

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

Edition: April 2026

Agenda: General Discussion

Venue: PineGrove Bromeliad Nursery
114 Pine Street Wardell 2477
Phone (02) 6683 4188

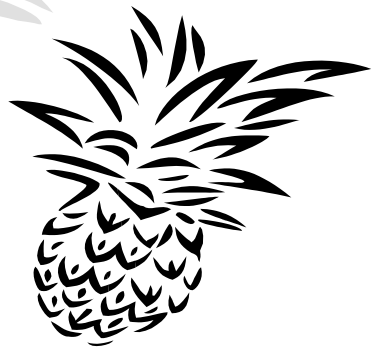
Study Group meets the 3rd Thursday of each month
Next meeting May 21st 2026 at 11 a.m.

Editorial Team:

Ross Little

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Life Members: Gary McAteer, Coral McAteer
Debbie Smith, Shirley Smith
Ross Little, Keryn Simpson



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Meeting March 14th 2026

The meeting was opened at approximately 11.00 am
The 10 members were welcomed.
Two apologies were received.

General Business

With heavy heart, Ross advised the Group of the passing of Helen, more on p.5.

New South Wales (NSW) Department of Primary Industries conducted another Fire Ant check of the Wardell area again in March checking all properties which includes PineGrove. We're given the all clear again, keep up the good work NSW DPI.

The Popular Vote point score was discussed so that everyone who enters understands how the points are attributed.

1st = 3 points

2nd = 2 points

3rd = 1 point

1 point for each plant entered in Open, two may be entered per person.

1 point for entering a plant in the Tillandsia section, one plant per person.

In the event of a tie each entrant receives the relevant amount of points e.g.

Three-way tie for 1st, each entrant receives 3 points.

2nd still receives 2 points.

3rd will still receive 1 point.

It's the 'KISS' system, keeping it simple and consistent each month is the important thing, also keeping it fun rather than being too serious, giving encouragement to each other so that we all learn and want to improve our growing.

The change to a Saturday meeting was trialled for three months, promotional adds were placed on various community group web sites. Was it a success? not really - only time will tell if we get more enquiries for a Saturday meeting in the future. As agreed prior to the trial we would vote on its continuation or return to our usual 3rd Thursday meeting each month. The vote was carried to end the trial and return to Thursday.

Kayelene reported the return to Thursday to all concerned via e-mail.

Shane and Debbie are now officially co-treasurers / co-signers to manage our funds held at Summerland Bank, Ballina. Shane advised our account is healthy.

Our library: we need a librarian to check books out each month, books can be borrowed for one month at a time, if nobody wishes to borrow the same book the following month it can be borrowed again for another term and checked in to the librarian the following month. As most of the books are out of print and not easily replaced, one must have attended meetings for three months minimum and show proof of identification before one can borrow any books or Journals.

Remember when reading older publications there have been many name, genus and subfamily changes over the years, if in doubt refer to:

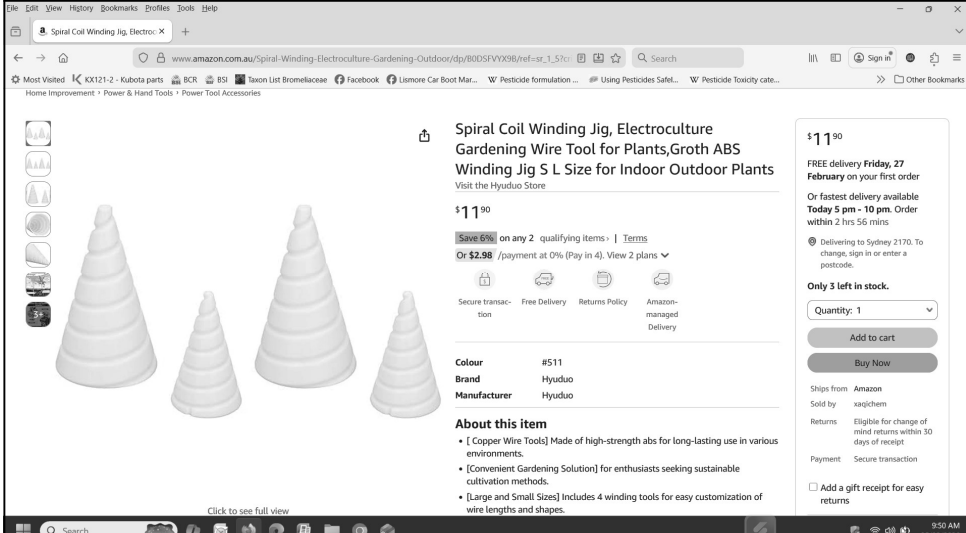
New Bromeliad Taxon List : <https://bromeliad.nl/taxonlist/>

A Bromeliad Glossary - 3rd edition, 2022 - Bromeliad Society International is an excellent publication to keep on hand at all times. It will assist in understanding technical terminologies one encounters when reading many of our library books and Journals.

Appendix II outlines the family of Bromeliaceae which is divided into eight subfamilies, each genus is listed under its relevant subfamily.

If in doubt about anything Bromeliad ask at your Society/Group meeting, there is always somebody willing to help guide you in the right direction and help answer any queries.

We've had some enquiries about where to get those 'coily' things for hanging your Tillandsias in. I neglected to note in our February 2026 Newsletter that they can be found on Amazon - look for: Spiral Coil Winding Jig.



The screenshot shows an Amazon product page for a 'Spiral Coil Winding Jig, Electroculture Gardening Wire Tool for Plants, Groth ABS Winding Jig 5 L Size for Indoor Outdoor Plants'. The product is shown in four different sizes. The price is \$11.90, with a 6% discount on any 2 qualifying items. The product is in stock, with only 3 left. The page includes details about the manufacturer (Hyuduo), shipping options, and a 'Buy Now' button. The browser address bar shows the URL: www.amazon.com.au/Spiral-Winding-Electroculture-Gardening-Outdoor/dp/B0DSFVYX9B/ref=sr_1_5?

Trichomes

It's the trichomes that give many Tillandsias that fuzzy appearance. They can appear as a white, dusty, or silvery sheen on the leaves or form bands or thick felt-like layers on many Tillandsias.

Their main function is to absorb water and nutrients, these fuzzy structures can absorb moisture from rain, dew and fogs/mists which allows many species to live as epiphytes with minimal root systems. They also create a boundary layer that prevents moisture from escaping the leaf. When dry, the trichome shield lays flat and is reflective, when wet and filled with water plants appears more green until the moisture has passed into the plant.

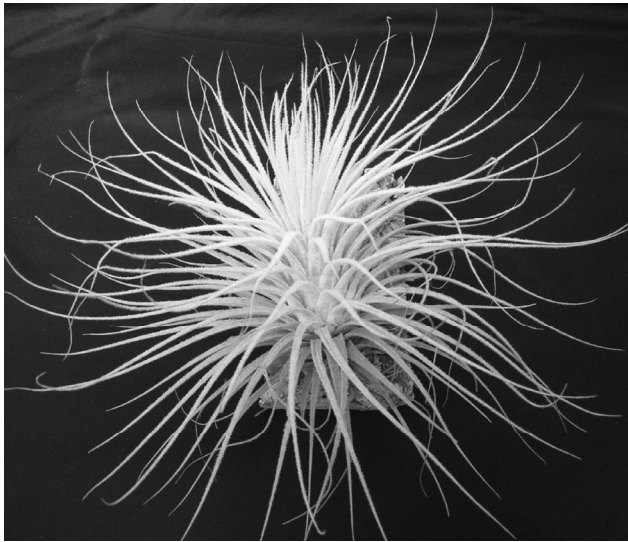
The dense covering of silver scales reflect sunlight and protect the plant against harmful UV radiation. The xeric, dry growing Bromeliads, are covered in dense,

silver trichomes that give them a grey or white appearance.

Mesic, wet growing Bromeliads generally have less trichomes due to growing in more shaded, humid, wet environments such as forested areas where they are in need of less protection from the sun.

Trichomes are a key evolutionary feature of Bromeliads allowing them to thrive in diverse environments, from arid deserts to rainforests.

A trichome has a foot, a stalk, and a shield of cells that sit on the surface of a leaf and can be quite variable from species to species.



Tillandsia tectorum (large form)
1st Tillandsia Shane Fitzgerald

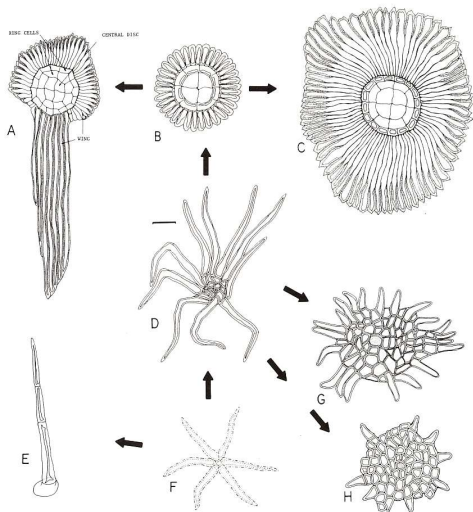


Fig. 4.3 Phylogeny of the bromeliad trichome: A, *Tillandsia crocata*; B, *Catopsis floribunda*; C, *Tillandsia circinnata*; D, *Cottendorfia serrulata* (bar = 50 μ); E, *Cottendorfia wardoakii*; F, prototype stellate hair; G, *Pitcairnia undulata*; H, *Aechmea bracteata*. (A, C, D and E redrawn after Tomlinson, Reference 8, Chap. 5.)

How trichomes vary - see Biology of Bromeliads, Benzing 1980

Vale — Helen Maree Clewett - October 1947 - 2026.

Helen passed away on the 4th March after a long period of ill health. It is with much sadness that we farewell our dearest friend and group member.

Helen was a foundation member of the Far North Coast Bromeliad Study Group (FNCBSG) when it began in November 2008.

She was also very active with the Hunter District Bromeliad Society prior to moving to the north coast.

Helen was a regular participant in our Popular Vote competition winning quite a few trophies.

Helen, well done and thank you for all you did for our little Group, you will always be in our hearts.



Tillandsia Day — The Bromeliad Society of Queensland

Date: Saturday 20th June 2026.

Venue: Kedron Wavell Services Club, Chermside in Brisbane.

Guest Speakers: Pam Koide-Hyatt

Jerry Raack

Chris Larson

Peter Tristram

I did it My Way- by 3 local Growers

Show and Tell plant ID panel

Rare Plant Auction

Plant Sales

Register now at Trybooking - \$50.00 each.

<https://www.trybooking.com/DHOVG>



Goudaea

This is a genus consisting of only two species:

Goudaea chrysostachys and

Goudaea ospinae

each having two varieties.

Our discussion this month was centred around some of the cultivars of:

Goudaea ospinae var. *gruberi* — named in honour of Franz Georg Gruber.

Previously in *Vriesea*, however due to DNA analysis this new genus *Goudaea*, was created and named in honour of Eric Gouda from Utrecht, The Netherlands.

Goudaea can be found growing in Colombia from 3 - 500 metres altitude, they are easy to handle having no spines on their leaves (entire), they are terrestrial and can form very long trunks.



The trunk can be cut and reset into a pot of fresh mix to continue to growing.

Goudaea ospinae var. *gruberi*
x
'Tiger Tim'
=
'Grubby Tiger'
grex unreg.

The long trunk helps the plant to 'walk' or 'crawl' across the forest floor, they form offsets in the upper leaf axils and along the trunk of the plant which helps them form large clumps. They produce a yellow, branched inflorescence amid pale yellow-green with dark reddish brown or purple tessellated leaves.

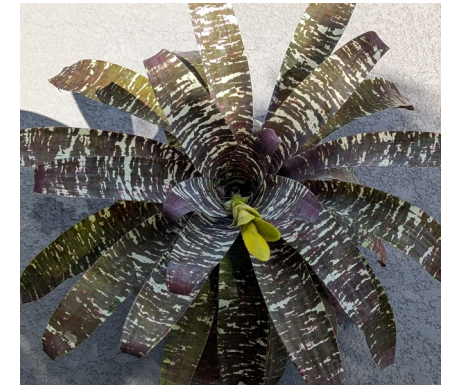
Back in around 2012/13 we crossed *gruberi* with 'Tiger Tim' as did quite a few other breeders. From our batch of seedlings we got very white backgrounds to quite golden yellow, some brown barred and many chocolates with white and or yellow backgrounds. We called the grex 'Grubby Tiger', only one out of the grex has been registered so far, *Goudaea* 'PineGrove Mantis' (inset pic centre p.6) registered by Mitch Jones. A cross for eager hybridizers to try and see how many colour variations you can get. (it's like a box of chocolates!)

Many of the 37 cultivars and hybrids of *Goudaea ospinae* var. *gruberi* require bright light but not full or direct sun to show off their best colour pattern. Grow them in a large pot is best to help keep them upright as that trunk elongates. When it gets too long it tends to want to fall over or walk. The trunk can be cut and reset into a pot of fresh mix to continue growing. Don't discard the trunk as it may produce more offsets.

Some beautiful *Goudaea* brought along by Shane for Show and Tell.



Goudaea 'Tiger Tim'



Goudaea 'Medina'



Goudaea 'Euro Smudge'



Goudaea 'Nazca'



Billbergia 'Martello'
grown by Shane Fitzgerald



Billbergia 'Moontiger' unreg.
grown by Keryn Simpson



Billbergia 'Hallelujah'
grown by Kayelene Guthrie



Guzmania 'Beau'
grown by Deb Baker



Vriesea 'Hunua Fireburst'
grown by Michelle Hartwell



Neoregelia 'Skotak's Laser' unreg.
grown by Michelle Hartwell



Goudaea 'Tiger Tim'
grown by Shane Fitzgerald



Vriesea Dilling Hybrid unreg.
grown by Kayelene Guthrie



xWallfussia 'Feather Belle'
grown by Deb Baker



Neoregelia 'Hannibal Lecter' x *concentrica*
grown by Kayelene Guthrie

Tillandsia 'Samantha'

Due to the revision of the *Tillandsia mooreana* complex the parentage of *Tillandsia 'Samantha'* is in question now that *Tillandsia kalmbacheri* has been reduced to a synonym of *Tillandsia mooreana*.

I raised the question to the Bromeliad Cultivar registrar Graeme Barclay: "Is 'Samantha' still a hybrid now that *kalmbacheri* is a synonym of *mooreana* meaning it is *mooreana* x *mooreana*?"

Answer: "There will be no change for 'Samantha', it's still a man (lady!) made cultivar between two species clones".

I have also spoken to Pamela Koide Hyatt the creator of 'Samantha' who will be discussing the latest changes within the 'mooreana complex' in greater detail at the Tillandsia Day on Saturday 20th June 2026 at the Kedron Wavell Services Club, Chermside in Brisbane held by the Bromeliad Society of Queensland. We highly recommend attending for Pam's latest determinations on this complex.



Tillandsia 'Samantha'

1st Open and Judges Choice
Ross Little

A trio of 'Samantha', the Popular Vote plant is the one on the left. The inflorescence colour and size 113 to 132 cm tall this season is amazing, certainly a sight to behold in the garden. They are grown in full sun until mid morning, they're watered daily and foliar fed regularly.



Tillandsia latifolia var. *major*
grown by Deb Baker



Tillandsia xfloridana
grown by Keryn Simpson



Tillandsia 'Nashville'
grown by Ross Little



Tillandsia fuchsia f. *gracilis*
grown by Michelle Hartwell

Aechmea smithiorum not *Aechmea serrata*

Ian brought along an inflorescence for an identification confirmation, it is *Aechmea smithiorum*.

For many years this pair of *Aechmeas* have had growers confused due to the fact that they look very similar until we look at the descriptions of both species.

Aechmea smithiorum is found at 50 to 1200 metres altitude growing as an epiphyte and terrestrially in the Lesser Antilles from Grenada to Montserrat and St Vincent.

Primary bracts like the upper scape bracts, **entire**, at least the lower ones equalling or exceeding the axillary branches.



Aechmea serrata came into being through Carl Mez in 1896 although it had been known under the name 'serrata' since 1703.

Distribution Martinique, Lesser Antilles, it is reported to be extinct in the wild.

Primary bracts like the scape bracts, equalling or exceeding the axillary spikes, **serrate**.

Therefore if your *Ae. serrata* is **NOT** toothed with spines along the edges of the bracts you have *Aechmea smithiorum*.

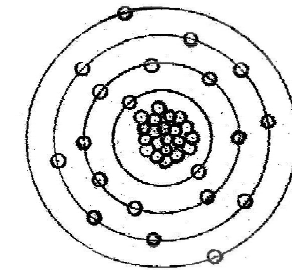
Note: the use of 'scape bracts' is wrong, better to use the term peduncle bracts.

Atomic Structure of Plant Nutrients

by Les Higgins 2016

Plant nutrients are molecules formed from atoms. Neutrons and positively charged protons make up the nucleus. Negatively charged electrons orbit the nucleus at various distances in rings called a shell.

One Atom of Calcium



20 proton in the Nucleus
2 Electrons shell 1
8 Electrons shell 2
8 Electrons shell 3
2 electrons shell 4

The Periodic Table of Elements lists Bromeliad nutrient atoms as:

Hydrogen (H)	1 electron circling one proton.
Carbon (C)	2 electrons in the first shell and 4 in the second.
Nitrogen (N)	2 electrons in the first shell and 5 in the second.
Oxygen (O)	2 electrons in the first shell and 6 in the second.
Magnesium (Mg)	2 electrons in first shell, 8 in the second shell and 2 in the third shell.
Phosphorus (P)	2 electrons in the first shell, 8 in the second and 5 in the third shell.
Sulphur (S)	2 electrons in the first shell, 8 in the second and 6 in the third shell.
Potassium (K)	2 electrons in the first shell, 8 in the second, 8 in the third and 1 in the fourth shell.
Calcium (Ca)	2 electrons in the first shell, 8 in the second, 8 in the third and 2 in the fourth shell.

It is the electrons in the outer shell that interact during chemical reactions. Atoms will gain, lose or share electrons to fabricate a full outer electron shell. The number of electrons that an atom can give in a chemical reaction is called the valency. Written in superscript and immediately following the symbol for a chemical element is the valency. One "+" indicates that there is one electron the atom can give away or share. Two "++" or 2+ means two electrons are available. When two or more atoms share electrons a covalent bond is formed.

Water: Two hydrogen atoms can each share their one electron with one oxygen atom that has a deficiency of two electrons in the outer shell. The result is each atom has a full outer electron shell and one molecule of water (H₂O) is formed.

Carbon dioxide: Carbon has 4 electrons in the outer shell. Carbon has a valency of 4 (either + or -) and can share 4 electrons with two Oxygen atoms (which need 2 electrons each) so that each atom has a full outer shell and one molecule of carbon dioxide (CO₂) is formed.

When a soluble salt is dissolved in water the ions separate, the solution contains cations and anions which can join up with other available ions e.g:

Mono-calcium phosphate (Soft rock phosphate) $\text{Ca}(\text{H}_2\text{PO}_4)_2$. As the phosphate is saturated with calcium no further reaction takes place. Soft rock phosphate dissolves in water to give calcium ions (Ca^{++}) and twice as many di-hydrogen-phosphate ions (H_2PO_4). An introduction of calcium carbonate (lime) (CaCO_3) forms di-calcium-phosphate (CaHPO_4) and carbon dioxide (CO_2) and water (H_2O). Repeating the introduction makes tri-calcium-phosphate $\text{Ca}_3(\text{PO}_4)_2$ again releasing carbon dioxide and water, resulting in insoluble "Rock phosphate".

Rock phosphate and superphosphate: The major minerals of the "Rock phosphate" in the fertilizer industry are Hydroxylapatite $\text{Ca}_5(\text{PO}_4)_3\text{OH}$ and Fluorapatite $\text{Ca}_5(\text{PO}_4)_3\text{F}$ and Chlorapatite $\text{Ca}_5(\text{PO}_4)_3\text{Cl}$. Rock phosphate is insoluble and has stood for centuries as a Rock. Sulphuric acid is required to break the bond between calcium and phosphate to make superphosphate. To use superphosphate in the proximity of calcium (lime) allows recombination and that explains why there are thousands of tonnes of insoluble (rock) phosphate in Australian agricultural soils. To use superphosphate on a pot plant whose substrate includes lime makes insoluble rock phosphate within the pot.

Single Superphosphate obtained from the H_2SO_4 treatment of typical rock phosphate contains about:

30% Mono-calcium phosphate $\text{CaH}_4(\text{PO}_4)_2$ (Water soluble)

10% Dibasic calcium phosphate CaHPO_4 (Citrate soluble)

45% Gypsum (CaSO_4).

Also trace elements and poisons including iron oxide, silica, lead and cadmium. The term "Citrate Soluble" indicates the need for alcohol or rotting vegetation before it becomes soluble.

Double Super Phosphate: Is made by separating the gypsum (CaSO_4) from the single superphosphate and reacting the rest with phosphoric acid (H_3PO_4).

Phosphoric Acid: Three hydrogens can each share their one electron with one phosphate ion (PO_4^{---}) to form phosphoric acid (H_3PO_4) and all the atoms have a full outer shell.

Phosphate: One phosphorus and four oxygens form covalent bonds to make phosphate, but they still need three more electrons to all have full outer shells. Phosphate is a polyatomic ion with a valency of $-3(\text{PO}_4^{---})$

Calcium Nitrate: Nitrogen (N) has 5 electrons in the outer shell. Nitrogen needs to gain 3 electrons to have a full outer electron shell. Oxygen (O) has 6 electrons in the outer shell. Oxygen needs to gain 2 electrons to have a full outer electron shell. One nitrogen and three oxygens can share electrons with each other (covalent bonds) but they still need one more electron to have full outer electron shells. Nitrate is a polyatomic ion with a valency of $-1(\text{NO}_3)$. Calcium has 2 electrons in the outer electron shell so one calcium can donate an electron to each of two nitrate ions forming the compound calcium nitrate $\text{Ca}(\text{NO}_3)_2$ and

all of the atoms have a full outer electron shell. $\text{Ca}(\text{NO}_3)_2$ dissolves in water to give calcium ions (Ca^{++}) and twice as many nitrate ions (NO_3^-)

Nitrogen Atomic weight: Ammonium (NH_4) weight is $\text{N} = 14 + \text{Hydrogen weight of } 1 \times 4 (14 + 4) = 18$.

Nitrate (NO_3) weight is $\text{N} = 14 + \text{Oxygen weight of } 16 \times 3 (14 + 48) = 62$.

Passive transport system of plants easily adsorbs ammonium but is unable to pick-up nitrate when the barometric pressure is low.

Sulphate: One sulphur and four oxygens form covalent bonds to make sulphate but still need two more electrons for all atoms to have full outer electron shells. Sulphate is a polyatomic ion $-2(\text{SO}_4^{--})$.

Potassium Sulphate: Potassium has one electron in its outer electron shell (valency of +1). Two potassiums can each donate one electron to one sulphate forming the compound K_2SO_4 and all of the atoms have a full outer shell.

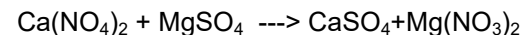
Magnesium Sulphate [Epsom Salts]: MgSO_4 dissolves in water to give magnesium ions (Mg^{++}) and equal sulphate ions (SO_4^{--}).

Magnesium Nitrate [Home Made]: Molecule disassociation occurs in water containing calcium nitrate and magnesium sulphate. Calcium ions and sulphate ions combine as calcium sulphate. Each calcium sulphate molecule precipitates with two water molecules becoming the mineral gypsum ($\text{CaSO}_4 \cdot \text{H}_2\text{O}$). What remains in the solution is the magnesium ions and the nitrate ions and they combine. Evaporate the solution and magnesium nitrate $\text{Mg}(\text{NO}_3)_2$ crystals appear.

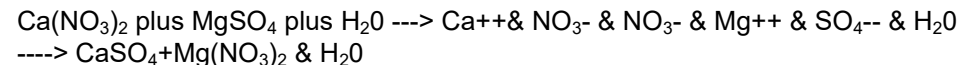
WARNING: Magnesium Nitrate crystals in contact with atmospheric moisture quickly becomes a concrete eating slop. Make Magnesium Nitrate and promptly use it!

A chemical equation is a summary of the reaction. Ions that don't take part in the reaction, intermediary steps and the solvent are usually not included.

For example, the equation to make magnesium nitrate [$\text{Mg}(\text{NO}_3)_2$] and gypsum (CaSO_4) from calcium nitrate and Epsom salt is written:



instead of:



Note to Readers: We understand that some readers may find these articles a bit too technical for their liking, however we find quite a number of our readers appreciate such articles and gain great value from them. We try to maintain a balance of technical and general articles to suit all levels. We do prefer original articles written by you the readers. At times we reprint articles relevant to a topic discussed at our meetings. Moral here is, if you want more gardening / general Bromeliad related articles please put pen to paper and forward to the Editors. ☺

Open Popular Vote

1st	Ross Little	<i>Tillandsia</i> 'Samantha'
2nd	Shane Fitzgerald	<i>Billbergia</i> 'Martello'
2nd	Michelle Hartwell	<i>Vriesea</i> 'Hunua Fireburst'
2nd	Keryn Simpson	<i>Billbergia</i> 'Moontiger'

Tillandsia

1st	Shane Fitzgerald	<i>Tillandsia tectorum</i> (lge form)
2nd	Deb Baker	<i>Tillandsia latifolia</i> var. <i>major</i>
3rd	Michelle Hartwell	<i>Tillandsia fuchsia</i> f. <i>gracilis</i>
3rd	Keryn Simpson	<i>Tillandsia</i> 'Chooks'
3rd	Ross Little	<i>Tillandsia</i> 'Nashville'

Judges Choice

1st	Ross Little	<i>Tillandsia</i> 'Samantha'
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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.

Bromeliad Species Database (BSD): www.bsi.org/members/?bsd

Refer to this site for species identification, photos, descriptions and more.

New Bromeliad Taxon List : <https://bromeliad.nl/taxonlist/>

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 many with Table of Contents Index and there's 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.