

LASCA LEAVES



Los Angeles County Department of Arboreta and Botanic Gardens

FOUNDATION SPONSORS SPECIAL JAUNT TO SANTA CRUZ ISLAND

ON JULY 11, 93 California Arboretum Foundation members and guests visited Santa Cruz Island on a private tour hosted by Dr. Carey Stanton.

During the voyage to the island, bonus glimpses of sea life added excitement to the boat ride. Approaching the offshore oil rigs, the boat came close so the group could watch sea lions cavorting around the platforms. Then, just as the boat was ready to dock, a school

of dolphins appeared. Because many people had never seen these mammals in the wild, the captain returned to deep water for a better view as the playful dolphins roiled the surface with their leaping and diving.

Dr. Stanton, who greeted the group when they landed at Prisoner's Harbor, lives on the island where his family has owned a 56,000-acre working cattle ranch for the past 50 years. Since 1978, a conservation partnership has existed between Dr. Stanton and the Nature Conservancy. Photo and vegetation monitoring as well as exotic plant and animal control are a few of the projects the Conservancy conducts on the island.

Public access to the island is very limited, so everyone savored the quiet, peaceful surroundings during the three-mile hike to the ranch. The path curved gently upward between rolling hills, crossing and re-crossing a stream that played peek-a-boo with the hikers; at times it was so wide they had to cross it on stepping stones, then it would vanish underground only to reappear further along.

Distinctive fragrances gave the group clues about the different plant communities as they walked.



Wendy Sekovich

Alice Thomas, left, and Dr. Carey Stanton help a member of the California Arboretum Foundation tour disembark on Santa Cruz Island.

On one section of the trail, fields of wild fennel crowded along the edge of the path, scenting the air with licorice. A short while later, the air was redolent of menthol as the hikers entered a eucalyptus grove.

Nearing the ranch headquarters, the road ran down a lane bordered by crisp white fences. At the end was the final destination, a yellow-trimmed ranch house set on a rise between two ranges of hills. After exploring the buildings, which Dr. Stanton rarely opens to outsiders, everyone settled in the shade of huge old pepper trees to eat their lunches.

In the afternoon, Lyndal Laughrin, a naturalist with the Santa Cruz Island Reserve maintained on the island by the University of California, described the unique features of Santa Cruz Island. The 62,000-acre island supports a rich variety of plants and animals, he said. About 40 plant species are restricted to the Channel Islands, and eight of these occur only on Santa Cruz Island. Notable examples of the endemic plants that the Foundation group saw include the Santa Cruz Island ironwood and the Island oak.

A smooth cruise back across the channel, and everyone disembarked

at the Ventura harbor after a unique jaunt.

The trip to Santa Cruz Island is an example of the exclusive field trips to unusual destinations that Alice Thomas, CAF president, plans to offer Foundation members in the future.

YULE SHOW, TOURS, OPEN HOUSE HIGHLIGHT CHRISTMAS

ONCE AGAIN Christmas cheer overflows at the Los Angeles State and County Arboretum with the opening of the Queen Anne Cottage, an open house at the Gift Shop and a three-day Christmas show featuring demonstrations and holiday entertainment.

On Dec. 13, the doors of the Queen Anne Cottage will swing open, allowing everyone a firsthand view of elaborate furnishings and Baldwin family mementos that are usually visible only through the Cottage windows. Antique Christmas cards and ornaments will festoon the parlor and music room. A smaller tree surrounded by antique toys will delight children in the bedroom.

Other historic buildings — Santa Anita Depot, Coach Barn and Hugo Reid Adobe—will also be decorated with period Yuletide ornaments.

An additional \$1 charge for a narrated tour through the Cottage benefits the Historical Preservation Fund at the Arboretum.

Docents will also lead tours through the Santa Anita Depot. The baggage room, not normally open, will be part of the tour. A collection of photographs depicting the chronology of the depot from 1890 to the present will be displayed in this room. The depot kitchen and living quarters furnished with antiques from the 1890s can also be seen. Tours will be led through the Historical Section from 10 a.m. to 4 p.m.

An open house at the Gift Shop adds to the excitement Dec. 13 from 9 a.m. to 4:30 p.m. Free demonstrations will continue throughout the day. Gift items from around the world can be purchased. Hot cider and cookies will be served.

At the Christmas show, Dec. 18-20 from 9 a.m. to 4:30 p.m., flower arranging and wreath making demonstrations, along with Holiday entertainment will get everyone in the Holiday spirit.

Christmas customs of other countries will be illustrated by exhibits. Holiday craft items and ornaments will also be displayed. Models in Victorian era costumes will circulate through the show area.



Lyndal Laughrin, second from left, lectures on Santa Cruz flora.

Alice Thomas

FOUNDATION NAMES NEW DEVELOPMENT DIRECTOR



LuAnn B. Munns

Beverly Rouse

BEVERLY ROUSE became director of development for the California Arboretum Foundation on Sept. 1. In this new position Mrs. Rouse will be responsible for increasing funding from membership and community sponsors. Mrs. Rouse's duties will include managing the Arboretum's fund raising program.

"I'm excited that the first stage of the master plan has begun, beginning with the renovation of the Peacock Pavilion," Mrs. Rouse said.

Last spring she completed a study on the benefits of corporate giving, endowment and public relations programs for the American Water Foundation in Denver, Colorado. Prior to working on the project, Mrs. Rouse was director of corporate relations at Colorado State University where in 1986 she received a gold medal from the Council for the Advancement and Support of Education for a video production used within the corporate relations program.

She had been director of development at the university's engineering college from 1980 to 1985 where she designed and directed the first college-based development program at Colorado State University. Mrs.

Rouse was also assistant director of development for health services at the University of California, Los Angeles, where she designed and directed fund raising, public relations and alumni relations programs for the School of Nursing and Pub-

lic Health and the Molecular Biology Institute.

Mrs. Rouse received her degree from Colorado State University and has attended conferences and seminars on foundation and corporate giving skills.

PAVILION BECOMES GARDEN CAFE WITH PALMS, AWNINGS, LATTICE

AUGUST 6 MARKED the opening of the newly renovated Peacock Pavilion at the Arboretum. Khammar Food Services, who also operate the restaurant at the Natural History Museum, took only three weeks to remodel the old coffee shop.

When coming up the walkway to the pavilion, one first notices a change in the decor of the pavilion. White resin chairs and white tables, set on the balcony for a cafe view of the garden, are a fine vantage point for peopewatching.

Inside, banks of tall palms fill the restaurant with garden greenery. A

striped canvas awning beckons over the deli counter. White lattice above the counter window brings the garden atmosphere indoors.

Most important, though, is the change in menu. Fresh pasta and fruit salads are suited perfectly for health-oriented visitors. Fried foods are no longer sold. The menu is even displayed California-style with pastel lettering on a chalkboard set on an artist's easel.

Everything is moderately priced for people who like to have something tasty while visiting the garden. And the friendly service is unbeatable.



Jill Lachut

From left, Fernando Chavez, Louis Truckenmiller and Margaret O'Connor of Khammar Food Services welcome customers in the refurbished Peacock Pavilion.

ARBORETUM SUPPLIES SACRED PLANTS FOR POPE'S LA VISIT

An ikebana floral arrangement by Reiko Kawamura symbolized inter-faith cooperation when Pope John Paul II visited Los Angeles in September. Her arrangement was placed in the lobby of the Japanese Cultural and Community Center where the Pope participated in an event honoring "Nostra Aetate," a document to all mankind embraced in brotherhood.

For her modern ikebana arrangement, Mrs. Kawamura used plants historically linked with five major religions: Buddhism, Christianity, Hinduism, Islam and Judaism.

On the grounds of the Los Angeles State and County Arboretum (right) Mrs. Kawamura gathers branches of *Acacia nilotica*, believed by Jewish scholars to be the "shittah" wood used in construction of the Ark of the Covenant. Mrs.



Jill Lachut

Kawamura also incorporated date palm, pomegranate, deodar cedar and olive branches into her arrangement.

Mrs. Kawamura, a master in the Ohara school of ikebana Japanese flower arranging, teaches several classes at the Arboretum.

PERFECT GIFT FOR A GARDEN FAN

WHEN YOU surprise your friends with a gift membership to the California Arboretum Foundation, you both give them pleasure throughout the year and help the Foundation achieve exciting new goals for the future. For the past 40 years, membership donations have helped meet the needs of the Los Angeles State and County Arboretum. With your help, the Foundation can build upon these past accomplishments.

Patron of the Gardens, a new membership category, will offer unlimited admission to the Los Angeles State and County Arboretum, South Coast Botanic Gardens and Descanso Gardens plus an annual reserved tour of Virginia Robinson Gardens. A 10 percent discount on purchases at all of the gardens' gift shops is also included. These benefits are special privileges for the Patron of the Gardens \$100 membership donation, but can be added

to other membership categories for \$25.

By giving a gift membership in any category, you entitle your friends to a year of free enjoyment visiting the Arboretum with its colorful plants and trees from around the world. As a lasting reminder of your thoughtfulness, new members also receive an exotic plant for their own garden and an annual subscription to GARDEN magazine. Not only will they be among the first to know about all special events, previews and members-only tours, but they receive discounts on classes and trips offered to the public.

Members of the California Arboretum Foundation comprise a select group of community-minded people who help beautify Southern California with their donations to the Foundation. The Arboretum depends heavily upon support received from the Foundation. This support has been a key factor in

building Meyberg Waterfall, the Aquatic Garden, the Koi Pond and Meadowbrook, among other projects.

Continuing programs that also depend on membership donations include: developing and introducing colorful new plants and trees, expanding the collection of books and periodicals in the Plant Science Library, leading school field trips and adult tours for thousands of people annually, sponsoring educational programs, and maintaining the Arboretum as an outdoor laboratory for lectures, demonstrations and flower shows as well as scientific research.

A membership you give is one of those rare gifts that provide both immediate pleasure and the lasting satisfaction of being part of a unique institution. To order memorable gifts for those special friends, simply fill in the attached envelope and mail it to the Foundation.

Water Lily for a Queen

by LuAnn B. Munns

WHEN THE pea-sized seeds of giant water lilies (*Victoria* spp) arrived at the Los Angeles State and County Arboretum last March, they gave little hint of the plants' historic charisma. Longwood Gardens sent about 100 seeds of *V. amazonica*, *V. cruziana* and a hybrid developed at Longwood. This world-famous garden at Kennett Square, Pennsylvania, has been growing giant water lilies successfully for a number of years and shared seeds with the Arboretum as part of a worldwide exchange program among botanic gardens.

The huge *Victoria* leaves floating on the ponds in Meadowbrook attracted a lot of attention after they were set out in June. Not only are the mature leaves more than an armspan across, but they are rimmed by a wine-colored, upturned edge about 3 inches high.

Flowers and the 3 to 8-foot leaves of both species and the hybrids are basically the same, with the differences obvious only to experts who can discern the subtle distinctions among them. Undersides of the leaves are purplish-crimson in *V. amazonica* but more of a violet blue in *V. cruziana*. The flower buds have four sepals armed with prickles. On *V. cruziana* the spines are confined to sepal bases, while they

cover the entire bud on *V. amazonica* and the hybrids.

The same sharp thorns armor almost all the underwater parts of the plant. Translucent spikes up to an inch long stud the petiole and march along the ribs on the underside of the leaves. Before a new leaf unfolds, which it does at the

rate of almost an inch an hour, it looks much like a heavily armored, floating football. Some botanists speculate that the thorns may have evolved as protection against fish and aquatic herbivores such as the manatees native to tropical rivers. Unfortunately, the spines proved ineffective against the resident Ar-



A flower of the giant water lily opens white and turns cerise on the second day.

boretum turtles. These reptiles regularly grazed on several young plants until thorns on the maturing leaves hardened enough to protect the submerged portions.

The plants are adapted in several ways to the heavy rainfall of their habitat in quiet streams and backwaters of equatorial South America.



A newly opened flower rises above a bud, a furled leaf (center) and a pollinated seed pod.

The round leaves are actually made up of two lobes with only a notch in the upright rim on opposite sides of the leaf showing where the lobes join. These notches allow water to run off during torrential rains. Many small pores, called stomata, that serve as drains dot the rich green, leathery surface of the leaves. When water collects on the leaves, the pinpoint openings allow it to seep away before harmful algae and fungi can form. Also, gas that rises from the mud at the bottom of a pond would be trapped under the leaves except for these vents. Although the water lilies seem to grow best when the crown is only a few feet below the water surface, the petioles are several feet longer. With this generous tether, leaves can float on the surface despite seasonal floods.

Although the leaves reportedly remain on the plant for up to six weeks, at the Arboretum they looked tattered and began decaying after two or three weeks. Nurseryman Don Fitch, who tends the Arboretum's giant water lilies, has observed that as the plants mature, they produce progressively larger, more durable leaves.

It takes a remarkable undergirding to support the oversized leaves, which at the Arboretum have reached 5 feet 8 inches in diameter. A petiole rising from a crown of spindle-shaped tuberous rhizomes anchored in the bottom is attached to the center of each leaf. Eight main ribs radiate out from this point and diverge into numerous smaller ribs as they near the outer edge. Curved struts connect the ribs, strengthening and stabilizing the structure. Both ribs and struts contain long air canals that buoy up the mass of greenery and make it strong enough to support a great deal of weight if it is evenly distributed. One researcher reportedly spread 150 pounds of sand on the surface of a leaf without sinking it.

The strong, lightweight framework of the giant water lily leaf had a major influence on architectural design in the middle of the last century. The ribs and concentric struts revolutionized greenhouse design and led eventually to London's famous Crystal Palace, built in 1851. Its designer, John Paxton, took note of the arches and braces in the leaf structure when he was growing giant water lilies on the Duke of Devonshire's estate in Derbyshire, England. Using the same engineering principles, he designed the immense glass house that covered almost 19 acres, large enough to hold football games and fireworks displays.

John Paxton had been connected with giant water lilies since 1849 when he was the first to bring them to bloom in Europe. The first flower was appropriately presented to Queen Victoria, England's reigning monarch when the plant was named. Since horticulturists had been trying for 50 years to make the plant grow and produce a flower, the long awaited blossom created a sensation in England.

Long before 1801 when explorers returned to Europe with reports of the giant water lily's wondrous dimensions, South American Indians had incorporated the plants into their culture and daily lives. "Yrupe," one of the native names for the water lily, translates into "water platter." The Indians also harvest the seeds for flour which they call "maize of the river," supposedly rafting their infants upon the buoyant leaves as the parents gather the seeds.

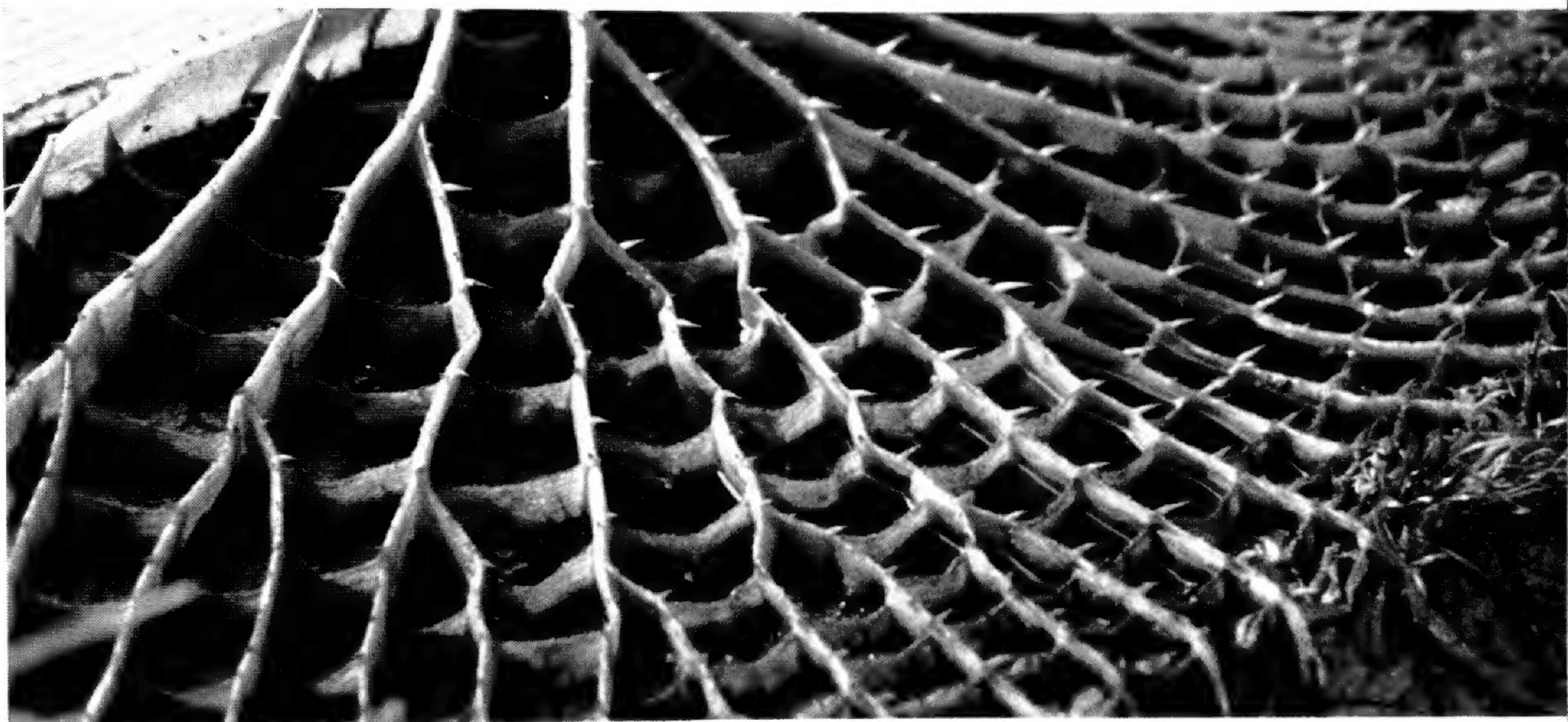
According to a legend told by the Guarani Indians of South America, the flower of the giant water lily was once a beautiful maiden who had fallen in love with the moon, believing it to be a strong and handsome warrior. One night she drowned when she tried to embrace her beloved's reflection on a lake.

Filled with compassion, the moon transformed her into a gorgeous flower that welcomed the moon every night by opening its petals.

An account of the flower's bloom cycle sounds almost as improbable as the legend. Most noticeable is the color; overnight the petals change from white to cerise. On the first night when the bloom unfolds, the magnolia-like flower is white with only a blush of pink on the innermost petals. During the night the flower generates heat, becoming as much as 20 degrees warmer than the surrounding air. By mid-afternoon of the second day, the flower has begun to close and the petals are almost all cerise with maroon stripes on the outer petals.

Researchers are presently studying the possibility that the dramatic color change is caused by natural red pigments called anthocyanins in the petals that are masked by some substance during the early bloom phase. Exactly what the substance may be and what advantage the color change gives the plant has not yet been determined.

The seemingly bizarre opening, closing and reopening of the petals



Thorns almost an inch long bristle from the ribs and reinforcing struts on the underside of a giant water lily leaf.

is actually a carefully timed ballet that, in the wild, ensures cross-pollination. Only on the first night is the flower receptive to pollen, so at this time it emits a strong pineapple scent to attract scarab beetles, its natural pollinators. The beetles, laden with pollen from nearby flowers, push past the open petals and are trapped inside when the flower closes. During the night, the beetles scramble around inside a fist-sized center receptacle, feasting on starches produced especially for them and depositing pollen from

flowers they visited earlier. When the now-pink petals open again on the second night, the pollen is mature. As they exit, the beetles crawl past the antlers, picking up pollen to carry to a newly opened flower. At the Arboretum the flowers have been hand-pollinated in hopes that viable seed will be produced for an encore performance next summer.

Plants chosen for display at the Arboretum usually are rare or endangered or have potential uses in home landscapes, but the giant water lily is an exception. Francis Ching, Arboretum director, explained why these remarkable members of the Nymphaeaceae family were planted in pools and streams at the Arboretum.

"Giant water lilies have the largest leaves of any flowering plant," he said. "And although there is no botanical reason to grow them here, we planted them to give our visitors a chance to see at close range plants that are novel, interesting and from a different area of the world." So throughout the summer, Arboretum visitors could observe the improbable plants that stunned nineteenth-century Europeans.

Story and photographs by LuAnn B. Munns, Arboretum publications specialist.



Don Fitch removes anthers with mature pollen from a "second day" flower with which he will fertilize one that has just opened.

ORCHID AND SPECIALTY PLANT SALE

Saturday, February 13, 1988
10:00 a.m. to 4:00 p.m.

Los Angeles State and County Arboretum
310 N. Baldwin Avenue, Arcadia, CA 91006
(One block south of the 210 Freeway. Exit on Baldwin Avenue)



INDOOR PLANTS ORCHIDS

TROPICALS STAGHORN FERNs

Beautiful plants for you - - and your Valentine!

Sponsored by
The California Arboretum Foundation and the Los Angeles State and County Arboretum

LOS ANGELES STATE AND COUNTY ARBORETUM, Arcadia

NOVEMBER 21, 22 — 9 a.m. to 4 p.m.
Bonsai Show
Santa Anita Bonsai Society
DECEMBER 5, 6—Sat. 1 to 4:30 p.m.
Sun 9 a.m. to 4:30 p.m.
Camelia Show
Pacific Camelia Society
DECEMBER 12 — 9 a.m. to 3 p.m.
Annual Conference
California Rare Fruit Growers
DECEMBER 13 — 9 a.m. to 4:30 p.m.
Queen Anne Cottage Open House
California Arboretum Foundation
DECEMBER 13 — 9 a.m. to 4:30 p.m.
Gift Shop Open House
California Arboretum Foundation
DECEMBER 17 — 5 to 8 p.m.
Christmas Tree Lighting
California Arboretum Foundation
DECEMBER 18, 19, 20—
9 a.m. to 4:30 p.m.
Christmas Show
California Arboretum Foundation

CALENDAR OF EVENTS

NOVEMBER, DECEMBER
JANUARY, 1988

DESCANSO GARDENS, La Canada Flintridge

OCTOBER 23 THRU NOVEMBER 20—
Artist of the Month
Barbara Frankel
NOVEMBER 7, 8 — 9 a.m. to 4:30 p.m.
Ikebana Show
International Ikebana Society
DECEMBER 5 THRU 13—
9 a.m. to 4:30 p.m.
Christmas Show
Descanso Gardens Guild

SOUTH COAST BOTANIC GARDEN, Palos Verdes Peninsula

OCTOBER 28 THRU NOVEMBER 1 —
9 a.m. to 5 p.m.
Country Crafts Sale
South Coast Botanical Garden Foundation
NOVEMBER 7, 8—10 a.m. to 4:30 p.m.
Orchid Show
South Bay Orchid Society
NOVEMBER 15—2 p.m.
Wreath making workshop
Suzy Seamans
NOVEMBER 29—2 p.m.
Wintering Birds Lecture
Eric Brooks
DECEMBER 4, 5, 6— 10 a.m. to 4 p.m.
Holiday in the Garden
South Coast Botanic Garden Foundation
DECEMBER 13—2 p.m.
Christmas Concert
Palos Verdes Symphonic Band