

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

Study Group meets the third Thursday of each month

Next meeting 16th November 2017 at 11 a.m.

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

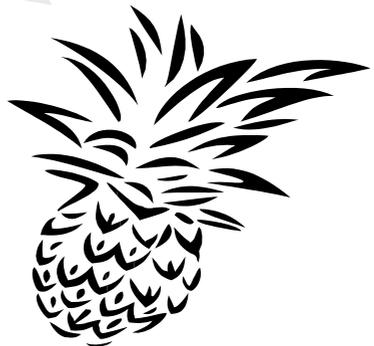
Discussion: October 2017

General Discussion

Editorial Team:

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Meeting 21st September 2017

The meeting was opened at approximately 11.00 am
The 13 members were present and welcomed.
A total of six apologies were received.

General Business

Trish received a thank you from Gloria for the Group's best wishes to Tom, we all hope you're back on your feet soon.

Ross did a quick review of the September Newsletter drawing our attention to various articles. First of all was the change of names for Cryptanthus. It is an extensive list but Ross has highlighted those most likely in our collections.

The *Neoregelia* 'Bottoms Up' grex mates issue has been resolved with the unreleased stable marginated plants imported into Australia by M&M Cameron as 'Bottoms Up' are now registered as *Neoregelia* 'Heads Up'. As M&M's plants have not been released to collectors this seemed the safest and fairest solution with the least ongoing effect to those who have previously purchased plants as 'Bottoms Up' from other sellers. However we can now retain the name *Neo*. 'Bottoms Up' for the unstable marginated cultivar purchased as such from those other sellers with the addition of *Neo*. 'Bottoms Up Striated' to cover those striated vegetative sports from the marginated 'Bottoms Up'. Thanks to Geoff Lawn, BCR Registrar for all his hard work for a best and fairest result.

“BCR Registration of New Hybrids - Hybridist nurserymen always show up in force to sell their plants in the sales area of BSI's World Bromeliad Conferences. But lately, many of them are failing to name and register their cultivars with the BSI's Bromeliad Cultivar Registry. Whatever the reason, this practice is certainly unacceptable for our society, and it violates the rules of the International Cultivar Authority and International Cultivar Nomenclature. When I see a photo of a gorgeous new hybrid with a formula name only I'm always tempted to reprint it in Bromeliana, but if it is not named and registered in the BCR I won't touch it in principle. My personal (minority so far) view is that unregistered cultivars should not be permitted entry to BSI sponsored shows including the WBC. I also strongly believe that plants with formula names only should not be permitted entry in any show. One of these days we're going to see two wholly dissimilar plants with the same formula name from the same grex entered in a show. Perhaps that may be the eye opener attendees need to understand this issue”.

Reprinted from: Bromeliana: The New York Bromeliad Society, Oct. 2017
If we support these views of Herb Plever, I feel it would have saved us from the *Neo*. 'Bottoms Up' issue escalating as it did.

On page five were photos sent in by Wendy and Ian Buddle for identification, some of the Cryptanthus still need names as the Group were unable to help. We would like to see more photos of plants and gardens from our “away” members who receive our Newsletter electronically, also any queries you may have or growing tips for readers of our Newsletter.

John's *Vriesea hieroglyphica* led to the interesting article on smudgy Vrieseas and Goudaea. If you feel you have something interesting or unusual growing in your shade house bring it along to a meeting. If you can't make it to a meeting send us your photos and some history if you have some to go with them would be good or we'll try to find out a little information about it for you.

Ross presented our newly purchased Tillandsia book for the library, the text is in Italian however it has some amazing photos of plants, both single specimen and clumps. The authors do a lot of travelling and hence there are many fantastic habitat photos to help one dream of being in such places. A great addition to our library which we are sure will have the pages well worn in no time.

Show, Tell and Ask ?

Kay brought in four plants for identification:

The first was to confirm that a correct identification was decided upon by herself that her plant was in fact *Neo*. 'Amazing Grace' not *Neo*. 'Scarlet Charlotte' as was on the label, all agreed yes.

The second plant brought along was of small to medium size, had green leaves with a purplish tinge and reddish brown spots, this one was easily identified as *Vriesea vigeri x cardinalis x guttata*, a comparison match was made with plants growing at PineGrove.

The next two plants shown were possibly *Neoregelia* 'Rosea Striata' type crosses. Kay couldn't remember where she had acquired the first plant that was beginning to flush pink in the centre, the second of the two plants was found in the bush garden of PineGrove about 5 years ago. Kay was given the plant and told to grow it and see if she could work out what it was. Guessing they were both a *Neo*. 'Rosea Striata' type cross was a good start but that's as far as Kay has got with an identification which is why both plants were brought to the meeting for help.

Photos of these two *Neoregelias* are on page 9, hopefully one of our readers may recognise them and help Kay solve her riddle.

Many Bromeliads can be identified from their foliage and appearance however for most it is best to wait till it flowers (WTiF) for a positive identification.

Pollination and Hybrization by M. Foster in 'Bromeliads' by BSI 1951
Pollination is not difficult with most of the Bromeliads, but it does require close attention to the ripening of the stamens and to the pistil during the short period it may receive pollen. This period will differ somewhat among the various species. With few exceptions, and those principally in the Tillandsias, the flowers of the Bromeliads last but a few hours. Other exceptions to this rule may be found in many of the Vrieseas. If they blossom in cool weather the flower may carry over to the second day.

Some species of the Bromeliads flower early in the morning and may be gone by midday. One species of Aechmea which I found in Brazil baffled me for several days. I finally learned that the petals opened at midnight and by 3.00am those petals were completely disintegrated. By way of contrast the flowers of *Tillandsia crocata* last for four to five days according to the prevailing temperature. When the pistil and stamens are very short and are far down in a slender corolla of the flower they cannot be seen without carefully removing the sepals, and petals so as to expose these reproductory organs. This is the condition in the flowers of *Wallisia lindeniana* or *Wallisia cyanea*.

Some of the giant Hohenbergia species such as *H. salzmanii* or *H. blanchetii*, have very small flowers, the petals may be less than an eighth of an inch long and the flower may be completely filled with nectar. All of these different conditions may be met with if you are interested in the pollination of Bromeliads, but be assured that if you are interested enough to study these different conditions, your interest in Bromeliads and plant life in general will carry a great and lasting compensation to the better understanding of all life in its myriad mani-festations, you will find parallels everywhere.

Once you have determined the time of day that the flower is completely open, and the stamens and pistil are in mature form, then you may procure the pollen on a small camel's hair brush and carry it to the flower of the plant which you may desire to fertilize.

Your problems of pollinating the flowers will vary with different species. In many flowers you will find the stigma of the pistil extending out beyond the stamens. Such a flower is very easy to pollinate, but in many species the stamens may exceed the pistil or may be of even length. In many flowers the stamens may completely surround the stigma so that they would have to be removed in order to pollinate it with the pollen from another flower. If this be the case, then Plant No.1, the maternal plant, should be emasculated as soon as the flower is open or mature. This means that the stamens must all be removed very carefully so that none of the pollen falls on the stigma to cause self-pollination.

The pollen should then be carried to it from Plant No.2, the paternal plant. This may necessitate a little practice with a steady hand. If you wish to use Plant No.2 for the same cross, then the same care should be used in removing those stamens. Now the pollen is carried from Plant No.1 to No.2 which will make the

same cross with the same results, as each flower has the parts of both sexes. Should the two species which you wish to cross, mature their flowers at different times of the day, you may find a short period between those two maturity hours that you can pollinate one stigma before it is entirely receptive and the other before it has entirely passed that period and still catch both flowers. But if the time space between the two maturity periods is too great, you may be able to keep the pollen from one plant by taking the stamens and keeping them in waxed paper or in a tightly sealed bottle in the refrigerator for a few hours. I have not been able to keep the pollen of Bromeliads for any great length of time, but further experiments may make this a possibility. With some flowers in other families, pollen has been kept for a period from six months to a year.

Should your two subjects be two different true species, then the results of this hybridization will be rather constant. Variation in the offspring will not be very great. However, if one of the parent plants in this cross pollination should be a species and the other a hybrid, or if they both be hybrids, then the offspring will run a most interesting lot of hybrids with the different combinations of character of parents and grandparents.

If you wish to self-pollinate a plant for the propagation of more of the same species, then you carry your brush from flower to flower back and forth from plant to plant, thrusting carefully your brush into each flower, being sure that each stigma is covered with pollen.

Rarely will your bromeliad flowers under cultivation be pollinated unless you do it artificially, as there appear to be few insects that are attracted to them. We believe that most of the pollination of bromeliad flowers in their natural state is performed by humming birds and night moths. In some instances, however, the ants and bees have been the pollinators, especially with flowers that carry considerable nectar. The pollen is not dispersed by wind because it is of a semi-moist nature.

Then the rare exception of self-pollination may be found in such species as *Guzmania graminifolia* and other new species of *Guzmania* which I found in Colombia in 1946. The flower heads on these plants were entirely encased in a jelly-like substance, thus preventing any insect from entering the flower. Also, there are a number of other species that bear flowers which never open, and yet they produce seeds without any outer agent of pollination. In these instances, no doubt, the flowers are self-pollinated.

Most species of bromeliads have a number of flowers on each inflorescence, but the range in quantity may vary from a single flower, as in *Till. usneoides* to as many as 8,000 in *Puya raimondii*. This giant Puya has a flower head twenty feet long and eight feet in circumference which holds these myriad flowers.

Nearly all the bromeliad flowers function as perfect flowers, that is, they contain the reproductory organs of both sexes. However, there are exceptions. The Hechtias have both parts, pistil and stamens, but only one sex can function in

each flower. Some plants, considered as male plants, will have flowers in which the stamens are perfectly formed while the pistil is aborted and incapable of receiving pollen. In the female plant the flowers have aborted, undeveloped stamens but have a pistil fully developed and capable of accepting the pollen from another plant. A similar condition may be found with some of the *Catopsis* and *Dyckia* species.

With the *Cryptanthus* species there is still another condition. With very few exceptions, and I have examined hundreds of flowers, I have found only male flowers in the center cluster. These flowers are imperfect and have no trace of female parts, but the flowers in the axils of the bracts below the center cluster are invariably perfect, having both sexes that function. The pollen from the center male flowers is fertile and can be used for pollinating, but these flowers are generally spent before the lower perfect flowers appear. The lower flowers can be self-pollinated or can be used for cross pollination in hybridizing.

Self-pollination by hand is not always successful with some species, as it seems that some of them are self-sterile. This condition is still more prevalent among the hybrids. However, it is often the case that, while self-pollination among the flowers on a single inflorescence may not be successful; the pollen from one of those flowers may possibly be successfully used on another similar plant, species or hybrid.

Not always are the results of hybridization an improvement over the parents used, but in most instances they will give the hybridizer an interesting new combination of characters quite worth while. I doubt if anyone can foretell which parent plant will influence the resultant hybrid most. However, after attempting several different crosses by using *Aechmea Weilbachii* as one of the parents, I have as yet to find even one of those crosses to be of any value.

Bigenetic crosses can be most interesting although but few such crosses have survived in horticulture. Some well worth-while *Biltanthus* have been developed. The cross between *Cryptanthus beuckerii* and *Billbergia nutans* has become common. As in many bigeneric crosses, the flowers are aborted and have little attraction, but as a foliage plant it has a definite decorative value.

Until 1930 little had been done, in, hybridization among the bromeliads excepting in the genera of *Cryptanthus*, *Billbergia* and *Vriesea* and most of that hybridization was carried on in Europe. Even up until the last ten years, little had been done outside of Europe along this line except in *Billbergia* and *Cryptanthus* by Florida and California hybridizers,

Now with all the new species that have been introduced into horticulture in the past twelve years, the possibilities have been greatly enlarged with a most interesting field at hand for horticulturists to enjoy the privilege and experience of assisting in the creation of new, decorative forms and color combinations in the Bromeliaceae.

Genus revised by editors, 2017, from *Tillandsia* to *Wallisia*

'Rubra' is it Valid or NOT ?

compiled by Ross Little 2017

In our September Newsletter we used the term 'rubra' which drew the following response from Derek Butcher. Let us get rid of the term 'rubra' used with *Alcantarea imperialis* or at least try. Nobody has defined this quasi-botanical term by writing a description under the ICN rules as a botanist would do. It is not acceptable under the ICNCP rules for a cultivar either.

The following is what Versieux and Wanderley published in 'Bromelias Gigantes do Brasil', 2015, which is a very definitive book on the genus *Alcantarea*: "There is considerable morphological intraspecific variation in the different populations studied, particularly with regard to the colour of the central rosette leaves and peduncle bracts. In the populations of Macae de Cima, in Nova Friburgo, Rio de Janeiro, Brazil, it is possible to observe individuals totally green growing alongside those totally vinous (Barbara et al. 2007). For gardeners, such variations constitutes important sources of selection of cultivars, which can be totally green plants, completely red-vinous with variations between the lighter shades or dark, or plants with leaves almost completely green, only with the tips vinous and peduncle bracts vinous at the base, passing to green concolor".

Nobody has defined what 'rubra' refers to:

Is it the red leaves or red peduncle/primary bracts or must it have both ?

Does a tinge of red in the leaves qualify ?

The use of the word 'rubra' in this context should be banned from Bromeliad Newsletters. Regrettably some growers will always use the word on their labels even though it has no botanical validity in conjunction with the botanically described, Latinised words *Alcantarea imperialis*.



Photos by Peter Franklin



After some discussion it has been agreed that there is no way a single cultivar name could be used for this ill-defined red form of *Alc. imperialis*. The redness is quite normal however variable the plants may be. Remember the term 'rubra' is only a descriptive trade or nursery name. The use of such terms should be banned. If you must use a descriptor use "red form".

If sellers are serious about their use of the name 'Rubra' they should select their distinctive forms and think of alternative names and register them as Cultivars.

For similar reasons "Purpurea" should be banned too.

Acknowledgements: Peter Franklin, Geoff Lawn and Derek Butcher.



Dyckia hybrid ???
1st Open and Judges Choice
Trish Kelly



Tillandsia fasciculata
grown by Laurie Mountford



'Spring Time'
1st Decorative Helen Clewett



'As Snug as a Bug in a Rug'
shown by John Crawford



Neoregelia 'Linda Cathcart'
grown by John Crawford



Deuterocohnia brevifolia
grown by Laurie Mountford



Two Neoregelias brought along for identification by Kay, any thoughts ???



Alcantarea imperialis



Vriesea vigeri x cardinalis x guttata

Photos supplied by: Ross Little and Kay Daniels

Aechmea ornata

by Derek Butcher Sept. 2017

Now is the time for var. *nationalis* to bite the dust and be replaced by the cultivar name of *Aechmea* 'Nationalis'. This is in line with my crusade to treat plants found in the wild with variegated leaves as cultivars which I started in Die Bromelie 2: 62. 2013

Reitz in Bromeliaceas 427-433. 1983 says "RUPICOLOUS with leaves striped lengthwise of green and yellow. Utility - Plant of great decorative effect, today cultivated across the world. Enjoys great power of vegetative reproduction. The hundreds of specimens grown all over the world descended from clonotype collected by me in Bau, in 1952, and cultivated in Brusque, Santa Catarina."

No reference is made to the size of the inflorescence or the colour of the petals so we do not know if it is linked to the Type or the var. *hoehneana*. Photos I have gathered from different sources of a variegated *Ae. ornata* not only show some with yellow and green stripes but white and green. It is interesting how a green plant with white stripes acquired the name var. *nationalis* and yet it has always been recorded as green with yellow stripes [See S&D (1979)]. Also there seems to have been differences in petal colour which suggests that sporting/mutation has occurred from different clones.



This difference in petal colour leads us to a somewhat controversial paper by T. Wendt in Bot. Journ. of Linnean 125: 245-271. 1997 where many of her propositions were not generally accepted. However, she did make the following comment "This species has three varieties: *Ae. ornata* var. *ornata*, *Ae. ornata* var. *hoehneana* L.B. Sm. and *Ae. ornata* var. *nationalis* Reitz. The latter has yellow longitudinally striped leaves and is known only from the type specimen. Variation in inflorescence size and petal colour are used to distinguish the other two varieties. In the key proposed by Smith (1955), *Ae. ornata* var. *ornata* is separated by a large inflorescence (4 cm wide) and a frequently reddish or lilac petal, *Ae. ornata* var. *hoehneana* by its delicate inflorescence (3 cm wide) and blue petals. However, these differences, especially the size of the inflorescence, are not consistent.

The collections examined presented variation of inflorescence shape from cylindrical to slightly conical, scape bracts with distinct blades with or without sheaths, strong variation in the spine length of floral bracts and sepals, and variation in the position of the petals appendages. This variation suggests the presence of infraspecific taxa, and perhaps *Ae. ornata* is a complex of species that still need to be delineated. However, it is currently impossible to delimit any of these forms clearly. Furthermore, geographically correlated variation is often poorly understood. For example, the collections from Santa Catarina (*Gaudichaud* 129 in part, *Wendt* 289), Sao Paulo (*Foster* 396) and Rio de Janeiro (*Martinelli* 11763, *Wendt* 217, *Costa* 444, *Vieira* 279) are clearly the same species.

This inconsistency in petal colour is also apparent when you compare Foster 1124 cited by S&D (1979) with the type but clearly blue petalled in Foster's painting. Therefore, I am treating var. *hoehneana* as per Type to agree with Tanya Wendt. Reference to REFLOA also doubts the status of var. *hoehneana*.

Leaving the most important to last, it has been decided that to accommodate the different coloured variegations the yellow one e.g. Vic Przetocki's photo on page 10 will be called 'Nationalis Median' and the white one will be called 'Nationalis Marginated'.



Aechmea 'Nationalis Marginated'
photos by
Ross Little and Vic Przetocki

Acknowledgements: Thanks to Geoff Lawn and Ross Little who helped solve the riddle of the two types of 'Nationalis'.

Understanding the Variegation Naming Changes

Variegation occurs from various methods of reproduction, one being from seed, two a vegetative mutation or a deviation of the typical form referred to as a sport, a third being a variegated form of a species another is tissue culture mutation.

In seed raising, using a variegated seed parent which is known to carry the variegation genes gives the most consistent results, however occasional luck can occur with other parents. Within variegated Bromeliads we can see certain patterns which in the past have been referred to as variegated, variegata, albomarginated (white edged), flavomarginated (yellow edged), striata, lineata, medio-picta etc. This was fine when dealing with variegated species and a few variegated hybrids until now. Today we see very complex hybrids giving rise to many variable sports (a single mother plant may give a dozen different looking offspring - sports), to resolve the naming of each individual sport Geoff Lawn the BSI Cultivar Registrar has proposed the following as an optional alternative:

“Where a registered variegated has a certain variegation pattern (marginated), if it sports to (say) a striated or median (central stripe) or lineated form, rather than choose another separate cultivar name for each, I propose simply adding "Striated" or "Lineated" or "Median" to the existing registered cultivar name as a separate entry, so that growers can see where this new form came from”.

For these descriptor terms to be valid a new epithet has to be created for the sport e.g. 'Bottoms Up Striated' not 'Bottoms Up' striated.

There can be exceptions to this suggestion, if one wishes to register a sport with its own cultivar name Geoff will honour it, making this a convention which should be encouraged but not a rule. Grex naming to be in another issue.

Variegated species need to be registered accordingly rather than one name fits all forms of variegation for them as there are distinct forms within a species. This species variability can give rise to a number of variants e.g. four different marginated forms of *Alcantarea glaziouana* from various sources. A different name for each saves confusion as opposed to using a species name plus descriptor e.g. *Alc.* 'Glaziouana Marginated'. Using this name, which of the four distinctive- clones are you after ?

Occasionally a variegated seedling will revert to a non variegated form, for this use the term “Novar”. If this plant is exceptional and considered worthy of future development it can be registered by adding “Novar” to the existing epithet or one has the freedom to give an entirely different name if desired. If a variegated sport reverts e.g. *Neo.* 'Serendipity Girl' resultant pups can be referred to as 'Serendipity Girl' “Novar” or revert back to the original parent of *Neo.* 'Beetroot'.

A Brief Study into How Plants Function

by Les Higgins 2017

Part 7: Plant Breeding.

Hybridising is intended to produce a plant that is superior to its parents and/or uniquely different compared to all other plants of the same species. Years of selection and back crossing may elapse before a quality, genetically improved and stable hybrid is achieved. Good quality hybrids don't just happen!

A knowledgeable hybridist considers not only size, texture, shape and colour but vigour, stability, pest and disease resistance, viral status and environmental suitability. C4 x C4 and C3 x C3 plants have the potential to produce quality hybrids. CAM x CAM begets a water miser. C3 x C4 and C3 or C4 x CAM are plants of different environments and unlikely to produce worthwhile hybrids.

Rubbing two flowers together is not Plant Breeding it's **Trash Production**. Naming and selling every minor colour variation is money grubbing. To sell or give a genetically unstable plant is irresponsible. Finding an aberration and promptly registering it “Parents Unknown” is deplorable. **A plea to all Flower Rubbers who aspire to be Plant Breeders:** You may think that your product is wonderful but keep it for yourself. With *Cryptanthus* it is almost certain to be yet another repetitive plant.

Huge quantities of *Cryptanthus* hybrids are being produced by indiscriminate crossing of hybrids. With less than 70 species and more than 2,000 registered and unregistered hybrids it is inevitable that many hybrids differ only by name.

Primary crosses yield predictable intermediates between the parents (F1's). Further hybridising gives results including combinations reminiscent of ancestry types and siblings with minor variations.

The stigma becomes receptive for a specific period of time during the 24 hour cycle. Pollen on a receptive stigma germinates to make a pollen tube that carries the gametes (sperm) to the ovules. The tube's energy allows it to extend slightly longer than the distance between the stigma and ovule of the staminate species. Should the pod parent's carpel be long and the pollen grain is from a short gynaeceum plant the tube may fail to reach the ovule. Cutting-off the pod parent's stigma lessens the pollen tubes journey. Germination is just as effective when the pollen is deposited on the style stump as on the stigma.

Incompatibility may sometimes be overcome with the use of Pollen Germination Solution (mineral salts and white sugar). Dab the solution on the stigma then apply the pollen grain.

Hybridising a plant of single flower and attractive foliage with a nine flowered plant of plain foliage the F1 will be intermediate foliage with 3 flowers, not the arithmetical average of $1 + 9 = 10 / 2 = 5$ flowers. Flower calculation is the geometrical mean determined by the square root of multiplying the two quantities.

Boron, the trace element needed in greatest amount dominates fertility. Commercial nutrients are unlikely to have adequate trace elements therefore an occasional pinch of boron added to the nutrient is beneficial.

Cryptanthus inflorescence is andromonoecious. Staminate pollen is superior to the hermaphrodite's pollen. A ripe pollen capsule is at its best when looking fluffy. The stigma must be moist before pollen can be successfully applied. Within three months the seed pod is visible, maturing in less than six months and containing up to ten berries. Unrelated *Cryptanthus* of same species are compatible however *Cryptanthus* clones are self-sterile.

(Pollen can be stored in the refrigerator using a sealed tube containing a drying agent. The viable life of stored pollen is probably three months).

Polyploidy details the chromosome aggregate within a nucleus and given an 'n' number. Most living organisms are 2n. Diploid (2n), Tetraploid (4n), Hexaploid (6n) and Octoploid (8n) divide equally in half and therefore have potentially fertile flowers. Triploid (3n) plants are restricted to vegetative reproduction. Pentaploids (5n) are extremely rare.

The bromeliad hobby would be improved with the introduction of polyploid series. 2n seeds could be made into 4n plants. Good quality diploid (2n) F1 hybrids could be reworked as tetraploid X tetraploid. A 4n x 2n would result in a triploid (3n) that is bigger and more vigorous in growth than the diploid. Triploid's flower is often more floriferous than either that of diploid or tetraploid. A triploid could have its chromosomes doubled to make a fertile hexaploid that could be crossed to a diploid giving a large and very floriferous tetraploid.

Colchicine creates polyploidy and has been used in horticulture for many years to make big plants and/or large flowers. **Colchicine is a DEADLY SUBSTANCE** available from Laboratory suppliers. Full details of "how to use" must be obtained before purchase.

Colchicine stops the central lamina wall growing that divides one cell into two cells. (explained in Part 9 Genetics). To be effective colchicine treatment must be very close to lethal strength. The successful result is a quiescent cell with a doubled amount of chromosomes (a tetraploid). Excessive colchicine can result in further chromosome doubling within that same cell making an octoploid.

Orchid techniques using colchicine include germinating 2n seeds in a sterile nutrient medium. The protocorms are transferred to a flask of sterile liquid medium. After two weeks colchicine is injected into the flask to make a 0.05% solution. The desired result is some tetraploids. The remaining protocorms develop into diploids and chimeras. Another method is the meristems (back-bulb eyes) are pierced with a needle then the plant soaked for 2 hours in 0.03 colchicine.

When a quality hybrid becomes available it could be reproduced by tissue culture in small batches. Large scale production demands the integrity of the propagating material is maintained by constantly obtaining fresh meristem tissue from to the original plant, or a natural offset.

Cryptanthus 'It' is an example of a mutation due to excess tissue culturing of a *Crypt. arellii* meristem. Prolonged tissue culturing of 'It' produced a reverse colour mutation and given the reverse name of 'Ti'. 'It' is more stable than 'Ti', a degenerate colour aberration of 'Ti' is reminiscent of *Crypt. arellii*.

Orchid hybridists use this technique in the hope of producing changed colour patterns or different petal shapes.

Whether the intention is serious breeding or just the fun of hybridising two plants one question should be asked: **"Is this plant a fair deal if it were sold or even given away?"**

Glossary

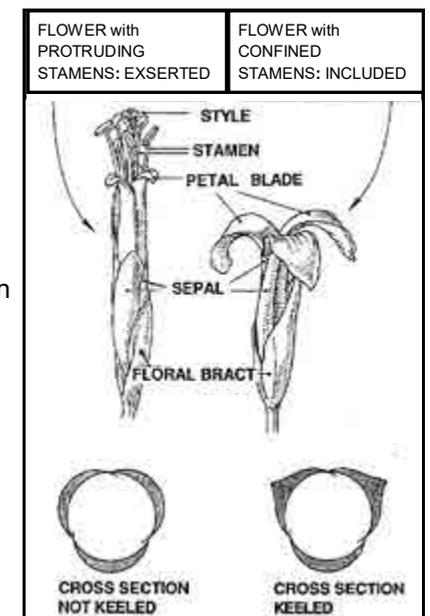
Andromonoecious: Producing both bisexual and male flowers on the same plant.

Hermaphrodite: Plant having both male and female sex organs, stamens and pistil. Same as bisexual.

Staminate: Having stamens but no pistils.

Style: The elongated part of the pistil between the ovary and the stigma.

Colchicine: Is a medication most commonly used to treat gout. It is a toxic natural product and when used to induce *polyploidy* in plants, *colchicine* cream is usually applied to a growth point of the plant, such as an apical tip, shoot, or sucker.



Novice Popular Vote

1st	No
2nd	Novice
3rd	Entries

Open Popular Vote

1st	Trish Kelly	Dyckia hybrid ???
2nd	John Crawford	<i>Neoregelia</i> 'Linda Cathcart'
3rd	Laurie Mountford	<i>Tillandsia fasciculata</i>

Judges Choice

1st	Trish Kelly	Dyckia hybrid ???
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Decorative

1st	Helen Clewett	'Spring Time'
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Comments from the Growers:

Trish has had this bowl of Dyckia for about 5 years, this is the first time they have flowered for her. Since gaining an interest in growing the spiney Dyckias she has discovered they like fertiliser and lots of water. Trish's Dyckia entry was also voted as Judges Choice.

John tabled *Neoregelia* 'Linda Cathcart' which he grows on a bench under 50% white shade cloth which he feels is giving the plant the brightest light it is able to handle to help maintain its shape and colour.

Popular Vote Tables:

With many of our members away again this month we unfortunately had very few plants on the competition tables, hopefully this will improve with the onset of Spring. Here in our Northern Rivers area of NSW we experienced a very mild if not exceptionally warm winter with very little rainfall. For some growers not on town water supplies the situation got quite dire with the need to purchase water to fill their water tanks both for household use and their shade houses. (Which is more important ? The shade house of course.)

How unreliable has our weather been these days, not long ago, March/April 2017 here in our region we were under flood yet by September/October we weren't too far off feeling like being in a drought. I say weren't as it is raining here as I write, I can almost hear the trees and our beloved Bromeliads breathing a sigh of relief.

