

LASCA LEAVES



Los Angeles County Department of Arboreta and Botanic Gardens

STUDENT INTERN PROGRAM

IT WAS A SUMMER of learning, hard work and fun for the 10 students who advanced their horticultural skills at the Los Angeles State and County Arboretum during the 1982 internship program sponsored by the California Arboretum Foundation.

Michael Kerry summed up the students' attitude when he said, "In school you can learn a certain amount of it, but you can't say enough for practical experience."

And practical experience is what the intern program was all about. The interns, Kerry, Brenda Pudwill and Ron Rindone from Mt. San Antonio College; Lynndee Sharpton, Paul Youngren and Amy Dooks from California Polytechnic University, Pomona; Patricia Smith, Rozanne Andry and Margo Patterson from California Polytechnic University, San Luis Obispo; and Louis Randall from the University of California, Davis, were exposed to as many aspects of the Arboretum's gardening procedures as possible in 10 weeks.

Major projects and improvements undertaken with the direction of John Provine, superintendent, included the construction of a retaining wall along the sidewalk north

of the Hall of Environmental Education, installation of a drip irrigation system in the old-fashioned rose garden and renovation of the jungle garden. General maintenance work included propagation and greenhouse management, soil preparation, watering, fertilization, pruning, weeding, clearing, planting and mowing.

The interns got valuable practical experience while they provided the

manpower necessary to complete these time-consuming projects that the small garden staff could not find time for.

Each of the interns had some previous horticultural work experience before their internships, but all agreed that it was an exceptional opportunity to work in such diversified areas.

"There's much more variety," Lynndee Sharpton said. "And we



Laurie Schenden

Gardening interns get a ride to their next assignment from Bill Neubauer, member of the Arboretum staff. During their 10-week training program, the interns work in most sections of the Arboretum.

were able to ask questions, not just be expected to do it and not ask why."

The interns were instructed in each area by a supervisor, usually the crew chief, on the work to be done, methods to use and safety precautions to take.

"It's just as much for the supervisors," Mr. Provine said. "It's a learning process for them to work with the interns and instruct them, not just leave them with a job."

The first week, supervisor Ralph Gutierrez instructed the interns on the practices and procedures of the tree crew, demonstrating tree climbing equipment, chain saws, hand saws, a chipper and safety.

In eight days intermittently spent in the nursery, the interns learned from Bill Hawkinson about propagation and greenhouse management.

"There are so many different and unusual plants here," said Amy

Drooks. "They just stick with the basics in school."

The second week began with the interns splitting into groups of five. The group in the rose garden removed the obsolete drip irrigation system, then reworked and updated it. Finally, they installed used brick in sand for access walks. The other group dug a trench next to the sidewalk along the Hall of Environmental Education, laid bricks and built the wall of railroad ties.

They also extended the flagstone walk, begun by interns last year, along the north side near the dye plants section of the Herb Garden.

Tony Gonzalez, a senior gardener, supervised other work in the Herb Garden including irrigation procedures. The interns learned the correct use of a soil probe, a hollow pipe which extracts a 3-foot deep soil sample, and the specific sprinkler heads used for different areas.

Joe Erby, another senior gardener, taught the interns corrective pruning techniques and methods for determining when to prune in the various geographical sections to make room for nursery plants ready for the field. He also demonstrated fertilizer types and application rates for different plants.

Next, the interns supervised DPSS workers for the two weeks spent clearing and replanting in the jungle garden. The jungle garden work also included amending and preparing the soil, grading, installing the watering system and repairing fence.

As part of a long-term project the interns located, labeled and charted plants and trees on the Arboretum grounds. Each intern also spent a day in the Herbarium identifying plants from various manuals and monographs and pressing and mounting them.

The Arboretum benefits from the intern programs, not only because of the extra manpower, according to Mr. Provine, but because it is an opportunity to find new employees.

Several students from last year's program have gone on to jobs in related fields or further study. Carla Hawke quit her job as secretary after her Arboretum internship to major in horticulture at Cal Poly, Pomona. Denise DePew works full time at Stewart's Orchids in San Gabriel, one of the largest orchid growers in the world, and Mamie Mitchell is employed at the South Coast Botanical Nursery in Redlands while working on her master's degree.

The intern program has been patterned after the practical work requirements for an American Association of Botanical Gardens and Arboreta horticulture diploma. By setting objective standards, the AABGA diploma recognizes the importance of both training and experience in developing capable professional gardeners.



LuAnn B. Munns

Margo Patterson (left) records the types of plants that Louis Randall (center) and Paul Youngren are carrying to the students' landscaping project in the South African Section.

NEW CAF OFFICERS

THE CALIFORNIA ARBORETUM Foundation elected a new slate of officers headed by John Shepherd as president at the annual meeting June 17.



John S. Shepherd

Mr. Shepherd, a member of the CAF board of trustees since 1979, has built his career around plant related activities. He is president emeritus of Calavo and is emeritus director of the California Avocado Society where he currently serves as publications editor. His continuing involvement with California agriculture includes acting as consultant to several other agribusinesses.

During his term of office, Mr. Shepherd plans to lead a team effort to sharpen the focus of CAF. "The Foundation has grown to a considerable size," he said. "Now it's time to bring a business orientation to it in the interest of better serving the Arboretum."

Mr. Shepherd believes that the difficulty of operating an arboretum during financially stressful times makes extensive long-range planning necessary.

"We will have to decide where and how we go," he said. "The organization must develop a pattern so the public interests will be best served."

Mr. Shepherd, a third generation Californian, lives in Altadena with his wife. They have two grown children.

Other CAF officers elected at the meeting are Nancy (Mrs. James) Anderson, first vice-president; Cecelia (Mrs. John) Grivich, second vice-president; and Kirk Evans, secretary-treasurer.

After the meeting, each member received a coleus cultivar or a *Lagerstroemia faurei* shrub for the annual plant distribution.

SOUTH AFRICAN INTERPRETIVE CENTER

THE MAY COMPLETION of the new South African Interpretive Center and various landscaping improvements in the last two years has changed what was once barren, open ground into an exotic South African garden.

The framework that houses the colorful displays and informative guide to the unique trees and plants of South Africa was built by the

Galbraith Construction Company. The wood-beam structure, funded by the Hancock Park Garden Club and the California Arboretum Foundation, harbors four 4 by 8-foot glass covered viewing panels, each showing different plant forms and selected drawings and photos.

Visitors to the South African section can explore over 200 varieties of plants that provide year-around color while learning from the Interpretive Center more about the continent they represent.

Featured on the west panel are gazanias, colorful perennials that bloom intermittently throughout the year; wild poppies; and geraniums. These represent groundcovers, perennials and annuals from South Africa.

The trees and shrubs panel describes the Cape chestnut, a tree with large lilac flower clusters, and the Senegal date palms located at the Arboretum entrance gate. The unique baobob tree or monkey-bread tree, called "a carrot planted upside down" by David Livingstone,



Laurie Schenden

A peacock perches on a wooden bench, part of the rugged framework that supports the slatted roof and display panels of the South African Interpretive Center.

is sketched in the detailed display.

Calla lillies, gladiolus, hemanthes sparaxis, watsonias and pregnant onion (*Ornithogalum caudatum*) enhance the South African section with colorful blooms and unexpected shapes, described on the bulb and bulb-like plants panel.

The fourth panel contains a color-coded map of South Africa and miscellaneous South African plants such as the bird of paradise, the official flower for the city of Los Angeles, and cycads, the most primitive seed plants.

Between the four panels are shaded benches built into the structure for visitors to relax and enjoy the serene beauty of the secluded South African surroundings.

The plants, trees and groundcovers throughout the garden are labeled for easy identification. Some are very conspicuous, such as the aloes. Tree form aloes are planted on and around the mounds east and south of the Interpretive Center. Ground-hugging forms with stalks of bright orange-red flowers grow as a groundcover south of the center along the tram road.

The attractive foliage and interesting forms of podocarpus trees stand out south and southwest of the center. African daisy (*Osteospermum*) cultivars near the garden entrance along the east tram road flaunt a variety of colors, many striped with different shades of orange, yellow, purple, blue or brown. Also near

the entrance are lily-of-the-Nile (*Agapanthus*) with round clusters of blue or white flowers nodding on stems to five feet tall.

Two of the newly planted groundcovers on the mounds around the Interpretive Center are brilliant ice plants (*Lampranthus*) and gerbera, an elegant and sophisticated daisy.

The plants in the South African section adapt well to Southern California's climate and can withstand drought better than most plants in the other geographic sections of the Arboretum.

The South African Interpretive Center is the third of six planned centers that will provide visitors with a guide through the plant collections of the Arboretum.



Laurie Schenden

Aloes and lilies-of-the-Nile (*Agapanthus* sp.) are among the many South African native plants that grow around the new interpretive center. Display panels help visitors

understand these plants that are so well adapted to the Southern California climate.

Liriodendron: the tulip tree



MILLIONS OF VISITORS to Mount Vernon, the home and tomb of George Washington, have passed beneath a magnificent 120-foot high tree, unaware of its name and its history. It is a tulip tree (*Liriodendron tulipifera*) and it was established more than 200 years ago on February 28, 1785 along with the Declaration of Independence. Records tell us that George Washington transplanted the tree to its present location from a nearby woodland as a young sapling nine or ten years of age.

The tulip tree or tulip, yellow poplar, white poplar, popple, canoe-wood or whitewood, as it is sometimes known, is at home throughout the eastern United States from New England west to Michigan and south to central Florida and Louisiana. It is most abundant and reaches its largest size in the valleys of the lower Ohio Basin and on the mountain slopes of North Carolina, Tennessee, Kentucky and West Virginia. It also occurs naturally in southern Ontario, Canada.

For non-botanists it might be difficult to understand that the tulip tree and the southern magnolia are related, but they are. Both have the same number of sepals, petals, stamens and pistils in their flowers. Both have their pistils of one carpel and both have much elongated re-

ceptacles (the flower part to which sepals, petals, stamens and pistils are attached). Tulip trees belong to the genus *Liriodendron* and are members of the magnolia family, *Magnoliaceae*. In addition to the American species, *Liriodendron tu-*

lipifera, there is another species, *L. chinensis*, in China. It differs from its American cousin only in small details.

In the Cretaceous period, the genus *Liriodendron* with several species was widely distributed in



William Aplin

The tulip tree (Liriodendron tulipifera) is easily identified by leaves that look as if their tips had been snipped off and by flowers that resemble tulips.

North America and Europe. During the Tertiary period it continued to exist with one species extending over eastern North America and Europe until the advent of glacial ice restricted its range in America and destroyed it in Europe.

Tulip trees grow under a variety of climatic conditions. Temperature extremes vary from moderately severe winters in southern New England to almost frost-free winter months in central Florida. Within its range, the average annual minimum and maximum temperatures vary between -20° and 100° F. Rainfall in the same area varies from 30 inches to more than 80 inches in restricted areas of the southern Appalachians. It prefers moderately moist, well-drained, loose soils where it is usually associated with other species requiring the same growing conditions. Trees growing with tulip trees in various locations are basswood, white ash, American beech, yellow birch, cucumber tree, black cherry, bald cypress, flowering dogwood, American elm, black gum, sweet gum, eastern hemlock, hickory, red maple, sugar maple, southern magnolia, northern red oak, red oak, white oak, Virginia persimmon, loblolly pine, sassafras, black walnut, and some others.

The tulip tree is one of the largest and most beautiful trees of the North American forests. It sometimes obtains, under favorable conditions, a height of 160 to 190 feet, with a straight trunk eight to 10 feet in diameter destitute of branches for 80 to 100 feet from the ground.

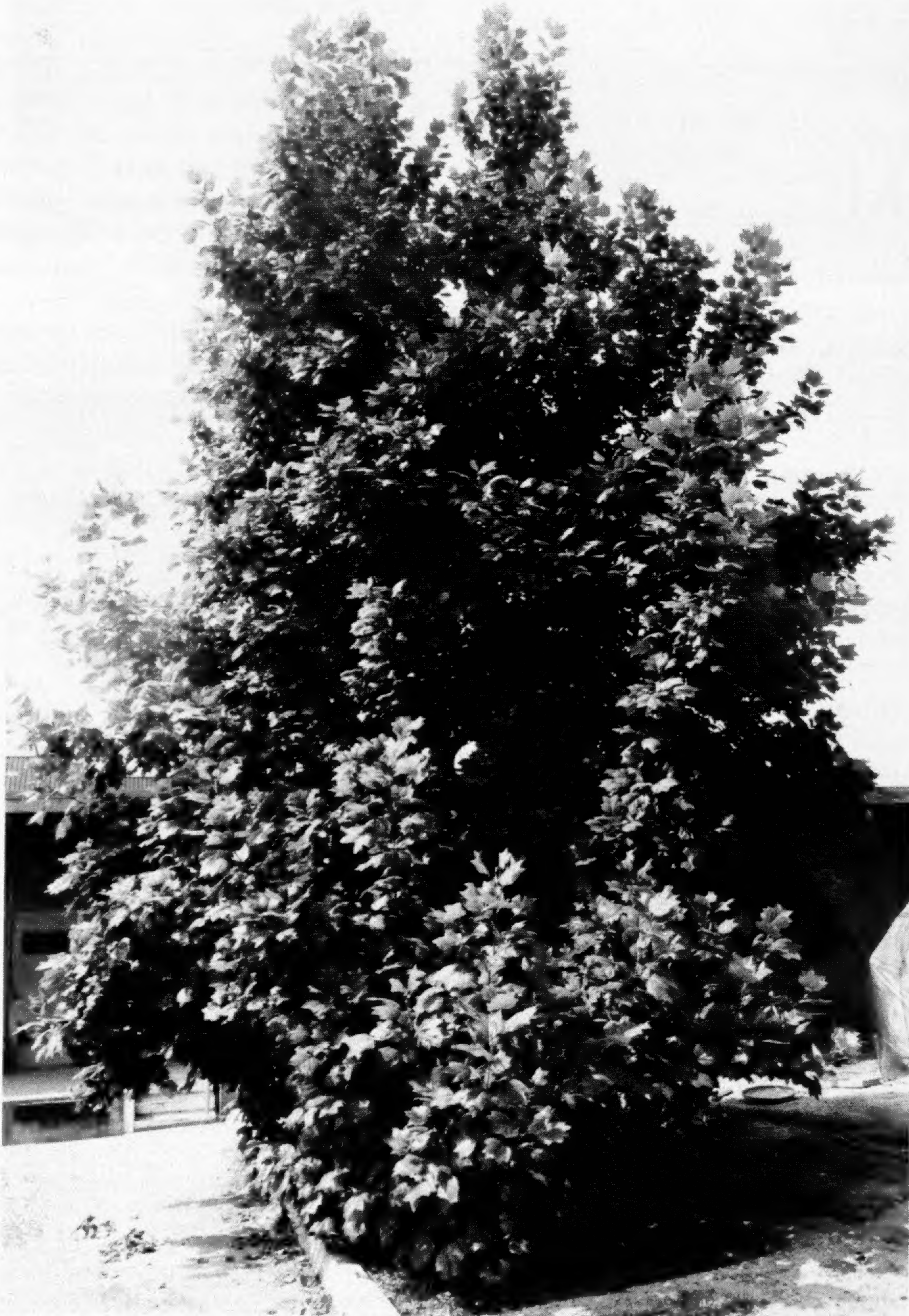
The leaves of the tulip tree are squarish in shape and with two or three pointed, paired lobes on each side. They are pale green when appearing in spring, deepening in color in summer and finally turning into a rich, rejoicing gold before falling in autumn.

The showy, large, cup-shaped and tulip-like flowers are borne singly

at the end of the new growth in spring. Their color is yellow and light green or orange and light green. Each flower has three sepals, six petals, many stamens and many pistils. The petals are in two sets. The pistils, each formed from one carpel, are closely arranged around the axis. The flowers are the favorite source of nectar for honeybees, and it has been suggested that the number of viable seeds is directly

related to the number of bees visiting the flowers. A mature tree yields up to four pounds of one of the most flavorful of honeys.

The fruit is an elongated cone composed of many dry, one-seeded, winged fruits called samaras by botanists and seeds by horticulturists and gardeners. Although the tulip tree is a prolific seed bearer, only a few seeds per cone are fertile; the rest are empty, nonviable seedcoats.



LuAnn B. Munns

This fine tulip tree (Liriodendron tulipifera) north of the Research building is 45 feet tall.

Lack of fertilization because of ineffective pollination is believed to be a principal cause for empty seed-coats. As the cones dry, the individual seeds are scattered by the wind to distances equal to four or five times the height of the trees. The cones mature from early August in the northern part of the range to late October in the South.

The tulip tree is seldom, if ever, propagated other than by seeds. When the seeds are sown in autumn, they generally come up the following spring, but when they are sown in spring or the beginning of summer, they remain a year in the ground before germinating. Seed stored and sown in the spring need pregermination treatment to overcome this dormancy. Cold, moist stratification of seed in bags of peat moss or sand and peat moss for 60 to 90 days has proved to be most satisfactory.

The wood of the tulip tree is light, soft, easy to work and is used for making boxes, crates, sashes, doors, shelving, furniture, musical instruments, veneer, etc. It also makes good hat blocks in the hat industry, because it does not absorb moisture present during the steaming process. The pioneers used tulip tree logs for building houses, wells and canoes. The canoes were made by hollowing out logs to extreme thinness. Such a canoe, 60 feet long, was made by Daniel Boone. He then piled his family and his gear into it and sailed down the Ohio into Spanish territory away from ungrateful Kentucky when his fortunes there ran low.

At the Los Angeles State and County Arboretum, *Liriodendron tulipifera* can be seen in quadrats I/3, I/4, I/7, H/8 and L/6. All these trees were planted in 1963. *L. chinensis* in quadrat H/6 was planted in 1953.

Dr. Enari recently retired as senior biologist at the Arboretum after a 25-year career with the Department.



Southern California Flora and Garden EXPOSITION

OCTOBER 30 through NOVEMBER 7, 1982

10 a.m. to 5 p.m.

*20,000 square feet of exhibit space
filled with floral displays,
garden settings,
AND
a nursery trade show*

ADMISSION: \$3.50 per person

(Price includes admission to the Arboretum and Exposition)

PREVIEW NIGHT RECEPTION

Friday, October 29, 1982 - 6:00 to 9:00 p.m.

\$7.50 per person (Free to CAF Members)



Bill Ross

Members of the Southern California Garden Panel celebrated the group's 20th anniversary during a meeting June 11 in the Sunset Demonstration Home Gardens

at the Arboretum. This advisory group of plant industry representatives meets nine times a year to provide information for future Sunset magazine articles and books.

LOS ANGELES STATE AND COUNTY ARBORETUM, Arcadia

SEPTEMBER 10, 11, 12 —
9 a.m. to 4:30 p.m.

Cactus and Succulent Show
San Gabriel Valley Cactus & Succulent Society

SEPTEMBER 12 — 6 p.m. to 9 p.m.

Harry James Concert and Picnic
\$8.50 for adults, children under 12 free

Arcadia Rotary Club

SEPTEMBER 18, 19 —

9 a.m. to 4:30 p.m.

Ivy Show
American Ivy Society

SEPTEMBER 25, 26 —

10 a.m. to 4:30 p.m.

Bonsai Show
Akebono Bonsai Society of So. Calif.

OCTOBER 9, 10 — 9 a.m. to 4:30 p.m.

Hemerocallis Tuber Sale
Southern Calif. Hemerocallis & Amaryllis Society

OCTOBER 29 — 6 p.m. to 9 p.m.

Preview Show — So. Calif. Flora and Garden Exposition
Admission \$7.50

OCTOBER 30, 31 — 9 a.m. to 4:30 p.m.

Koi Show
Ikeru Hoseki Koi Club

OCTOBER 30 THRU NOVEMBER 7 —

10 a.m. to 5 p.m.

Southern California Flora and Garden Exposition Exhibits (garden settings, landscape plots)

Events sponsored by California Arboretum Foundation

CALENDAR

SEPTEMBER, OCTOBER, NOVEMBER 1982

DESCANSO GARDENS, La Canada

**NO SEPTEMBER EVENTS
OCTOBER 1 THRU NOVEMBER 12 —**

9 a.m. to 4 p.m.

Art Show
Oil paintings on canvas by Charles Knecht

OCTOBER 16, 17 — 9 a.m. to 4:30 p.m.

Annual Plant Sale

OCTOBER 16, 17 — 9 a.m. to 4:30 p.m.

Antique Car Show
Horseless Carriage Club of So. Calif.

OCTOBER 30, 31 — 9 a.m. to 4:30 p.m.

Chrysanthemum Show
Glendale Chrysanthemum Society
Events sponsored by Descanso Gardens Guild

SOUTH COAST BOTANIC GARDEN, Palos Verdes Peninsula

SEPTEMBER 12 — 2 p.m.

Dahlia Growing Demonstration
Dick Kohlschreiber, dahlia expert

SEPTEMBER 19 — 2 p.m.

Talk — Shade Plants
Speaker from Ark Gardens

SEPTEMBER 26 — 2 p.m.

Talk — Cool Season Flowers
Dan Zilla from Elwood Nursery

OCTOBER 3 — 2 p.m.

Talk — Indoor Plants
Pam Miesel from Crest Nursery

OCTOBER 10 — 2 p.m.

Demonstration — Pine Cone & Succulent Wreaths
Suzy Seamans

OCTOBER 17 — 2 p.m.

Demonstration — Flower Arrangements
Silver Spur Garden Club

OCTOBER 24 — 2 p.m.

Slide show on world-famous Flower Shows

OCTOBER 30, 31 — 10 a.m. to 4:30 p.m.

Bonsai Show
South Coast Bonsai Association

NOVEMBER 6, 7 — Sat. 12 to 4:30 p.m.

Sunday 9 a.m. to 4:30 p.m.

Orchid Show
South Bay Orchid Society

NOVEMBER 14 — 2 p.m.

Talk — Succulents, Especially Caudices
Joe Clemons

NOVEMBER 28 — 2 p.m.

Talk — Winter Birds in Local Gardens
Jess Morton, Palos Verdes Audubon Society

Events sponsored by South Coast Botanic Garden Foundation