REASONER: THE HIBISCUS

varieties of hibiscus now being originated in Florida, and with the interest shown and the number of experimenters now raising seedlings, it is not at all un-

likelj that south Florida may soon be known as the leading center of hibiscus culture, rather than Hawaii, as at the present time.

BROMELIADS IN FLORIDA HORTICULTURE

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The cultivation of plants for ornamental horticulture is followed on the premise that beauty is a necessity in your life and mine. Horticulturally bromeliads have been developing, and in Florida they can provide a very pertinent addition to our gardens, creating more plant interest and decorative value than many other previous additions to the Florida scene.

Bromeliads in Florida are a natural. And in considering bromeliads for Florida horticulture first of all we must be aware that they are already here in the species of Tillandsia usneoides, (the ubiquitous Spanish Moss); in Tillandsia utriculata (the “Fountain Plant”), vicinity Vero and Merritt Island; in Tillandsia tenuifolia of southern Florida; in the Tillandsia fasciculata (Cardinal Plant), dense in the cypress swamps around Kissimmee; and in Tillandsia recurvata (Ball Moss), noticeable in trees along with the Spanish Moss and prominent on telephone wires all over Florida. Just why they seem so happy on telephone wires would afford a very interesting study.

There are ten other bromeliads less conspicuous in Florida. All but three of the seventeen bromeliads native to the United States are growing in Florida. While other States, Texas, Louisiana, the Carolinas, and even the southern section of Virginia can claim some bromelai,ds, Florida can boast fifteen native species, twelve tillandsias, one guzmania and two catopsis. This affirms the fact that bromeliads like it here and therefore conditions are favorable to the introduction of others from afar.

If the bromeliads had not had to depend almost entirely on the wind for distribution we might have had still more species here in Florida. The ones we have, no doubt, came by way of Cuba and Mexico, as our native bromeliads are also found in these Caribbean countries. We might say that many centuries ago these air-fed, air-domiciled, air-borne seed plants established the first air communications between this country and our Latin American neighbors. Man who feels that he has advanced so considerably in the air needs only to study the ages old history of air-minded plants.

The bromeliads which have already traveled on their own as well as the ones which have traveled in the stomachs of beast and bird are now coming into Florida as introductions to horticulture by the man made air routes.

The native members of this great family (commonly known as the pineapple family) here in Florida are all epiphytes creating, thus, their own natural tree garden. You can see these
tree gardens when you travel from Orlando to Kissimmee or Holopaw; when you go to Melbourne or Vero; when you cross the Tamiami Trail or explore in the Royal Palm Park, or even in any native hammock. Thus the feature of an air garden already being established naturally, encourages the garden builder to go ahead and make a tree garden on the oaks or palms in his own yard using not only the natives but the horticulturally introduced exotics. Good gardening means, in one respect, doing what nature has already done especially in general planting utilizing native material wherever possible. So, in planning a tree garden for the home owner we always try to include some of our hardy native species, the Tillandsias or wild pines as they are sometimes called.

While man likes the little pat on his mental ego as being original we doubt very much if he ever is, rather he simply rediscovers and reapplies the features and principles which are inherent to everything throughout nature. So, while air gardens might be something new to many people, Floridians can point out to visitors our well established air gardens where not only bromeliads flourish but also epiphytic members of other families such as orchids, cacti, pipers, and ferns.

It is interesting to note that the native bromeliads in Florida occur on nine different species of conifers, those being five species of pines, two of cypress (Taxodium) on one white cedar and on one red cedar. Of course, the rough bark and great spreading branches of the live oak make this tree an ideal host for the air plants.

The tree gardens of Florida, however, are but a sample of tree gardens that exist in the Americas. In the Americas south we have seen as many as 5,000 air plants living in one tree and although crowded, evidently quite happy. There seemed to be no evidence that the tree was burdened or imposed upon, rather it was adorned, apparently enjoying being host to harmless epiphytes rather than the harmful parasites.

In using bromeliads in Florida garden designs we have not limited our use of them to the air or tree garden. This versatile family has produced members which can be utilized in the rock garden, in the cactus garden, in the sheltered garden, on the seashore, and on the patio. These, of course, are the species which have been introduced from the other American countries; except for one species, the bromeliads do not grow outside of the South, Central, and North American countries.

There are already a number of exotic bromeliads in Florida horticulture; these came into Florida by way of Europe where years ago they were choice house and conservatory plants.

No doubt the early introductions of bromeliads into Florida came through the enthusiasm and appreciation of them by Dr. Henry Nehrling, Mr. Theodore Mead and Reasoner Brothers, all of whom had outstanding collections of bromeliads at one time which they received mostly from the European collections of bromeliads. You may have read the exuberant writings of Dr. Nehrling on this great family of plants. Florida, even now, 20 years since, remains host to the introduction of many new bromeliads; Florida now has one of the world’s outstanding collections. From this collection bromeliads are being dispersed and sent to many other countries not only to bolster and renew the old collections but to distribute the new species that
have been discovered in the past few years.

There is one exotic bromeliad which came originally from Brazil which has already adapted itself to Florida gardens, and so much so that you might say it is common. It reproduces rapidly in our loose sandy soil; it also loves climbing up an oak tree; grows well in any area of thick leaf mold, or can do just as well in a pot. If you see no other bromeliad you will see this one. It is a *Billbergia pyramidalis*, having a plain green leaf-tube which sends forth a brilliant torch-like head of flowers late in the summer.

*Aechmea bracteata*, an introduced exotic, while not so common a bromeliad as the *Billbergia pyramidalis*, is nevertheless becoming distributed around Florida gardens. It is a native of the Caribbean area and so should be at home in Florida gardens. It stands our frosts of Central and South Florida very well. It produces heavy succulent leaves with big teeth, the plant sometimes becoming 5 or 6 feet high. In the spring a tall spike of brilliant red bracts and berries is produced which remains in full color for as long as 6 months. It is an epiphyte but adapts itself in porous soil very well.

The *Aechmea miniata discolor*, introduced many years ago, while not so common a bromeliad as the *Billbergia pyramidalis*, is nevertheless, around in many collections throughout the State. It is the first bromeliad that started my collection 20 years ago. Its beautiful satin-green leaves on the topside and the soft maroon underside make it a most pleasing plant. The long 3- to 4-month sustained bloom of brilliant red berries with blue petals give it an added charm that few plants have.

A third bromeliad which has already been in Florida horticulture a long time is the *Bromelia serra*, a large, sticky terrestrial which resembles the pineapple plant and even produces a cluster of fruits with a pineapple flavor. This bizarre looking plant is quite a sight in bloom. The center leaves turn brilliant flame-scarlet and out from them a great white cylindrical flower head, containing red bracts which cover maroon flowers, emerges gradually over a period of considerable time. No one can cease to thrill over this glorious display.

In our travels in South and Central America searching for new bromeliads for introduction into horticulture, we have found a bromeliad adaptable to almost every Florida condition.

For example: For our mangrove swamps there are beautiful Porteas, a genus of the bromeliads which produces showy flower stalks; these thrive in Brazil on the roots and trunks of the mangroves. Perhaps you have been confronted with the problems which a mangrove forest present. Let this problem be an opportunity for making an usual garden by establishing the large rosettes of the Porteas on the multiple-rooted mangroves. These Porteas are also quite adaptable to other parts of the garden.

We have found and introduced into Florida the gorgeous genus of Quesnelia whose species *Q. quesneliania* grows right down to the sand dunes of the beach front in Brazil. This large rosette of light green leaves produces a great watermelon-pink torch for a flower stalk creating a glorious sight down the beach.

One of the smaller types, *Aechmea nudicaulis*, can take the heat, drouth, and tough conditions of the littoral or the first line of growth back of the actual
beach. This bromeliad along with others will undoubtedly become a familiar plant personality among our introduced seaside planting as the years go along.

Numerous genera of this versatile family grow as epiphytes in the moisture-laden cloud or rain forests of Colombia, Mexico, Brazil, Ecuador, Dutch Guiana, Honduras, Costa Rica, to mention only a few countries whose bromeliads have found and can find favorable new habitation in the moist jungles, either natural or man-created of Florida. Two members in the genera Catopsis and Guzmania are already growing here in the State down on the lower tip of the Florida peninsula. They like excessive moisture and dark shade. Other members in these genera could make interesting additions to the wild or naturalized gardens of Florida.

A large number of terrestrial bromeliads are growing on or among rocks in their native haunts in Brazil, Peru, Chile, and elsewhere in the Americas. So, as introduced exotics, we have bromeliads in the genera of Dyckia, Hechtia, Encholirium, Bromelia, Neoglaziovia, Orthophytum, and Aananas which make excellent rock garden plants. These are gradually being introduced and propagated for the "new look" in rock gardens. A number of Dyckias have already been in cultivation and general distribution for a number of years, but there are many more, even more attractive, to be made known to the rock garden fancier. The other genera named are unfortunately very much less known but hold much interest for the courageous gardener who will risk something new. They not only have interesting and tough foliage but brilliant spikes of flowers of endless variety and color.

Two excellent rock garden bromeliads have proven to be in the genus Neoregelia, *N. spectabilis* (Painted Fingernail) and *N. marmorata* (Marble Plant) and hybrids of these. Their leaves become very red in full sun and their wire-like roots fasten themselves eagerly on the porous rocks of either coquina or limestone. The Neoregelias are more of an epiphytic type of bromeliad but they have adapted themselves so remarkably well in our own rock garden and others of central and south Florida that now we are recommending them as a colorful, novel addition to home-made rock gardens.

Not to be forgotten are the Pitcairnias, a terrestrial leafy bromeliad which can be happy in the shaded garden either among rocks or near a pool. A number of the species remind one of tufts of grass such as *Pitcairnia flammea* until they produce their brilliant red tubular flowers on a branched spike which in some species continues to bloom for 2 months, such as *P. corallina*.

Why don't we have all of these recommended bromeliads now in Florida gardens? Well—some of them are like century plants to dig and to pack when collecting them in South America, so only a few are taken. Those few are badly damaged in transit and quarantine upon entering this country, it takes a year or so for them to make the adjustment to our side of the equator, and propagation is not fast. In other words, plant introduction is a slow process.

Bromeliads used as patio or house plants in Florida have few rivals in decorative plant form because of their brilliantly colorful flower spikes, their splendid leaves, and because of the minimum care required.

On the patio for either sun or shade
there are several choice bromeliads awaiting placement. With a reasonable amount of rain or watering they ask for no other care. These bromeliads can be selected from the genera Aechmea, Queena, Billbergia, Neoregelia, Dyckia, Hohenbergia.

In the home the Aechmeas, Nidulariums, Neoregelias, Billbergias, and Cryptanthus make unusually successful indoor plants because of their characteristic adaptability and from a decorative standpoint, because of their highly colored foliage with their brilliant and long-lasting flower stems. Bromeliads lend themselves admirably to certain color schemes of the home, also to formal and informal furnishings. And for the busy housewife their need for only a minimum amount of care is always a desirable quality.

Looking on the economic side we find that there are just two outstanding species of bromeliads which are used commercially in Florida, the pineapple from Brazil and the Spanish Moss so prolific over this State as well as in other States and other countries. This "moss" has been successfully gathered, dried, and cleaned with a resultant fiber that makes excellent upholstery fiber now used extensively in airplanes, furniture, and automobiles. This manufacturing is being carried on near Jacksonville and Ocala, as well as in a number out-of-State locations.

Another large scale use of the Spanish Moss which we all are acquainted with, is its use as shade over plant beds. Instead of an expensive lath house Spanish Moss draped on chicken wire serves as a relatively inexpensive shade house.

Pineapples, the best known bromeliad, at one time were grown commercially on a much grander scale in Florida than now, and what the future holds for Florida pineapples depends on research into better growing requirements peculiar to Florida.

There are other members of this family which have commercial potentialities but whether or not they will be developed here in the State remains to be seen. Undoubtedly the Florida climate is favorable, but the soil conditions are so dissimilar to the indigenous spots where the commercially potential bromeliads grow natively that there must be considerable research done to bring these plants into successful production.

Excluding the pineapple productions of Cuba and Hawaii, Brazil has possibly gone further in a commercial development of this family than any other country with their Neoglaziovia variegata, a tough whip-like bromeliad which produces an excellent fiber, finer and more durable than linen. This has become a very productive industry in north Brazil in the states of Bahia Pernambuco, and Paraiba.

The bromeliads yield another excellent fiber plant in Aechmea magdalenana which is utilized extensively by the Indians in Mexico and Colombia for twine and rope. So far as we know it has not been industrialized but holds considerable potentiality, and, undoubtedly could be more favorably adjusted to our Florida soil than the Neoglaziovia.

Generally speaking, the versatile bromeliads have already given Florida a most interesting native flora; they have added by their introduced species an unusually different decorative value for the home garden, and hold within the 52 genera varied commercial potentialities whenever they can be adapted to Florida conditions.