

Palms at a High Latitude in Florida

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Photographs by the author unless otherwise noted.

The palm collection here discussed is in no way remarkable except for the larger number of genera and species under cultivation far north of the areas generally considered warm enough for their success. In fact it is the northernmost outdoor planting of any comparable number in Florida and—so the probabilities say—in the world. But it is not to be compared with the large gardens, for the grounds are not extensive enough for such a comparison and the palms are still, most of them, of insignificant dimensions. Nor will it ever have the grandeur of the great gardens, for when the palms finally reach impressive proportions there will be no good perspectives for lack of space, no open grass-grown vistas and no landscaping carefully planned for pleasing effect. There will be, instead, a forest or jungle of palms of many kinds incongruously growing together in a way never duplicated in nature.

This planting, which because of its remoteness from the tropics must still be considered in the experimental stage, is at Daytona Beach, Florida on a narrow strip of land locally known as "the Peninsula," itself tightly embraced by the open Atlantic on the east and by the tidal Halifax River on the west. These bodies of salt water not only temper the air of the Peninsula but actually make its winter climate a different one from that of the immediate mainland. In winter the minimum temperatures are often 5 to 10 degrees higher on the Peninsula than at the principal Weather Bureau station located at the mainland airport a scant three miles distant. A maximum difference of 17° F. in minima has been observed by me on instruments installed by Weather Bureau officials for a Cooperative Station at the

site of my palm plantings. This site is very favorable for its latitude of 29° 10' N., which in Florida has always been considered too high for the cultivation of the tenderer palms. Daytona Beach is 260 miles north of Miami and only 90 miles south of Jacksonville; it is in the same approximate latitude as Galveston, Texas and the southern tip of the Mississippi River delta, and in Florida, as Ocala. But latitude is only one among many factors controlling climate; elevation above sea level, prevailing winds and marine influence are some of the principal offsetting factors.

There was once a beginning to the palm collecting here, and it has not been long since. Together with my neighbor Miss Margueriete Martin (who has served as Treasurer of The Palm Society) I acquired seven years ago about four acres of wild land in a section of the Peninsula then sparsely inhabited though since urbanized; and subsequently we each built a house. But at first the land was so overgrown with saw palmettoes, cabbage palms, sand live-oaks, sand pines and tangled vines that it was impenetrable till paths had been cut. At least 200 scrawny trees had to be removed and some 500 saw palmettoes had to be grubbed out by hand, subterranean trunks and all, to make room for other plants; but even then a good half of the land was and still is a half-open woodland mostly of sand live-oaks (*Quercus geminata* Small).

More than half of the palms here have been planted under the oaks. The shade-loving kinds reap the benefits both of shade and cold protection; the sun-lovers thrive in shade when young, but the overhanging branches must be removed as the palm tops approach them. Matted oak leaves and pine

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Daytona Beach News-Journal photo

Tall slender specimen is Archontophoenix Alexandrae acquired fr. Reasoner, Bradenton, planted here 1953. Young royal palm in background fr. Pampas, Cocoa, 1954.

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needles maintain the acidity of the soil composed of deep fine-grained sand with no humus visible in it below the depth of 16 inches. It contains no shell, marl, limerock or other "sweeteners," and the water table is too far below the surface to benefit shallow-rooting palms; but there is a second soil type here and a high water table on about an acre of low land beside the river where the soil is a mixture of poor sand and shell in almost equal amounts. The palms known to have a preference for one or the other of the two kinds of soil are planted accordingly. (Most palms will thrive, or at least live, in a wide range of different soils, but some are "specialists" that fail to adapt themselves outside their restricted element).

The first palms were planted here in 1950, of the kinds already common in this part of Florida. Gradually others were grown from seed or obtained as either large or small plants. The number of species already or soon to be planted now approaches the 200 mark, which is something over 100 short of the 300-goal that might be attained by dint of enough persistence and by good luck.

A few of the planted palms are adults but most are still in the juvenile stage. Tropical palms are tender to cold in direct ratio to their age and height, the older and taller ones suffering less cold injury in proportion to their development of toughened tissues; also in proportion to their height because the foliage is the tenderest part of the palm and the higher it is elevated above the ground, the less it is exposed to frost formation and the colder layers of air nearer the ground level. Despite this demonstrable fact, the small and even minute size of some of the palms here has not yet resulted in the winter-killing of any; moreover, not one palm specimen, big or little, has been lost here to cold damage thus far. Nor are the plants protected by artificial heat or other means.

The month of January, 1956 provided a rather severe test, for it was the coldest January since 1940 when the entire state, minus the Keys, was frozen. The palms here endured in January, 1956 twelve mornings on which the mercury dipped into the 30's and ten other mornings into the 40's; they also endured brief frosts on two mornings when the



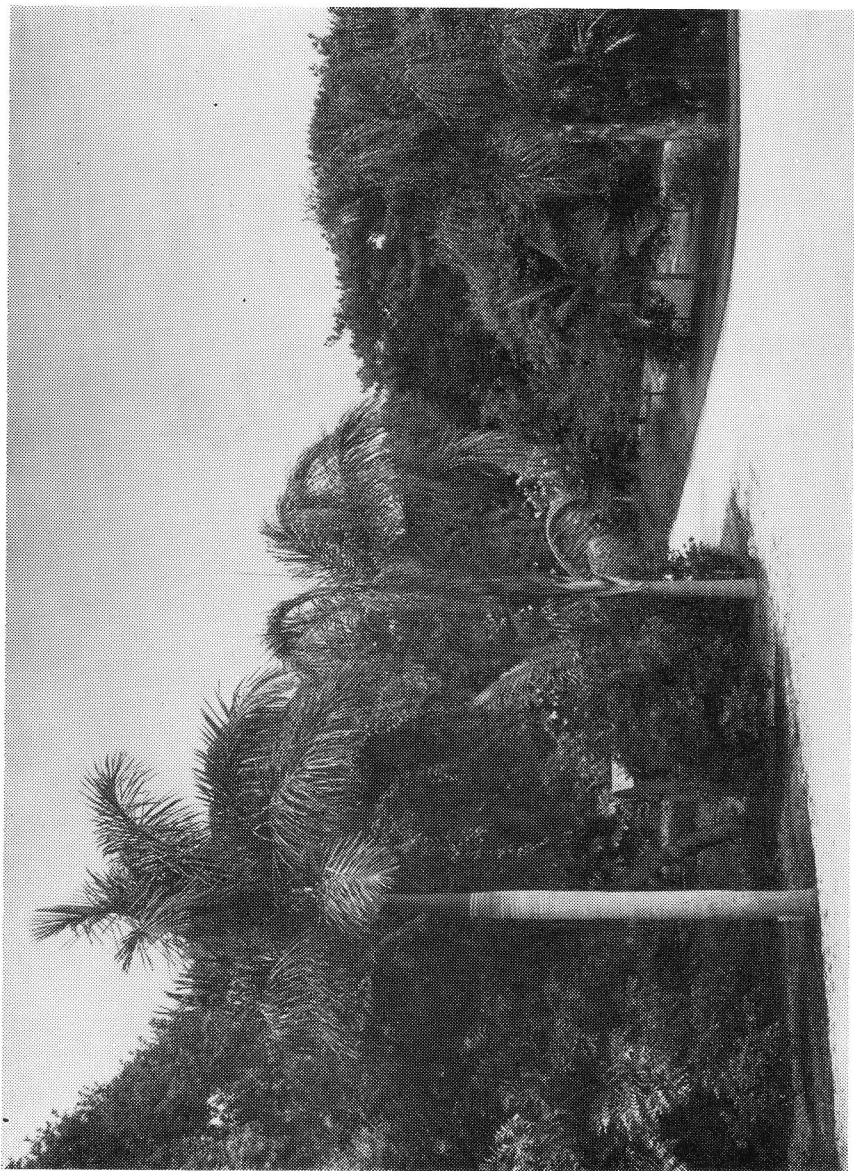
Aiphanes caryotaefolia, fr. Betty Chalk, Miami, pld. 1952. Fast grower, but subject to leaf-burn, fr. cold winter winds.

temperature reached a minimum of 30° F. Nevertheless most were unaffected and none was severely injured; several kinds suffered leaf damage and were made to look quite shabby, notably *Cocos nucifera*, *Aiphanes caryotaefolia*, *Adonidia Merrillii*, *Guilielma Gasipaes*. Others displayed an altogether unexpected tolerance of both frost and the protracted cold, as for example one 7-year-old specimen of *Latania borbonica* which was totally uninjured then or later by actual and visible white frost on its leaves. Oddly enough this palm

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Some of the juvenile palms. Upper left: *Hexopetion mexicanum*, fr. U.S.P.I. Gdn., Coconut Grove, pld. '52. Lower left: *Arenga pinnata*, Reasoner, '56, showing method of trenching before back-filling with manure to enlarge feeding-watering area 1 yr. after planting. Top right: *Arikuryroba schizophylla*, Reasoner, pld. '53. Middle right: *Ptychosperma* sp. (Dr. Fairchild's "Ragey" palm), FTG distrib. '53, pld. '54. Bottom right: *Dictyosperma album*, fr. Pampas, Cocoa, pld. '54.



Daytona Beach News-Journal photo

Left foreground, Roystonea regia, Reasoner, '53. Two palms at either side of drive, Arecastrum Romanzoffianum, McDonald, Daytona, '51. In background and barely discernible, l. to r., Caryota urens, Cocos nucifera, Archontophoenix Cunninghamiana, Ptychosperma elegans.

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and all of the others from the Mascarene Islands that have been tried here seem to be perfectly able to withstand the rigors of this climate, *viz.*, species of *Latania*, *Mascarena* and *Dictyosperma*, so that there is room for some optimism for the two other genera, *Acanthophoenix* and *Hyophorbe*. On the other hand, palms from the Seychelles Islands in the same Indian Ocean with the Mascarenes, are definitely tenderer, as plants of the monotypic genera *Stevensonsonia* and *Lodoicea*—accounted for, possibly, by the closer proximity of the Seychelles to the equator.

No one seems to have made the discovery that the palmate or fan-leaved palms are hardier, in the main, than the plumose or feather-leaved palms; or if the discovery has been made not once but a dozen times, there has been no accompanying publicity and no wide recognition of it. It is, however, a truth not easily disputed, even though a very few fan palms (*e.g.*, *Pritchardia pacifica* and *Lodoicea maldivica*) are exceptionally tender and a few feather-leaved palms (species of *Acrocomia*, *Arecastrum*, *Chamaedorea*, *Jubaea*, *Butia*, *Phoenix*, some others) are exceptionally hardy. Such are the exceptions that prove the rule. The evidence in favor of the greater hardiness of the fan palms is overwhelming, for not one of them in a long list should be called exceptionally tender as the term is applied to palmaceous plants. On the contrary, most are remarkably hardy and much more so than generally supposed—or at least the species of *Sabal*, *Washingtonia*, *Serenoa*, *Rhapidophyllum*, *Paurotis*, *Thrinax*, *Coccothrinax*, *Rhapis*, *Chamaerops*, *Trachycarpus*, *Livistona*, *Borassus*, *Copernicia*, *Trithrinax*, *Latania*, *Bismarckia*, *Brahea*, *Erythea*, *Cryosophila*, *Hyphaene*, *Corypha*, still other genera. And though the plumose kinds constitute much the greater number of all palms, no such overpowering number of genera may be adduced among them in support of their general hardiness.

Moreover, of several hundred palm species supposed to be extremely tender, one would be hard put to name even ten with palmate leaves. The point of all this is not to show that the plumose palms are tender, for some of them are hardy; it is to show that the palmate-leaved palms are, with very minor exceptions, remarkably hardy to cold no matter their place of origin.

The term "hardy" applied to palms means that, for the plant family, they are relatively hardy but not in the usual sense applied to northern plants. And if a *Latania* proves hardy here, this does not constitute proof that it would be hardy in Ocala or Jacksonville. It seems improbable that many of the palms growing here—very likely more than half—could be successfully cultivated on the mainland at a distance of only a mile or two from this location, the assumption arising from the fact that the mainland is too often subjected to freezing weather.

Florida has been invaded by "big freezes" usually at long intervals. These invasions are not cyclical and so are unpredictable, but history shows that one of disastrous proportions might occur during any winter. It remains to be seen how many palms at this location will survive the next big freeze to descend upon the state. A prolonged temperature of 25° F. would be indeed calamitous while the palms are small, and one of 27° F. undoubtedly would cause some losses. If the state is spared during the next ten or twelve years, thus allowing time for the palms to reach much hardier size, any losses would be greatly restricted should the threat finally materialize.

Obviously the palms here have not been established long enough to justify the assertion that all or nearly all are suitable for this climate. So far I can only say that the tender kinds have already survived various cold spells of an intensity and frequency hitherto believed certain to be fatal; and if every-



Young coconut palm grown in situ from coconut sown in 1951.

one else had held this belief, so had I. Having been undeceived, finally, I can say that something has been learned from the guinea-pigging carried on here; but I cannot say that much of a new and startling nature has been proved in so short a time, and still less that all the palms here have been proved adaptable to the climate. It is already evident that several, though not winter-killed, are not suited to the cool winters. *Pritchardia pacifica* is an outstanding example of unsuitability, for it is invariably an eyesore in January and recovers but slowly. Many other hot-country palms, some of them even equatorial, appear to thrive here quite as well as within their native tropics, but they must remain suspect till many elapsed years remove the last doubts.

I have not relied upon any popular theories of acclimatization. Science has been reluctant to give them credence. The cultivated tomato is still a tropical plant no matter how far north it is grown, and if hardiness could be bred into it by selection the quality of the fruit might be bred out. Improved hardi-

ness of a palm might be brought about by selective breeding through several generations, but if the first generation could not be acclimatized and succumbed, an experiment that might take several lifetimes would end in its beginning. The gradual toughening of the tissues of a growing palm could easily be mistaken for its having become acclimatized. Notwithstanding, it does seem fairly sound that the seed of northern-grown palms will produce offspring at least as hardy as the parent has been proved to be; so that to grow the coconut in latitudes marginal for its cultivation, one should try to procure seed from the northernmost tree known to mature its fruit.

The *Paurotis Wrightii* has been established here on our local peninsula long enough to prove its cold tolerance; clumps of it begin to appear about homes and motor courts. The palms generally grown in the area are those long known to be hardy here, such as species



This young royal palm will not be 5 years old till June '57. Grown here from seed collected '52 from sidewalk, Krome Ave., Homestead.

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of Phoenix, *Butia*, *Washingtonia*, *Rhapis*, *Arecastrum*. Others just as hardy, or hardier, including *Chamaerops* and *Trachycarpus*, are scarce or altogether missing. An occasional specimen of *Livistona chinensis* may be seen and a few Royals begin to make a timid appearance. Coconut palms are occasionally planted but most have an unthrifty look and leaves of sub-standard length, especially in the winter season. No really large number of palm species—that is, of 100 or more—has ever before been tried in this part of Florida. The nearest extensive collection is maintained by Mr. H. Bertram Smith at Melbourne, about 90 miles to the south.

Collecting, I readily admit, is a disease sometimes incurable, no matter whether you collect postage stamps, books, antiques or palms. You beg, you buy, and I trust you don't steal, but you do everything short of it to expand your collection. The palms here were mainly acquired from upward of thirty different nurseries; others were grown here from seed, and still others were obtained from botanical gardens or from friends. I am greatly indebted to many persons for both plants and seed, and would certainly make individual acknowledgment here were it not for fear of overlooking someone.

I append a list of the palms now being cultivated here for two reasons: (1) so that the reader may know exactly what plants are under discussion and (2) as a continuation of the Society's effort to ascertain what palms are being cultivated where by recording lists of those in the botanic gardens and in private collections. The binomials in the list are substantially correct, having been reviewed by Dr. Moore. Very likely the name *Ptychosperma Macarthuri* may strike someone as obsolete and only a synonym for the palm we have known for some years as *Actinophloeus Macarthuri*; the former name is listed because the species is currently being referred to the genus *Ptychosperma*. There is no certainty that the names, however good their taxonomic standing, have been applied to the proper plant in every case, for here in Florida, as elsewhere in the world, there is more than just a suspicion that we are cultivating some palms under the names of others. One such doubtful palm is the one we denominate *Veitchia Joannis*, though the doubts may soon be resolved; but I received it by that name and so list it. Wherever there is some perplexity as to species, "sp." (plural "spp.") has been substituted for the specific name under the known generic head.

List of Palms at 2514-18 S. Peninsula Drive Daytona Beach, Florida

The figures in parentheses signify the number of individuals either growing wild or planted to date.

The unnumbered palms, most of which will be set out this year, are still in containers.

Acanthophoenix

rubra

Acrocomia

aculeata (2)
armentalis
mexicana (1)
Totai (1)
spp. (2)

Adonidia

Merrillii (16)

Aiphanes

acanthophylla (1)
caryotaefolia (1)
Lindeniana (2)

Archontophoenix

Alexandrae (4)
Cunninghamiana (2)

Areca

- Cathecu (1)
- concinna
- triandra (2)
- sp. (FTG 208, Langlois)
- spp.

Arecastrum

- Romanzoffianum (7)

Arenga

- Engleri (1)
- pinnata (1)

Arikuryroba

- schizophylla (1)

Attalea

- spp.

Bactris

- major
- sp.

Bentinckia

- nicobarica

Bismarckia

- nobilis (1)

Borassus

- flabellifer

Brahea

- dulcis

Butia

- capitata (4)
- eriospatha (1)

Calamus

- sp.

Caryota

- Cumingii (1)
- mitis (4)
- urens (2)
- sp. ("plumosa")

Ceroxylon

- sp.

Chamaedorea

- cataractarum (1)
- costaricana (1)
- erumpens (12)
- fragrans (1)
- geonomiformis (1)
- Klotzschiana (1)
- oblongata (1)
- Seifrizii (1)
- stolonifera (1)
- Tepejilote (2)
- Wendlandiana (2)
- spp. (4)

Chamaerops

- humilis (2)

Chrysalidocarpus

- lucubensis
- lutescens (5)
- madagascariensis
- sp. "Soledad" (2)

Coccothrinax

- argentata (1)
- argentea
- crinita (2)
- fragrans (1)
- Martii
- Miraguama
- Miraguama var.
- novogeronensis
- Yuruguana
- sp. "barbadensis"
- sp. (1)

Cocos

- nucifera (5)

Collinia

- elegans (2)

Colpothrinax

- Wrightii

Copernicia

- australis
- cerifera
- Torreana

Corypha

- elata
- umbraculifera (1)

Cryosophila

- Warszewiczii (1)
- sp. (1)

Cyrtostachys

- lakka

Desmoncus

- Schippii

Dictyosperma

- album (1)
- album var. rubrum (1)

Didymosperma

- nanum

Drymophloeus

- Beguinii (1)

Elaeis

- guineensis (3)

Erythea

- armata
- edulis

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Euterpe
edulis (1)

Gaussia
attenuata

Guilielma
Gasipaes (1)

Hedyscepe
Canterburyana (1)

Heterospathe
elata

Hexopetion
mexicanum (2)

Howea
Belmoreana (1)
Forsteriana (2)

Hyphaena
sp.

Jubaea
spectabilis

Latania
borbonica (4)

Licuala
amplifrons
grandis (2)
peltata (1)
spinosa (1)

Livistona
australis (1)
chinensis (5)
chinensis *var.* subglobosa
cochinchinensis (2)
rotundifolia (1)

Mascarena
lagenicaulis
Verschaffeltii (3)

Mauritia
setigera

Metroxylon
amicarum (1)

Nephrosperma
Vanhoutteanum

Normanbya
Normanbyi

Oncosperma
sp.

Opsiandra
Maya (7)

Orbignya
Cohune (1)
Guacuyule
speciosa (4)

Parajubaea
cocoides (1)

Paurotis
Wrightii (1)

Phoenix
abyssinica (1)
canariensis (4)
dactylifera (1)
humilis (1)
pusilla (2)
Roebelenii (5)
reclinata (11)
rupicola (1)
sylvestris (2)
zeylanica (2)

Phytelephas
macrocarpa (1)

Pinanga
Kuhlii (1)

Polyandrococos
caudescens

Pritchardia
Beccariana (1)
pacificae
Thurstonii (2)

Pseudophoenix
saonae
Sargentii (1)
vinifera (1)

Ptychoraphis
augusta

Ptychosperma
elegans (9)
Macarthuri (2)
Sanderianus ? (1)
sp. "Ragey" (2)
spp. (5)

Raphia
Ruffia

Rhapidophyllum
hystrix (1)

Rhapis
excelsa (2)

Reinhardtia
gracilior (1)

Rhopaloblaste
hexandra

Rhopalostylis
Baueri
sapida

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Rhyticocos

amara (1)

Roystonea

elata

oleracea (1)

regia (8)

Sabal

causiarum

Etonia (14)

glaucescens (1)

Japa (1)

mauritiaeformis (1)

mayarum (1)

mexicana

nematoclada (1)

Palmetto (42)

parviflora (1)

Rosei

umbraculifera

sp.

Scheelia

sp. (1)

Serenoa

repens (3)

Syagrus

coronata (2)

quinquefolia

sancona (1)

Weddelliana (2)

Thrinax

microcarpa

parviflora (6)

Trachycarpus

Fortunei (1)

Martiana (1)

Trithrinax

acanthocoma

brasiliensis

Veitchia

Joannis ? (2)

Vitiphoenix

sp.

Wallichia

caryotoides ? (1)

Zalacca

edulis (1)

Zombia

antillarum (1)

Wanted

For Sale

Exchange

This advertising is restricted to members of the Society or to firms having a member of it in their organization. Two nurseries have reported very substantial sales of palms directly resulting from ads in PRINCIPES. Ads for the next issue must be received by May 15, 1957. Please confine copy to matter bearing on the palms. Rates: 25c a line or part of a line, straight-run, \$1 minimum charge. Kindly remit to the Treasurer, after publication, counting the lines to determine the charge.

Rare seedlings: *Acrocomia*, *Aiphanes*, *Arenga*, *Colpothrinax*, *Copernicia*, *Corypha*, *Dypsis*, *Erythea*, *Howea*, *Mauritia*, *Syagrus* and many others. No shipping. Vero Beach Nursery, Highway No. 1, near McKee Jungle Garden, 2 miles south of Vero.

Wanted to buy: Seeds of *Licuala* and *Chamaedorea* palms, and cycads. O. J. Priebe, Route 1, Box 33, Clermont, Fla.

Chamaedorea cataractarum. A jewel of a single-trunked species. Mexican. The 3/8ths-inch trunk is flecked with light green. The seeds make a beautiful scarlet display. This species makes a wonderful pot plant. The inflorescences of the respective species are distinctly different and easy to pollinate. Plants out of 4" pots \$5.00, including packing. California Jungle Gardens, 11977 San Vicente Blvd., Los Angeles 49, Calif.