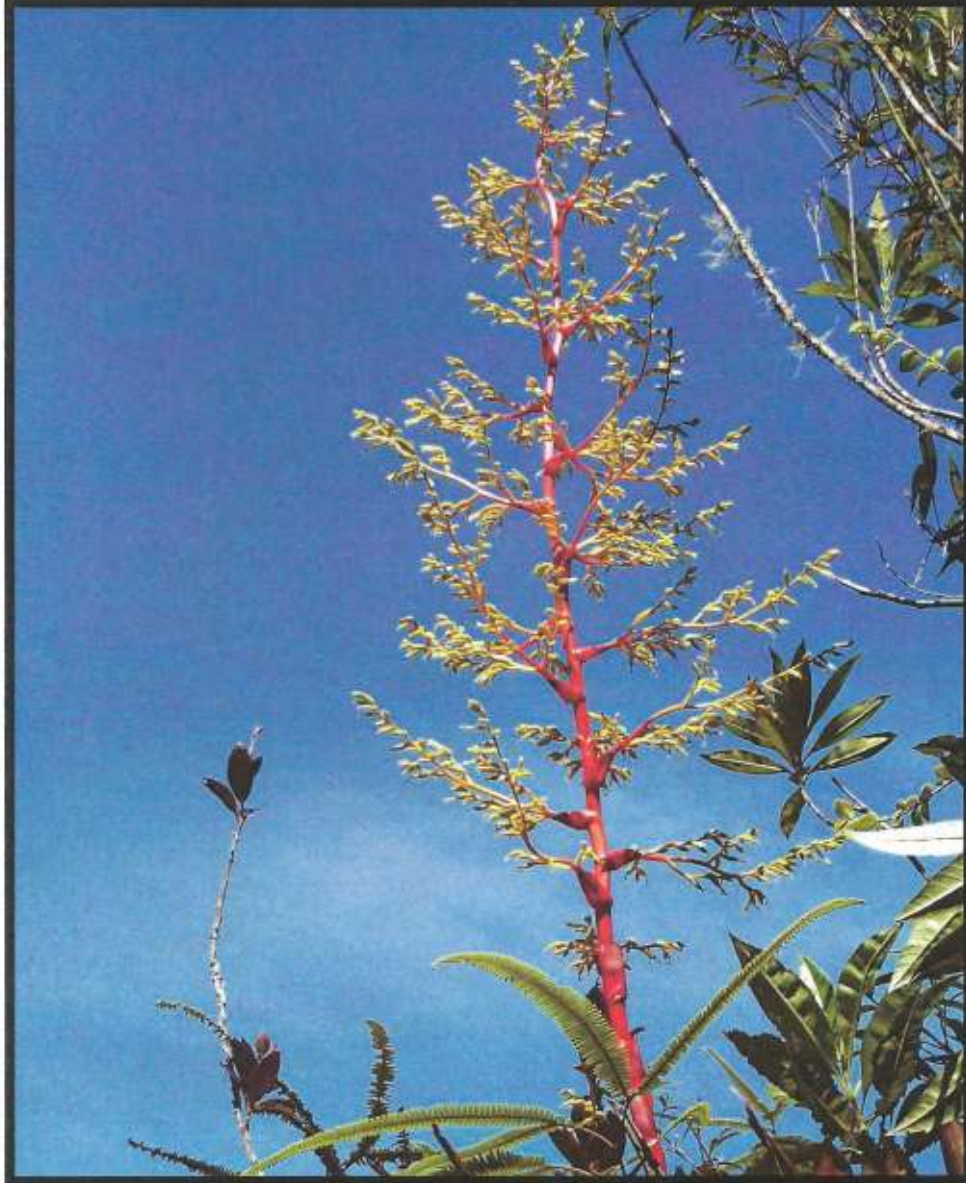


Bromeliaceae



VOLUME XLVI Third Quarter 2012



The Bromeliad Society of Queensland Inc.

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GENERAL MEETINGS of the Society are held on the 3rd Thursday of each month except for December, at the Uniting Hall, 52 Merthyr Rd., New Farm, Brisbane, commencing 7.30 pm. Classes for beginners commence at 7.00 pm.

ANNUAL GENERAL MEETING is held immediately before the February General Meeting

Front Cover: *Guzmania diffusa*
Rear Cover: *Guzmania scherzeriana*

Photo by Bruce Dunstan
Photo by Bruce Dunstan

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From the Editor's Desk

Being Editor is a challenging job, the rewards are high but so are the chores. This can be compounded if 'other factors' come into play. With me, 'other factors' always come into play and this edition has been no different, so I apologise for the edition being a little late. Nevertheless I think it is an interesting edition and I greatly enjoyed putting it together.

There is a flavour in this edition of venturing into the past with a number of articles about the way things were back in the 1970's. I am relatively new to the world of bromeliads with about 8 years, I know that we have a number of members whose interest goes back to the 1970's and I congratulate them on having the ability to maintain their interest for such a long time.

During the past week, a friend gave me three books on Bromeliads that came from his mother-in-laws estate. These books were published during the 1970's. One in particular "Bromeliads for Modern Living" written By Dr. Louis Wilson is particularly interesting as it has a lot of colour photos. These photos show the popular plants of about 35 years ago and most appear to be species. The plants also seem to have names, for example *Tillandsia punctulata* is called 'Fairy Queen' and *Tillandsia ionantha* is called 'Blushing Bride'. While the species are very familiar, the names aren't.

The titles of the other books I was given are "Bromeliads by Walter Richter" and "Bromeliads for Everyone by Bea Hanson". Richter's book is quite informative, but is let down by the fact that the illustrations are in black and white and not of high quality. I think that the cost of colour plates at the time would have made the cost of publishing too high. Quite a contrast to today when a small

journal like Bromeliaceae can afford to have twelve pages of colour photos.

Bea Hanson's book on the other hand is pitched at the beginners who are just starting out and is a bit too simple for my tastes.

On a different note, one important aspect of this time of year is that it has warmed up, the sun has shifted and the light and shade around your home likely shifted as well. Maybe time to relocate those bromeliads that are sensitive to the higher light levels.

For me spring heralds the time when I can think about removing and potting the offsets. With spring, summer and autumn ahead, these plants will have the longer days, higher temperatures and higher light levels to use to develop into healthy plants and of course flower. I know one member who you won't find out in the garden because he has found this time of year as being highly suitable for furthering his passion in collecting customs medals.

Roy Pugh has set aside this spring for Moldava medals. He doesn't understand why we get so excited by bromeliads and not custom medals. For those of you who don't know, Roy plays a vital role in that he proof reads this journal and sends me a lot of corrections to be made prior to publishing. I would like to thank Roy and his wife Barb for the great efforts they do into maintaining the distribution lists and getting the journal into the mail. Well done Barb and Roy!

Some of you might know that another of my interests is in vintage aeroplanes. You may also have heard about the crash of the vintage biplane up near Gympie where six people were killed. Why am I drawing this to your attention? It's because two of the six people killed were friends of mine and a demonstration to me of the fragility of life. I encourage you all to live life to the full and don't put off to tomorrow what you can do today.



Nidularium 'Red Queen' Photo by Herb Plever at WBC Orlando 1980



Nidularium 'Red Queen' Photo by D Butcher

Nidularium 'Red Queen'

by Derek Butcher 5/2012

This all started when Justin Lee of Victoria asked me what I knew about *Nidularium* 'Nat DeLeon' because plants of this name were being sold on Ebay but there was no reference in the Bromeliad Cultivar Register. The name rang a distant bell so I checked my old photographic slides and found some noted with a faded ex Nat DeLeon and the same plant called 'Red Queen'. How could this have happened? Margaret and I remembered having had a plant with *Nidularium* ex 'Nat DeLeon' on the label in the early 1980's from Qld somewhere. In the late 1980's we were working with Don Beadle on his preliminary hybrid list and thought it would be a good idea to see if we could nail this *Nidularium* hybrid. We chanced upon 'Red Queen' which fitted ideally even to the pink petals linking it to the *N. regelioides*. So we changed our label and it has been there ever since. We even showed the photo on the BCR in 2000 under 'Red Queen'. It is easy to see how the 'ex' got dropped which links the source of the plant not its name! A querying mind would wonder why a hybridist would name a plant after himself. *Nidularium* 'Red Queen' is shown in the BCR as a hybrid done before 1973 by R. Davis from (*regelioides x innocentii*) but little is known about the hybrid other than what was written as follows:

"*Nidularium* 'Red Queen' by Irma Gall in J Brom Soc 23(5): 183-4. 1973

Another hybrid that is not too different from its parents is *Nid.* 'Red Queen.' Its outstanding characteristic is the clear, bright red color at time of blooming and the length of

time it holds in excellent colour. The first one to bloom for me held its bright, fresh color for twice as long as one of its parents, *Nid. regelioides*. I had one of each of these plants next to each other, and they came into bloom at the same time. The *Nid.* 'Red Queen' was fresh and new looking when the *Nid. regelioides* had completely lost its colour."

We know there were strong links between Davis and DeLeon and this was another reason why we changed the name at the time.

With any plant imported from the USA I always like to get Ross Little to check the Ledger kept by PineGrove Nursery and there was an entry

BBK # 2651, *Nidularium* xNat de Leon, 5/1986, from Grace Goode.

We know that Grace Goode never named any of her hybrids 'Nat DeLeon' so it must have come from another source. Maybe that entry should have been 'ex Nat de Leon' which is where the confusion has come from.

Current investigations reveal that nobody is growing any unregistered *Nidularium* 'Nat DeLeon' in Florida but then nobody has owned up to growing *Nid.* 'Red Queen' either! We do know that in Michael Kiehl's catalogue he offers 'Red Queen' but also offers (*regelioides x innocentii*) so he must be seeing differences with the same alleged primary cross.

However, we do have a photo that Herb Plevier took at the World Bromeliad Conference at Orlando in 1980 of a *Nid.* 'Red Queen' which confirms that the red leaved form of *Nid. innocentii* was used in the hybrid.

At the moment I believe that 'Nat DeLeon' is an unnecessary name but for Australia growers could be put in the Bromeliad Cultivar Register as a reference to 'Red Queen'.

The Shy Tillandsia

by Derek Butcher 12/2011

Everybody knows that the ubiquitous *T. schiedeana* always has yellow petals and reddish tones to its floral bracts - at least this is what all the taxonomists tell us. Because Barry Genn in Qld, Australia, has plants with yellow bracts we both feel they need a cultivar name. There are two forms - thin leafed (blade 2mm diam at thickest) and fat leafed (blade 5mm diam at thickest). Because they don't blush in the floral bracts they must be ultra shy - hence the two names 'A Little Shy' for the smaller plant and 'Shy' for the larger plant. Apparently Nev Ryan knew about these in the 1990's or before and now Barry has proved that they reproduce faithfully from self set seed.

Renate Ehlers reports that the form with yellow floral bracts is not rare in Mexico, having found it in many locations, most times in low and humid areas. From the taxonomic point of view, details from Smith & Downs are as follows

Tillandsia schiedeana Steudel, Nom. Bot. ed. 2. 2: 688. 1841; (See L B Smith in Proc. Amer. Acad. Arts 70: 178. 1935, "After being in constant use for over one hundred years, *Tillandsia vestita* has to be replaced by *T. schiedeana* because of an earlier homonym."

Synonyms

Tillandsia flavescens Martens & Galeotti, Bull. Acad. Brux. 10(1): 118. 1843. Type. Jalapa, Vera Cruz, Mexico, Galeotti 4912 (P) 1840.

Tillandsia caerulea sensu Grisebach, Nachr. Ges. Wiss. Gott. "1864": 16. 1865; non Humboldt, Bonpland & Kunth, 1816. Based on Fendler 1533 (K, K photo 7431),

Colonia Tovar, Aragua, Venezuela.

Tillandsia grisebachii Baker, Jour. Bot. London 25: 305. 1887; nomen novum for *T. caerulea* sensu Grisebach.

Tillandsia eggersii Baker, Handb. Bromel. 170. 1889. Type. Llanos de San Rafael, Republica Dominicana, Eggers 1806 (BM, C, GH, K, P, US), 7 May 1887.

Plant: caulescent, flowering to 4 dm long, but usually not much more than 2 dm, often pulvinate; stem 5-20 cm long, simple or few-branched.

Leaves: polystichous-ranked, varying greatly in density, to 25 cm long, densely cinereous-lepidote or ferruginous-lepidote; scales appressed near the apex of leaf, spreading below;

Sheaths: suborbicular, large, densely imbricate and making the stem appear very stout, at least the margin hyaline, glabrous only where covered;

Blades: very narrowly triangular, filiform-attenuate, involute-subulate.

Scape: terminal, erect, shorter than the leaves;

Scape-bracts: imbricate and concealing the scape, the lower foliaceous, the upper thinner and usually roseate but usually with a distinct filiform lamina also.

Inflorescence: always simple, distichous or sometimes polystichous at base, lanceolate, attenuate at both ends, terete, to 7 cm long and 8 mm in diameter but often less than half as large, densely few-flowered;

Rhachis: nearly straight, slender, strongly sulcate, glabrous.

Floral bracts: densely imbricate and wholly concealing the rhachis, twice or thrice as long as the internodes, elliptic-lanceolate, obtuse or the basal ones minutely apiculate, about 30 mm long and 10 mm wide, much exceeding the sepals, membranaceous, roseate, strongly nerved, the lower ones appressed-lepidote, the upper ones often glabrous;

Flowers: sessile, to 46 mm long.

Sepals: lanceolate, acute, to 20 mm long, subcoriaceous, glabrous, even or few-nerved, the posterior ones carinate and usually much connate;

Petals: tubular-erect, yellow;

Stamens and pistil: exerted;

Ovary: ellipsoid.

Capsule: cylindrical, to 45 mm long.

Type. Schiede & Deppe 1004 (B, B photo 1249/24; isotype BM), Hacienda de la Laguna, Vera Cruz, Mexico.

DISTRIBUTION. Epiphytic, 50-1800 m alt, Mexico and the West Indies to Colombia and Venezuela.

This shows that this species is wide spread and very variable in plant size and furriness of the leaves but nothing is said that the floral bracts may be greenish-yellow to yellow even in the descriptions of the synonyms. In a way it is odd that you see 'Major' and 'Minor' in Nurserymen's lists and yet there appears to be a variation of sizes in the wild. But then conversely no names have been given because of difference in floral bract colour and yet apparently this trait has been noticed in the 'Trade'.

For this 'Shy' exercise we will ignore *Tillandsia glabrior* which has been linked to *T. schiedeana* in the past, but is said to have reddish petals and different plant shape. BUT it does lead to the next cultivar which we will be calling 'Speckled Pink' because the petals are creamish coloured with pink speckles and which has also been referred to me by Barry Genn.

In 2004 the Mexicans promoted this taxon from subspecies level to species level without giving a formal description as to what it should look like! So we are guessing a bit but Gardner did write about differences which are a help in trying to identify our plant. I quote from Selbyana: 361-379. 1983 & Jour. Brom. Soc 37: 163-4. 1987

"Tillandsia schiedeana subsp. glabrior

This is the correct name for an attractive small tillandsia that is well represented in the trade and bromeliad collections around the world. This subspecies occurs in large colonies on perpendicular canyon walls from Tequisistlan to Totolapan in the state of Oaxaca, Mexico at 900 to 1200 meters.

Dr. Lyman B. Smith described this plant originally as *T. pueblensis* var. *glabrior* from a few dried specimens in 1958. Without fresh flowers, the plant, with its thick, curved, gray-lepidote leaves and small, simple spike, appears similar to *T. pueblensis*. In 1983, Wilhelm Weber and Renate Ehlers described this same plant as *Tillandsia schiedeana* var. *totolapensis* (See below) from a living specimen collected in Mexico. Since Dr. Smith's varietal name has precedence it must be conserved even though the species epithet is corrected.

Although this subspecies is more closely related to *T. schiedeana* than to *T. pueblensis*, it is distinct from the former by several significant characteristics, most of which are associated with saxicoloy. For example, it forms large clumps of a single clone, and individual rosettes have both long, descending stolons and thick, upwardly second leaves. These characteristics are often found in saxicolous species including *T. pueblensis*.

Tillandsia schiedeana subsp. *schiedeana* is widespread, and occurs from northern Mexico to northern South America. Specimens of this subspecies also occur sympatrically with subsp. *glabrior*. Specimens of the typical subspecies occur also in saxicolous forms. They do not, however, display modification of the typical spherical clumps of stellate rosettes with straight leaf blades joining the leaf sheath at a 90 degree angle. Similarities in inflorescence characteristics of the two taxa support conspecific clas-



Tillandsia 'Shy'



Tillandsia 'Little Shy'



sification, however, assignment to different subspecies indicates a greater difference than varietal classification does.

Pigmentation of the flowers varies between and within the two subspecies. A larger amount of red pigmentation is typical of the petals of subsp. *glabrior* with one-half to all of the petal lobes red, whereas in samples from six populations of the typical subspecies only a few specimens in each were found to have a small amount of red pigment at the base of the primarily yellow petals."

It will be seen from these field observations that both *T. glabrior* and *T. schiedeana* can occur in the same geographical area so that natural hybridising can occur. It would appear that reddish tones appear in *T. glabrior* but our plant is typical *T. schiedeana* with its leaves spreading at a 90 degree angle and 'Speckled Pink' should, if anything, be linked to this species.

(Ed: I would like to thank Derek Butcher for his continuing support to this journal. Derek has been a reliable contributor for most of the time that I have been editor. You might have noticed that we have two excellent articles from Derek in this edition.)

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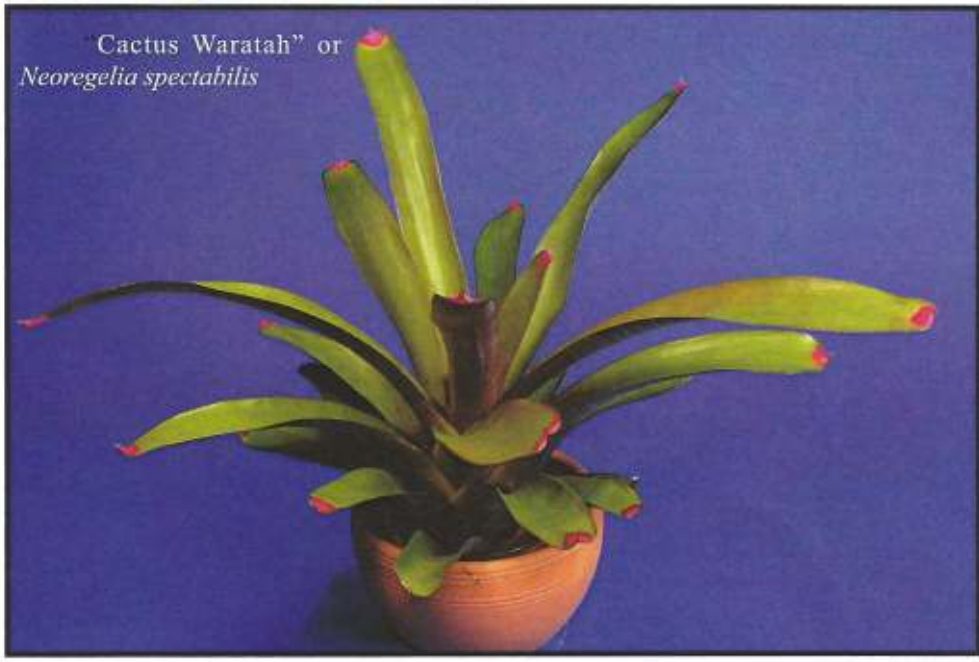
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Photos above: Bromeliads in the editors back yard
The top photo is of a large clump of *Neoregelia compacta*. Ross likes the overcrowded effect.



BROMELIAD CULTURE IN QUEENSLAND, AUSTRALIA

Author: Len Butt 1972

*Ed: John Olsen extracted this from
Extracted from the BSI Journal 1972 V22(5).
Reprinted with permission The article gives
a perspective on bromeliad growing in
Queensland 40 years back. Len Butt's name
appears on one of the Society's trophies. We
suggest you just smile over the use of names
to identify plants in that period.*

This northern Australian state, nearly synonymous with the Ananas, because of its very productive pineapple industry, is as yet as backward as most countries in knowledge concerning the "air-pines" and other species of the large family Bromeliaceae. This is precisely how it was a short time ago with only about six species being cultivated by ardent collectors of exotic bushhouse plants.

Most of us here had seen these plants, "pineapple cactus," *Billbergia pyramidalis* var. *concolor* and *Cryptanthus acaulis* being the first two remembered in cultivation about 25 years ago. Some of our members have had the former as a garden plant for as long as 60 years!

Possibly the next two species to become available, if one was keen enough to search around, were what we named "Cactus Waratah" or *Neoregelia spectabilis* and, of course, the old favorite *Aechmea miniata* var. *discolor* and its many varieties, all rejoicing in the one botanical name. Unfortunately, when a few of us become enthusiasts, the only source of supply we found was from the late Charles Hodgson of Victoria, a grand old collector with a very fine collection. It was

from Charlie, I received my first thirty species some twenty years ago, when we both were keen collectors of all the many plants of cacti and other succulents.

With the growth of interest in the bromel family came an unfortunate unwanted legacy which has remained with us to this day! Nurserymen, keen to cash in on the new plant trend, introduced seed from the great European sources, which were the most advanced in this field. Now we had new, larger problems, because now we all were introduced to the hybrid and the greatest collection of wrongly named plants to be seen in one plant family.

Although the Bromeliad Society of Queensland, founded in 1966, has done much in Queensland to sort out the tangle of species, many are multi crosses and have no bearing in description or growth pattern to species described in the reputable books now at hand. These plants should not be disregarded, however, as many are very interesting. An example is *Aechmea tessmannii* (See 'Tessie' on the BCR), which is a very vigorous plant with a fine rose inflorescence and protruding blue florets. Whether we have this plant or *A. phanerophlebia*, we do not know, but even here we may be wrong, as Dr. Lyman B. Smith tells us that after perusing photographs and leaves, he thinks it is an *Aechmea disticantha* hybrid. Another plant first known as *Billbergia macrocalyx* × *saundersii* now emerges as being definitely *B. saundersii* × *nutans*.

With the rapid growth of the Bromeliad Society of Queensland, there has come about a definite pattern of cultivation among the members who have large collections and the time to specialize. Mr. Nez Misso, a very keen Tillandsia grower, has really fine plants growing on untreated coconut fibre rope, which is wound around a base and the plant sewn into it. Others have followed suit,

and indeed the best Tillandsias seen here are grown in this way.

Another successful trend has been to procure red sandstone sea rocks taken from low tide coastal beaches, the holes being already in this medium. All that is required is to wedge a small offset or miniature species into the cavities and place in appropriate well-lit situations. *Aechmeas*, *Billbergias*, *Neoregelias*, and *Dyckias* respond very favorably and will sucker and grow readily, also producing a better colour than normally expected. This sea salt impregnated sandstone does not affect the flowering habits of the plant.

The culture of many species on small logs and in actual sawn-off tree stumps is rather widely practiced, *Aechmea* 'Royal Wine' and *Billbergia* 'Fantasia' on a three-foot stump producing excellent growth and a good effect. Mrs. Grace Goode, a member from a north seaside town, uses this stump culture extensively.

Various media are in use here, but the most successful are the basic mixtures used to grow orchids. The media vary considerably because of temperature differences and our plants need quite a bit of adjustment. One enthusiast, Mr. Jim Soley of Central Queensland, uses a medium of tightly plugged *Platyserium* fern peat with great success, although this mixture is not suitable for many species down as far as Brisbane.

Seed cultivation is practised constantly by many of our more enthusiastic members, and many fine new plants are becoming available. In particular, there have been a few choice crosses which we feel are worthy of registration. The beautiful green and yellow striped sport of *Aechmea nudicaulis* by Mr. Jim Hyde and the fine miniature *Neoregelia* of Peter Paroz are but two of these.

Considering that this is sometimes called the "Pineapple state," it may seem odd that no great quantities of *Ananas* in its

variegated forms are available. After some investigation it appears that any change from normal colour ranges is regarded with suspicion by the farmers, and with thoughts of a possible detrimental virus in the industry, these plants have been promptly eradicated. Fortunately for us, the standard form of *Ananas comosus variegatus* is available from southern state sources.

A Great Question to the Editor

Author: Ross Stenhouse

(Ed: A while back, I used to publish letters to the editor, however ceased the practice as it turned political and I found myself getting into difficult situations, however occasionally I get a question that poses an opportunity which is a great learning opportunity for beginners.)

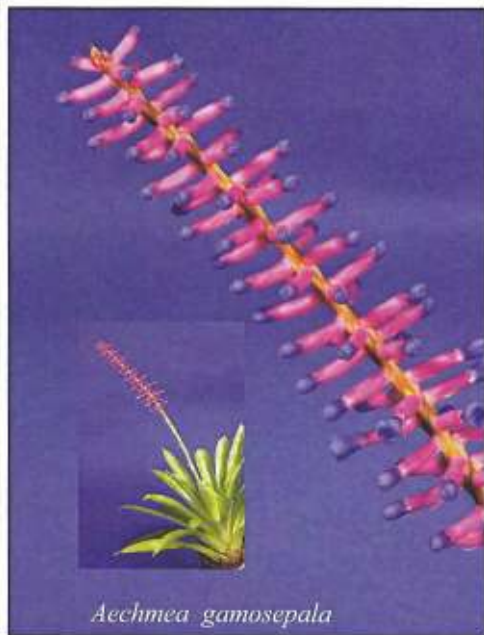
As editor, I often receive enquires from newcomers to the world of bromeliads. It can be that they have a specific question about a bromeliad that they have purchased at a school fete or found in the garden. The question below is a great question and encompasses the questions that many face when shifting into a new location that has bromeliads growing in the garden.

Question:

Hi I was pleased to find your web site and have enjoyed reading some of the general articles but I have a couple of basic questions I couldn't find the answer to. I was wondering if you could help me or forward me to an article which would help.

I have recently moved to my current address from Brisbane and have found myself the proud owner of several different types of coloured bromeliads.

I was told that the plant only produces the colour bracts once and then the pups that shoot can be replanted to start a new "flower-



Aechmea gamosepala



Neo. 'Hannibal Lector'



Neo. 'Wee Willy'



Billbergia nutans inflorescence



Highly magnified view
of white spot scale on
neoregelia leaf

ing” specimen. Is this true?

My garden is old and some groups of Bromeliads in the garden have not produced their bracts as yet and are looking scruffy. Is there a specific time those different varieties produce their bracts or would I be best to divide the large clumps?

I used to live in New Farm but as I had no garden at the time I didn't ever get to your meetings at the Uniting Church but now I've found your web site I shall be doing a bit more research into these dramatic plants.

All the best
Jenny Webber
Byron Bay

Answer:

Great question and to give a good answer requires the question to be broken down into several parts, so here goes.

How often do bromeliads flower?

We get used to having plants in our garden that flower each year and people carry that thought across to bromeliads. I guess that if you get a beautiful flower (or bract) then we all would like to see that beauty repeated on an annual basis especially if we purchased the plant for a sizable amount of money at the local super market. The answer to the question is that bromeliads only have one flowering season.

How do I get new bromeliads from my existing plants?

That simple question leads to a more complex question and one that is interesting to answer. Bromeliads may grow from offsets (or as they are often called “pups”). That is called “vegetative propagation” and is a form of asexual reproduction of a plant. Only one plant is involved and the offspring is the result of one parent. The new plant is genetically identical to the parent.

Bromeliads can also be grown from seed. Most plants reproduce more of their kind through production of seeds. This is

sexual reproduction and it usually involves the exchange of genetic material between two parent plants (the seed parent and the pollen parent).

Since sexual reproduction usually involves two parents we may be left wondering if the method can be used to get a copy of the parent plant(s)? Yet another question that needs another question to be answered and can generally be determined by answering the question : Is my plant a species or a hybrid?

That answer is important because if the parent is a species, then growing from seeds will usually result in a similar plant, especially if selfing was used to fertilise the seeds. Selfing is where the pollen parent and the seed parent are from the same plant. A problem that can occur with selfing attempts in that many bromeliads are self sterile, that is they need to have the pollen from another plant.

Simple you may think, but another problem may arise and that is that if the other potential pollen parent is from another plant that was grown from a pup that shares the same genetic line (that is, was grown from pups that have the same common parent some where back in it history) then it will be sterile to that plant. Pups are all clones of the parent. For certain species, finding suitable parents in order to set seed can be a problem. In some cases only one plant was ever imported into Australia and all of the many plants that may exist in the country are the result of vegetative propagation (pups) and thus are sterile to each other.

Why grow from seeds?

Generally speaking the reason bromeliads are grown from seed is to generate a new desirable hybrid or in the case of species to generate a lot of new plants, maybe hundreds in a single batch or in the hope that a sport will occur that pups true and a new line of

interesting plants becomes available.

Overgrown and scruffy, what and when to fix it up?

I recently had this problem myself, due to my interest in vintage aeroplanes and videography overcoming my interest in bromeliads. The net result was my collection of over 600 bromeliads took third place to my very long held interest in aviation and photography.

I suppose my bromeliads had minimum care and attention for about 18 months. Over the first weekend in September 2012, I remembered hearing a leading member of the society say its best not to take pups off during the period from end of April until the end of August. The logic was that you could get the plant out of kilter with the seasons and the net result would be stunted plants that flowered too early.

I started to try and get the bromeliads back in order. Just three sq. metres of bromeliads took 10 hours of labour. I never anticipated that so much effort would be involved and so many small decisions. What plant was it?

Damm! Why didn't that carefully written label survive instead of being half washed off.

Getting back to answering the question, my interest in bromeliads started because in 1989 I purchased a house in the Brisbane suburb of Jindalee. Somewhere in the house's history a gardener with an interest in bromeliads lived there and in the garden were large clumps of *Aechmea fasciata*, *Aechmea gamosepala*, *Aechmea miniata* var. *discolor*, *Neoregelia marmorata* and *Billbergia pyramidalis*. Just those four and today, those same four types of plants were again growing in large clumps and needed to be "tidied up".

Three of these plants are mentioned in the article published elsewhere in this

journal and titled "Bromeliad Culture in Queensland", first published over 40 years ago - interesting, my garden has an interesting history involving bromeliads. I suspect that this history is shared with many gardens in Brisbane.

As editor I get to read a lot of articles and have developed a good technical knowledge on the horticultural aspects of growing bromeliads. What I don't have is the ability to correctly identify the different species and hybrids, (I also lack the ability to pronounce the species names, That latin is a foreign language to me).

So what to do with the clumps of bromeliads? As a collector, I tend to have the habit of splitting off the pups and potting them separately as a "specimen". I think a lot of collectors find that as their first reaction, but hey there is another way, put the clump in a very large pot and keep it as a clump. For lots of the larger neoregelias and aechmeas this looks quite pleasing. This is especially the case if you have a garden that is absolutely overflowing with bromeliads.

In my case for the ones that I had decided to keep as clumps, I made the decision to remove any of the plants that were dead or had flowered - too bad if they were good for a few more pups. This opened up the clump and gave growing room for the remaining plants. The clump still looked good after that operation.

My garden

On page 10 of this journal, I have included a photo of part of my bromeliad collection and you will see that I have a liking for large clumps of plants and for overcrowding the bromeliads together.

Neoregelia compacta seems to particularly like growing in a large clump and forms a garden that requires very little maintenance. My clump is grown in full sunlight and seems to thrive.

Root Rot & Heart Rot

Submitted by Rob Murray

Bromeliads are not subject to many pests and diseases but heart rot and root rot can cause considerable losses. These two conditions are caused by the same organism, *Phytophthora cinnamomi*, depending on the origin of the attack. This organism is a fungus with swimming spores which thrives in oxygen deficient conditions. The spores have a long time resting stage estimated at 12-15 years !! It is highly invasive particularly when some form of mechanical damage has occurred. The mode of dispersal is not known but contaminated surface water is a possibility and rain water is suspected.

The organism is widely spread in soils where it has caused appreciable losses in avocado plantations attacking the roots. It is also reported as a problem in durian, oak, cotton and cacao trees and numerous ornamental shrubs in other parts of the world; and is a problem in Queensland pineapple fields. I have a copy of a newspaper article from the 1890's which describes in recognisable detail crown rot in pineapples at Nundah. The organism gets its specific name from the cinnamon tree. The organism, previously unnamed, was identified as the cause of substantial losses in cinnamon tree plantations in Java about 1915.

The pineapple industry has developed a simple "baiting" test for detecting *phytophthora* in soil, potting mixture or water. The procedure depends on the ready attack by the organism on the basal white tissue at the base of a bromeliad leaf. The original test used leaves from a pineapple top, but any young bromeliad leaf with white tissue is satisfactory.

Fill a glass jar to about 100 mm with water to be tested and place the test leaf in

the water so that about 25 mm of the leaf is submerged. Use a thin skewer to pin the leaf at the required depth. Allow to incubate for 8-10 days. *Phytophthora* is indicated by attack on the white tissue usually with a blue/black line and a foul smell. A less invasive organism *pythium* is indicated by a cotton wool like growth around the leaf.

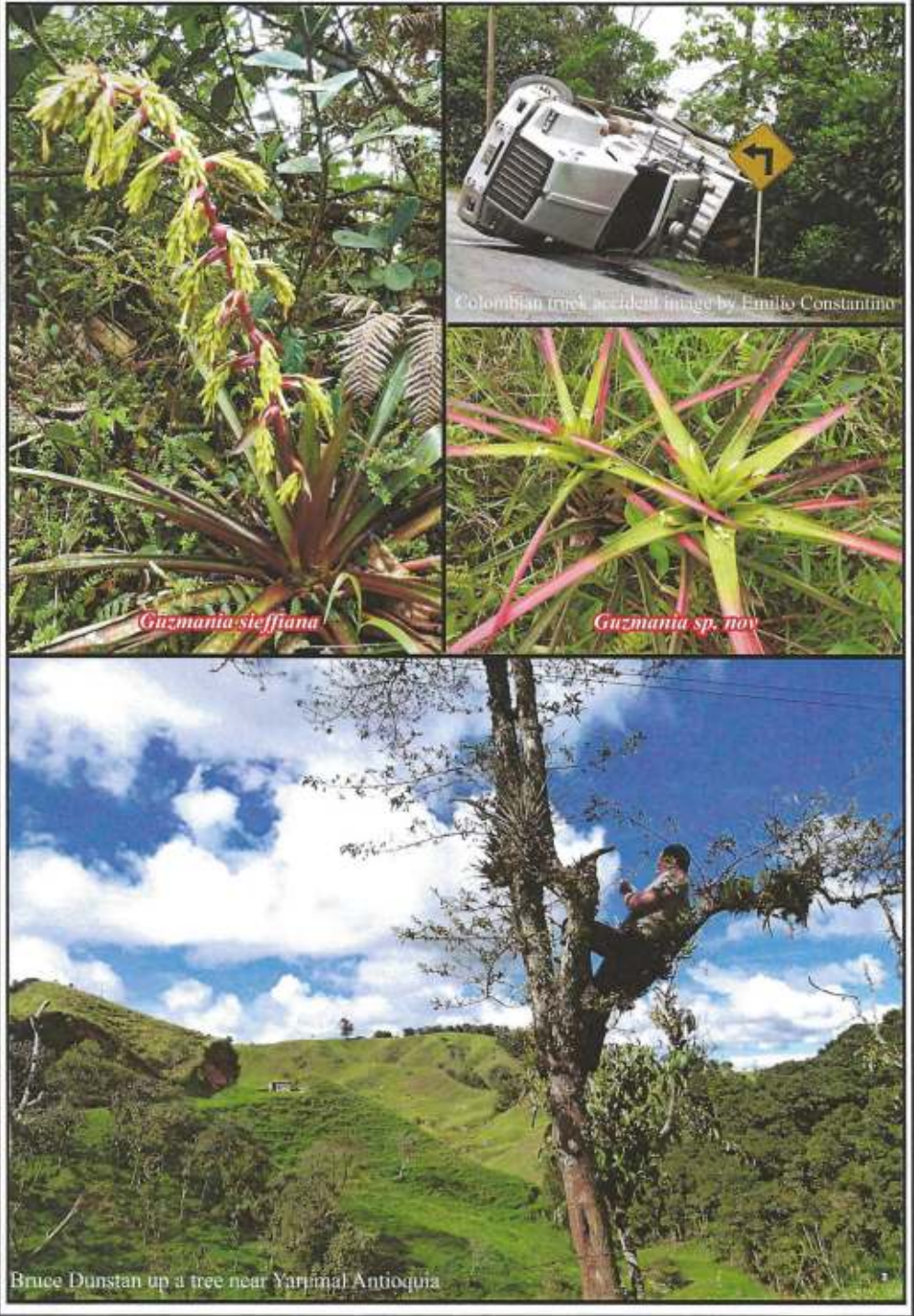
For soil or potting mixture, boil and cool some water. Place 3 or 4 teaspoons of soil or potting mixture in the bottom of the glass jar and gently pour in the boiled and cooled water, and set the leaf so that the white tissue is 30-35 mm above the soil.

The recommended fungicide for the local pineapple industry is Ridomil (Fongarid). Aliette is a recommendation from the WWW. Another local recommendation is Phosforpine which is a phosphorous acid preparation neutralized to pH 5.7. This compound appears to act by inhibiting germination of the spores. These preparations may not be available for non-commercial use.

Bromeliad plants which are infected with heart rot can sometimes be saved if the invasion is not too advanced. The best procedure is to remove as much of the affected tissue as possible back to white tissue. Treat with fungicide and allow the damaged tissue to dry and callous over. A serviceable fungicide for this purpose can be made from two parts slaked lime (calcium hydroxide not agricultural lime) and one part sulphur.

The recent heart rot problems (2007) that I am aware of seems to be associated with the use of chemical sprays; one for mosquitoes and the other for scale control. A possible reason is that the chemical was too strong and caused damage to the growing point of the plant allowing invasion by the fungus.

The following are some general web locations which may provide useful reading.



<http://www.environment.gov.au/biodiversity/invasive/publications/p-cinnamomi.html> A page with information and several documents.

http://www.rbgsyd.nsw.gov.au/plant_info/pests_diseases/fact_sheets/phytophthora_root_rot A fact sheet from the Royal Botanic Gardens NSW.

<http://www.bsnz.org/articles/48-rotten-to-the-core> From NZ (2002)

Colombia Revisited

by Bruce Dunstan

Heliconias took me back to Colombia this year. With the Heliconia Society International conference being held in El Valle de Anton in Panama in August the opportunity to spend another couple of weeks in Colombia on the road was too great to miss. Once again I had the pleasure of travelling with Emilio Constantino, a native Colombian from Cali who specialises in taking people into the bush in Colombia to see plants, birds, cultural activities, etc and ensuring they return to tell the story. Emilio's facebook page (<http://www.facebook.com/emilio.constantino>) is essential viewing for anyone who has an interest in what grows or happens in Colombia, with thousands of amazing images ready for viewing. I've even joined facebook, to my horror, to help Emilio get some names to some of his images. I'd suggest you give yourself a couple of hours to scroll through them. Travelling with me this year were two old friends of mine, Dave Quigley who went to high school with me and has always wanted to come along on one of my plant trips, as well as Steve Villiers who came to Panama and the Caribbean with me in 07.

With lots of planning and studying, I spent many a weekend locked onto my computer looking at herbarium specimens, plant descriptions, maps, Google Earth, with the app. From Missouri Botanical Gardens attached, showing collections, etc., in preparation, also at the same time driving my partner mad with my obsession. It payed off in spades as we spent less time driving around not seeing what we were looking for and more time seeing what we were after.

Arriving in Bogota, Emilio picked us up at the airport and we were off, in his new 4WD, ready for action. As we travelled in the higher elevations around Bogota, we saw *Vriesea tequendamae* growing in trees along the side of the road, with their red, pendent inflorescences hanging down. I was keen to lose elevation and find my first Heliconia so away we went towards the Rio Magdalena and down the western slope of the Cordillera Oriental, towards Sasaima.

The BSQ Library

Your attention is drawn to the Society's library. It is run as a service to its members. Members are able to borrow books from the library.

The Society also sells specialist books relating to Bromeliads - see the web site for details.

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Tillandsia fendleri



Tillandsia andreana



Tillandsia complanata

Stopping for a late lunch allowed me to eat quickly and disappear along the road to see what was growing around our restaurant, while my travelling companions finished lunch at a leisurely rate and then discussed how truly crazy I was. Large flowering *Tillandsia fendleri* with pink bracts were growing in the trees close by and were stunning! After seeing the red-and-yellow bracted plants in Peru, seeing bright pink ones on day 1 was very exciting. The inflorescences were easily 1 m tall and flowering in all their glory. Also growing in the trees were *Tillandsia myriantha* forming large stoloniferous colonies.

We headed further down the range, losing elevation and arrived at Guaduas just on sunset. Thinking wisely, we elected to stay in a hotel out of town and were assured a good night's sleep, without the nocturnal noise of some Colombian towns (more on this to follow). The next day we were off, back up the hill to explore around the Villeta region. Growing in the trees were some large *Aechmeas* with large upright inflorescences that I assumed were *A. Mexicana* but could be *A. latifolia*. Also growing in the same trees were plants of a tall upright *Racinaea* species, *R. michelii*, with flower spikes that were over 600mm tall. I had assumed it was *R. spiculosa*, a very wide-spread species that I'd seen previously in Panama and it just goes to show I know nothing about *Racinaeas*. After finding the particular *Heliconia* species I was after in that locality, *H. estiletioides*, we found another couple of species, with one potentially a new species. Colombia is the home of the red pendent *Heliconia* so another one is hardly earth shattering and previous collectors have joked about these red pendants to the point a tee shirt was even produced mocking them.

Further along the road, back up the hill, we came across a beautiful *Tillandsia* in

spike, up a tree alongside the road, but just not at flowering stage. It had pendent spikes with colourful salmon bracts. Even better was another plant of the same species further along with seed happily blowing away in the breeze. This necessitated me climbing the tree! After seeing the image of Eric Gouda in a tree and exuding the Zen-like calm of a master of martial arts, I'd have to say my technique is more that of an enthusiastic scrambler. I had to climb a few trees on this trip to get either seed or images of plants without coming to grief. The steep climbs up banks and slopes are much scarier as one slip and you are headed towards a hard surface with no control. I lost count of the number of plants that I just couldn't clamber up to, or even get close enough to, to take a good photo. I find that a lot of the plants I am really interested in getting up close and personal to document and to photograph seem to grow on inaccessible slopes -highly frustrating, but it just makes for even more anticipation of 'doing it' again.

Having secured what I was after we were off along the road down to the Rio Magdalena. Once we were down at the river the heat was noticeable, as we had lost the modifying influence of elevation. We were approximately 50 klms north of the equator and really in the lowlands so the temperature rose, not a bad thing though, as we had left the Brisbane winter behind. Growing alongside the road just north of La Dorada, we spotted a flowering *Pitcairnia* and I am still uncertain of its true identity but suspect it may be *P. fluvialis*. We saw lots and lots of *Pitcairnia*s but July doesn't seem to be a good time to see them flowering in the lowlands as we discovered, driving past lots of different colonies in varying locations with hardly any in flower. Further along the river, in the large roadside trees, we saw colonies of flowering *Aechmea nivea* or *nallyii* as well as *Tillandsia*

fasciculata. Last year, along the Rio Cauca, I saw thousands of *Tillandsia mima* but they don't seem to cross the central range, as we saw none along the Rio Magdalena valley this year.

Our next stop was the Agua Clara Nature Reserve. This protected reserve is a very steep valley of marble, through which flows a beautiful clear river. On a quick morning walk along the river before breakfast, just after dawn, I discovered a cat track in the mud which, judging by the size, I thought may have been an Ocelot, but I have since discovered the shape of the pads suggest it was made by a young puma, very exciting, but I'm glad they tend to be nocturnal. Growing in the trees were many flowering *Guzmania linguata* that were being visited by hummingbirds at that early hour as well. After an amazing raft ride down through the gorge, under tall trees laden in bromeliads, mainly *Werauhia sanguinolenta* and *W. gladioliflora* with a few *Aechmea tillandsioides*, we jumped back in the car and headed further along the Rio Magdalena up into Santander State.

In the lowlands the heat of the day was punishing. We were off to a nature reserve that Emilio had heard about and we spent more than an hour travelling along a flat bumpy road hoping to get closer to the forest that we could see in the distance. Along the way we spotted a chestnut-rumped toucan, small green parrots and plenty of other bird species that would keep twitchers busy. The morning seemed a waste of time until we spotted a tree just beginning to flower. We stopped and wandered out into the cattle paddock where it was growing, for a closer look. It had blue flowers obviously from the Caesalpinnaceae family but it was nothing that I have seen in all my years of hanging around botanical gardens, nurseries and private gardens. The tree was literally loaded in racemes of buds up to 1m long, with as many

as 60 buds per raceme. We had luckily come along just as it was starting to flower; had we been the week earlier we would have driven past without even noticing the tree. The tree turned out to be *Brachycylis vegeleri*, a monotypic species and one of a number of endemics that only grow in the Magdalena Medio. It was described in the '70s from near where we found our tree and, from what I can gather, it has never made it out of the region, let alone into cultivation. To me it is one of the most ornamental flowering trees I've ever seen, giving *Amherstia* a run for its money as the most ornamental flowering tree in the world.

From the lowlands we headed up the slope towards Velez as this particular road had 8 *Heliconia* species described along it in the early '80s. We could see the Serrania de San Lucas in the distance. This small range appears as an outlier from the Cordillera Oriental and has been a stronghold for guerrillas over the years so definitely hasn't been visited by botanists and remains largely intact with no roads or deforestation spoiling its beauty. As we gained altitude we noticed more bromeliads with *Tillandsia juncea* and *T. andreana* growing on trees at mid elevation. I noticed that the cocoa trees being cultivated alongside the road were loaded in *T. andreana*. Towards the top of the range the trees were heavy with epiphytes including more *Tillandsia fendleri*, this time with reddish foliage, pink spikes and yellowish paddles.

After achieving most of what I'd wanted to do along this route, we headed back down the slope again, towards the Rio Magdalena and started to climb the central cordillera heading to the northern slopes. As we began our climb we saw plenty of *Tillandsia fasciculata* again, growing in roadside trees. In a patch of forest remnant, *Vriesea heliconioides* was spotted growing in the

shade, happily flowering. It wasn't until we had gotten up onto the central range that we saw more diversity in broms. At one stop, high on the range, the stunted trees were loaded in *Tillandsia* and *Racinaea*. Notable was what may be *T. somnians* or *T. denudata* glowing wine-red due to the UV exposure I imagine. These plants had tall, thin inflorescences, taller than 1m, with arching branches. They were still yet to flower so I imagine they were also to produce the typical viviparous offsets so common in these species elsewhere. Growing in more shaded positions were *Tillandsia biflora* and *T. complanata*. Thankfully I knew what I was looking at with these two species. Not far away we saw a nice flowering clump of *Tillandsia compacta*, with its pendent orangey-pink inflorescences hanging down 30-40cm.

Back in the car, we headed to Yarumal for the night. As we sped along, a bright orange flower spike brought us to a quick stop; *Guzmania multiflora* growing on a tree at the side of the road was at its peak, just beginning to flower. The long spike was over 1 m and a glowing fluorescent-orange with the small white flowers just starting to emerge from the bracts. As we arrived in Yarumal a very strange sight greeted us. A red biplane, minus its wings, was being or trying to be lifted up into a first floor window. It certainly stopped traffic as everyone stood and watched, open-mouthed. After a few photographs and a few different attempts were made, the plane hung by its wheels from the railing on the first floor.

When we arrived back in town the next afternoon, they had obviously succeeded as they had bricked in the hole in the wall with just the tail sticking out. We decided it must be the Red Baron Disco with the protruding tail a sign for party goers. Yarumal is built on the side of a mountain and I'm betting some of its streets are steeper than San

Francisco's.

The next morning we ventured down onto the northern slopes of the central cordillera. Coming up the slope were truck-after-truck loaded with goods that would have arrived in Colombia in the northern ports of Barranquilla or Cartagena. First stop was for a couple of red pendent *Heliconias*. The second and third were probably new species, unfortunately the second was growing on an unclimbable slope so we will never be totally sure although we were able to take images. Growing happily in the shade of the forest was *Guzmania hollinensis* with its plicate foliage and branched green inflorescences.

Not too far down the road we were treated to another two species in full flower and luckily they were in old trees next to the road. *Vriesea elata* was in full bloom and the individuals here were red with yellow tips to the bracts, something I hadn't seen before; all the ones I'd seen previously were solid red. Growing in other trees was a huge *Guzmania* that we had seen up on the hill in Santander in bud, but thankfully on the Yarumal - Valdivia road they were flowering.

I only needed to climb another tree to get close enough for a decent image - we were looking at *Guzmania betancurii*. This plant was big, with leaves well over 1m long and the pink and yellow, branched inflorescence was getting towards 1.5m tall. This was yet another plant of which I had seen the description, line drawing and herbarium specimen but had never seen an image before. So, with the words of Uncle Derek ringing in my ears, I tried to take images that were in focus, a difficult thing to do when you are breathing heavily with excitement, exertion, altitude, adrenalin, etc.

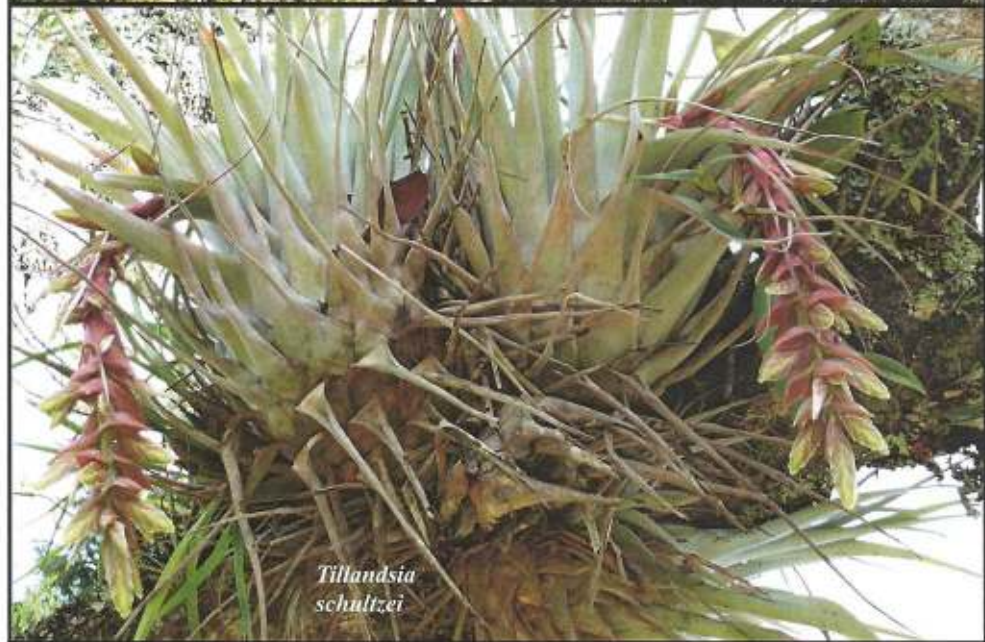
We had hoped to travel across the range to Amalfi, a known bird watching area with intact forest, but unfortunately we were stopped west of Yarumal by the Police and



Tillandsia compacta



Tillandsia clavigera



Tillandsia schultzei

told we were headed for an area where safety couldn't be guaranteed, so we turned around and missed lunch in Campamento. I lost track of the number of times we were stopped and searched either by the Police or the Military. After a while it just became part of the trip and wasn't anything to worry about. Emilio told us the stops were to look for weapons, drugs or even foodstuffs for resupplying guerrillas who live in forested inaccessible areas. We all figured it was an easy thing to put up with in return for a safe trip.

The next area on my wish list was the slope from the top of the western cordillera down to the Pacific, in the Chocó Province. In last year's trip we just got into the southern Chocó and travelled down the slope to the lowlands, experiencing the amazing diversity that is caused by changes of elevation and some of the heaviest rainfall in the world. El Llano has the distinction of being one of the wettest places on earth with an average rainfall of 13.3m per year.

To get there we needed to start in El Carmen del Atrato and drive down a steep dirt road, a 7 hour drive to get to the Provincial capital of Quibdó. We arrived at El Carmen in the afternoon of Colombia's National Day and found accommodation at a very spartan hotel, but luckily for us in a street lined with restaurants and a bar with the obligatory loud music. Military patrolled the street regularly and we discovered we were actually staying outside of El Carmen where all the buses stop on their way out of the Chocó. The amazed looks we got, as people got out of the buses for a break after 7 hours and saw us three westerners sitting around drinking beers at the bar in the middle of nowhere, were priceless.

The next morning we headed down the slope and stopped for plenty of exciting Heliconias. Growing along the way was *Racinaea schumanniana* with very upright

inflorescences and another *Guzmania* that may have some affinity to *G. triangularis*; no one so far has ventured an opinion on the FloraPix site. Once again Emilio decided we had gone as far as he was comfortable with on this road. In the previous weeks a vehicle had been stopped and robbed, as well as spray painted with messages, before it was allowed to get away, back up the hill. A safe return home is most important but I was still unhappy to be so close but so far away from an area I know contains some amazing plants; there's always next time, I consoled myself.

After being disappointed by the Mid Chocó, we decided to do the southern area again as Dave and Steve hadn't been with Emilio and I last year. Back into the car and off we went, south along the Rio Cauca river valley to the town of Ansermonueva. This is yet another beautiful Colombian town where tourists don't seem to venture, so we were a bit of a novelty again. We discovered Ansermonueva had a sense of humour when, at 5 in the morning, someone lets off fireworks that sounded like cannons, evidently to draw the faithful to morning prayers. As the fireworks went off there were three frightened Australians woken from their peaceful slumbers lying in their beds thinking, 'Who is attacking?' When we joined each other at 6:30 for breakfast it was the first topic for discussion: 'What the hell was that all about?'

We drove out of the Cauca river valley and up towards the ridge of the Cordillera Occidental or western range. Along the way we spotted large *Tillandsia fendleri* with orange bracts and spikes, some getting well over 1.5m tall; they were enormous. Also growing in the trees was another *Racinaea* with tall straight spikes and a *Vriesea* or *Tillandsia* of indeterminate identity due to their upright spikes being well and truly past their flowering best. As we continued to gain altitude the area got substantially wetter due

to the moisture that blows over the ridge from the wet Chocó region. We took the San Jose del Palmar road again and were treated to the amazing plants that grow at the top of the ridge.

It is not just broms that show amazing diversity along this road: Ericaceae, Araceae and Orchidaceae also show themselves in many varying forms in this unique habitat. *Guzmania diffusa* in flower were spotted growing on a steep rocky bank. It took a couple of attempts to get close enough to take some photos but getting to the plants themselves was impossible. The flower spikes were well over 1m tall with bright red stems and yellow branches. Growing just along the road were large colonies of *Guzmania oligantha* and luckily for us were in flower this year. This plant appears like a small sedge with its thin wispy leaves and caulescent habit, but the canary yellow flowers on red stems give it away.

We saw a related plant that was 2-3 times bigger and much more caulescent, but we had just missed its massed flowering. It may have some affinity to *Guzmania caricifolia* but has some distinguishing features of its own. Also growing alongside were *G. sieffiana* and *G. schezeriana*, both in full flower. Up in the trees were *Guzmania kressii*, which we saw last year well past their best, but this year they had seed exploding out of their old inflorescences.

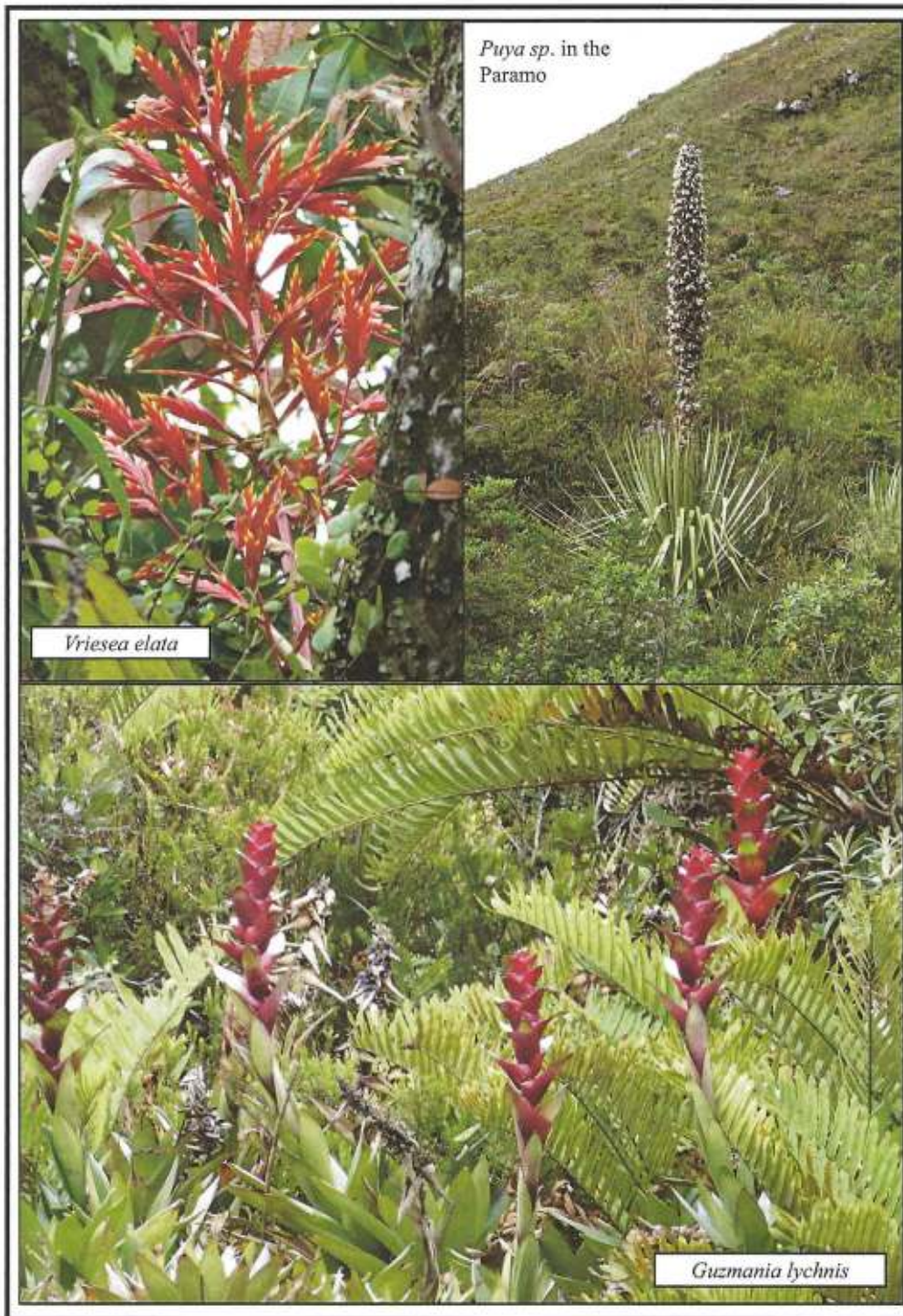
Part of my motivation to return to this road was that last year I had taken a couple of photos of something I thought was different to the *Pitcairnia multiflora* we had seen further south; unfortunately my images weren't particularly clear and they didn't show the plant's foliage. The plant in question is *Pitcairnia bicolor*, a plant collected in 1977 by the same group who collected *Guzmania rugosa* that we had seen and photographed last year, the first time that plant

had been photographed. So this time I was very careful to get good clear images of all parts of the plant to try to document a plant that hadn't seen a bromeliad enthusiast for a few decades. Growing along the same roadside was the biggest *Pitcairnia* I have ever seen. Its leaves are between 2-3 m tall with red edges and a very upright growth habit. I found old inflorescences this year with seed, so hopefully it could be flowered in cultivation to see what species it is. Two other undescribed species we saw last year were also found as well. The most ornamental was sent back with Emilio to try to get it growing in cultivation.

Truth be known, the real reason I was on this road was to search for a particular *Heliconia* that was described there in 1980 but unfortunately the forest it grew in is no longer there along the road from San Jose del Palmar, being cleared decades ago by the look of it. As we made our way back up the hill to the ridge at the end of an amazing day we discovered yet another two *Guzmania* species in flower. The first had thin pink bracts and I thought I might have found *Guzmania nidularioides* that we had found in a mature but not quite flowering state last year.

This pink-tipped plant turned out to be something potentially new and to me looks to be related to *G. circinnata*, while Harry Luther has suggested it is closer to *G. wittmackii* and if you look carefully you can see the similar habit of the emerging flowers. The second plant was still in bud but looked different to the common *Guzmania rosea*. I'll post it on the FloraPix website and see what suggestions I get as to its identity.

We returned to Ansermonuevo tired but elated with what we had found in just one day. We wandered around town discovering that all the different restaurants we had seen during the day had closed so we ended up at the lovely family run one we had eaten



Puya sp. in the Paramo

Vriesea elata

Guzmania lychnis

at the night before, opposite our hotel. The pork schnitzel was superb, washed down with a few cold Pokers, Colombian cerveza. Tired after a big day and a great dinner we retired for the night, to be woken again by the cannons at 5 in the morning. Dave counted and with misfires there were 22 explosions to wake the faithful... And not so faithful. Our rooms were pretty small and pokey and Ansermonuevo was dubbed the 'side-saddle toilet town', as you couldn't sit on the toilet without your knees ending up in your face due to the lack of space.

Our next drive was to take us over the central range again, this time near Manizales and over to Honda, down next to the Rio Magdalena again. As we headed up and gained elevation Tillandsias became common again in the trees along the roadside. *Tillandsia clavigera*, with its tall grey and black inflorescences, was easily spotted growing alongside the pendent *Tillandsia ionochroma*, *T. carrierei* and *Racinaea tetrantha*. Also growing in the trees was *Guzmania gloriosa* with its green and red tipped inflorescences visible from the road.

Vriesea (Tillandsia) tequendamae was also quite common along this road. We quickly gained more altitude and at the ridge line more species were visible; *Guzmania lychmis* with its red maroon spikes was very common flowering away in large colonies. It has a caulescent growth habit and its foliage is a metallic grey colour. Also growing high on the exposed rock faces at the ridge were *Racinaea gilmartinae* or forms of *R. tetrantha* as well as *Guzmania diffusa*. As we headed down the other side and towards the Rio Magdalena valley we spotted *Guzmania multiflora* with its bright orange spikes flowering alongside the road.

Once we were down alongside the Magdalena River we had to climb the Cordillera Oriental again as the eastern slope

was our next target. We decided to take the Cimatarra-Landuzuri-Velez road again as it was such a great road for Heliconia but not quite as good for bromeliads. I'm sure if you were looking you would find great plants but the Heliconia tunnel vision had me. A quick drive through the higher regions of Boyaca got us to a lake near Sogamoso. We stayed in a little villa right on the lake front, with an open fire to ward off the cool air of being close to 3000m elevation.

The next day we began the drive down the slope towards the Llanos region where all the rivers drain towards the Orinoco/ Amazon. We started by driving through a Paramo, which are high altitude grasslands where Puyas are the dominant bromeliads. We saw 3 species as we made our way to the start of the descent down towards the enormous grass plains that make up the Llanos. From the top of the hill, once we got below the tree line, we started to see *Tillandsia buseri*, another large showy species, this time with bright red spikes to 1m tall. Also spotted growing in the trees were large red and yellow *Guzmania squarrosa* as well as another *Tillandsia* species with very tall, pink, multibranching inflorescences that could have been *T. maculata* or *T. towarensis*. Next time I might try to climb the tree to get better close ups.

As we came around one corner the sight of a truck accident greeted us. One of the large trucks had rolled with the truck cab precariously clinging to the roadside and its trailer hanging over the side. There was another truck stopped and two truck drivers wandering around holding their hands to their heads, no doubt amazed at their luck in surviving.

As we could offer no real help and there were no injuries we set off on our way. Further down we were stopped again with roadworks and sat by the side of the road for an hour as concrete was poured to stabilise



N. 'Blushing Zebra' (Skotak)



N. 'Groucho' Skotak (Kiehl) unregistered



N. 'Delirious' Skotak (Cathcart)



N. 'Groucho' Skotak (Kiehl) unregistered



Neo. lilliputiana



Neo. 'Tiger Cub'

the road from falling down the mountain side. After our long wait it was time to get going again and right in front of us we watched in horror as a bus tried to overtake a truck that wasn't going to let the bus pass it; no doubt both were 1 hour behind their schedules. With neither driver giving an inch they proceeded to run into each other and a window was smashed in the bus.

Out everyone got and it looked like it was going to come to blows. With 1 hour's worth of traffic going nowhere we then had to wait for the police to arrive and do an insurance report. Steve and I set off walking downhill to try and find some plants rather than enduring another long wait at the side of the road. We ended up walking to a small town and were able to buy some icy cold beers that we happily drank in the shade.

Down on the flat lands below the range the trees were loaded in *Werahia gladioliflora* and occasionally we spotted the orange spikes of *Vriesea rubra*. I had hoped to try to get to the type locality of *Vriesea ospinae* var. *gruberi*, which would have meant taking another road back up the eastern range, but Emilio told me the area was still a little hot and we had to continue along the flat road to Villavenceio.

It is always the changes of elevation where diversity occurs and unfortunately the flat lands were very much the same in plants. From Villavenceio it was back up the range to Bogota and the bulk of this route was through tunnels, which didn't make for great plant spotting.

We had travelled more than 3000 km in our 12 days, which is absolutely ludicrous unless you are possessed by plants. I'm sure Emilio was glad to see the back of us after so much driving. I'm sure Dave and Steve have had their fill of plant hunting with me to last a lifetime, while I'm already thinking about my next trip.

Bromeliaceae

CHESTER SKOTAK'S NEW MINIATURE HYBRIDS

By Herb Plever

Chester Skotak has earned world renown as an outstanding and most prolific hybridizer of bromeliads

For many years he has lived and worked in a huge mountain area of Costa Rica outside of San Jose that was a former coffee plantation. He has a fertile and restless mind and imagination and a great nose for selecting bromeliad characters to create strong, beautiful plants. He has worked with many bromel genera and bigenerics, and he looks to create compact and light sensitive plants that most bromeliad enthusiasts grow. He grows an astronomical number of plants and seedlings

In his recent hybridizing Chester has been producing miniature neoregelias and pineapples, and he is now working on creating mini guzmanias. At the 2010 World Conference in New Orleans, Eloise Beach displayed a number of Chester's new miniature neoregelia hybrids. These are true minis that range from 10 to 20cm tall and 12 to 25cm wide! I don't have much information at this time about the guzmanias. One of the miniature pineapples was shown recently by Deroose Plants at the Tropical Plant Industry Exhibition in Ft. Lauderdale, FL and got the "Cool Plant Award". You can see why from the photo - this miniature plant has fruited five small pineapples that Chester says were sweet and delicious.

The neo miniatures are all complex hybrids; they are the results of a number of crosses, selections and recrosses from an original hybrid or hybrids. In later stages of the crosses, a new parent may be added to the mix because it has special characters that Chester wants to be transferred to the progeny. Of course, at this time Chester has not released information on the parentage of the new plants. When a hybridizer has developed a good hybrid with commercial potential, it is typical and understandable that he/she will protect the special formulas from the competition until the plant has been reproduced in quantity. Chester says he intends to register the minis with the B.S.I. Registrar, at which time the parentage will be revealed. In 2008 I took a photo of an unregistered variegated cultivar of Chester's *Neoregelia* 'Hannibal Lector' that was labelled *N.* 'Kouchala'. It had broad white margins and also white longitudinal lines of varying thickness running along the length of the green leaves and red cross bands. These matched the markings on adjacent leaves to suggest the pattern on *N. concentrica* cv. 'Tiger', one of the parents of *N.* 'Hannibal Lector'.

It is interesting to note (but likely coincidental) that more than a few of the new miniature neoregelias exhibit similar markings with the exception of the longitudinal white lines. 'Hannibal Lector's' other parent was *N. ampullacea* cv. 'Rafa', a tiny plant whose few upright leaves have strong, dark purple bands. And some of the new minis display that dark banding on their undersides.

Of course there are many other tiny neoregelias with similar banding that could be used to reduce the original parents to miniature sizes: *Neoregelias* 'Tiger Cub', *lilliputiana*, 'Wee Willie', the red form of *N. punctatissima* and others. In addition to these plants, there are two hybrids made by Chester that may have been a part of the

mini mix: (*Neoregelia carolinae* variegated x *N.* 'Hannibal Lector') and *N.* 'Morado'. The former hybrid is variegated rather than consistently albomarginated with strong red markings, and I think of 'Morado' because of the consistent albomargination on all but two of the new minis.

The above suggestions are wild guesses that I hazard to make without evidence solely to give the reader an idea of the range of possibilities and the complexities of hybridizing - an art and a skill of great magnitude possessed by the good hybridizers.

Nine of the miniature *Neoregelias* that were displayed at the 2010 World Conference in New Orleans are being grown by Eloise Beach for Chester at the Tropiflora nursery in Tallavast, Florida). You can see their photo and descriptions on line at tropiflora.com. With the exception of two minis, all are albomarginated with varying degrees of purple to red broken cross-banding, spots and dots. *N.* 'Palmares' has green margins around a broad white longitudinal stripe and has purple markings.

As you can see from the photo of *N.* 'Delirious', its shorter and broader leaves also have green margins around broad or narrow white stripes (it is 15cm high by 15cm wide), but the undersides of the leaves are dramatically marked with dark purple bars reminiscent of *N.* 'Rafa'. Michael's Bromeliads of Venice, Florida will have three of Chester's miniature neoregelias listed in its on line Spring Catalogue, michaelsbromeliads.com. These are plants that were selected and named by Michael Kiehl in a previous visit to Chester's place in Costa Rica. They have been named *N.* 'Zeppo', *N.* 'Groucho' (shown on this page) and *N.* 'Harpo'. The available stock of Tropiflora's and Michael's miniatures is limited, so their prices are high. When greater quantities become available, the prices will undoubtedly drop.

Chester still has many mini neos that have not yet been released for distribution, two of which are shown at the top. The next batch of these plants will be shown at the 2012 World Bromeliad Conference in Orlando, Florida. Chester says these miniatures should be grown in filtered sun for best colour and markings, but as always indoor growers will have to test each new cultivar in different light conditions to determine whether it will colour up well indoors. I think they will do surprisingly well in a good east, certainly south and west window - and even close under fluorescent lights. As Reginald Deroose has been growing some of Chester's pineapple minis, we hope that tissue cultures and fruiting plants may become available later.

The guzmania hybridizing is still in progress. Indoor growers are eagerly looking forward to seeing Chester Skotak's new miniature hybrid guzmanias. Our collective experience with this genus has been very satisfactory. Guzmanias easily adapt to different indoor environments, and they flourish and produce blooms that stay in vivid colour for many months.

In contrast to the Guzmanias, indoor grown Vrieseas are constantly attacked by spider mites even when the relative humidity is kept at decent levels. What we may consider a "decent" level of humidity (about 50%), is still a dry enough atmosphere for mites to thrive in. It is interesting that they mostly restrict their appetites to the soft, all-green leaved Vrieseas, and they seem to ignore the soft-leaved, all green-leaved Guzmanias as well as Vrieseas with markings such as *V. fenestralis*. This is true even when plants of the two genera have their leaves intertwined (when I have too many plants bunched together). The fussy mites will ignore the Guzmanias and devour the Vrieseas.

Introducing *xAechbergiopsis* 'PITA'

By Kerry Booth Tate
March, 2011

For many years there has been a bromeliad circulating in Queensland and N.S.W. labelled as *Hohenbergiopsis guatemalensis*. I purchased a specimen by that name at a Mt. Coot-tha BSQ show in 2008. On doing my homework post-purchase, I noticed there were two different-looking versions of this lone species of the genus on the FCBS photo index. The photo of the suspect version was submitted by Derek Butcher. His photo was of a plant grown by Ruby Ryde in Sydney, N.S.W. in 1996.

The three other photographic submissions were by John Buchanan of Pinegrove Nursery, N.S.W. (three photos), Eloise Beach of Florida, U.S.A., and Robert Read - the latter two published in the BSI Journal, 1982. The plants grown by Eloise are direct descendents of the type specimen of this species. Although the photos are all scanned pre-digital images, depicting various blooming stages with questionable true colour, the photographed Pinegrove plants do look to be the same - particularly the plant in the third image. Ross Little (Pinegrove Nursery) and Genny Vauhkonen (Jacob's Well, Qld.) have both confirmed that they grow the true *Hohenbergiopsis guatemalensis*. Therefore, it has been grown in Australia for many years, although not recorded in the Pinegrove "Ledger" and still elusive. Genny also grows the "furphy" plant with the erroneous label



Photos Above: The type specimen of *Hohenbergiopsis guatemalensis* flowering in Eloise Beach's garden, Florida, August 2010. Photos by Peter Tristram.



xAechbergiopsis 'PITA' flowering in Kerry's garden, The Channon, N.S.W., January 2010. Photos by Kerry Booth Tate.

- the same as Ruby Ryde's specimen, photographed by Derek.

Last year, Peter Tristram imported a plant of *Hohenbergiopsis guatemalensis* directly from Eloise's Florida garden. Down the track, it will be interesting to compare its inflorescence and growth habit to those which have been in Australia much longer – if they can be found!

(Ed. Please refer to photos on top of page 33)

Of course, Derek had long noticed the anomalies of Ruby's plant also labelled as *Hohenbergiopsis guatemalensis* - as surmised in the accompanying "Uncle Derek Says" link on the FCBS website. He wisely suspected the odd one out to be, more likely, a bigeneric hybrid, and awaited healthy debate with fellow sceptics – of which there was little...until recently.

My plant flowered in January, 2010. The unusual inflorescence looked identical to the same misnamed plant which Derek had photographed. It is definitely not *Hohenbergiopsis guatemalensis*.

So the question remained – What is it?

I sent my query to Detective Derek, with accompanying photos of the blooming plant. The case was re-opened. After considerable discussion, it was agreed that our mystery bromeliad is a bigeneric hybrid between *Hohenbergiopsis guatemalensis* and an unknown *Aechmea* – and deserves a registered cultivar name. Among the *Bromelioideae* genera, *Aechmea* best fits the general description below as the most likely other parent genus involved. Geoff Lawn, the Bromeliad Cultivar Registrar, was called in to adjudicate on an appropriate nothogenus classification. Because this is the first bigeneric hybrid recorded with that combination of parentage, the new nothogenus of *xAechbergiopsis* now exists.

Due to my defence of this pretty hybrid's worth, I was given cultivar naming rights. Considering Derek's complaint about this plant's habit of coming back and biting him, I thought the name *xAechbergiopsis* 'PITA' appropriate. Those readers who are familiar with contemporary acronyms will know what PITA stands for!

Description: Mature plant approx. one metre wide, in an open funnel-shaped rosette. Leaves lime green, becoming rose-flushed in bright light, 6cm wide, and 60-70cm long. Small spines along length of leaves, regularly spaced, with a soft terminal spine. Inflorescence 70cm high. Upright rachis densely lepidote, primary and floral bracts pink, petals blue-grey. Hybridiser and origin unknown.

In summary: If you have purchased a plant labelled as *Hohenbergiopsis guatemalensis* which matches *xAechbergiopsis* 'PITA', then I suggest you relabel your plant accordingly.

Many thanks to Geoff Lawn, Derek Butcher, Ross Little, Peter Tristram and Genny Vauhkonen for their information and opinions.

Growing Tillandsia

Notes by John Olsen

1. Pick the right ones

- Buy Locally as what is available locally probably suits your area
- Be careful when you go to conferences etc – you can "buy it try it" but you may kill it. I have a few plants which need more heat and humidity than Brisbane provides "on agistment" in Cairns.
- Rough rule of thumb is silver grey plants come from drier locations and green leaved ones come from moister areas

- Go through the photos on the web and pick good looking plants but then do some habitat research to find out if you will be making a good investment – good looking plants tend to cost more!

- If in doubt ask

2. Seed raising

- You can obtain seed from a variety of seedbanks. Brom Soc of Qld, Brom-L (but that involves importation so check rules), or members;

- Propagating from you own seed is not too difficult but in an insect proof shadehouse you'll need to pollinate. Plants in an open position are more likely to set seed but it may be hybridised for you.

- If you can see the pollen and stigma just smear pollen on the stigma.

- Sometimes one or other sex part is within the petals and you'll need something like a juncea leaf to bring pollen to the stigma;

- Many plants need "unrelated parents" ie a different clone to set seed.

- Seed is ripe when the pod is straw colour and gives a bit when squeezed. Put the pod in an envelope and allow to open. Then sow the seed;

- Sow on a medium with some grip for the seed and which won't rot. I use bits of shade cloth. Others use coir, insect screen., twig bundles, stocking over coolite.

- Mist regularly and allow to dry between misting,

3. Mounting/potting

- When your seed is about 5 leaf stage it can be mounted;

- I use corks which are becoming harder to get, pegs, and timber strips as initial mounts;

- In Brisbane some plants grow better potted but you will need to be careful with potted tillandsias in Cairns;

- Larger plants can be taken off the corks and mounted on large cork slabs, wood

offcuts etc – select something which will survive repeated watering over several years in your shadehouse

- Air movement is important for most tillandsia

4. Seeing the Light

- More light usually means more colour and better growth

- Most Tillandsia can be grown under 50% shade – many in full sun

- UV in altitude habitat often produces excellent colour

5. Fertilising

- Weakly and regularly

- Tank tills can be fed strongly for faster growth

- Need a seasonal regime – prepare plants for winter and heat with "tonics" like Seasol, and increased K Use something with more N in growing season and more K when dormant.

6. Trying the Wrong ones

- You can to some extent create microclimates for plants which prefer conditions different to your own- grow under cover if plants like to be dry (can't escape humidity though). You could simulate a cool dry area with air-conditioning. To my mind this is easier in temperate or dry areas where adding moisture or heating tends to be easier than cooling; OR

- Take them home and do your best

7. Clumps vs single specimens

- Tillandsia need patience and you may have to wait for flowers

- Many plants look better if allowed to clump – you just need to resist splitting them to recoup your costs.

- A single funkiana on a little cork is a bit sad but hang it for a few years and a large clump in flower is truly spectacular. Many of the cheaper plants clump well as their good reproduction rate makes them plentiful but no less beautiful.



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