

# BROMELIANA

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## SOME LOOK-ALIKE BROMS - HOW WE DISTINGUISH THEM

by Herb Plevier

Given what we know about how living things evolve, it is understandable that we would find species that look alike. If we look at two similar plants and see differences in size, color or inflorescence, that could be attributed to the fact there are variations in size, color and inflorescence within a species population in habitat. Or the differences could be due to environmental factors such as light levels, fertilizer, etc. On the other hand we might be looking at two different species.

We must check for differences in each plant's botanical characters to be able distinguish them. Here are a few examples:

*Tillandsia cyanea* and *Tillandsia lindenii* appear to be similar in the photos here. Of course the spike on *T. cyanea* is more rounded than the elongated spike on *T. lindenii*. But, in habitat there are many *cyanea* species with more elongated than rounded spikes, so



*Tillandsia cyanea*



*T. lindenii* (from New Zealand B.S. Journal)

we can't rely on that character identify the plants.

The scapes (stems) of their inflorescences, are very different - a short stem on *cyanea* and a quite long scape on *lindenii*. And these characters are consistent for all the plants in each population; thus the length of the inflorescence stem is a reliable marker to distinguish the species.

We are fortunate in now having available an easy to use key to the species of *Tillandsia*. It can be found at BROM-L at <http://botu07.bio.uu.nl/Brom-L/> In the main page, click on the highlighted "Identification Key to Tillandsias and look alike" and you will be taken to the key in which there is an alphabetical species list. Next to *cyanea* you will see a link - A107. This signifies that *cyanea* is in Section A for petals which are blue, lilac or violet. Click on the link and you will be taken to line 107 where botanical information is

**NEXT MEETING** - **Thursday, December 18th**, 2014 at 6:30 P.M. at the home of Michael Riley and Francisco Correal, 101 West 104<sup>th</sup> Street nr. Columbus Avenue. (Take the 7<sup>th</sup> Ave. #1 train or the Independent A, B, or C trains to 103<sup>rd</sup> St.)

**HOLIDAY PARTY!** - Once again Michael and Francisco have graciously offered to host our annual party at their beautiful home. The party is open only to members and their spouses or significant others. Michael and Francisco will provide the main courses; please RSVP them at 212-666-2395 if you plan to attend. AND let him know if you will bring a side dish, salad, fruit or dessert. Michael has improved the lights and has added new plants to his collection of bromeliads, orchids, aroids, ferns, etc. growing epiphytically on his living room walls.



*T. cyanea* - no nerve lines

Nerve lines on *T. lindenii*  
photo by M. Andreas

listed. On line 107a below it you will find information about *T. lindenii*.

On line 107 under “scape” you can see that *T. cyanea* has a “very short” scape, whereas the scape on *T. lindenii* on line 107a is up to 20 cm long. Also note another distinguishing character - the spike bracts on *cyanea* are “not nerved”, whereas the spike bracts on *lindenii* are “prominently nerved”. Nerve lines are vertical parallel lines found on some inflorescences. From the photos above you can note the absence of such lines on the spike of *T. cyanea*, and the strong red lines on *T. lindenii*.

*Tillandsia minutiflora* (formerly called *T. bryoides*) and *Tillandsia tricholepis* - I include this pair of look alike especially to correct my error in the identifying photo of what I purported to be *T. minutiflora* in the November issue of BROMELIANA. That photo was of a plant I bought as



*Tillandsia tricholepis* (note that the flower is sitting on a long stem. This is the plant that was wrongly identified as *Tillandsia minutiflora*



*Tillandsia minutiflora* (note absent stem or if very short, it's hidden in leaves)

*Tillandsia bryoides* many years ago when I was not very knowledgeable about bromeliad taxonomy.

I am indebted to Prof. Walter Till of the University of Vienna for bringing that error to my attention. Dr. Till is an eminent taxonomist and researcher in Bromeliad phylogenetics; he pointed out that the plant in the photo was *Tillandsia tricholepis*, because it had a pronounced peduncle (flower stem) and was 2-flowered. *T. minutiflora* has a stem so short it is hidden down in the leaves and it has only one, terminal flower. This difference is clearly shown in the photos below. I regret that I carelessly named that plant without checking its correct status. Had I checked with the above-cited Tillandsia key, I would have become aware of the importance of the length or absence of a peduncle.

There are closely similar species in most genera, for example *Aechmea racinae* and *A. warasii*. It helps to go the descriptions of the plants in bromeliad literature to find distinguishing botanical characters. □

**OTHER CORRECTIONS FOR ERRORS IN THE NOVEMBER ISSUE OF BROMELIANA:**

1. The November issue showed a photo of a beautiful, Neoregelia in the Bromeliad display in the World Conference in Hawaii, wrongly stated to be unnamed and incorrectly attributing the hybrid to Lisa Vinzant. However, the plant has been registered as *Neoregelia* ‘Purple Majesty’ and it was made by Sharon Petersen.



*Neoregelia* ‘Purple Majesty’ (Petersen)

2. The November issue showed a photo of a tree said to be commonly found on the Big Island of Hawaii, wrongly identified as a Rainbow Shower tree. David Fell kindly wrote to me advising that the photo shown was of a Royal Poinciana that is similar



Golden Shower tree



Rainbow Shower tree

in appearance to a Shower tree.

The Shower tree on Hawaii is *Cassia fistula*. It can be seen with pink, gold-yellow, red and orange flowers. The 'Rainbow Shower' tree is a hybrid of the yellow flowered *Cassia fistula* x the pink/red flowered *Cassia javanica*. *Cassia* is a genus in *Fabaceae*, the bean family - thus it is a legume.

## BROMELIADS UNDER LIGHTS

by Herb Plever

At our November meeting we talked about the light in member's setups. Part of that discussion was an informative colloquy about growing under lights.

**T12, T8 & T5 Fluorescent Tubes** - Michael Riley related how he had changed the T12 8 ft. fluorescent tubes to T8s in the array of tubes in the ceiling of his living room to light the large wall on which he grows many plants epiphytically. T12 tubes have a 1½ inch diameter and are no longer being manufactured though there is still a quantity of stock available. T8 fluorescents have a 1" diameter with the same medium bipin connector that will fit the T12 terminals, but they come in 32 to 36 watts instead of the 40 watt T12 tubes. Thus they reduce your electric bill, AND they put out more light than the T12s. There is also a relatively newer, more expensive T5 tube with a smaller diameter that further increases the lumen output, but it cannot be used in the old fixtures.

**Quality of Light** - The inner surfaces of fluorescent tubes are coated with a chemical phosphor that determines such elements as the lumen (light) output, how the tubes render all frequencies of its color spectrum (CRI) and their color temperature in degrees Kelvin which determines the part of the color spectrum their light is emitted. The closer to 100 CRI, the better the tube for our purposes. The color temperature of daylight at noon is 5500°-5600° K; that is the bluest part of the daylight spectrum. Daylight tubes which are in the range of 5000° to 6500° K (5500° K is best for them) are good for growing bromeliads, especially *Cryptanthus* and tissue cultured mini *Guzmanias* and small *Vrieseas*,

but you can also get good color and markings on light responsive neos such as *N. 'Gaspacho'*.

Fluorescent tubes come in a variety of phosphors. Michael uses a combination of the popular and relatively inexpensive cool white tubes (with a color temperature of 4200° Kelvin) and warm white fluorescents (color temperature 3500° K).

There are also so-called "daylight" tubes with color temperatures ranging from 5000° to 6500° Kelvin. Before new phosphor formulas were developed for these tubes, they put out less light than cool white tubes, so it was a trade-off of getting more, lower quality light at a much cheaper price than the better quality daylight tubes like the old VitaLites. Surprisingly the new daylight tubes now equal or exceed the lumen output of cool white tubes, but they are much more expensive.

The amount of light that reaches your plants growing under these fixtures varies in inverse proportion to the distance of the leaves from the tubes. The light intensity drops off the further the distance away from the tubes. Thus you will get better growth and markings if your plants are closer to the tubes. You can raise plants on pots as close as a few inches from the tubes without burning the leaves. **Heat** - In a commercial fixtures the ballast (that converts the tubes' DC current to AC) are attached with the lights under the reflector. Ballasts get hot and give off lots of heat, which together with the heat from the tubes dries the humidity that the plants need. You can dissipate and blow away the heat with a small fan, and the plants will do better with the moving air.



Section of 6' fluorescent fixture. l. to r. Cr. 'Strawberries Flambe', Vr. 'Davine', Cr. 'Elaine', Cr. 'Arlety', Cr. 'Firey Ruby', Cr. 'Betty Ann Prevatt'. Note plants are wick-watered; aluminum foil around reservoirs reduces algae.



*Neoregelia caroliniae v. tricolor* lighted by David's Blue Max lamp

a tube in a 10 pack. Though pricey, Vita-Brite or Verilux tubes are good choices; the Phillips Daylight is a much cheaper, good alternative. Another good alternative is the Blue Max lamp that David McReynolds

grows his broms under. It has a CRI of 96, color temperature of 5800° K and puts out an incredible 4300 lumens of light. It comes in table or floor lamp fixtures with flexible shafts and costs \$199. Since it has a single lamp, it lights only a small area, in contrast to the 4 ft. area of a bank of four 48" fluorescent tubes. With its great specs it does a good job of growing the small number of broms it covers. (See above photo of David's *Neoregelia caroliniae v. tricolor*.)

The ballast can be removed away from the fixture to remove heat from under the reflector..

**My Fluorescent Fixture (s)** -I used to run 3 separate fluorescent light units that I wired myself. All the ballasts were removed away from the fixtures, and I hung a small whisper fan on one end of each unit to dissipate the heat from the tubes. Now I only have one fluorescent unit (pictured above) with a combination of T12 Vita-Lite and Verilux 48" tubes alternately spaced from each end to cover the 6 ft. space under the unit.

This fixture has been operating for almost 50 years; the tubes have a rated life of 36,000 hours. The fixture is turned on and off by an electric timer; currently the tubes are on for 13 hours a day. The next replacements will be one of the available T8 daylight tube types. Many broms are in 4" pots which have too small a diameter to sit in the water reservoirs shown above, so they're placed in 4.5" or 5" pots that fit.

**Specifications and Prices** - Verilux Natural Spectrum T8 48" fluorescent tubes come in 32 watts, have a CRI of 85, a color temperature of 6000° K and a light output of 2900 lumens. Verilux ships them in packages of four at a cost of \$15.50 per tube including shipping. They can be found a little cheaper on line.

Vita-Brite Full Spectrum T8 48" tubes (similar to the defunct Duro Test Vita Lites) have a CRI of 91, a perfect color temperature of 5500° and an even better output of 3200 lumens. They come in cases of 30, but on-line discounters will sell you smaller packs. With shipping, they cost from \$13 to \$15 a tube.

In contrast to that price, the T8 48" Phillips Daylight Deluxe (6500° K and 2780 lumens) is \$3.40 a tube in a 10 pack at Home Depot; the Phillips Cool White Supreme (4100° K and 2800 lumens) is \$2.65

NEWS and NOTES

**2015 DUES** - will be due and payable at the end of this month. Single and joint memberships are \$25.00; the domestic subscription rate for BROMELIANA is \$8.00 and an overseas subscription is \$12.00. Please mail your check payable to N.Y. Bromeliad Society to Barbara Lagow, 54 West 74th Street, #603, N.Y.C. 10023 or pay your dues at the Holiday Party on December 18<sup>th</sup>.

**IN MEMORIAM** - We regret to report the deaths of Dorothy Berg and Luiz Felipe N. de Carvalho, long-time bromeliad colleagues. Dorothy was a leader of the Sarasota Bromeliad Society and the BSI. Felipe was the founder of the Bromeliad Society of Brazil.

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