

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

Study Group meets the third Thursday of each month
Next meeting 19th September, 2013 at 11 a.m.

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

Discussion: August 2013

General Discussion

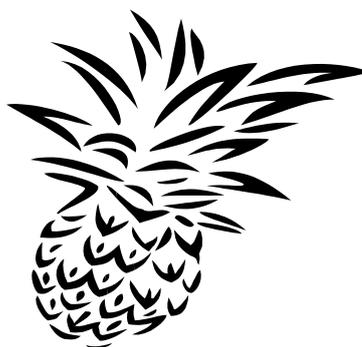
Bromeliad I.D's.

Editorial Team:

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Meeting 18th of July 2013

Meg opened the meeting at 11:01 AM. All 27 members present were welcomed, with a special welcome to our friend from the south Bill Morris. A total of 11 apologies were received.

General Business

Meg mentioned the receipt of the 50th anniversary issue of 'Bromeletter' as well as the Illawarra Bromeliad Society's newsletter.

Members' Show and Tell

Don presented a *Neoregelia* for ID. The general consensus was that it could be a *Neoregelia* 'Martin', or *Neoregelia carolinae forma tricolor*. However it is very similar to many other neoregelias. The plant was relegated to the raffle table.

Meg had a recent trip to John and Genny Catlan's private nursery. As we all know, John and Genny are well-educated regarding the intricacies of bromeliad cultivation. In addition they grow and collect many other families of plants. Currently they're crossing many vrieseas and developing plants with stunning colours including the beautiful pinks seen with the New Zealand vrieseas. It would take a number of pages to even briefly describe their bromeliad collection. It is certainly worth seeing, but please ring first and make an appointment before visiting.

Bill endorsed Meg's words saying that he had never seen as extensive a private collection as John and Genny's. Some statement, but keep in mind that Bill has cast his net widely.

It was decided that members should give an account regarding their early introduction to bromeliads. Perhaps this is too euphemistic, and the previous sentence should read, how each member became infected with the bromeliad virus.

Meg Kerr led the way. She was introduced to bromeliads in the Middle East in the 1990's. Her first contact was when she presented a Ramadan gift to a family. It was a bromeliad with a red centre. On moving back to Australia she visited John Buchanan's nursery, (now Ross and Helen's PineGrove). Here she started to acquire bromeliads, then moved houses and had to gather up her plants and re-establish her collection. This of course developed into her current collection, including shade house, and a well infected bromeliad grower.

Meg and Ron Burns were the people responsible for nagging Ross and Helen into starting the FNCBSG NSW. Thank goodness for that.

Trish Kelly has been collecting and growing neoregelias for 20+ years. While she was changing locations, she was leaving many neos in the ground. However she did take the pups, and many of these followed her to where she is now. Fortuitously she then won an *Alcantarea* in a raffle (Donated by PineGrove). This kick-started a passionate interest in bromeliads, and at the end of 2009 she joined the FNCBSG NSW.

Debbie Smith became obsessed with bromeliads a couple of years ago when she was revamping her backyard. A friend who had some broms told her about PineGrove, and suggested she should go and look at what was available, and of course she was amazed. She then decided to join the group, and it was from there that things heated up. Broms began to multiply, which to Debbie was a good thing, for wherever there was a vacant spot a bromeliad would be implanted.

Although during this meeting a great number of members described the commencement of their individual affliction, how this bromeliad virus has spread will continue to be attested to in the reports of these members over the next few months, watch this space.

Kerry Tate presented a beautifully coloured and banded *Vriesea* 'Pacific Blush' F2 (unreg). The plant is four to five years old and Kerry obtained the seed from her friend John Lambert, so the plant is N.Z. bred and Aussie raised. It is an Andrew Malloy hybrid. One can see the *Vr. heiroglyphica* in the plant. On receipt of seeds and prior to planting Kerry removes the plumose part of the seed, to assist in a healthy germination.

The question was raised as to whether or not Roundup would harm bromeliads. Advice from most was that it would harm or even kill the brom (particularly those with plenty of chloroplasts) if sprayed directly onto the plant. If the brom received an accidental dose, an immediate flushing of water is the remedy.

While visiting PineGrove (July 2013) Bill Morris fortuitously discovered a short article that he had written in 1986 on fertilizing. He thought that this was a good basis for a presentation and to which he could add any recent improvements or otherwise.

The gist of it follows:

One must remember that growers grow their plants differently to each other as well as, in all likelihood , growing their own different plants in different manners. Thus any fertilizing regime would depend on this primary tenet. Also, most mature bromeliads don't need fertilizing.

Fertilizer is only needed when:

- 1) Rapid growth is required e.g. seedlings. This would be in addition to whatever nutrition the potting mix provides.
- 2) Large growth is required e.g. specimen plants or to develop more offsets.
- 3) Plants have small or no root systems e.g. *Tillandsia*'s.
- 4) Plants which are grown in an improved environment, such that the growing season is lengthened. Feeding must occur under the right conditions, there is no point in feeding heavily if the plant is in a poor environment.

Bill gave an example where a grower in Rockhampton was producing the biggest *Cryptanthus* he had ever seen. This was accomplished using a small plastic house inside a normal glasshouse and placing the plants near the roof. This together with the watering regime produced a tropical situation. Heavy fertilising on top of this produced the giant *Cryptanthus*.

- 5) Large green plants, those that don't colour in a high light, are grown for their flower spikes e.g. *Vriesea* and some *Aechmea*. Usually the bigger the plant, the bigger the flower spike or inflorescence. For this sort of growth feeding is necessary. Please remember, overfeeding can cause many problems. There are a number of bromeliads that should not be fertilised. Too much nitrogen will unbalance the NPK mix of the fertiliser. Although nitrogen (N) is extremely important for growth, one is better off with a dilute solution containing fertiliser with the right NPK.

Do not fertilise plants that are grown for high colour, which is generally produced by high light, heat or dryness. Two of the most colourful genera namely *Neoregelia* and *Billbergia* should not be fertilised. They are grown for colour, shape and general appearance and when fertilized are likely to lose all three characters. Many of the plants will go strappy, Neoregelias may even flatten out.

Bill is now only growing billbergias, some 80 different kind. They are mostly Bill's original hybrids he created himself. His friend Bob Larnach has kindly given him shade house and glass house space for these plants, so that Bill can continue his hybridizing work on these plants. (photos of some of Bill's hybrids on p.9)

He mentioned that many barred, banded and coloured plants will not lose colour or barring when fertilized e.g. a lot of *Aechmea*, *Vriesea* and *Tillandsia*. However some variegated broms such as *Edmundoa* 'Alvim Seidel' (was *Canistrum lindenbergii* variegated) may reduce or totally lose variegations. It appears to depend on the number of functioning chloroplasts within the cells within the leaves, as to whether or not the variegation will disappear. Those plants with clean clear white variegation (no chloroplasts and hence no chlorophyll) may well be fertilised with no degradation of the variegation.

Bill spoke a little about one of his namesake plants, *Neoregelia* 'Bill Morris', which was originally known as *Neoregelia concentrica*, albo-margined. Bill originally obtained the seeds for this plant from a friend, Adda Abendroth in Brazil. Bill proceeded to grow the seed. One seedling displayed a stripe in one leaf. As the plant grew the stripe appeared to be failing. Bill decided to pull the centre out of the plant, leaving only two leaves. This plant had two tiny offsets only, one of which was clearly striped. This plant developed into the final *Neo*. 'Bill Morris'. Bill also relates that through selection, Olive Trevor was able to produce an albo-margination of up to 25mm wide (normally approximately 6mm). To Bill although selection is personal, it is more important than hybridising, a process which is more akin to a lottery. Bill also mentioned that Rob Smythe once produced a pure white offset from a *Neo*. 'Bill Morris'. Apparently this one grew by itself, had normal flowers, but had a slight green flush when mature. This small number of chloroplasts and their contained chlorophyll were the reason for the survival and slow growth of the plant.

Dave gave a brief description of his and Caroline's recent trip to Myanmar (Burma). On the way they stopped in Singapore and saw the newly created Gardens by the Bay, with its two domes each 10 stories high, and one a cloud forest dome containing a mountain, waterfalls and tropical mist. Just the habitat for bromeliads and orchids, and they were there *en masse*. Outside the dome were massive artificial trees five stories high all covered in bromeliads. Unbelievably spectacular. Their visit to Myanmar took in the Botanical Gardens. Started in 1917 and revamped later, these were 250 hectares, including lake, of floral and faunal spectacle...orchids, deer, monkeys, butterflies, birds etc. etc. Then on to Europe.

Tidy-up Corner by a Eagle Eyed Observer

In our July Newsletter there was an article about *Aechmea contracta*, the following response was forwarded by Herb Plever, Herb is the Editor of 'Bromeliana' the Newsletter of the New York Bromeliad Society.

I enjoyed your July issue, and want to add some information about Ae. contracta. One of its key characters is that the spikes are tristichous with flowers in 3 separate rows, triangularly. Attached are photos of my Ae. contracta taken many years ago.

Readers please keep these responses coming as this is the type of information that helps us all learn about our bromeliads.

Thank You Herb.



Pitcairnia inermis

by Derek Butcher July 2013

To those of you who query what is on the label and look into anomalies you often get that warm fuzzy feeling when you find a true anomaly. One such person is Ross Little who flowered a plant from Peter Tristram called *Pitcairnia inermis* var. *flava* but the problem was that it had green petals and the petals had appendages. So he contacted me. In South Australia, Keith Bradtberg had already flowered a similar plant from Peter in the 1990's only at that time we had different worries as the following article written by me in 2004 shows.

***Pitcairnia inermis* var. *flava* by Butcher 2004**

This plant was imported from the USA as *Pitcairnia vargasiana* by Peter Tristram in the 1980's and an offset found its way to South Australia in 1989. I came into the picture in the mid 1990's and suggested the plant was wrongly named. I even took it to pieces in my search! In 1996 I took a photograph with me to the Orlando Conference and spoke to Harry Luther about my problem. Harry agreed it was not *Pit. vargasiana* but because I spoke to him at the Conference and not when he was home at Selby Gardens he was unable to advise further.

In June 1999 I again saw this plant in flower and was allowed to take it home for "homework".

Using the key in Smith and Downs I kept stumbling across *Pitcairnia inermis* but the sepals were pointed to my mind but the description said obtuse! That was until I saw the line drawing of the sepal and it was the same shape as mine! Secondly I was worried about the petals which were yellow not red and there was no appendage at the base. What was a surprise was the fact that these two criteria were how Lyman Smith differentiated between the type species and the variety *flava*. It was a surprise because on the one hand we had Lyman Smith splitting two genera, namely *Tillandsia* and *Vriesea* on petal appendages and here he was not splitting at species level! You are never too old to learn.

Everything clicked from then on so I'm quite sure that the plant should have been identified as *Pit. inermis* var. *flava*. It comes from 2000 m altitude in Central Peru and shares a similar habitat to the less-well documented *Pit. vargasiana*.

In June 2013 we again contacted Peter Tristram and got more information. The plant originally came from Rob Phillips, collected in Peru about 1985 and flowered in quarantine (Peter at that time had his own Quarantine house). Most of the fantastic stuff he collected took exception to the Methyl Bromide treatment and abruptly died. He grew on some seed. Harry named it *Pit. vargasiana*. Peter is still doubtful as to what it really is and it may be an undescribed species. He assumed at the time that Rob had collected it near Tarapoto or Moyabamba but he also went to Tingo Maria and the Machu Picchu area, with Lee Moore, the Adventurer .

Back to the books because these days there is a wealth of information available to use, courtesy of the internet. Big problems! We have conflicting information. In the original description of *Pit. inermis*, Meyer says “Petala angustissima calyce plus duplo longiora, basi squamis differte,” but does not refer to colour. Baker in 1889 in Handbook of Bromeliaceae says petals are white but does not mention petal appendages. Mez in 1935 in Das Pflanzenreich does not mention colour but does mention petals are ligulate. Smith in 1974 Flora Neotropica we read “Petals scarlet, rapidly fading to white.” And we can only assume that Smith got this information from Macbride 4077, 1946. But ligulate! As for leaves, Meyer originally, was of the opinion they were spineless hence the name but from Mez 1935 onwards we seem to have sheaths that are spiny and as the leaves age, the blade is deciduous at this join.

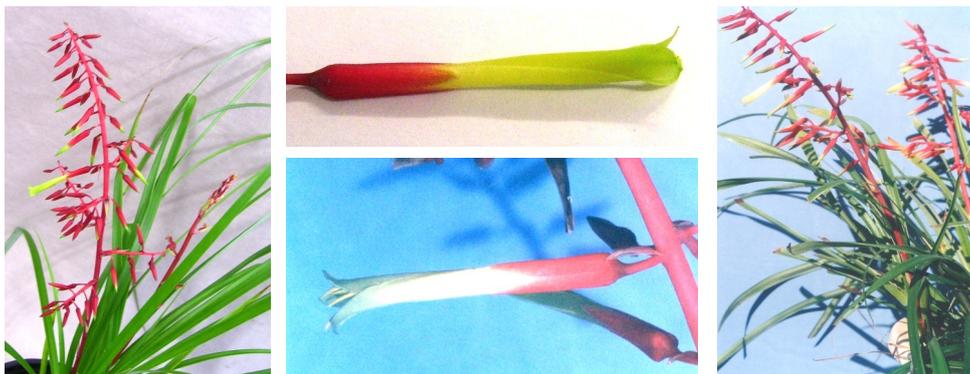
In 1954 Smith created the variety *flava* and the protologue is as follows:
***Pitcairnia inermis* var. *flava* var nova** L. B. Smith, Phytologia 5: 46. 1954.

A var. *inermis* petalis flavis differt.

Flowering plant 8 dm high; leaves serrulate below the abscission line; petals yellow, naked. Type in the Museo de Historia Natural “Javier Prado” Lima, Peru, collected in tropical forest, at Cayumba, near Las Palmas, between Huanuco and Tingo Maria, Province of Huanuco, Department of Huanuco, Peru, altitude 800-900 meters, July 15, 1948, by R. Ferreyra (No. 4228).

It would seem that this species can have different coloured petals, with or without appendages so this should not deter us from linking these seedlings of Peter’s to *Pit. inermis* as well as being consistent in our approach. The chance of cross pollination in Peter’s quarantine house seems remote. Therefore, I suggest that this new find be called *P. inermis* ‘Green petalled’ without it being registered because we do not know if it is a sole survivor. When more of this clone are available it may be opportune to register it as *P. ‘Inermis Green’*

On a more positive note, we do know that Eric Gouda at the Utrecht University does have some of Peter’s seedlings and is now eagerly awaiting their flowering. We may even see a different approach to identity!



Photos supplied by Ross Little and Derek Butcher



xVrieslandsia 'Spiraling Flame'
1st Open & Judges Choice
Shane Weston



Vriesea 'Gypsy Moon'
1st Novice - Trish Kelly



Tillandsia mount in bonsai dish
1st Decorative - Helen Clewett



Guzmania hybrid
1st Decorative - Marie Essery



Neo. 'Two Tone' x 'Painted Lady'
grown by Coral McAteer



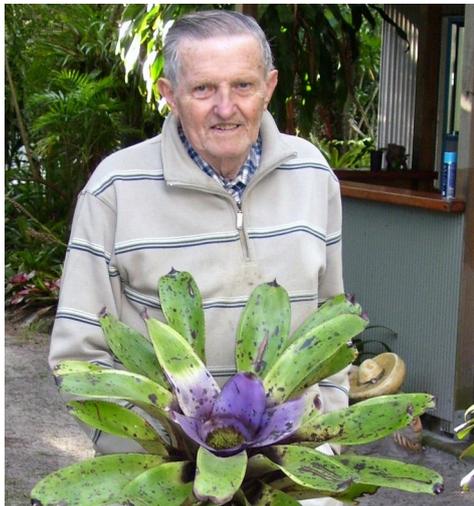
Vriesea 'Pacific Blush' F2 (unreg.)
grown by Kerry Tate



Neoregelia 'Martin' pronounced 'Marteen' grown by Don Beard



Vriesea fenestralis x 'Red Chestnut' grown by Marie Essery



Bill showing *Neo.* 'Bill Morris'



Bill. 'Golden Joy'



Bill. 'Medowie Gift Pinkie' *Bill.* 'Pink Surprise'



Bill. 'Touch of Grey'

Photo's supplied by: Don Beard, Derek Butcher, Vic Przetocki and Ross Little

Billbergia elegans

by Derek Butcher

This species has caused us Australians a slight headache over the years. It all started in the 1960's when Adda Abendroth from Petropolis in Brazil sent us seed of a plant which Lyman Smith could not decide whether it was *Bill. elegans* or *Bill. sanderiana*. (see Bromeliad Society Bulletin, May 1957)

We first got the name as *Bill. elegans*, but then a few years later it was corrected to *Bill. sanderiana*.

Needless to say 30 years later we still come across *Bill. sanderiana* with *Bill. elegans* on the label! As part of this confusion there is a *Billbergia amoena* v. *penduliflora* described by Mulford Foster in 1962, which Smith placed in synonymy under *Bill. sanderiana* (see Smith & Downs page 1996).

I would suggest you ignore this reasoning because Fosters plant is clearly linked to the *Bill. amoena / elegans* complex.

In the 1980's a plant called *Bill. amoena* v. *carnea* arrived in Australia from Brazil and by the 1990's I had acquired an offset. In the 1990's another plant called *Billbergia* sp. was imported from Brazil and on flowering photographs were sent to Elton Leme, who identified it as *Bill. amoena* v. *carnea*. I again acquired an offset, so now I was the proud owner of two different *Bill. amoena* v. *carnea*!



Purchased as *Bill. elegans*, however is *Bill. sanderiana*



Billbergia elegans



Bill. elegans as *sanderiana*
Margaret Mee painting

At the 1996 World Conference at Orlando Don Beadle spoke on guess what - Billbergias. Amongst his slides I noticed one of my *Bill. amoena v. carnea* BUT he called his plant *Bill. elegans* and it had orange scape bracts, just like mine!

What was going on? On returning to Australia I started corresponding with Harry Luther as to this apparent anomaly. We had been searching for a *Bill. elegans* that looked something like *Bill. sanderiana*.

Harry pointed out that *Bill. amoena* and *Bill. elegans* are very closely allied, and went so far as to suggest that he suspects that *Bill. elegans* is only an inland, drier area, ecotype, compared to *Bill. amoena* being a coastal rain forest ecotype. My plant with the orange scape bracts was *Bill. elegans*.

This was in the back of my mind when I prepared to photograph a *Bill. amoena* in 1999 that Ruby Ryde of Sydney had collected in Brazil in 1986. It had orange bracts but the inflorescence axis was not orange. I contacted Ruby to find out why she had *Bill. amoena* on the label and where did she find it?

The name had been given because it looked like a *B. amoena* and had been collected when she stayed at the Caraca Monastery near Santa Barbara, Minas Gerais. I remembered that Tom Lineham had been there too and had written an article in the BSI Journal and I found it on page 206 - 1992 volume. Luckily Tom had given an inventory of plants collected on his trip, this included *Bill. elegans*.

This meant I just had to refer the problem to Harry and, yes, he confirmed my thoughts of Ruby's plant being *Billbergia elegans*.

Letter from Harry Luther 17 Jan 1998

Regarding your concerns about *Bill. elegans*, *sanderiana*, *amoena* var *penduliflora*, and perhaps *amoena v. carnea* they have been a problem for years. *Bill. sanderiana* is very distinct, related to *Bill. chlorantha* and *Bill. kautskyana*. It has NO relationship to *Bill. elegans*. *Bill. elegans* is similar and perhaps conspecific with *Bill. amoena*. *Bill. amoena v. penduliflora* is certainly the same as *Bill. elegans*. *Bill. amoena v. cylindracea* may also be the same but I've seen no material of this taxon. Getting back to *Bill. amoena v. penduliflora*, there may be plants of otherwise typical *Bill. amoena* with pendulous inflorescences, one of the Mee paintings that I have seen labelled as *Bill. sanderiana* or *Bill. amoena v. penduliflora* doesn't look like *Bill. elegans* and may be a pendulous flowered example of *Bill. amoena*.

Billbergia amoena seems to be a plant of coastal or near coastal rainforests. *Billbergia elegans* appears to be an inland plant from Campos rupestris type dry habitats.

Family Diaspididae — Hard or Armoured Scale Pests of Bromeliads

compiled by Les Higgins

There are many genera of scale insects. Some are easily recognised by a distinguishable shape or colour. Others are so similar in appearance that identification is ascertained by inverting the scale and examining the insect under the cover.

N.S.W has three armoured scale of major importance infesting bromeliads:

Pineapple scale, *Diaspis bromeliae* — Colour varies from greyish white to tan. Size is between 2mm to 3mm diameter. The female is nearly circular in shape and can be seen all over the plant. Males, similar in size to females, are more oblong with three longitudinal ridges on the upper surface. Males are in more sheltered positions low down on the plant. Emergent larvae, dependant on temperature, become adults from about 60 days onwards. There is no seasonal influence and several generations are produced per year.

Orchid scale or boisduval scale, *Diaspis boisduvalii* — Females are circular to oval 1.2mm to 2.25mm in diameter. Colour, white to pale yellow and semi-transparent. When inverted the female is identified by two horns and an apical cleft. Males are oval to elongate in shape, up to 1mm long, with a white cover. Most popular hosts are green-leaf tillandsias, guzmanias and vrieseas.

Fly Speck scale, *Gymnaspis aechmeae* — Females are shiny purple-black, circular to oval and very convex. Size is about .8mm to 1.3mm in diameter. There are two generations per year and seem most prolific in spring and summer. Live young are the first to emerge from under the female and later eggs are laid. Life expectancy, conditional on temperature, is between 33 to 55 days.

Also recorded as armoured scale pests of bromeliads:

Red scale, *Parlatoria proteus* — Females are about 2mm in diameter, moderately convex, colour, dark reddish brown to almost black.

Latiniae scale, *Hemiberesia lataniae* — Females are 1.5mm to 2mm in diameter, very convex. Colour, off white to beige. On top is a brown circle. The wax cover is enclosed overall with a scant, light coloured secretion.

Tropical Palm scale, *Hemiberesia palmae* — Females are circular to oval 1.75mm to 2.25mm, very convex. Straw coloured to tan to dark brown.

Black Thread scale, *Ischnaspis longirostris* — They look very thin thread like, shiny black in colour and 2.0mm to 3.5mm long.



Emergent hole and parasite wasp larvae



Fly Speck scale - *Gymnaspis aechmeae*

The cover of all hard scales adheres firmly to the insect. The head and thorax are combined. Abdominal segments are fused to form the pygidium. The insect secretes waxy threads from pores on the pygidium and shapes them into a ribbon using the pygidial fringe. The ribbon creates the protective cover above the insect as it walks unendingly in a circle using its rostralis (long thin feeding tube) as a pivot.

Hard scale is described as a piercing and sucking insect although it lacks muscles to suck. The turgid pressure of the host pushes fluid into and through the insect. Without an anus all body waste flushes out from the rostralis and into the plant as a toxic poison. No anus means that no honey dew is produced and therefore hard scale is of no interest to ants. The only insects interested in hard scale are parasites and predators eager to eat them.

Females emerge as tiny six legged crawlers. They moult to first instar to second instar to third instar (adult). At each moult the insect increases in size. At the first moult the legs are lost. Females are wingless and remain sessile at that spot for the remainder of their life span. For about three days after expanding into the adult phase a pheromone permeates the area around the female. This odour attracts a male while the cover is sufficiently raised to facilitate entry.

Males start life identical to females. Mouthparts are lost at the second moult. Each passes through a pre-pupa and pupa stage to emerge as a minute, weak flying two winged insect. Without a mouth-part to provide sustenance life is brief. In less than one day the male must locate a receptive female and impregnate her. Job done, life over !

Larvae wander all over the plant to find a suitable permanent position. During this time they are dominated by light, heat, gravity and plant surface. Their mortality is huge! Larvae dehydrate during a hot day. Air currents disperse larvae and a lucky one could land on a distant bromeliad. Only when the crawler has settled and inserted its rostralis into the plant does it start to produce the hard cover.

The ideal habitat for *Diaspis bromeliae* is cool, moist and shady. The most prolific infestation can be found wherever light penetration is limited. Early experiments suggest a simple way to eliminate *Diaspis bromeliae*. Place infested bromeliads in a "hotspot", a warm, sunny, north facing position (ensure the pot keeps cool otherwise the roots may get cooked). Unable to survive in about 40°C in bright sunlight all *Diaspis bromeliae* and eggs are dead within a few hours.

Bromeliads are unaffected by the heat that apparently kills Pineapple scale. The successful killing of hard scale in the "hot spot" may be due to UV wavelength in bright sunlight.

Could UV stabilised shade cloth encourage hard scale infestations?

As a Study Group please help with this experiment. Put infested plants in a warm sheltered position, with maximum bright sunlight for a day or two. Also scrutinize plants that are growing in an open situation, are they hard scale infested? Please report your findings to the Group.

RECYCLING (PART 2)

by Neville Wood 2008

OLD HARDWOOD FENCE PALINGS: For many years new or second-hand fence palings were used for bench tops in shade houses and the method was to fix them with a space between to aid in air circulation. The down side was that eventually rot would start beneath the pots where they couldn't dry out sufficiently. This could be overcome to a degree by occasionally moving the pots around but was not very practical if you had a large collection of plants; however, they still make a good temporary bench until something more substantial can be built.

They can also be used to create a tiered effect by placing a couple of 10" terracotta or concrete pots at the rear of a bench and laying two palings across them to raise plants to a different height. In front of this you repeat the process but this time using an 8" pot to create a lower level and then in front of this, a similar thing with a 6" pot. You will be amazed at how better your plants look displayed in this stepped manner with the larger plants at the rear and the smaller ones in the front.

If you are into the DIY thing it is possible to make quite nice rustic looking wooden lath baskets which are good when used to accommodate some of the smaller stolon type *neoregelias*. You first of all need a power saw to rip the palings down to laths of about ½" in thickness and then cut them all the same length of about five or six inches which is a convenient size.

Next you need to drill a 1/8" hole in each end about ¼" back from the end and in the centre of each lath. When you have sufficient (about fourteen), take four pieces of galvanised wire about 9" or 10" in length and using pliers bend a small loop in one end to prevent the wire from passing right through the hole. Next you pass a piece of wire through each of the holes in two pieces of lath. Lay them parallel to each other and now thread two more laths onto the wire in the opposite direction so that you have created a square. Keep adding laths in alternate layers until the required height is reached.

The next step is to form a loop in the wire where it comes from the top lath and to do this, cut the wire so that only about 25mm. protrudes from the top lath. Take a pair of thin nosed pliers and twist the wire around until it forms a loop suitable as an attachment point for a thin chain or a plastic pot hanger. Turn the basket over and insert three or four more laths between the two bottom laths to form the floor of the basket and secure with screws or by tying with galvanised wire (*Not copper*).

The next step is to line the sides and the bottom of the basket with *Melaleuca* paper bark or black plastic film with random drainage holes in the bottom, pot your plant in your preferred potting mix and water in well. Attach a thin chain or a plastic pot hanger to the loops you have made in the wire on top of the basket and hang the basket from your preferred location.

Don't throw away the paling off-cuts if they are 100mm or longer in length as their weathered appearance compliments *Tillandsias* and can be used successfully as mounts. Cut the paling to a length suitable for the plant you intend to mount and firstly drill a 2-3mm hole about 12mm. down from the top in the centre. Through this you can attach a wire hanger (*Remember not copper wire*) to suspend your plant.

There are various ways of attaching the plants to the wood and two of the most common are firstly to tie them on using old fishing line which is strong and easy to get a firm tension with. Secondly you can tie them on with old stockings or legs from pantyhose; these are very strong and will stretch and provide adequate support for the plants as well. Both of these methods will support the plant until it provides roots to form its own anchor. As these notes are just about recycling, I won't go into the many other options available using other materials.

OLD BICYCLE WHEELS: An attractive feature can easily be made by using an old bicycle wheel as a base from which to suspend plants. Firstly paint the wheel an unobtrusive colour so that it doesn't detract from the plants you want to feature. Remove the axle from the hub and laying the wheel flat; pass a length chain through the hole securing it at the bottom. Suspend the wheel from a suitable beam or tree branch and here you have a good base from which to hang your baskets and pots. You may need to juggle the positions of your pots slightly until the correct balance is obtained but once in place you will have created an attractive feature especially if the plants are suspended at different levels.

WIRE MESH OFF-CUTS: Sometimes we are fortunate enough to come across old galvanised mesh fence panels or off-cuts from galvanised mesh. As well as making very good benches in the shade house, the off-cuts from the mesh can also be used to make excellent suspension points for pot hangers. Instead of putting screws or nails into overhead roof timbers in the shade house to hang pots from, simply cut the mesh into sections of about 150mm to 200mm in height as long as they have a top and a bottom horizontal wire and by using the following method, attach them to the overhead timbers.

Make some anchor brackets for these sections by cutting pieces of 25mm galvanised strapping about 100mm. in length and bending them in half. Drill a 4mm. hole in the centre of each bracket and push them over the vertical sections of the mesh on each end. Place the mesh in place and secure the anchors to the overhead beam using suitable screws. Depending on the length of the mesh, extra anchors can be screwed in other locations along the length. Once in place these mesh off-cuts make an excellent base from which to hang pots or baskets and you're not confined to the one suspension point, you can hang them anywhere along the length of the mesh depending on the width of the plant and how much clearance you need between plants.

Novice Popular Vote

1st	Trish Kelly	<i>Vriesea</i> 'Gypsy Moon'
2nd	Coral McAteer	<i>Neoregelia</i> 'Two Tone' x 'Painted Lady'

Open Popular Vote

1st	Shane Weston	x <i>Vrieslandsia</i> 'Spiraling Flame'
2nd	Kerry Tate	<i>Vriesea</i> 'Pacific Blush' F2 (unreg.)
3rd	Marie Essery Meg Kerr	<i>Vriesea fenestralis</i> x 'Red Chestnut' <i>Vriesea carinata</i> x 'Poelmanii'

Judges Choice

1st	Shane Weston	x <i>Vrieslandsia</i> 'Spiraling Flame'
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Decorative

1st	Marie Essery Helen Clewett	Pot of <i>Guzmania</i> <i>Tillandsia</i> on log in bonsai pot.
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Comments from the growers:

Shane's x*Vrieslandsia* 'Spiraling Flame", a bigeneric by John Arden in California. (seed parent *Vr.* V-O74, pollen parent *Till. multicaulis*). The plant is not flowering as yet, but is likely to have grey murky petals. Acquired from G. Stomatis in Q'ld, grown under 70% shade cloth in a free draining mix, slow release fertilizer.

Kerry's *Vriesea* 'Pacific Blush" F2 (unreg) is about four years old. A complex hybrid. Major influence is *Vr. heiroglyphica*. Fertilizer boost to begin, then slow release. Using a Higher K formula to give colour.

Marie has had her *Vriesea fenestralis* X 'Red Chestnut' since the QBS Brisbane show in April 2012. Acquired as a seedling. Grown under 70% beige shade cloth, receives rain only, recently, slow release fertilizer, no pests or diseases. Marie also has plants growing under brown shade cloth.

Trish got her *Vriesea* 'Gypsy Moon' from June Howard who acquired it from Meg who got it from Buchanans. It is a Buchanan hybrid named by R Harper. It has a large spike. Grown under 50% shade cloth with sun until 2pm. Currently rain only. Fertilize twice a year with slow release fertilizer. No pests or diseases.

Coral's *Neoregelia* 'Two Tone' X *Neo.* 'Painted lady' was a gift she received at the 2011 Christmas meeting. Hybridized by Allan Freeman. Grown on a table where it receives the afternoon sun. Rain only. Slow release fertilizer. No pests.