

FLORIDA COUNCIL of BROMELIAD SOCIETIES INC. Newsletter

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Make checks payable to:

Florida Council of Bromeliad Societies

Mail to:

Carol Johnson, Editor at cover address

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VOLUME X - ISSUE I

FEBRUARY 1990

CATCHING UP - STAYING EVEN

COLD DAMAGE: Greatest losses from the Christmas freeze appear to have been among those people who were away from home for the holiday. Anything left unprotected outdoors was really hit hard. From Central Florida on North nearly all the *T. recurvata* (ball moss) is dead on the trees. It will be many years before our native *Tillandsias* recover and they were just beginning to mature following the disastrous freezes of the late 1970s. *T. usnioides* (spanish moss) is not quite dead, but was badly damaged. Coldest temperatures in Central Florida were 14 degrees early Sunday a.m., December 24. Our Gainesville friends suffered below freezing temperatures from Saturday until Tuesday, December 26. My *Aechmea distichantha schlumbergerii* and *Aechmea bromeliifolia rubra* are blooming beautifully outdoors even though their foliage is a complete disaster. Most of the commercial growers I have talked to fared rather well, especially in those areas where freezing temperatures are rare but not really unexpected. Please, everyone, be cautious until after the full moon on March 11.

TISSUE CULTURE - Assuming you have read the FCBS minutes for the last meeting on January 13 (printed this issue) you will find mention of a proposal that the Council arrange for the reproduction of bromeliads through tissue culture. It is very early on and no real plans have been finalized. One of the main problems will be to select the plants to be cultured those selected should be rare, hard to propagate species (or hybrids)--those which do not ever set seed and are stingy with offsets. My personal first choice selection would be *Cryptanthus warasii*; second choice, *Aechmea corymbosa* discolor. The Council welcomes all suggestions. Send them to any member of the Selection Committee (Nat DeLeon, Carol Johnson, Carl Perry).

ADDRESS CORRECTIONS - Those societies which request reprints of tracts from Selbyana are requested to furnish Harry Luther with the correct mailing address. Many of his mailings have been returned because of insufficient address.

ADVENTURES UNLIMITED - Many of us have recently received a letter from Betty Feuerstein of "Adventures Unlimited" regarding an organized plant-collecting trip to Ecuador in May, 1990. I have talked with some of the people who also received the letter (one in California), & also called and talked with some of the people whose names were given as reference. Two of these were in Florida and both have made trips to Ecuador and are very enthusiastic in their recommendations. They said there are no hidden gimmicks or surprises, the food is very good and the travel arrangements flawless. Therefore, should you be interested, read the presentation carefully and take it at face value.

The KEW MAGAZINE

Volume 6 Part 4 November 1989

Pp. 181-188

READERS' LETTERS

April 1989

In reply to Mike Read's (1989) article 'Bromeliads Threatened by Trade', I feel I should comment on certain of his statements and recommendations.

It is certainly true that bromeliads, specifically species of *Tillandsia*, have evolved from specialist collector's plants to mass market, fad items during the past ten years or so. It is also true that at least initially most of the stock was wild-collected, mostly from Mexico, Guatemala, Honduras, Peru, Argentina and Brazil. It is not true that a significant number of species found in the trade have a very limited range.

Five of the most widely offered and least expensive species (*Tillandsia ionantha*, *T. brachycaulos*, *T. tricolor*, *T. caput-medusae* and *T. butzii*) have extensive distributions from Mexico to Costa Rica. *Tillandsia bulbosa*, *T. juncea*, *T. polystachia* and *T. pruinosa*, also commonly offered, are even more wide-ranging, to the West Indies and South America. Considering that large scale harvesting occurs in only limited areas of each species' natural range, it is unlikely that commercial collecting will have more than a very localized effect. Ignored is the fact that collectors rarely harvest all the individuals and that at least the common and widespread species have a high potential for reproduction and re-colonization. The latter, of course, assumes that the habitat remains intact and suitable.

Among *Tillandsia* species of less extensive ranges, only a few have entered horticulture in large numbers. The evidently rare *Tillandsia sprengeliana* has, to my knowledge, been imported into the United States on only three occasions - a total of less than 100 plants. The same may be said for the rest

of the highly endemic 'Anoplophytum' taxa from south-eastern Brazil; few plants have ever been collected and exported, and they remain highly valued collectors' items.

Mr Read's statement that specialists 'offer around 200 species of *Tillandsia* and bulk lots of up to 10,000 *Tillandsia* plants at a time' is very misleading. While well over 200 taxa are available at the retail level, less than 50 taxa can be obtained in any sort of quantity approaching 10,000 plants; and some of these are from nursery-raised stock. The situation in Europe may differ slightly, but I think not.

Irrelevant to this discussion of wholesale collection is the status of *Dyckia marnier-lapostollei* and *Cryptanthus warasii*. It is very possible that these species may be more numerous in horticulture than in habitat due to artificial propagation of the few (again, less than 100 individuals) exported from Brazil. Wild-collected Bromelioids and Pitcairnioids, because of their weight and bulk, are rarely if ever commercially exploited for international trade. Once introduced, seed and vegetative reproduction is relatively straightforward; and demand, if any exists, can be satisfied without further wild collections.

Mr Read is entirely correct stating that the status in the wild is poorly known for many species in the trade. A good example of this is *Tillandsia abdita* L.B. Smith cited by Smith (1979) as known from a single collection from Costa Rica dating from 1935. It is now commercially offered in quantity from exporters in Mexico and Guatemala. It has also been rediscovered in Costa Rica where it is locally abundant. Rarity of plants is often a reflection on the activities of botanists and not a biological reality. Until the real distribution and population dynamics of an organism can be studied in detail and *in situ*, it is premature to assign a status of 'common', 'rare', 'threatened' or 'endangered'. Research toward this end is now being carried out as part of floristic and monographic studies throughout the Neotropics. My own work for part of the *Flora of Ecuador* and *Vascular Flora of Costa Rica*, as well as routine determinations of submitted bromeliad specimens, has led to the rediscovery of several 'lost' or poorly known species, and to the extension of the known ranges of many of the better known bromeliads.

The following statements sum up my view of the state and effects of commercial exploitation of bromeliads.

1. The taxa most exploited are the most abundant and wide ranging taxa.

2. Rare (or apparently rare) taxa have rarely entered horticulture in large quantities.

3. The actual status of most taxa is incompletely known. At least some of the 'rare', highly endemic and 'lost' taxa will be (or already have been) found to have much more extensive ranges and populations.

4. Due to consumer demand for higher quality plants free from damage and defects, an increasing percentage of tillandsias are being propagated and grown in nurseries in the United States, Mexico and Guatemala.

5. With the exception of the genus *Tillandsia*, the important bromeliads

of horticulture are highly selected cultivars (e.g. *Aechmea fasciata*, *Neoregelia carolinae*) or hybrids (many vrieseas and guzmanias), the commercialization of which has no effect on any wild population.

6. No bromeliad taxa known to me are at present in danger of extirpation by commercial exploitation.

7. Habitat destruction is the single greatest threat to ALL tropical organisms including bromeliads.

Harry E. Luther,

Director, Mulford B. Foster Bromeliad Identification Center;
Curator of Bromeliaceae, The Marie Selby Botanical Gardens.

Read, M. (1989). Bromeliads threatened by trade. *Kew Mag.* 6: 22-29.

Smith, L. & Downs, J. (1977). *Flora Neotropica*, Monograph 14, Pt. 2, Tillandsioidae.

May 1989

In reply to Mr Harry Luther's comments on my article 'Bromeliads threatened by trade' there are one or two points I should like to make clear. I gladly acknowledge that large numbers of certain species of *Tillandsia* are being artificially propagated in several different countries. I would also sadly concur that habitat destruction presents the greatest threat to the flora of Central and South America. However this seems to me to make it even more important to bring to a close the unnecessary additional threat of collection of wild plants to supply the horticultural trade. This applies to both collection to supply specialists and the enormous 'popular' market.

Evidence for damaging exploitation of wild *Tillandsia* populations continues to mount up. Most recently a report on the trade from Guatemala has been compiled by the German branch of TRAFFIC (Trade Records Analysis of Fauna and Flora in Commerce). An English translation is in preparation and will be available shortly from: TRAFFIC (Germany), Umweltstiftung WWF-Deutschland, Postfach 70 11 27, Hedderichstr. 110, D-6000 Frankfurt/M 70, West Germany.

Mike Read

Now that you have read Harry Luther's reply to the Kew Gardens Magazine proposal to make bromeliaceae subject to CITES, let me give you one collector's feeling on the subject. I am not a wholesaler nor a taxonomist, but yet cannot be classified specifically as a hobby grower. My son Jeff, and I, have been making collecting trips since 1973--usually with a group and combining collecting with sight-seeing. On none of those trips have we returned with more than forty pounds each of bromeliad plants. Considering the size of Central and South America, it is difficult to believe that the efforts of collectors like ourselves can make any dent in the native bromeliad populations. Example: In Vera Cruz province in Mexico our group had permission to collect *Tillandsia stretophylla* in an area where the plants covered all the trees as far as the eye could see. We could have loaded a semi-trailer in five minutes and made no noticeable difference in the plant population. That is an extreme example, of course. In other places, other times, we have hunted all day and had to make do with a few *Catopsis*.

How do the countries affected view the proposal? Have they been asked? Do they want to forego the tourist's dollars in order to prevent the collection of bromeliads? In most areas the plants are considered parisitos and either fed to the cows or burned with the felled trees.

If there were some easy way to get a permit to collect CITES plants, there would be less objection to it. Returning from Honduras in 1981, the folks at USDA Plant Inspection Station in Miami showed us a room full (thousands and thousands) of dead and dying orchids on which the paperwork was lacking. Until bureaucracy becomes efficient there is no way that CITES can be an effective means of controlling plant collecting and/or conservation.

From plants collected on our various trips, we have brought back into circulation species which have been absent for many years. These have bloomed, set seed, and been distributed to other bromeliad growers all over the world. I feel our collecting efforts have been a conservation measure as well as a whale of a lot of fun.

Editor.....



PLANT TISSUE CULTURE

by

Geoffrey C. Johnson

Tissue culture uses the notion of the totipotentiality of cells. This says each somatic cell of an organism contains a total DNA blueprint to produce a total organism.

Beginning of tissue culture was in the early 20th century, but the earliest tries were unsuccessful due to a lack of understanding of the nutritional factors needed in propagation. Procedures were perfected in the late 1950s by Skoog and Miller and refined to commercially acceptable techniques in the 1970s by Murishige of California. The process is widely used today in horticulture.

The actual mechanics of the procedure are deceptively simple. A small explant, a portion of a plant, normally an apical or lateral bud is sterilized and placed on a nutritionally suitable substrate, either solid or liquid, and treated with hormones to induce root and shoot production.

These hormones, cytokinins and auxins, properly balanced, will produce plantlets from the originally cultured plant material, called callus.

Cytokinins such as kineton, BA (H₆ benzyladenine) or 2IP (H₆ isopentenyladenine) induce shoot production from callus.

Auxins such as 2, 4, D or those more often used, IAA (indole-3-acetic acid) or NAA (α -naphthalenacetic acid) induce root production in callus tissue.

The plantlets must be given differing light levels throughout the production stages and then must ultimately be hardened sufficiently to grow in their final medium into plants for market.

The advantages of tissue culture are many-fold. Plants typically affected by virus and bacterial disease can be produced disease free by culturing from cells not already infected. The plant material produced is essentially identical. The time frame for production is greatly compressed as opposed to the generally used asexual techniques, i.e., cuttings, offsets, etc.

The ultimate success of the new plants arises from the quality of the original stock. The plant material used must be strong and vigorous, and the techniques used must be scrupulously sterile to prevent outside contamination by viral, bacterial and fungal diseases. The nutrient and light levels must all be optimal throughout the procedure. With proper adherence to standardized techniques it has been shown that tissue culture is a commercially lucrative proposition.

There are drawbacks to the procedure. Some genetic aberration can arise from pushing a single explant too far. A new disease can have a field day in a genetically identical population. These are, however, not really a factor and can be circumvented by various means.

All in all, tissue culture is a valuable process for rapid plant propagation if proper technique is adhered to religiously.

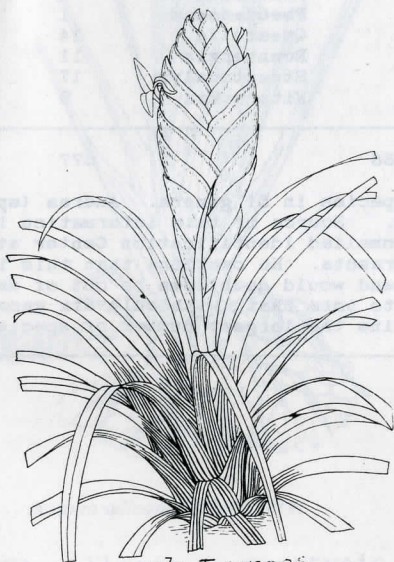
COLLECTOR'S CORNER

TILLANDSIA anceps:

Tillandsia anceps tends to be overlooked by collectors and has consequently become rather rare.

At first glance, the plant is identical to *Tillandsia cyanea* in non-blooming stage. In fact, many years ago a plant purchased as *T. cyanea* proved at blooming to be *T. anceps* and at that time was a terrible disappointment to me because the blooms were pale blue and white and smaller than *T. cyanea*. In 1981 we collected *T. anceps* in Honduras and that form has produced pure white blooms. The blooms are fragrant in the same fashion as *T. cyanea*--that is, the surrounding atmosphere must be warm and humid. It has always been more difficult to grow and bloom than *T. cyanea*, but trial and error has proven that it likes low light, moist atmosphere and foliar feeding. It can be grown in the same mix as *T. cyanea* or epiphytically.

The plant is native to Central America and northern South America. The only place I have collected it was in Honduras and the population there was very meagre. Consequently, I only took two plants. If you have room for only one of the type, stick with *T. cyanea*, but *T. anceps* is well worth adding to a *Tillandsia* collection.



-7- *T. anceps*

BROMELIACEAE OF RECORD
As of January 15, 1990

PITCAIRNIODEAE

Abrometiella	4
Ayensua	1
Brewcaria	2
Brocchinia	21
Connellia	5
Cottondorfia	1
Deuteroconhia	8
Dyckia	115
Encholirium	22
Fosterella	15
Hechtia	48
Lindmania	36
Navia	101
Pepinia	60
Pitcairnia	260
Puya	186
Steyerbromelia	3

BROMELIOIDEAE

Acanthostachys	2
Aechmea	200
Ananas	8
Androlepis	1
Araeococcus	5
Billbergia	61
Bromelia	50
Canistrum	10
Cryptanthus	26
Disteganthus	2
Fascicularia	5
Fernseea	2
Greigia	28
Hohenbergia	45
Hohenbergiopsis	1
Lymania	6
Neoglaziova	3
Neoregelia	94
Nidularium	42
Ochagavia	3
Orthophytum	23
Portea	7
Pseudaechmea	1
Pseudananas	1
Quesnelia	14
Ronnbergia	11
Streptocalyx	17
Wittrockia	9

TILLANDSIOIDEAE

Catopsis	21
Glomeropitcairnia	2
Guzmania	158
Mezobromelia	5
Tillandsia	515
Vriesea	291

888

677

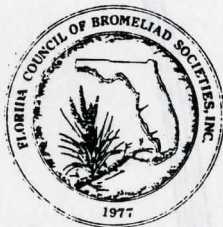
992

A total of 2,557 species in 51 genera. Andrea (sp) is now considered to be a Nidularium. Source of this information is Harry Luther, Director of the Bromeliad Identification Center at Marie Selby Botanical Gardens in Sarasota. He cautions that this information is as of January 15, 1990, and would doubtless be out of date within 30 days. It is interesting to note that, with only six genera in the Tillandsioideae, it contains the largest number of species.



Andrea selloana (Sellow 1414)

ANDREA selloana, a monotypic genus, has been reclassified & moved to genus NIDULARIUM



FLORIDA COUNCIL OF BROMELIAD SOCIETIES, INC.

MINUTES OF F.C.B.S.

JANUARY 13, 1990 MEETING

The meeting was held at the home of Peggy & Joe Bailey at Ft. Myers, Fl.. Thank you to our hosts.

The minutes from the previous meeting were handed out & Jane Dahlin asked that the words "Sarasota Bromeliad Society was asked about hosting the next Extravaganza" be struck, the minutes were then approved as written. Motion- Nat DeLeon, then seconded.

TREASURER'S REPORT - Carol Johnson reported a balance of \$2,891.12 minus \$60.00 for the mail permit, with yearly expenses at about \$1,800.00. A motion was made by Roland Schnabel to file the report for audit, it was seconded.

REPRODUCTION OF RARE PLANTS AT SELBY GARDENS - Carl Perrin talked with Eric Christanson of Selby and as of yet we need:

- 1) A list of possible plants
- 2) To get input from commercial growers
- 3) Motivation to save rare plants
- 4) To know time from seed to sale
- 5) Ask societies what plants they would like to see on list
- 6) Possible costs
- 7) Will Miami possibly finance this venture with money left over from the World Conference.

A committee was appointed for plant selection they are:

Carol Johnson

Nat DeLeon

Carl Perrin

They will consult with Harry Luther.

JUDGES SCHOOL - No specific date has been set but it will be in the spring probably in April. There will possibly be a seminar for currently accredited judges. A seminar is for information & knowledge, a symposium is for credit.

NEXT EXTRAVAGANZA - West Pasco Bromeliad Society has expressed an interest in hosting the next extravaganza. Bob Steiger is checking into it. Possibilities for extravaganzas - 1990-West Coast
1991-Seminole
1992-Caloosahatchee

VAN HYNNING - FOSTER FILES - There is possible interest by Dr. Norris Williams of the Museum of Natural History. More information to follow.

WORLD CONFERENCE - There will be a giant Show & Tell and all members of Bromeliad Societies are encouraged to participate by bring slides. A reminder that the World Conference is June 6-10 in Houston, Texas.



FLORIDA COUNCIL OF BROMELIAD SOCIETIES, INC.

SILENT AUCTION - Ron Schneau donated a *Vr. platanema variegata* x *Vr. gutata*. The winner was Connie Johnson bidding \$40.00 & the Stuckee was Jane Dahlin at \$10.00. Proceeds go to the Florida Council. Carol Johnson will bring the next plant.

The next meeting will be held in Tampa on April 14.

Respectfully submitted,

Narda Enander
Narda Enander, Secretary

F C B S

TREASURER'S REPORT

January 13, 1990

Balance at Last Report		\$ 2,861.02
Deposits:		
10/21 Seminole, Polk, FWC & Subscriptions	113.00	
11/4 BSSF	148.00	
11/25 Tampa & 5.00 subscript.	83.00	344.00
		<hr/>
		\$ 3,205.02
Disbursements:		
Printing Palace, Letterheads	25.55	
Reimb. treasurer, postage, LD, computer labels	22.70	
Printing Palace, V.9, #4	220.12	
Postmaster, Longwood, V9, #4	45.53	313.90
		<hr/>
Balance at 12/31/89		\$ 2,891.12

SHOW PAGE

May 11-13, 1990 Bromeliad Society of Central Florida Annual Show & Plant Sale. Florida Mall, Orlando. This is Mother's Day weekend.

May 18-19, 1990 Bromeliad Society of South Florida Annual Show & Plant Sale. Fairchild Tropical Gardens, Miami.

April 27-29, 1990 Florida West Coast Bromeliad Society FIRST Show, being held jointly with the St. Petersburg Flower Club at the Bayfront Center. Show Chairman Mike LeVasseur, (813) 522-0631

August 18, 1990 Seminole Bromeliad Society Fantasy 4 One Day Exhibition & Plant Sale. Earl Brown Recreational Park, Deland.



BROMELIADS IN SPACE

NINTH WORLD CONFERENCE
JUNE 6-10, 1990
HOUSTON, TEXAS

RESERVATION FOR ALL BROMELIAD LAUNCH AND ORBITAL FUNCTIONS

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(713) 875-2222 or 1-800-822-4200

RESERVATION (per individual)
EARLY
Before December 1, 1989 \$ 75.00
REGULAR
December 1, 1989 to May 1, 1990 100.00
LATE
After May 1, 1990 125.00

A Reservation entitles you to participate in all of the Bromeliad launch and orbital activities.

No refunds will be issued after May 1, 1990.

Make checks payable to: BS/H WORLD CONFERENCE

REGISTRANTS:

Please print name(s) _____

Address _____

MAIL To:
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7818 BRAES MEADOW
HOUSTON, TX 77071