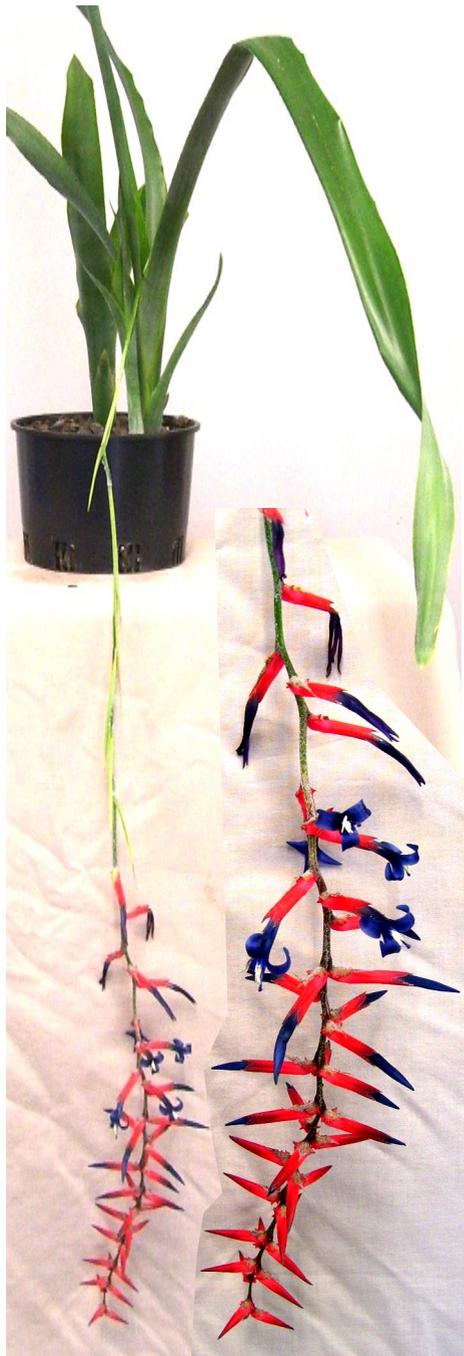
John potted his flowering *Ursulaea macvaughii* two years ago as a pup and it is already developing a pup from its base. The spectacular inflorescence on *Ursulaea macvaughii* is a delight to see, and this majestic plant is an outstanding addition to any Bromeliad collection.



Vale: Jim (Jimmy) Hanley (64)

Jim first joined us at the FNCBSG NSW in March 2011. He had a fascination for many plant families especially Bromeliads and Orchids. His collections were quite variable containing a bit of everything. He was a very well liked member of our Group often offering a joke or two. He was content and happy with his life as could be seen in his photo, he was always smiling. His quick wit kept all of us on our toes. Jimmy will be sadly missed.





Quesnelia augustocoburgi
1st Novice Sue Mackay-Davidson



Tillandsia stricta var. *albifolia*
1st Tillandsioideae and Judges Choice
Sue Mackay-Davidson



Tillandsia tenuifolia
grown by Helen Clewett



'So Long Stolon'
1st Decorative Drew Maywald



Quesnelia marmorata
grown by Drew Maywald



Tillandsia rodrigueziana
shown by Drew Maywald



'I See Tillandsias'
by Helen Clewett

Aechmea recurvata by Herb Plever in part from Bromeliana 36(5): 1-3. 1999

Dr. Lyman Smith, in his 1979 Monograph on sub-family Bromelioideae, placed *Aechmea recurvata* in Subgenus *Ortgiesia*, where it is distinguished by having a scape wholly covered by the leaf sheaths, floral bracts usually serrulate (but not so with var. *benrathii*.) sepals 9-15 mm long without a terminal mucro (sharp tip) and leaf blades triangular and uniformly narrowing from base to apex. The plant flowers about 7-8 inches high and its leaves are about 6 inches long. The broad sheaths form an ellipsoid pseudobulb and are densely lepidote (covered with white scales). The leaf blades are lepidote below and green and nearly glabrous (without scales) on their top sides. The floral bracts are red and longer than the sepals and the flowers are erect and sessile (without stems). The petals are over 1 inch long, rose-pink, purple or purple-black.

Dr. Smith provided a key to the three recognized varieties of *A. recurvata* as follows:

- 1. Inflorescence almost completely exerted above the leaf sheaths; floral bracts serrate var. **recurvata**
 - 1a. Inflorescence almost wholly included by the leaf sheaths.
 - 2a. Leaves and bracts strongly serrate var. **ortgiesii**
 - 2b. Leaves & bracts entire (spineless) or nearly so. var. **benrathii**

So it should be easy to distinguish the varieties. If most of the inflorescence rises above the leaf sheaths and its floral bracts have spines it is var. *recurvata*. If most of the inflorescence does not rise above the leaf sheaths and if its leaves and the floral bracts have spines, it is var. *ortgiesii*. If the spike is mostly included and the leaves and floral bracts are without spines or nearly so it is var. *benrathii*. Right? No, it is not so easy because these plants are so variable and your plant may fit -conflicting key descriptions. Dr. Lyman Smith says *A. recurvata*'s leaves are "very variable from sun to shade" and that the leaf blades are "abruptly spreading or recurving from the junction with the sheaths". If the conformation of the plant depends on cultural conditions, it is understandable that there are problems distinguishing var. *ortgiesii* from var. *recurvata*.



Aechmea recurvata

Photos by: Ross Little



Inflorescence exerted



Inflorescence included

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Bromeliaceae – A Layman’s Guide Part 2

Bromeliaceae were originally split into three subfamilies: **Bromelioideae**, **Tillandsioideae**, and **Pitcairnioideae** based on morphological characters. However, molecular evidence has revealed that while Bromelioideae and Tillandsioideae are monophyletic (belonging to the same taxon and sharing a common ancestor), Pitcairnioideae is, in fact, paraphyletic (belonging to the same taxon and sharing a most recent common ancestor, however, it does not include all descendants of that ancestor) and should be split into six subfamilies:

Brocchinioideae is defined as the most basal branch of Bromeliaceae based on both morphological and molecular evidence, namely genes in chloroplast DNA.

Lindmanioideae is the next most basal branch distinguished from the other subfamilies by convolute sepals and chloroplast DNA.

Hechtioideae is also defined based on analyses of chloroplast DNA; similar morphological adaptations to arid environments also found in other groups are attributed to convergent evolution.

Navioideae is split from **Pitcairnioideae** based on its cochlear sepals and chloroplast DNA.

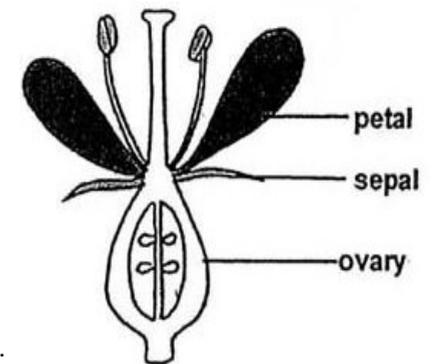
Puyoideae has been re-classified multiple times and its monophyly remains controversial according to analyses of chloroplast DNA.

The Bromelioideae Genera

Pronounced bro-meel-ee-oy’dee-ee, The Bromelioideae sub family is the most diverse, represented by the greatest number of genera with 32, but the fewest number of species with 861. Most of the plants in this group are epiphytes, though some have evolved in, or will adapt to, terrestrial conditions. This sub-family features the most plant types which are commonly cultivated by people, including Ananas, Neoregelia, and Nidularium.

The fruits of Bromelioideae are indehiscent (not regularly opening as a seed pod or anther; remaining closed at maturity) and baccate (berry-like; pulpy or fleshy).

The foliage in most Bromelioideae grow to form a rosette where water is caught and stored. Their leaves are usually spined and they produce berry-like fruits in their blooms. These plants contain an inferior ovary which lies below the attachment of other floral parts.



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Acanthostachys: pronounced a-cantho-steak-is, the genus name is from the Greek “acanthos” (thorny, spiny) and “stachys” (a flower spike), hence, thorny spike. This epiphytic genus from Argentina, Brazil and Paraguay was first described by the younger Schultes in 1841. It is unique among the Bromeliaceae because of the cascading habit of its thin, terete leaves. There are two known species, both endemic to South America, *Acanthostachys pitcairnioides* and *Acanthostachys strobilacea*.

Aechmea: pronounced eek-me-uh, this is a large popular genus to be found growing from Central Mexico to Argentina as an epiphyte, a terrestrial, or a saxicole. It was named by Ruiz and Pavon in 1794 after the Greek “aechmea”, referring to a spear tip, as in the points on the perianth.

Many Aechmeas have sharp spines along the margins or outer edges of their leaves. The Aechmea genus contains 251 different species. Some have adapted for growth in moist, shady forests while others prefer more arid regions. The Aechmea genus offers a great variety in colour, foliage and growth habits.

While Aechmea can grow well in pots, their root systems are not large. In the wild, Aechmeas roots merely act as an anchor attaching the bromeliad to the host plant. They take in water from rainfall and nutrients from dust, insects, and other particles that have collected in their tanks. It is common for Aechmeas to become top heavy. Their foliage is large and meaty yet their small root systems prefer small 100 - 150 mm pots.

They thrive in light shade or indirect sunlight. Aechmeas can flourish in indoor office spaces. They can be grown outdoors in climates that have no risk of frost. They are susceptible to few pests and are more unlikely to succumb to insect related illness or disease than other indoor plants.

Aechmeas foliage grows without a stem. The leaves grow together forming a rosette shape at the centre of the plant. It takes in water through this rosette, which is more commonly referred to as a tank. The Aechmea's ability to store up water in its tank to be used as needed helps it to survive through periods of sporadic rainfall.

Ananas: pronounced anay'-nus, Ananas has three species and one variety native to South America and Central America and many cultivars known to horticulture. One such cultivar is the common pineapple *Ananas 'Comosus'* which was first introduced into Europe by Christopher Columbus in 1493. Ananas is the name used by the Guarani Indians of Brazil where it was extensively cultivated for food.

The pineapple, is the most economically important Bromeliad. It is the only Bromeliad that produces a fruit that can be eaten and is therefore grown commercially in a variety of tropical locations.

Androlepis: pronounced an-droll-epis, Androlepis is native to Central America and southern Mexico, and was described by Adolphe Brongniart in 1870 who named it after the Greek “andros” (man) and “lepis” (scale), referring to the pair of scales on each stem. Androlepis has two species, *Androlepis skinneri* and *Androlepis fragrans*.

Araeococcus: pronounced a-ree-o-cock'us, Araeococcus has 9 species. The genus name is from the Greek “araios” (thin, weak, slight) and the Latin “coccus” (berry).

Billbergia: pronounced bill-ber'jee'a, this popular and easily grown genus, was named by Thunberg in 1821 in honour of the Swedish botanist, zoologist, and anatomist Gustaf Johan Billbergia. The genus was divided into two subgenera: Billbergia and Helicodea, however all the species in Helicodea are now classified as Billbergia. They are native to forest and scrub, up to an altitude of 1,700 metres in southern Mexico, the West Indies, Central America and South America with many species endemic to Brazil. The genus has 63 species.

They are evergreen perennials usually epiphytic in habit, often with brilliantly coloured flowers. While Billbergia grow naturally attached to a substrate, they will also grow terrestrially.

Billbergia can withstand temperatures down below 0°C for short periods of time.

Billbergia do not require much water, but they do like high humidity. The potting medium should feel dry when touched between each watering. It is best not to fertilise Billbergia. Too much fertiliser may cause the leaves to turn green instead of having colourful variegation. Fertiliser that is strong in nitrogen will also encourage the plant to grow without producing a flower. Billbergia flowers are particularly showy, though not as long lived as many other genera of Bromeliad. They are usually found on a flower stalk that emerges from the central tank. The stalk or scape either stands upright or droops in a pendant form. The inflorescence and flowers come in many different colours from reds and pinks to purples, greens and blues. Some Billbergia flowers are noted for their tightly recurved 'Clock Spring' petals.

Bromelia: pronounced brom-eel-e'a, this genus is one of the first Bromeliads to be identified, this genus was named by Linnaeus in 1737 to honour Olaus Olai Bromelius (1639 - 1705). The Latinised name of Olof Ole Bromell, a Swedish botanist who probably never saw the plant. There are 70 Bromelia species which are widespread across much of Latin America and the West Indies, and are characterised by flowers with a deeply cleft calyx. Many Bromelia are large terrestrial plants.

Canistropsis: pronounced can-is-trop-sis, the genus, Canistropsis is from the genus Canistrum and the Greek “opsis” (resembling). All 11 species of this genus are endemic to the Atlantic Forest biome located in south eastern Brazil-

Canistrum: pronounced can-is-trum, the genus name is from the Greek “kanistron” meaning, a kind of basket carried on the head. Canistrum are endemic to the Atlantic Forest biome located in south eastern Brazil.

Resembling Neoregelia and Nidularium, this small terrestrial genus was first described by Morren in 1873, who named it after the Greek for basket because of its inflorescence. There are currently 13 recognised species in the genus.

Canistrum prefer moist conditions and grow either as terrestrials or epiphytes.

The flat topped obconic (cone attached at the small point) inflorescence rises above the leaves with often brightly coloured red, pink or greenish floral bracts surrounding the fascicles of white or yellow flowers and creating a basket. The foliage is predominantly light green with darker green mottling.

Cryptanthus: pronounced cript-an-thus, this genus of small terrestrial plants has been called "Earth Stars" because of their flat form and symmetrical pattern. Entered horticulture in 1836 and named by Otto and Dietrich from “crypt”, Latin for hidden and “Anthos” Greek for flower. All 55 species in this genus are endemic to Brazil and there are two sub genera Cryptanthus and Hoplocryptanthus. The common name for any Cryptanthus is “Earth Star”.

Cryptanthus roots can be expected to grow to at least the same width as its foliage. While their root systems are larger a 125 mm or 150 mm pot should still provide adequate space for the plant to grow. In order to maximize growth, *Cryptanthus* should be fertilised with a highly diluted, balanced fertiliser.

Almost all Cryptanthus have small, delicate white flowers near their leaves. Sometime before it dies, a healthy plant will produce pups, exact clones of the mother plant, that can be removed and then potted in their own growing medium. Depending on the variety of Cryptanthus, the pups can be found either at the end of stolons, at a leaf axis, or at the base of the plant.

Most Cryptanthus prefer indirect sunlight. Shade from tall trees outdoors or a sunny room without direct sun exposure is ideal for Cryptanthus which are adapted to survive under the cover of trees in humid climates. Too much direct sun can cause bleached or sunburned areas on the plant’s leaves. On the other hand, if your plant does not get enough light it will begin to look light green in colour.

Deinacanthon: pronounced day-ina-can-thon, the genus name is from the Greek “deinos” - terrible and “Anthos” – flower. There is only one species in the genus being *Deinacanthon urbanianum*, which is native to Bolivia.

Disteganthus: pronounced dis-teg-anthus, the genus name is from the Greek “dis” (two), “steg” (covering), and “anthos” (flower). Disteganthus are considered a primitive genus among Bromeliads and are only found in terrestrial environments. There are four known species in the genus, native to north eastern South America.

Edmundoa: pronounced ed-mund-do-a, the genus is named for Edmundo Pereira, Brazilian botanist (1914–1986) and has only recently been recognized as an independent genus, grouped earlier with *Canistrum*. There are three species in the genus.

Eduandrea: pronounced ed-wan-dree’a, this monotypic genus contains a single species, *Eduandrea selloana*. The former genus *Andrea* has been ruled invalid and renamed *Eduandrea* in honour of the collector Édouard Francois André (1840 -1911). The species *Eduandrea selloana*, is endemic to the state of Minas Gerais in south eastern Brazil and is a critically endangered species in its habitats in the state of Bahia on the north eastern Atlantic coast of Brazil.

Fascicularia: pronounced fas-cic-ular-eea, this genus was named by Mez in 1891, who took the name from the Latin “fasciculus” (bundle) and “arius” (pertaining to), describing the flowers which grow in bundles.

There is only one species of these hardy plants, which is indigenous to Chile. The species *Fascicularia bicolor* has reportedly been naturalised in France and Great Britain.

In the wild, all Fascicularia are terrestrial, saxicolous (growing on rocks) or epiphytes. Extremely hardy, they like full sunlight and can withstand cool nights. In their natural habitat they grow in exposed areas near the sea, in soil or on rock cliff faces. When they flower, the leaves turn red at the centre of the plant.

Fernseea: pronounced fern-see’a, the Fernseea genus has two known species, *Fernseea bocainensis* and *Fernseea itatiaiae*, both endemic to Brazil. The genus was named in honour of Moravian-Austrian botanist and physician in Vienna Dr Heinrich Ritter Wawra von Fernsee (1831 – 1887).

They are small xerophytic plants with firm, narrow, heavily spined leaves, and are not often seen in cultivation. When not in bloom they might be mistaken for a *Dyckia* or *Pitcairnia*.

Greigia: pronounced grayg’ea, Greigias are native to Latin America from Mexico to Chile. The genus is named in honour of Major General Samuel Alexiewitsch Greig, president of the Russian Horticultural Society in 1865. This is a genus of large terrestrial *Puya*-like plants with lateral inflorescence, seldom seen in horticulture. Greigias are unique among Bromeliads in that they do not die after flowering. Instead, they continue to bloom every year from the same rosette. There are 36 species in the genus.

--: continued next month

Novice Popular Vote

1st	Sue Mackay-Davidson	<i>Quesnelia augustocoburgi</i>
2nd	Drew Maywald	<i>Quesnelia marmorata</i>
3rd	-----	-----

Open Popular Vote

1st		
2nd	NO OPEN ENTRIES	THIS MONTH
3rd		

Tillandsioideae

1st	Sue Mackay-Davidson	<i>Tillandsia stricta</i> var. <i>albifolia</i>
2nd	Helen Clewett	<i>Tillandsia tenuifolia</i>
3rd	Steve Davidson	<i>Tillandsia</i> 'Holm's Capricorn'

Decorative

1st	Drew Maywald	'So Long Stolon'
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Judges Choice

1st	Sue Mackay-Davidson	<i>Tillandsia stricta</i> var. <i>albifolia</i>
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Web Links for Checking Correct Identification and Spelling ?

Bromeliad Cultivar Register (BCR): <http://registry.bsi.org/>
Refer to this site for correct identification and spelling of your hybrid or cultivar.

New Bromeliad Taxon List : <http://botu07.bio.uu.nl/bcg/taxonList.php>
Refer to this site for latest species name changes and correct spelling.

Bromeliads in Australia (BinA) <http://bromeliad.org.au/>
Refer to this site for its Photo Index, Club Newsletters, Detective Derek Articles.

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

Where do I Find the Dates ?

www.bromeliad.org.au then click "Diary".

Check this site for regular updates of times, dates and addresses of meetings and shows in your area and around the country.