

with one another in crossing. On the other hand, it is evident that some species should be compatible because of the general similarity of the shape and style of the spadices in both sexes, such as those of *C. metallica* and *C. Ernesti-Augusti*. I assume that this cross could be made, and I recommend it as the kind of hybrid that should produce a significant and interesting result.

In handling the pollen of *Chamaedorea*, plastic bags, or Baggies, are very useful. When the male flowers are ready to shed pollen and will do so when the spadix is tapped, enclose the spadix in the bag, tap and shake the bag vigorously, and the inside of the bag will be whitened with pollen. When the female flowers are sticky, envelop the entire female spadix in the bag, tap and shake the bag, and the flying or

falling pollen will find its way to the open flowers.

This method can not be used with species like *C. elegans* that have glutinous pollen that will not be shed by the flowers. In such cases, remove one corolla at a time from the spadix branch, hold it between two fingers, and pluck away the thick petals with tweezers. Put the stripped flowers in a small, open dish for two or three hours to air-dry. Then the pollen may readily be picked up by the bristles of a camel's hair brush by stirring the flowers with it. The pollen will show as white powder on the brush with which the sticky female flowers may be touched, one by one. This is tedious, but it is effective, and will make up for the absence of an insect.

GARDEN TOUR

The Palms at Lotusland

Estate of Madame Ganna Walska

The area of Santa Barbara, California, lying at 34 degrees, 25 minutes North Latitude, enjoys a milder climate than one might expect. The principal reasons for this pleasant situation appear to be two: the close presence of the Pacific to the south (*sic*; consult your atlas) and the fact that immediately to the north of the city is a mountain range which, contrary to the custom of most red-blooded American ranges, runs east-west rather than north-south. The beneficial effect of these rocky slopes, which rise to three or four thousand feet, is often to shut out cold winds from the north, and to absorb and re-radiate heat from the low winter sun.

January and August official average high and low temperatures are given as 64.8°, 40.3° and 78.1°, 56.7° F. by the Department of Commerce Weather Bureau. In recent years, the weather sta-



1. Entrance to Lotusland. Iron gates in filigree are flanked by tall *Jubaea* specimens emerging from a planting of gray-leafed agaves. Barry Osborne photo.



2. Part of a grove of *Howea* at the Ganna Walska estate. Ivy provides a lush and easily maintained groundcover. Ken Foster photo.

tion has been moved to within two blocks of the beach, and often lies in a chill bank of sea mist, while the rest of the city is warm and clear; thus the nationally published temperatures for the area now give only a foggy idea of the weather here.

Lotusland lies east of the city on gently sloping land between the hotter microclimate of the foothills, where frost may occur only once in, say eight or ten years, and the low-lying regions where the ground is blanketed with

white on several mornings each year. Thus, Lotusland serves as a good test spot for the adaptation of a plant for the majority of the land in the Santa Barbara area.

On a tour, one enters the estate through great iron gates which are flanked by two nicely matched huge *Jubaea chilensis* palms. Continuing up the broad entrance drive between clumps and rows of aloes and agaves, one begins to encounter young *Howea Forsteriana* on the right, planted both singly



3. The sky-blue reflecting pool in the "desert" section of the garden where palms provide a transition between the cacti and succulents and the evergreen trees in the background. Ken Foster photo.

and in groups for a natural effect. On the left soon appears the lotus pond after which the estate is named. If one is fortunate enough to arrive at blooming time (generally July into September) the pond will be a solid sea of round lotus leaves, with the lush pink flowers unfolding above them on swaying stiff stalks. Large plants of *Erythea edulis* and *Phoenix canariensis* form part of the backdrop for this spectacle, along with various dicotyledonous ornamental trees and shrubs.

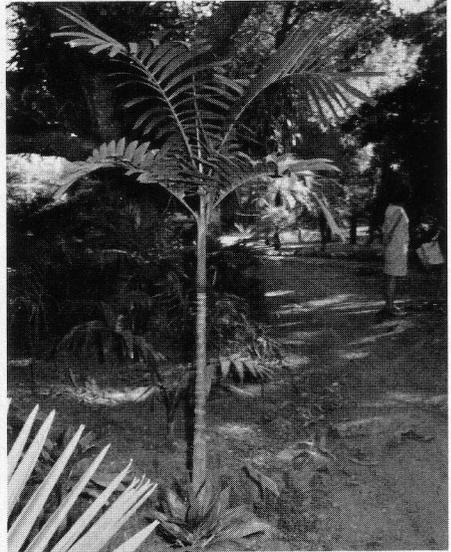
Further along the drive, the howeias on the right become larger, and gradually other species, such as *H. Belmoreana*, *Hedyscepe Canterburyana*, and *Ar-*

chontophoenix Cunninghamiana are worked into the grove. It is here, too, that two other specimens are seen which invariably cause comment when the tour members are palm enthusiasts: *Jubaeopsis caffra* and *Parajubaea cocoides*. The *Parajubaea* is particularly striking, as the leaves have a special sheen similar to that of *Cocos nucifera*, as well as the contrasting yellow midrib. It seems a shame this plant is not more widely distributed in California, as it appears to be hardy as far north as Richmond (San Francisco Bay area), yet there is only one mature, bearing tree of the species in the state, to my knowledge.

Soon a decision must be made in our



4. *Caryota ochlandra* in silhouette. Barry Osborne photo.



5. *Ptychosperma elegans* growing in the Santa Barbara garden of Madame Ganna Walska. The small plant behind it is *Chambeyronia macrocarpa*. Barry Osborne photo.

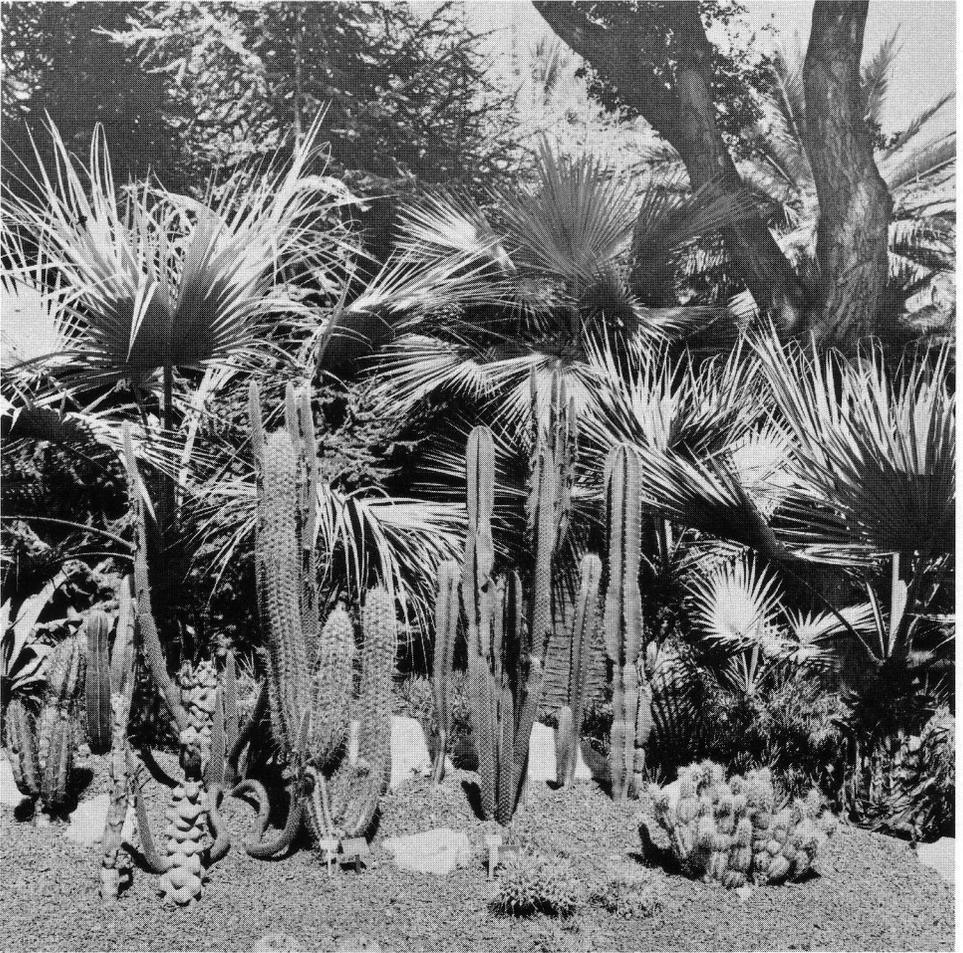
walk, as paths begin to extend in several directions. Generally, the decision is already suggested by the presence of chains made of rattan, or the presence of a wooden animal, such as those seen on carousels, blocking the way. The route has been planned, however, so that you will not miss the sights behind the wood unicorn or gnu, but will circle about for them later.

Generally, one turns here to the left, and goes down a little path past a *Rhopalostylis sapida*, a large *Trithrinax acanthocoma*, and several butias, thence into an area where the lotus pond is viewed from a different angle, and where many young palms are gathered under the trees. There are, for example, *Arenga Engleri*, *Livistona Mariae*, and — most interesting to me — three *Roystonea regia*, the tallest about ten feet now, and just getting ready to form trunk. Records at the Santa Barbara Botanic Garden indicate that roystoneas have been grown in California, but so far as I know there are only two of any

considerable size in the state now: one in San Diego and one said to be in the vicinity of Palm Springs. However, the history of palms once grown here but now scarce or nonexistent would be another article, so let us continue up one of Madame Walska's secluded paths.

Shortly we come upon an interesting situation of similarity and contrast: large clumps of *Rhapis excelsa*, *Rhapis humilis* and *Chamaedorea costaricana* are planted right next to a grove of black-stemmed bamboo. As one's eyes travel up these various jointed stems, there is always the slight feeling of surprise as the greatly differing leaves are seen.

Beyond these groves, the land begins to become more open and sun-drenched. It is here that the majority of aloes and many beaucarneas are gathered. Along the sides of this desert-like area appear *Erythea Brandegeei*, two spiny-trunk *Acrocomia Totai*, and several groupings of *Phoenix reclinata*. Here, too, are four majestic *Jubaea* in a row, with *Trachy-*



6. Cacti and palms make a pleasant garden setting. Ken Foster photo.

carpus Fortunei filling in the foreground. In the center of this "desert" there appears a mirage-like sky-blue reflecting pool, free-form and edged with iridescent shells. Water cascades into this pool from several giant clamshells, producing a shimmering effect on the whole area when the sun is at the right angle.

From the aloe section, the tour then continues by several more formal pools, past specimens of *Acoelorrhaphe Wrightii* and *Jubaeopsis caffra* to the deeply shaded *Caryota* section. The largest and most impressive of this

genus seen here are *C. ochlandra*, which has been found to be not only hardy here, but rather fast-growing as well. Beneath and around these ochlandras are seen the other more familiar species such as *C. mitis* and *C. urens*, creating a dense exotic effect difficult to describe and, I understand, even more difficult to photograph.

Nearby, for those impressed with size, are several of the tallest *Washingtonia filifera* in this region, and an extremely tall *Arecastrum Romanzoffianum*.

After passing a tree-fern "forest" and



7. Sunshine gleams on the leaves of *Parajubaea cocoides*, its delicately pinnate leaves contrasting sharply with *Agave attenuata* below. Barry Osborne photo.

a display of truly magnificent large specimens of staghorn ferns, we enter an area which is filled with many species of young palms, many of them considered to be either unusual or experimental for this area. Here are *Pritchardia Beccariana*, *Chambeyronia macrocarpa*, *Chrysalidocarpus lutescens* and *C. madagascariensis*, *Neodypsis Decaryi* and many kinds of *Chamaedorea*. My own favorite species in this area is *Linospadix monostachya*; its unusual leaf shape and dark green gloss make it especially attractive, and the relatively rapid growth of the specimens here is most encouraging.

Just around the corner begins a grove of *Phoenix Roebelenii* of all sizes and shapes, including one multi-headed specimen which, while not so graceful as many of the others, always draws comments as a curiosity.

The most curious and interesting spectacle at Lotusland, however, is, in the minds of many, the "blue and silver" area to the east of the main drive. Here, gathered in one spot are plants from all over the world, combined on the basis of one requirement: the predominant color of the plant must be blue or silver. The South African silver tree (*Leucadendron argenteum*) can be seen here, as well as many specimens

of *Erythea armata*, which vary from silvery-white to bluish in their fronds. Various blue evergreens are planted next to agaves, over a groundcover of *Festuca glauca* and *Kleinia repens*. The overall effect is rather Alice in Wonderlandish because for the moment the whole world seems to have turned blue and silver.

Since this is an article on the palms at Lotusland, we must regretfully pass over the collections of succulents and cacti, the bromeliad collection, which has been vastly expanded in the past year, and only mention the outstanding collection of cycads, which is scheduled for further extension into a new area next spring. I know little about many of these plants, but suspect that there are some true rarities here, for I have seen cycad collectors touching their foreheads to the ground before certain specimens, just as Mohammedans prostrate themselves toward Mecca.

The tour of Lotusland traditionally ends on the broad, meadow-like lawn, where Madame Ganna Walska often serves refreshments beneath wide varicolored umbrellas, near the topiary collection and the giant clock decorated with semi-precious stones and minerals. Here, beside large multi-stemmed *Phoenix reclinata*, one may discuss with the hostess her plans for further developments of her gardens.



8. A young specimen of *Pritchardia Beccariana*. Barry Osborne photo.

In the palm category, these include two new areas scheduled for planting in the spring of 1968. Many palm species, either out of the ordinary or as yet untried in this region, are now being gathered in the greenhouses, to be put into the ground as soon as the soil temperature rises. In the process of making new plantings, a great deal of forethought and judgment must be involved to form a harmonious overall landscape. Despite the tremendous variety of plants and collections, somehow one is never aware of a transitional shock, so cleverly are the plantings arranged.

One of the most important lessons to be learned from a visit to Lotusland is that a plant should not be passed off as "impossible" or "inappropriate" simply because it has not been traditional in a region. Were it not for people who seek new plants, plus a few adventuresome landscape gardeners, Santa Barbara might still be an area of only live oaks and chaparral.

Otto Martens and I were able to make a survey of the palms present at Lotusland in the spring of 1967. Herewith follows a list derived from that study. Most of the heights are estimated, with the exception of a few of the tallest specimens, where an instru-



9. *Acrocomia Totai* at Lotusland is shown in the center of the picture. Dark fronds at the right and rear are *Jubaea chilensis*. Barry Osborne photo.



10. Four *Jubaea chilensis* at Lotusland. Barry Osborne photo.

ment operating on a triangular principle was employed. In a few cases where groves were particularly dense, estimates were also made of the number of plants. The list does not, of course, contain the many species added since the survey was made. After the name appears the quantity and the height of the tallest specimen:

Acrocomia Totai 2, (15'); *Aiphanes acanthophylla* 1, (1½'); *Archontophoenix Cunninghamiana* 9, (28'); *Areca triandra** 3, (2'); *Arecastrum Romanzoffianum* 11, (80'); *Arenga Engleri* 4, (5'); *Butia capitata* 34, (18'); *Caryota Cumingii* 1, (1½'); *C. mitis* 15, (4'); *C. ochlandra* 5, (15'); *Chamaedorea cataractarum* 2, (4'); *C. costaricana* 6, (12'); *C. elatior* 2, (10'); *C. Ernesti-Augusti* 4, (3'); *C. erumpens* 1, (7'); *C. glaucifolia* 1, (10'); *C. met-allica* 16, (2½'); *C. microspadix* 1, (4'); *C. radicalis* 4, (3'); *C. Seifrizii* 1, (7½'); *C. sp.* 1, (6'); *C. stolonifera* 1, (3'); *C. Tepejilote*, 4, (5'); *C. Woodsoniana* 1, (8'); *Chamaerops humilis* 14, (14'); *C. humilis* 'Nana Compacta' 1, (2'); *Chrysalidocarpus lutescens* 4, (5'); *C. madagascariensis* 1, (2½'); *Dictyosperma album** 1, (3'); *Erythea aculeata* 3, (3'); *E. armata* 51, (25'); *E. Brandegeei* 2, (21); *E. edulis* 81, (28'); *E. elegans** 1, (11'); *Hedyscepe Canterburyana* 2, (3'); *Heterospathe*

elata 1, (3'); *Howeia Belmoreana* 4, (8'); *H. Forsteriana* 73, (26'); *Jubaea chilensis* 45, (45'); *Jubaeopsis caffra* 2, (7½'); *Linospadix monostachya* 3, (2½'); *Livistona australis* 21, (45'); *L. chinensis* 7, (10'); *L. Mariae* 2, (1'); *Mascarena Verschaffeltii* 1, (5'); *Microcoelum Weddellianum* 2, (2'); *Parajubaea cocoides* 1, (9'); *Phoenix canariensis* 85, (55'); *P. dactylifera* 6, (40'); *P. humilis** 1, (1½'); *P. reclinata* 3, (38'); *P. Roebelenii* 50, (10'); *P. sp.* 1, (1½'); *P. tomentosa* 1, (4'); *Pritchardia Beccariana* 1, (1½');

chosperma Macarthurii 1, (1½'); *Rhapidophyllum hystrix* 2, (6'); *Rhapis excelsa* 1, (12'); *R. humilis* 2, (11'); *R. sp.* 1, (3'); *Rhopalostylis Baueri* 1, (5'); *R. sapida* 1, (11'); *Roystonea regia* 3, (9'); *Sabal Blackburnia** 2, (5½'); *S. sp.* 1, (17'); *Trachycarpus Fortunei* 12, (29'); *T. Martianus** 1, (24'); *T. Takil* 4, (2½'); *Trithrinax acanthocoma* 3, (16'); *Washingtonia filifera* 6, (80'); *W. robusta* 1, (18').

*Identity has been questioned.

BARRY L. OSBORNE



11. Madame Ganna Walska and Palm Society President, Otto Martens. Ken Foster photo.