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## Some Botanical Notes From the Land of Flowers

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Much reading of separates, by a well-known authority on the plants of Florida, had whetted the writer's botanical appetite to a razor-edged keenness. When the opportunity came to appease that hunger the few meals only increased the desire for more. It will take many more trips to the land of flowers, tourists and real-estate projects before a surfeit becomes a possibility.

As is usual when man touches nature there is a devastation on every side, some of it inevitable in the settlement of the land and much of it due to indifference, carelessness and worse.

So extensive has this destruction of native flora been that some far-sighted people have already set aside certain typical areas that future generations may get some idea of the richness of plant life in its primeval condition. The Royal Palm State Park, near Cape Sable, and Matheson's Hammock, a few miles from Miami, are good illustrations of this movement. Some state forest areas in the northern part of the state may help in this good work.

Aside from the cultivation of large areas for garden truck and citrus fruit, perhaps the most destructive agent is uncontrolled fires, especially in the pine lands which, together with the everglades, occupy a large part of the state. The nature lover and even the casual tourist is appalled at the recklessness of the burning. Fires are deliberately set and allowed to burn themselves out regardless of the effect upon the scenery or the vegetation. Although the larger pine trees and palms are not killed there are few, or no, young trees to replace the old as all the undergrowth is destroyed. The result is that there is hardly a real pine forest in the whole of central and southern Florida. Some of this burning is necessary for the clearing of the land but a large part of it is unnecessary.

Very extensive drainage has also seriously damaged the primeval flora and fauna. Much of this has been unnecessary and is a great tax on the people of the state. Millions of acres are unused and will be idle for many years to come.

The writer confined his studies largely to the southern part of the state with short excursions into the central part. For convenience the flora will be discussed according to the kind of territory occupied and not in regard to scientific relationships.

### COASTAL PLANTS

The seaside and sand dune plants are unique, and run over the sand almost to the line of high tide. Many of the plants blossom for a considerable part of the year but are at their best



The Sabal Palmetto is abundant in the coastal regions of central and southern Florida. View near Fort Lauderdale.

for only two or three months, frequently the late winter, spring and early summer seasons. Many of the species are confined to a certain habitat, others may be found flourishing in two or more.

It is quite a surprise to find that our common smartweeds of the Buckwheat family are represented on the sandy coast region by a tree twenty feet high. The ocreae at the nodes indicate its relationship at once. The leaves are nearly circular with

a shallow notch at the tip. The tiny whitish blossoms are in a long slender upright spike to which the bees are strongly attracted and a low continuous humming is always associated with this tree when in flower. This is the Sea-Grape, *Coccolobis uvifera*, found in the tropical and semi-tropical regions of the New World.

Another tree which is almost universal in southern and central Florida is the Cabbage Palm, *Sabal Palmetto*. The name is given because the large terminal bud may be used as a salad. It is rather tasteless and is little used. The tree is of the fan palm type and grows to a height of twenty to thirty feet and one to one and one-half feet in diameter.

Very striking are some of the morning glory family. The Goat's-foot Vine, *Ipomoea Pes-Caprae*, because of its very long thick stem which runs for twenty feet or more over the sand almost to the high tide mark and its very thick wide leaves, notched at the end, which have a superficial likeness to a goat's foot. The flowers are purple and as large as the cultivated morning-glory. Climbing over the shrubbery and running over the sand, not only along the shores but in many other parts of the region, is the large Purple Morning-glory, *Pharbilis purpurea*. Most striking of all, because of its blossoms, is the Moonflower, *Calonyction aculeatum*, with its very large salver-shaped flowers. The tubes are about six inches long expanded at the top to a width of four to five inches. It is white and opens only at night. This fact may account for its name, Moonflower.

The Dune Sunflower, *Helianthus debilis*, with its yellow blossoms one and one half to two inches broad, is common, but, unlike our forms of this genus, it is procumbent and forms a fairly good cover to keep the sand from drifting. Scattered among the sunflowers one often sees small white flowers on very prickly stems, with broad lobed leaves protected in the same way. If we step on them with bare feet on our way to the bathing beach we realize that the name, Tread-softly, is well applied. The scientific name of this plant is *Bivonea stimulosa*. The effect is like that of our own nettles only more so. A plant only six inches high may have a spindle-shaped root a foot long going straight down into the ground. It is said that the natives formerly ate it for the stimulating effect it had on them. Probably the species name, *stimulosa*, was applied for this reason.

Although nettle-like in its character, it does not belong to the nettle family but to the Euphorbia family and is sometimes called Spurge-nettle.

On returning from a stroll one usually finds his trouser legs roughly patched with medium-sized ovate green leaves, whole or in fragments. Sometimes parts of stems accompany the leaves. It is a tedious task to remove them as the whole surface is held tightly to the cloth by numerous barbed prickles and the blade itself is so tender that only a little can be removed at a time. It is best to let the leaves dry when they can be removed by vigorous brushing. If one searches for the source of his Poor-man's Patches, *Mentzelia floridana*, one discovers a low branching plant with yellow flowers about three quarters of an inch broad.

On the sand dunes, along the canals, in abandoned cultivated fields and almost everywhere on dry ground a medium-sized white flower with a yellow center is very abundant. As one walks among them one finds his clothing covered with spindle-shaped brown objects about one quarter of an inch long with two to four barbed prickles at the broader end. We call similar fruits in the north, Beggar-ticks, but these are named Spanish or Shepherd's needles, *Bidens pilosa*.

Walking in the low herbage in sandy soil one often hears a sound like that of a baby's rattle. The cause is a low plant with a yellow blossom about one-half inch broad and shaped like a sweet-pea flower. The plant has pods like those of the common cultivated pea but smaller. As they become dry the seeds rattle whenever the pods are touched. This is the Rattle-box, *Crotalaria pumila*, or some similar species.

From the standpoint of usefulness one of the most interesting plants in the dune region—but more abundant in the dry sandy pine land—is the Coontie, Florida arrow-root or Wild Sago, *Zamia integrifolia*, belonging to the cycads. They are easily mistaken for ferns. The seeds are borne in a cone like structure at the base of the cluster of stiff leaves. This plant represents the lowest of the seed-bearing plants and is a sort of connecting link between them and ferns. The long thick underground stem from which the leaves spring is full of starch which furnished a large part of the food of the Seminole Indians and

the aborigines before them. Now it is sold under the name, Florida arrow-root.

Perhaps the most striking tree, both because of its abundance and its general appearance, is the Australian Pine, *Casuarina equisetifolia*. It has been introduced everywhere along the coast and flourishes particularly well in the dry coral sands. The resemblance to a pine is only superficial as it has not true needles. The very slender green branches give the appearance of needles when seen from a distance but, closely examined, show a structure much like our common Horse-tail Rush, hence the specific name, *equisetifolia*.

Often plants are striking because of their manner of growth and not by the brilliance of their blossoms. This is the case of a leguminous shrub with no common name, *Ecastophyllum Brownei*. It is very bushy, but also sends out thick green runners often twenty feet in length, lying flat on the ground. It has axillary panicles of small white flowers. Although the leaves are compound there is only one leaflet, which is indicated by a joint between the blade and the leaf stem.

The beautiful Day Flower, *Commelina augustifolia*; Prickly Pear, *Opuntia austrina*, with large yellow blossoms; a pretty matting Verbena; a Helitrope with *white* blossoms; and two small species of Poinsettia, unmistakable because of their close likeness to our much larger one used for Christmas decoration, are among other common shore and dune plants.

#### THE PINEY WOODS

The pine forests of Florida are a disappointment as forests but they are full of interest for the botanically inclined. The pines are principally of three species, the commonest being the Long-leaf, *Pinus australis*, with three very long needles to the cluster; next the Slash Pine or Caribbean Pine, *Pinus caribaea* which prefers calcareous soil and is particularly abundant in the southern part of the state; and, third, the Spruce Pine, *Pinus clausa*. The Slash Pine has two or three needles to a cluster, shorter than those of the Long-leaf. The Spruce Pine has needles only two to three inches long and only two in a bunch so that it may be easily identified as one rides along the road.

In general the trees are so far apart that abundant sunlight

reaches the ground resulting in a plentiful undergrowth of shrubs and rather scanty grass. One is impressed with the rusty appearance of this undergrowth. An investigation shows that it is due to the abundance of scrub oaks of several kinds, Chapman's Oak, *Quercus Chapmani*, and a Live Oak, *Quercus geminata*, being the most common in many places. The shrub, one of the Staggerbush group, *Xolisma ferruginea*, adds greatly to this effect as it is often plentiful.

In this growth the Saw Palmetto, *Serenoa repens*, is perhaps the most conspicuous as it forms dense patches. Its prostrate stems curve over the ground like great rough-skinned pythons. They rear their heads in tufts of fan-shaped blades on long saw-toothed stems to a height of five or six feet making an almost impenetrable mass.

An evergreen shrubby St. John's-wort, *Hypericum aspalanthoides*, is conspicuous with its orange yellow blossoms and clusters of needle-like leaves, which remind one of those of the larch.

The mint family is not usually associated in our minds with shrubs, yet here in the "piney woods" is a heath-like shrub of this family with short needle-like whorled leaves. The blossoms are one-half inch long, pale purple with darker spots. This is *Conradina grandiflora*.

Not only is St. John honored in the "piney woods" but St. Peter as well in the form of St. Peter's-wort, *Ascyrum tetrapetalum*. In this rather low shrub the four petals are bright yellow. The sepals are unusual in that the two outer are broad ovals while the two inner are elliptical. Here again we have clusters of short needle-like leaves.

Rabbit-tobacco, *Pterocaulon undulatum*, a composite with nearly cylindrical long heads of small white blossoms; a large yellow milkwort, *Polygala Rugelii*; a yellow heliotrope, *Heliotropium Leavenworthii*; and a blueberry, *Vaccinium nitidans*, are a few of the many other plants which add beauty and interest.

It is in the "piney woods" that the Florida Jay dwells. It is darker blue and less noisy than our Jay and has no crest. There, too, we find the Pine-woods Sparrow, some parts of its attractive song suggesting the song of a thrush. The White-eyed Towhee finds a congenial home in the low bushes and searches for food by scratching away the vegetable debris on the ground.

## EVERGLADE PLANTS

Perhaps no part of Florida is better known by reputation than the hundreds of thousands of acres of low, level, grass-covered wet areas of southern Florida called the Everglades. We have read how they have been drained for truck gardening and of the fires which have rendered great sections useless by destroying the soil down to the limestone.

To the naturalist it is a fascinating region because of its plant and animal life. Herons and other large marsh birds roam



A typical Everglade landscape showing a hammock. Near West Lake, west of Royal Palm Hammock State Park.

over the broad expanse in thousands. Snakes, turtles and amphibia abound. The typical Everglade surface does not have a varied plant life as few plants other than Saw-grass, *Mariscus jamaicensis*, may be found over extensive areas. However, when one considers the variety of habitat included in the whole Everglade region, the number of species is very great. Many species have come in along the drainage canals.

Scattered through much of the area are slightly raised drier sections, from a few to many acres in extent, known as hammocks—sometimes called keys in the southern region. Indeed

they strongly resemble in distinctness the island keys in the water to the south of the mainland. To the north the typical Everglade country gradually merges into the somewhat drier terrain of the prairie. To the west and northwest it becomes cypress swamp. Only a few of the common plants one sees in driving along the canals can be mentioned here.

Springing up here and there in the Saw-grass is the Groundsel tree, *Baccharis hamilifolia*, and, *B. glomerulifolia*. The former is common in our northern salt marshes. It is one of the few shrubs of the composite family. Marsh Fleabane, *Pluchea purpurascens*, is a common herb with compound blossoms of a purplish color. It so closely resembles our own species that it is easily recognized.

Growing in the shallow water of the canals and in the small ponds of the Everglades is our familiar Pickerel Weed or Wampee, *Pontedaria lanceolata*, with its spikes of bright blue flowers while contrasted with it is Arrow-head, *Sagittata lancefolia*, bearing a tall cluster of large white blossoms. The large leaves give the plant its common name.

In many parts of the canals the water is completely covered with a dark green mass of Water Hyacinth, *Piaropus crassipes*, a cause of sulphurous language to the boatman but a pleasure to the eye of the nature lover. Its roots hang suspended in the water and a large cluster of pale blue flowers arises from the short stem. Wild ducks eat the foliage eagerly. In other parts our common Spatter-dock or yellow Water-lily, *Nymphaea advena*, covers the water with its large, rather coarse yellow blossoms.

In the more prairie-like parts of the Everglades many acres may be covered with various species of *Sabbatia*, many of them with large delicate pink blossoms in striking contrast to the grass in which they are scattered. Other species are smaller and some have white flowers.

Perhaps the most striking of all is the Alligator Lily, *Hymenocallis*. It is easily recognized by its very large and peculiarly shaped white blossoms. The lobes of the perianth are very long and narrow rising from a tube four inches or more long, the whole blossom being eight inches across. The bases of the stamens are connected by a broad membrane.

Not only in the Everglades but also in almost any low, open,



wet place, one's attention is attracted by a rather large scraggling plant with large yellow blossoms with four petals and a long red calyx with short lobes. The stems are reddish also. One knows at once that it is an evening primrose but what a giant as compared with our northern forms. The willow-like shape of its leaves helps to give it the common name, Primrose Willow, *Jussiaea peruviana*.

#### HAMMOCK VEGETATION

Space does not allow me to attempt a description of the hammock vegetation. It varies greatly in different parts of the state. In the southern part, however, it is usually made up of deciduous trees and shrubs with some palms of different species interspersed. Ferns are often common and epiphytes of various species are to be found. In origin many of the plants are tropical or subtropical, coming largely from the West Indies. A description of this flora would require a large volume.

Besides the two species of palms to which reference has already been made, there are several other kinds, some of which are of rather limited distribution. All along the coast of the southern part of the peninsula and, to some extent, inland, the Coconut, *Cocos nucifera*, is, perhaps, the most graceful and attractive. In some places it forms groves of considerable size. Its tall, somewhat sinuous trunk and its tuft of immense feather-shaped leaves add the tropical touch so much desired.

The Royal palm, *Oreodoxa regia*, is second only to the Coconut in desirability and some give it first place. Many of these, fifty feet tall, growing in the wilderness, have been dug up and transported on huge trucks to hotel and exclusive club grounds where they are planted and flourish. They grow ninety to one hundred feet tall. Their massive light-gray trunks have a stately columnar effect which is used to advantage on formal landscapes. In all there are about thirteen native species of palms and one hundred and nineteen introduced forms.

To one who has never visited a tropical coast the common Mangrove, *Rhizophora Mangle*, is rather repelling at first. Its thick masses of dark-green foliage; its habitat of black slimy mud which is covered with water at high tide; and the fact that it hides the real shore line does not invite a close investigation. Like some reticent people, however, it is full of interest on

closer acquaintance. The slender trunks are light gray and raised above the surface of the ground on a coarse network of roots making it very difficult to walk among them. Aerial roots are sent down from the branches making the task still greater. But most interesting of all is the method of reproduction. The pendulous fruit is about an inch long and germinates while attached to the parent plant, sending out a radicle a foot or more long. After a time the whole structure falls, floats in an upright position and takes root when stranded. Much of the coast from Fort Lauderdale, around Cape Sable, and as far north as Fort Myers on the west coast, is fringed with this growth. Many square miles of the Cape Sable region is overgrown with it and it penetrates the southern edge of the Everglades for miles, gradually petering out to the north. The yellow blossoms, about two-thirds of an inch long, are not especially attractive except in masses.

The White Mangrove or White Button-wood, *Laguncularia racemosa*, is often found growing with the common species and is not readily distinguished from it at a distance. It is not a true mangrove and belongs to quite a different family. Its white flowers are very fragrant. Still another tall shrub called the Black Mangrove, *Avicennia nitida*, is found in pure stands and growing with the other two. It also is not a true mangrove. It grows much larger than the others, reaching a height of seventy-five feet. The white flowers are somewhat mint-like in structure and show the close relationship of the two families.

The plants, briefly described here, gave me only a taste of the rich botanical feast which I may enjoy in future trips which I hope to take.

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