

# A Proud Day For The Garden

March 19, 1988: It was a beautiful spring day for a party. Mesquites and other trees were leafing out, wildflowers like penstemon and blackfoot daisy were in bloom, and the weather was perfect. The Garden's new trail, Plants and People of the Sonoran Desert, was dedicated less than a year and a half after breaking around in October 1986.

The festivities included the requisite speeches, a poetry reading in Piman and English by Dr. Ofelia Zepeda, an array of culinary delights made with desert plant foods, and a ribbon cutting ceremony using agave fiber rope for the ribbon.

Interpreters along the trail invited guests to participate in ethnobotanical activities. Now that the trail is open, docents staff the touch carts regularly and the trail serves as an outdoor classroom for many of the Garden's activities.

We thought that it would be interesting and fun to look back and review how the

# **Opening Remarks**

Dr. Robert Breunig March 19, 1988

Today we celebrate the opening of a marvelous new trail and exhibit and the communication of a powerful idea. What Plants and People of the Sonoran Desert teaches us is that this desert land has been home to human cultures for thousands of years.

The early people were able to live here because they understood where they lived and they developed an intimate knowledge of the land and its plants. And if we are going to live here for more than a few generations, we must also become desert people. To do this we must open ourselves to the incredible richness of the desert and make it our home.

trail came to be, from the original concept to reality, keeping in mind that a living trail continues to grow, change with the seasons, and improve with time.

The term ethnobotany is relatively new, but the study of plants and people and how they interact is not. Interest in ethnobotany in the early years of the Garden is illustrated by the review of L.S.M. Curtin's book, Healing Herbs of the Rio Grande, in the 1940's. Other articles dealing with plants and people surfaced on and off for the next 40 years.

The commitment to build an ethnobotanical trail came in 1979 when it was included in the Garden's Ten Year Plan and the Potomac Plan in 1982, under the leadership of Dr. Charles Huckins. Dr. Charles Merbs, a Garden trustee from 1977 to 1984, advocated the importance of desert plants and ecology. The concept was emphasized again in the Gar-(continued on page 2)

By explaining how plants of the desert have been used in the lives of people over the centuries — and how they can be used in our lives in the future, we can begin to end the estrangement between our culture and the desert environment in which we live.

All of us who have worked to make this project a reality have learned a great deal, and we are eager to share what we have learned with others. There are many people to thank our trustees, our donors, our staff, the construction workers and our consultants.

We especially honor today those peoples who have gone before us: the Hohokam, 'O'odham, Apache, Yavapai, Maricopa and Hispanic peoples whose knowledge has been shared with us and which we now share with you through this trail.

uarofana

Phoenix, Arizona

## A Proud Day (continued)

den's Strategic Plan of 1984. At this time it was still uncertain whether the trail would deal with ethnobotany of the world or a specific region, i.e. the Sonoran Desert.

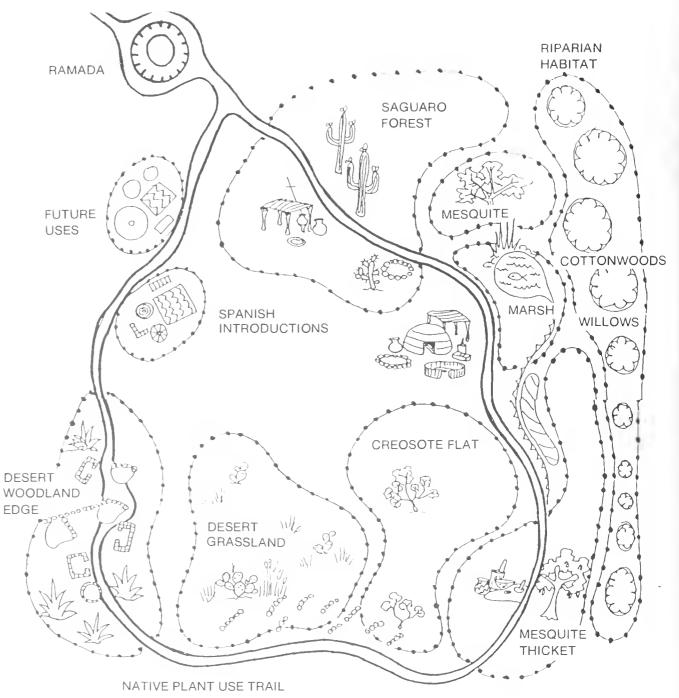
Ethnobotany workshops conducted in 1981, 1982 and 1983 were funded by the National Endowment for the Humanities. As a result of these activities, the first conceptual plan for the trail was developed by Ruth Greenhouse and Robert Gasser, Garden Research Associates. At this time it was decided to focus on the ethnobotany of the Sonoran Desert region. A grant from the Arizona Humanities Council funded the research required to develop a comprehensive outline and conceptual map of the proposed trail (see insert). At this time, September, 1984, the trail was called the Native Plant Use Trail.

Early in 1985, under the leadership of Board president, Nancy Swanson, the trustees established this project as the number one capital goal of the Garden. In March 1985, the Garden contracted with Ron A. Landon and Associates, landscape architects, to develop a comprehensive plan of the exhibit. Progress on this project continued under the leadership of Dr. Robert Breunig, who became executive director of the Garden in November 1985. The April 1986 issue of the Garden's quarterly journal Agave, was devoted entirely to describing the proposed new trail. By this time, the exhibit was given its official name, Plants and People of the Sonoran Desert.

Phase I of the construction began in October 1986 and included the installation of the preliminary path, infrastructure (irrigation and electricity), Desert Habitat, Desert Oasis Habitat, Mesquite Bosque, and Semidesert Grassland. Phase I was funded by the 1985 fundraising event, *Dinner on the Desert*, a major private contribution, and a grant from COMPAS, for a total of \$160,000.

Phase II began in January 1987 with a \$114,996 challenge grant from the National Endowment for the Humanities. This grant, and the matching funds raised in the community, allowed us to complete the trail. This phase included the ethnographic and archaeological structures, native, Hispanic, and future crop gardens, Chaparral Habitat, trail paving, graphic panels, trail guide, and security fence.

Although this comprises the actual dollar cost of the exhibit, it doesn't take into account the major donations of plants



1984 Illustration by Matt Thomas

and services, staff and volunteer time, and other expenses incurred under standard Garden operating costs. Subsequent issues of *Saguaroland Bulletin* will give a step by step account of the creation of the habitats and structures along the trail.

## Landscape Architect

Ron A. Landon and Associates, landscape architects, developed an architectural plan of the new exhibit, based on the conceptual plan. With the aid of aerial photographs and topographical maps, Ron walked the site literally dozens of times to determine where the actual perimeters of the habitats and the path should be. He allowed the lay of the land to dictate the natural flow of the trail, winding between native plants so that virtually no desert trees had to be removed and the existing plants could be used to enhance the landscaping plan. Every bend in the trail, every pass between large trees, was carefully designed so that the visitor would feel immersed in the habitat.

Ron's responsibilities also included planning the irrigation and electrical components of the trail. This system is extremely complex, because each habitat requires different amounts of water, and in some cases, even different methods of watering. For example, the Semidesert Grassland and Chaparral Habitats have overhead sprayers, while other areas have drip irrigation, and the Native Crop Garden is flood-irrigated.

An automatic clock with the capability of handling the different water regimes was specified, and a complicated system of pumping water from the Oasis pond into the irrigation lines was devised.

During the process of construction, Ron acted as field supervisor and liaison to the Garden. He also worked as a consultant to help determine the actual placement of some of the major ethnographic features and plants along the trail.

# DBG Hosts AABGA Annual Meeting

The Annual Meeting of the American Association of Botanical Gardens and Arboreta took place May 11 — 17 at the Scottsdale Hilton with the Desert Botanical Garden as the host institution.

For public garden professionals, this is one of the highlights of the year. It is a time they can meet with their colleagues, share their experiences, and learn new techniques in an atmosphere that invites an exchange of information.

Delegates heard from experts and fellow professionals in sessions on horticulture, administration, university gardens, development, visitor programming and ethnobotany.

The business meetings and programs were held at the hotel. The delegates visited the Desert Botanical Garden on Friday, May 13, for a tour of the grounds, an overview of DBG education and conservation programs, and a festive, southwestern style dinner and entertainment.

For many of the delegates, this was their first visit to the Southwest and to the Desert Botanical Garden. Our staff and volunteers took advantage of this opportunity to show off our Garden, our programs and our new exhibit trail, *Plants and People of the Sonoran Desert*.

AABGA members also visited the Boyce Thompson Arboretum. Some of the delegates took a pre-conference tour to the Arizona-Sonora Desert Museum in Tucson, and a post-conference tour to the Arboretum in Flagstaff and then the Grand Canyon.

# Around the Grounds

If you haven't been out to the Garden in the past few months, we think you'll be impressed by the appearance of the core collection. DBG horticulturists, with the help of volunteer horticulture aides, have made significant changes in this main part of the Garden.

Areas that had become overgrown were cleared, trees and shrubs have been judiciously pruned and new plantings have been added. The result of all this hard work is that visitors are better able to appreciate the beauty and uniqueness of these desert plants.

Much of the credit for this belongs to Cesar Mazier, horticulturist in charge of the core garden, working under the direction of chief horticulturist Steve Priebe and with the help of gardener Laura Stacy.

# DBG Membership — A Good Deed and A Great Deal!

As a member of the Garden, you know that the value you get in return for your annual membership contribution is equal to, if not greater than, the satisfaction of knowing that you support an institution that provides such a unique resource for our community.

You probably have friends or neighbors who would also enjoy the benefits of Garden membership. Why not share with them your own enthusiasm for the Garden?

Tell them how you are entitled to free admission all year long, and about the guest passes that let you share the Garden with friends and relatives. Remind them that members get advance notice of our workshops and classes (and reduced enrollment fees, too) as well as invitations to preview events like Luminaria Night for members only, and the members pre-sale (including a discount on purchases) for our annual Spring and Fall Plant Sales.

Of course you'll want to show them your copies of *Agave* magazine, the quarterly *Calendar* of *Events* and the *Saguaroland Bulletin*. (By the way we hope you like our new look.)

Garden memberships make wonderful gifts, and you don't even have to leave home to do your shopping. Just mail your check with the application included here and we'll take care of the rest. Or you can call the Membership Office (941-1225) and charge it to your Visa or MasterCard.

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# From the Director

This spring has been a season of incredible activity for the Garden. Many efforts of the trustees and staff are bearing fruit.

The big event, of course, was the opening of *Plants and People of the Sonoran Desert* on March 19. Public reaction to the trail has been tremendous, and it has been a pleasure for all of us to watch our visitors learning from the activities on the trail.

Tom Wilson of the National Endowment for the Humanities visited the exhibit on April 27. In a letter, he wrote the following: "The National Endowment for the Humanities was very pleased to support your project. It is viewed here as an outstanding effort to bring the fruits of significant multi-disciplinary research to the public in an innovative format. The issues that your exhibition explores are not only vital to encourage sensitivity to diversity but relationships with the environment. I predict that your project will become a model for other innovative trails elsewhere in the United States."

Just a month after the opening of the trail, the citizens of Phoenix approved a bond package that will provide \$1 million of infrastructure improvements to the Garden. These improvements will include a new water line, new parking facilities, new underground power lines in the Garden, and restoration of Webster Auditorium. Work on these improvements will begin this summer.

Finally, at the March meeting of the Board of Trustees, the Board approved an ambitious Master Plan for the Garden developed by Vernon Swaback Associates. This long-range plan will guide the future growth of the Garden.

It provides for the development of a new Visitor Center complex, a 16,000 square foot Cactus and Succulent Pavilion, new horticulture and propagation facilities, an education center, new trails, a system of interpretive signage, a new library, herbarium, and research center for desert plants. This plan was outlined for members at our Annual Meeting on May 19.

The Board of Trustees is now exploring various options on how and when to implement the plan. In the coming months, we shall keep our membership informed on this major planning effort.

As this program year ends, I would once again like to thank all of our volunteers, staff members, and trustees for all of their hard work on behalf of the Garden.

Robert G. Breunig, Ph.D. Executive Director

# The Good Old Summertime

As summer approaches, we prepare once again for a long season of 100 degree temperatures and up. Plants, animals and people have developed unique ways in which to deal with the hot, dry conditions of summer in the desert.

All plants must adapt themselves to the particular environment in which they live. Plants from a very cold climate must develop ways to deal with the stresses presented by frigid conditions. Similarly, desert plants adapt to stressful conditions of limited moisture and intense radiation from the sun by conserving, storing and gathering water, as well as protecting themselves from the sun's rays.

Many desert plants have small leaves which help limit the amount of water lost through transpiration. Waxy or hairy leaf coverings reduce water loss by helping seal in moisture. Leaves that are gray or light in color reflect some of the sun's radiation. Some desert plants are droughtdeciduous, dropping their leaves during periods of limited water availability then growing new leaves when water is more plentiful.

Succulent plants, which include cacti, are able to store large quantities of water in their leaves, stems and/or root structures. Many also have wide-spreading root systems, close to the surface of the ground, which enable the plants to gather desert rains quickly before the water is lost to run-off or evaporation. Some plants have roots that travel deep into the earth to gather water from the water table. Spines, which are really modified leaves, help shade the stems of many succulent plants from the sun's radiation. Some plants have leaves which actually help to shade other leaves on the same plant. Still others have leaves that orient themselves vertically, reducing their exposure to the sun. In addition, developing seedlings are often protected from the sun by a "nurse plant" which helps to shade them.

Just as plants need to adapt to environmental conditions, so do animals. Since all animals need water for survival, desert animals have had to develop ways to live in the dry conditions by searching out, storing and conserving water sources, while others have found ways to store and conserve body fluids for time of drought. They also receive small amounts of moisture from any plants or animals they eat.

Mammals are warm-blooded and maintain their body temperatures at constant levels. In summertime, they conserve their energy by resting during the day, venturing out in the cooler evenings and early mornings to search for food.

Flight enable birds to rise above the hot ground surface to reach the cooler air. Feathers help insulate them against extremes of temperature. Nests also serve as extra protection against the elements, providing warmth in winter and a cool home in summer. Birds are warmblooded and maintain their body temperatures at constant levels.

All reptiles are cold-blooded, retiring underground or in the shade during the midday heat. Because their body temperatures become the same as the environment, reptiles enter a period of estivation, or diminished activity, during hot months. When it becomes too cool they hibernate, and their body metabolism slows until warmer temperatures return.

Reptiles with legs can run across the hot ground, which aids them in keeping cool. Those that lie prostrate, such as snakes, are less active and stay in the protection of the shade.

While plants and animals have evolved certain characteristics which enable them to survive in the desert, humans have also learned to cope with the problems of limited water and hot temperatures. People have lived successfully in the Separan Depart for at least 15,000

the Sonoran Desert for at least 15,000 years.

Most desert dwellers settled near constantly flowing streams. Others were semi-nomadic in relation to the available water in shallow wells, natural rock tanks (tinajas) and streams that flowed after rainstorms. Runoff from rainstorms was channeled into reservoirs.

The timing and location of daily activities were planned with environmental conditions in mind. Work was done in the early morning hours or late in the day. Midday activities took place under the shade of the ramada. Outdoor kitchens had low walls which served as a windbreak and were roofless so that heat from the hearth rapidly dispersed. Temperature, humidity and wind conditions were always being considered when planning daily as well as seasonal activities.

Modern desert dwellers must also deal with the environmental conditions of the Sonoran Desert. Outdoor activities should be planned in the early morning or evening hours. Midday work should be done indoors or in a cool, shady place. Landscaping with plants that are adapted to desert conditions helps to conserve valuable water.

The Garden's education department has planned a series of summer tours with these conditions in mind. Desert Sunrise Family Tours will be conducted on June 11 and 25 (Saturdays) at 7:15 a.m. Sonoran Desert Sunset Tours will be held on June 7, 14, 21 and 28 (Tuesdays) from 5 — 7 p.m. Sunrise Garden Tours will be given on June 2, 9, 16 and 30, as well as July 7, 14, 21 and 28 (Thursdays) at 7:15 a.m. All tours start at the Gift Shop and are free with regular Garden admission.



As temperatures climb, the cooler early morning hours or early evening are the best times to visit the Garden.

# Staff Notes

Diana V. Flegenheimer has been appointed to fill the newly created position of Director of Development at the Garden. Diana will be responsible for coordinating all fundraising and membership activities, working closely with the Board, staff and Friends of the Garden. A long-time resident of the Valley, Diana held a similar position at the Arizona Museum of Science and Technology and was a professional volunteer with the Jewish Federation of Greater Phoenix.

Pat Smith has joined the Education Department as scheduling secretary. A former teacher, Pat will be handling group scheduling, classes and workshops. She will also be working with volunteers and editing the Friends Newsletter.

Arsenia Cota has taken over the duties of receptionist and telephone operator. Prior to joining the Garden, Arsenia was a clerk and a teacher's aide in the Phoenix school system.

Al Blair, who had been answering the telephones and providing secretarial support, is now a full-time secretary working mainly in the Community Relations Department. She will also provide back-up clerical support for the administrative office when needed.

Ruth Greenhouse has been named Exhibits Coordinator for the Garden. A DBG Research Associate since 1980, Ruth has designed ethnobotanical programs and workshops through the Education Department. She was instrumental in developing and planning our new ethnobotany trail and served as project director during the construction of the exhibit.

Robert Gregoire has joined the staff as Maintenance Supervisor. A transplant to the Valley from Houston, Bob will be responsible for overseeing all maintenance and security functions at the Garden.



Webster Auditorium, which will be 50 years old in 1989, will be renovated with funds from the successful Phoenix bond election.

# DBG'S Critical Needs Funded by Bond Election

The successful outcome of the recent Phoenix bond election means that critical needs will be provided to the Garden by our landlord, the City of Phoenix. The monies appropriated will be used to bring a new water line to the Garden so we will have sufficient water pressure for irrigation and, most importantly, for hydrants to provide basic fire protection.

Also included in the bond funding are a sewage system, undergrounding of electrical and telephone lines, a new access road from Galvin Parkway that will allow safe turns while entering and leaving the Garden, additional parking spaces, and renovations to Webster Auditorium to bring this historic building into code compliance.

We want to thank all our members who responded to our request to support this bond issue. Dealing with these basic infrastructure needs is critical to the Garden's plans for future growth and expansion.

# 1988 Conservation Project Approved

The Center for Plant Conservation, headquartered at Arnold Arboretum of Harvard University, has approved several plants as approved species for the Desert Botanical Garden's ongoing program of conserving endangered plants.

The Center has approved the following species for accession by our research department: Agave schottii var. treleasei, Echinocereus Iloydii, Echinocactus horizonthalonius var. nicholii, Amsonia kearneyana, Epithelantha bokei, Proboscidea sabulosa, and Talinum humile.

Our request for amendments for multiyear plans for three taxa was also approved. These were for *Cereus greggii*, *Amoreuxia gonzalezii*, and *Agave arizonica*. All were approved as two year plans.

The Desert Botanical Garden is one of 19 institutions in the United States that participates in the conservation programs of the Center.

# Spring Plant Sale the Biggest Ever

The good news is that the Spring Plant Sale was the most successful in the Garden's history. The bad news is that growers had limited quantities of certain plants and these sold out early, so some of our customers were disappointed.

However, we plan to inform suppliers now of our anticipated orders for next spring so that there will be ample supplies to meet the demand. Remember to take advantage of your Garden membership and plan to attend the members pre-sale for the best selection of plants. The tentative dates for the Fall Plant Sale are Saturday and Sunday, October 8 and 9, with the members presale on Friday, October 7 from 3 to 6 p.m.

## Desert Botanical Garden Members — New and Renewals December, 1987 — March, 1988

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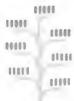
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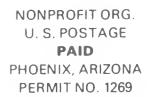
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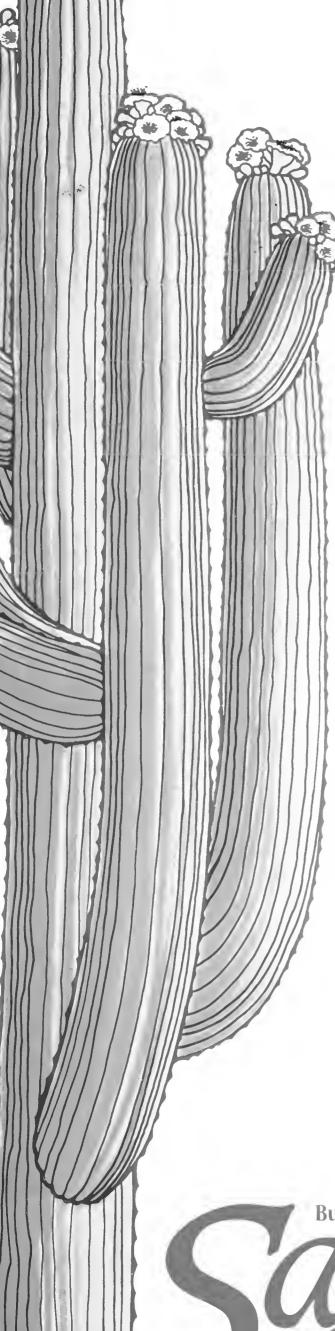
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# Baja: Visit A Unique and Beautiful Land

From the window of your jet, the long peninsula of Baja California stands apart from other landscapes. On a clear day you can see its length and the two seas that nearly surround it. The vast, powerful Pacific Ocean contrasts sharply with the unpredictable, sometimes calm Sea of Cortez.

Some twenty million years ago, Baja began splitting slowly away from what is now mainland Mexico and the Sea of Cortez gradually began to take shape. Today's traveler encounters a colorful variety of landforms --- from 10,000 foot sierras in the north to vast, flat ancient sea bottoms that now form the coastal deserts surrounding the large lagoons that are now famous as winter migratory homes for the California gray whales.

The Central Desert is best-known among botanists as the home of the magnificent boojum tree (Fouquieria columnaris). In some places, Central Desert forests are dominated by elephant trees (Pachycormus discolor) but there are also dozens of other significant and interesting plant species. Many of them are in full flower during the spring.

The Sierra de San Francisco is a beautiful place, and travelers can enjoy views of breathtaking palm canyons from their vehicles. These rugged mountains rise abruptly to form a part of the eastern boundary of the flat Vizcaino Desert. Here the Vizcaino is overgrown with a variety of unique plants, dominated by the giant cardons and Yucca valida.

As the road passes through various vegetation zones, travelers will see rocky meadows carpeted with fragrant Ambrosia camphorata and dotted with graceful Palo brea trees. In years when winter rains are sufficient, dozens of flowering annuals show their bright colors. Boojums occur again here, though smaller than those seen in the Central Desert. At the end of the journey is El Raton, a once-remote Indian cave. Tall figures of

men, women and animals are painted on the walls, ancient images of the littleknown people of Baja's past.

Laguna San Ignacio is, without a doubt, the best place to watch gray whales. It is Baja's second larges lagoon, stretching some 17 miles inland, and it supports a natural habitat that includes mangrove estuaries with an abundance of migratory and resident bird species.

Over the past ten years, the whales seem to have accepted the presence of humans in their lagoon, and increasing numbers of them in Laguna San Ignacio are "friendly," allowing themselves to be touched. But the basic rule of whale watching is to merely observe, not create any situation that will alter the whale's natural behavior, for this is the end of their migration from the Bering Sea, and they come to this place to give birth to their young and to mate.

## **Experience Baja's Deserts and** the Gray Whales of San Ignacio March 4-12, 1989

A small group of nature-interested guests will share a unique Baja experience with Gary Paul Nabhan, noted author and assistant director of the Desert Botanical Garden. He will be assisted by a selected staff from the Garden and Baja's Frontier Tours.

A custom itinerary has been created for the Desert Botanical Garden by Baja's Frontier Tours. This 9-day excursion features plants and literature unique to the Sonoran Desert with a specific focus on the gray whales of San Ignacio.

This is personalized wilderness travel with classics around the campfire; a comfortable, get-involved, escorted natural history vacation. Participants will share a wildlife experience and botanical lore plus evening readings from selected literature during the journey. The group (continued on page 2)

Phoenix, Arizona

Bulletin of the Desert Botanical Garden Maroland

## Baja (continued)

will enjoy comfortable accommodations and fine food afield and pleasant hotels and restaurants en route.

The gray whales end their migration in the lagoon near Baja Frontier Tour's unique island camp in a marine wilderness setting. Wonderful birdwatching opportunities abound here as well.

On this trip, participants will share in some camp and travel tasks. These chores will not be stressful or difficult and activities will always be supervised by Baja Frontier Tours personnel.

**All Included:** 3 Baja hotels en route; all accommodations afield; about 18 meals afield (including soft drinks, wine, beer and open bar); whale watching and boating explorations; land transportation from San Diego to Loreto.

**Not Included:** Personal items; about 7 restaurant meals and tips en route; insurance. (All 7 meals might cost as little as \$30 or as much as \$70; bar is extra.)

Sleeping bags and pads are not included: you may bring your own or rent a set for \$50. Tents are provided.

The trip begins in San Diego and ends in Loreto. Guests are responsible for reservations and costs of travel between Phoenix and San Diego and from Loreto to Phoenix. We will be happy to assist with these arrangements.

## COSTS:

\$1285 per person, double occupancy (Single supplement add \$125)

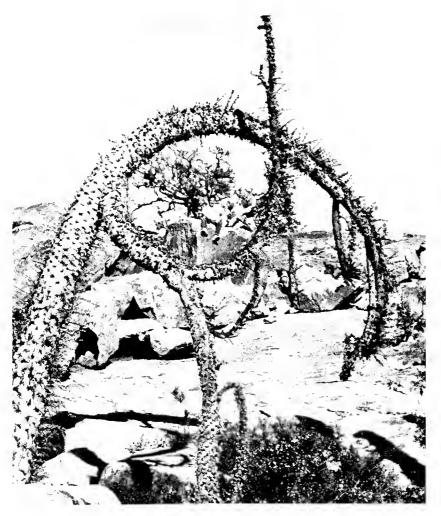
Deposit of \$300 per person is required with your reservation. To assure a place on this tour, reservations should be received by the Desert Botanical Garden by October 1. Balance is not due until January 4, 1989. Upon receipt of deposit, you will receive a detailed itinerary, personal items list and application. A background information packet will be mailed closer to the departure date.

**Gary Paul Nabhan, Ph.D.,** botanist, assistant director of the Desert Botanical Garden, winner of the Burroughs Medal for nature writing for *Gathering the Desert*, author of *The Desert Smells Like Rain, Saguaro,* and *Enduring Seeds.* Dr. Nabhan's field interpretations and campfire readings from selected desert literature will enhance this vacation experience.

**Piet Van de Mark:** founder of Baja's Frontier Tours, the peninsula's oldest touring company, will personally escort our group. His writings and photography of Baja have been widely published, and BFT has provided logistical services in the peninsula for the National Geographic Society and other groups in connection with filming and publications.

## **A Brief Itinerary**

- Day 1 Meet in San Diego at 9 a.m., drive to Ensenada. Overnight at a beachfront hotel.
- Day 2 The Central Desert. Dinner under the stars and classics around the campfire.
- Day 3 The Vizcaino Desert, which may be ablaze with spring wildflowers. Campsite tonight is at the base of the sierras.
- Day 4 Sierra San Francisco. A drive to 3500 feet through several vegetation zones to a remote Indian cave. Evening in the old mission village of San Ignacio in a comfortable hotel.
- Days 5-7 Laguna San Juan and the friendly gray whales. Board a boat to base camp on an island in the midst of the calving and mating grounds.
  - Day 8 Morning boating and exploration, overland to San Ignacio pueblo, overnight at our hotel.
  - Day 9 Sightseeing to the Sea of Cortez at the 18th century French mining town of Santa Rosalia. Arrive at Loreto by mid-afternoon for flight to San Diego.



Photos by Piet Van de Mark



Above: Some "friendly" whales visit the boats year after year to share touches, allow photos and get acquainted with visitors.

Left: Baja traveler is framed by an unusual circled boojum tree (Fouquiera columnaris). In the background is a gnarled elephant tree (Pachycormus discolor). Boojums can live 700 years and often reach heights of 50 feet.

# **DBG Elects Officers and Trustees**

At the Annual Meeting of the Desert Botanical Garden on May 19, 1988, the following new members were elected to the Board of Trustees: Craig J. Bolton, Pamela Grant and Rosellen C. Papp. Elected to serve another term were John Augustine, Alice Feffer, Donna Humphrey Fleischer, James E. Louden, William H. O'Brien, John C. Pritzlaff, Jr., and Dr. Milton R. Sommerfeld.

The trustees also selected officers for the coming year:

President	Roger Davis	
President-Elect	H. Clifton Douglas	
Secretary	Kate Ellison	
Treasurer	N. Joel Smith	
Past President	James E. Louden	

Dr. Robert G. Breunig, Executive Director, thanked outgoing President James Louden for his enthusiastic support and hard work in behalf of the Garden. Mr.

## Open House for Prospective Volunteers

Friends of the Garden will host an informal coffee and Open House at the Garden on Monday, October 10 at 10:00 a.m. This is a wonderful way for you to learn about the many opportunities for volunteers to become involved in Garden activities.

Discover the techniques used by our docents to introduce the Desert Botanical Garden to Valley residents, visitors from around the world, and school groups. Learn how the **horticulture aides** assist staff horticulturists in watering, weeding, pruning and collecting seeds. Find out what our **gift shop volunteers** do to help with sales and customer service in the Gift Garden.

You will have an opportunity to meet and chat with Garden staff, docents, horticulture aides and gift shop volunteers and to ask questions about training and continuing education programs, luncheon lectures, and social opportunities offered especially for volunteers.

Please join us on October 10 and discover the personal rewards and satisfactions of volunteering at the Desert Botanical Garden. Bring a friend — make a friend — become a Friend. For additional information about the Open House or volunteer activities at the Garden, call Pat Smith at 941-1225. Louden presided during a year of significant accomplishments — we opened a widely acclaimed, innovative new exhibit trail, completed a comprehensive Master Plan, and hosted a national convention. The Garden continues to gain recognition in the community as a major cultural attraction and a resource for information about desert landscaping and the ecology of the Sonoran Desert.

Roger Davis, Manager of Public Affairs for Salt River Project, has been a member of the Board of Trustees since 1984. During his term as President of the Board, the Garden will celebrate the 50th Anniversary of its dedication in Papago Park and enter into the first stage of a longrange capital development program to implement the recommendations of the Master Plan.

# From the Research Department

For the second year, the Garden has received funding from the Jessie Smith Noyes Foundation for the Gentry Agroecology Project. This grant has enabled us to establish a training program for Mexican and Native American interns. This summer we have been working with four trainees from the Gila River and Tohono O'odham reservations and from Durango, Mexico.

With a second year grant from the Ruth Mott Fund, we have been studying the potential of wild chiles as a perennial crop. A one-day symposium reporting on this research will be held at the Garden on October 17.

A grant from the Marshall Fund will allow the Garden to continue to work to reintroduce endangered and threatened plants to their natural habitats.

DBG staff members are scheduled to present papers this fall at the Wild Chile Symposium; Smithsonian Folklife Center's Seeds of the Past Conference; Society for Conservation Biology; Mexico's BioDiversity Conference; Symposium on Resources of the Chihuahuan Desert; and the Pinacate Desert Symposium in Hermosillo, Mexico.

## Director's Message

Over the next several months some signifcant changes will take place at the Desert Botanical Garden. The first of these is associated with the widening of Galvin Parkway by the City of Phoenix.

The Parkway will be widened from two lanes to four for its entire length from McDowell Road to Van Buren Street. In conjunction with the road construction, the entrance to the Garden will be relocated several hundred yards to the south.

Moving the entrance to this point will create a much safer traffic situation. For many years we have been concerned about the increasing speed of cars traveling on the Parkway and the traffic blind spot at our current entrance.

The new entrance will have acceleration and deceleration lanes and a transition lane to provide a smooth entry for cars turning left onto Galvin Parkway. From here, cars will proceed along a new entry drive that winds into the core of the Garden and our existing parking lot.

Later in the year other improvements will begin that have been made possible by the successful outcome of the Phoenix bond election. These will include the installation of a new 8" water line which will upgrade our water system and provide fire protection for the first time. There will also be a new sewage system, and an expanded parking lot to accommodate our increased visitation. Webster Auditorium is scheduled for some major repairs, including a new roof, new electrical and plumbing systems, and cosmetic improvements to this historic structure.

All of these things will enhance our ability to serve our members and guests. There will be some disruptions over the next year and for that we apologize in advance. But as we celebrate the 50th anniversary of the dedication of the Garden in Papago Park, I am sure you will agree that these changes will lay a good foundation for our next 50 years.

> Robert G. Breunig, Ph.D. Executive Director

# Around the Grounds

The horticulture department has been busy this summer on a number of projects. We have been taking soil moisture measurements throughout the Garden to find out how quickly the soil dries out in order to determine more accurately how much and how often to water.

The study funded by the Arizona Municipal Water Users Association has been completed. This research activity to determine thermotolerance allows us to rank the most commonly used landscape plants into three thermotolerance groups. AMWUA and the Garden will be releasing the results of this research project in the near future.

The improvements on the north side of the Succulent House are nearly completed. This project was funded by a conservation grant from the Institute for Museum Services. Senior horticulturist Mary Wilkins, who is in charge of the Succulent House collection, is in Harare, Zimbabwe, attending an international meeting on succulent plants. Mary is also collecting plants, seeds and propagation information on African succulents, particularly those of the Karoo Desert where conditions are most similar to our Sonoran Desert.

Through a contract with the U.S. Park Service, DBG senior horticulturist Judy Mielke has been working at Tumacacori National Monument on a program to remove trees that are affecting structures in the park and to design and develop a maintenance manual. Judy has also established a program to control weeds in the main courtyard and introduce a representative mix of native wildflowers.

The Grassland Habitat area of the new exhibit trail has been fenced this summer to prevent further animal predation of the new grasses. The successful results are obvious; the bunch grasses and wildflowers are recovering and growing back in this area.

Carol Sheffer, an ASU intern, has been working at the Garden to develop a manual for landscape plants that will describe height, width, color, flowering times, etc. This information was developed specifically for the plants sold at DBG plant sales and will be available to the public when plants are purchased.

Bruce Lundquist, also an ASU intern, has been working to develop a manual for the maintenance of the Australian Section and the plants in the Succulent House.

Late this summer and through early fall, two Eagle Scouts will be working in the area near the proposed new entrance to the Garden. They will be removing old fencing and modifying the existing rabbit fence to connect and coordinate it with the new entrance road.

Our volunteer Horticulture Aides have been busy working all summer despite the heat, helping to care for the plants in the core garden and on the new exhibit trail. They also helped remove and replace soil in the Succulent House beds and collected quantities of mesquite bean pods for the Education Department.

# From the Education Department

Did you know that the Garden offers a great variety of educational programming for children? Here is a brief outline of some of the activities that we provide for student groups and for youngsters visiting the Garden with their families.

A Touch of the Garden: Hands-on experiences at "touch carts" along the main trail teach children about the uses of desert plants. See the Calendar of Events for the days and times that docents are available.

**Desert Detective:** This activity sheet is in the form of a game that is designed to reinforce basic desert concepts and encourage children to discover information on their own. Every child receives a free copy of the Desert Detective upon arrival at the Garden.

Plants and People of the Sonoran Desert: This interactive exhibit explores the importance of plants to people of the Sonoran Desert through time. Children can grind corn into meal, pound mesquite pods into flour, make brushes out of yucca leaves and enter desert structures made from plants.

Puppet Shows: "The Hotel Saguaro" is presented as an outreach program in

cooperation with the Great Arizona Puppet Theater and is sponsored by Valley National Bank. Children learn about desert ecology by seeing how animals depend on saguaros for food and shelter. Available at no cost to schools (suitable for students in grades K-2). See the Calendar of Events for weekend performances at the Garden.

"Seasons of the Desert" is also presented in cooperation with the Great Arizona Puppet Theater. This story line explores the importance of desert plants to animals and people. If funding is available, it will be presented free to students in grades 3-5.

Sammy Saguaro Club: Designed for children ages 4-11, club members receive a sticker, membership card, quarterly newsletter/activity sheet, discounts on children's classes and special classes for club members and their families. There is a \$2.50 enrollment fee.

**Teacher Aids:** Teachers are encouraged to offer classroom introductory and follow-up lessons to relate Garden visits to classroom learning. A complimentary copy of *The Sonoran Desert Handbook: Desert Study Unit* is available to teachers who schedule a Garden visit. The handbook provides background information on the ecology of the plants, animals and people of the Sonoran

Desert plus lessons to reinforce these concepts and a list of suggested vocabulary words and resource materials.

Teachers also receive a reference copy of the trail guide for *Plants and People of the Sonoran Desert* when registering for a visit to the Garden. Additional copies may be purchased for fifty cents or borrowed upon entering the exhibit. We encourage teachers to use this trail guide to supplement the classroom introductory and follow-up lessons presented in this unit.

**Teacher Inservices:** The Garden offers workshops for teachers and school administrators. Instruction focuses on the exploration of desert ecology through observation and hands-on activities for students. In addition, teachers are introduced to the educational opportunities and materials available from the Garden for teachers and students. Presentations can be designed to meet the needs of specific school districts and programs. Price is contingent upon length of time and materials provided.

We are very proud of the excellent programming the Garden has developed for children and we are gratified by the response we have received from parents and teachers. The Education Department welcomes comments, questions and suggestions.

# From the Membership Department

Effective October 1, 1988 there will be some changes in the Garden's membership program along with a brand new look. We hope that you will continue to share the Garden with your family and friends by using your guest passes and by giving gift memberships to celebrate special occasions. The new membership categories are:

## Individual

\$25

\$1000

Free admission for member; 4 guest passes; subscription to all publications; 10 percent discount on Gift Shop purchases and at Plant Sales; 20 percent discount on classes and field trips; members only Luminaria Night; invitations to preview events; advance notice of Garden activities for priority registration.

**Family** \$35 Free admission for member family; all other benefits of individual membership; 4 additional guest passes (total of 8).

**Contributing \$50** All benefits of family membership plus 2 additional guest passes (total of 10).

Agave Century Club \$100 All benefits of contributing membership plus 2 additional guest passes (total of 12); invitation to annual Century Club event; special recognition in Garden publications.

## Saguaro Society

All benefits of family membership, unlimited guest privileges; invitation to Saguaro Society events; special recognition in Garden publications; acknowledgement on Saguaro Society Recognition Board.

## **The Perfect Gift**

It's hard to think about the holidays with temperatures still hovering at 100+ degrees, but when you do make up your gift list we hope you will consider a Garden membership for some of those special people. It will bring someone a whole year's worth of enjoyable experiences.

If you like to do your shopping early, purchase your gift memberships now and we'll make them valid through December 31, 1989. Use this form OR call the membership office (941-1225) and we will bill your MasterCard or Visa.



# Beat the Heat: Think Luminaria!

The Luminaria Committee of Friends of the Garden has been working and planning through the summer for the 1988 **Noche de las Luminarias.** 

Luminaria is a major event requiring thousands of hours of staff and volunteer time. If you would like to help with this exciting event, we can use additional volunteers for both nights. If you can volunteer for one shift (two and one-half hours) please call Pat Smith at 941-1225. Mark Your Calendar 1988 Noche de las Luminarias

> December 2 (Friday) Members Only Preview 5 p.m. — 9 p.m.

December 3 (Saturday) **Public Night** 5 p.m. - 9 p.m.

(Watch for your special mailing with details about Luminaria.)

Level of membership selected: \_\_\_\_\$ 25 Individual \_\_\_\$ 35 Family \_\_\_\$ 50 Contributing \_\_\_\$ 100 Agave Century Club \_\_\_\$1000 Saguaro Society Enclosed is my check for \$ \_\_\_\_\_ Please charge my: \_\_\_\_\_ Visa \_\_\_\_\_ MasterCard Card # \_\_\_\_\_ Exp. Date: \_\_\_\_\_

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## Desert Botanical Garden Members — New and Renewals March, April, May, 1988

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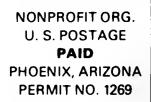
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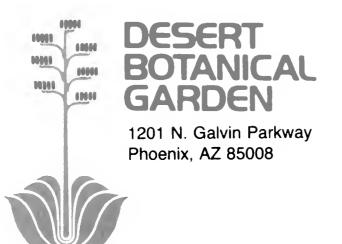
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## PREVIEW SHOPPING DAY BENEFITS GARDEN Thursday, September 8, 1988 9 a.m. to 9 p.m. GOLDWATERS SCOTTSDALE FASHION SQUARE

The Friends of the Garden and other community groups are selling admission tickets to the Charity Benefit Day at Goldwaters. (Admission to the Preview is by ticket only.)

Tickets are \$5.00 each and all proceeds go to the Garden. In addition to the ticket receipts, there are cash bonus incentives for the organization selling the most tickets.

Everyone who buys a ticket and attends that day will receive:

- A 20% discount certificate on any apparel item
- A 20% discount certificate on any single home item
- Special savings throughout the store
- A chance to win a \$2500 Goldwaters shopping spree
- Prize drawings all through the store
- Celebrities and live entertainment
- Refreshments, games for children

Monies raised will help meet the Friends' fundraising goal of \$30,000 for new interpretive signs for the Garden.

## To order tickets, fill out the form below and mail with your check.

			•••••		
NAME					
ADDRESS					
CITY		STATE	_ ZIP		
	Number of tickets ordered X \$5.00	Amount enclosed \$			
Please make check payable to: Desert Botanical Garden, 1201 N. Galvin Parkway, Phoenix, AZ 85008 OR call 941-1225 for more information.					