

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

Study Group meets the third Thursday of each month
Next meeting 19th March 2015 at 11 a.m.

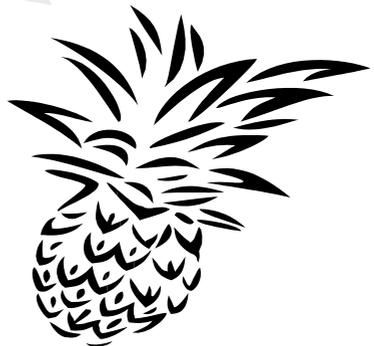
Venue: PineGrove Bromeliad Nursery
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Discussion: February 2015
General Discussion

Editorial Team:

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Meeting 15th January 2015

The meeting was opened at approximately 11.00 am
The 15 members and one visitor present were welcomed.
A total of seven apologies were received.

General Business

Our January meeting got off to a pleasant start with exchanges of Christmas and New Year chatter. Being the start of the year all 'office' positions were declared vacant. This being an annual event we can understand the fewer than usual regular attendance figure. The only change to the line-up is Jeanette Henwood who offered to take on the roll of Librarian.

There was a discussion about the need of an index for our Newsletters from past years, Jeanette has offered to assist in this mammoth task. This will involve reading each Newsletter from Issue #1 through to the present and noting each person, plant, place etc. mentioned throughout. Perhaps this work could be shared between several members over the next 12 months. If you feel you can assist by taking home a volume (12 issues) please discuss this with Jeanette. Any of our electronic recipients may wish to assist also by e-mailing the editors.

Your Name Tags: have now been separated into two boxes supplied by Jim, he hopes this will make it easier for you to find yourself — boys you are in the blue box and ladies you are in the red (sorry, Jim couldn't find a pink one for you).

Tidy-up corner (corrections): there have been responses to the ID of Laurie's *Vriesea* - was it Cathy or Christiane, many thanks to those eagle eyed observers who offered their input as this is what this section of your Newsletter is for, which is to help us all learn more about our plants.

Ross mentioned an article by Derek Butcher in our January issue relating to a plant Lesley showed at our October 2014 meeting tagged only as *Neoregelia* Skotak hybrid (photo p.8 November 2014), which needed to be identified. After some discussion it has been registered as *Neoregelia* 'Wild in Oz'.

Flo asked if a plant wins in the Novice Popular vote section can it be entered into the Open Popular vote section now that she has been moved up to Open ?
The answer is **yes** as it is not in the same competitive year or section.
A plant that wins a 'section' can not be entered into the same section again within the same competitive year.

Exception to this rule: a plant entered as a foliage plant (not showing any sign of initiation of inflorescence) may be entered later in the year when in flower.

Ross showed a pack of Tillandsia cards from Bird Rock Tropicals TILLI-CARDS collection, each card from the pack of 100 has a photo on the front and relevant information on the back. Suitable plastic sleeves and folder are being sourced to put them in, before allowing them to be borrowed from the Library.

There was a request for Laurie, one of our Groups more experienced Tillandsia growers to compile his thoughts on growing Tillandsias including his successful seed growing methods. As interest in growing Bromeliads from seed increases this information could be extremely valuable to members of our Group.

Les was asked how we can identify a CAM from a non-CAM plant. *Cryptanthus beuckeri* is an example of a non-cam plant. It has thin leaves and bigger than normal cells so it can hold more water. If it has thick leaves it is a cam plant. Les has put together a 'cultural notes' article on *Cryptanthus* and encourages other people to write their own cultural notes / hints and we can combine these.

The editors need photos of your Bromeliads. Ross showed photos offered by Marie and discussed what made a good photo for use in our Newsletter. Be careful of background clutter around the plant, a plain background is best. As this can be difficult in a garden situation try to use the sky rather than having a tall inflorescence lost in a leafy background. If possible with smaller plants a sheet used as a backdrop is very successful, sometimes garden landscapes are of great assistance to readers also. Take many photos under different light conditions, overcast days are best to eliminate glare, then choose the best few to forward to the editors for final selection. Photograph plants at different stages of growth as an article can be written around this explaining each of the stages.

Trish asked why her *Vriesea* 'Erotica' pup only had one paddle while the mother had multiple paddles. No particular reason was offered other than more feeding may benefit.

Laurie offered a description of a plant growing in his front garden and wondered if anybody could suggest an identification. It was suggested he bring in a photo as there are many *Vrieseas* and *Alcantareas* flowering at the moment making identification difficult without the plant at hand or at least the photo of it. Some suggestions of several *Alcantareas* to Laurie didn't ring any bells. Another Laurie could look toward is *Vriesea gigantea* as these are flowering in our area now.

After lunch Trish gave a talk about growing from seed. (article p.4)

Trish and Kay have offered to bring along surplus *Hohenbergia* seedlings for members to experiment with as regards location, feeding etc. This will not be a competition, it is just for interest and it is all a learning curve of information. There is no right or wrong way to do it. We can look at colours, growth etc.

Notes for the Hybridist

by Derek Butcher 2002

Is Your Hybridising Really Necessary ?

There are hundreds of true species of Bromeliads that have been found in the wild and many of these or their progeny are in Collections. However, they will evolve in a different pattern to their "brothers" and "sisters" in habitat.

There are some very beautiful true species and you could have a varied collection just from these. You can have 1cm midgets to 10 metre giants. You can have green, spotted, or striped leaves. You can have an inflorescence of 100 flowers or just one. What a variety!

Are you still toying with the idea of hybridising "just for fun" ?

Think Twice

It can put you in the class of the Ginger Tom next door OR even worse put you in a class BELOW the birds and the bees. Remember that in the wild the birds and the bees do exactly what the flowers want them to do!

Do you still want to hybridise ?

What do you want to achieve ?

The good hybridist will go down in history.

A good hybridist has a definite goal.

Are you looking for ?

Hardiness

Compact growth

Broader leaves

Better markings

Larger inflorescence

Scented flowers

Simply crossing two plants that happen to be flowering simultaneously, and hoping for the best, is a hit and miss operation but practised by many.

Growing and Acclimatising Bromeliads from Seed: For the Home Gardener.

by Trish Kelly 2015

Following on from the demonstration Ross gave on identifying and removing seed from the fruiting body of the Bromelioideae and Tillandsioideae subfamilies of Bromeliads, I will share with you some of my experiences, growing these seeds in a basic way utilising the facilities and materials most of us would have at home.

It is always important to keep a permanent record of the seed origins, where did it come from, who/ what was the parentage, who gave it to you or from whom it was purchased. Always keep in mind that you cannot be sure of pollen parent/s if your bromeliad has not been isolated prior to pollination and that the pollination was not done by hand, noted and labelled and kept in isolation until flowering is complete.

The materials and equipment needed: A shade house, with a shelf, although not necessary it makes observation a lot easier. The shelf needs to receive adequate light during the day, around the year and if necessary in winter given a little extra protection from cold winds or frost. A covering of 50% shade cloth is generally adequate, however, given the intensity of this summer's heat, a second piece of 50% shade cloth placed over your seed container or the immediate area will give the necessary protection.

If you do not have a shade house, a large shady tree is absolutely fine. If the sunlight can cover the area under the tree for part of the day, preferably the morning, with protection from the hot afternoon sun the same results can be achieved.

Several clearly labelled plastic spray bottles for water and soluble fertiliser.

Containers: Normal black squat pots we use for our bromeliads, choose one about 165mm that a clear plastic food container will fit firmly into the top over the contents. This acts as a mini hot house maintaining humidity and growing medium moisture preventing the fluctuation which is so detrimental to the small and germinating seed. (photo p.7)

Growing medium: A mixture of 2/3 sharp river sand and 1/3 coco peat blended well together. If you are using a new block of coco peat, first place it in a large container, soften the block and give the whole thing several rinses of fresh water to remove any possible salt residue, this can be deleterious to your germinating seed. Thoroughly mixing the wet coco peat with the dry sand makes a great mix, which you can then 3/4 fill your squat pots making sure you tap the pots 'down' by tapping them on your bench to ensure your mix is well settled in the pot and not too fluffy.

Sowing the seed: Lightly sprinkle the cleaned, dried seed evenly over the surface leaving a free ring just inside the pot. Lightly press the seed into the growing medium, using the base of the plastic container, lightly water, label with the name and date and place the inverted plastic container over your seed and patiently wait. If you are planting larger sized seed, a light sprinkling of the growing medium over the seed is necessary. Germination, at this time of the year using fresh seed takes about two to three weeks.

During the growing period it is necessary to remove the cover and check the moisture level, replenish when necessary using the 'water' spray bottle (rain water if available) and replacing the cover.

Fertilising, Pots and Transplanting: Once the seedlings are 5mm or so, using the 'fertiliser' spray bottle with 1/3 strength soluble fertiliser, lightly spray the tiny seedlings in the early morning or later in the day when the sun is not on them, always checking that the growing medium is moist before fertilising.

Your seedlings will take many months of growth before being of sufficient size to pot up. You may find a few of your seedlings grow faster than the rest. When the seedlings are approximately 25mm high they can be transplanted to 80mm pots allowing you to gain a little experience. After potting up any of the seedlings, label them clearly with the genus, species, or cultivar name, a sowing and transplanting date.

The growing medium will now be 1/3 sand 1/3 coco peat and 1/3 composted pine bark fines 0 - 5mm.

Using a polystyrene box about 150mm deep, with a layer of moist sand in the bottom about 30 - 40mm deep, place the potted seedlings close together over the sand and set the box on your shade house shelf or under the Mango tree, covering it with a piece of shade cloth if necessary.

Keep a constant check on moisture levels!

The fertilising needs to be continued every ten to fourteen days increasing to half strength when the seedlings are 40 - 50mm high and ready for transplanting onto the next sized pot. This can be to a 100mm squat pot, continue to transplant your seedlings onto larger sized pots, increasing by about 50mm each time. This encourages good root development and excellent plant growth, not allowing your plant to anchor their roots to the sides of the pot.

Depending on the time of the year you are transplanting, once you have potted your seedlings into 100 - 120mm pots they will not need the protection of extra cover, other than the shade house. In winter if you are in a colder, frosty area you may need a more protected place depending on the species.

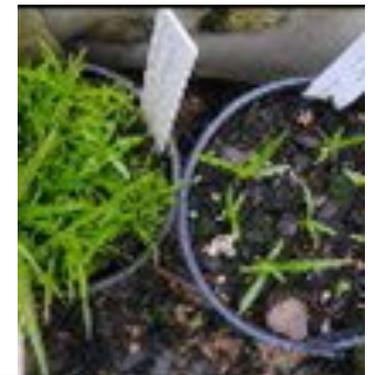
Spring, will be time to begin hardening your seedlings to normal climatic conditions with exposure to sunlight, wind and rain as your conditions determine particularly when the intensities are not too great.

At about the 150mm pot stage I change the size of the composted pine bark fines to 8 - 12mm, used in the same proportions as previously and continue to up size the pots until the seedlings are in 200mm squat pots where at this stage they are close to flowering.

The general growth rates for Aechmeas, Hohenbergias, Neoregelias and Nidulariums are much faster than that of Tillandsias, Vrieseas, Alcantareas, Araecoccus and Werauhias that I have grown.



Squat pot with clear plastic container fitted to make a mini hot house



Seedlings from mini hot house have been transplanted into a community pot



Seedlings may need protection from marauding grasshoppers.



Seedlings ready for hardening off to regular climatic conditions.

Photos by Trish Kelly



Cryptanthus 'McIntosh'
1st Novice Les Higgins



Guzmania hybrid
1st Open Marie Essery



Neoregelia 'Imperfecta'
grown by Laurie Mountford



Guzmania hybrid
grown by Kay Daniels



Orthophytum 'Warana'
Judges Choice Jeanette Henwood



Neoregelia 'Earthrose'
grown by Flo Danswan



◀ Jill Ash Les Higgins ▶

Decorative entries grown by

◀ Marie Essery

▼ Jeanette Henwood



'Frog in Paradise'
1st Decorative Helen Clewett



Tillandsia stricta
grown by Laurie Mountford



Photo's supplied by: Ross Little



Show and Tell Discussion Plants



Pitcairnia integrifolia flwrs to 1mtr high, alt. to 500 m., Brazil (?), northeastern Venezuela, northern Trinidad.



Araeococcus parviflorus flwrs to 45cm high, terrestrial and epiphytic in low woods, 30-100 m alt, Bahia, Brazil.



Aechmea 'Dark Goddess' is a cultivar of *Ae. chantinii*



Aechmea 'Roberto Menescal' is a tissue-cultured sport of a dark form of *Ae. chantinii*

Cultural Note for Cryptanthus

by Les Higgins 2015

My location and climate: This records **MY EXPERIENCE** in growing Cryptanthus at a frost free location on the N.S.W. Far North Coast, altitude 20 metres. Growing temperature is +30°C and occasionally exceeds 40°C. Lowest ambient winter temperature is 8°C while inside the shade house 3°C is recorded.

Light / shade house: Xerophyte Cryptanthus (Cam plants, thick leaves containing large cells) e.g. *Crypt. fosterianus* grow outdoors in areas shaded from direct sunlight.

The shade cloth colours of my Cryptanthus house attempt to replicate the illumination of a tropical day: Eastern side 50% white, north end 70% green, north-western side 50% green over 50% white and south western side 50% red over 50% white. South wall (entry) is 50% black.

Shade cloth colour influences plant growth and colour development. Beige is biased toward red pigmented leaves. Red stimulates green plants. Green is good for red/brown coloured leaves. Black reduces light intensity. White shade cloth is reflective and creates a more uniform illumination. In my shade house plants are positioned under the colour that gives them most advantage. Red/brown leaves are located to the north and green leaved plants are in the south-west.

Humidity: My shade house has a water retentive floor that creates a warm, humid environment. The plants are arranged to suit their environmental needs. Mesophytes (Non-cam, thin leaves with small cells) e.g. *Crypt. beuckeri* live on the floor. Extreme xerophytes e.g. *Crypt. warasii* (very thick leaves, large cells) are high up on the eastern side in maximum light and least humidity.

Pots: Cryptanthus are not deep rooted therefore shallow containers that are wider than deep are the most suitable. For me the best growth is in net pots and least growth is in glazed pots.

Potting Mix: No potting mix is perfect for every Cryptanthus in all environments. Air movement within the potting mix is essential to facilitate gaseous diffusion across the roots semi-permeable membrane (skin). My basic potting mix has a particle : air ratio of 3:1, a pH of around 7.0 and organic content tailored to suit each plant.

Potting Mix for Mesophiles comprises ½ - ¾ organics.

Potting Mix for Xerophytes is about ½ organics.

Potting Mix for Extreme Xerophytes contains as little as ⅓ organics.

Watering: More plants are killed by overwatering than by any other single cause. Xerophytes evolved to survive in water deficient habitats. During night time darkness the stomates of mesophytes are closed and water cannot be assimilated.

My plants are in polystyrene boxes in which layers of newspapers soaked with polluted tank-water induce high humidity. This is a good technique to satisfy the moisture requirements of xerophytes. Most mornings the leaves are saturated with pure water from the night's condensation. Rain quickly creates an over wet situation and some of the xerophytes need shelter.

Nutrient: All plants require nutrients, but it is unwise to make comprehensive recommendations for fertilizing. Nutrient requirements vary depending on species, growth stage, potting mix, watering regime, light and temperature. Cryptanthus are terrestrial and therefore have feeding roots. Slow release nutrients are incorporated into my potting mix.

As a generalization, potting mixes with high levels of organic matter (e.g. bark, coco-peat) always require more nitrogen and iron than potting mixes with high levels of inorganic matter (e.g. perlite, vermiculite, pumice). Nitrogen assists the microbial action within the organic substances.

I make a nutrient solution by combining Potassium Nitrate, Calcium Nitrate and Molasses, (1/2 teaspoon of each per 10L water). A dilute spray of Iron Sulphate, Magnesium Nitrate (home-made) and a pinch of 'Complete Trace Elements' is infrequently applied. This makes a nutrient with the descending value of K, N, Ca, Mg, P and S with trace elements. Molasses provides soluble carbohydrates that Cryptanthus use in preference to depleting their own carbohydrate stock.

Plants are autotrophic (biosynthesising using basic inorganic elements). They take up nutrients by osmosis. The more dilute a nutrient solution the more readily it is absorbed into less dilutes. I use nutrition weekly and weakly during the growing season. K: N: Ca: Mg is adjusted for seasonal progression.

Vegetative propagation: Offshoots snapped-off when undersized are lethargic growers. I endeavour to let pups abscise naturally or become floppy before severance.

When potting-up stoloniferous pups wrap the stolon around the inside of the pot. Prior feeding with phosphate (ammonium phosphate) improves flexibility and the possibility of breaking is reduced. Pups planted along the inside pot edge always develop roots quicker than pups planted in the centre of the pot. Satisfactorily rooted pups are repositioned into a central position.

Sexual propagation: Cryptanthus are andromoeious (two types of flowers; staminate flowers (pollen-bearing anther and filament) and hermaphrodite flowers (stamen and pistil). Flowers emerging from the crown are predominately staminate. Hermaphrodite flowers become numerous lower down in the leaf rosette.

Seed pods are appearing within the rosettes of my plants suggesting self-fertile flowers. If correct a Cryptanthus registered "Pollen Parent Unknown" is possibly pollinated courtesy of ? There is no observable insect that indiscriminately pollinates Cryptanthus. At a guess the pollinator could be slugs or ants both of which are abundant in my shade house.

Unhappy plants: 'Wobbly' plants warrant immediate investigation. Problems include: root and soil mealy bug, water-logging, earth worms and anaerobic potting mix. I detect soil problems by applying gentle pressure to the side of a plant. Good roots have adequate anchorage.

Leaf edge and tip die-back often indicate that the nutrition is too concentrated. Never apply foliar nutrient to a dry plant. Excessive imbibing may result in the plant killing its growing tissue by attempting to store nutrient.

Inadequate light causes leaf greening and etiolated leaves.

Excess light can bleach leaves and possibly stunt a plants growth. My plants by all appearances receive far too much light and many become overall red.

Sunburn can be the consequence of insufficient water, extreme light exposure, lack of magnesium or any combination.

Cold sensitive, disease prone plants are predictable after excessive use of urea and /or ammonium. NH_4 squanders the plants carbohydrate store. The result is a soft bulky Cryptanthus. NH_4 has merit but should be used in moderation. In protracted periods of below 20° C Urea/Ammonia toxicity occurs. This becomes apparent as roots rot off.

Cryptanthus leaves normally droop after flowering. For aesthetic reasons supports can be used to maintain the leaves in a level position.

Pests and Protection: problem pests of Cryptanthus are soil, root and aerial mealy bugs. Slugs not only graze on leaves they also eat pollen. Extremely unlikely but unwelcome invaders are hard and soft scales and grasshoppers (more correctly Locusts).

Ant activity indicates the presence of insect pests. Some problem pests are unlikely to survive following ant extermination. Ants establish out-posts in the

pots that may include elaborate drainage facilities. Ants are a serious pest of Cryptanthus.

Diatomaceous Earth sprinkled over the potting mix kills all trespassing insects. In the potting mix DE prevents soil and root mealy bug becoming established.

Two high LD₅₀ rated (comparatively safe for humans) insecticides registered for use in N.S.W. are the systemic Confidor® (active ingredient is imidacloprid) and Mavrik® (active ingredient is fluvalinate). The carrier for both pesticides will not damage the surface of a plant. Registered for use in Queensland is Crown® (active ingredient is ?).

A good slug and snail annihilator is the wettable powder Measurrol 75® (it also kills mealy bug). Snail bait with iron chelates as the active ingredient is extremely effective.

Pesticides should be applied according to the manufacturer's instructions. Apply pesticides on a rising temperature to facilitate quick drying. Pesticides used when temperatures are above 30°C can result in tissue damage, viral like symptoms and distortions.

Local grasshoppers are most active at night. The best kill for grasshopper is spray late in the evening.

Diseases and Control: Pathogenic Bacteria have an unpleasant smell. Dead flowers can initiate Bacterial Soft Rot (crown rot). Remove dead flowers and as first control dry-out the infected area. Bacterium in bromeliads is 'gram negative'. Bleach is one of numerous controls recommended by bromeliad growers. Streptomycin or its veterinary equivalent is a certain but expensive killer.

Fungi are comprised of several morphologically similar but unrelated groups. Fungal disease has a mushroom like smell. Toadstools are the fruiting bodies of a fungus that is almost certainly benign.

Fungal disease e.g. *fusarium* has cell walls of chitin and is more closely related to animals than plants. This disease is a problem of high humidity combined with high temperatures. *Fusarium* hyphae growing within the plant cause dead areas to rapidly develop. Remove dead sections by cutting extravagantly into living tissue then keep the plant dry. Devastation continues unless the hyphae are absolutely eliminated. Fungicide is ineffective.

Soil-dwelling organisms *Phytophthora* and *Pythium* have cell walls containing cellulose and greater affinity to algae than fungus. Related to water mould they are associated with wet conditions. Low level *Phytophthora* is also allelopathic (growth-inhibiting) to many plants including Cryptanthus.

There are organisms in both groups that cause tribulations such as damping off, crown rot, collar rot and leaf spots. To combat these problems use chemicals that have the highest LD₅₀ and formulated to control that specific disease. One anti-*Phytophthora* is Aust-Phoz (a.i. Potassium Phosphite) registered for use on pineapple. Another is Yates Systemic Anti-Rot with the same active ingredient.

This Cultural Note is just one of several techniques that successfully grow Cryptanthus. Other ideas include 75% shade and "watering as if a Tropical Rain-storm".

Glossary

Hermaphrodite — A flower with both stamens and pistils. Same as bisexual.

Androecium — The male part of the flower, consisting of stamens.

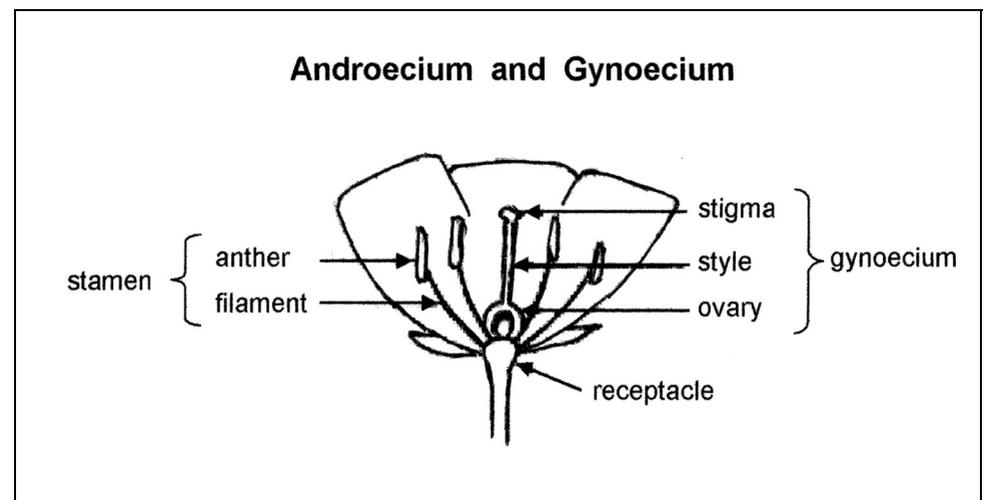
Staminate — A flower consisting of stamens only, no pistil — a male flower.

Andromonoecious — Plants having inflorescences of mixed bisexual and staminate flowers.

Gynoecium — From the Greek meaning female parts.

Pistilate — A flower of female parts only.

Gynomonocious — Plants having inflorescences of mixed bisexual and pistilate flowers.



Novice Popular Vote

1st	Les Higgins	<i>Cryptanthus</i> 'McIntosh'
2nd	-----	
3rd	-----	

Open Popular Vote

1st	Marie Essery	<i>Guzmania</i> hybrid
2nd	Flo Danswan	<i>Neoregelia</i> 'Earthrose'
2nd	Jeanette Henwood	<i>Orthophytum</i> 'Warana'

Judges Choice

1st	Jeanette Henwood	<i>Orthophytum</i> 'Warana'
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Decorative

1st	Helen Clewett	'Frog in Paradise'
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Comments from the Growers:

Les's *Cryptanthus* 'McIntosh' is a good reliable grower showing good colour. Parents are unknown, it is grown under both green and white shade cloth. Refer to Les's article this issue for his fertilising and watering regimes.

Marie has had her *Guzmania* for 2 years, she grows it under 70% beige shade cloth. Marie fertilises with osmocote Exact and waters twice a week in summer. This is a pup off the original mother plant.

Flo bought her *Neoregelia* 'Earthrose' 2 years ago at the Ashby Markets. It is grown under 70% shade cloth and gets morning sun. It is fertilised with both Osmocote and Dynamic Lifter added in the mix.

Jeanette has had her original plant of *Orthophytum* 'Warana' for many years. It sits on a table on her verandah which faces west. Not bothered by scale pests but gets spider webs. Watered when she thinks about it.

Helen created her 'Frog in Paradise' using a piece of old fence paling for the base and glued onto it a small knot from a pine tree, small pebbles covered the rest of the base. Tillandsias were then glued to the pine knot and one on the base, a small lichen covered twig was affixed to the base for overall balance. The piece sits on a ledge on the verandah.

Note: Please make sure you write your name and plant beside the correct number on the popular vote entry forms. Last month seven plants were entered in a section and only six plants were written down. Each entry attracts one point toward your end of year point score, no name recorded means NO point.