May/June, 1978

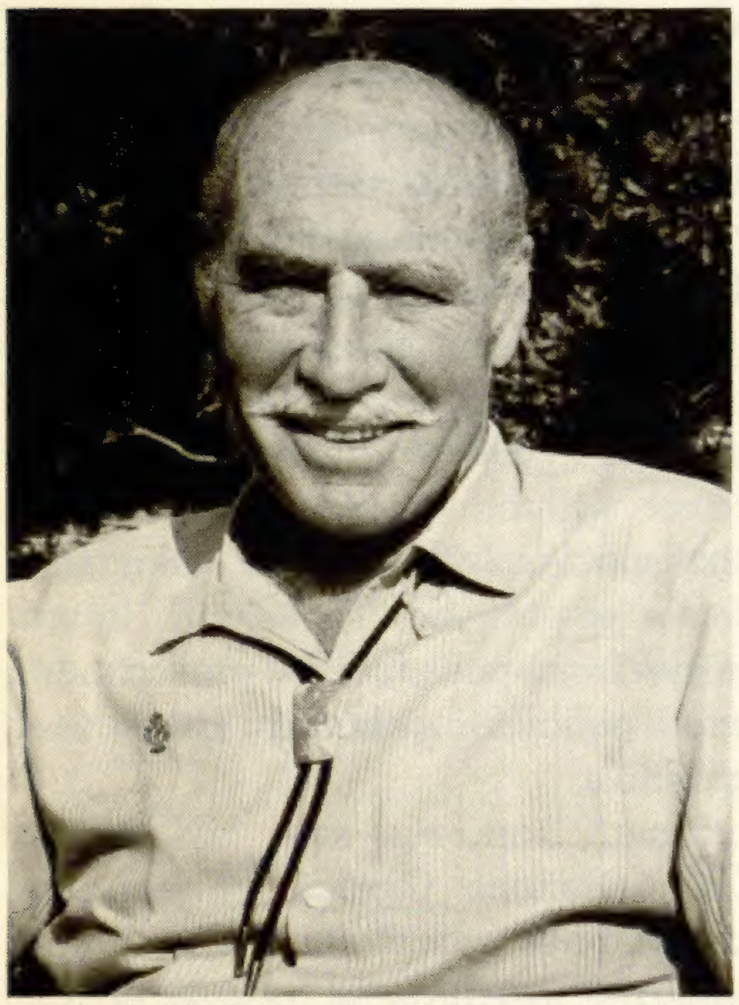
Lasca Leaves

Los Angeles County Department of Arboreta and Botanic Gardens

New Trustees

THE TWO NEWEST members of the California Arboretum Foundation's Board of Trustees are Morgan Evans, a landscape architect long associated with the Walt Disney organization, and Richard M. Ray, president of the Horticultural Publishing Company. With the addition of these gentlemen, each of whom will serve three terms totaling nine years, the Board now has forty members.

Morgan "Bill" Evans is a native of Southern California who has been involved in landscaping and horticulture for more than forty years. In the mid-thirties he was a partner in Evans and Reeves Nurseries in Los Angeles, specializing in rare plants and custom landscaping. In 1954, Bill and his brother Jack were commissioned to provide landscape services for Disneyland. By 1967, he had become so involved with the Disney organization he closed his own business and joined the Disney staff, devoting full time to the landscape development of Walt Disney World. Bill is the author of Disneyland's World of Flowers, an official guidebook to the park's landscaping. He is a member of numerous garden societies, among them the Pacific Tropical Botanic Garden, American Horticulture Society, Royal Horticultural Society, and the Botanical Society of South Africa. He is also past president of the American Institute of Landscape Architects and currently serves as a member of the California State Fair Commission.



Morgan Evans

Photos by William Aplin

Richard Ray

Dick Ray is a native of Illinois who made his way into the horticultural world through the publishing field and his own interest in the subject. After graduating from Northwestern University, he entered into a variety of publishing ventures that led to his formation of the Horticultural Publishing Company of which he is president. In association with Regensteiner Publishing Company, Dick's company is the independent producer of the Ortho Book Series for the Chevron Chemical Company. In addition to his publishing associations, he is a founding member of the Garden Workshop Horticulture Therapy Program, a school for the developmentally disabled in Lakeside, California. He is also a member of the National Council of Therapy and Rehabilitation through Horticulture. Dick is a member of the Los Angeles Men's Garden Club and serves as distribution coordinator for "Color for the Landscape," the well known guide to southern California landscaping published under the direction of Dr. Samuel Ayres, Jr., and the editorship of Dr. Mildred Mathias, emeritus professor of Botany at UCLA.

Garden Internes

LAST SPRING, four University of Delaware graduate students, Karla Patterson, Jane Pepper, Kim Bast, and Phil Correll, spent a month at the Los Angeles State and County Arboretum in partial fulfillment of the curricula requirements of a garden management program sponsored jointly by the university and Longwood Gardens in Kennett Square, Pennsylvania. As Longwood Fellows, they were pursuing a two-year course of field and classroom work leading to a master's degree in horticulture. Accompanying them during their stint at the Arboretum was Dr. Richard Lighty, coordinator of the Longwood program and professor of horticulture at the university and currently president of the American Association of Botanical Gardens and Arboreta.

There are two classes in the program each year with a total enrollment of ten students, all of whom receive a fellowship. The program is unique in that it offers opportunities for those primarily interested in garden management. At the Arboretum they were able to observe and discuss management at various levels and at the same time engage in the kind of practical work they would likely be supervising at some future date. Their assignment here was to assist in the location and mapping of plants.

During their stay in Arcadia, the students were the guests of members of the Board of Trustees of the California Arboretum Foundation who were able to offer their special insights into garden activities. Before returning home, they visited the Tournament of Roses float-making center and gardens in San Diego and San Francisco.

Jane Pepper

Kim Bast

Karla Patterson

Phil Correll

Photos by Frank Simerly

Fiesta de Flores

ALWAYS THE BIGGEST event of the year at South Coast Botanic Garden, this year's Fiesta de Flores on May 20 and 21 is certain to continue the tradition. It will be highlighted by an outstanding plant sale that no home gardener will want to miss and that is motivated by the Foundation's fund-raising program to help pay for the garden's new buildings. To maximize the effectiveness of the sale, a fine collection of rare and exotic plants has been gathered. Included are succulents, cacti, and orchids chosen for their unusual color or shape. Among plants not commonly available will be varieties of the tropical twining vines, dioscorea; morning glories or ipomoea; the low-growing perennial herb, raphionacme zeyherli; euphorbias; and bombax trees. A selection of rare pelargoniums from a Santa Barbara grower specializing in unusual geranium varieties is expected to prove highly popular. Another sale category will offer what in effect will be unique mementos of the garden. These will take the form of original boutique items made from pods, seeds, pine cones, and pebbles gathered from the grounds.

Apart from the sale, the South Coast Botanic Garden Foundation has planned attractions that will absorb the attention of people of all ages. For the children, there will be a special area where they can pot their own plants. For art lovers, there will be demonstrations of flow-

er arranging, bonsai, Sumi Japanese brush painting, and the mounting of bromeliads on cork. Those interested in the practical aspects of gardening can attend lectures by Joe Littlefield, veteran commentator and practitioner in the field. And for the photographers, and those who just like to stroll about and look, there will be fern, bromeliad, herb, fuchsia, and vegetable displays.

Foundation docents will offer guided walking tours for the energetic, and for those preferring a more relaxed view of the garden there will be the usual tours by tram.

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Stock Chaser

BESIDES DONATING a new Arboretum tram last summer, the California Arboretum Foundation purchased a flat-bed electric truck for the Arboretum nursery. Known in the trade as a "nursery stock chaser," the vehicle is an all-steel, 10-foot-long, uncovered truck powered by six rechargeable batteries. It features a flat bed approximately six feet long by three and a half feet wide that will permit moving all but the largest plants between the nursery and the grounds. Cost of the much needed vehicle was $3,269. A nine-foot trailer designed for the power unit is on order, and when it arrives the two units will not only provide the necessary flexibility needed for moving plants, but will also be of great use during such events as the Baldwin Bonanza where a quiet, mobile, non-polluting truck is needed to move plants purchased by the public to their cars.

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CAF Annual Meeting

THIS YEAR'S California Arboretum Foundation business meeting, to be held Tuesday, June 20, will have a special flavor to it certain to please attending members. It will mark, first of all, the 30th anniversary of the founding of the organization. With this in mind, Foundation president Ruth Mary Larson has arranged an early evening meeting starting with guided tours at five, dinner at six followed by a brief business session, then a unique fashion show capped by the annual plant distribution. The scene will be that lovely and appropriate area, the mall in front of the Queen Anne Cottage.

The fashion show will focus not so much on clothes as on the Arboretum history they reflect from the Baldwin era, or about 1875 to 1950. Sandy Snider, Arboretum historian, will be the commentator as twenty or more ladies of Las Voluntarias model the clothing styles of that 75-year period, the dresses and other items of apparel drawn from the Arboretum historical collections.

Before going home, members will have a choice of two plants to take with them. Superintendent John Provine has selected *Helichrysum bellidioides,* a perennial from New Zealand commonly known as straw flower because of the straw-like texture of the flowers and because they last a long time when cut and dried, and *Ardisia crispa,* a shrub or pot plant, indoors or outdoors, from China notable for its long-lasting crop of red berries.

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Spring Extravaganza

THIS YEAR'S Spring Extravaganza at the Los Angeles State and County Arboretum will be held June 10th and 11th, a little later in the season than in the past. It will be the fifth Extravaganza to be staged and like the others will offer the gardening public just about everything it might wish to see or hear about in the world of horticulture.

A totally new feature will be Eucayptus Days designed to acquaint the public with the great variety of plants in this genus that offer a wide range of landscape possibilities. There are many who still associate eucalptus with the giant blue gum, a tree far too large

New nursery cart purchased by California Arboretum Foundation.

Photo by William Aplin

for the average home garden. The Arboretum's Australian Section contains about 180 out of approximately 500 species of eucalyptus, making it one of the largest collections outside Australia. Experts will give guided walking tours through the section, focussing attention on those species having the greatest potential for home use such as the low-growinging shrub with roselike flowers, *E. rhodantha*. In anticipation of an aroused interest, visitors will be given the opportunity to select among some 20 species of eucalyptus seedlings and seeds that will be offered for sale for this event only.

Regular features of these horticultural field days will include exhibits by the Palm, Cactus and Succulent, Santa Anita Bonsai, Hemerocallis and Amaryllis, Fern, Begonia, Epiphyllum, Camellia, Bromeliad, Orchid, and Pasadena Horticultural societies, and others. Each of these will have representatives on hand to discuss their specialties with interested visitors. A very popular feature are the plant clinics where visitors can get an answer to just about any horticultural question and where they can bring their own plants for identification or for diagnosis of suspected disease or growth failure. The Arboretum Plant Science Reference Library will be open and staffed so that visitors can take advantage of its wide range of books and periodicals.

Also open both days will be the Tropical Greenhouse, a repository of ferns, orchids, bromeliads and not-often-seen economic plants such as the vanilla bean vine. The propagation nurseries will also be open as will the research building which will have research staffers on hand to explain the many exhibits. Always a highlight will be the twice-daily vegetable garden demonstrations, conducted outdoors next to the Garden For All Seasons with bleacher seating to provide every visitor with a good view of the proceedings.

Prototype Greenhouse

AN EXPERIMENTAL GREENHOUSE constructed by Vimar Incorporated, a firm specializing in products fabricated from PVC (polyvinylchloride), was installed at the Arboretum last fall. Developed by Vimar and the Arboretum as a possible prototype medium-sized, low-cost greenhouse, the 15- by 25-foot structure is composed of double sheets of PVC over a wooden frame. The area between the sheets is inflated so as to provide insulation that absorbs the heat of the day and gives it off at night. A water-filled sleeve around the base acts as a seal against the bare ground and as a stabilizing weight to prevent moving in the wind.

There are a number of advantages to be gained from a greenhouse of this type. It is portable and probably won't require a building permit. As a temporary structure it is not taxable. It is expected to last 8 to 10 years, which is at least three times longer than polyethylene-type greenhouses currently being used.

The idea of using PVC in double sheets for a greenhouse developed from use of the material for swimming pool covers that would eliminate the need for heaters and thus save energy. The potential for its use for greenhouses is much greater. In addition to the model being tested by the Arboretum nursery, Vimar will supply an igloo-shaped, homeowners' model that will be placed in the Arboretum's Garden For All Seasons for visitors to examine. An added esthetic value for homeowners lies in the fact that PVC can be produced in a variety of colors.

(Above) Low-cost, polyvinylchloride greenhouse being tested at the Los Angeles State and County Arboretum. At left, homeowners' model.

Photo by William Aplin

(*LASCA continues after page* 36)

Pepper

A Driving Force Behind the Great Explorers

Leonid Enari

THE SEARCH for pepper has played a colorful part in the history of the world, stimulating exploration of the globe and opening up new countries to trade and Western civilization.

Pepper was cultivated in India and the Indonesian Islands long before the Christian era and was one of the most important commodities of early Indo-European trade. By the first century A.D., Rome was already importing pepper from India while exporting red coral, a commodity the Indians valued as a charm against disease and danger. Unfortunately for Rome, this arrangement resulted in a gross trade imbalance requiring the sending of large shipments of gold and silver eastward, a practice causing a continual drain on the great empire's monetary reserves.

Pliny the Elder, the Roman naturalist, encyclopedist, and writer, complained bitterly that pepper sold at one hundred times its original cost by the time it arrived in Rome. The high prices inevitably attracted unscrupulous merchants who increased their profits further by diluting pepper with various foreign materials and reselling the resultant product at astronomical prices. This practice became so widespread that the authorities in Rome, Alexandria, and Baghdad enacted laws making any adulteration of pepper and other spices punishable by death.

For many centuries, pepper was ranked in importance with gold and silver. When Alaric, the King of the Visigoths, appeared with his hordes before the wall of Rome in 408 A.D., he demanded 5,000 pounds of silver, 3,000 pounds of pepper, 4,000 silk tunics, and 3,000 valuable skins as ransom against sacking the city. The Romans paid the price, only to discover that this did not prevent the Goths from capturing and plundering the eternal city two years later, an event that started the collapse of the Western Roman Empire.

Throughout the Middle Ages, Europe was obliged to buy pepper from the Arabian traders who controlled the bulk of the spice traffic. That this pepper came from India and later from Java was kept secret by the Arabs for centuries. To discourage possible competition, the Arabs spread fantastic stories of monsters, dragons, and fierce wildmen inhabiting the faraway spice islands. From India, pepper was taken to Arabia, and from Arabia to Alexandria, Venice and Genoa whose wholesalers added more than their fair share to its already inflated price.

One of the reasons why pepper and, to a lesser extent, other spices were so much in demand in Europe in medieval times, and even later, was the poor quality of the foods available and the monotony of the very limited diet. There were no potatoes, tomatoes, beans, squashes, and many other vegetables and fruits we enjoy in the twentieth century, nor was there any sugar, coffee, tea, cocoa, or chocolate. And of course, there was no refrigeration or plumbing either.

Pepper was used not only to improve the taste of certain foods but also as a preservative for meat. It was also believed that consumption of pepper would keep away diseases. When the Black Death landed on the shores of Italy in 1347, having already devastated Asia and Northern Africa, much pepper was eaten as a preventive measure. This did not, however, prevent the plague from killing in only three years approximately twenty-five million Europeans, or roughly one-fourth of the continent's entire population.

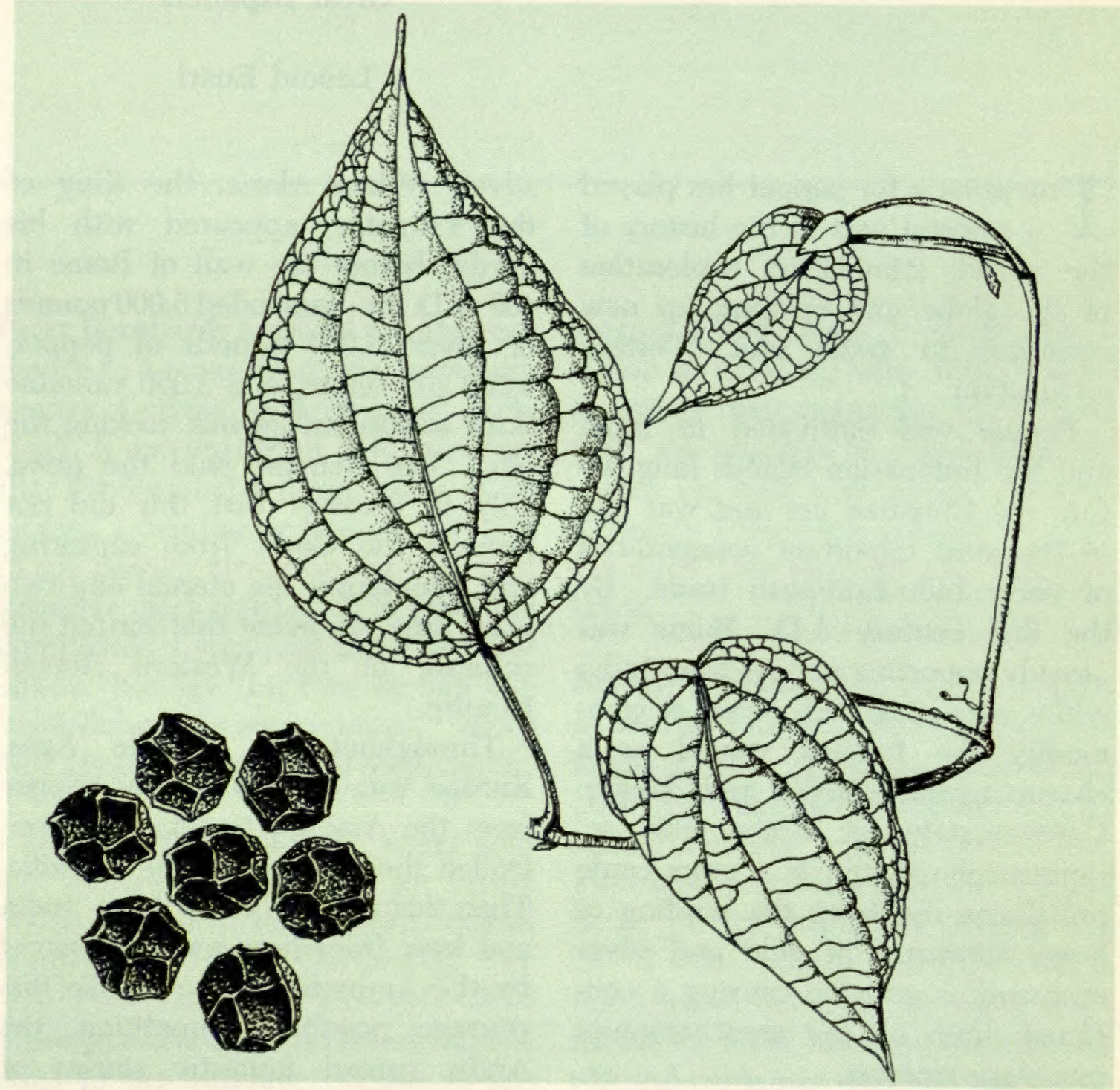
The demand for pepper coupled with its high high cost were the main motivations in Portugal's efforts to find a sea passage to India. When the Portuguese navigator Vasco da Gama cirumnavigated the Cape of Good Hope and reached the spice-rich port of Calicut on the west coast of India in 1498, the Arab monopoly was broken, and Lisbon became the most important trading center for oriental spices and the richest port in Europe, replacing Venice and Genoa. Christopher Columbus, who tried to reach India in the east by sailing west, was not so lucky. Instead of India, he only rediscovered America, and instead of pepper he only found yams, kidney beans, corn, and tobacco. But the Portuguese did not maintain their control of the spice trade for

long, the monopoly shifting to Holland, from Holland to England, and eventually to the United States.

Pepper (*Piper nigrum*) is indigenous to the wooded slopes of the Western Ghats mountain ranges in India. It is a perennial vine which climbs by means of aerial adhesive roots very much like an ivy. The leaves are ovate, entire, up to 4 inches wide, petioled, alternate, glabrous, leathery and five-, seven-, or nine-veined. The upper leaf surface is dark green and glossy. The lower surface is sea green, dull, and densely covered with whitish pellucid dots. The inflorescences are catkin-like, cylindrical, pendant, opposite to leaves, and may contain up to 150 flowers. The flowers are whitish, very small, naked (without sepals and petals), and usually unisexual. Each flower is subtended by a bract. The staminate or male flower consists of two stamens and the pistillate or female flower of one pistil. Bisexual flowers, however, exist in some cultivated forms. The fruits are berry-like, thin-fleshed, one-seeded, globose, and approximately one-fifth of an inch in diameter. Their color is red when ripe and black when dry.

Pepper is cultivated in the tropics from sea level up to about 1500 feet. It requires an annual, evenly distributed rainfall of about 100 inches, light shade, and a fertile soil with good drainage. One acre produces about 10,000 pounds of berries.

The berries are processed into commercial black or white pepper. If the crop is to be converted into black pepper, the berries are picked while they still are green and spread on mats or concrete floors in the sun to dry. During the drying process they turn black, shrivel and become the familiar peppercorns. Sometimes the berries are fermented in heaps or dipped into boiling water before drying. If white pepper is to be made, the berries are picked when fully ripe, bagged, and submerged into running water for about ten days to soften the hull (skin and pulp). The softened hull is then removed by rubbing or stamping underfoot in tubs and the innercorns are washed and dried in the sun. The dried innercorns are creamy-white in color. One hundred pounds of fresh berries yield approximately 35 pounds of black pepper and approximately 12 pounds of white pepper.



Piper nigrum. *Insert, enlarged view of black peppercorns.*

The yearly world production of black and white pepper averages about 155,000,000 pounds. Most of it is produced in India, Indonesia, Sarawak, and Sri Lanka. The United States is the largest importer followed by the Soviet Union, West Germany, France, and the United Kingdom. The value of United States' black and white pepper imports in 1973 was $26,000,000, a figure representing one quarter of the value of the country's total spice imports.

There are many types of black and white pepper in the trade. They take their names from the localities where they are grown or from the ports through which they are exported, e.g., Aleppey, Lampong, Penang, Singapore, Tellicherry, Muntok, and Sarawak. They differ slightly from each other in their color, size, pungency and other physical or chemical properties.

Pepper is available in markets whole, cracked, coarsely ground, medium ground and finely ground. If stored in closed containers in dry places at moderate temperatures, the whole peppercorns keep for many years without any loss of quality. The ground pepper, however, has a short shelf life.

The chief active ingredients in pepper are piperine, an alkaloid,

and chavicine, a resin. Piperine is tasteless at first but has a burning after-taste. Chavicine is responsible for the pungency and is most abundant in the mesocarp (fleshy pulp of the berry). Consequently, black peppers are more pungent than white peppers.

If there ever has been a cure-all remedy in folk medicine, it is the pepper. It has been used not only as a cure for everything from toothache to epilepsy, but also as a preventive drug for typhus, cholera, scarlet fever, smallpox, leprosy and the bubonic plague.

In addition to the true pepper, there are a number of other plants which are the source of various kinds of peppers. Among these, perhaps the best known is Melegueta pepper (*Aframomum melegueta*) from tropical West Africa. It is an herbaceous plant of the ginger family (*Zingiberaceae*). Its seeds, often called grains of Paradise, exceed even black pepper in pungency and piquancy, and at one time were in great demand in Europe. Today, however, their use is almost entirely limited to Ghana and Nigeria whose inhabitants use them for seasoning. The section of West Africa once known as the "Grain Coast" owed its name to this spice.

Green, sweet, bell, red, cayenne and chili peppers, sometimes grown in vegetable gardens, belong to the nightshade family (*Solanaceae*) and are not related to the true pepper.

Dr. Enari is a senior biologist at the Los Angeles State and County Arboretum.

Plants For a Contained Atmosphere

John Provine

Equisetum scirpoides and *Ficus pumila* cv. 'Quercifolia' can be grown in the same contained atmosphere as specimens. Together they seem complementary.

Equisetum scirpoides, commonly known as dwarf horsetail, grows upright and open; *Ficus pumila* cv. 'Quercifolia' hugs the soil and acts as a ground cover. Both like moist, cool conditions, which is the reason for growing them in a contained atmosphere in Southern California.

E. scirpoides is an evergreen perennial that grows three to six inches high. It is found in moist wooded banks from Labrador to Alaska, and as far south as British Columbia, Pennsylvania, and Illinois. It is also found in Europe and Asia.

F. pumila cv. 'Quercifolia' is a German cultivar developed about 40 years ago. It is dark green with lobed leaves which resemble oak leaves, thus giving it its cultivar name. It creeps and hugs the ground, rocks, and trees. In a contained atmosphere, it will cling to the sides of the container. It is necessary to keep it pruned to keep it attractive.

When pruning your ficus, save the trimming or cuttings and replant. They grow very easily. The cuttings should be two inches long and they should be pinned flat to the surface of the soil mix with a hairpin rather than imbedding them into the soil.

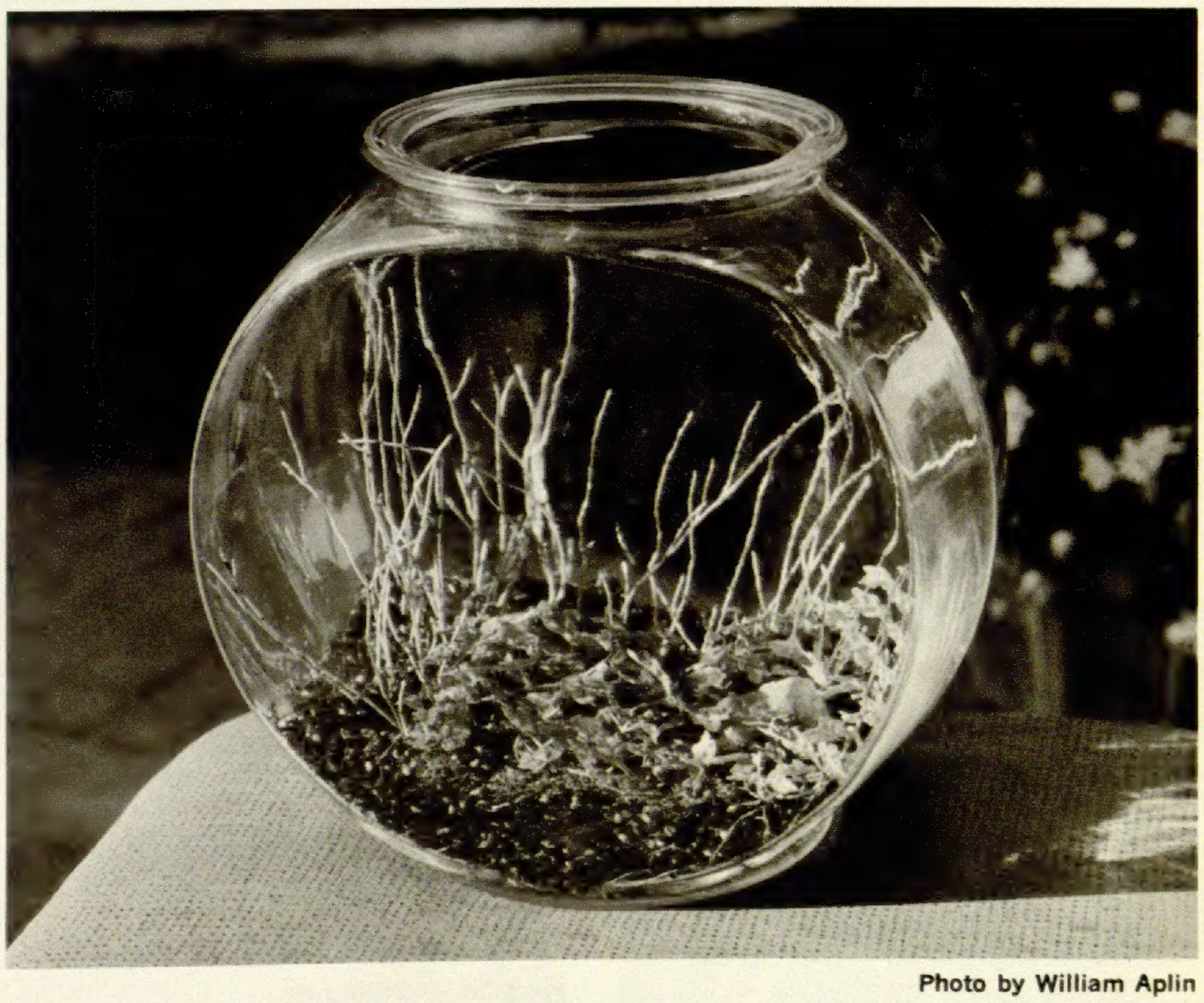


Photo by William Aplin

Both these plants require the same growing conditions. To grow them in a contained atmosphere, the following steps should be taken:

1. Select a clear glass or plastic bowl with a large opening which will enable you to work with the ficus.
2. Clean the bowl thoroughly with detergent and rinse with bottled water.
3. Cover the bottom of the container

with chips of charcoal to allow for drainage.

4. Add moist growing mix. The Arboretum prefers a soilless mix of one-half peat moss and one half perlite. This is a light growing mix and will allow for correct moisture and oxygen balance.
5. Water the plant with distilled water. A cooking baster should be used by pointing the open end against the glass so that water will run down the inside of the container, thereby preventing splashing the soil on the sides of the container. Let the water stand so that the growing mix can soak up the water, then tilt the container slightly and take the baster and pull off the excess water.
6. You can cover your container with a lid or saran-type wrap but it is not necessary. A cover just helps in keeping the plants moist.
7. Selecting a place in the home or office is very important. Both plants like soft light and a cool temperature. Do not grow in direct sunlight.

Equisetum scirpoides is easily started from divisions. The one source in this area is Tropic World, Inc., Escondido, California.

Ficus pumila cv. 'Quercifolia' is available at the Arboretum Gift Shop.

Mr. Provine is superintendent of the Los Angeles State and County Arboretum and a specialist in container plantings.

CALENDAR

MAY, JUNE, JULY

LOS ANGELES STATE AND COUNTY ARBORETUM, Arcadia

MAY 6 — 5:30 p.m. to 8 p.m.
Baldwin Bonanza Preview Party (For Foundation members and their guests)

MAY 7 — 9 a.m. to 4 p.m.
Baldwin Bonanza
Presented by California Arboretum Foundation

MAY 21 — noon to 5 p.m.
Epiphyllum Show
Presented by Epiphyllum Society of America

MAY 27, 28, 29 — 9 a.m. to 5 p.m.
Bonsai Show
Presented by Santa Anita Bonsai Society

JUNE 3, 4 — 9 a.m. to 5 p.m.
Satsuki and Azalea Show
Presented by Valley Satsuki and Azalea Society

JUNE 10, 11 — 9 a.m. to 4 p.m.
Spring Extravaganza
Presented by California Arboretum Foundation

JUNE 18 — 10 a.m.
Sunday Morning Walk
Historical Buildings
Sandy Snider, Arboretum historian

JUNE 24, 25 — 9 a.m. to 5 p.m.
Hemerocallis Show
Presented by Southern California Hemerocallis and Amaryllis Society

JUNE 30, JULY 1, 2 — 9 a.m. to 5 p.m.
Cactus and Succulent Show
Presented by Cactus and Succulent Society of America

JULY 21, 22, 23 — 9 a.m. to 5 p.m.
Fern Show
Presented by Los Angeles International Fern Society

JULY 23 — 10 a.m.
Sunday Morning Walk
Australian Section
Dr. Gary Wallace, Arboretum biologist

DESCANSO GARDENS, La Canada

MAY 18 — 10 a.m.
Paseo por Descanso
(Includes luncheon; reservation deadline, May 10)
Presented by Descanso Gardens Guild

May 27 — 2:00 p.m.
Square Dancing on the Green for Everyone
Hosts: The Swangers
Presented by Descanso Gardens Guild

May 28 — 2:00 p.m.
Presented by Descanso Gardens Guild
"Join Us on the Green"
Folk Dancing Around the World
Presented by Descanso Gardens Guild

June 3 — 2:30 p.m. to 3:15 p.m.
Mayfield Senior School Glee Club
Presented by Descanso Gardens Guild

June 4 — 11:00 a.m. to 5:00 p.m.
Arts and Crafts Festival
12:30 p.m. to 4:00 p.m.
Palm Crest Glee Club
2:00 p.m. to 4:00 p.m.
Tournament of Roses Band
Ron Hoar, Director
Presented by Descanso Gardens Guild

June 10 — 2:00 p.m.
Foothill Youth Orchestra
Myron Sandler, Director
Presented by Descanso Gardens Guild

June 11 — 2:30 p.m. to 3:15 p.m.
Excerpts from "South Pacific"
Glendale College Civic Music Theatre
Milton Young, Director
Presented by Descanso Gardens Guild

June 17 — 2:00 p.m. to 4:00 p.m.
Variety Show
"Kaleidoscope in Motion"
Kathy Dunn, Director
Presented by Descanso Gardens Guild

June 18 — 2:30 pm. to 3:30 p.m.
Los Angeles Sheriff's Rhythm Posse
Captain Ross McCollum, Director
Presented by Descanso Gardens Guild

June 25 —2:30 p.m. to 4:00 p.m.
7:30 p.m. to 9:00 p.m.
Concert on the Lawn
Corla Pandit, Organist
Presented by Descanso Gardens Guild

July 2 — 2:30 p.m. to 4:30 p.m.
Adult Swing Band of Pasadena City College
Paul Killian, Director
Presented by Descanso Gardens Guild

JULY 9 — 10 a.m.
Sunday Morning Walk
Rose Gardens
George Lewis, superintendent

JULY 15, 16 — 3 p.m.
La Canada Players
Presented by Descanso Gardens Guild

SOUTH COAST BOTANIC GARDEN, Palos Verdes Peninsula

MAY 7 — 2 p.m.
Flower Arrangement Demonstration
Presented by South Coast Botanic Garden Foundation

MAY 7 — 2 p.m.
Japanese Gardens in Containers
Edna Schoenbaum, president Ikebana International, presented by South Coast Botanic Garden Foundation

MAY 20, 21 — 9 a.m. to 5 p.m.
Fiesta de Flores
Presented by South Coast Botanic Garden Foundation

MAY 27, 28, 29 — 9 a.m. to 5 p.m.
Cactus and Succulent Show
Presented by South Coast Cactus and Succulent Society

JUNE 4 — 2 pm.
Sunday Afternoon Talk
"Outdoor Container Gardening"
Ed Hartnagel, assistant superintendent