

LASCA LEAVES



Los Angeles County Department of Arboreta and Botanic Gardens



The new Hall of Environmental Education shown in the drawing held by Richard Ray comes closer to reality with a \$50,000 grant from ARCO.

ATLANTIC RICHFIELD FOUNDATION CONTRIBUTES TO HALL

RICHARD RAY, chairman of the development program committee of the California Arboretum Foundation, announced in July that the Atlantic Richfield Corporation contributed \$50,000 toward building the planned Hall of Environmental Education at the Los Angeles State and County Arboretum. Most of the balance of the cost for the \$650,000 building has come from private contributions and fund-raising projects at the Arboretum, according to Mr. Ray, who is also vice-president of the California Arboretum Foundation.

Construction of the building, slated to begin in September, will ease the present crowding of existing facilities at the Arboretum said James P. Curry, president of CAF, in accepting the grant.

The 8,900 square-foot auditorium of the new building project will accommodate over 900 people, a capacity unmatched by any other facility at the Arboretum. Plans call for housing the 20 major plant shows held annually at the garden in the auditorium. In addition, several thousand people attend classes and lectures at the Arboretum each year, and 36 civic and plant-oriented groups meet there regularly. A folding partition can also be used in the

future to divide the space into individual classrooms for lectures and meetings.

The contribution is in addition to a recent \$25,000 donation ARCO made to support ongoing public service programs at the Arboretum which is in keeping with their program of making grants to projects involved with environmental concerns.

CHRISTMAS OPEN HOUSE IN QUEEN ANNE COTTAGE

THE CHARM of Christmases past will be recreated to help ensure the brightness of future Christmases when the California Arboretum Foundation holds a fund-raising open house in the Queen Anne Cottage during the holiday season.

All proceeds from both the preview open house on Saturday, Dec. 6, and the public open house Sunday, Dec. 7, will be used exclusively for making repairs and additions to the Queen Anne Cottage. A few of the conservation projects planned are reupholstering several pieces of furniture and rewiring and repainting the interior of the cottage, according to history committee co-chairmen Marilyn (Mrs. John) Llewellyn and Jean (Mrs. John) Atkinson.

The preview open house will be divided into two separate sessions with only 300 tickets being sold for

LuAnn B. Munns

each time slot. The first party will last from 5:30 to 7 p.m. and the second from 7 to 8:30 p.m. Both groups will be able to enjoy wine and hors d'oeuvres in the Lecture Hall while watching informal modeling of authentic historical costumes from the Arboretum costume collection. Special trams will transport party-goers from the Lecture Hall to the Queen Anne Cottage. Once inside the cottage, visitors will be met by docents who will give highlights on history to visitors as they tour the building enjoying the ambience of Christmas as it was celebrated during "Lucky" Baldwin's era. Tickets for either the early or the late party are \$5 per person. Invitations will be mailed to Foundation members in November.

The cottage will be decorated for the Christmas party in late 19th century holiday splendor. Fresh

evergreen wreaths and garlands will embellish the mantlepieces and mirrors in each room. In the parlor, a large cut tree festooned with tinsel and reproductions of typical turn-of-the-century ornaments will dominate the room. Smaller live trees will bring the holiday spirit to other rooms. In the bedroom crocheted snowflakes, shiny glass garlands, and gingerbread men on a tree surrounded by toys from the Victorian era will delight the child in everyone. Another live tree in the music room will be adorned with blown glass ornaments in shapes fashionable during that era.

The hardworking docents will also be in the cottage from 10 a.m. to 4 p.m. during the public tours Dec. 7. Price for the public open house will be \$1 per ticket for everyone who wants to take advantage of the rare opportunity to see the cottage from the inside.

DESCANSO PLANT SALE

DURING DESCANSO GUILD's plant sale October 18 and 19, the plant propagating class from Descanso will experience one of the most rewarding joys of gardening — sharing plants they started and grew themselves. For the past year, class members have devoted one day each week to collecting, planting, and nurturing cuttings and seeds from unusual plants. Most of the plants are difficult or almost impossible to find in commercial nurseries because they do not fit modern mass marketing techniques.

Gerry (Mrs. Willard) Hubbard, plant sale coordinator, proudly pointed out that not only are the plants unusual, but they are being sold by people with an extraordinary amount of practical knowledge. Each of the 20,000 plants will be assigned to a booth staffed by the members of the propagating class who grew that particular type plant.

In addition, several visiting experts will be giving recommendations and advice during the weekend. Dr. and Mrs. Samuel Ayres Jr. will be in the flowering and ornamental tree booth. In the exotic plants booth, Margaret (Mrs. John) Urabec will dispense horticultural advice on the tea plant (*Thea sinensis*), the coffee tree (*Coffea arabica*), and the jojoba (*Simmondsia chinensis*). Burnelle Yarick in the native plants booth and Jack Caplan in the succulents booth are also well versed in the lore of plants in their specialties.

Sentimental gardeners who like to collect horticultural "antiques" will find rare treasures in the booths featuring old-fashioned roses and historic camellias. Roses for sale include 'Reine de Violettes' and the traditional sweetheart rose, 'Cecile Brunner.' Many of the old favorites among the camellias, although as beautiful as the newer cultivars, have been crowded out of commercial nurseries. One camellia that is

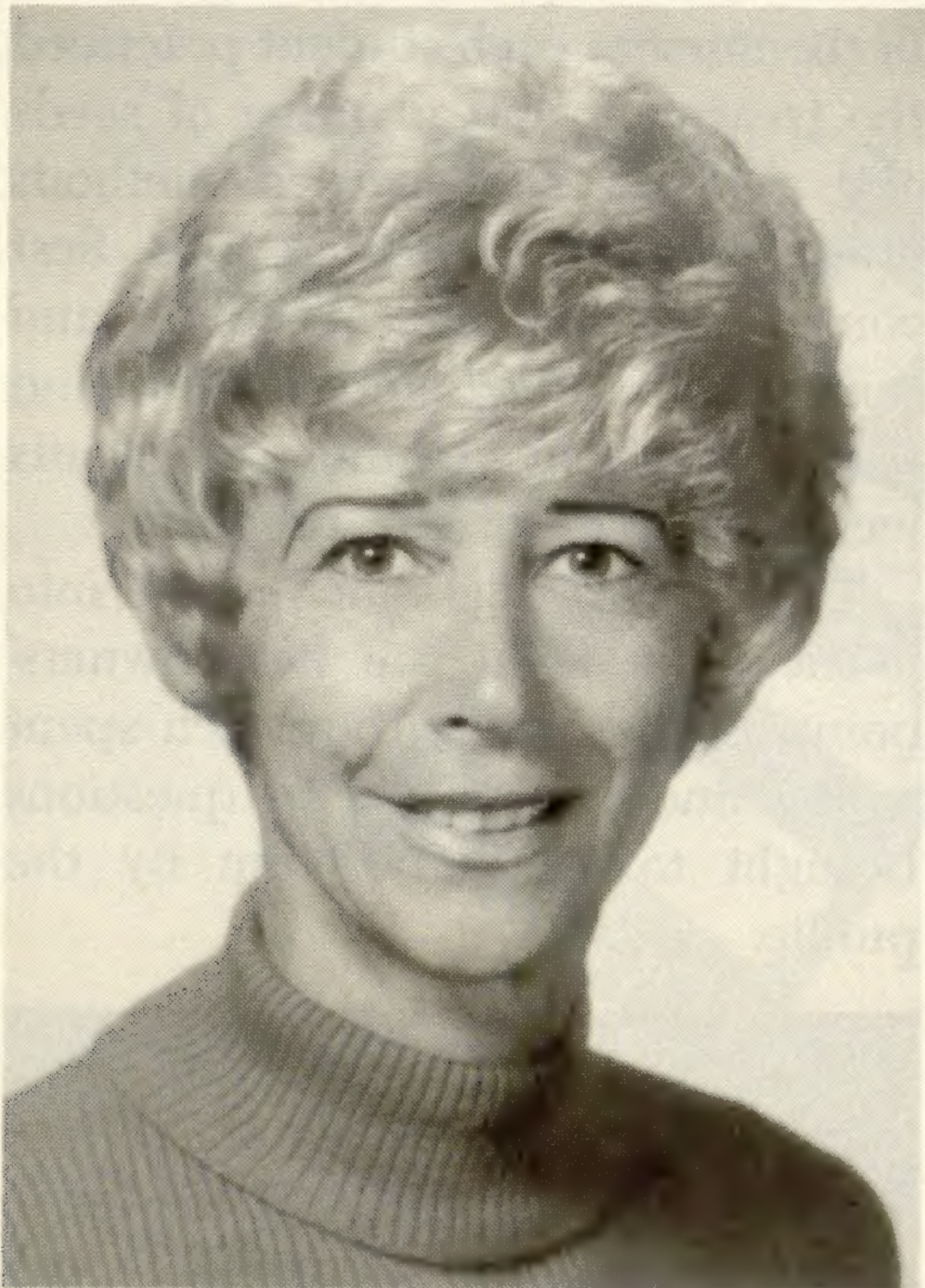


Hanging baskets held by Gerry (Mrs. Willard) Hubbard, sale co-chairman, and Randy (Mrs. Edward) McDonald will be among the 20,000 plants available at Descanso Guild's plant sale Oct. 18 and 19. In the back row from left are Florine (Mrs. Tedford) Andrews, co-chairman; Connie (Mrs. David) McKenney; and Nancy N. Dunn.

David J. Lans

seldom seen in private collections is 'Kingyo-Tsubaki,' called the fishtail camellia because the leaf tips are split and frilled.

Just a few of the other enticing plants for sale will be a wide variety of unusual ivies, cycads, and hanging baskets in the indoor-shade plants booth, a selection of ornamental vines, edible plants, and many medicinal and flavoring herbs. For chrysanthemum fans, there will be a collection of both tree and bush types. Indian corn, gourds, and pumpkins will be among the decorative items available for Fall projects.



Cindy Peters

NEW SCBG TRUSTEES OFFICERS

CHARLOTTE (Mrs. Richard T.) Peters, known to all as Cindy, was recently elected president of the Board of Trustees, South Coast Botanic Garden Foundation.

Mrs. Peters has been chairman of the Fiesta de Flores, the Foundation's annual plant sale, for the past two years and assistant chairman in 1977 and 1978. Under her guidance the Fiesta has shown substantial increases in attendance and revenue for both 1979 and 1980. Throughout the year she is responsible for the exhibits in the center

court and is actively involved in the display greenhouse.

A native of California, Mrs. Peters resides with her husband in Torrance.

Other officers elected for the 1980-81 term are Florence (Mrs. Edward) Siudmak, first vice-president; Martin Gould, second vice-president; Frank Stanton, secretary; and Mrs. Edna Schoenbaum, treasurer.

FIESTA DE FLORES PROFITS

THE FIESTA DE FLORES on May 17 and 18 was the most profitable of the plant sales that have been held each spring for the past 18 years at the South Coast Botanic Garden, said Cindy (Mrs. Richard T.) Peters, Fiesta chairman. An early tally indicated a profit of \$23,000 for the sale and preview party. Proceeds from the fund raising event will be used by the SCBG Foundation to help support maintenance and development at the garden.



Edward Hartnagel, assistant superintendent, and Jackie Majeski, Fiesta de Flores food chairman, examine one of the epiphyllums for sale at the Fiesta.



South Coast Botanic Garden staff and Foundation members collected thousands of plants for the Fiesta de Flores May 17 and 18. The sale this year was the most profitable one to date.



David Cameron



Jane Olmstead



David Cooke

ARBORETUM INTERNS

THE CALIFORNIA ARBORETUM FOUNDATION supplied funds again this summer to continue the horticultural internship program at the Los Angeles State and County Arboretum. Five students from local schools were chosen on the basis of their interest in making a career in the field of horticulture.

Two students from Mt. San Antonio College, David Cameron and Jane Olmstead, were recommended by their instructor, Charles Hewitt. David Cooke and Rubin Flores, upper division students at the California State Polytechnic University, Pomona, also took part in the program. For the first time, a high school student was selected as an intern at the Arboretum. Damian Sanchez will be a senior next year at Eagle Rock High School, according to John Provine who, as Arboretum superintendent, coordinated the internship program.

The program provided the Arboretum with additional manpower at the same time it gave the students a practical taste of many facets of horticultural work. During the nine-

week program, each student worked under the direction of several different Arboretum staff members. The interns did not work as a team this year, instead they rotated individually through the six phases of the program.

Most of the interns' time was spent on the grounds handling and learning to maintain equipment such as mowers and sprinkler systems and working on special construction projects. The students also got first-hand experience on the proper methods for weed control, watering, mulching, planting, and making out plant status reports. During a stint in the nursery each student practiced the treatment and planting of seeds and cuttings and learned methods for mixing and sterilizing soils. Pest control, nursery housekeeping, and reporting on seed germination and the subsequent caning of plants were also part of the program.

The students got an insight into horticulture from the homeowners' point of view when they each spent a day finding answers to questions brought to the Arboretum by the public.



Damian Sanchez



Rubin Flores

Australian Grass-Trees

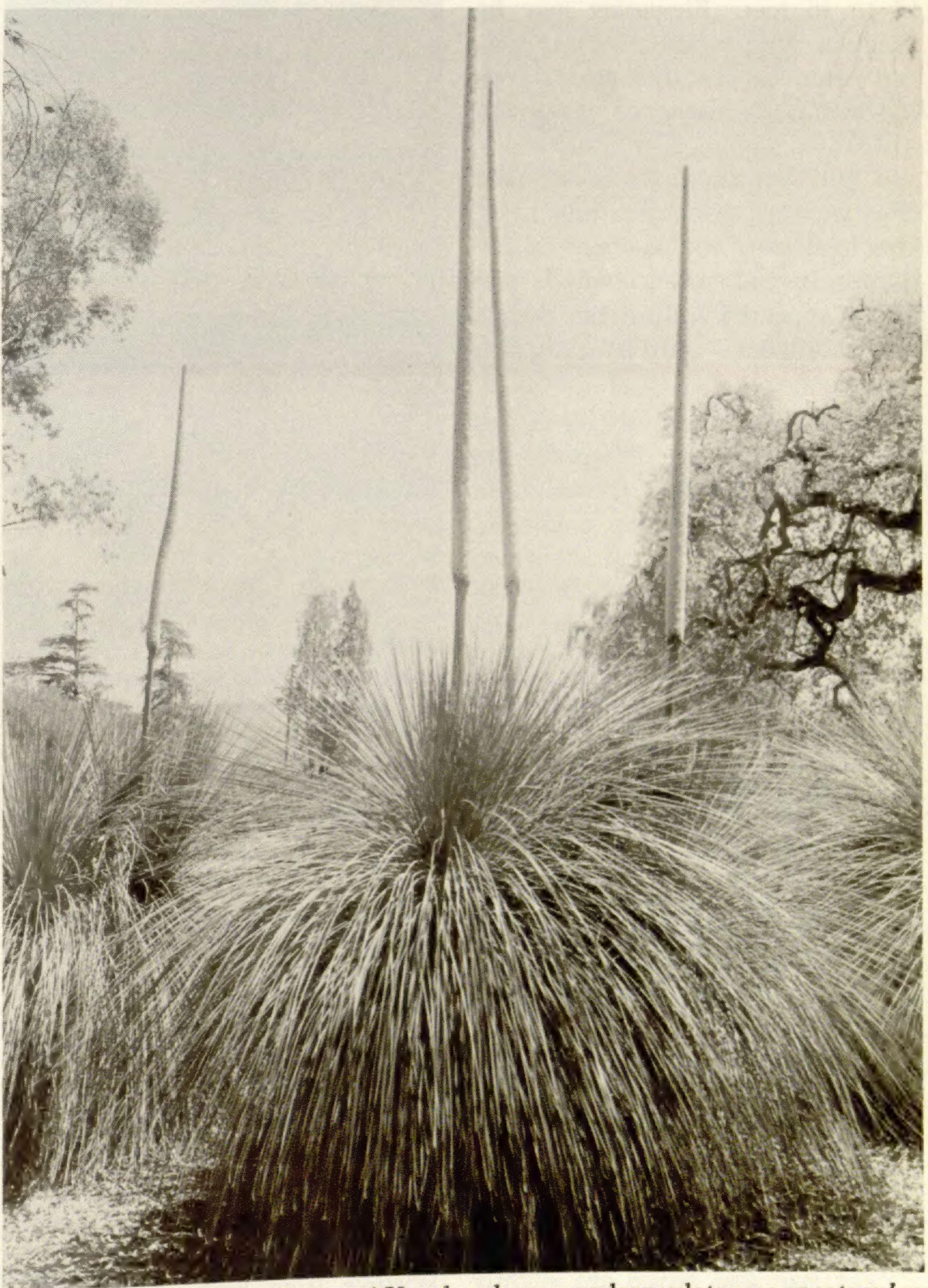
Gary Cromwell



Xanthorrhoea (pronounced zan'-thor-ee'-uh) plants commonly are known as grass-tree, grass-lily, blackboy, or yacca. These are ancient, long-lived, woody perennials with dense terminal tufts of long grasslike leaves and stout, dark-colored stems. Historically, the genus has been included in the rush family (Juncaceae), the lily family (Liliaceae), and within its own family, the Xanthorrhoeaceae. Many contemporary botanists regard the group as comprised of large lilylike plants and retain its position within the Liliaceae.

"Xanthorrhoea" is a composite of two Greek words, *xanthos* (yellow) and *rhein* (to flow), referring to the copious dark yellow resin contained in the stems of some species. The genus contains 11 to 15 species, most of which are indigenous to Australia and Tasmania. Unconfirmed reports also indicate the natural occurrence of grass-trees on the islands of New Caledonia and New Guinea.

Grass-trees inhabit the Australian states of Queensland, New South Wales, Victoria, South Australia, and Western Australia. They may form either small isolated populations or may cover large tracts of ground in great numbers. They occur on dry ridges in mountainous areas, among granitic and other rock formations, in wallums (barren sandy places in coastal regions), on river banks, in extensive flatlands called grass-tree plains, and as understory compon-



The 10-foot flowering spikes of Xanthorrhoea quadrangulata are spectacular. These large plants grow near the north road in the Arboretum's Australian section.

ents beneath dominant eucalypts in dry sclerophyll woodland. Grass-trees often are conspicuous features of the landscape within their ranges where they tolerate prolonged heat and drought.

Without flower stalks, grass-tree specimens vary in height from one to more than six feet. Fully developed flower stalks may double or triple total plant size; for example, a five-foot vegetative specimen of *Xanthorrhoea arborea* in flowering condition may attain a final height of 14 to 15 feet. Flowering may be irregular with reference to seasons and often occurs after brush fires. It was the fire-blackened stem, with its hairlike clump of long thin leaves and tall cylindrical flowering stalk, which caused early Australian settlers to think of the plants as "black-boys." In the fading twilight the plants appeared against the skyline as aboriginal warriors carrying spears.

The stem of the grass-tree also is known as a caudex. It varies from a thick, unelongated subterranean structure, as in *X. minor*, *X. gracilis*, and *X. pumilio*, to a stem about two feet tall in *X. australis*, and to the treelike forms of *X. quadrangulata*, *X. preissii*, and *X. arborea*, which may reach 10 feet in height. Stem structure is similar to that of other arborescent monocotyledons such as *Dracaena* and *Yucca*. In *Xanthorrhoea*, it consists of a tissue core enclosed by imbricate, fibrous leaf bases held together in solidified resin. The core is comprised of isolated vascular strands embedded in fundamental tissue. Secondary xylem (wood) is late-forming and limited in amount when compared with woody dicotyledonous stems such as oak or ash. Stems may attain a diameter of 12 to 18 inches and usually are monoaxial, but branches sometimes develop.

Leaf size and shape are slightly variable among species. Leaves are generally persistent, numerous, long,

and narrow with broad bases. They may be spreading or somewhat recurved. Leaf length and width range from three or four feet long by one-fourth inch wide in *X. arborea* to one or two feet long by one-twelfth inch wide in *X. minor*. Leaf shape in cross-section may be flat, triangu-



Hundreds of dark brown fruits of *X. quadrangulata* jut like small bird beaks from the surface of the spike. Each leathery capsule is about one-half inch long by one-fourth inch wide and contains small black seeds.

lar, or diamond-shaped, or sometimes a combination of flat or concave on the leaf upper face and angled on the lower face. Foliar color varies from dark green to light gray-green. All leaves are glabrous (without hairs) and are brittle, particularly when young. Leaves bear numerous fine toothlike projections along their margins which can cut the fingers of one who handles them carelessly. Old dead leaves hang skirtlike from lower stem portions of larger specimens.

Thousands of small cream to white

flowers are borne in a dense inflorescence on an apparently terminal stalk which is spectacular in its size and beauty. Flowering spikes plus scapes range from less than one foot to more than 10 feet in length, depending upon the species. Spike and scape may be of unequal or similar length and inflorescences are one-half inch to about two inches thick.

The flower is about one-half inch across and one-fourth to one-half inch long. It has a persistent six-parted perianth (petals and sepals collectively) with one inner and one outer whorl of three parts each. There are six distinct stamens and a superior ovary. Bracts and bracteoles of different lengths subtend each flower. Although the flowers appear white to the naked eye, their parts are translucent under the microscope. Green areas containing chlorophyll are visible on certain of the perianth segments, even after the flower has withered and the leathery three-valved fruit capsule has begun to develop. Seeds are flat and dull black in color. With age, all flowers turn dark to rusty brown on the stalks.

Information is scanty regarding prehistoric use of the plants by aboriginal cultures. Presumably, the stems and dead flower stalks served in house construction, for ceremonial purposes, or for campfire fuel. With care, the leaves can be woven into loose mats or baskets. The resinous stem contents may have served as a natural dye substance. Whether the flowers or fruits are edible is unknown. The soft leaf bases and young shoot tips of the Dackowar grass-tree (*X. arborea*) were consumed by native people of northern Queensland, while the stem resin from *X. quadrangulata* was used by South Australian aborigines as an adhesive to affix stone axe blades and spearpoints to wooden shafts.

Grass-trees are despised by Australian beekeepers as the source of

creosote-flavored pollen and honey, and because the bees tend to collect large amounts of resin from the plants for propolis (bee glue) used in cementing and caulking their hives. Grass-tree propolis is objectionable to apiarists because it sets hard in cold weather and creates difficulty in manipulation of hive equipment; in hot weather it softens into a sticky mess. For these reasons, beehive owners either destroy the plants or avoid grass-tree areas.

Of modern commercial importance is the yellowish acaroid resin which accumulates on stem surfaces near the leaf bases. Three important sources of this resin are *X. australis*, *X. hastilis*, and *X. quadrangulata*. Harvesters cut the plants down, the resin is extracted, and processing centers treat the resin with nitric acid to obtain nitropicric acid, an expensive poisonous material used in dyes, explosives, and analytical chemistry. Other resin products include varnishes, paper coatings, sealing wax components, cabinetry top-coatings, and candy glazes. Leaves of some species are used to manufacture household brooms.

About one-fourth of the known species of *Xanthorrhoea* are represented at the Los Angeles State and County Arboretum. Six mature specimens of *X. quadrangulata* and *X. preissii*, from four to seven feet tall, are located near the north road in the Australian section. They have the treelike habit of *X. arborea* and are a favorite photographic subject for visitors during the April to July flowering season. Just west of these plants, clustered beneath *Eucalyptus* trees, are three specimens of *X. media* subspecies *latifolia*, from three to five feet high, and six one-foot to three-foot tall *X. australis* plants. These are 10 to 20 years younger than the *X. quadrangulata* specimens and therefore appear as simple tufts of leaves emerging directly from the soil.

Near the bromeliad greenhouse, south of the Arboretum's Garden for All Seasons are five specimens of *Xanthorrhoea*. These were planted out at different times, and they vary from 18 inches to more than five feet tall. The larger specimens are *X. quadrangulata* and the smaller are *X. media*. At least two of these newer plants flowered this year.

Once established, grass-trees are easy to care for and will reward the discriminating homeowner with their durability and beauty. They

may be propagated either by seeds or offsets but must be transplanted only when young. They tolerate most well-drained soils and can survive erratic watering and neglect. On a patio they may be grown in tubs in a peat-loam compost. When used as a garden border or bed planting, young grass-trees should be sheltered from weather extremes.

*Gary Cromwell is a biologist, ethnobotanist, and taxonomist in the Department's Research Division.
(Photos by William Aplin)*



The smaller plant size of such species as X. media make them ideal for confined garden spaces. These attractive plants do best in full sun and loose sandy or loamy soil.



Happy Holidays — Christmas trees, a brimming punch bowl, and toys from the Victorian era will evoke the spirit of Christmas as it may have been celebrated in the Queen Anne Cottage almost a century ago. Foundation

members and their guests can tour all the festively decorated rooms of the cottage during a benefit open house on the evening of Dec. 6. (Photos by William Aplin)

LOS ANGELES STATE AND COUNTY ARBORETUM, Arcadia

- SEPTEMBER 7 — 2 p.m.**
Sunday Afternoon Talk*
"Bromeliads"
Tim Lorman, horticulturist
- SEPTEMBER 13, 14—9 a.m. - 4:30 p.m.**
Cactus and Succulent Show
San Gabriel Valley Cactus and Succulent Society**
- SEPTEMBER 21 — 2 p.m.**
Sunday Afternoon Talk*
"Growing Winter Annuals"
Ron Call, education assistant
- SEPTEMBER 20, 21—9 a.m. - 4:30 p.m.**
Fall Garden Fair, horticultural field days
California Arboretum Foundation
- SEPTEMBER 27, 28—9 a.m. - 4:30 p.m.**
Akebono Bonsai Show
Akebono Bonsai Society**
- OCTOBER 4, 5 — 9 a.m. - 4:30 p.m.**
Plant show and sale
Southern California Horticultural Institute**
- OCTOBER 19 — 2 p.m.**
Sunday Afternoon Talk*
"Color in the Landscape"
Dr. Gary Wallace, botanist
- NOVEMBER 1, 2—9 a.m. - 4:30 p.m.**
Novice Bonsai Show
Santa Anita Bonsai Society**
- NOVEMBER 14 — 8 p.m. to 10 p.m.**
Lecture, "Think Small with Calif. Natives"
Dick Tilforth, speaker
Theodore Payne Foundation**

CALENDAR

SEPTEMBER, OCTOBER, NOVEMBER

- NOVEMBER 23 — 2 p.m.**
Sunday Afternoon Talk*
"Plants for Small Areas"
John Provine, superintendent
*Sponsored by Calif. Arboretum Foundation
**Co-sponsored by Calif. Arboretum Foundation
- SOUTH COAST BOTANIC GARDEN, Palos Verdes Peninsula**
- SEPTEMBER 14 — 2 p.m.**
Sunday Afternoon Talk*
"Plant Propagation"
Ed Hartnagel, assist. superintendent
- SEPTEMBER 21 — 2 p.m.**
Sunday Afternoon Talk
"Choosing the Right Fruit Trees For Your Area**"
- SEPTEMBER 28 — 2 p.m.**
Sunday Afternoon Talk*
"Soil Amendments"
Wayne Morgan, agronomist
- OCTOBER 5 — 2 p.m.**
Demonstration, making Christmas wreaths*
- OCTOBER 12 — 2 p.m.**
Demonstration, flower arranging and making a potpourri*
- OCTOBER 18, 19 — 9 a.m. to 4:30 p.m.**
Rose Show
South Coast Rose Society**

- OCTOBER 25, 26—10 a.m. to 4:30 p.m.**
Bonsai Show
South Coast Bonsai Association**
- NOVEMBER 2 — 2 p.m.**
Talk, "Planting Now for Color in the Fall, Winter, and Spring"*
Rocky Marshall
- NOVEMBER 9 — 2 p.m.**
Talk, "Planting a Succulent Wreath and Making an Evergreen Wreath"*
- NOVEMBER 16 — 2 p.m.**
Talk, "Herbs for Everything"*
- NOVEMBER 30 — 2 p.m.**
Holidays in the Garden*
Displays of Christmas decorations for the home
*Sponsored by South Coast Botanic Garden Foundation
**Cosponsored by South Coast Botanic Garden Foundation

DESCANSO GARDENS, La Canada

- SEPTEMBER 14 — 10 a.m.**
Sunday Morning Walk*
Trees of Descanso Gardens
George Lewis, superintendent
- OCTOBER 18, 19—9 a.m. to 4:30 p.m.**
Plant sale, rare, unusual plants
Descanso Gardens Guild
- NOVEMBER 1, 2—9 a.m. to 4:30 p.m.**
Chrysanthemum Show
Glendale Chrysanthemum Society
*Sponsored by Descanso Gardens Guild
**Co-sponsored by Descanso Gardens Guild