NATIVE AND EXOTIC PLANTS

OF

DADE COUNTY, FLORIDA

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INTRODUCTORY NOTE.

THE art of landscape gardening is in its infancy in the tropics. The material is there for the production of effects which shall have all the romance and mystery that only a tropical jungle possesses, but the artists have seemingly been lacking.

South Florida borders the tropics and yet is close enough to our great cities to be filled in winter by those who want to get away from cold weather. These northern residents—those who spend their winters and those who settle there—are the ones to develop the landscape gardening of the south. It is everything to these people to have plenty of material from which to choose in making their picture effects. They will reach out and appropriate everything new which they see and like, and it is therefore of the first importance that they have presented to them the most beautiful plants of all the thousands which will grow on their places. Unless this is done they will fill their gardens with things which are easy to propagate and easy to obtain, regardless of whether they are beautiful or not. Those who have pushed on ahead in these matters and have tried out many things are most useful citizens of the communities in which they live. They are the pioneers, and their places become the centers from which spread the knowledge of what is best to plant.

It is for the purpose of calling public attention to one of these places that this booklet is published. It gives the experience of a man whose love for plants and whose belief in the possibilities of

Biscayne Bay led him late in life to settle on its shores and gather around him the plants which his travels and reading had called to his attention.

His example should lead others who are tired of the northern winters to consider how quickly trees grow in the south and what a beautiful place can be built up and enjoyed and left as a heritage by one already in the afternoon of life.

Mr. Charles T. Simpson has successfully established on his place near Little River what is considered the best out-of-doors collection of palms anywhere on the Atlantic Coast, and his orchids and many rare and interesting ornamental trees and shrubs, gathered from various parts of the world, make his place an arboretum which becomes of greater value every year, as the growth of the plants in it indicates their adaptability to the conditions of southern Florida.

This paper by Mr. Simpson was published in the "Proceedings of the Florida State Horticultural Society" for 1912, but the limited edition of that report has made it already a rare publication. The rapidly increasing interest in the ornamental plants which it describes made it seem desirable to reprint it in pamphlet form. Having had the pleasure of Mr. Simpson's acquaintance, and having spent several days on his interesting place, it is a peculiar pleasure to write this brief introduction to his paper, which I trust will encourage many people to experiment as he has done with the rare and beautiful plants of the tropics.

DAVID FAIRCHILD,

*Agricultural Explorer in Charge, Office of Foreign Seed and
Plant Introduction, U. S. Department of Agriculture.*

Given by Charles Derry
MAR 4 - 1914

A BROAD-LEAVED ORNAMENTAL, FICUS FROM THE EAST INDIES (*FICUS
NYMPHÆFOLIA*)

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BY CHARLES T. SIMPSON

FOR 40 years it had been a life dream with me to be able some day to live in a land where there is no winter, and where I might cultivate the beautiful and strange vegetation of the tropics. A little over ten years ago I resigned my position in the Smithsonian Institution and came to Dade County, Florida, to make a home for an old man.

The piece of land selected for this purpose fronted on Biscayne Bay, in the village of Lemon City, about five miles north of Miami. It contained some 15½ acres; three acres of the front being low hammock or muck land, two acres joining this, rocky, high hammock, and the rest rocky pine land. I was 56 years old, and having little spare money I put on overalls and a blue shirt and began the task of making a home in the unsubdued wilderness. I chose this region for my home after studying Cuba, Haiti, Jamaica and the Bahamas. These islands have the advantage of a more tropical climate than South Florida, their soil is generally richer, but I felt that to them could be applied the lines from the missionary hymn:

"Where every prospect pleases,
And only man is vile."

This region has some decided disadvantages to the grower of fruit and ornamentals. It lies in the track of the West Indian hurricanes and its soil is generally poor, but I felt that by proper fertilization it might be made to produce a finer quality of fruit than that which grows in the rich soil of the West Indies. I have sometimes felt that the remark made to me by a Bahaman truck grower at Homestead that "there is a hinsect here for every wegetable" was true. And there are sometimes mornings here in winter when the mercury

wakes up to find itself "below the frost line" on the face of the thermometer.

The clearing of the land here is an excessively heavy and expensive task, dynamiting, burning and removing trees, grubbing rock, getting it off the ground, and destroying the three or sometimes four species of palmettos as well as a variety of other scrub. And when it is all done the grower has a waste of dry, sandy soil in which it is exceedingly hard to make tender plants grow. I believe it to be an excellent idea when clearing land to leave small pine trees and some of the low palmettos standing to shade and shelter the ground, and protect young and delicate plants. The pines and palmettos may be removed later if necessary.

One of the difficulties the grower has to encounter is the frosts and occasional spells of chilly weather. I have never been able to devise any means by which I could completely protect young and tender plants from frost. It is a good plan to make a mound of dry earth around such young things, say early in December, to be removed as soon as danger of frost is over. This protects the collars of the plants, and if the tops are frozen they will generally sprout up vigorously. As soon as most tropical trees and shrubs have attained a height of six or eight feet they are not likely to be seriously damaged here.

It would be impossible within the limits of a paper like this to give anything like a complete list even of the ornamental trees, shrubs and plants growing wild and already cultivated here. I shall therefore only attempt to mention the more prominent forms, calling attention to those that seem to be especially adapted to our peculiar soil and conditions, and to others which do not seem to succeed. The paper will

therefore be only a sort of "first aid" to the cultivator.

NATIVE ORNAMENTAL PALMS.

This region is especially rich in vegetable forms. In the pine woods the greater number of the species belong to a warm temperate flora, this being almost its extreme southern extension. A very large tropical element of the flora has evidently migrated from the West Indies, the Spanish Main and Central America, the seeds having probably been carried on the Gulf Stream and deposited on our shores during hurricanes or high southeasterly winds. The seeds of a few forms may have been carried by birds or the winds. The region is exceedingly rich in trees, a number of which are quite ornamental. Within five miles of Miami there are probably growing wild today nearly or quite a hundred species of trees or large shrubs which sometimes attain tree-like proportions. Most of these species inhabit the hammocks, and in many places they become veritable air gardens, being loaded down, even to the breaking point, with a great variety of orchids, Tillandsias and other air pines, ferns, Peperomias and cacti.

First among the native ornamentals should be mentioned the palms, "The Princes of the Vegetable Kingdom." South Florida is exceedingly rich in palms. No less than 13 species have been found growing wild in Dade County alone; another arboreal saw palmetto, *Acoelorrhaphe arborescens* being reported, so far, only from Monroe County, but without doubt it will be found in Dade County also.

The Cocoanut Palm (*Cocos nucifera*) has become thoroughly naturalized on the mainland of extreme South Florida and the Lower Keys. Some one has said that it is a "Marvel of Titanic grace," and no finer description of it can be given. It is the tree of the poor as well as of the rich, and every settler, no matter how little improvement he makes, plants a few cocoanuts, that, in a few years, will make his place glorious.

The young plants are a little tender and are sometimes killed with frost, but after they have begun to form a trunk they are out of danger. They grow everywhere here from the lowest and saltiest marsh to the highest pine land, and the seed from our trees will, in a majority of cases, germinate and produce other trees.

If the Cocoanut is a "Marvel of Titanic grace," the Royal Palm may be called "A Marvel of Titanic majesty." I know of no tree on the earth to which the term majestic can be more appropriately applied. Unfortunately it has been found that the name *Oreodoxa*, signifying "Glory of the Mountains," which has long been applied to it, really belongs to another group of South American palms, hence the name was changed to *Roystonea*. I never look at one of these lordly trees but I am thankful that I live in a land where it not only grows but is native. Mr. O. F. Cook, of Washington, who gave the genus its new name, believes that the Floridian form is distinct from the Cuban, and has called it *Roystonea floridana*, but other authorities differ from him and believe it to be *O. regia*. Certain it is that I have never seen any of the royal palms in Cuba attain either to the height or dimensions that wild or cultivated specimens reach in Florida. At the Royal Palm Hammock back of Cape Romano, and on Paradise Key in the southeast part of Dade County, are many trees which must be well over 100 feet in height. I never see one of these majestic palms but what I feel as though mortals ought to fall on their knees before it and worship it with bowed, bared heads. The royal palm is most at home in low, rich hammock, but does well in salt marshes, if not too wet and salty. As a rule it does not do well on the high pine land, but it may be helped by liberal mulching, by digging in a coating of muck, and by fertilizing. Quite a number of them growing wild in the swamp just north of me were destroyed since I came here by wood cutters.

Pseudophoenix sargentii was discovered some years ago on Elliot's Key,

LANDSCAPE VIEW AT "THE SENTINELS" AT LITTLE RIVER

Young cocoanut palm on right; agaves and palms in center, behind which is a small arboretum of ornamental trees and shrubs
Sentinel Cuban Pines (*Pinus caribaea*)

and it is quite abundant in places in the Bahamas. It is a stiff, formal, very deep green palm with pinnate leaves and does well under cultivation.

The common cabbage palmetto (*Inodes palmetto*) is found rather sparingly in Dade County and is always a striking tree, either when young and covered with the old split-leaf stalks ("boots") or as an old tree with its tall, rough, often crooked stem and globular head. It will grow well in all soils.

Along the shore of Biscayne Bay is a dwarf species (*Inodes megacarpa*), which is everywhere mingled with the saw palmetto. In clearing it is well to leave specimens occasionally, as they make fine clumps when given a chance.

Mingled with the last two is a dwarf, fan-leaved palm of exquisite beauty (*Coccothrinax garberi*) named for a dear botanist who explored and collected in South Florida. The upper sides of the leaves are glossy and a rich green; the under surfaces are the loveliest satiny or silvery color imaginable. It is rather a slow grower and never attains any great height. It is found only on the shores of Biscayne Bay.

On one or more of the Lower Keys is found an allied species (*Coccothrinax jucunda*) which is much like the *C. garberi*, only that it is larger in all its parts, reaching a height of 25 feet. Its brilliant purple berries are edible, and it is one of the handsomest palms I know, but it grows very slowly when young.

There are certainly four species of *Thrinax* native to extreme South Florida, all of which are well worthy of cultivation and are perfectly at home without fertilizer in our poorest soil. One of these the writer has brought to the attention of botanists recently, and though quite common it has been overlooked or taken for something else. It is *T. wendlandiana*, also found in Cuba.

Acoelorrhaphe wrightii is a fine native palm which Mr. John and Marion Soar discovered in extreme South Florida, and was brought to the attention of Prof. C. S. Sargent by the writer. It is a handsome fan palm, growing in immense tufts 50 feet across and 25 in

height, and will do well in wet situations. It grows wild in the Madeira Hammock and in Cuba. *A. arborescens* becomes a straggling tree 30 to 40 feet high, the stems sometimes nearly prostrate.

The common saw palmetto, *Serenoa serrulata*, needs only a word. If given a chance it will make quite fine specimens.

NATIVE ORNAMENTAL TREES.

Our common pine is different from the species found in Georgia and North Florida, it being a native of Cuba. It has gone under more aliases than a professional crook or confidence man, having been called *Pinus tæda*, *P. heterophylla*, *P. cubensis*, *P. elliottii*, *P. bahamensis*, and it is now believed that *Pinus caribæa* is the correct name. It is a handsome tree when young, with its great masses of long, rich green needles; it is stately when in its prime and picturesque in its old age. When at its best its somewhat flattened, rounded top reminds one of the very striking *Pinus pinea* of Southern Europe which painters love to introduce into their canvases.

Two uncommonly fine specimens of nearly equal size grew in my grounds about 40 feet apart, the one nearly north of the other. I built my house about 35 feet to the westward of these trees and they stand there in their erect, soldierly attitude as guardians. From them I have named my home "The Sentinels," and somehow I imagine that they watch over me and mine night and day. Three other pine trees north of the house were left undisturbed when clearing, and these are "The Three Graces." In the darkness of the night they cut the sky line with wonderful effect. Trees and shrubs planted under the pines do very well, and I think it a fine idea to leave a few standing in ornamental grounds, and especially about one's house as a protection against lightning.

Our native red cedar was formerly believed to be the same as the northern form, but is now referred to *Juniperus barbadensis*, a West Indian species. It is sometimes planted, but to my mind is too suggestive of a northern climate

to be appropriate to this Land of Sunshine.

Yucca aloifolia, or Spanish Bayonet, sometimes reaches the size of a small tree. It is a striking plant with its stiff, cruelly pointed, dark-green, closely-set leaves, and throughout the summer is covered with immense heads of waxy white lilies. It grows abundantly along the seashore and will flourish anywhere without care or fertilizer. I am not sure whether its companion, *Y. gloriosa*, is found in Dade County, but it probably is, and it is as fine as *Y. aloifolia*.

A strange tree is *Casuarina equisetifolia* or Beefwood, which has escaped cultivation in extreme South Florida. It looks a little like a very slender, vigorous white pine, but on close inspection the branchlets look like miniature scouring rushes. It is a most astonishingly rapid grower, and like many rapid-growing tropical trees it has hard wood. It is being used here considerably for planting along roads, where it does well, but to me it is very dreary looking and suggests snow and ice. It has become naturalized on lower Biscayne Bay over quite a wide area which, in consequence, has been called "The Cedars." It is a native of the Australian region.

The Live Oak (*Quercus virginiana*) is somehow respected by nearly every one who has cleared up hammock, and is often allowed to stand. Whether this is from a love of the beautiful on the part of the settler or from the fact that it is an immense task to clear the trees and get rid of them I cannot say. The tree grows rapidly when young, and when old and hung with Spanish Moss is a most striking object. It, however, robs the soil till few things will do well near it.

Our native mulberry (*Morus rubra*) is one of the very few trees found growing here and in the Northern states, as it ranges to Massachusetts, Michigan and Nebraska. Although it is deciduous in winter it is again covered with its handsome, light green foliage in February, one of the earliest harbingers here of spring.

Ficus aurea, Wild Fig, Wild Rubber

Tree or Strangler forms a handsome tree when grown where it has room. The seeds are dropped by birds high up on trees in the hammocks. When they germinate they send down a slender root to the ground, then others which cross and form a network, till soon the host becomes strangled and dies. The dead tree quickly decays; the strangler becomes first a complete cylinder, then grows inward until it has the trunk of an ordinary tree. With plenty of room it throws down great bundles of air roots which swing in the wind and finally become attached to the trunk, while others reach the ground, and the tree eventually may have the character of the Banyan.

Ficus populnea is also quite ornamental.

Shore Grape, a small tree (*Coccolobis uvifera*) grows abundantly along sandy beaches. It has large, glossy, leathery and nearly round leaves of extraordinary substance, and Charles Kingsley called it the most beautiful broad-leaved plant he had ever seen. The leaves have red veins and color up to an intense crimson or scarlet as they die. It bears a rather inferior edible fruit and will grow vigorously, planted out in pine land or hammock.

Another species (*C. laurifolia*) the Pigeon Plum, is a dense-headed, handsome tree with smooth bark.

The Cat's Claw of the hammocks (*Zygia unguis-cati*) has curious leaves in pairs, brownish or whitish flowers in heads, and twisted pods which, on opening, disclose black or brownish seeds, partly surrounded with a bright red aril, the whole being quite an attractive small tree.

Z. guadalupense is also an interesting species resembling the first.

There is an attractive small tree occasionally found growing wild in the edges of hammocks, the Wild Acacia. It has very delicate, twice pinnate leaves, and in the spring small yellow flowers in heads which are deliciously and powerfully fragrant. It will grow without attention in any ordinary pine land. This tree (*Vachellia farnesiana*) is nat-

uralized throughout the tropics, but is believed by Prof. Sargent to be a native of Texas.

A nearly related tree, the *Leucaena glauca*, a native of South America, is also naturalized in South Florida. It has very attractive foliage and brown seed pods, the flowers being white. If once introduced into a place it spreads rapidly and becomes a nuisance.

There is a species of *lignum-vitæ* found growing on the Florida Keys (*Guaiacum sanctum*) which has small, dark-green, glossy, pinnate leaves and attractive blue flowers, that is worthy of cultivation, though it is a slow grower.

The Paradise Tree (*Simaruba glauca*) grows abundantly in hammocks, and when cultivated where it has room is a strikingly handsome tree. It has rather large, long pinnate leaves of leathery texture, extremely glossy and attractive. It contains an excessively bitter principle, and is one of the trees that furnishes the quassia of the druggists.

Closely related to it is the Gumbo limbo (*Bursera simaruba*), one of the most striking objects in our native forests. It becomes a large and lofty tree, with massive crooked limbs and glossy trifoliate leaves. The entire bark is smooth, peeling off in thin papery layers, and is generally a rich reddish-brown or copper color, though occasionally it is silvery. It is one of the first trees to attract the attention of the visitor to this region. It furnishes the gum elemi of the druggist. Large limbs may be set in the ground where they will root and produce trees.

The well-known mahogany (*Swietenia matrogani*) grows abundantly on most of the Lower Keys and the extreme southern end of the peninsula, where it occasionally forms a crooked, widely branched tree 40 or 50 feet high and two feet or more in diameter. It is a handsome ornamental tree when young, its large round seed-pods being quite striking. It flourishes in all soils, from low salty marsh to high pine land.

Drypetes lateriflora, the Guiana Plum, is a tree of our hammocks, with shining,

long-elliptic, pointed leaves, and when covered with its rich red velvety fruit, a third of an inch in diameter, is a very attractive object.

Sapindus saponaria, or Soapberry Tree, is found occasionally in our hammocks. It has fine, large pinnate leaves, the petioles being winged, and it bears in spring or summer globular, yellow fruits three-quarters of an inch in diameter. It is quite a pretty small tree, and the berries make a good substitute for soap.

One of the handsomest small trees or large shrubs I know of is *Hibiscus tiliaceus*, which is quite generally distributed along beaches throughout the tropics. It has large, glossy, leathery, cordate leaves and immense yellow flowers with a dark center. It is one of the few native trees which can readily be reproduced from cuttings, as nearly all of the others must be grown from seed. It is found sparingly on the coast of Dade County, growing in low land near the sea. Another allied species has lighter-colored, thinner leaves and similar flowers, and is not given in our botanies. Both grow in muddy ground near the sea and do well on high land.

A closely related tree is *Thespesia populnea*, occasionally called Headache Tree. It is widely distributed along seashores in the tropics, and grows wild in Lower Florida. It has smaller leaves and flowers than *Hibiscus tiliaceus*, the latter slightly tinged with red and turning darker with age.

Almost everywhere in and around hammocks the Wild Pawpaw (*Carica papaya*) is found growing, and it is a most striking and tropical looking tree. It usually has a stout, unbranched stem 16 to 18 feet high when well grown, and is crowned with immense palmate leaves. The tree is supposed to be dioecious, the male flowers, which are light yellow, being borne on long, pendulous stalks on one tree and the larger, sessile female flowers on another. The fruits, which in cultivation are often as large as a musk melon, are closely clustered among the under leaves and are edible—for those who like them, a good

YOUNG PALMS ON THE EDGE OF THE HAMMOCK

Phoenix sylvestris on left; *Pritchardia* sp. in center; *Cocos nucifera* in background

many thinking they taste like squash. The tree is short lived, but is so striking and beautiful that it should be in every one's grounds.

On the Lower Keys a large *Cereus* (*C. monoclonos*) occasionally grows, usually in clusters, whose stems sometimes reach a height of 20 feet and a diameter of six inches. It is a most striking object, but so far I have never been able to make it do well here.

The Red Stopper (*Eugenia confusa*) is a beautiful tree in our hammocks, with a dense head of very glossy, leathery, long pointed leaves, with small white flowers in the fall, followed by bright scarlet berries. It is well worthy of cultivation.

On the Lower Keys and the extreme southern part of the mainland is found a small, crooked tree with obovate, shining, yellow-green leaves and clusters of small, pale yellow flowers in winter that are deliciously fragrant. It is *Jacquinia kayensis*, and is well worthy of a place in the yard or garden.

The Wild Star Apple (*Chrysophyllum monopyrenum*) is a handsome, small tree, growing in dense hammocks. Its oval, pointed, thick leaves are glossy, an indescribable blue-green above and covered on the lower side with a brilliant coppery or red-brown pubescence. Although it naturally lives in deep shade it will grow well in sunshine and on high pine land. When the wind tosses up its leaves so that the under surfaces show it is strikingly beautiful.

Mimusops sieberi, or Wild Dilly, is a nearly related tree from the Lower Keys, with rosettes of handsome leaves clustered at the ends of the branches, rounded or retuse at the apex. They are bright red when young, but become leathery and deep glossy green above at maturity. The small flowers are followed by globular fruits an inch or more in diameter, covered with rusty scales. It is a striking and handsome tree.

The Geiger Tree, a native of the Keys (*Cordia sebestena*), is probably the handsomest flowered wild tree of South Florida. It has large, rough, pointed leaves which are sometimes cordate, and

salver-shaped flowers in large heads that are a brilliant orange or flame color, and they appear irregularly throughout the year. It may be readily grown from cuttings.

Crescentia cucurbitana or Black Calabash Tree is common in hammocks and swamps only along the shores of Biscayne Bay in Florida, although it is found in the Bahamas and West Indies. It has handsome, large, thick, glossy leaves. Its flowers are trumpet shaped and purplish, and are followed by oval, green fruits three or four inches long.

There is a small tree found on the Lower Keys called Prince Wood (*Exostema caribæum*), with elliptical, pointed, shining leaves and long fuchsia-like white or pinkish tinted flowers, that is an elegant thing. A fine specimen of it may be seen planted by Dr. John Gifford in his grounds at Cocoanut Grove.

We have an elderberry, a large bush or small tree, native of Dade County (*Sambucus* sp.), which may be undescribed. It has exceedingly large, fine heads of pure white flowers and is really very attractive.

Laurocerasus sphaerocarpa is a lovely small tree with shining leaves, white blossoms like those of a northern cherry, opening in early winter, and small greenish fruits. It should be planted extensively. *L. caroliniana* is said to grow in Dade County and is a handsome, hardy, small tree.

NATIVE ORNAMENTAL SHRUBS.

Two handsome shrubs grow in this region around the borders of hammocks, *Hamelia patens*, with elliptical, pointed, red-tinted leaves and clusters of elegant, orange scarlet, tubular flowers; and *Erythrina herbacea*, with trifoliate leaves and elongated, purplish-crimson flowers. The former is in flower nearly the entire year, and is really one of the most desirable shrubs I know of for this region, as it flourishes when planted in the pine land without either attention or fertilizer. The latter is an awkward grower and opens its blossoms in late winter and spring. An arboreal form grows in Florida which has received the

name of *Erythrina arborea*, but I do not know that it grows in Dade County, though it probably does.

NATIVE ORNAMENTAL CLIMBERS AND
CREEPERS.

The well-known woodbine (*Parthenocissus quinquefolia*, formerly called *Ampelopsis quinquefolia*) is one of the few plants common to the Northern States and extreme Southern Florida. It springs up in cleared pine land and often almost becomes a nuisance. It climbs to the tops of the loftiest pines, and along in January or February its foliage takes on the rich crimson color that it has after frost in the Northern States.

Chiococca racemosa is a sprawler in the hammock and bears racemes of lemon yellow, honey-scented flowers which somewhat resemble those of the Lily of the Valley. Later it becomes covered with white, waxy berries which remain on all winter.

Several native *Ipomoeas* bear handsome flowers, the most conspicuous being *Calonyction bonanox*, the magnificent night bloomer, cultivated in the North under the name of moon flower. It grows along the borders of hammocks, creeping over the ground and bushes or even to the tops of lofty trees. A variety here bears flowers which remain in bloom until late in the forenoon, or nearly all day if it is cloudy. There is another closely allied form growing on the Lower Keys, with thicker, more succulent leaves and stems, which may be a variety of the above.

Ipomoea pes-caprae (Goat's foot) has astonishingly long, vigorous stems which trail along sandy shores, bearing large, glossy, handsome leaves that are cleft at the apex, hence the specific name. The large purple flowers are very fine. If introduced into ordinary pine land it makes itself as much at home as along the seashore.

Ipomoea dissecta has delicately-cut leaves and handsome, whitish flowers having a purple eye, and is quite commonly used here to cover piazzas and arbors.

Another species, *Ipomoea fuchsoides*, comes from the Homestead Country of Lower Dade, where it grows in crevices among the most ragged limestone rocks. It has elongated leaves which are rounded at the base and quantities of brilliant purplish-crimson flowers. These are about an inch or a little more in diameter, their buds looking as though varnished, and are indescribably beautiful. It does not seem to flourish when planted out in this vicinity. Perhaps the abundance of soil, even if it is poor, proves too stimulating for it.

Another plant belonging to the *Convolvulus* family, *Jacquemontia pentantha*, from the Lower Keys, is very fine. It has glossy, cordate leaves and rather small, funnel-shaped, blue flowers having a white eye. It does not last very long in cultivation, being probably an imperfect perennial, but like the companion vine, *Ipomoea fuchsoides*, it is worthy of a good deal of care.

Along the seashore in the edge of hammocks there grows a rampant, prickly vine with bipinnate leaves, yellowish flowers and short, inflated pods covered with thorns, each containing two or three rounded, gray seeds, the nicker beans. It is *Guilandina cristata*, and does well when planted in a sheltered location.

In the West Indies every black man who has a bit of ground plants a few seeds of *Canavalia obtusifolia* or *C. gladiata*. These are the "Overlook peas," and it is absolutely necessary for one's safety that he have one or the other of these vines growing on his place in order to prevent his garden being "overlooked" or bewitched by the Evil Eye. Both are pretty and interesting naturalized vines, with rather attractive purple, pea-like blossoms, the former being more inclined to trail and the latter to climb. I am always careful to have my place well protected from anybody who may wish to "hoodoo" it.

There are two balloon vines growing wild in waste places in this region (*Cardiospermum halicacabum* and *C. Microcarpum*). Both are pretty, delicate vines with compound leaves and triangular inflated seed pods.

One of our wild grapes with small glossy leaves (*Muscadinia rotundifolia*) grows in the edges of hammocks and comes up from seed in the cultivated pine land to an extent that is anything but agreeable. It is a rampant grower, and when it hangs over the edges of the hammocks it looks well. One of these vines has covered a solitary live oak in my grounds and hangs in long streamers all around it and looks like an uncommonly fine white elm.

Rhabdadenia biflora is a wonderfully vigorous vine that grows in salt marshes, either sprawling or climbing often to the tops of lofty trees. Its flexible, woody stems are smooth and brown; it has elongated, thick, glossy, opposite leaves, and handsome, creamy-white, funnel-shaped flowers in pairs. The center of the waxy flower is yellow, and it is richly fragrant. It is full of milky sap, and it is predicted that it will be an important rubber-producing plant in the near future. I have no doubt that it would grow on higher ground if it was well cared for.

Vanilla planifolia, the plant producing the vanilla of commerce, has been credited to South Florida, erroneously, I think. We have a species growing here in the hammocks (*Vanilla eggersi*) which has large, fleshy stems and the leaves reduced to mere scales, which climbs trees by means of adventive roots. It bears great heads of brownish-purple flowers, which are fragrant and handsome. It is an odd and attractive plant.

NATIVE HERBACEOUS ORNAMENTALS.

In the tropics the proportion of herbaceous plants is less than in cooler regions. In Dade County there are quite a number of attractive ferns, several of these having been found recently for the first time in Florida by botanists exploring in the Homestead region.

Osmunda spectabilis, a noble, yet delicate fern, is abundant in swamps, and is believed by some authorities to be the same as the *Osmunda regalis* of Europe.

Our largest native fern grows everywhere in brackish swamps (*Acrosti-*

chum excelsum), and sometimes reaches a height of 8 feet or more. It is a bold, handsome plant, with heavy stipes on which the fronds are pinnately arranged. It is a question in my mind whether it does not run into *A. aureum*, which is generally believed to be distinct.

In the hammocks everywhere the trunks of the live oaks are more or less covered with a lovely little fern with creeping rootstalks and pectinate fronds (*Polypodium polypodioides*). In dry weather its fronds curl up and turn brown and become so brittle that they easily break up. With one-fourth of an inch of rain or even less they open out, turn to a rich dark green, and cheerfully grow on as though nothing had checked them, only to close up and become brown when it turns dry again.

With something of the same epiphytal habit its near relative (*P. pectinatum*) is even more beautiful, but is a much rarer species. Mr. John Soar and the writer found it on Pumpkin Key growing on dead logs or the ground, and I have attached it to trees in my hammock, where its lovely fronds, cut into teeth like a comb, open or close up and turn brown, according as the weather is damp or dry.

The Hound's Tongue Fern also grows, for the most part, on decaying wood in the hammocks. It was formally called a *Polypodium*, but is now *Campyloneuron phyllitidis*. It has lovely, entire linear fronds, reaching a height of three feet, and is a striking plant whether hidden away in the half twilight of the hammocks or grown in pots or vases.

Another rather rare fern, which resembles the last but has wider fronds, is *Asplenium serratum*, the edges of the fronds being finely serrated. The latter, though, occasionally grows to a considerable distance up tree trunks in damp hammocks.

Phlebodium aureum is entirely epiphytal in its habits, growing mostly on the trunks of cabbage palmettos, where it forms knotty rootstalks and throws out its bold, large, deeply-cut fronds.

Nephrolepis exaltata, the Sword Fern, is equally at home in the ground of hammocks, on rocks, or high up under the

crowns of palmettos, and is very abundant in many places.

A rarer species is *Nephrolepis biserata*, which grows in damp ground with fronds reaching sometimes a length of ten feet. It is often found on palmettos.

A lovely fern that grows on palmettos might be taken for a tuft of grass, hence its name, Grass Fern. Its fronds are linear, leathery, and glossy above, with edges slightly revolute. It is *Vittaria lineata*.

The *Adiantums* are all exquisitely beautiful, but *A. tenerum* is especially delicate. It is found in hammocks in the Homestead region and does well in cultivation if kept damp and shaded.

At the head of the Miami River is found a large, bold fern (*Meniscium reticulatum*) which at first glance might be taken for an *Acrostichum*. It is a West Indian species, and I have a fine specimen in my hammock which was brought by Mr. John Soar from the Isle of Pines. The late Mr. A. A. Eaton was very much interested in my plant, but later, when he discovered the same thing growing in quantities near the Miami pumping station, remarked that he thought Mr. Soar had been "carrying coals to Newcastle."

There are several fine *Dryopteris* growing wild in Dade County, *D. patens* being abundant on the banks of ditches. *D. thelypteris* in mucky, fresh-water swamps, and a grand species *D. ampla*, found in the hammocks in the Homestead Country, has an erect rootstalk and is in reality a tree fern.

There are many other species here which are well worthy of cultivation, but I cannot mention them on account of lack of space.

Two species of fine epiphytal orchids grow in the neighborhood of Miami; *Epidendrum tampaense*, which in early summer has airy panicles of very pretty brownish flowers that are variegated with white and purple and *Cyrtopodium punctatum*, which is not so common. The former has thick linear leaves, while those of the latter are broader and thin. The matted roots turn upwards, forming a sort of basin which catches

falling leaves, insects and the like, and no doubt thus fertilizes the plant. It has tall, branching flower stems and greenish-yellow, brown-spotted flowers and bracts in great abundance. On Paradise Key and near Flamingo in Monroe County a variety of *Oncidium luridum*, which has heavy, thick leaves and flowers that superficially resemble those of *Cyrtopodium*, is found on trees, and in the Homestead hammocks *O. sphacelatum* is almost terrestrial.

A lovely *Peperomia*, *P. magnoliaefolia*, with very thick, obovate leaves and rat-tail spikes of greenish flowers, is epiphytic on the live oaks.

One of our *Tillandsias*, *T. fasciculata* is a splendid ornament of the hammocks in spring. Like other species, its seeds are furnished with cottony tails with which they are carried by the wind and by means of which the seed attaches itself wherever it strikes and germinates. This species has flattened heads of brilliant red bracts, out of which come slender, deep blue flowers, and when in bloom they gleam like spurts of fire among the trees.

Guzmania monostacha is a handsome epiphyte, excessively abundant on trees in the Homestead hammocks. It is a relative of the *Tillandsias* and bears heads of brown, white and rich red flowers. A variety has elegantly striped leaves. They sometimes grow so abundantly as to break the limbs to which they are attached.

Three species at least of century plants grow wild in Dade County, *Agave sisalana*, *A. rigida* and *A. neglecta*. All are striking, tropical looking plants and are often cultivated.

In fresh water and slightly brackish swamps *Crinum americanum* lights up the dreary wastes with its splendid starry white flowers. Associated with it are several species of *Hymenocallis*, with broad, soft leaves and heads of spider-like satiny flowers, the stamens being connected by a thin, gauzy cup. They will flourish if planted in dryer land.

Another beautiful swamp plant is *Hibiscus grandiflorus*, with velvety lobed

ONE OF THE MOST SATISFACTORY OF THE ORNAMENTAL PALMS (ARCHONTOPHENIX ALEXANDRAE) IN CENTER

leaves and immense pink flowers. It may be propagated from seed or cuttings and I have established it in my low land.

Kneiffia riparia, belonging to the evening primrose family, is a fine, branching plant growing in wet land along streams, and bearing continually large yellow flowers.

CULTIVATED PALMS

Feather Palms

Dade County seems to be a veritable paradise for palms. I have about 150 species native and exotic and nearly all of them promise well. Nothing can be finer as single isolated specimens or groups, or when planted in mixed masses, than the palms. Many of the species are as yet unattainable or can only be had with difficulty and at great expense. I have imported a large number of plants which have nearly all died on account of the long voyage, and also seeds which have rarely germinated. But there are many fine things for sale at our home nurseries now that were unattainable a few years ago, and are being offered at reasonable prices. I will begin with the pinnate palms and go through the genera in alphabetical order.

Archontophoenix alexandræ (known as *Ptychosperma alexandræ*) and *A. cunninghami* (*Seaforthia elegans*) are elegant species offered by many dealers. In the former the underside of the leaves is a little more silvery than in the latter, and the arching leaves do not turn up edgewise. They grow to considerable size and will do well in the sunshine, but should be planted where they are protected from the winds, as the leaflets break up very badly when blown about.

Areca. I have had several species of these fine palms. So far I have not been able to make *A. catechu*, the Oriental Betel Nut, succeed.

A. glandiformis is a grand palm, and is doing splendidly with me.

A. alicæ and *A. triandra* promise well, though I think likely the latter should be grown in the shade.

Astrocaryum. I have only one species, (*A. mexicanum*) planted in the ham-

mock, which is growing slowly, but is in good health. The under sides of the leaves are a fine, silvery color and the petioles and trunk are spiny.

Attalea. *A. cohune* is a magnificent species from Central America. I have seen it in Honduras over 100 feet high and Mr. O. F. Cook of the Department of Agriculture tells me he has measured leaves of it 55 feet long. They shoot up almost straight for a great distance, then curve out slightly at the tips. Commodore Monroe has a fine specimen at his home in Coconut Grove which is beginning to form a trunk. It is a slow grower when young and has one drawback when matured, and that is that the old leaves hang on to the plant and disfigure it. I have plants of *A. gomphococca* which are doing well.

Acrocomia. A genus of very spiny palms with slender leaflets. I have young plants of *A. media*, *A. sclerocarpa* and *A. totai*, all of which are doing well in the sun on pine land. I have what may be *A. lasiospatha* from Cuba which has an immensely swollen stem.

Bactris. Excessively spiny palms which are, however, quite ornamental. The leaves seem to suffer from cool weather and come out in the spring here in bad condition. I have *B. gasipaes*, the Peach Palm of Brazil, *B. aurantiaca* and an unnamed species.

Caryota, Carat or Fish-tail Palm. I have several species. *C. blancoi*, *C. mitis*, *C. purpuracea*, *C. sobolifera* and *C. urens*. *C. mitis* and *sobolifera* sucker profusely and these suckers may be used for propagating if taken off carefully after they begin to throw out roots. All the species bloom only when fully matured, beginning to throw out their magnificent tassels, (in *C. urens* as large as a man's body) immediately under the leaves and continuing to bloom downward to the base of the stem, when the plant dies. I have had best success with them when planted in the shade as they seem when in full sunshine to be particularly subject to blotching of the leaves.

Chamædorea. Slender, often reed-like, dioecious palms sometimes throwing up suckers. They should be planted

A VIEW IN THE PALM COLLECTION

The African oil palm stands on extreme right; next to it the East Indian sugar palm; then *Chamaerops humilis*, and behind it *Inodes mauritiformis*, and to the left, in background, *Roystonea boreinquena*

in deep shade, where they grow nicely and bloom every year. I have *C. arenbergiana*, *C. corallina*, *C. multicaulis* and one or two others.

Chrysalidocarpus lutescens is a handsome, popular palm, better known as *Areca lutescens*. Its rather slender stems and the petioles have a yellowish tint; it suckers freely and when well grown is elegant. For some reason I have had poor success with this palm until lately, but it is now growing well in pine and hammock land. It is quite tender.

Cocos. A genus of many American species, one of which, the cocoanut, I have already mentioned. The other species here are subject to a peculiar leaf blight which forms brownish streaks and sometimes kills quite large plants. Aside from this most of them do well here and nearly all are somewhat hardy. I have an unnamed species in my grounds, said to come from Cuba, which is exceedingly fine, being a miniature of the big cocoanut. I have never succeeded with *C. insignis* and *weddelliana* here, either in pots or in the open, and it may be that the lime in our soil is injurious to them.

Desmoncus major is a thorny, slender palm from the lower West Indies where it climbs and holds on by means of hooks at the end of the pinnæ. It is called "Croc-chien" in its native country, a name meaning "the teeth of a dog," in allusion to the dreadful way in which it seizes and holds on to any one running into it. I have a fine young plant in the hammock which is doing well and is just beginning to develop hooks.

Dictyosperma rubra and *D. alba* are fine medium-sized palms, with rather slender stems. I have a fine specimen of the former 12 feet high, and it has repeatedly fruited at Palm Beach. In the open its leaves are quite red when young, but they change to green with age. Both species do well in the shade or sunshine.

Dypsis madagascariensis. A slender, reed-like palm with the pinnæ arranged in fascicles. It is doing well with me in shade and sunshine.

Elæis guineensis. The Oil Palm of tropical Africa. It has bloomed and borne fruit for me and does moderately well, though I think our winter climate is a little too cool for it.

Euterpe. I have had several species of this genus, but for some reason all have died. It has often happened that where I have utterly failed with certain plants, others have succeeded, and that I have succeeded after repeated failures. These may do well here.

Howea. *H. belmoreana* and *H. forsteriana*, better known as *Kentias*, are offered by many dealers. Neither seems to do really well here though the latter does the better of the two. The lime in the soil may not be congenial for them.

Hydriastele wendlandiana. A tall growing palm with long leaves, the segments being truncate and ragged at the apex. It is a vigorous grower and promises well here.

Hyophorbe verschaffeltii and *amari-caulis* are two very striking and handsome palms from Mauritius. They are lofty growers, with large, bulging trunks, rather stiff, richly colored and orange tinted leaves. Both are growing finely for me in shade and sunshine.

Jubæa spectabilis. The southernmost palm of South America. I have had poor success with this palm which I have started from seed several times. I now have a specimen sent from California four years ago which looks healthy, but has only made one leaf in all that time. At that rate I shall be a very old man before it becomes a tree.

Kentia. The genus *Kentia* has been completely dismembered and the nomenclature seems to be badly confused. For want of any better knowledge I shall refer to it a fine species which goes under the name of *Kentia macarthurii*. It grows in large clumps with rather slender stems and obliquely truncate leaflets. It is a rapid grower and soon forms a large clump, but it is a little tender and I am inclined to think it would flourish best in a somewhat sheltered and shaded place.

Martinezia caryotæfolia, the only species I have tried to grow, is a slender

A RAPID-GROWING PALM PLANTED IN THE SHADE OF THE HAMMOCK
Dictyosperma rubra from the Indian Archipelago

palm and does not seem to do very well. It is slightly spiny, has elegant leaves with the broad segments raggedly truncate, and it grows quite rapidly in pots when young.

Phoenix. The Date Palms. I have some 20 or more nominal species of this genus and there are no palms known to me which are any more satisfactory in every way for planting in Dade County. They all grow rapidly even when mere seedlings. They flourish in all soils from low salt marshes which are occasionally overflowed to the highest, driest pine land, and all will do well without fertilizer. They are dioecious, and a large proportion of my plants have proven to be males. The great clusters of creamy blossoms are quite attractive. A female *P. humilis* has borne fruit which has germinated and made fine young plants. As it is the only specimen of the species I have, and no other males of any species were in bloom anywhere near it at the time it flowered, it seems probable that it was self fertilized. *P. canariensis* is a majestic palm with a colossal trunk and leaves 10 to 12 feet long. *P. sylvestris* is fine, while *P. roebelenii* is the gem of the genus. It is very distinct in appearance, with delicate leaves of a peculiar green, and rich yellow spines. According to W. M. in Bailey's *Cyclopedia of Americana Horticulture* this has stems only two or three feet in height in 20 years. My best specimen, set out as a little plant about four years ago, and badly crowded and robbed by a *Ficus elastica*, without fertilizer, is now five feet high, has a trunk three feet high and five inches in diameter and is in bud for blossom. (For a fine article on "Phoenix in Florida" by H. Nehrling see the above quoted work, Vol. III, p. 1309).

Raphia ruffia. I have this palm, but am not at all sure it will succeed. It grows very rapidly as a seedling, but does not seem to do well when larger. It is a fine species from Madagascar with immense, nearly erect, pinnate leaves and enormous heads of fruit weighing from 200 to 300 pounds.

Roystonea. Besides our native species already mentioned we have *R. oleracea*

from the lower West Indies, a magnificent palm growing to a great height and *R. borinquena* from Porto Rico. Both are doing well with me; the latter is growing very rapidly and promises to do better on the pine land than *R. regia*. It has a stouter, more fusiform trunk than *regia* and heavier leaflets.

Stevensonia grandifolia. I have not been successful so far with this magnificent palm, largely owing to the fact that it seems to be very tender in a young state, but I hope to succeed with it later.

Verschaffeltia, another fine palm, has also proved very tender and difficult to grow.

Wallichia. I have had *W. densiflora* and *W. caryotoides*, but neither of them have succeeded and it is quite likely that our limestone soil does not agree with them.

Palmate Leaved Palms.

Corypha. I have had three species of this genus, *C. umbraculifera*, *C. gebanga* and *C. macropoda*, but none of them have done well with me.

Chamærops. A circum-Mediterranean genus of elegant palms. Probably only a single species exists in Europe, though botanists have made many nominal species. This is *C. humilis*, and a form from northern Africa which is more robust has received the name of *C. macrocarpa*. I have fine large plants of the former and small ones of the latter, all of which are doing well. They are rather slow growing when young.

Erythea edulis, a fine, densely leaved fan palm from Guadalupe Island, Lower California. So far it is a moderate grower, but is in perfectly healthy condition on pine land and is making a fine ornament.

E. armata, the Blue Palm of Lower California is a still finer species. I have small specimens of it which promise well.

Hyphaene. I have a single plant of *H. shatan* about seven feet high and beginning to form a trunk. The heavy curved petioles are black bordered and have very large, crooked, black spines along them, and the midribs are sharply recurved. The immensely thick blade is attached diagonally to the petiole. Two

A YOUNG EAST INDIAN PALM (ARECA TRIANDRA)

Planted out only two years ago. When full grown it reaches a height of fifty feet. A rapid grower and should probably be planted in the shade

or three times this specimen was nearly killed by frosts, but now it seems to be well established and is growing with the greatest vigor. The species of this genus form branching trees; and the outer rind around the seed is sweet and tastes like gingerbread, hence the name "Gingerbread Palm."

Inodes. The species of this group were previously referred to *Sabal*, but O. F. Cook has shown that they are not true *Sabals*. One obvious distinction is that in *Sabal* the leaves are nearly or quite flat, while in *Inodes* the midrib is curved backward. It is as satisfactory a group of palms for this region as the *Phoenix* and that is saying all that can be said. *I. ghiesbreghtii* is one of the finest, with large leaves of unusually heavy texture. *I. mauritiæformis* of the West Indies and northern South America is said to have leaves 12 feet across. All are well worthy of cultivation, as they flourish on almost all our soils even without fertilizer.

Latania. A genus of a few species from Mauritius and vicinity, containing some of the most noble palms on earth. They have large trunks and immense leaves supported by massive petioles, the whole often glaucous and highly colored. *L. glaucophylla* is the finest species, and magnificent specimens of it are growing in Miami and at Cape Florida. *L. commersonii* is also a grand species and is growing at Cape Florida. The species are dioecious.

Licuala. A genus of East Indian palms, several of which I have tried to cultivate with indifferent success. They grow for a while and then get sick and almost stand still.

Livistona. Another genus of East Indian palms, but one which does much better here than *Licuala*. *L. chinensis* is usually sold as *Latania borbonica*, which is quite a different thing. It is a slow-growing species with very glossy leaves, but after it reaches considerable size its growth is more rapid. It is rather hardy and attains considerable size and is a most excellent and useful palm. *L. subglobosa* is a rapid grower. *L. hoogen-dorpii* is doing well. *L. australis* is a

slow grower, but quite hardy, and is a picturesque tree. *L. rotundifolia* is beautiful, but seems a little delicate.

Neowashingtonia. I have three species of this Mexican genus. *N. robusta*, a magnificent, strong-growing palm with large glossy leaves which have stout prickles on the edges of their petioles. It is rapidly becoming a favorite here for street planting. *N. filifera* has dull colored leaves and is greatly inferior in vigor and beauty to the *robusta*. *N. sonora*, of which I have young specimens, is said to be more delicate than the others.

Pritchardia. A noble genus of palms from the South Pacific containing a few species fully as handsome as the *Latanias*. They have immense plaited leaves borne on heavy petioles. *P. pacifica* has the petioles covered with a creamy or whitish fluffy scurf. *P. thurstoni* and an unnamed species which I have are very fine. Unfortunately they are all exceedingly tender and even large plants are injured by sharp frosts.

Rhapis humilis and *flabelliformis* are clustered reed palms from China, and are exquisitely beautiful. The former does better for me than the latter.

Thrinax. There is no group of palms more completely adapted to South Florida than the species of this and allied genera. No less than six species of *Thrinax* and *Coccothrinax* grow wild in Dade County. *T. barbadensis* is an elegant palm which is deeper colored in shade than in sunshine, though it does well in both situations. *T. altissima* is altogether one of the most beautiful palms I have ever seen. Its large, glossy, airy leaves are almost flat and their lower edges lap over at the petiole. It should be planted where it is sheltered from wind. All the species are tender when young.

Thrincoma alta, a new palm from Porto Rico, does well, and promises to be a beautiful little tree. All the species of this group do well in hammock or pine land and need no fertilizer.

Trachycarpus excelsus totally fails in this locality. I have planted it repeatedly in different soils and situations, but

ONE OF THE AFRICAN DOUM PALMS (HYPHAENE SCHOTTIANA)

This palm (center foreground), when fully grown, is peculiar in that it has a branched trunk, something very unusual among palms. It is a characteristic plant of East Africa

it invariably soon dies. I am satisfied that the soil does not suit it.

ORNAMENTAL, EXOTIC TREES.

Adenantha pavonina, Circassian Bean, is a pretty tree from India with delicate compound leaves and small brownish or yellowish flowers. These are followed by spiral pods with brilliant red, polished, lenticular seeds. They are an article of food in India and are used extensively for necklaces. They may be strung readily with a heavy needle and thread or twine just as they are ripening, turning from cream color to scarlet. If strung too early they shrivel, but they soon begin to harden and cannot be worked at all.

Acacia. Elegant trees with delicate compound foliage and often pretty heads of flowers, but unfortunately only a few of them do well here. *A. bicornis* or *cornigera*, from Mexico and Central America, which bears elongated heads of yellowish flowers and immense spines in pairs, united at the base and looking like the horns of an ox, does fairly well and two or three unnamed species flourish.

Araucaria. A noble genus of warm temperate or subtropical conifers. *A. excelsa* is often grown in Dade County, though quite tender when young. This is the Norfolk Island pine, very commonly cultivated in pots and tubs at the north and when in perfect condition is one of the most strikingly beautiful trees in the world. It does fairly well here on pine land that is well drained, and occasionally there are seen remarkably handsome specimens. *A. bidwillii* from Australia is another noble species with broad leaves which seems to be completely at home in our poor soil. *A. imbricata* has been tried repeatedly by myself and others, in shade and sunshine and in various soils, but it has invariably died. *A. brasiliana* has failed with me.

Albizzia lebbek becomes a noble, wide spreading tree here in a very short time. Its common name "Woman's Tongue" was given it because the pods of the one and the tongues of the other are supposed to rattle, a gross libel on both.

Aleurites. Candle nut tree. A genus

of trees of majestic appearance and large, striking leaves. *A. moluccana* has handsome lobed leaves and bears an excellent edible nut. It has borne fruit in Dade County. *A. trisperma* has very large cordate leaves and is a beautiful tree. It is from China and is perfectly hardy. *A. cordata* is a fine hardy ornamental. All three flourish here, the only drawback being that their rather brittle limbs break up badly during hurricanes, and they should therefore be planted in sheltered locations.

Andira inermis, West Indian Cabbage Tree, has elegant pinnate leaves with wavy leaflets and is said to bear handsome purple flowers. It is a beautiful tree, but so far I have not been able to make it succeed as well as I would like to.

Bauhinia. A large genus of tropical trees and shrubs generally having showy flowers. *B. purpurea* is one of our finest trees, being covered with large orchid-like blossoms in late winter and spring, most beautifully variegated. One of these trees in full bloom is a sight worth going a long way to see. *B. alba* and *B. furfuracea* have handsome white flowers, both blooming at various seasons. *B. triandra* has lovely pink flowers striped with white. *B. tomentosa* has yellow flowers. I have a large growing unnamed species that bears a great profusion of whitish blossoms tinted purple through the late fall and winter. The curious leaves of all the species which are more or less bifid at the apex are attractive. They all do well here in our light soil, but should be liberally fertilized for best results.

Bombax. Silk Cotton tree. A soft wooded, rapid growing tree of the West Indian region, attaining immense proportions. It has digitate, deciduous leaves and the stems and trunk bear strong prickles. In late winter when the tree is nearly or quite naked it becomes covered with very large showy red flowers. It does well in Dade County. At the Royal Poinciana Hotel at Palm Beach are very large specimens for Florida.

Bischofia trifoliata from the East Indies is a rapid-growing tree with

handsome trifoliate leaves which flourishes finely here.

Bixa orellana, a West Indian tree has cordate leaves, pink flowers like glorified peach blossoms, and soft, prickly pods whose seeds are covered with an orange red paste. It is the Arnatto or Roucou, and the paste is used alike to decorate the bodies of South American Indians and to color the butter and cheese of civilized man. It does fairly well if fertilized.

Butea frondosa. An Indian tree with very large trifoliate leaves and red flowers. Sir Joseph Hooker in the Himalayan Journals says "In the Soane Valley *Butea frondosa* was abundantly in flower and a gorgeous sight. In mass the inflorescence resembles sheets of flame and individually the flowers are eminently beautiful, the bright orange-red petals contrasting brilliantly against the jet-black, velvety calyx." I have repeatedly failed with this tree, but at last a specimen planted in the edge of the rocky hammock in a rather dry place is doing finely.

Cassia fistula has handsome, large pinnate leaves and drooping leaflets, and long, pendant, pale yellow clusters of flowers. When in bloom it is one of the most charming of objects. There is a fine specimen at the Sub-Tropical Laboratory near Miami.

Caesalpinia sappan is a rather attractive, thorny tree with fine, bipinnate leaves, yellow flowers and striking seed pods, which does well here. *C. coriaria* is a tree with delicately beautiful compound leaves and greenish, fragrant flowers, a little tender when young, but it will probably do well when established. *C. gilliesii* so far has not done well.

Calophyllum inophyllum, a noble tree from the East Indies has fine large glossy leaves and large handsome white flowers. It is very tender here, but may do well when it is once established.

I have a superb specimen of *C. calaba* of the West Indies that grew from a seed which was washed upon our shores. It is 20 feet high and has not yet bloomed, but is one of the finest trees on my place.

Castilla elastica. This is the Central American Rubber Tree and I have seen specimens of it in southern Cuba that were fine. It grows well here in summer, but the cool weather and especially frosts put it back badly.

Crescentia cujete. An awkward growing tree with long, narrow leaves and not particularly ornamental, but it bears curious, purplish, trumpet shaped blossoms on the main stem and large branches, which produce the celebrated calabashes, used everywhere in tropical America. It is a rapid grower, is very tender, but will do well here when it becomes large.

Delonix regia, the Royal Poinciana, vies with one other tree (*Amherstia nobilis*) for the position of King of Flowering Trees. It is a native of Madagascar, but long ago was carried all around the tropics and cultivated for its glorious flowers and foliage. Its marvellously beautiful bipinnate, dark green leaves alone would give it a high rank among ornamentals. These come out a pale, delicate green in April and at the same time the tree is covered with great masses of bloom, each flower being four inches or more in diameter. The outside of the thick petals is yellow, the inside is red. The petals are clawed, a rich warm red and often variegated inside. It blooms, in some cases, at intervals well into the summer and some trees bear clusters of flowers that would not go into a half bushel basket. There is considerable variation in growth and bloom, and one form is always low growing and wide spreading and is certainly a distinct variety if not a separate species. The immense pods are striking and rather ornamental, and the trees are readily grown here from seed and flourish in all kinds of land except that which is quite wet.

Enterolobium cyclocarpum is a handsome tree with bipinnate leaves, greenish flowers in heads, and pods bent back in a complete circle. A rapid grower.

Erythrina. Coral Tree. A genus of leguminous trees with several species, all with trifoliate leaves and handsome red flowers. The stems and trunks are prickly. They are deciduous in winter

and in late winter or early spring bear large spikes of dazzling flowers. Here they are troubled with a brownish borer which enters into the ends of the growing branches and the large flower buds so that the trees bloom but little. If the ends of the limbs which are bored are cut back to healthy wood as soon as the leaves fall there will be a much better show of bloom. They grow well in our sandy soil. I have *E. carnea*, *E. velutina*, *E. umbrosa* and one or two others.

Eriodendron, Silk Cotton Tree. *E. anfractuosum*, probably, is cultivated here. It is a strikingly handsome tree with a columnar stem, smooth, or nearly smooth, variegated green bark, limbs in whorls and digitate 5-9 foliate, smooth leaves. The flowers are yellowish and attractive. The tree grows to a great size and does finely here, but the wood is brittle and breaks in storms.

Euphorbia tirucalli is a small tree with pendant, succulent branches, milky juice and very small leaves. It is a strange and attractive plant. *E. antiquorum* has triangular, variegated branches, almost no leaves, is spiny, and is a strange looking tree to northern eyes. Both do well here in poor dry soil, but are tender when small.

Eucalyptus. A large genus of trees from the Australian region, many of which attain an enormous height. Quite a large number of species are grown in Dade County where most of them do well. *E. robusta* is a broad leaved, fine species, quite ornamental in bloom. *E. ficifolia* for some reason has not done well with me. It has handsome scarlet flowers. *E. rostrata*, *E. viminalis* and many others have no true leaves, bearing only phyllodia, or leaf-like expansions of the petiole, alike on both sides, and set edgewise on the tree instead of horizontally. *E. globulus* has true leaves when young and phyllodia when mature, the latter being wholly unlike the former.

Ficus. An immense genus ranging from warm temperate regions through the tropics and from lowly creepers to lofty trees. Nearly all the many species

introduced here do well. *F. altissima* is one of the best. *F. nymphaefolia* has enormous cordate leaves. *F. religiosa* is the sacred Ti tree of India. *F. benghalensis* is the Banyan and *F. pumila* and *barbata* are creepers which will cover walls or trees.

F. elastica is the well known India Rubber. A specimen of this tree grows in Lemon City having a head a hundred feet across. The variegated variety is very fine. *F. parcelli* has also attractive variegated leaves.

Garcinia morella. A handsome tree with long, leathery, glossy, opposite leaves and yellowish flowers. The gamboge of commerce is made from it. The mangosteen (*G. mangostana*) will not grow here, but the gamboge promises well.

Gliricidia. Two species of this leguminous tree promise well here, *G. platycarpa* from Cuba and *G. maculata* of Central America. The latter has bloomed beautifully here. Both have handsome pink flowers, but are tender when young.

Grevillea robusta. Australian Silk Oak, is grown in great quantities in the north as an ornamental plant, having elegant fern-like leaves. Here it becomes a large tree, bearing in spring great clusters of strange, handsome, golden flowers. *G. hilli* is somewhat similar to *robusta*, but has pink or white flowers.

Heterophragma adenophyllum is a tree becoming 50 feet high, from India, having digitate leaves and brownish yellow, woolly flowers. The long pods are spirally twisted. I have a fine young tree on pine land which gives good promise of soon furnishing corkscrews for all of Dade County.

Hura crepitans, Sand Box of the West Indies, is a large tree with elegant cordate leaves, inconspicuous flowers and flattened, ribbed seed pods, which burst with a loud noise when ripe. It is grown here, but does not generally succeed very well.

Jacaranda mimosæfolia is a Brazilian tree having charming compound leaves with innumerable small leaflets. When

young it grows quite well, but as soon as it reaches a considerable size it does not generally flourish. It has handsome blue trumpet-like flowers.

Kigelia pinnata is a pinnate leaved tree from tropical Africa related to *Bignonia*. It has large, dull red, trumpet-shaped flowers and sausage-shaped fruits, suspended by long stems. There is a large tree at Cocconut Grove, on high, rocky land.

Lagerstrœmia flos-reginæ. A superb tree bearing enormous fascicles of rose purple flowers. It is very much larger and finer in all its parts than the ordinary crape myrtle (*L. Indica*). There is a fine specimen on the place formerly belonging to Rev. Thomas Spencer, near Miami.

Magnolia. *Magnolia foetida* (*grandiflora*) does not grow wild as far south as this, but I have a young tree in the edge of the swamp that is doing well. *M. glauca* is common here in swamps.

Melaleuca leucodendron, the Cajeput Tree, grows finely here, either on high or swampy land. It is an attractive tree with lanceolate phyllodia and small white blossoms. The bark is very thick and remarkably spongy. The leaves are strongly scented.

Melia azedarach umbraculiformis, Texas Umbrella Tree, is common here, but as a rule does not reach the perfection it does in North Florida. *M. sem-pervirens*, said to come from Jamaica, though probably originally from the Orient, is an elegant, rapid growing tree, here nearly always in bloom. The trees of this genus are subject to soft scale which can be killed with kerowater.

Moringa moringa, is a native of India, but is now widely distributed in the tropics. It has airy, compound leaves and clusters of somewhat pea-shaped, white, fragrant flowers and is always in bloom. It bears long, curious, triangular pods. The whole tree has a pungent odor and taste and the soft roots, as large as a man's arm, make an excellent substitute for horseradish, hence the name Horseradish Tree.

Pachira. A genus of handsome trees from tropical America with large glossy,

leathery, digitate leaves and showy flowers. *P. princeps* has white flowers with red stamens and grows in brackish swamps. *P. macrocarpa* has very large white flowers. *P. fastuosa* from Cuba drops its leaves in winter and in February is covered with immense crimson blossoms, one of the handsomest trees I ever saw. I have a tree of another species which I cannot determine, that has white nocturnal flowers. All grow here finely in the pine land.

Pandanus. A large genus, but the only one we cultivate that I am sure reaches the proportions of a tree is *P. utilis*, commonly called the Screw Pine. It is a most striking and tropical looking object. The nearly smooth trunk is copper colored and marked with the scars of fallen leaves. It is supported at the base by many large air roots. The branches usually come in whorls of three, and the long, folded, spiny leaves are arranged in a perfect spiral. The tree is dioecious, the flowers are large and strange, and are followed by immense, nearly globular heads of seeds which are glossy and highly colored. I have a female tree near my house which now has three of these great seed heads, each larger than a man's head and very heavy. Taken in all, I know of no plant more astonishing in appearance than this, for it seems to be a combination of vagaries in every part.

Parmentiera cerifera. Candle Tree. This is another of the vagaries of the tropics. It is a tree with winged trifoliate leaves from tropical America. It has large white trumpet shaped flowers and long, cylindrical yellow fruits which very greatly resemble candles, and they hang in profusion from the branches. They are said to be edible. Will probably do well here.

Peltophorum ferrugineum. A tree with handsome bipinnate foliage, a rapid grower and a native of Ceylon. The young leaves and shoots are covered with a brown, velvety tomentum. It bears rusty yellow flowers twice a year and they are fragrant. Macmillan in *Tropical Gardening*, says that it is a magnificent sight when in full bloom.

YOUNG TREE OF CIRCAEAN BEAN (*ADENANTHERA PAVONIANA*)

In the East Indies this tree grows to a great size and yields a useful, solid timber, a valuable dye and bright scarlet seeds used for ornaments

Pimenta vulgaris, the well-known Allspice is a handsome tree, native of Jamaica, with long, shining leaves. Every part of it is rich with the flavor of allspice. I have a tree 12 feet high planted in the thick scrub of the hammock which is growing finely.

Plumeria, Frangipani. I have three species, *P. alba*, with white flowers. *P. acutifolia*, flowers pink and white, and *P. tricolor*, flowers white, yellow and red. The thick, succulent stems of these small, tropical American trees lose most of their leaves in winter. The flowers of all are deliciously fragrant, and from them frangipani is made. A magnificent specimen of the latter species is growing in the grounds of Commodore Monroe at Coconut Grove. They all do well here, but are tender.

Paritium elatum. Cuban Bast Tree. A member of the Hibiscus family, with immense, nearly circular, cordate leaves and large flowers that are a peculiar yellow when they open, but later become brownish red. I have a large tree in the pine land, 40 feet high and as much across, that has been constantly in bloom for more than five years.

Saraca indica is a tree with drooping, glossy, compound leaves that are of waxy texture when they come out, and beautifully colored. The orange red flowers are handsome, but it has not done well for me. It should probably have a damp, shady situation.

Schizolobium excelsum. A rapid growing tree from Brazil with splendid bipinnate leaves of immense size and yellow flowers. Will possibly succeed here though it is quite tender.

Stereospermum suaveolens. A tree belonging to the Bignoniaceæ, having enormous compound leaves and dull red trumpet-shaped flowers. It is doing well for me. *S. sinicum* is very fine.

Sterculia. Several species, which do not generally do well here. *S. alata* with immense oval leaves has proven a failure with me. I have had *S. plataniifolia* six years and though it seems healthy it is only three feet high. *S. carthagenensis* is a noble tree, of which there is a fine specimen at the Govern-

ment Plant Introduction Garden near Miami.

Spathodea campanulata. A magnificent tree from tropical Africa with fine pinnate leaves and clusters of orange trumpet-shaped orange flowers. A young specimen on pine land is growing beautifully.

Swietenia macrophylla. A magnificent tree from the American tropics. It has the largest pinnate leaves I have ever seen. These it retains for a long time and they become highly colored before they fall. It is a vigorous, rapid grower, apparently quite hardy, and my specimen has had no fertilizer though planted in pine land. If it stands wind well I predict that it will make a good tree for planting along roads.

Theobroma, Cacao. A beautiful ornamental tree but very tender and it has utterly failed with me so far.

Terminalia catappa is a common but exceedingly striking tree. Its branches come out in whorls and grow horizontally. The obovate leaves sometimes measure 12 inches in width by 22 in length, and they turn the most wonderfully purplish crimson when cool weather comes. It is unfortunately very brittle. It flourishes in the poorest soil without fertilizer.

Thespesia. Trees of the Hibiscus family, one of which, *T. grandiflora*, is a fine, rapid grower and promises to do well here.

Thevetia nerifolia is a small West Indian tree with narrow shining leaves and funnel shaped, very fragrant blossoms, yellow or salmon colored. It does well on our pine land, but should be fertilized. The whole tree is very poisonous.

ORNAMENTAL FRUIT TREES AND PLANTS.

In the north it is considered bad taste to plant fruit trees in ornamental grounds as they generally possess little beauty. In the tropics there are many fruit bearing trees which are highly ornamental in foliage, flowers and fruit.

Achras sapota, Sapodilla, is a handsome, evergreen, tropical tree with elliptical, leathery, shining leaves, the

branches disposed in whorls. It is a beautiful object planted alone or mixed with other trees.

Artocarpus, Bread Fruit and Jack Fruit. The former with its immense, incised, glossy leaves is, when well grown, one of the grandest objects of nature. There is a fine photograph of this in McMillan's Handbook of Tropical Gardening. It is very tender when young, and I have not yet succeeded with it. There is a fine specimen of Jack Fruit growing in pine land at Cocoanut Grove.

Carica papaya, the common pawpaw is a striking ornamental plant. The cultivated form has larger fruit than the wild one.

Carissa. The specific nomenclature of this group is somewhat confused. I have what may be *C. grandiflora* and *C. arduina*. Both have beautiful, thick, glossy leaves and enormous pairs of thorns. The large, waxy, starry, fragrant flowers make a lovely contrast to the deep green leaves and the crimson fruit. They are as completely at home here as weeds.

Cecropia palmata is a rapid growing, awkward tree from the West Indies with immense deeply cut leaves which are silvery beneath. It is a striking ornament and does well here.

Citrus. The orange, the lemon, the tangerine, the grapefruit and especially the kumquat are beautiful ornaments with their rich, glossy leaves, fragrant flowers and golden fruit.

Chrysophyllum cainito (Star Apple). This is as handsome a tree as our wild species and blends finely with other ornamental trees.

Dillenia indica. A fine tree with handsome serrate leaves and very large, showy white flowers. The fruit, as large as an apple, is edible.

Eriobotrya japonica, Loquat, has elegant, large, serrate leaves, is very hardy, and is a beautiful tree.

Eugenia jambos and *E. malaccensis*, Rose Apple and Malacca Apple are superb ornamentals. The former has long, leathery, glossy leaves and large heads of creamy stamens. It blooms in late winter and spring and it is a sight

never to be forgotten to part its branches and peer into the semi-darkness inside and see its lovely blossoms, gleaming like stars. *E. malaccensis* has crimson flowers and is a gorgeous tree but is very tender. The former does finely here anywhere.

Mammea americana, Mamee Apple, is a lofty, tropical tree with heavy, glossy leaves and fragrant white flowers. It is very tender when young but becomes a large tree here.

Mangifera indica, Mango. No finer, nobler, ornamental tree is grown in this region. It has a well rounded head of long, leathery, shining leaves and the upright panicles of brownish flowers are quite attractive. It is perfectly at home in our poor soil and would make a fine tree to plant along roads.

Musa. The banana and plantain rank among the most striking and beautiful of tropical ornamental plants. Unfortunately the plantain does not do well here and even the banana does not flourish here with the luxuriance that it does in the tropics. The banana does best in a rich, damp soil, though it does not like to stand in stagnant water, but it may be made to grow finely on pine land if given plenty of fertilizer and cultivation and should be planted freely in ornamental grounds.

Phyllanthus distichus. Otahite Gooseberry. It is one of the anomalies of our vegetation, that our cherries grow on evergreen bushes and our gooseberries on thornless trees. The long pinnate leaves of this tree, curved downward in the middle are indescribably beautiful, and when the new growth comes out it is of a rich, reddish brown color. The tree is rather brittle and should be planted in a protected place.

P. emblica is a very handsome tree with long, wand-like branches and exquisite leaves. I have a fine specimen.

Pomegranate (*Punica granatum*). It is a beautiful shrub with scarlet, trumpet-shaped flowers and handsome, large red fruit. For some reason it does not always do well here.

Tamarind (*Tamarindus indica*). It is a noble tree with finely roughened bark

A YOUNG LEBBEK TREE (ALBIZZIA LEBBEK)

This is one of the most commonly grown avenue trees in Egypt. A five-mile avenue leads to the Great Pyramid from Cairo

and delicately beautiful foliage. It does well here in pine and hammock.

ORNAMENTAL EXOTIC SHRUBS.

It is hard to draw any hard and fast distinction between trees and shrubs. In a general way the latter are smaller and often send up numerous stems from the ground.

Allamanda neriifolia and *A. williamsi* may be grown as shrubs or sprawlers. The former is one of the most floriferous plants we have here, and is covered nearly all the year with fine, large trumpet-shaped, yellow flowers. So great is the drain on it from constant blossoming that it should be repeatedly fertilized and cultivated to keep it in vigor. It is one of our very best shrubs. *A. williamsi* is a fine floriferous species.

Aralia guilfoylei is an elegant, erect shrub with glossy pinnate leaves variegated with white, which does well here. I have a plant under the name of *A. pulchra* with beautiful, glossy, digitate leaves, which promises well but is probably not an *Aralia*. It may be an *Oreopanax*.

Ardisia crenulata is a pretty shrub with crenate, leathery leaves and waxy, crimson berries that remain in perfection a long time. I have not been very successful with it but have had best results by planting it in shade in the edge of the hammock.

Aucuba japonica, Japan Gold Dust Tree. I have totally failed to make this lovely plant grow here. I have kept it in fair condition in a pot but when turned out, even in a shaded location the leaves turn black and it soon dies. It may be either the soil or a too warm climate that is the trouble.

Azalea. None of the *Azaleas*, *Camellias*, *Rhododendrons* or tea plants will grow for me. No doubt this is on account of the lime in the soil. The *Gardenia* also fails, probably for the same reason.

Bauhinia. Several species of this charming genus are shrubs and a few are climbers. *B. acuminata* is a fine shrub with lovely, large, white flowers which blooms throughout the spring and

summer. I have a small species received as *B. picta*, but which is not that. It has handsome, pale yellow flowers, shaped much like those of *Abutilon*. With a good assortment of *Bauhinias* one can have flowers throughout the entire year here.

Brunfelsia americana has obovate, shining leaves and yellowish, salver-shaped, fragrant flowers. The tube of the flower is exceedingly long. It does remarkably well here in pine land and is a very free bloomer.

Cassia. None of the shrubby species I have tried have done well.

Caesalpinia pulcherrima is a favorite shrub in South Florida and well it may be. It is easily grown from seed and it flaunts its gorgeous scarlet and yellow flowers to the sun nearly the whole year through. There is a variety with yellow flowers. The plants should be headed back and fertilized after their periods of blooming. *C. nuga* is a thorny, half climbing shrub which promises well.

Catesbæa spinosa is an elegant shrub from the Bahamas. It has small, thick, shining leaves, is quite spiny, and bears numbers of pendant, trumpet-shaped, lemon yellow flowers. These are cut into four segments on the border and are from four to six inches in length. It does well in ordinary pine land.

Cestrum. *C. nocturnum* is the Night Blooming Jessamine. The flowers are small and greenish white but give out, at night only, the most powerful perfume. A large bush will scent an acre of garden on a calm night. There are those who complain of these strong odors as being overpowering but they are never so to me. I love when out walking at night to plunge my head in the very middle of these bushes and revel in the wealth of their fragrance. *C. diurnum* is a very fragrant day bloomer. *C. elegans* and *aurantiacum* have failed with me, probably on account of root knot.

Clerodendron squamatum has large soft, cordate leaves and brilliant scarlet flowers. *C. fragrans* with double white flowers has been naturalized here. *C. siphonanthus*, with long tubed, dirty white flowers and showy berries has also

escaped cultivation. *C. thompsonæ* is either a shrub or half vine and has elegant flowers with white calyx and a deep red corolla. All flourish here.

Codiaeum. The Crotons. Perhaps the finest ornamental leaved plants we grow. The climate here is a little too cold at times in winter for them to do their best and the soil is generally rather poor for them. However, if planted where they are protected and heavily fertilized they make a glorious show. A large variety is grown in Dade County but the names are in great confusion. They are hybrids, from two or three species belonging in the South Seas and have a great diversity in the forms of the leaves and coloring.

Dombeya wallachi, is a wonderfully vigorous, rapid grower with immense, soft leaves measuring a foot or more in length and width. The flowers begin to open in winter and the plant continues in bloom for a long time. The flowers are in large heads, a handsome pink, and remind one of those of the *Hydrangeas*. A poor stub of a plant put out in the pine land without fertilizer last fall bloomed superbly and is now eight feet high and as much across.

Duranta plumieri is a rampant grower and bears spikes of blue flowers looking like magnified forget-me-nots. During the winter when it is in bloom swarms of butterflies of many colors hover around it and contribute not a little to its beauty.

Euphorbia splendens is a fine old thorny, succulent plant with pretty red bracts. *E. sanguinea*. I have received a plant bearing this name from Reasoner Bros. which has ovate leaves of an indescribably rich, bronzy purple crimson with lighter veins. It is an exquisite plant, half shrubby and grows well but is very tender. *E. pulcherrima*, commonly known as *Poinsettia pulcherrima* is one of the finest ornaments of our gardens. It begins to develop its dazzling crimson bracts in November or sometimes in October and often holds them until in March. As soon as the new growth starts in the spring the stems should be severely cut back and

these may be cut up and planted to within one bud in the ground to make new plants. As the old plants grow through the summer it is well to pinch out the tops to make them branch. They should be well fertilized, for with the best care they are usually rather short-lived here.

Eugenia microphylla. An exquisitely beautiful little shrub with dark green, linear leaves. It makes repeated growths through the year and the young leaves are yellowish or brownish pale green, a charming contrast with the old ones. It promises to succeed here but I think it will do best when it is partly shaded.

Hibiscus. The two first ornamental plants that the settler here puts out are Coconut palms and Chinese Hibiscus. These, from their beauty and their adaptability are planted wherever civilized or semi-civilized man is found within the tropics. There are a dozen or more varieties here in cultivation and all do exceptionally well. Put a cutting into the ground and within a year it is flaunting its glorious blossoms to the Florida sun. When the plants become old and scraggy all that is necessary to do is to cut them severely back just before growth starts and in a little while they are a mass of fine new growth and foliage. I have plants eight years old so cut back which have never had any fertilizer, that are the picture of health and vigor. *H. mutabilis*, with soft, velvety, angled leaves and large pink flowers that open in the morning and turn dark through the day, is very fine. The same cutting back process is almost necessary with this, in fact I practice it with *Oleanders* and a great variety of things that become old and lose their vigor.

Ixora. One of the finest genera of shrubs that can be cultivated in this region, though they are tender and need protection when young. *I. coccinea*, scarlet; *I. colei*, white; *I. amboina*, orange, and there are yellow and pink varieties. They should be in every garden.

Hydrangeas. These have utterly failed with me and I presume that our soil is not suitable.

AN ARTIFICIAL POOL IN THE HAMMOCK

Palms (*Phoenix reclinata* and *Inodes havanensis*) and other exotic plants are set out around it. The Nipa palm of the Philippines is growing here

Jasminum. The genus contains a considerable number of species, most of which do well here. *J. sambac*, the Arabian Jessamine and its varieties, *J. pubescens*, and *J. simplicifolium* have white flowers. *J. primulinum* is a vigorous grower and has large yellow flowers. These do better with me than any others. Most of them may be grown as shrubs or sprawlers.

Lagerstroemia, *L. indica*, the well-known crape myrtle is quite common here, but it does not do so well as it does further north. There are white, purple, pink and light red varieties.

Malvaviscus arboreus, an old fashioned shrub with upright, Abutilon-like scarlet flowers. It will do fairly well with good soil and plenty of fertilizer.

Nerium, or Oleander. The oleanders are among the best ornaments of our gardens, being hardy, generally healthy and floriferous. They bear crops of their handsome flowers several times a year and some flowers may be picked at any time. There is a considerable variety of colors from white to pink, cherry red, rich crimson and purplish, and there are yellowish flowered varieties though as yet no clear yellow. They succeed equally well in pine, hammock and muck land.

Nipa fruticans. The Thatch Palm of the East Indies. Sprouted seeds of this plant have been sent to me from the Bureau of Agriculture at Manila which I have planted in my brackish swamp and they are doing finely. It is not a true palm but is related to *Pandanus* according to Lindley and others and its systematic position is in doubt. It is a beautiful object and it is probable that it will do well in our salt marshes.

Panax. Ornamental leaved shrubs, among which we have *P. excelsum*; *P. plumatum*; *P. aureum* and *P. victoriæ*, the two last with variegated leaves. They are very tender and should be sheltered.

Phyllanthus nivosus roseo-pictus. A lovely, small, delicate shrub which has beautifully variegated leaves, green, brown, white and pink. It is used some-

times for hedges here. *P. atropurpureus*, of which I have a fine specimen has dark purplish leaves and is much more vigorous than the former.

Pittosporum. Hardy shrubs with glossy, handsome leaves which bear small, fragrant flowers. *P. tobira* and a variegated variety, *P. viridiflorum* and *P. undulatum* do finely here and soon make large shrubs, but so far have not bloomed for me.

Plumbago. Leadworts. *P. capensis*, blue, and a white variety and *P. rosea*, do well. *P. larpentæ* has not succeeded with me.

Raphiolepis indica and *R. japonica*, two hardy, neat shrubs with obovate, glossy leaves and pretty white flowers, produced almost continuously, are desirable and do well here.

Ricinus. The Castor Bean. *R. communis* has become naturalized here around dwellings, as well as the smaller variety or species, *R. sanguineus*, with all the parts deep purple red. They are striking, short lived plants.

Rosa. The Rose. Although in many places this is the acknowledged Queen of Flowers, it is hardly so here. All the species do best in a strong tenacious soil and ours is too light and poor to suit them. They do better in the hammock land, and if abundantly fertilized with bone meal and well watered some of them will succeed for a while. They will probably do better in the Homestead region of Dade County than elsewhere in it.

Solandra grandiflora is a sprawling, rapid growing shrub or half climber that bears immense, tubular, yellow flowers. It grows finely and blooms profusely in our pine land.

Tabernamontana coronaria is a superb large shrub or small tree with leathery, very glossy leaves and large, waxy white, semi-double flowers which are fragrant at certain hours of the day. It blooms abundantly throughout a large part of the year and is completely at home in Dade County.

Stenolobium stans is better known as *Tecoma stans*. This lovely shrub, or in

some cases a small tree, is a native of Mexico and the West Indies, but is becoming naturalized in Dade County, Florida. It is an upright grower with airy, pinnate foliage and enormous clusters of large, fragrant, golden flowers. It is a poor man's plant and will grow anywhere, springing up spontaneously in and around gardens and dwellings and requiring no care.

Thunbergia erecta. A moderate sized shrub with large curved, violet-blue, trumpet-like flowers having a yellow throat. It must be grown in a more or less shaded location and if so planted will flourish and bear quantities of its lovely flowers with little attention, though it responds to good treatment. There is a white flowered variety which is not so fine.

Viburnum tinus. A fine, old-fashioned evergreen shrub bearing pretty white flowers and known as *Laurustinus*. It is perfectly hardy and promises well here.

EXOTIC ORNAMENTAL VINES AND CREEPERS.

Abrus precatorius, Crab's Eye Vine. A lofty climbing vine with delicate pinnate leaves and small pods of round red seeds, with a black eye and called "Crab's Eyes." The whole plant has a decided taste of licorice. It is distributed all over the tropics and according to Tenson-Woods it grows near the mangroves in Malaysia. It soon spreads rapidly when introduced on a place here.

Agdestis clematidea is a rapid growing vine with soft, cordate leaves and large panicles of lovely, small, waxy white flowers. It grows from great ill scented tubers, in some cases larger than a bushel basket. When once the roots are well grown it soon covers a large area.

Allamanda hendersoni is a magnificent sprawler, with glossy leaves and very large, trumpet-shaped, golden flowers. It is often used to cover piazzas here, though it is sometimes grown as a shrub. The tubes of the large flowers are favorite resorts of the tree frogs from whence they cheer the heart of the nature lover

with their delightful music. I have *A. schottii* which is doing well, but has not bloomed yet.

Antigonon leptopus. Mountain rose. A lovely vine from Mexico with airy racemes of the most brilliant rose colored flowers, blooming almost the entire year. It stands neglect well, but the leaves are sometimes troubled with blight.

Argyreia tiliaefolia is a rampant climber with very large, handsome, cordate leaves and white and violet flowers that is related to the morning glory. A fine specimen is growing in the grounds of Dr. John Gifford at Coconut Grove.

Aristolochia, Birthwort. *A. elegans* is sometimes cultivated here for its large purple and white blotched, very curious flowers.

Asparagus plumosus is well known at the north and does well here planted in a sheltered place.

Bignonia venusta is, perhaps, the handsomest vine planted in South Florida. It has trifoliate, glabrous leaves and immense clusters of the most vivid orange scarlet, long, tubular blossoms, produced in astonishing abundance in late winter and early spring. The drooping corollas continually loosen at the base and slide down the long bright pistils and for a time hang there suspended, thus adding another element of beauty to these superb flowers. There is a wonderfully fine vine covering some 60 feet of piazza at the house of Mrs. Fuller, in Coconut Grove, and when this is in bloom there are spaces of many square yards where nothing but masses of its lovely flowers are seen. *B. crucigera*, Cross Vine, is a native of northern Florida, with dull red flowers. *B. chamberlainii* has yellow flowers. The vines attach themselves by means of hooked tendrils.

Bougainvillea spectabilis is a thorny vine with the most dazzling purple bracts and when it does well is one of the showiest of our winter bloomers. A leaf rolling caterpillar sometimes eats the young growth so badly that the vine is a failure. *B. lateritia* has large leaves

and very showy brick red flowers but is very difficult to propagate. I have a very fine vine of it. *B. glabra* is a more delicate vine but when well grown is a fine climber.

Cereus. A few species do well here. *C. nycticalus* and *C. grandiflorus* sprawl around the bases of trees, sometimes climbing by air roots and bloom beautifully here in spring or early summer. *C. triangularis* has become naturalized at the Punch Bowl, south of Miami. I have seen a specimen clambering over a live oak at the residence of Mr. John Soar, at Little River, with over 50 flowers open, each averaging a foot or more across. Several other climbing species promise well here.

Cryptostegia grandiflora is a rampant vine with glossy leaves and handsome, purplish, bell-shaped, starry flowers a couple of inches across. *C. madagascariensis* has red veined leaves but has not yet bloomed for me. Both produce rubber.

Dioscorea alata and one or two other species, the yams of the tropics, are rapid growers during the warm season, but die down in late winter. They have strikingly handsome, large leaves and interesting, triangular, winged flowers and seed.

Entada scandens. The great brown, flattened seeds of this West Indian vine are often washed up on our shores and I have planted many of them. They sometimes germinate and even grow to a height of 20 feet, but for some reason die, yet I hope sometime to succeed with it. The vine has delicate, bipinnate leaves and climbs by means of tendrils. Its enormous, twisted pods are from six to eight feet long.

Euonymus radicans has completely failed with me though I have often tried it in various situations.

Gelsemium sempervirens, Carolina Jessamine, is a native of North Florida but probably does not grow wild in Dade County. It is sparingly cultivated here but does not always do well.

Gloriosa superba and *virescens*, two lovely vines bearing flowers variegated

red and yellow, resembling lilies, are cultivated here occasionally, but succeed only moderately with me.

Hoya carnosa, the well known wax plant, is doing well in my slat house, but has not, so far, succeeded well out of doors.

Ipomoea, or Morning Glory. An immense genus, several species of which do well here. *I. tuberosa* has fine, glossy, palmate leaves and bright golden flowers in winter that look as though they were varnished. *I. sidifolia* forms immense, knotted, ribbed stems, running to a great distance and bearing in large clusters, unnumbered rather small, white flowers with a greenish center. They are much sought for by bees. It blooms about Christmas and is called Christmas Vine. I have one which covers an extensive chicken yard fence and house and a quarter of an acre of ground, and I have estimated that an average of a million flowers opened on this vine every day for six weeks.

I. horsfalliæ has lobed leaves and elegant deep crimson, glossy flowers, perhaps the finest of all. A beautiful vine of this covers a pergola at Dr. John Gifford's place in Cocoanut Grove. A number of other species do well here.

Lonicera or honeysuckle. *L. japonica* is cultivated here and does fairly well.

Monstera deliciosa. A remarkable vine making a very strong growth and having colossal leaves, lacinated at the edges and full of natural holes. It attaches itself to trees or cliffs by aerial roots and sends down feed roots from great elevations. The plant is an Aroid and its great white spathe is cream colored, boat shaped, and almost as thick as one's hand. Charles Kingsley states that when it is opening a heat is generated sufficient to sensibly affect the thermometer. This is true of the flowers of *Victoria*. The fruit is elongated and cone-like and ripens 18 months after the flower blooms. I have a grand specimen planted in my hammock which climbs a mastic tree and is now over 20 feet high and sometimes has one crop of fruit on it and sometimes two. It is the Ceriman of the West Indies.

Mucuna urens. Sea Bean. The large seeds of this West Indian vine are often washed up on our shores and many of them will germinate and grow, though the plants have never become established in a wild state in Florida, so far as I know. I have repeatedly planted the seeds and had vines get up to 20 or 30 feet and for some reason they have died. At last I have several vines that, together, run over a half acre of the hammock. It has trifoliate leaves and large clusters of strange and handsome, pendant, yellow flowers in winter and spring. These are followed by pods more or less covered with stinging hairs. When ripe the seed is an inch in diameter, brownish with a distinct dark border. The stems of these vines, knotted and twisted together, are now as large as my thigh.

Passiflora. Several species of passion flowers have been tried here but they do not seem to do well and die in a short time.

Pereskia. A climbing, leafy cactus of which we have two species. *P. aculeata* and *P. bleo*. Both have pink flowers but those of the latter are finer, looking something like those of a single rose.

Philodendron. I have several unnamed species of this fine Aroid genus, all of which are climbers and are doing well in the hammock. One which I presume to be *P. lacerum* has large pinnatifid leaves and is a noble plant.

Petræe. A lovely, half climbing shrub with bluish flowers, very floriferous but quite difficult to propagate. There is a fine specimen in the grounds of the Royal Palm Hotel at Miami.

Pothos. When established in suitable grounds *P. aureus* is a strong growing vine with very large, cordate thick, shining leaves, splashed and striped with yellow. It is a handsome plant and does best in rather damp rich soil. *P. argyreus* is a more delicate species marked with white.

Pueraria thunbergiana, a popular vine at the north has never succeeded with me. It is no reason, though, because I cannot succeed with a plant that some one else may not make it do well and it

has several times happened that after repeated failures I have at last been completely successful.

Tecoma. *T. capensis* is a sprawler with pretty, deep green, pinnate leaves and heads of brilliant scarlet, trumpet-like flowers. When it is once established it spreads rapidly over the ground and throws out roots at every joint. It is perfectly at home here and may either be trained up a piazza or allowed to form a mass.

Solanum. Two species are very fine vines with pinnatifid leaves and light blue flowers. In *S. seaforthianum* the individual flowers are rather small; in *S. wendlandii* they are sometimes two inches across and lighter colored. The berries of *S. seaforthianum* are brilliant red and handsome and are much relished by the mocking birds. One of these vines grows on my north piazza and daily a mocking bird comes for his feed of berries, having little fear of the inmates of the house.

Stephanotis floribunda. An old hot-house favorite at the north. I have one planted in the edge of the hammock which has run up a tall live oak where it opens each summer its lovely white, waxy, fragrant flowers.

Thunbergia alata. A pretty, small, herbaceous vine with bright cheerful looking flowers, white, buff and deep yellow, and each of these has a form with a dark eye. Along the edge of my hammock in a spot sheltered with other growth I planted seeds of these and now they run all over every shrub and tree and on the ground and make the place gay with their thousands of blossoms. This is "Thunbergia Nook." *T. fragrans* is something like *T. alata* but the leaves are heavier and the flowers larger and of finer substance, pure white. I have not been able to succeed with *T. laurifolia* or *T. grandiflora*.

Trachelospermum jasminoides. This beautiful vine with its airy clusters of starry white, fragrant flowers is a general favorite, even with rabbits, for they have repeatedly eaten it to the ground for me. It is commonly called the Con-

federate Jessamine and is one of the best plants we grow.

Vallaris dichotoma. A beautiful climber with dark rich foliage and white flowers. I have a fine specimen in the edge of my hammock.

Zebrina pendula. This is the old, well-known *Tradescantia zebrina*, with its pretty purple and silvery striped leaves, everywhere grown in the north as a basket plant. It would do very finely here in moist land and partial shade if the land crabs would let it alone, but they tear it to pieces in summer more than it grows the rest of the year.

EXOTIC HERBACEOUS ORNAMENTALS.

It is hard to draw the line between herbaceous plants and shrubs, or even between them and trees. I have placed the banana and traveler's tree here, though they may have tree like proportions, because they are succulent and do not branch.

Acalypha. The *Acalyphas* are among our most gorgeous garden ornamentals. When full grown the red leaved species look like sheets of flame on the landscape, but the descriptions in the cyclopedias are so vague as to be absolutely worthless for purposes of identification. We have a form with large, dark, bronzy red leaves, variegated, often to half the leaf, with carmine. A second form has smaller, narrower leaves, the ground color lighter than in the first, and is more greenish, the light color being carmine. A third form has much the same colors as the second but the leaf is more coarsely serrate and is often contorted. *A. marginata* has green leaves margined with white, the green turning to deep red bronze in winter, the white to pink or red. *A. miltoniana* is an elegant form with narrow, often curled, cut, whitish edged leaves and there is a fine sport from it with broader leaves, the borders margined and blotched with yellow. All these do well here, the *A. marginata* being the strongest grower and the hardest. *A. godseffiana*, beautifully margined white and pink, has not done well with me. *A. sanderi* has long cat-tail-

like, brilliant red flower spikes, but is quite tender.

Achyranthes and *Alternantheras*, richly colored plants, have not succeeded with me.

Aechmea. Choice epiphytic plants which do well when fastened on to trees in the hammock. *A. discolor* has broad leaves, deep green above and rich purple below, with coral red calyxes and deep blue corollas.

Alocasia. Several species of this Aroid genus are fine, but there is great confusion as to systematic position. *A. macrorhiza* and its variegated variety are often cultivated. *A. roezeli* has handsome green leaves spotted whitish.

Agave. I have about 25 species of this fine genus and all are doing well or promise to. *A. americana*, variegated variety is especially fine, so is *A. salmonea* and *A. recurvata*. *A. victoria reginae* is a little gem. These plants once established soon propagate themselves by underground suckers, and when they bloom, by bulblets. I have a plant of an unnamed species with a spread of 13 feet and a height of nearly 11, which shows no signs of blossoming. Plants bloom here sometimes within three or four years after planting.

Alpinia nutans, Shell Flower. A handsome, rank growing, canna-like plant, with curious and elegant flowers which does best in rich, rather moist soil. *A. mutica*, with whitish crimson veined flowers does well on pine land.

Annuals of several kinds do well here in the cooler part of the year and especially if watered. *Phlox drummondii*, *Petunias*, *Portulaca*, *Iberis* or *Candytuft* and *Marigolds* make the garden gay in winter and spring.

Anthurium. I have not succeeded well with most of the species offered in the catalogues. *A. huegelii* perhaps, a stately plant with immense, oblong leaves, which I have introduced from the limestone mountains of Cuba, grows finely here and will be an excellent plant for rock-eries.

Asparagus sprengeri is used a good deal for vases and does well.

Bambusa, Bamboos. A number of species do finely here. Among them *B. argentea* and a striped variety form immense plants 35 to 40 feet high and do well on high or low ground. *B. disticha* is a rather dwarf species reaching 10 feet high with handsome foliage. *B. spinosa* is very thorny and is a large species from the East Indies. This is *Bambusa arundinacea* according to Nehrling. I have received from the Department of Agriculture and elsewhere a very different species under this name. The nomenclature of the bamboos seems to be badly mixed up. *B. vulgaris* grows to 60 feet here and does well anywhere but especially on low land. *B. verticillata* is a handsome species with striped stems, forming immense clumps. All these are doing well. *B. arundinacea* (as received from the Department of Agriculture) and *Arundinaria metake* have not yet done very well with me, neither have *Phyllostachys aurea* or *violenscens*. *Dendrocalamus strictus* (*Bambusa* sp. according to Nehrling) will probably succeed. The common *Cyperus alternifolius*, Umbrella Grass, is rarely found growing wild here and it does well in moist places.

Begonia heracleifolia is a rank growing species with large, sharply lobed, hirsute leaves and panicles of pink flowers, and is fine for rockeries where not too dry. My experience with the other species is that they are uncertain.

Bryophyllum calycinum is a succulent with opposite leaves and clusters of attractive green and brown flowers. It is useful for rock work.

Cactus. Several species have already been mentioned. I have tried many species of *Cereus* and *Opuntia* that do indifferently well or fail. *Melocactus* has been brought from the Bahamas but does not live long. I have been rather successful with *Phyllocacti* planted on the trees, and species of *Rhipsalis* do well as epiphytes.

Caladium. The fancy leaved *Caladiums* do quite well under a slat house but have not succeeded with me out of doors.

Cannas do well in moist, rich earth, but have failed with me on pine land. They need fertilizer and water.

Coleus. These gorgeous plants would do well here but for the root knot, caused by a villainous little nematode worm in their roots, changing them into great knots, after which the plant dies. This root knot is a terrible pest here and it attacks and destroys a great variety of small plants. Whenever a little plant looks sickly it is well to dig it up, and, if not too far gone cut the roots back to where they are healthy and reset in a new place. Sometimes valuable plants of these and other things may be saved in this way.

Crinum. Beautiful amaryllidaceous plants with pink, white and large reddish flowers. I think they should have rather rich, damp soil as I have only had indifferent success with them on high pine land.

Curcuma. These do well on moist, rich soil and have very attractive heads of curious flowers but I have failed with them on high land.

Dasyliion serratifolium, a *Yucca*-like plant with the ends of the leaves always looking as if dead, has a tall panicle of white flowers. It does well in dry land but with me is a slow grower. Would look well on rockeries.

Dieffenbachia. Beautiful, broad leaved plants which in most species are finely variegated, but so tender here that I have no success with them in winter even in the slat house. A slight chill sometimes kills or badly injures them.

Dracaena lindenii. I have a fine plant of this in my hammock. All the other species I have tried soon fail. *D. godseffiana* may succeed planted in a half shaded place.

Eranthemum pulchellum or *Daedalocanthus nervosus*, grows rankly in pine land and bears quantities of lovely blue flowers all winter. It should have a place in every garden here. *E. atrosanguineum*, with handsome, very dark, purplish leaves, would do well but is excessively tender. *E. albo-marginatum* is a beautiful plant but seems quite tender.

Fittonia argyroneura and *F. verschaffeltii* are lovely little trailers, the leaves of the former netted with silver, of the latter with coppery red. They need shade and moisture but are very tender.

Ferns. Many of the species can be grown in slat houses but I have had poor success with most of them when planted out. I have a deep artificial pool in the hammock and on its rocky sides I have planted many ferns and *Selaginellas*. The native species mostly live; nearly all of the exotic ones die sooner or later. Land crabs destroy them often.

Furcraea. I have a dozen species of these fine, stately plants and all grow in the poorest land without fertilizer. They closely resemble the *Agaves* but generally do not have such sharp thorns, and the flowers are more ornamental. *F. lindeni* is a magnificent plant with striped leaves. The descriptions in the encyclopedias are so imperfect that I am unable to identify most of my plants. With the *Agaves* they are most strikingly tropical looking ornaments of the garden and they all do well here.

Gynura aurantiaca, Velvet Plant. Quite an attractive plant with velvety, purplish leaves and orange, tassel-like flowers. Planted anywhere, it will flourish, but does best in shade.

Hedychium coronarium, Garland Flower, belonging to the ginger family, is a handsome plant with attractive white, fragrant blossoms and does best on damp, rich soil.

Heliconia. Several species of noble, tropical plants with exceedingly odd handsome flowers, but none have done very well for me.

Hippeastrum. Commonly known as *Amaryllis*. Beautiful bulbous plants of numerous species which do fairly well here. *H. reginae* has large, red, showy flowers with a greenish center. *H. johnsoni* has deep red flowers with a white stripe in the center of each petal. *H. equestre* is an old, well known plant with flowers somewhat like those of *H. reginae*. I have never succeeded with *H. aulica*. The lubber grasshopper is the

sworn enemy of the *Hippeastrums* and *Crinums* and many a beautiful plant falls a victim to its voracity. In early spring I watch for the young which remain together when hatched, often 50 or more in a lot, and I kill every one at that time. By doing this I prevent infinite damage later. Prof. Henry Nehrling, of Gotha, Fla., a veteran horticulturist, has originated a marvelously fine strain of hybrid *Hippeastrums*.

Iris. Some of the members of this lovely genus do well here in low, rich ground. At Coconut Grove along "The Trail," one of the species has become naturalized in the edge of the brackish swamp. I have plants of *I. germanica*, the German, and *I. kaempferi*, the Japanese Iris, growing and promising well.

Jacobinia coccinea is one of our standard herbaceous plants and is quite common in this vicinity. It grows and does well in sandy pine land and flaunts its gay spikes of scarlet, tubular, varnished flowers nearly all the year.

Lantana. Coarse, rough plants, but always covered with their bright heads of flowers, white, lilac, yellow and orange being the prevailing tints. They do well here when not troubled with root knot and are improved by being fertilized.

Leonotis leonurus. One of the very best herbaceous plants for this region. It will take care of itself when once it is established, sending up rank growths which carry whorls of orange, tubular flowers.

Musa. Some of the ornamental musas have succeeded with me and others have failed. *M. rhodochlamys*, from Congo, is a glorious species, very vigorous and healthy, with rather upright leaves and handsome bloom. *M. martini* and *M. gillettii* are fine. *M. rosacea* is a pretty plant and these have sometimes succeeded. I have had poor success with *M. ensete*, the great Abyssinian species, and several others.

Pandanus. Quite a number of species belong here which might be called shrubs or small trees as well as herbaceous plants. *P. veitchii* is a favorite at the north, and is a noble plant here, forming

great clumps 10 to 12 feet across and considerably higher, but it loses much of its color when planted out. *P. sanderi* grows fully as large as *veitchii*, but retains at all seasons its marvelous coloring. Grown in a sheltered position this is one of the most glorious plants we cultivate. *P. candelabrum*, the striped variety, is a fine plant, but loses some of its color in the open. I have a fine group of these three in a partly shaded place and as a mass of splendid tropical color and growth I have never seen it equalled. *P. baptistii* is beautifully striped and holds its color well; it is entirely free from spines. I have a mass of this that is 20 feet across and 12 feet high, that has been planted about five years. This will grow in very wet places. *P. luzonicus* and *P. odoratissimus* promise well. *P. graminifolius* is a delicate species which stands on stilted roots and *P. pacificus* is a beautiful, broad leaved species, but unfortunately both are excessively tender, even a chill injuring them. All do well on pine land.

Pedilanthus tithymaloides is a succulent plant with curious red flowers shaped a little like a human foot. It is beginning to be naturalized.

Pelargonium. The Horseshoe Geraniums do not succeed here when planted out, as a general thing, though they are sometimes grown in pots. The scented *Pelargoniums* do very well for a while if fertilized.

Ravenala. Two species of noble plants, though *R. madagascariensis* is commonly called "Travelers' Tree." It forms a trunk though it does not branch, and has distichous leaves. It does fairly well on pine land, but flourishes best in rich, damp soil. I have a specimen about six years planted which is placed in such a situation and it is the finest I have seen. It is 25 feet high and is just beginning to form a trunk which is 4 feet and 11 inches in circumference at the ground. It has 17 leaves with a spread of 29 feet, their stems being about 10 feet long and the blades 3 feet wide and 9 feet or more in length. The flattened leaf stems where they join the trunk are as large as a man's arm; at the blades about the size of his wrist. It has re-

cently bloomed. It is easily the most striking plant on the place. *R. guyanensis* has not done well with me.

Richardia, the well-known Calla Lily, is only a partial success here.

Russelia juncea, a slender, twiggy stemmed plant, bearing quantities of coral red, tubular flowers, is beginning to be naturalized here. It is a Mexican plant and is perfectly adapted to our poor soil and is always in blossom. A variety *Lemoinei* is more floriferous than the type.

Sansevieria zeylanica, a striking, variegated plant, takes absolute possession of the soil to the exclusion of almost everything else wherever planted. I have two other species.

Strobilanthus dyerianus is a handsome plant variegated with iridescent tints of purple and bronze. It has never done well for me, but perhaps it might succeed in rich, damp soil, partly shaded, where it would not be troubled by land crabs.

Strelitzia. Magnificent plants with the leaves distichously placed, bearing peculiar, very handsome blossoms called Bird of Paradise Flowers. I have *S. reginae*, a small species, and *S. augusta*, which reaches a height of 18 feet.

Tillandsias and *Vriesias* all do well here fastened firmly to trees in the hammock. *V. splendens* is a lovely plant, its leaves barred across with brown. *Cryptanthus zonatus* is a beautiful epiphyte, also barred.

Tradescantia discolor is a fine plant with deep purple under surfaces of the leaves that will do well here almost anywhere. It is a good plant for rock work, as is its near relative, *Zebrina pendula*.

Vinca rosea. Commonly called Madagascar periwinkle. Wherever man goes in South Florida this plant goes also. There is a purple, a pure white and a white variety with a red eye. The white variety is the most vigorous and floriferous and works up beautifully in bouquets. If given a little extra care in the way of fertilizing the growth will be finer and the flowers larger.

Xanthosoma violaceum. A grand plant with immense arrow head leaves

CATTELYA TRIANAÆ, A LARGE FLOWERED ORCHID, WHICH HAS BEEN FASTENED TO A SLOPING TREE TRUNK IN THE HAMMOCK AND HAS MADE ITS HOME THERE

tinted bluish or violet, which is often grown around houses. It should have plenty of fertilizer to make it do its best, and it likes moisture.

ORCHIDS.

I must devote a few words to these strange, lovely and interesting plants before I close this list. I have about 70 species of epiphytal and sub-epiphytal orchids in my hammock. A few of them are native, the rest of them I have planted on the trees and this may be successfully done by any one who has hammock. The plant is placed in proper position on a tree and narrow pieces of shingle or thin board are nailed with one end on the tree and the other pressing the roots to the tree. Galvanized or copper wire may be used for fastening, but care should be taken that the roots are not smothered. It is absolutely essential that the plants be firmly placed, for if they can be moved about they will not become established. I put a little sphagnum around the roots and water occasionally until they are established. I have bloom from time to time throughout the year, and when they are all established I shall have a constant succession of flowers. The *Cattleyas* stand at the head of these, both because they are so much at home and for their superb blossoms. The *Laelias* are almost equally fine. The *Dendrobiums* generally do well and so do the *Epidendrums*. *Schomburgkia tibicina*, the *Vandas*, *Oncidiums*, *Zygopetalums*, *Miltonias* and some others do well. I doubt if the *Odontoglossums* succeed. I have not tried *Phalanopsis*, but it is doing well in pots for Mr. John Soar.

The above list of ornamental plants of Dade county is nowhere near complete. There are no doubt, many things cultivated by others that I have not seen which should be included and there are hundreds of species that I have, or have had, that I have not listed, partly because to do so would extend this paper beyond reasonable limits, and in part on account of not having had many of them long enough to form any idea of what they will do. I have growing now, or have had, everything in the above list,

with perhaps a dozen exceptions. Many will succeed when other trials with them have been made. It was a long time before success was reached by floriculturists in the north with the *Victoria regia*, and for a time it was believed it could not be made to grow under glass, but now it and other species are common. A few things, probably, which now promise well, will fail for various reasons. But we can have no conception of the immense variety of species from the warmer parts of the world that will flourish in this favored land. If treated right this poor soil becomes better and better as the years go by, fitted for a greater variety of plant life. When one begins, it is in some cases sour, and cultivation sweetens it. Roots decay and add to its fertility. I never destroy an atom of anything that grows with me, weeds, grass, leaves, broken limbs, are all used as mulch and to make humus, the crying need of the soil. And as one's trees and shrubs become grown they shade the ground and afford protection in a marked degree from the sun, frosts and hurricanes.

No attempt has been made in this paper to bring the nomenclature down to date or to adopt any system used by anybody. It was prepared in the greatest possible haste on account of lack of time to properly handle the subject. I have simply given a name that has at some time been applied to each plant discussed.

With regard to propagation I could not give detailed instruction without extending this paper beyond reasonable limits. A large number of our cultivated plants raise fertile seeds which can be easily grown. Many may be propagated from suckers or layers; the *Ficus* can be air-layered, that is in the rainy season, a cut may be made in a limb, which is kept open by a bit of wood. Sphagnum moss is wrapped around the wound and the whole is tied up with twine and wetted occasionally. Most soft-wooded species can be rooted from cuttings, though these will not root so readily from plants in the open as from those growing in pots. If one has much propagating to do he should build a slat house

with tight, low walls and roof strips so laid that they will cover about two-thirds of the space. Either on raised benches or the ground he can sow seed and root cuttings. Hardy seeds can be sown and cuttings can be rooted in the cool part of the year; those of tender plants should be put in in the spring or summer. It is well to have a pit covered with glass which can be shut tight on cold nights, where one can preserve the very tender things. Even a small frame covered with glazed sash is a great help in propagating.

I make claim to no skill whatever as a propagator or grower of plants. There are those who succeed where I fail, who seem to have a genius for making things grow. But after all, as Peter Henderson has said, eternal vigilance counts for more in growing plants than any skill. I can only claim for myself the deep, devoted love for them such as a mother has for her little child. Looking over my grounds I feel that the dream of my life has come true; that the reality is far grander, more beautiful and satisfying than I thought it ever could be. It is a source of the greatest pleasure to me to

wander among these dear things, to watch the dormant buds breaking, to find some rare and cherished flower opening at last. I feel that I am a part and parcel of it all as I walk in my garden with a sense of reverence and devotion.

I love to wander in my grounds at night; the trees seem larger than in the growing sunlight. I love to look upward where their tops make a blot of darkness against the lighter sky. I love to walk in the hammock at night even when it is darkest. But it is most beautiful when the moon overhead pours down its light through the epiphyte-laden trees like a sheet of illuminated spray from some waterfall. I cannot close this paper more fittingly than by quoting the words of Charles Kingsley, in his Christmas in the West Indies: "But how beautiful they are all and each after their kinds! What a joy for a man to stand at his door and simply look at them growing, leafing, blossoming, fruiting, without pause, throughout the perpetual summer, in his little Garden of the Hesperides, where, as in those of the Phœnicians of old, 'pear grows ripe on pear and fig on fig' forever and forever."