



# NEWSLETTER

## UNIVERSITY OF CALIFORNIA BOTANICAL GARDEN

### BERKELEY

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Robert Ornduff, Director

Spring Quarter 1977

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#### SPRING EVENTS SCHEDULE

April 30: Saturday, 1:00 pm. First Annual BUSINESS MEETING for members of the Friends of the Botanical Garden, in the Meeting Room at the University Botanical Garden, with Jerome E. Carlin, President of the Friends' organization, presiding. Dr. Robert Ornduff, Director of the Garden, will report on Garden activities and plans. Also, Toni Fauver, Docent Plant Sale Publicity Chairperson, will present an overview of the plants available for sale at the Preview and on May 7.

April 30: Saturday, 2 to 4 pm. Preview Plant Sale for members of the Friends of the Botanical Garden at the University Botanical Garden. Plants sold will be nominally priced and not generally available in nurseries. They include: Drought resistant plants, natives, tropical exotics, ferns, herbs, unusual perennials, succulents, bulbs and many more. At the Preview Sale, in exchange for the privilege of early choice, 10% extra will be charged. New memberships will be accepted.

May 7: 10 am. to 3 pm. (or until all plants are sold) Third Annual U.C. Botanical Garden PLANT SALE at the east rim of the U.C. Memorial Stadium, sections MMN to UUV. Parking on Rim Road, U.C. Lot #7 near Bowles Hall. The Plant Sale is sponsored by the Docents of the U.C. Botanical Garden. Proceeds benefit the Garden's educational program, plant collections and facilities.

#### CURATOR REPORTS

Dr. Bruce Bartholomew reports that the major collection the Garden obtained during winter quarter was collected by Dr. Robert Ornduff during a visit to the Hawaiian Islands. When collecting seeds, Dr. Ornduff concentrated on plants growing from 4,500 to 10,000 feet since plants from these elevations will likely survive average Berkeley winters. (However, one Hawaiian plant in the Garden's collection - Lepechinia hastata, a rare Hawaiian mint, survived the disastrous 1972 freeze.) Among his collections were seeds of Vaccinium (related to our huckleberries), Smilax, Coprosma, Wilkesia and Dubautia (both close relatives of the silverswords), Acacia koa, the handsome high altitude Sophora chrysophylla, Rubus, Myoporum and several accessions of Metrosideros polymorpha (a close relative of New Zealand's "Christmas Tree").

Other interesting accessions during the first quarter of 1977 included three species of Macadamia obtained from Dr. W.B. Storey of U.C. Riverside. These were the smooth shelled macadamia M. integrifolia which is the main species of commerce, the rough shelled macadamia M. tetraphylla which is cultivated to a lesser extent, and the gympie nut macadamia M. ternifolia which has a very small nut and is of no economic value. There has been some confusion in the botanical literature concerning the correct names for these three species, and although this confusion was straightened out over twenty years ago, much of the horticultural literature is still not correct. Even the recently published Trees of the Berkeley Campus lists two trees of M. ternifolia on campus although they should have been listed as M. integrifolia.

An important future addition to our tropical house will be cloves, Eugenia caryophyllus, which we obtained as seed from the Lyon Arboretum of the University of Hawaii. Some people may not realize it, but the part of the cloves that they use as a spice is the unopened flower.

CURATOR REPORTS (continued)

An interesting addition to our Himalayan area is Pinus roxburghii which we obtained from the Institute of Forest Genetics at Placerville via Dr. Robert A. Cockrell of the U.C. Berkeley Department of Forestry and Conservation. This species occurs along most of the Himalayas and is very closely related to the Canary Island Pine although the two species grow 5000 miles apart.

EDUCATION PROGRAM PARTICIPATES IN COMMUNITY EVENTS

Dr. Gertrude Machlis, Education Coordinator, and Mrs. Laurianne Hannan, Garden Educator, conducted a workshop on the Garden's education program at the Bay Area Environmental Education Resource Faire on March 5 at California State University, Hayward. The Bay Faire was well attended with 575 participants including 425 registrants and 150 resource persons.

Mrs. Laurianne Hannan also participated in the 15th Annual Science Symposium for 225 selected high school students from Northern California and Western Nevada when students visited the Garden on March 11 as part of the 3 day conference.

SUMMER PROGRAM FOR TEACHERS TO MEET AT GARDEN

Botany by the Bay (Education 372) to be taught at the Garden, Monday thru Friday, from 9 am. to 12 noon, June 20 to July 22, 1977, as part of the School of Education's eleventh annual program for teachers. Faculty will include Dr. Gertrude Machlis and Mrs. Laurianne Hannan from the Garden staff as well as Miss Paula H. Skene, Coordinator, Instructional Laboratories, and Lecturer in Education, and Dr. Nancy J. Vivrette, Associate Director, Botanical Garden, and Assistant Professor of Botany at UCB.

The course will offer an introduction to Bay Area natural history and the application of botanical concepts and resources for the enrichment of instructional programs in elementary and secondary schools. Teachers of all grades and subjects are welcome, and no prior background in science is required.

For an ecological overview of the State of California, the class will study plant and animal life from seashore to desert to alpine meadow in the high Sierra. Among additional specific topics for study will be plants useful to man, propagation through seeds and cuttings, exotic flowering species, and cacti and succulents.

Teachers will examine curricular projects developed under the auspices of the Instructional Laboratories and will be able to create projects to use in their own classrooms. Several field trips to Bay Area nature study areas are planned, as well as an herbal and culinary tour of Chinatown.

CREDENTIAL VALUE: 9 units of upper division life science (botany); also elementary and secondary curriculum and instructional procedures in science and environmental education.

FEES: \$225 plus \$10 for basic course materials and all personal expenses on field trips. For additional information and application, write Summer Program for Teachers, University of California, Berkeley, Ca. 94720 or call (415) 642-0841.

BIOLOGICAL CONTROL OF GREENHOUSE PESTS EXPERIMENT INITIATED IN THE TROPICAL HOUSE  
Reported by Judith Van der Naillen of the Garden staff.

Predatory insects raised at the University of California Agriculture Extension Research Facility in Albany are being placed on pest infected plants within the Tropical House. The various stages of maturity in both the pest and the predator are visible on the leaf surfaces of specific plants. If the pest is completely abolished, the predator will either die from starvation, eat its young, or abandon the greenhouse. The goal is to have a balance between the opposing insects. With biological control, the plant may be marred while steps are being taken to introduce the most suitable predator for a specific pest. Temperature, humidity, and the physical surface of the plant leaf play important roles in the success of a specific predator. Garden staff will be monitoring the experiment closely. Predators introduced to date are Chrysopa carnea (green lacewing) and Hippodamia convergens (ladybeetle) for aphids, Amblyseius chilensis (predatory mite) and Stethorus loxtoni (beetle) for mites, and Cryptolaemus montrouzieri for mealybugs.

#### WATER CONSERVATION AFFECTS THE GARDEN TOO

The Garden must reduce its water consumption drastically, according to Anton Christ, Manager. Watering the lawn has stopped though this is a favorite gathering spot for school groups stopping over at the lunch hour. Watering generally will be done sparingly and when necessary, with more hand watering rather than automatic sprinklers in outside areas. This means need for more not less manpower. As a hedge against a water shortage, the Garden already acquired 2 tanks that hold 250 gallons each. These will be put to use to collect the runoff from Winter Creek. Needless to say, planning for many new plantings outside will be postponed when frequent watering is required. The runoff water collected from Winter Creek will be used to water the Mather Grove.

#### CROWN ROT STRIKES SEVERAL TROPICAL HOUSE PLANTS

Phytophthora spores caused a fungus problem for the Breadfruit tree. To cope with the problem, the soil will be drenched with a solution containing either ethazol or diazoben and the specimen planted higher on a mound so that the root-crown transition zone is 4 to 6 inches above grade ensuring drainage away from the plant. Cooperative Extension of the U.S. Department of Agriculture and the University of California provide useful information on crown and root rot in their October 1976 issue of Growing Points. It is the most important woody-plant disease in California's deciduous fruit orchards as well as very destructive in landscape plantings. Crown and root rot can be suspected when trees fail to start growing in early spring, develop chlorotic leaves, or show stunted terminal growth with dieback of terminal shoots or branches. For prevention, water management is most important; watering only as needed and avoiding prolonged flooding and saturation of the soil. Practical suggestions mentioned in the article include using known resistant plant material, planting on a broad mound ensuring drainage away from the plant, avoiding water contact with bases of susceptible woody plants, and avoiding contamination of noninfested soil by using cleaned equipment and healthy plants.

#### MATHER GROVE DEDICATION PLUS ONE YEAR

The Stephen T. Mather Redwood Grove has proved to be a popular attraction for visitors. Understory plantings beyond the amphitheatre area has been limited by the water shortage and lack of funding to complete development of the Grove. The placque unveiled at the Dedication is now in place imbedded in a handsome rock at the entrance to the Grove. We are indebted to the National Park Service and, in particular, to Mr. Howard Chapman, Director of the National Park Service's western region, for the placque. The rock is a gift of the Kaiser Industries Corporation through the efforts of Mr. Eugene E. Trefethen, Jr., Director and Former President of the Corporation. Mr. Trefethen is also President of the U.C. Berkeley Foundation.

#### METASEQUOIA INTRODUCTION HISTORY LINKED TO UCB AND BOTANICAL GARDEN

The Botanical Garden is mentioned in an article about the introduction of Metasequoia into cultivation written by Edmund H. Fulling - "Metasequoia-Fossil and Living" in The Botanical Review, vol. 42, no. 3, July-September 1976. Credit for the discovery of Metasequoia in southwestern China and its introduction into cultivation rests with the Chinese botanists and foresters. Before discovery of the living specimen, the genus Metasequoia had been described in 1941 from Pliocene fossils by Shigeru Mikí, a Japanese botanist. Credit for the extensive distribution of Metasequoia in late 1947 given primarily to Dr. Elmer D. Merrill, then Director of the Arnold Arboretum at Harvard University. Dr. Ralph W. Chaney, then Chairman of the Department of Paleontology at UCB, was one of the recipients of seeds from Dr. Merrill. Dr. Chaney subsequently travelled to China in early 1948 returning with four seedlings. Dr. Bruce Bartholomew has found a letter in the archives of the Botanical Garden indicating Dr. T.H. Goodspeed, Director of the UCB Botanical Garden, received seeds and herbarium materials directly from Dr. Hsen-hsu, <sup>Hu</sup> Director of the Fan Memorial Institute of Biology in Peking in early 1948 at a time before Dr. Chaney traveled to China. The herbarium materials sent by Dr. Hu are now in the UCB Herbarium. The UCB Botanical Garden grew a large number of Metasequoia seedlings for Dr. Chaney and later grew cuttings after

METASEQUOIA INTRODUCTION HISTORY LINKED TO UCB AND BOTANICAL GARDEN (continued)

the seeds were no longer viable. All of the Garden's accessions of Metasequoia have a 1949 date and were obtained from Chaney. These accessions are 49.310, 49.500, 49.501 and 49.502. Accession 49.502 represents two of the seedlings that Chaney carried back from China, but the source of the other three accessions is unknown. The seven trees we presently have are all labelled 49.500.

PERSONNEL NEWS

Dr. Gertrude Machlis, Education Coordinator, resigned effective April 1, 1977 to devote more time to teaching at the university level.

COMINGS AND GOINGS

During the middle of January, Director Robert Ornduff visited Hawaii as a guest of the Pacific Tropical Botanical Garden on Kauai. Ornduff gave an evening lecture to members of the garden and to the Hawaiian Botanical Society as well as a seminar to members of the Department of Botany of the University of Hawaii in Honolulu. Among the gardens he visited were the Foster Garden, Lyon Arboretum, and the Waimea Arboretum on Oahu; the University's collection of economic woody plants at Waimanalo; and the Pacific Tropical Botanical Garden. Members of the faculty and students at the university gave him a tour of the native flora of Tantalus, above Honolulu, and of the cloud forest on Mount Kaala, Oahu. On Kauai, Ornduff visited the Alakai swamp.

Mr. John Domzalski, Garden staff, selected Rhododendron specimens from the Garden's collection for display at the California Chapter, American Rhododendron Society's Rhododendron Show in the Oakland Garden Center at Lakeside Park in Oakland on March 27 and 28. The Garden is indebted to Mr. Hadley Osborn, Chapter President of the Society, for setting up the Garden's exhibit.

GARDEN VISITORS

Winter visitors included R.L. Taylor, Director of the University of British Columbia Botanical Garden and Heino Heine of the Natural History Museum in Paris.

FRIENDS OF THE BOTANICAL GARDEN NOTES

Program events proved popular. Dr. J.R. Haller's Plants of California multimedia show was presented to an enthusiastic and capacity audience at the Oakland Museum Theatre on February 15. Hadley Osborn's excellent illustrated lecture about the Garden's Rhododendron Collection on March 17 followed by a tour of the Rhododendron Dell on March 20 made viewers aware of how the collection started and has been added to over the past 45 years to become today's prize collection.

Memberships in the Friends organization boosted to over 200 by recent mailings. Future mailings are planned.

Debt of thanks owed U.C. Berkeley Foundation for guidance, handling our financial accounting, and providing use of their mailing permit. Memberships in the Friends of the Botanical Garden is in the nature of a restricted gift to the U.C. Berkeley Foundation to be used to benefit the Garden. Memberships are eligible for matching gift plans offered by many companies. If the membership alone is not enough to meet company matching requirements, the membership plus other gifts to the University from the same individual during the same calendar year may be added together and considered for matching. Further information may be obtained by contacting the UCB Foundation.

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