

BROMELIANA

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BENEVOLENT BROMELIADS CONT'.

by Racine Foster

(This is the second part of an article by Racine Foster that appeared in the May to November, 1952 BSI journals, then called The Bromeliad Bulletin. The last part will be reprinted in the next issue of BROMELIANA.)

In studying the useful bromeliads further we were rewarded with learning that there are a number of bromeliads which produce a commercially useful fiber. Only one, *Neoglaziovia variegata*, found in Brazil, is used on any extensive scale for commercial purposes. It is not grown agriculturally but is gathered from the wild. The value of other members of the *Bromeliaceae* is not unknown; for example: *Bromelia sagenaria* (now reclassified as *Ananas sagenaria* - Ed.) which grows in and near the state of Para, Brazil, has two varieties. One is known as "Branco" (white) which is stronger and lighter in color, and therefore more desirable than the "Roxo" (purple) which is an inferior grade. The species will grow freely in sand or humus soil, and although not commercialized yet it has possibilities.

"Curaua", *Ananas erectifolius* (now *Ananas lucidus* - Ed.) produces very long fibers which have an average of two meters in length; each plant has a yield of 350 grams of fiber. The plant has a quick turn over as the leaves can be harvested twelve to fourteen months after planting, just when the points of the leaves start to become yellow. *Bromelia*



Neoglaziovia variegata - photo by Ken Marks, fcbs

laciniosa, Mart., "Macambira", is another one of the bromeliads growing in the vast areas of northern Brazil which have fiber possibilities.

Neoglaziovia variegata, natively called "Caroa", grows extensively in dry, northeastern regions of Bahia, Alagoas, Pernambuco, Paraiba and Pinai. The firm of J. Vasconcelor & Cia in the state of Pernambuco has gone into preparation of *Neoglaziovia* fiber on an extensive scale. They mechanically

decorticate the fiber and manufacture it into ropes, twine and sacking. (See photos below.) It has also been woven into cloth suitable for clothing. The fiber is said to be three times as strong as jute. Its thread No. 22 for instance, has a resistance of thirty-eight pounds.

Many thousands of acres of this unique fiber plant grow in the big highlands of northern Brazil. The area is called "Caatinga" and is comparable to the mesquite areas



THE INDUSTRY OF THE "CAROA" IN THE MUNICIPALITY OF CARUARU - PERNAMBUCO.



Caroa fiber ready for spinning in Caruaru factory of Jose de Vasconcellos & Cia, Pernambuco, Brazil. (Brom. Bulletin 1952)

THERE WILL BE NO MEETING IN JANUARY.

BEST WISHES FOR A JOYOUS HOLIDAY AND A HAPPY NEW YEAR

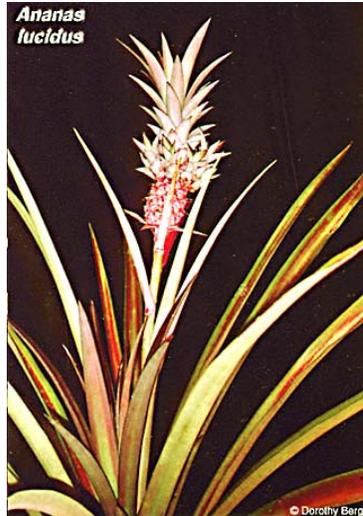
of Mexico and the Southwest. In order to preserve the plant from extinction the gatherers are allowed to pull only two or three leaves from the plant at a time.

One of the important fibers of Mexico comes from *Aechmea magdalanae*, a pineapple-like bromeliad which has an extensive range throughout southern Mexico, Guatemala, Honduras, Salvador, Costa

Rica, Panama, Columbia and Ecuador. Dr. R. E. Schultes in his paper (Bot. Mus. Leaflet. Cambridge, Mass 91941) says that the fiber or *pita* from this *Aechmea* "is the basis of one of the most important native industries of the Chinantec and Zapotec Indians of Oaxaca in southern Mexico, being made into hammocks, ropes, nets, fans, baskets and numerous practical articles. (See photo below.)

Concerning gathering this bromeliad, Dr. Schultes states, "The work of procuring the fiber is accomplished chiefly by the Chinantec women who cut the leaves near the ground and remove the soft, flexible but strong fibers. The extraction process consists of rubbing the softer tissue of the leaf free from the fibers on a metate. The fibers are then thoroughly washed and freed from extraneous materials. When dry, the finished product is almost pure white in color.

Further in praise of the fiber of *Aechmea magdalanae*, Dr. Schultes says that it "is promising" and "is of superior quality." It has been shown to possess great power of resistance to the affects of salt water, and "its resistance to alkalize hydrolysis (caustic soda) is good". Again we must consider the versatile, ubiquitous Spanish Moss (*Tillandsia usneoides*), this time as a fiber plant which is now used extensively in the upholstery in



Ananas lucidus ph Dorothy Berg



Ananas lucidus fruit ph D. Berg

Pullman cars, airplane or automobile seats or mattresses for beds and couches. The gathering and processing of this bromeliad takes place almost exclusively in Florida and Louisiana totaling a five million dollar industry in the two states.

In his article "Spanish Moss: Forest By-Product of the South", George S. Corfield says that: "The colorful phases and the romantic story of this activity make the industry in many respects unique among the industries of the world." He states further that "In the Cajun Country (if Louisiana) the Spanish Moss industry is known as a 'lagniappe crop' or an extra revenue crop which nature furnishes without the help of man." However, after reading that the average picker gathers about 500 pounds a day of this light stuff, it would seem that man would have to do a considerable amount of work to obtain it.

The processing is not exactly an easy job although it is slow. From six to eight months the moss remains in the pits, trenches or mounds where the heat and moisture rots off the outer grey surface and leaves a tough, hairy, black internal fiber which toughens considerably after this curing process. Removed from the pits it is hung on great stretches of wire for several weeks to thoroughly dry. The grades of fiber depend upon the length of time cured. A ginning process cleans off the extra debris and straightens the curly fibers before it is packed for sending to all major cities in the East and Mid-West for distribution to manufacturing companies. (To be continued.)

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Aechmea magdalanae - photo by A. Sanchez

Chacara bag woven from *Aechmea magdalanae* fibers by the Ngobe Bugle Indian women of the Chinantec tribe, Oaxaca, Mexico.



THE BEST-LAID PLANS - ON HOLD

by Herb Plever

When I examined my plants at the end of the summer, I saw that I would have lots of pups to take off and pot up. I made an assessment of when different pups would be large enough to flourish on their own, and I made a tentative schedule to do the job in the fall.

I had crowded pots of *Billbergia* 'Fantasia', *B.* 'Strawberry' and *B.* 'Louise', each with many pieces, that I planned to separate. I also made a mental note to clear space on my terrace table so I could do the messy job of making some fertilizer mix. In anticipation of our September meeting topic, I planned to create a new potting mix. I bought a bag of potting soil and dug out a bag of big pieces of peat moss that I had been saving for years and a bag of perlite so I could mix them with cedar bark mulch.

Those plans were disrupted during the Labor Day weekend when I was hit with a deep-vein thrombosis (blood clot) in my right thigh. In the course of diagnosis for this ailment it was discovered that I had a small lesion in my right lung which would have to be removed. The almost 3½ months that followed have been taken up with incessant visits to many physicians, tests, medication, etc. I only had time to occasionally water and soak my plants to keep them alive, but broms have no trouble adjusting and my plants are bearing up ok.

The surgery on December 1st went well and at this writing 10 days later, I am convalescing at home in good shape but with reduced physical energy. My broms will have to wait a bit longer; I watered them heavily on December 28th so I know they'll survive without damage for at least another few days or more.

In checking my plants I note that most of the aechmea and guzmania pups have not grown to the point that they must be removed. Several pieces of *Billbergia* 'Fantasia', *B.* 'Louise' and *B.* 'Strawberry' are flowering. But on three of my cryptanthus the pups are getting quite large. On *Cryptanthus* 'Strawberries Flambè' and *Cr.* 'Circuit Breaker' the pups are close to flowering maturity. On *Cr.* 'Arrogance' which

flowered in the early summer two pups have come up; one is already quite large. (Photos of these plants appear on page 4.)

I grow all my crypts under fluorescent lights and they often develop different and perhaps more vivid markings than the plants shown in the cultivar registration photos. There are now 67 recognized *Cryptanthus* species, and there are 450 or more cultivars named in Cultivar Register. I confess I have always had an ambiguous attitude with respect to these cultivars, many of which are barely distinguishable from each other. There are also a goodly number of registered cultivars that don't have any really redeemable esthetic features (such as *Cr.* 'Glad' and *Cr.* 'Musk') whose hybridizers should have dumped rather than register them. (I have the same complaint about the enormous volume of *Neoregelia* cultivars.)

I also have a mix of both insights and much confusion with regard to the parental provenance of many cryptanthus hybrids. When a compound hybrid is made by crossing two cultivars, there are many "recessive" genetic characters that may surface in succeeding generations or when changes in the plant's usual environment occur.

Take my *Cryptanthus* 'Arrogance' (*Cr.* 'Fine Feathers' x *Cr.* 'Zonatus Silver') that has brown-red barring whereas in hybridizer Jim Irvin's registration photo the plant is dark brown-black. It favors its pollen parent *Cr.* 'Zonatus Silver'; its seed parent 'Fine Feathers' is a cross of 'Cherry Frost' with the species *Cryptanthus fosterianus*. This cultivar appears to have a combination of *Cr. zonatus* and *Cr. fosterianus* characters. My plant looks a lot more like *Cryptanthus fosterianus*.

Three key characters (among others) distinguish the two species: *Cr. zonatus* has 19mm long sepals with entire (spineless) margins), and its leaves are thin and

flexible. The sepals of *Cr. fosterianus* are 8mm long with serrulate (saw-toothed) margins, and its leaves are thick and fleshy. Note however, that like the rest of the *Bromeliaceae*



Cryptanthus fosterianus



Cryptanthus zonatus forma fuscus

cryptanthus populations are variable and there are often differences between species and from the descriptions.

Both plants have attractive transverse, irregular brown bands with white or silver margins, so that the margins appear to be irregular horizontal bands on a darker background. I think it is clear that the genes of *Cryptanthus zonatus* and *Cr. fosterianus* are present in the hundreds of barred crypt cultivars in the register. For instance: ‘Absolute Zero’, ‘Alberta’, ‘Alpine Frost’, ‘Alternating Current’, ‘Arrogance’, ‘Audacity’, ‘Aunt Beulah’, ‘Bensche’s Black Beauty’, ‘Betty Ann Prevatt’, ‘Black Mambo’, ‘Black Mystic’, ‘Black Power’, ‘Blake Babcock’, ‘Blushing Zebra’, ‘Bone Chiller’, ‘Broken Surf’, ‘Cape Coral’, ‘Chantilly Lace’, ‘Circuit Breaker’, ‘Cloud Cover’, ‘Custom Made’, ‘Cutting Edge’, ‘Dancing Zebra’, ‘DeCoster’s Silver Star’, ‘Double Fudge’ and ‘Dr. Larry’. (Only the first four letters of the alphabet.) I bought my first crypt, *Cryptanthus fosterianus*, from Ed Hummel in 1963. It was and is a beautiful plant that stands up to any of the new cultivars.

Note that the identification of the *Cr. zonatus* alleged to be a parent in many registrations needs to be clarified, because there are three forms in which the color is different. Years ago whenever I ordered *Cr. zonatus* hoping to get a black plant, I invariably got a brown plant which I now believe was the basic species. I thought the color might be influenced by the light environment, but then I learned there is a very dark brown or black form called *forma fuscus*, and there is a green form which is called *forma viridis*. Genes of the green form are probably lurking in the provenance of the lovely *Cryptanthus* ‘Betty Ann Prevatt’, a reasonably small, green crypt with silver horizontal bars. It also was made by Jim Irvin.

Thus *Cryptanthus* ‘Zonatus Silver’, listed in the Cultivar Register as “parents unknown”, undoubtedly has *forma fuscus* in its genes. The registration for the



Cryptanthus ‘Circuit Breaker’ pup



Cryptanthus ‘Arrogance’ pup with very wavy bands, some broken to create other markings



Cryptanthus ‘Black Mystic’



Cryptanthus zonatus forma viridis
(photo by Jim Irvin, courtesy fcbs.org)

beautiful *Cr.* ‘Black Mystic’ correctly lists it as a hybrid of *forma fuscus* and it is a black plant.

When I wrote an article (Feb. 2010) about tillandsia hybrids, I opined that in most hybrid crosses the results did not improve on the parent species. I received a response from a veteran hybridizer who agreed with this opinion and said that it was why he had stopped hybridizing.

Yet I cannot deny that many worthwhile hybrids have been made which do improve or at least highlight a different aspect of the parents. Jim Irvin has produced a succession of cultivars with small (and sometimes significant) changes from the preceding cross. See for instance his registration photos of *Cryptanthus* ‘Audacity’ and *Cryptanthus* ‘Arrogance’; in the latter the bands are more delineated.

However, I am still confused by the fact that my pieces of *Cr.* ‘Circuit Breaker’ and ‘Arrogance’ do not have the brown-black bands shown in his registration photos of these plants. Is this a matter of the light they are grown in? This is an issue that need more testing and investigation.

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