Bromeliaceae

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Neoregelia 'Red of Rio'

by Derek Butcher 4/2011.

This article was prompted by discussions as to whether the variegated 'Fireball' is in fact a variegated 'Fireball' or a hybrid! It is interesting that this variant has not been given a cultivar name so it can be registered. Consensus was that it is a hybrid unless someone in the USA was playing with tissue culture - but such a happening has not been reported! As well as looking at 'Fireball' as grown in Australia we also looked at the variation in shapes and sizes on the alleged variegated form and it was inevitable that 'Red of Rio' would get involved.

Bromeletter 21(5): 14-15. 1983

LETTER BOX: Today the postman brought me BROMEL NEWS, the official Newsletter of the Ipswich Bromeliad Society, Queensland. The Society is to be congratulated on their activities, thus bringing bromeliads to the fore in their area. In the June issue, Mr Len Butt the Editor wrote about the controversy re Neoregelia Fireball and Neoregelia Rio Red. A reprint of this appears below, followed by my comments on a plant purchased by me from Mrs Olive Wills in 1967 as *Neoregelia* 'Red of Rio'.

"The interesting controversy that has developed about these plants at least warrants a few notes. Here below, as written in the catalogue of "The Bromellad Treasury" is "Fireball", a small compact 8 inch to 10 inch rosette of brilliant red, glossy 1 inch wide leaves that only reach their full brilliance in 50% sun. A small cushion of blue lavender flowers appear in the centre at blooming time. The plant spreads by radial stolons from each plant. It will make a beautiful wheel of plants in a hanging pot if the offsets are allowed to mature. In two years the wheel can be 3 feet across.

Rio Red on the other hand, is an excellent substitute for Fireball in those cases where the collector does not have enough light to keep Fireball red. Slightly larger than Fireball, with a diameter of 12 inches, it has reddish maroon leaves in a flat rosette, that sometimes develops some small green random markings. Rio Red spreads easily by stolons and has beautiful royal blue flowers deep in the rosette. Train the stolons to climb a branch for good effect. Bright light without sun will keep the red colour and it can be safely given up to 50% sun.

I sometimes think the labels on these plants must have been initially mixed, as according to one well known grower who brought his Fireball out from America, the latter is 'Fireball' and the former 'Rio Red'.

Just to add a little spice to all of this, here are a few paragraphs taken from GRANDE about the origin of N. Fireball, and please note the remarks credited to Lyman B. Smith about this plant. An article concerning the origin of Fireball appeared in GRANDE and stated that the famous plant explorers Nat de Leon and Ralph Davis found it as a great cluster of red rosettes growing on a tree at Sao Paulo Brazil, and Ralph Davis gave it the name of Fireball. (Butcher's note - This is a misquote where in fact it was in 1960 that Nat de Leon received a then unnamed single plant of Fireball in a bromeliad consignment from orchid collector Walter Doering of Sao Vicente, Sao Paulo State, Brazil .)

The author of the article said he received a single plant but found it difficult to flower in South Florida. Later Nat Deleon sent a flowering plant to Lyman B. Smith at the Washington Institute and received a reply stating that it was a species of Brazilian origin and it was then named Neoregelia

Neoregelia 'Greenball'
Photo by Geoff Lawn

Neo. 'Fireball from Bill' Photo by Butcher

Neo. 'Red of Rio' Photo by A. Steens

schultesiana. (Butcher's note - For further details on the mysterious N. schultesiana see article under 'Fireball')"

(In 1967 I purchased a small neoregelia from Mrs Olive Wills of Jannali, NSW under the name of *Neoregelia* 'Red of Rio'.

Can anyone else add to the history of this little plant gem? It is a small, rosette type, offsetting by stolons and ideal for hanging basket culture. It fits the description in Len's article on *Neo*. 'Fireball'.

I have seen one plant similar to the larger plant mentioned by Len, in a collection here on the Gold Coast, and will continue to check on it flowering, as it looks very much like the Oeser hybrid of *Neo. carolinae* X *Neo. ampullacea* = *Neo*. 'Petite No 1', and before I named the hybrids, released by me as No.38.

Neo. 'Petite No 1' is a smallish rosette type, offsetting on stolons, and reddens well in near full sun. At flowering time the centre takes on the red colour of the parent *Neo. carolinae*, thus making it easy to separate it from the first mentioned two plants in Len's article. I have also seen this plant in collections labelled *Neo. carolinae minor.*

Neo. 'Petite No. 2'. is smaller and more upright than No 1. It is a darker red, and does not colour in the centre at flowering time. I did not list it until recently, so do not think No 2 would enter into the controversy, O. Ferris. Editor.)

Bromeletter 27(5): 5. 1989

Questions and Answers

Q8. (Joan Williams, NSW).

For many years I called my miniature *Neoregelia* 'Red of Rio'. I was then told that it was *Neoregelia* 'Fireball' and that there was none called 'Red of Rio'. However, others say that it is a slightly larger and not quite as red a version of 'Fireball' and is called 'Red of Rio'.

I have looked through the "International Checklist of Bromeliad Hybrids" and also Derek Butcher's hybrid book but 'Red of Rio' is not listed. The nearest name I can find is 'Rio Red'. Could this be the plant that people call 'Red of Rio'?

A8. (Derek Butcher, S.A.). Yes, I did come across *Neoregelia* 'Red of Rio' but all the comments I got were hearsay and I didn't go into print on the matter. I'm not even certain if the name is of Aussie origin or the U.S.A. *Neoregelia* 'Rio Red' is allegedly a Hummels hybrid. At least this was what Brian Smith picked up from the various literature in the U.S. Being a Hummels hybrid its parents are unknown but I do not know if anyone has grown on any self-set seed from 'Rio Red'. *Neoregelia* 'Rio Red' has been used in Australian hybrids.

Neoregelia 'Fireball' is supposedly a true species, having been collected in the wild but the only reference I can find at the moment is on p.73 of the U.S. Joumal in 1977. Here it is said that this plant is known

in Europe as Neoregelia schultesiana. However, I have been unable to trace any botanical description.

Perhaps we may hear from Harry Luther on the subject.

In Adelaide we find that 'Fireball is cold sensitive whereas 'Red of Rio' (yes, we have one under this name!) is more hardy and looks different !

Is 'Red of Rio' the same as 'Rio Red' ? If I can get some sort of proof then it could go into the check list to save this sort of problem in the future.

Bromeletter 28(2): 5. 1990

Questions and Answers

A8 (Olwen Ferris, Qld.). Re the miniature *Neoregelia* 'Red of Rio' and *Neo*. 'Fireball'

I have owned *Neo*. 'Red of Rio' since early 1962. I bought it as an offset from a plant grown from seed which was said to be collected from the mountain overlooking Rio de Janeiro (hence the 'Red of Rio'). Offsets have been sold by me to collectors around Australia and I still grow it separate to the slightly smaller *Neo*. 'Fireball' that Grace Goode imported in the 1970's. Under Queensland conditions both plants appear similar, except that *Neo*. 'Red of Rio' is slightly larger.

The more I read this history the more I am convinced that Hummel's 'Rio Red' has not got to Australia. What seems to have happened is that 'Rio Red' and 'Red of Rio' have been interchanged on labels as the plant moved around Australia!

The spotting mentioned by Len Butt has me intrigued because a photo taken by Andrew Steens – see his latest book page 230 indicates that 'Red of Rio' is still being grown under this name in New Zealand. An earlier photo that Andrew sent me in 2008 shows it has spots on the leaves! We know that Olwen sold plants called 'Red of Rio' so perhaps this plant is still being grown in Queensland under this name.

There is another twist in that my Margaret got a plant from Bill Morris, Newcastle, NSW, in the 1980's that he called 'Fireball'. We know that Bill was a stickler for accuracy and this plant could well be linked to Olwen Ferris (See notes above). But, Margaret's memory seems to suggest that Elton Leme was involved even that long ago – but this is mere hearsay! Anyway it had spots and for want of a name we called it 'Fireball from Bill' because it was different to our other plants called 'Fireball'. I am sure others would have got 'Fireball from Bill' from Bill in those days so I will be adding detail to the Bromeliad Cultivar Register just in case someone in the future ponders why their 'Fireball' has spots on the leaves. Methinks there is a link with 'Red of Rio' somewhere.

In 2001 while on a working holiday at the Singapore Botanic Gardens I did see a plant called 'Rio Red' and the Gardens' manifest indicated it had come from Shelldance nursery in California, which as we know, was the home of Hummel. This suggests to me that it is authentic. I was able to acquire a photo, which is now in the BCR database.

Finally, we have 'Greenball' discovered by Luciano Zappi in 1992 but sent to Selby Gardens by Elton Leme, which can have the odd spot or two on its leaves. Spots and size in themselves do not a species make and yet as horticulturists we have three names to choose from, ignoring the many small hybrids that abound that have 'Fireball' as mother or father!

Got information about forthcoming events

email the Bromeliaceae Editor using the email address below

editor@bromsqueensland.com

Plant Glue

Author: Peter Paroz

Some years ago, there was a report of members of the Cairns Study Group experimenting with 'Sellys SUPA GLUE' for attaching epiphytes onto their mounts.

Following this news, I experimented with this material and found the results quite favourable. It has a good initial 'tack' so that small seedlings stay in place right away. Once set, the glue seems reasonably water proof and does not have any adverse effect on plant growth; and even appears to promote new root growth.

In spite of favourable results by some growers, I have never been game to commit small seedlings to hot melt glue.

Society Library

The Society has an extensive library of books which are available for borrowing by members who attend the monthly meetings.

This is a great resource for members, books cover the full range of topics from beginner to advanced growers.


Guzmania desautelsii
Guzmania musaica

Travels in Panama

Author: Bruce Dunstan

In the past when I have given presentations about some of my travels I always have someone offer to carry my bags or ask if they can join me on future adventures, even asking if they could stow away in my bag. This article about travels in Panama and the news that the International Heliconia Society is having their next conference in Panama, may convince some people that a trip to the Neotropics to see Bromeliads in their native habitats is possible. With preconference trips to Western Panama and Costa Rica and a post conference trip to the Western cordillera of Colombia what a great opportunity to get out and see plants in their natural habitat.

My first trip to Panama was in 2007 and within an hour and a half of arriving in the country, I was peering out the car window at bright yellow Heliconia buds growing in the forest on the side of the road wondering if it was in fact Heliconia xanthovillosa growing in the wild. Carla, my travel compadre, helpfully asked me, "Well, what else do you think you are seeing, with that colour?" So we stopped the car and began the adventure. Within ten minutes I had proved to Carla that I was potentially unhinged: I took off my shoes in two unsuccessful attempts to climb a tree to collect seed from a Werauhia kupperiana that was spreading its seed like thousands of dandelions through the wet forest. The abundant moisture and lack of traction meant I couldn't reach the prize I was after, but luckily on my second trip the same species was in seed again at a different locality and was in a much easier position to collect.

We entered the forest that afternoon and didn't pop back out for 11 days, traversing the length of the country. That plant trip was the first that I had spent with such little precious down time - it was all action. I realize now that each trip I do with Carla and her husband, Angel, is the same and it just goes to prove some people make the most of the opportunities that come their way. After all, life is short and there are lots of plants out there.

Panama is a long thin country running from west to east. It joins Costa Rica on its western boundary and attaches Central America to South America where it joins Colombia in the famous Darien region. Along the length of the country runs a spine of mountains and up in the hills there remain forests that haven't been cleared for farmland, like that on the Pacific coast. The Caribbean side of the range is still widely untouched as the humid winds from the Atlantic rise up the mountainsides and dump their moisture almost year round, creating very wet humid regions that are slowly being cleared and developed for people to settle along the newly built roads.

Two hours drive from the capital city is El Valle. This is the 2012 Heliconia Society International conference location and is an historic little town nestled in the floor of a long-extinct volcano. The town was one of the first places that the wealthy people of Panama City would escape to on weekends, heading to the mild highlands to escape the heat, humidity and noise of the capital. El Valle has a range of hotels and other accommodation. Both hotels I have stayed in were clean and tidy, one overlooking the surprising hustle and bustle of the main street on Saturday night, plus hot water and a very efficient laundry service. The other was off in the quieter suburbs, so to speak; charming, until you stepped into the cold shower! The town's market is a thriving centre for local artisans


Aechmea allenii
Guzmania elvallensis
Guzmania calamifolia Rosaceae

selling handmade Panama hats, soapstone toucans etc. and has in the past been a place where exotic plants were taken for sale after their removal from the surrounding forests. This latest trip we noticed signs prohibiting the sale of plants collected from the forest and saw none for sale at the market. If you are considering bringing your beloved partner to the coming conference, El Valle also offers the curative powers of massage, day spas with beauty treatments as well as meditation establishments.

Towering over El Valle is Cerro Gaital, a tall mountain within the ring of the old volcano 5 minutes drive of the centre of town. The forest that remains on the mountains surrounding the town and the many chicken farms up behind the hills is full of Bromeliads: P*itcairnia atrorubens* var. *pallidobracteata* and Pitcairnia funkiae with nearly 1m tall dark purple inflorescences, *Guzmania musaica, Ronnbergia explodens, Aechmea pubescens , Aechmea mexicana* and *Guzmania elvallensis* which was flowering with its small, club-like inflorescence covered in clear mucilage protecting the developing flowers from marauding weevils. As you climb the mountain you come across *Guzmania calamifolia* var. *rosaceae* with its small, delicate, pink and white inflorescences and pleated leaves. Higher are the larger more robust *Guzmania plicatifolia*, another species with pleated leaves, with orange and yellow flower spikes. Even higher we saw clumps of pure yellow individuals. The forest is loaded with Heliconias, Aroids, Palms, and Gesneriads of every description plus many more interesting plants.

It was up here close to the summit that I climbed a tree to get a photo of a nice individual of Werauhia lutherii, a large silver vase-shaped plant. As I got up to eye level with the plant I could see the bright orange and black scales of a snake wrapped up inside the rosette. Asking Angel, who was standing below me, what sort of snake it might be, he quickly let me know it would be best if I left the snake to its own devices and down I climbed without a photo from the top. You'd think a snake up high in a cloud forest with no sunlight would be pretty slow moving but best not to find out. I was also told it was the best way to get the Panama military out in their helicopters as they always go and rescue snake bite victims.

When standing on the mountain look-out on Gaital on a clear day, you are treated to the amazing view of both the Pacific and Atlantic oceans. This viewpoint is reached by a well-maintained nature trail which is readily accessible to people of all fitness levels. We also took the opportunity this year to travel down a new road heading off into the Rio Indio watershed. Towards the Caribbean coast we were treated to beautiful *Anthuriums*, *Calatheas* and *Araecoccus pectinatus*, a pendent red-flowered bromeliad, all growing along the roadsides. As we travelled down the smooth new road losing altitude through newly created farms and gardens, we came across two new *Heliconia* Hybrids within just a couple of hours which, for us, was quite exciting

Just up the Interamerican highway from El Valle, heading west towards Costa Rica, is the famous plant town of El Copé. It is another mountainous area that has patches of forest that have been spared the clearing of the Pacific coast for agriculture. As we headed up the hill from the dry Pacific coast that has been pretty much cleared of all forest, we stopped to look at Plumerias growing amongst the stony hills. Once out of the car we could fossick about and quickly discovered an orange flowered *Pitcairnia* clinging to the rocks. This turned out to be *Pitcairnia chiriquensis*.

El Copé is famous for the amazing


Cochliostema
Chevelaria veitchii
Pitcairnia atrorubens var. *Pallidobracteata*

plants that grow in the forest; included in them are the *Zamia pseudoparasitica* that grow epiphytically high above the forest floor with fronds a good 2m or more in length. *Geonoma epetiolata* is a small entire bifid leafed understory palm that has beautifully patterned leaves that are covered in purple red spots as they emerge. Another plant that has come from this locality that you may have heard of is a *Guzmania* species that is awaiting publication; it is the subject of the novel written by Chester Skotak titled Searching for Miss Fortuna. The original collection of this species was made by John Kress and Harry Luther in the Fortuna area, closer to the Costa Rican border region. The El Copé form, which has a more cone shaped inflorescence, has been tissue cultured in Europe and is becoming a popular flowering houseplant around the world. This species has been found in other localities in Panama but it prefers the moist forests on the Caribbean side, also the least developed with precious few roads. One of my fondest memories at El Copé during wet season was the change in the weather from morning to afternoon; we would head off on a morning walk in bright sunshine, but after lunch the cloud comes down, making it very difficult to see other people more than 10m away. I've heard of collectors of old using fishing line tied to their vehicles to ensure they could return after dropping down the hill into the cloud-laden forest.

Werauhia lattissima were common with dark maroon leaf undersides and very broad blunt leaves, as well as *Werauhia kupperiana* and *Werauhia sanguinolenta Rubra*, *Guzmania elvallensis, Werauhia insignis, Chevelaria veitchii* and *Aechmea allenii*. Once again the forest is dripping with Heliconias, Aroids etc. The flora in this part of the world need to compete with each other to encourage hummingbirds to come and visit and pollinate their flowers, so colour runs rife in these forests.

The next road crossing over the mountainous spine that runs along Panama, is to the town of Santa Fe. This is where the beautiful and incredibly rare Heliconia bella grows. Carla and Angel were able to find this rare and thought-to-be-extinct species after much searching, and the presentation Carla gave at the 2004 HSI conference in Puerto Rico convinced me I needed to go to Panama and see it for myself. The walk to get up into the mountains behind Santa Fe to see H. bella in habitat is an arduous one. Now that I've done it twice it's getting easier, and being able to take one's time, like this year, was much more pleasant.

The previous trip we had to do the trek and be back in Volcan, 4 hours up the highway minimum, in one day, which was quite a tight timeline. We had torrential rain to deal with on this year's trip and decided we didn't need to get to the summit. With the rain, visibility was limited and the thought of getting struck by lightning on the grassy summit also made the decision to turn back an easy one. Getting down the trail with an umbrella and staying upright can be difficult, especially if you are bent over busy looking for poison arrow frogs on the forest floor. We saw a bright green and black frog on our first trek and I'd swear it's the same species I've seen at the top of the hill at Lyon Arboretum above Honolulu in Hawaii. The Hawaiians have the most exotic feral pests: Chameleons, Cockatoos, fluro Geckos and Poison Arrow Frogs. They also have Cane Toads.

Down around the town of Santa Fe we saw *Tillandsia monodelpha, T. fasiculata, T. bulbosa, Aechmea haltonii, Werauhia gladioliflora, Guzmania monostachya*; higher up were *Guzmania desautelsii, Pitcairnia squarrosa, P. valerii, G. spruceii, G. clamifolia* var*, rosaceae, Werauhia ringens* and *W. hygrometrica* with its patterned leaves. Also

what maybe a natural hybrid of *Aechmea mexicana* and *A. allenii*. As we came down we wandered into an old citrus plantation that was loaded in *Werauhia lutheri* and *Guzmania sanguinea* that covered the trees in bright red clusters, almost like looking at Christmas decorations.

After Santa Fe, heading east towards Colombia, there are only two roads crossing the isthmus. The road along the Canal has been heavily studied over the years and being a low land crossing, best avoided if you are looking for interesting plants, not that there is anything wrong with lowland sp., it's just that with a little elevation or change in elevation nature seems to go crazy with speciation and a whole range of diversity that you don't see in the lowlands. Give me a mountain to climb any day! The only other crossing is the El Llano-Carti road. Before my first trip in '07 I consulted the Lonely Planet Guide on the localities Carla was suggesting we travel to. The 1990 edition said that if you wanted to travel this road you would need a strong 4WD with big tyres and a winch to get up one hill; from there the road degenerated into an indistinct trail, and that you would need an armoured personnel carrier to reach the end.

Thankfully, in the subsequent 7 years the road has been upgraded to a mixture of paved and unsealed dirt. This year the road has been further improved to make it a pleasant drive in the country, with spectacular plants growing on the roadside verges - perfect for car-seat botanising. Both times we travelled to this region we stayed at the Nusagandi Kuna Indian meeting facility. It has dormitory accommodation with red and white check tablecloths for sheets, plus a separate kitchen and eating building built high on the hill, giving great views down to the Caribbean Sea and the many islands inhabited by the Kuna. The view from the toilet, if you leave the door open, is of a tree swathed in *Guzmania musaica* with *Guzmania scherzeriana* higher in its branches, as well as Cochliostemas, Orchids, Ferns and Aroids. One of the highlights of this place is having troops of small monkeys climb through the trees that overhang the kitchen and large numbers of hummingbirds feeding on a large white-flowered Posequeria? Rubiaceae tree next to the eating area. The Kuna gained autonomy of their tribal lands in the 1930s after some ferocious battles with government troops. The Indians still live offshore on islands and retain their forests for hunting, resisting any attempts to log or clear their forests.

While walking in the forest looking for plants we were able to find lots of *Guzmania lingulata*. These are sought after as parent plants in breeding programs as they produce copious amounts of pollen every day when flowering. This is essential for breeders who are working with hybrids that may not produce much viable pollen. The ubiquitous *Guzmania spruceii* was also very common and all seemed to be flowering at the time of our visit.

On my first visit I was surprised to see a plant that appeared to have a faint pattern to the foliage and it was also the shape of a patterned leaf Vriesea. It was well past flowering and had a thin tripinnate inflorescence. It was later identified as *Tillandsia pinnata*. Flowering examples of *Racinea spiculosa*, *Tillandsia anceps, Werauhia vittata, Pitcairnia arcuata* and *Aechmea cf. dactylina* were also spotted. There were another couple of finds in the forest at Nusagandi that will stick in my mind forever. One was large colonies of a black leaved Cyclanth growing right in the middle of a creek. These plants grow to 30cm tall with heavily pleated bifid foliage, in stunning black. Angel found one individual on the previous trip and it was something I

had been hoping to see again this time but I wasn't expecting to see such a large populations. The next plant falls into exactly the same category – rare!

On one of our walks in '07 we came across a variegated Cochliostema, related to Tradescantias and Rhoeos, which appeared to have fallen from its perch high in the trees. The plant was wider than 1m across and heavily banded in green and gold stripes. I only collect seed due to the harsh import requirements to bring live plants into Australia, so wasn't able to take it home with me. Carla and Angel were not interested in hauling around Commelinaceae, even one as spectacular as this. I knew it was doomed as it lay on the forest floor, smack in the path of machete blows from the Kuna that keep the trail groomed, and well away from the bright light it would need to sustain itself due to its limited photosynthetic potential. Prior to getting into the bush on the last trip I had showed travelling compadre, Bill Fitz, an image of the plant and he was amazed; we joked it might still be there but knew it had almost no chance of surviving three years in the middle of the path. As we walked the same trail but in the opposite direction to last time I could feel myself speeding up thinking we were getting closer to the spot where it had been growing. Incredible! The plant was still in the same spot although it had been chopped, and now consisted of five small plants all clinging to the original plant's swollen stem.

The next item on the highlight reel is not directly plant-related. We were finishing a loop trail, and were about to pop out of the forest onto the roadside, when I slowed down to traverse a fallen tree that had an Epiphyllum cactus growing on it. I got within 2m of the tree when I saw, coiled up on top, a snake. I have no major fear of snakes but I do have a healthy respect of them! My travelling companions were rapidly coming down the hill, full of the exuberance of a great day in the bush, and were making an absolute racket as I was whispering 'Snake! Snake!' and remaining motionless. But they weren't listening to me and kept coming, so I had to raise the volume and shout 'Snake! Snake!' while still trying to remain frozen to the spot. Eventually I made my point and everyone skidded to a halt. We took some photos and carefully made our way around the snake without disturbing it. We showed our Kuna hosts the image and they nonchalantly said it was a nasty one, but really, the smaller individuals were more dangerous. We showed the image to Angel on his return and he identified it as a fer de lance - best avoided for sure!

This gives you a brief insight into what you may encounter in Panama should you decide to join us for the Conference in 2012. I look forward to seeing you there as I'm already looking forward to getting back to Panama. If you are hoping to see Heliconias in their natural habitat, Panama is an easy place to see plenty. On my first trip, Carla and Angel showed me 39 species or subspecies and of these, 35 I had never seen in habitat before. For a small country the diversity is incredible. Add to that three hybrids from this year's trip and it's heading towards overload, if there's such a thing with Heliconia! If you are looking for Bromeliads you could easily double or triple that number. They grow on everything, the locals refer to them as Parasitos, regularly stripping them off their trees fence posts etc. and carefully mounding them up before setting fire to them. Information on the conference is available from www.heliconia.org .

I would also like to take this opportunity to thank my travelling partners Carla Black, Angel Rodriguez, Steve Villiers, Dave Lloyd, Bill Fitz and Mark Paul who travelled with me through Panama and tolerated my behavior when the siren call of the plants

Tillandsia 'Kaoldii' or is it '*kolbii*?

by Derek Butcher May 2011.

The main problem with mis-spelling is the fact that it gets carried on like the plague but even down in Adelaide I know that plants are being grown under this peculiar name in Queensland. I know that your editor is always asking for articles or letters for your Journal and simple research by the purchaser could easily have prompted a letter to the Editor. There is a wealth of information on the internet where they even help with spelling.

Names are important because it means you are comparing like with like. Humans get very up-tight if you call them by the 'wrong' name so why not plants.

In this case you need mental gymnastics to link kaoldii with kolbii but if you saw a 'kaoldii' and knew what a kolbii looked like, your problem would be half solved.

"Only half solved?" I hear you ask. Well, the full answer we can blame on the taxonomists and growers only half listening.

Forty years ago everybody knew what a *Tillandsia ionantha* looked like and if you were lucky you may have had a *T. ionantha var. scaposa*, which needed more shade than your tough old *T. ionantha* and came from Guatemala. The other difference was the inflorescence which is nestled in the leaf rosette for *T. ionantha* but raised for the variety *scaposa*.

Thirty years ago an odd plant was found in Oaxaca, Mexico and was called *T. kolbii*. It had some similarities to but was hastily considered to be the same as the Guatemalan *T. ionantha* var *scaposa*.

A species name has a higher rank than a variety so we had a temporary name change to *T. kolbii*. This was great for the nurseries because here we had a plant with two names so it could be sold twice! On the taxonomic side of things Peer pressure changed that hasty decision and we now have a very rare *T. kolbii,* probably disappeared in the wild and only grown in a few collections in Germany and Austria. BUT NOT Australia.

We are left with the old var. *scaposa* which to help you write out labels, is now known as *Tillandsia scaposa*.

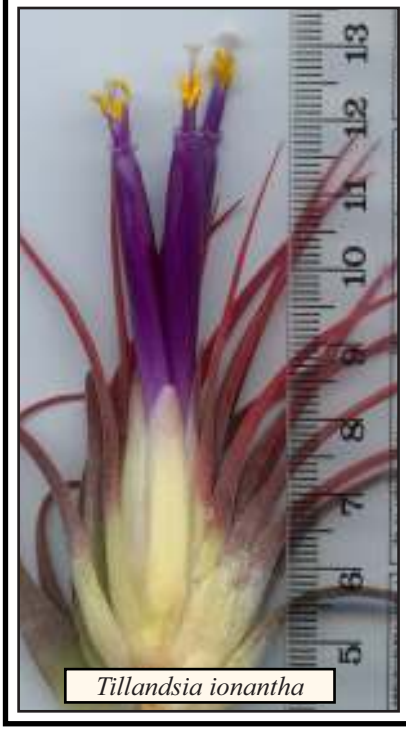
So if you have plant called *T. kolbii* or *T. Kaoldii* (shudder shudder) then change its name to *T. scaposa* BUT only if the inflorescence protrudes!

The BSQ Web Site

Don't forget that the society has a web site. We place urgent and general information and information on the site.

The URL is:

www.Bromsqueensland.com



Photos of *T. ionantha* and *T. scaposa* (top and left) by Derek Butcher, photo below of *T. ionantha* by Ross Stenhouse

Plant Nutrition Sulphur: The Forgotten Element

Author: Peter Paroz

The reason I regard sulphur as the forgotten element is that it is rarely discussed as an element essential for plant growth.

Benzing[1] lists sulphur as the macro nutrient required in least proportion; ranking after magnesium at about one third the rate for magnesium. Sulphur is an essential component of certain amino acids and other biological compounds.

It is difficult to find information on the signs of sulphur deficiency. This is probably due to the components used in compounding fertilisers. Most garden fertilisers include superphosphate; and the manufacture of 'super' ensures that there is adequate sulphur in the final fertiliser.

For the soluble fertilisers, widely used for bromeliad and orchid culture, the preferred source of potassium is potassium sulphate and this ensures that there is adequate sulphur for the plant's requirements. In this respect, there is apparently an over abundant supply of sulphur without any indication of sulphur toxicity!!

In short, growers who use any of the popular soluble fertilisers need not worry about sulphur nutrition. However, for large scale users who may blend their own fertiliser, some caution is indicated.

Using the cheapest available sources for the NPK, it is possible to blend up a minimum cost fertiliser with an NPK**of 18:4.6: 26. (3kg urea, 5 kg DAP (di-ammonium phosphate) and 2 kg potassium chloride).

Not recommended. This combination is devoid of sulphur (calcium and magnesium as well). Unless these elements are available from the components of the potting mixture, plant growth will be restricted and abnormal.

[1]TheBiology of the BROMELIADS by David H. Benzing

Ananas for the Cut-Flower and Garden Markets

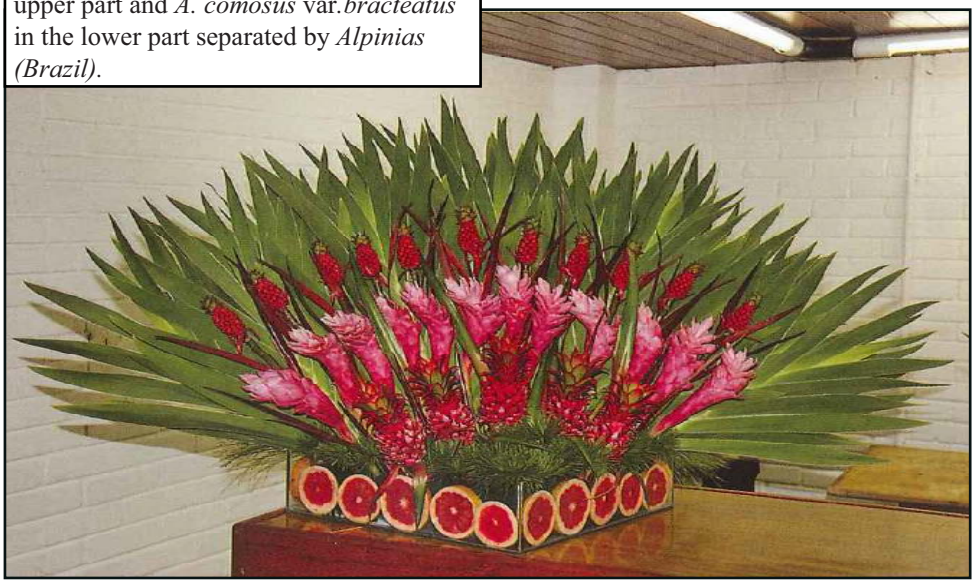
By: Garth Sanewski, Senior Horticulturist at Dept. Of Employment, Economic Development and Innovation, Maroochy Research Station, Nambour, Qld.

Bromeliaceae is a plant family well recognised for its extraordinary diversity of species with ornamental appeal. The genus Ananas, which includes the edible pineapple and its close relatives, is better known for its fruit, fibre and pharmaceutical uses. Some of the more primitive types of pineapple do however have some ornamental appeal.

Brazil, the home of the wild pineapple, has an expanding ornamental pineapple industry with a strong market established in Europe, principally the Netherlands, Germany and Portugal and smaller markets in England, France and the USA. Plantings are mainly in the northern state of Ceara, Brazil where there are approximately 50 ha. Here, ornamental pineapples are second only to roses in production importance. The main varieties are the inedible, primitive varieties *A. comosus var.eretifolious* (Selvagem 6) and *A. comosus var.bracteatus*. The main products are the pre-flowering buds, and the small, decorative fruit on a long stem (see Figures 1 and 2). The principal market appears to be for the decorative fruit with a progressively higher price paid for longer stems. Small markets also exist for the foliage of Selvagem 6 and small plants of Selvagem 6

Fig 1 Annas buds, *A. comosus* var.*eretifolious* and *A comosus* var. *anassiodes* (right image) and *A. comosus erectifolious* decorative fruit in Brazil (top image).

Below :Fig 2 A display with *A. comosus* var.*eretifolious* decorative fruit in the upper part and *A. comosus* var.*bracteatus* in the lower part separated by *Alpinias (Brazil)*.



in tubes. Foliage pieces are longer than 70cm. Decorative fruit are 8-10cm long with a small well-formed crown and a stem of 40-80cm. Selvagem 6 accounts for 75% of all exports. It is sold as *A .lucidus. A. comosus var. bracteatus* (sold as *A. porteanus*) accounts for 24% and *A. comosus var.ananassoides* accounts for 1%.

In Australia, The Department of Employment, Economics Development and Innovation has conducted a fresh market pineapple breeding program at Maroochy Research Station since the early 1990's. In the course of expanding the pineapple germplasm collection, several accessions of wild pineapple types were imported from Brazil including the main Brazilian ornamental varieties, Selvagem 6 and A. comosus var. bracteatus. A small scale breeding program was also conducted to explore the potential for developing improved types that might have value in the cut-flower or garden amenity's industries. Several promising selections of decorative fruit and flowering types were made. Two of these are shown in figures 4 and 5. Further work is needed to investigate opportunities both on the domestic and near export markets.

Consider Growing Vrieseas

by Ervin Wurthmann

Editorial comment (Bob Reilly): Reprinted, with permission of the Bromeliad Society International, from the Journal of the Bromeliad Society, May-June 1995, v 45 (3), pp110- 112. Ervin Wurthmann grew, and hybridised, vrieseas in southern Florida in the United States of America. Growing conditions there are similar to much of coastal, southern Queensland, although freezing weather occurs periodically. When Mr. Wurthmann wrote this article, the genus Alcantarea was still part of the genus, Vriesea. The current genus name has been included in the text, where needed.

Vrieseas have enjoyed popularity in Europe for over 100 years. Demand for these plants has fostered many hybrids, of which many are still in the trade today. Vrieseas vary in size from less than six inches in diameter to a size with a spread of over five feet.

The smooth-edged leaves may be spotted, blotched, or barred with eccentric markings. The inflorescence usually bears a flattened or distichous spike with yellow, red, green, or purple bracts while remaining in color for several months.

CULTURE

Light.

Vrieseas are not hard to grow. They do not require as much light as the neoregelias but will thrive under higher light conditions than once supposed. Some of the vrieseas with thin, green leaves will take on a rose or dark purple hue at the base if the plant is grown as bright as 65% shade on an all-day basis.

Soil mix.

Soil mix should be well drained to permit frequent watering, which vrieseas prefer.

potting.

I am not an advocate of over-potting having flowered *Vriesea hieroglyphica* in a 5 inch pot. It is well to add turkey grit or fly ash if you wish to grow *V. fosteriana, gigantea, gigantea var. seideliana, hieroglyphica,* (*Alcantarea*) *imperialis* in a situation where ample watering occurs.

Feeding.

Most vrieseas require a higher level of feeding to grow a top quality plant than do neoregelias. It can be accomplished by top-feeding on the medium with Osmocote, Sure Gro, or Nutra Coat, all slow-release fertiliz-

Fig 3 Variety 34-76, a variety with potential for the bud market

Fig 4 Variety 'Anna'

ers that provide long-time feeding. Soluble fertilizers may be used when watering.

Pests.

Pests are few. Soft brown scale can be controlled with Diazinon, Cygon, or Orthene. Occasional fungus can be handled with Dithan M-45, Captan, or Banrot. Read labels thoroughly as dosages will vary according to the material used.

Applications.

Small vrieseas are ideal house plants because they will endure relatively low light conditions and are not demanding in terms of temperature and humidity.

The more closely the grower can meet ideal light and humidity the more attractive will be the plants. Most are rewarding with their inflorescences that retain their bright colors for many weeks. Many vrieseas are satisfactory bedding plants where the winters are mild and moderate shade can be provided.

Some of the larger varieties such as *Vriesea altodaserrae, atra, neoglutinosa, phillipocoburgii, tuerckheimii* and *Alcantarea edmundoi, imperialis* and *vinicolor* would do well with almost full sun in frost-free areas.

SELECTION

After reading price lists and visiting collections you may want to make a list of the plants you would like to have. Aside from the matter of size, which may be the main consideration, there are other things to think about such as special requirements for air circulation and protection from cold. In some cases there may not be enough information about which plants are cold hardy and which ones are not. In such cases you may have to guess, or resort to learning where plants came from and how high, how dry or wet the original growing conditions. The easiest is cold-hardiness so we will begin there.

Cold Hardy. Nearly all of the Brazilian species and their hybrids possess considerable cold tolerance. Many of them are as tough as neoregelias and can be grown outdoors in the Tampa Bay, Florida area.

The most cold tolerant ones are those with green leaves. They include: *Vriesea altodaserrae, atra, bituminosa, bituminosa var. minor, carinata, ensiformis, erythrodactylon, flammea, friburgensis, incurvata, phillipocoburgi, platynmea, psittacina, rodigasiana, schwackeana, simplex*, and *vagans*.

Species somewhat less tolerant of cold include those with more decorative foliage such as *Vriesea fenestralis, fosteriana. gigantea, gigantea* var. *seideliana, hieroglyphica, saundersii, tuerckheimii* (from the Dominican Republic was collected by the author in an area where frost occurred) and *Alcantarea imperalis*. *Vriesea heterostachys, racinae*, 'Red Chestnut', and *sucrei* are reasonably cold hardy, but should be protected from frost and subfreezing temperatures.

Not cold hardy. Central American and northern South American vrieseas are for the most part not cold hardy. These varieties will require greenhouse protection during the colder months. They include: *Vriesea chrystostachys, glutinoa. heliconioides. malzinei, rubra*, and *splendens*.The really challenging group. Another group for which, unfortunately, there is no record of hardiness in Tampa, Florida are those of the gray-leaved types, which somewhat resemble tillandsias. These vrieseas are frequently xerophytic in their native habitat and for that reason require a different method of culture. *Vriesea appenii. barclayana, chontalensis, cylindrica, espinosae, heterandra, hitchcockiana*, and *rauhii* are best mounted on cork bark, tree fern plaques, or some kinds of wood. Occasional spraying with a dilute, soluble fertilizer is beneficial. Since some members of this group are from high altitudes it is possible they may be somewhat cold hardy.

A real challenge to vriesea culture is the group sometimes known as the thecophyl-

lid vrieseas. These occur in the higher rain belt of Costa Rica, Guatemala, Honduras, Panama, and the Caribbean islands. Species such as V*riesea leucophylla, ororiensis*, and *sintenisii* have spectacular inflorescences while *V. montana* has sensationally coloured foliage.Cultivation of this last group is difficult and almost impossible in warm, humid areas. I have seen very presentable specimens in California. These plant s prefer to be mounted on wood so that there is ample air drainage around the roots. A greenhouse with fan and wet wall cooling will enhance your chance of getting them to survive. They should be watered only enough to keep them from dehydrating. It is not likely they will tolerate any degree of cold.

Membership Renewal

It's time to renew your membership of the Bromeliad Society of Queensland

Cost:

Single: $35
Family: $40

You can either pay your membership at the meetings or post it in to:
The Membership Secretary
P.O. Box 565 Fortitude Valley
* Membership becomes due 1st January each year

Quilling

by Jerry Raak, Gahana, Ohio

Editorial comment (Bob Reilly): Reprinted, with permission of the Bromeliad Society of New Zealand, from Bromeliad, August 2004, v.44(8) pp12-13. Quilling, see photograph opposite, periodically affects plants from most bromeliad genera. In this article, causes and cures for this condition are discussed.

What's that, your bromeliad is growing up looking like a soda straw? It is probably the victim of what is commonly known as 'quilling'. Quilling is the cementing together of the leaves, causing the plant to be very tubular in shape. It is generally caused by lack of good moisture while the plant is in an active growing period.

I have found through my years of growing that certain genera are more susceptible to quilling than others. These genera are vriesea and guzmania. Rarely do aechmeas quill, although I have *Aechtnea racinae* var *tubuliformis* and *Aechmea* 'Foster's Favorite' quill. Within the genus vriesea, certain hybrids and species are notoriously consistent in quilling. Among these are *V. x morreniana, V. ensiformis*, and unfortunately, *Vriesea* 'Viminalis Rex' x *V. hieroglyphica,* which is a superb hybrid with nicely banded foliage and a fantastic, long lasting, branched, blood-red inflorescence with, of course, yellow flowers.

Within the genus guzmania the most likely to quill are *G*. 'Feurn', *G*. 'Fantasia', and occasionally *G*. 'Exodus' In addition, other species of guzmania and vriesea will quill if grown very dry.

Besides dry conditions, some plants, both species and hybrids, are more susceptible because the leaves secrete a very sugary, and sticky substance known as 'Honey dew' which, if not washed off regularly and thoroughly, causes the leaves to cement together. Cold night temperatures with very low humidity will help the 'Honey dew' to thicken and speed up the process, and in particular young seedlings are extremely susceptible to quilling during this time.

Prevention

To prevent quilling, one must maintain high humidity, or, quite regularly flush the plants out with water to thoroughly wash away the 'Honey dew'. There is no better way to do this than to expose the plants to a long hard rain, be it spring, summer, winter or autumn. Taking the plants to the shower with you may sound silly, but an equivalent bath procedure is very beneficial.

Bathing a bromeliad? Maybe it sounds crazy but it works not only to prevent quilling, but also to cure it. If you have a plant that is quilling, take a mild liquid detergent, and put several drops into the tight centre cup and fill it with water to overflowing.

This procedure should produce lots of suds. The soapy water will dissolve the hardened sticky substance and then with the gentle use of a flat but blunt object, such as a plant marker, the leaves may be loosened from the outer-most to the innermost of the leaves around the quill. Make sure after loosening the leaves that all traces of the soapy water are flushed off the leaves with lots of water.

A soapy water 'recipe' to prevent Quilling:

Our life member, Len Trotman, has put together this tried and true 'recipe.' Note that although it will cause foaming to the centre of the plant it can be left in without any harmful effects. It's also effective against mosquitoes, slugs, snails and other insects.

- 500mls., of Sunlight Liquid (dish washing liquid)
- 200mls., of household cloudy ammo-

Above images - *Aechmea* 'Purple Gem' - On the left is an example of the plant as it should be, on the right is an example of extreme quilling, both plants are about the same age and height. Image below - *Ae*. 'Covata Too' an easy to grow Aechmea .

nia

- 100mls.. of citronella or Pine-o-Cleen disinfectant

Mix all above into container with 5 litres of cold water

As this mixture is very concentrated use only at 2 to 4 tablespoons per litre of water in the spray solution and or 1 litre in main 200 litre holding tanks with liquid insecticides, fertilizers or fungicides.

Note: The mixture is compatible with, and can be used in conjunction with, 'ORTHENE' ... 'ATTACK' ...and 'BRAVO.'

Using Liquid Fertilizers

(by Bob Reilly)

The regular use of liquid fertilisers improves the growth and flowering of many bromeliads. This article may help you achieve these results. There is a lot of debate as to which bromeliads benefit from liquid fertiliser. While an individual plant's response will depend on many factors, for example whether there is sufficient light and water for it to use the nutrients supplied by the fertiliser, some groups of bromeliads are more likely to respond better than others.

As a general rule, bromeliads in the Tillandsioidea group (sub-family) respond well to liquid fertilisers. These cover genera such as: Alcantarea, Catopsis, Guzmania, Racinaea, Vriesea, Tillandsia and Werauhia. While bromeliads from other sub-families may also respond well to liquid fertilisers, problems such as plant "malformation" and loss of leaf colour can arise.

So, it is best to proceed with caution in such cases. The "best" liquid fertiliser to use is the subject of much debate. A lot depends on your growing conditions including water supply. Probably, the key factors in deciding which liquid fertiliser to use are the amounts of nitrogen, phosphorous and potassium.

These are represented by the symbols N, P and K respectively.

As a general rule, aim for those liquid fertilisers which have a relatively "low" value for N, and a "high" value for K. The Bromeliad Society of Queensland sells a liquid fertiliser which has been specially formulated for bromeliads. Its N:P:K ratio is 3:8:25. In contrast, a widely available liquid fertiliser, Phostrogen, has an N:P:K ratio of 14:4.4:22.5. However, while the bromeliad – specific liquid fertiliser may give you the very best effect, you can usually obtain very good results with a product such as Phostrogen.

Some people apply liquid fertilisers only when the plant is actively producing new leaves. However, the plant may be using or storing nutrients even when they are not producing new growth. For example, they may be initiating the production of a flower spike, producing seed, or growing roots. Thus, it is usually best to apply liquid fertilisers throughout the year.

Best results are obtained when liquid fertilisers are used on a regular basis. If your fertilising schedule is more akin to a "feast", followed by a long period of "famine", then plants may not respond well. Initially, apply the fertiliser at the concentration, and time intervals, recommended by the product's manufacturer.

However, after some experience, you may achieve better results under your growing conditions by varying this approach. The residue from liquid fertilisers appears to "burn" some bromeliads if it remains on their foliage when the temperature exceeds 30 degrees Celsius. One way to avoid this situation is to apply the liquid fertiliser in the evening, if day-time temperatures are likely

to exceed 30 degrees Celsius, and hose the plants thoroughly early the next morning.

There is a wide variety of ways of applying liquid fertilisers. Some people dip their plants in a container of diluted liquid fertiliser, others use "hose applicators", while others use pressurised sprayers. The fertiliser's manufacturer normally gives useage recommendations for all of the common application methods.

It is usually best to apply liquid fertilisers just after you have completed a normal watering.

The Back End

by the Editor - Ross Stenhouse

The back end of the journal is normally the hardest section to fill. Articles never just end just where I want and fill up the space neatly. So I thought I would adopt the space, as Editor, I can easily adjust my ramblings.

I assume you have read most of the journal by the time you get to read this, so I hope you enjoyed the articles herein. If you are a newcomer to the world of bromeliads, I hope you learnt a few things from the education focused articles. In the next edition, I plan to present a few more that are targeted at the beginner.

Bruce Dunstan's travel article on Panama and the references to the various species of bromeliads almost had an old non-traveller like me thinking that a trip in Panama would be exciting.

This is the third edition I have compiled so far this year and I have another two to get out within the next three months, so I am desperately seeking new fresh articles. The lack of articles delays considerably the production of Bromeliaceae. You don't need to write a lengthy article, one about an interesting subject that is only few paragraphs in length is fine - how about giving it a go.

Calendar of Events

September 3rd. Barry and Ann Kable 281 Redland Bay Rd. Capalaba. Join us on our field day and listen to our MYSTERY SPEAKER.Barry and Ann have a large range of prize winning Bromeliads,Orchids and Foliage Plants .There will be plant sales and Barry will speak on how he use's a variety of mix's for his plants. Morning tea provided. Please bring a chair. 9a.m. to 1p.m.If you need more info. Contact Ruth (after 4p.m) on 32080546 or Bev. On 32087417.

October 29th. Terry Tierney 125 Boulia St. Greenbank . Terry has a large variety of Bromeliads ,Cacti and Succulents .There will be two speakers on the day, so come along and join in the fun with Ruth and Bev. Morning tea will be served. Plant sales from 9a.m to 1p.m. Don't forget your chair. Contact Ruth [after 4p.m.] on 32080546 or Bev. on 32087417.

Do you receive the BSQ email newsletter (titled 'Bromeliad Newsletter')
If you would like to then send an email to :
Secretary@bromsqueensland.com
Include your name and email address

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