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HOW TO REMOVE AN “UPPER” PUP

by Herb Plover

A few tillandsias are stingy in producing offsets and will put up only one pup after flowering, no matter how strong they are or how much they are fertilized. But most other bromeliads will produce at least two offsets and usually many more than that.

However, *Guzmania sanguinea* and *Vriesea splendens* (and most of its cultivars such as *V.* ‘Hera’ or *V.* ‘Splendriet’) if left on their own will produce only one pup after flowering, and it will come up along the side of the inflorescence in the central reservoir. Instead of emerging from a leaf axil or from the base of the parent plant, these “upper” pups come up at the top of the plant. We don’t know what evolutionary benefit these plants gained from adapting to a single upper pup, but, of course, we do not know their evolutionary history eons ago. Suffice it to say that natural selection was, as always, operative during this development - even if it might have been overcome by other physical factors.

These plants are called “upper puppers”, and they are the only two broms I know of that have this habit. You can leave the upper pup to grow on while the parent plant dies back. Eventually the upper pup will replace the parent, BUT since it is growing on top of the stem of the parent it will be somewhat out of the pot and the succeeding generation will be more so. The alternative is to remove the upper pup and repot it. An additional advantage is that stingy *Guzmania sanguinea* and *Vriesea splendens* may produce basal offsets when the upper pup is removed. Surgical removal of the pup must be done with care as its base is fragile and may snap off if outward pressure is applied. So it is important to be able to visualize the base before any cutting is done. A very sharp knife is mandatory.

STEP 1 - Since the pup came up along the side of the inflorescence it will have a definite lean to that side. Orient the pot so that the leaning side is facing you as shown in the photo at the top of



PHOTO 1 - Facing the leaning side.

column 2. (The parent’s leaves had been cut short when the plant flowered to make room for more plants in the window tray. At the time I hadn’t intended to do this experiment and write this article, or I would have left the leaves intact to have a more vigorous parent after the surgical removal.)

STEP 2 - Strip the parental leaves that are covering the pup by separating them in the center lengthwise. You will then be able to visualize the entire base of the pup, as shown in Photo 2 below.



PHOTO 2 - Pup base revealed

THERE WILL BE NO MEETING IN FEBRUARY.

STEP 3 - Make a horizontal cut below the pup base and downward vertical cuts on each side of the base to below the base and into the parent. Then place the sharp knife between the pup and the parent with the blade slightly angled toward the parent. A smooth downward cut all the way down will free the pup from its parent. Do not apply any outward pressure on the pup while cutting down to free it. If the knife is really sharp you won't need to push or apply pressure as the blade will do the work. When this pup came free from the parent I was happy to see that the base was intact and that it was showing roots at the bottom, as shown in Photo 3 below. Now that the pup is free from the parent, we must take additional steps to assure that it will remain healthy, free from infection and to prepare for its eventual safe potting in a medium.



PHOTO 3 - Freed base showing roots

STEP 4 - The base of the pup and the cut part of the parent are now vulnerable to infection from both fungus and bacteria. If you have a fungicide powder (or Rootone which has a fungicide) dust the base of the pup and the cut side of the parent.

In the alternative, swab some alcohol on those areas and then lightly spray them with Safer's Soap solution. These areas will not be safe until the tissue there has hardened and callused, and until then the pup should not be potted. This will take 3 to 5 days.

STEP 5 - During this period I like to suspend the pup

in air so the base is not touching anything. I accomplish this by hanging the pup in a clean yogurt container with the leaves hanging over the top circumference as shown by Photo 4 below. I also occasionally lightly spray the base with Safer's Soap.



PHOTO 4 - Pup suspended in container

STEP 6 - When the base of the pup has sufficiently callused, place the pup in a medium in which it will rapidly grow roots and establish itself to grow on its own. The area around the base should be consistently moist but not wet. In that area I would place presoaked pieces of peat moss (or sphagnum moss) that will retain moisture for a reasonable period. You can drop some potting soil into the hole to fill up the spaces, as rooting is encouraged when the base is more tightly surrounded by the medium.

To keep the pup stabilized and immovable during this initial period, I place two strips of masking tape overlapping across the top of the pot to tightly firm up the pup. This temporary brace should be removed when the pup is stabilized with its own roots. See Photo 5 below.



PHOTO 5 Pup potted and stabilized 5 days later.

BENEVOLENT BROMELIADS - CONCLUDED

by Racine Foster

(This is the third part of an article by Racine Foster that appeared in the May to November, 1952 BSI journals, then called The Bromeliad Bulletin.)

In tracking down facts about how bromeliads are utilized we hadn't considered them as the source of water for anything but the smallest insects, snakes, lizards and birds until we were surprised upon observing that the water in bromeliad "lakes" was useful to large animals, and to man as well, for several purposes.

Tillandsia hospitalis, (a synonym for *Mezobromelia hospitalis* - Ed.) a new species we discovered in Columbia on the Sierra Nevada

de Santa Marta is a giant bromel growing in the ground near the top of a mountain ridge, 8,000 feet up. Its great basins of water between the large leaves serve as the only source of water in this high area for grazing cattle in the dry season, and our hosts assured us that on many occasions it literally saved the lives of cattle. For that reason it was considered hospitable to cattle, hence the name "hospitalis".

Long will it be remembered when Mulford Foster was ably assisted by the beneficent water reservoir. During a very dry season while crossing the Florida Everglades (in a 1920 Chevrolet) he found his radiator very dry and very hot. It was impossible to travel any further until the bromeliads accommodated. Some native *Tillandsia fasciculata* plants from nearby cypress trees yielded a good gallon of water for the stricken radiator and he was able to proceed on his journey.

Mr. Thomas Macdougall in his article "Afoot in Mexico" in the journal of the New York Botanical Garden, July 1948, found the water from bromeliads most welcome. He says in part: "Celso climbed a nearby oak and carefully bent some rosettes of *Tillandsia imperialis* over his can. In a short time he returned with a gallon of water. The successful outcome assured us a leisurely stay. Except for floating debris, water like this is quite clear; small frogs, salamanders and other small animals that find refuge in bromeliads are forced out when rosettes become water-filled."



Mezobromelia hospitalis in habitat

"The availability of palatable water is a subject of acute interest to the tropical traveler. Few, if any, are considered the equal of pure water... That natives do not make (extensive) use of this water from bromeliads is partly explained by their dislike of 'dead water'...they prefer to dip from a stream or a spring, but I have always found it satisfactory."

On the other hand the natives of the Yucatan consider such water exceptionally pure as we learn from a quotation copied by Alex

Hawkes out of Gardener's Chronical (1871) p. 1386. "One of the most conspicuous plants of Yukaton is a showy species of *Bromelia* allied to *B. bracteata*, if not actually that species. (In a footnote to this article, Mulford B. Foster wrote: "*B. bracteata* is a synonym for *Aechmea bracteata* and this is undoubtedly the species referred to as it is one of the showiest species found in the Yucatan, Mexican jungles.") It grows parasitically (now known to grow epiphytically) in the forks of large trees where it embellishes the scenery with its long, bright scarlet bracts. The Indians, even now, have great admiration for this plant and its congeners, which played an important part in the sacred rites of their ancestors. It was from the axils of the leaves that the pure water of heaven was collected to

be used for the baptism of children. On such and other equally solemn occasions it was essential that water should be used that had come from heaven and never touched ground, hence the value of this and similar plants that collected rain in a manner similar to our common Teasel."

In the Putumayo region of southern Columbia at Sibondoy we were elated to see the palm frond arch entrance to the thatched house of the chief of the Sibondoy Indians distinguished with *bicundos*, bromeliads. Only the chief is allowed this decoration and only a color photo could give this display its full brilliance. For us, seeking bromeliads, it was a coup de grace in our jungle searches. (See National Geographic Magazine, 1950, p. 473.) (This particular bromel turned out to be our



Aechmea bracteata

new species, *Guzmania sibondoyorum*.)

At Christmas time great bundles of *Tillandsia imperialis* are brought to the markets by the Indians. Everybody craves to display the decorative, festive spirit that their central, cone-like inflorescences radiate. These tillandsias, called *tenchos* there have become traditional and as synonymous to a Mexican *Navidad* as the poinsettia (native of Mexico) is to an American Christmas in the United States.



Guzmania sibondoyorum (photo E. Lenz, fcbs)

Bromeliaceae in Flora Neotropica, starting with the *Pitcairnioideae* in 1974, *Tillandsioideae* in 1977 and *Bromelioideae* in 1979. And immediately after publication he was already making changes and correcting errors.

Now, some 30 years later, more significant changes in classification have already taken place, and important new revisions soon will be made as a result of ongoing research by molecular biologists on bromeliad DNA clades. Change, like natural

selection, is a basic law of our universe; it cannot be avoided or ignored by the comforting tendency to stand still or even move backward to the familiar.

To put a face on the writer I reprint a photo of Racine Foster at the left that I took in 1980 during a visit to the legendary Bromel-La, the Foster's home and bromel sanctuary on the outskirts of Orlando, Florida. She was then 70 years old. Mulford had died 2 years earlier.}



Vriesea heliconioides, Costa Rica



Racine Foster, 1980



Tillandsia imperialis (ph P. Koide, fcbs)

{Editor's Note: *Thecophyllum* was the traditional genus name given by 19th century taxonomists for some species that are now in genus *Vriesea* and its former subgenus *Alcantarea* and some have gone into the newer genus *Weraubia*. Be aware that this article was written in 1952 when the BSI had just been formed and major changes and revisions in bromeliad identification by Dr. Lyman B. Smith were just starting to be formulated - fed and stimulated by the discovery of hundreds of new species and rediscovery of old species by Mulford B. Foster. 20 to 25 years later Dr. Smith published his monumental three volume monograph on the

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