

THE ROYAL PALM—  
ROYSTONEA REGIA

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JOHN K. SMALL

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# Reports on Florida Explorations

By JOHN K. SMALL

1. Report on Exploration in Tropical Florida.—Journal of the New York Botanical Garden 5: 49-55. 1904.
2. Report upon Further Exploration of Southern Florida.—Journal of the New York Botanical Garden 5: 157-164. 1904.
3. Exploration of Southern Florida.—Journal of the New York Botanical Garden 8: 23-28. 1907.
4. Exploration in the Everglades.—Journal of the New York Botanical Garden 10: 48-55. 1909.
5. Report on Botanical Exploration in Andros, Bahamas.—Journal of the New York Botanical Garden 11: 88-101. 1910. (Included here on account of the relation between the flora of Florida and that of Andros.)
6. Exploration in Southern Florida.—Journal of the New York Botanical Garden 12: 147-157. 1911.
7. Report on Exploration in Tropical Florida.—Journal of the New York Botanical Garden 14: 81-86. 1913.
8. Exploration in the Everglades and on the Florida Keys.—Journal of the New York Botanical Garden 15: 69-79. 1914.
9. Exploration in Southern Florida in 1915.—Journal of the New York Botanical Garden 17: 37-45. 1916.
10. Royal Palm Hammock.—Journal of the New York Botanical Garden 17: 165-172. 1916.
11. A Cruise to the Cape Sable Region of Florida.—Journal of the New York Botanical Garden 17: 189-202. 1916.
12. Botanical Exploration in Southern Florida in 1916.—Journal of the New York Botanical Garden 18: 98-111. 1917.
13. The Tree Cacti of the Florida Keys.—Journal of the New York Botanical Garden 18: 199-203. 1917.
14. Collecting Prickly-Pears at Apalachicola.—Journal of the New York Botanical Garden 19: 1-6. 1918.
15. Ferns of Tropical Florida.—The American Museum Journal 18: 127-135. 1918.
16. A Winter Collection Trip in Florida.—Journal of the New York Botanical Garden 19: 69-77. 1918.
17. Botanical Exploration in Florida in 1917.—Journal of the New York Botanical Garden 19: 279-290. 1918.
18. Narrative of a Cruise to Lake Okeechobee.—The American Museum Journal 18: 684-700. 1919.
19. The Prickly Pears of Florida.—Journal of the New York Botanical Garden 20: 21-39. 1919.
20. Coastwise Dunes and Lagoons.—(A Record of Exploration in Florida in the Spring of 1918.)—Journal of the New York Botanical Garden 20: no. 237. October, 1919.
21. Of Grottoes and Ancient Dunes.—(A Record of Exploration in Florida in December, 1918.)—Journal of the New York Botanical Garden 21: 25-38. February and March, 1920.

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### THE ROYAL-PALM — ROYSTONEA REGIA

The fact that the most stately of our native palms should have eluded the notice of explorers in Florida up to as late a date as about three score years ago, with one possible exception mentioned on a succeeding page, is significant. It clearly reflects the fact that some of the more interesting and instructive parts of the Florida peninsula had not been penetrated by the white man.

The year 1920 found us quite accurately acquainted with the existing geographic distribution of the royal-palm (*Roystonea regia*) in Florida. In past ages, perhaps, its geographic area was more extensive and the plants more evenly distributed. At present, this palm occurs, in a native condition, in several isolated, disconnected colonies. The history of the royal-palm in Florida, traced backward, is interesting, both in its detail and in its brevity—in fact, the definite evidence leads into oblivion within the short space of little over half a century.

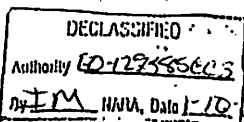
In the later-published tree books we may find definite and concise, even if not always correct, information concerning the geographic distribution of the royal-palm in Florida. Thus we find these statements referring to the ranges of the palm in Florida:

"The trees also grow in southern Florida, near Miami, and on both the eastern and western sides of the Everglades, . . ."<sup>1</sup>

"Florida, hummocks on Rogue [Rogers] River twenty miles east of Caximbas Bay, Long's [Long] Key, and the shores of Bay Biscayne near the mouth of Little River; . . ."<sup>2</sup>

<sup>1</sup> Nathaniel Lord Britton, Tree Book, 143. 1908.

<sup>2</sup> Charles Sprague Sargent, Manual, 114. 1905.



A decade earlier it is recorded that the royal-palm "inhabits hummocks on Rogue's [Rogers] River about twenty miles east of Caximbas Bay, Long's [Long] Key off the southern coast [of Florida], and the shores of Bay Biscayne near the mouth of Little River."<sup>3</sup> Still earlier the recorded distribution was "Little and Big Palm Hummocks" 15 and 25 miles east of Cape Romano (Curtiss), near the mouth of Little River, and on Elliott's Key; . . ."

"A tree 18-30 meters in height, with a trunk 0.60 meters in diameter; rich hummocks, often forming extensive groves; in Florida rare and local."<sup>4</sup>

Writing of the discovery of the royal-palm in Florida, C. S. Sargent says: "Another West Indian species, *Oreodoxa regia*—Royal Palm, which is common in Cuba, extends into southern Florida, . . . The presence of a lofty Palm in southern Florida was hinted at more than sixty years ago, and the fact is mentioned in the preface to Nuttall's North American Sylva, but it was not until 1859 that this Palm was known to be *Oreodoxa regia*. In that year Dr. Cooper found it on Bay Biscayne, and twenty years later Mr. A. H. Curtiss established the fact of its presence on Rogue's [Rogers] River and Long's [Long] Key."<sup>5</sup>

In the same year he also says: "The name of the person who discovered *Oreodoxa regia* in the United States is not known." Then in a foot-note he continues: "Nuttall,<sup>6</sup> in his preface to The

<sup>3</sup> Charles Sprague Sargent, *Silva* 10: 31. 1896.

<sup>4</sup> Charles Sprague Sargent, *Report on the Forests of North America*, 218. 1883.

<sup>5</sup> Charles Sprague Sargent, *Garden and Forest* 9: 152. 1896.

<sup>6</sup> Thomas Nuttall was born 5 January, 1786, at Long Preston, near Settle, Yorkshire. He became a journeyman printer, and early acquired a taste for botany. During thirty-three years of residence in the United States, from 1808 to 1841, he devoted most of his time to botanical study, collecting plants not only in the northeastern states, but in the middle west, the south, across the Rockies and on the Pacific coast, and in Hawaii, and publishing his remarkable little work on the "Genera of North American plants," as well as numerous other important contributions to botanical literature. He also became well known as an ornithologist. In 1841 he returned to England, and made his home at "Nutmans," a small estate near Rainhill, Prescott, Lancashire, where he died 10 September, 1859.—JOHN HENDLEY BARNHART.

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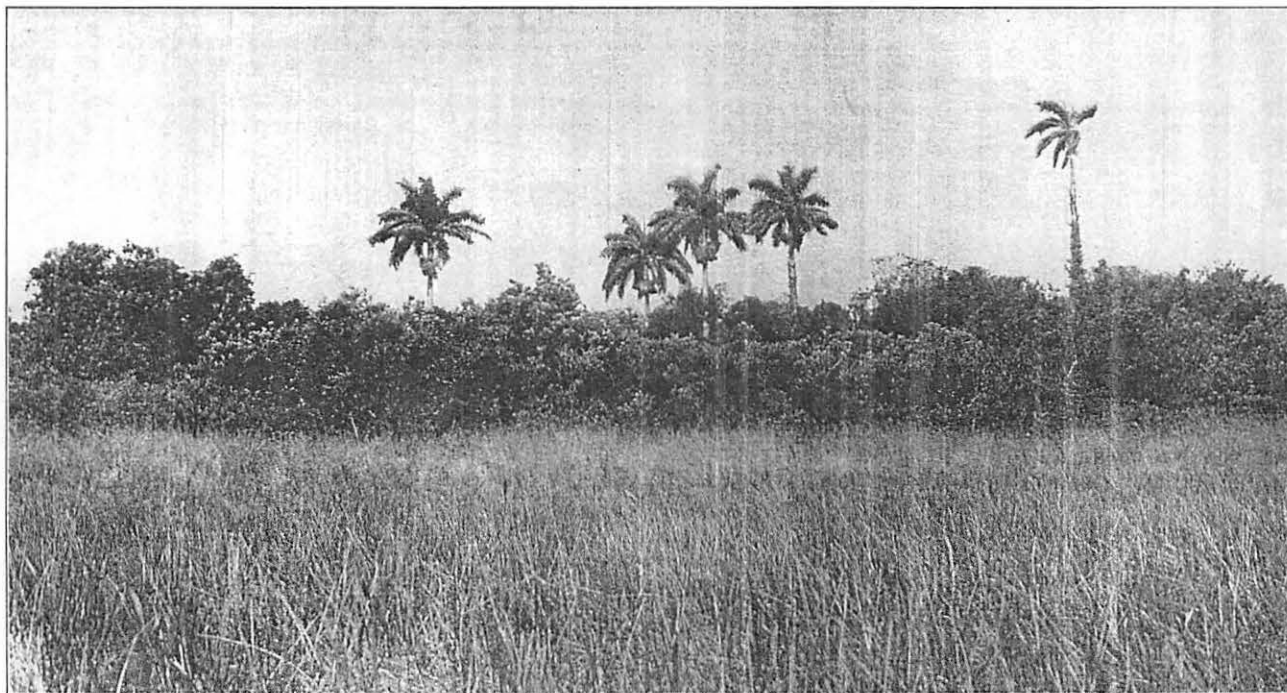


FIGURE 1. The northern part of Royal Palm hammock in the Royal Palm State Park, looking west. Several palms, about one hundred and thirty feet tall, tower above the growth of broad-leaved vegetation whose major elements are large or gigantic, live-oaks, pigeon-plums, mastics, gumbo-limbos, butter-bonglis, red-bays, lancewoods, and satin-leafs. All these large trees and many smaller kinds, as well as the palms, grow in almost pure humus which covers the rock foundation.

Sylva of North America (viii), states that he was informed of the existence of a Palm ninety feet high growing at some distance from the coast in east Florida. This palm must have been *Oreodoxa regia*. It was seen by Dr. J. G. Cooper,<sup>7</sup> in 1859, on the shores of Bay Biscayne, where Dr. A. P. Garber<sup>8</sup> subsequently collected it, and its existence on Rogue's [Roger's] River and Long's [Long] Key was established by Mr. A. H. Curtiss."<sup>9</sup>

"The Palm mentioned by Nuttall in the introduction to his Sylva is found, as I was informed by several persons, in large groves, between Capes Sable and Romano, and one tree three miles north of Fort Dallas. It was called 'Royal Palm,' and said to grow 120 feet high. It is probably the Bahamian 'Cabbage Palm' (*Oreodoxa oleracea*, Mart.). This was evidently the palm

<sup>7</sup> James Graham Cooper, son of the well-known ornithologist, William Cooper (1798-1864), was born in New York City, 19 June, 1830. He studied medicine, graduating from the College of Physicians and Surgeons of his native city in 1851, and spending two years in hospital work. From 1853 to 1855 he was in the territory (now the state) of Washington, as surgeon and naturalist to the northern division of the Pacific Railroad Survey. In the spring and early summer of 1859 he visited the entire east coast of Florida, from Key West to the St. Mary's River. A few years later he settled in California, which was his home for the remainder of his life. In 1865 and 1866, he was naturalist to the geological survey of the state, but for many years, in spite of delicate health, he supported himself by the practice of his profession. He was perhaps better known as an ornithologist than as a botanist, but he collected plants extensively and made important contributions to botanical literature. Notwithstanding the fact that his health was never robust, he accomplished a vast amount of work, and lived to the age of seventy-two years. He died at Hayward, Alameda County, California, 19 July, 1902.—J. H. B.

<sup>8</sup> Abram Paschall Garber was born 23 February, 1838, at Columbia, Pennsylvania. He graduated from Lafayette College in 1868, and studied medicine at the University of Pennsylvania, receiving his degree in 1872. He went to southern Florida as a health-seeker about 1877, and while there devoted much time to the collection of the plants of that region, whose flora was then little known. In 1880 he also collected plants in Porto Rico. In 1881 he returned to Pennsylvania and died there, at Renovo, the same year, 26 August.—J. H. B.

<sup>9</sup> Charles Sprague Sargent, *Silva* 10: 32. 1896.





FIGURE 2. In Royal Palm hammock on eastern coast (Dade Co.) of Florida. A single palm in the jungle of broad-leaved trees. Rodents and weevils are often so abundant and active where the royal-palm grows that scarcely one of the myriad seeds produced annually by a single tree ever sprouts or at least grows to maturity. When a palm does survive, it soon pushes its crown high above the forest roof.

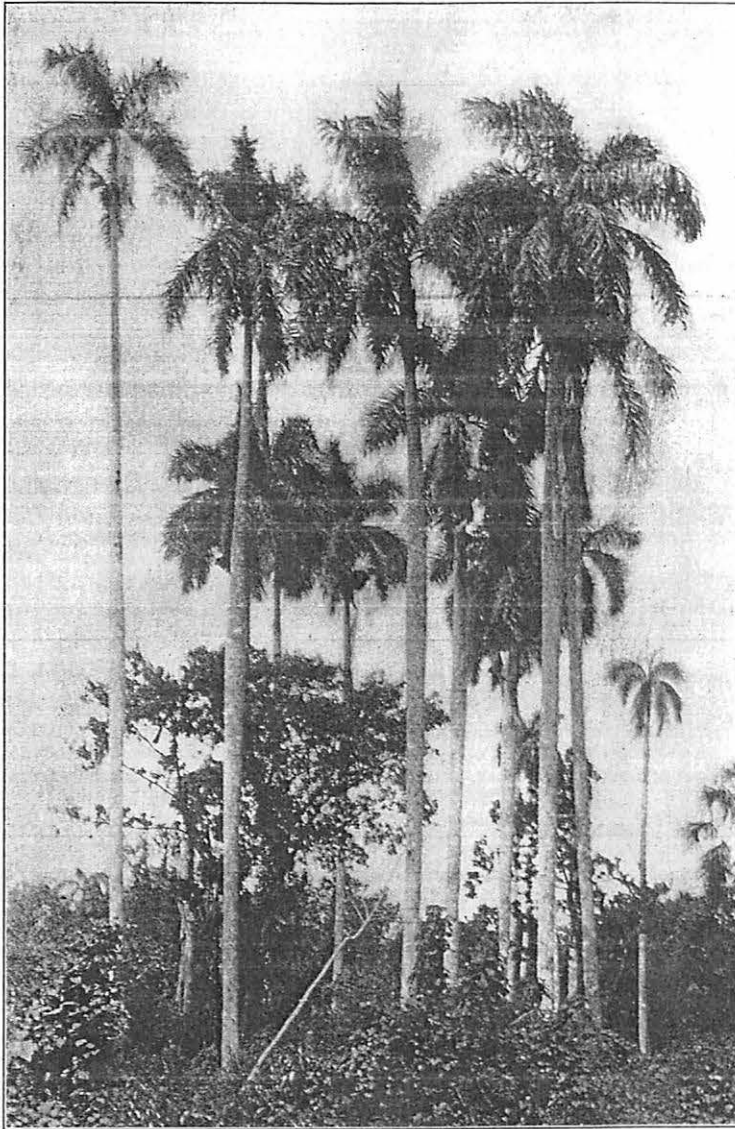


FIGURE 3. In Royal Palm hammock on western coast (Collier Co.) of Florida. A natural group of palms of various ages. When rodents and weevils, natural enemies of this palm, are not too destructive, palms spring up and continue to grow in colonies. However, two other agents have not only removed individuals, but sometimes wiped out whole colonies, either by digging them up for ornamental plantings or by vandalism—wanton burning of the hammock.—Photograph by W. M. Buswell.

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found by [William] Bartram,<sup>10</sup> in 1774, near Lake Dexter, on the St. John's river, latitude 28° 55', and to all appearances wild. Some were ninety feet high, with 'plumed' (pinnate) leaves thirty feet in length. (Travels, page 114.) As no one has seen them lately, they may have been destroyed by the severe frosts of 1835."<sup>11</sup>

Nuttall writes as follows in his Sylva:

"In the islands of the Everglades, considerably inland in East Florida, we have been informed that a Palm about 90 feet high, forming a magnificent tree, has been seen, but of this plant we have been unable to obtain, as yet, any further account."<sup>12</sup>

Back to the time of Nuttall's note all the records concerning the occurrence of the royal-palm in Florida have been correct, except for minor details and some errors. The palm attributed to Long's [Long] Key and to Elliott's Key is evidently *Pseudophoenix* and not *Roystonea*. The royal-palm has not been found off the Florida mainland, at least not on the islands of the Reef.

William Bartram's reference, in the latter half of the eighteenth century, to a palm growing on the lower Saint John's River, near Lake Dexter, marks the beginning of the history of the royal-palm in the Continental United States and makes William Bartram the discoverer of it this side of the Gulf Stream. Bartram's statement runs as follows:

"The Indian not returning this morning, I set sail alone. The coasts along the St. John's River, south of Lake George, on each side had much the same appearance as already described. The

<sup>10</sup> William Bartram was born 9 February, 1739, at the botanic garden of his father, John Bartram, at Kingsessing, near (now in) Philadelphia. He had the advantage of a better education than his father, and was an artist of considerable ability. He was a clerk in Philadelphia for a few years, and then a merchant in Carolina, but he was more interested in botany than business. In 1765 he joined his father in exploration in Florida, and when his father returned home in 1766 he remained as a settler on the St. John's; but the next year he returned to Kingsessing. From 1773 to 1778 he was engaged in botanical travels in the Carolinas, Georgia, and Florida, of which an account was published in book form in 1791. The rest of his life was spent in scientific study at the garden at Kingsessing, in the homes of the owners of the garden—at first his brother John, later, Colonel Carr—and it was there that he died, 22 July, 1823.—J. H. B.

<sup>11</sup> James Graham Cooper, Ann. Rep. Smithsonian Institution, 1860: 440. 1861.

<sup>12</sup> Thomas Nuttall, North American Sylva 4: viii. 1842.



FIGURE 3. In Royal Palm hammock on western coast (Collier Co.) of Florida. A natural group of palms of various ages. When rodents and weevils, natural enemies of this palm, are not too destructive, palms spring up and continue to grow in colonies. However, two other agents have not only removed individuals, but sometimes wiped out whole colonies, either by digging them up for ornamental plantings or by vandalism—wanton burning of the hammock.—Photograph by W. M. Buswell.

palm-trees here seem to be of a different species from the cabbage tree; their straight trunks are sixty, eighty, or ninety feet high, with a beautiful taper, of a bright *ash colour*, until within *six or seven feet of the top*, where it is a fine *green colour*, crowned with an orb of rich green plumed leaves: I have measured the stem of these plumes fifteen feet in length, besides the plume, which is nearly of the same length."<sup>13</sup> The italics are ours.

Now, this palm mentioned by Bartram could have been nothing else but the royal-palm. We may, then, consider that up to a century ago this plant grew naturally up to the northern part of the Florida Peninsula, carried northward by birds, and existed there owing to a protracted warm spell, or that it was introduced there generations ago by the aborigines who, doubtless, used this palm in their domestic economy. At any rate the palm was there, and, apparently, it has completely disappeared.

All this evidence, although indirect, indicates, among other things, that up to about a century ago Florida had a protracted warmer and perhaps less changeable climate, that the sporadic occurrence of tropical and semitropical plants in the more northern part of the peninsula represents the remains of a generous distribution of more typically southern plants further north. In passing, it may be said that Florida and the adjacent regions hold intensely interesting problems, considered from the past, present, or future.

What may have happened in the thirties of the last century in northern peninsular Florida actually happened in the southern part of the peninsula in the nineties of the same century. Three tall royal-palms grew in a hammock near the headwaters of the river upon which the settlement of Everglade in Collier County is situated. They flourished up to 1894. The cold weather of 1894 and 1895 killed them, but the trunks are still standing, though gradually decaying. No other royal-palms are in the immediate neighborhood. The species may be dying out this side of the Gulf Stream. If it has not been facing extermination from natural causes, it is now certainly confronted by more serious conditions brought about by the white man's advent in the region. In addition, an insect pest has recently been imported which bids fair to exterminate the cultivated royal-palms, if not promptly checked.

<sup>13</sup> William Bartram, *Travels in North and South Carolina, Georgia, East and West Florida*, 113-114. 1792.

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If it gets headway on the native ones, the royal-palm will soon disappear from the State.

The royal-palm has quite a restricted geographic range in Florida. It is represented naturally in only three counties—Dade, Monroe, and Collier. The colony of the Bay Biscayne region is in a precarious condition, if it is not already exterminated.

The large colony of Royal-Palm Hammock of Dade County, sometimes called Paradise Key, is under protection, and there are several outlying trees or small colonies in nearby hammocks.

It occurs sparingly in the Cape Sable region and on some of the higher islands in the Ten Thousand Islands; all in Monroe County. In Collier County there are royal-palm hammocks several miles east of Marco Island. Further inland in the Fakah-natchee Cypress there is a stretch of the royal-palms extending for fifteen miles north and south just west of Deep Lake.

The old trees are quite safe, as a rule, while they last, but the young ones throughout nearly the natural range have been damaged by fires or removed and sold for ornamental plantings. When the trees that are too large for transplanting pass away, it will be interesting, if not encouraging, to see what the present colonies will have to show for specimens.

In the country that was latest accessible and well known as most prolific in vegetable life, the natural plant resources are changing or disappearing most rapidly, largely through the carelessness and vandalism of the white man.

The royal-palm was formally described and published, in 1815, from specimens collected near Havana, Cuba, or twenty-five years after William Bartram mentioned it as growing in Florida.

It was given the generic name *Oreodoxa*, but this was untenable, as it belonged to a different kind of palm. Later it was named for General Roy Stone, and it is now known as *Roystonea regia*.

Contrary to the habit of our other palms, all of which have an aspect of naturalness, the royal-palm alone suggests artificiality. A tall gray symmetrical typically unblemished concrete-like column (trunk), often swollen between bottom and top, capped with a long, narrower, close-fitting apical ferrule (leaf-sheaths), which emits from its top a great plume of gigantic dark-green feathers (leaves), gives us something bizarre in our flora.

JOHN K. SMALL.