

Research Ready

Letter from the Executive Director
Terrence Walters, Ph.D.

A crucial component of MBC's purpose is to promote the use of our palm and cycad collections by researchers. We have spent the past six years developing scientifically valuable collections borne out of wild-collected germplasm. We continue to increase the value of our plants by adding our own observational data to the detailed record for each plant. For example, we photograph juvenile as well as mature plants, and collect data on the timing of reproductive processes such as flowering and fruiting. These in-house activities are producing collections that are of use in a variety of research projects. At the forefront are studies on the definition of and relationships among species and other taxa (these areas of study are called taxonomy and systematics). MBC has over 470 taxa of palms and 240 taxa of cycads for taxonomists and systematists to investigate. Within the plant kingdom, cycads and palms possess a number of unique anatomical and developmental characteristics. With well over 5,000 palms and 2,300 cycads in the ground, many of which are still immature, MBC offers a tremendous amount of material for study by structural and developmental morphologists. Ecologists and botanists have found our resources valuable as well, conducting studies of pollinators, symbiotic relationships, and life history on various native and exotic species at MBC. Cycads, which are known for their unique secondary compounds, have been extensively studied by biochemists in search of rare bio-active compounds. Scientists also use our collections to examine the cultural conditions necessary for growing commercial palm and cycad specimens. For example, horticulturists have used our plants to test specific chemicals for treating pest problems.

Since the inception of our scientific collections, researchers have accessed MBC's plants for an amazing array of purposes. The research opportunities at MBC continue to increase each year as our collections grow in number, diversity, and data quality. A vital responsibility of ours is to make sure that the scientific community is aware of what we have to offer. To that end, MBC staff visit other research and educational institutions; host on-site tours, conferences, and workshops; and reach out through our publications and internet website (www.MontgomeryBotanical.org). We believe there is no end to the possible research projects that can be conducted on our collections.

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SPOTLIGHT ON OUR VOLUNTEERS

by Evelyn A. Young, Volunteer Coordinator

Our last article looked in on MBC's nursery, where most of the plants here get their start. Long before a plant is ready to go into the ground, locations are discussed and pondered and a perfect spot on this vast 120-acre property is chosen. When the time comes for a plant to leave its nursery home, the work begins for the Palm and Cycad Horticulturists. Not only does the plant need to be planted; it requires a great amount of care to help it reach its full potential. Watering, herbiciding, mulching, weeding, trimming, and keeping it disease- and pest-free is a full-time job. The horticulturists are assisted with these many tasks by field volunteers.

One of our very dedicated and skilled field volunteers is Judy Griffis. Judy, a retired Palmetto Middle School Physical Education teacher, started volunteering after Hurricane

Andrew. She came to the MBC Nursery in 1995. In 1997, she decided to become a field volunteer and started working with Palm Horticulturists Laurie Danielson and Vickie Murphy. Being in the field requires a special type of person who can stand up to the vari-



Judy Griffis helping to fertilize the MBC collections.

ous elements for which Florida is so noted—mosquitoes, heat, rain, and the much hated no-see-ums (i.e., sand fleas). Judy has passed the test with flying colors. Week after week, she returns to MBC, providing constant support to

the Palm Team and the MBC collection.

If you would like a challenge like Judy's—working outdoors and getting great satisfaction helping things grow—or if working inside on a computer or in the archive has more appeal, we may have just the place for you. To find out what we have available, please call me at 305-667-3800, ext. #11.

Evelyn Clayton Smiley (1913 – 2001)

Evelyn Smiley, a close friend of Robert Montgomery, Alvin Jennings, and Nell Montgomery Jennings, and a long-time supporter of Montgomery Botanical Center, passed away on September 17, 2001. Evelyn married Nixon Smiley in 1933, and in 1935 they moved to South Florida to create a new life ripe with opportunities for themselves. They developed ten acres in the Redlands, raising chickens and cows, and growing the wonderful fruits of the tropics, including mangos. Later, along with their son, Karl, they moved to Miami where Nixon and Evelyn worked at The Miami Herald. Throughout her life, but much more in her later years, Evelyn created beautiful pieces of art, including woodcarvings, watercolors, and ceramics, many for which she won prizes. When Nixon became Director of Fairchild Tropical Garden and then also Director of MBC, Evelyn gave freely of her time as a volunteer, working alongside Nell Montgomery Jennings to support the success of these institutions. Even after Nixon's and Nell's passings, Evelyn continued with her commit-



ment. The MBC Team offers our condolences to Dr. Karl and Charlotte Smiley, and to Evelyn's grandchildren, Scott, Tom, Mark, and Laura.

TEAM WORK

The MBC Team has a thirst for knowledge that cannot be quenched. Since last summer, employees have participated in a variety of educational experiences. We begin with Dicot Horticulturist Scott Massey, who completed an “Urban Tree Short Course” through Miami-Dade County Cooperative Extension Service (MDCCES), and attended the Annual Arborist Conference in Tampa. Lee Anderson, Jack Bauer, Sue Katz, and Orlando Coy brushed up on their management skills by taking a full-day class entitled “Excelling as a First-Time Manager or Supervisor.” Jack joined Irrigation Specialist Ansel Thomas at an “FPL Power Quality Seminar” on September 25. Ansel and Grounds Supervisor Orlando Coy took an intensive all-day training course through MDCCES called “Innovations in Irrigation.” Various facilities staff attended the Miami International Construction Show in November.



Laurie Danielson (left) enjoying one of the many private palm garden tours during “Palm Fest 2001.”

Palm Horticulturists Laurie Danielson and Vickie Murphy participated in “Palm Fest 2001” on September 29–30. The event included lectures and tours of palm gardens on the west coast of Florida. In December, the Grounds Team had on-site training with Dr. Phil Busey on turf maintenance and irrigation (see page 10).

The MBC Team also spent a day touring the grounds and facilities of two other botanical organizations with long histories in Miami. During the morning of September 12, the staff learned about operations at the Tropical Fruit and Spice Park. The afternoon was spent touring the historic home and

native hammock of The Charles Deering Estate, which is only about 5 km south of MBC.

Finally, education at MBC would not be complete without our cross-training activities. The latest employee to experience another employee’s “work world” was Administrative Assistant Claudine Bachman, who spent a day participating in the work duties of Field Supervisor Barbara Bohnsack. A day out on the grounds with the plants was actually a nice change of pace for Claudine, who is usually tied to the phone lines and computers inside Nell’s House.

Staff are also active in lending their expertise to others. Laurie and Vickie visited The Charles Deering Estate on December 5 to advise Deering’s gardeners on the problems they are having growing royal palms around their boat basin. In August, Larry Noblick took his expertise to Brazil. Speaking in Portuguese, he gave botanical lectures at four educational institutions during his visit. Over 100 individuals attended his talk at the Instituto Plantarum in

Sao Paulo on August 9. Twenty-six biology students attended his lecture at the Federal University in Minas Gerais on August 13, and 35 landscape and nursery industry guests heard Larry speak the following day at the National University of Brasilia. Larry’s last lecture, on August 17, was to 40 students and professors at the State University of Feira de Santana in Bahia.

Executive Director Terrence Walters is not to be out-done by his staff. As a board member of the International Palm Society, Terrence attended the two-day IPS Board of Directors Meeting in San Diego



MBC Team touring the ground floor of the original home of the late Charles Deering.

in August. This trip was followed by a trip to New Orleans in October for The Cycad Society Board of Directors annual meeting. Terrence is Treasurer for this society. While in New Orleans, Terrence gave a lecture to the Louisiana Palm & Cycad Society entitled “Montgomery’s Cycad Collection: Its History and Future.” Terrence has also been invited to serve another term as member of the IUCN Species Survival Commission Cycad Specialist Group. This group provides expert advice and leadership at the international level for cycad conservation. Terrence’s multifaceted activities related to cycad science have also resulted in some publications, including “Montgomery Botanical Center’s cycad collection: a 2001 update on the collection” in *The Cycad Newsletter* (Vol. 24, No. 3). This article was co-authored with Cycad Horticulturists Eric Shroyer and Stella Cuestas.



Claudine Bachman (left) cross-training with Barbara Bohnsack of the Collections Development Team.

RESEARCH & EDUCATION

Snapshots in Diversity

A diversity of researchers and students have been accessing the resources of MBC. Dr. Andrew Henderson of the New York Botanical Garden (NYBG) continues to collect growth and development data from our palm collection (see box below). Caroline Stromberg (University of California–Berkeley) obtained material from our palm and dicot collections to develop a reference collection for phytolith identification at the Jepson Herbarium. Doctoral student Carol Landry (University of Michigan) spent two months with us this past summer, studying the reproductive biology of our mangroves. J. Richard Abbott (University of Florida) and Dr. Bruno Wallnofer (Austria) obtained vegetation and reproductive material from MBC's extensive *Diospyros* collection for their systematic studies of the genus. Fairchild Tropical Garden's (FTG) Dr. John Pipoly collected flowering material of *Wallenia laurifolia* for his morphological and taxonomic studies in the Myrsinaceae. In October, Dr. Belen Gutiérrez of the Botanic Garden of Madrid in Spain obtained palm leaf samples from six of our *Phoenix* species for her research. Drs.

Alan Merrow (U.S. Department of Agriculture), Javier Ortega (FTG), Jeremy Moynihan (Florida International University), and Terrence Walters (MBC) recently began a molecular-based taxonomic study of MBC's Florida cycad collection. Dr. John Lott (McMaster University, Canada) obtained cycad seeds from our collection to see if cycads have iron-rich particles like those found in cells of pines. January, 2002, was a busy month for visiting palm scientists: Drs. Scott Zona and Carl Lewis (FTG), John Dransfield and Bill Baker (Royal Botanic Gardens–Kew), Natalie Uhl (Cornell University), and graduate student Ross Bayton (University of Reading, U.K.) all accessed MBC's palms. Graduate student Bee Gunn (Missouri Botanical Garden) collected leaf and flower material from our *Syagrus* plants for her dissertation work on this palm genus. Graduate student Michael Calonje (Humboldt State University, California) spent three weeks at MBC

working with our cycads; his thesis will propose a management plan for the development and preservation of Colombian cycads. With a completely different perspective on what we have to offer, students from the University of Miami's School of Architecture visited MBC to learn how research institutions

design space to meet their purpose. And, architecture graduate student Elizabeth Baron (FIU) poured through the MBC archive looking for information on William Lyman Phillips, who was the landscape designer for Colonel Montgomery.



Upper Left: MBC's Larry Noblick helps graduate student Bee Gunn collect *Syagrus* material. **Above:** Graduate student Michael Calonje (right) is shown identifying the rare Colombian cycads in MBC's nursery.

Research Update: Palm Stem Growth

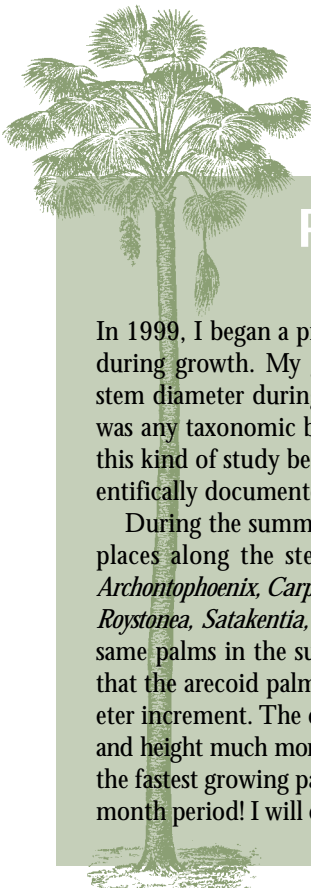
by Dr. Andrew Henderson, New York Botanical Garden

In 1999, I began a project at the MBC to measure stem diameter increment during growth. My goal was to discover which palms undergo increase in stem diameter during vertical growth and which do not, and to see if there was any taxonomic basis for the phenomenon. MBC is an ideal place to do this kind of study because a large number of young, correctly identified, scientifically documented palms have recently been planted in the ground.

During the summer of 1999 I measured height and diameter, at different places along the stem, of 123 palms, sampling 11 genera (*Actinorhynchus*, *Archontophoenix*, *Carpentaria*, *Chambeyronia*, *Dypsis*, *Normanbya*, *Ptychosperma*, *Roystonea*, *Satakentia*, *Veitchia*, and *Wodyetia*) and 15 species. I re-measured the same palms in the summers of 2000 and 2001. Preliminary results indicate that the arecoid palms (e.g., *Veitchia*, *Wodyetia*) have the greatest stem diameter increment. The other finding is that younger palms increase in diameter and height much more quickly than do older ones. *Syagrus botryophora* remains the fastest growing palm in my sample, growing almost 3 meters over the 24-month period! I will continue my measurements during the summer of 2002.



Field Supervisor Barbara Bohnsack helping Dr. Henderson with his palm trunk measurements.



OUTREACH & EVENTS



Lots to See and Do at MBC

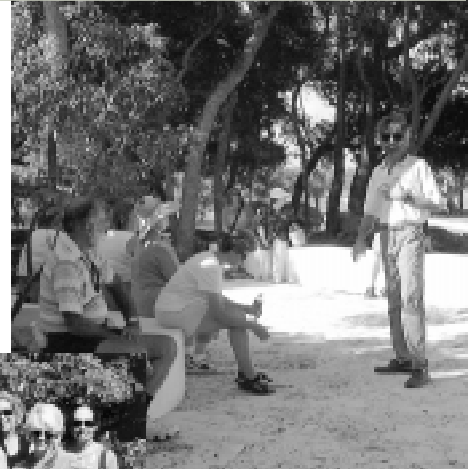
MBC offers a lot to see and do, for visitors and tour groups as well as for students and scientists. Over the past six months, MBC staff have given on-site tours and lectures to the Coconut Grove Garden Club, the Miami Chapter of Ikebana International, the South Florida Palm Society (which also held a work-day here), the staff of The Charles Deering Estate, and the Master Gardeners of Orange County, Florida. Some of our visitors also gave lectures, usually consisting of slide presentations in the Nixon Smiley Meeting Room. In September, Walt Dunlap spoke on "Mapping the New York Botanical Garden."

Margaret McPherson of the South Florida Water Management District gave a lecture on November 7 on the history of water management in our part of Florida. Landscape designer Alvaro Calonje lectured on the "Palms and Cycads of Colombia" on November 8.

One of our other outreach activities is with Miami-Dade's Adopt-a-Tree Program. Beginning in the spring of 2001, MBC started storing 1,500 small trees for the county. These trees are being given to local homeowners who had to have their citrus trees removed as a result of the Citrus Canker Eradication Program.

Finally, MBC is a place to kick-back, enjoy, and reflect over the year's ups and downs. University of Miami's Department of Geology held their year-end departmental party here on December 2. Over 50 students, faculty, and spouses attended the luncheon, lecture and two-hour "treasure hunt" on the property. Also closing out the year on a high note was the Florida Nurserymen and Growers Association, whose poolside party included live music by The Dashboard Saints. Over 90 industry people attended the moonlit event, which included tours of Nell's House by Executive Director Terrence Walters.

Yes, there's a lot to see and do at MBC.



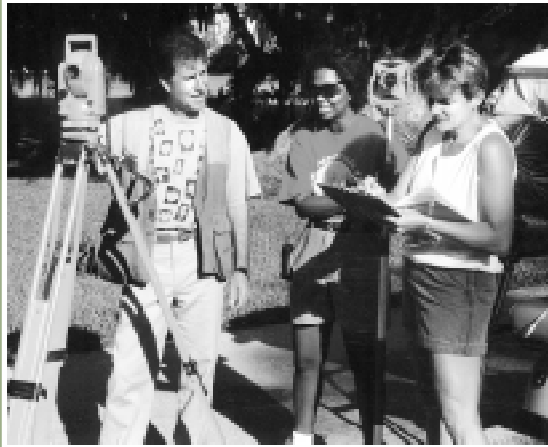
*Above: Executive Director Terrence Walters (right) giving a lecture to the Master Gardeners of Orange County. Left: Members of the Coconut Grove Garden Club during their tour of MBC in November. "Posing" in front of the group is the cycad *Encephalartos concinnus* with four female cones.*



Above, Right: Members of Florida Nurserymen and Growers Association dined poolside while listening to live music. Left: University of Miami's Geology Department enjoying lunch on the Walter Haynes Overlook.



COLLECTIONS



Walt Dunlap (left), a professional land surveyor and mapping specialist with the New York Botanical Garden, consulted with MBC's Norma Armstrong (center) and Barbara Bohnsack on some survey-related problems in October, 2001.

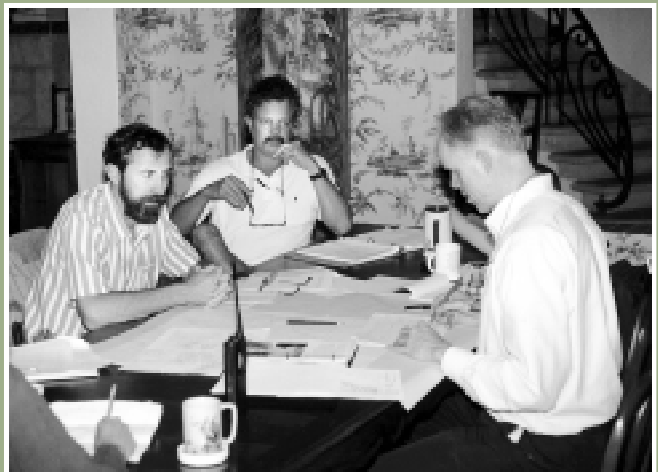
Montgomery's Con

The success of our institution depends on the information and professional advice we receive. Each year, consultants play a vital part in our operations. Some are brought in annually, others even more frequently, and some are consulted on an as-needed basis. Those with the necessary background, knowledge, and skills proceed with our purpose in the most effective manner. We also keep us informed on the latest technology in electronics, mapping, landscape design, and more. During 2001, numerous talented individuals in landscape design, computer database development, internet development, spent time on site improvements, and solving problems.



Since the start of the Seedbank Program in 1998, horticulturist Murray Corman has been the program's outside consultant. He chooses which of our palm and cycad species he thinks will do well in the Florida landscaping community. He then advises Seedbank Coordinator Judy Kay on optimum times for the collection, storage, and distribution of seeds from these species. Much of his time is spent sorting through germplasm, as shown here.

Sasaki Associates is MBC's Master Site Planning Firm. One of their expert landscape architects, Joe Hibbard (right), visits annually to oversee the implementation of our site plan. Here, Joe is seen conferring with Collections Manager Larry Noblick (left) and Property Manager Lee Anderson on the positioning of certain palms on the property.



DEVELOPMENT

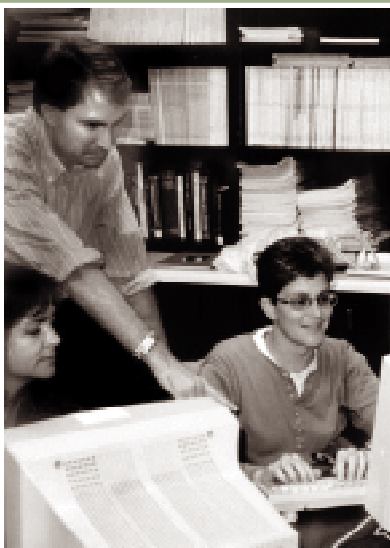
Consultant Support Team

depends on gathering the latest technical advice from the world beyond our gates. Each part in MBC's growth. Some of these experts visit every two to three years, while others are permanent. These specialists provide MBC Staff with their knowledge, and recommendations to promote the most efficient and cost-effective way. They bring the latest technologies and methods in databasing, database design, communication, and horticulture. These individuals, representing the fields of land-use planning, database software, horticulture, surveying, and more, come to MBC advising staff, suggesting improvements.



Mark Glicksman of BG-Map gives guidance to the Collections Development Team every other year. His next mapping software training session will be in 2002.

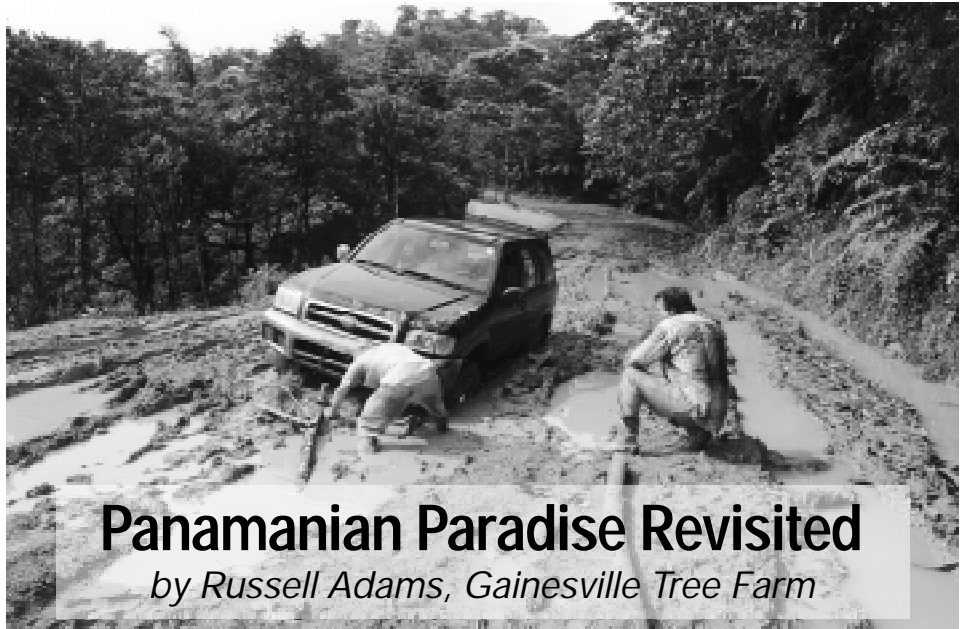
Mike O'Neal (left) is our BG-BASE consultant. He visits Sue Katz (right) and other Collections Development staff every other year, fielding questions relative to MBC's plant database.



Dr. Hugh Wilson (right) is one of our more recent discoveries from the pool of gifted professionals. A plant taxonomist from Texas A&M University, Hugh has extensive experience in managing large data collections. We contacted him for advice on how to place our plant database, with its diversity of images, online. During Hugh's visit in September, Barbara Bohnsack (left), Sue Katz (front), and Larry Noblick (back) introduced Hugh to the complexities of our records. With this background, Dr. Wilson will be able to advise us on the procedures and equipment necessary to create a searchable internet version of our database.

The year 2001 brought about a second Panama Expedition involving three great institutions and a reunion among three old friends. The group included myself as representative of MBC, Dr. Dennis Stevenson from the New York Botanical Garden, and Dr. Alberto Taylor from the University of Panama. We were joined on this excursion by world traveler and cycad enthusiast Alan Whittington of Florida. Our goal was to explore the northwestern region of Panama, including the states of Coclé, Veraguas, Chiriquí, and Bocas Del Toro. We were especially interested in the *Zamia skinneri*/*Z. neurophyllidia* complex and targeted several localities for this group.

From Panama City, we traveled west to the town of Santa Fe. This was to be our starting point for what we knew would be a very long and difficult day of travel. We planned to drive our four wheel drive Pathfinder as far as the road would allow and then continue on foot over the continental divide and down the Caribbean slope to the headwaters of the Calovebora River. This location is where Dr. Bob Dressler reported finding a plant that was a “perfect match” for Warscewicz’s 1851 sketch and description of *Z. skinneri*.



Panamanian Paradise Revisited

by Russell Adams, Gainesville Tree Farm

With our shiny new SUV buried to the frame only two kilometers outside of Santa Fe (see photo above), our hopes of a successful trip were greatly diminished. Alberto was dispatched back to Santa Fe for help, while Dennis, Alan, and I set our backs to the task of extracting the vehicle from the giant mud hole. Two hours later, we were much muddier but no closer to freeing the vehicle from the suction of the giant hole. At this moment, the most wonderful sight we could imagine rounded the corner—a caravan of four-wheel-drive trucks, right out of the “Dukes of Hazard”, complete with giant knobby tires and, even better, snow chains for traction. Riding shotgun in the lead truck was our dear friend Alberto. The caravan was taking school desks and building supplies to a small town at the end of a new road on the Calovebora River. We were saved! The trucks were completely filled with people in the cab and school desks in the back, but we were able to stand on the bumper and hold on to the steel frame that encased the truck bed. The next two hours were an incredible mix of pleasure and pain.

The pain was brought about by leg cramps from constant flexing as the trucks forded small rivers, traversed giant boulders, and scaled inclines as steep as 50 degrees. The constantly shifting chairs would occasionally smash into our also cramping hands, forcing us to relinquish our white-knuckled grip, but only for a second. This pain was offset by the sheer ecstasy of the sights unfolding before us. This new road was less than one month old and we were literally traveling through miles of virgin rainforest.

As we neared the divide, we began to see massive *Z. pseudoparasitica* plants settled in their lofty perches like venerable gray-green gentry looking down upon us. Were they contemplating the consequences of this new road, which was sure to bring a flood of people? Because of time constraints, we were not able to collect any specimens but we did allow ourselves the luxury of stopping to admire their magnificence. A little further along the road, we began to see the real quarry of our



quest—*Z. skinneri*. Like garnet and ruby fountains in an emerald green sea, the massive new leaves arched skyward from trunks measuring a meter tall. Leaves were produced in numbers from one to five, but mostly in sets of three. Some leaves were over 2.5 m long with leaflets up to 60 cm long and 20 cm wide. The anthocyanins, which gave the new leaves a ruddy hue, stood out in stark contrast to the green forest behind.

Once in the town of El Guabal, we quickly unloaded the trucks with the help of the entire town and headed into the forest. *Zamias* were very abundant and we soon had all the plants, herbarium vouchers, and DNA samples we needed.

The steady rain that had accompanied us all day now became a downpour and we rushed to leave before the road became totally impassable. We arrived back in town as night fell—bruised, tired, and hungry, but giggling like school children at the day's events.

The next morning, we were up early, driving west to the town of Chiriquí, then turning north on one of only two roads to transect Panama from the Pacific to the Caribbean coast. Near midway along this road is the continental divide and the Fortuna Dam area. This is an incredibly diverse botanical region protected by the national park system of Panama. Here, in cloud forest at 1,200 m elevation, we found the rare and beautiful *Z. lindleyi*. The plants were scattered sparsely along the top of the ridge. The trunks averaged about a meter tall, although all sizes from seedlings to much larger trunks were observed. Each plant held about five to six leaves per flush. New leaves were a bright shiny green; the older leaves were dull green and almost completely covered with bryophytes. A leaf was composed of 20 to 30 pairs of narrow leaflets, each leaflet measuring 2.5 cm wide by about 20 cm long.

As we continued down the mountain toward the town of Chiriquí Grande we again observed *Z. pseudoparasitica*. In the hills above the town, and along the costal road, which continues northwest to the Costa Rican border, we collected *Z. neurophyllidia*. This plant

is described basically as a dwarf form of *Z. skinneri*. The emergent leaves of this species are bright green as opposed to the reddish bronze color of *Z. skinneri*, and they tend to sport twice as many leaves at any one time. Leaflets of *Z. neurophyllidia* are generally smaller and more numerous than those of *Z. skinneri*. However, we found some mature *Z. neurophyllidia* individuals with leaves over 2.2 m long and leaflets 15 cm wide by 50 cm long. We found at least one large female plant with a trunk over 3 m tall. This is much larger than any trunks of *Z. skinneri* that I have personally seen. Plants were abundant all throughout this area, but are being

seedlings to mature plants with trunks 3 m tall. There were emergent male cones, emergent female cones, female cones with ripe seeds, and cones at every stage in between. *Zamias* were the dominant understory plant as well as the dominant ground cover. This was due in part to the fact that the indigenous people keep the underbrush down with their machetes. The *zamias*, like the great Hydra of myth, seem to sprout anew with each swing of the blade. The severed apex, likewise, falls to the ground, becomes rooted, and continues growing. This has created the most robust population of cycads I have ever seen. I only hope some steps towards conservation are made in this area, as beach-front real estate, even in these remote islands, is at

a premium. The first beach house on this part of the island already decimated the eastern end of the cycad population.

On the next leg of our journey, we traveled back to the mainland, over the Cordillera de Talamanca, and into the State of Chiriquí. Near the border with Costa Rica, at an elevation of 1,300 m, we found the beautiful and controversial

Z. pseudomonticola. The plants were growing along steep slopes in dark volcanic soils in the forest remnants between coffee plantations. Trunks were up to 1.2 m tall with leaves up to 2 m long. The bright glossy green leaflets had a slight crease down the middle, and the petiole was lightly armed with prickles.

On our way back to Panama City, we stopped in the State of Coclé near the town of El Valle to look for the diminutive *Z. acuminata*. We found them in abundance along the slopes of an extinct volcano. This is a subterranean species with small glossy green leaves less than 60 cm long.

The 2001 Panama Expedition was an unqualified success. Over 50 accessions of cycads and palms were collected. Collaborations developed during this and the previous Panama expedition will continue to benefit MBC and the scientific community at large for years to come.



Above: The price of our taxi ride to El Guabal was to unload the trucks. **Right:** Dennis Stevenson hard at work in the field pressing leaves of *Zamia lindleyi*.



threatened by deforestation.

Next, we headed to the barrier islands on the seaward side of Laguna de Chiriquí. We landed on the southern or mainland side of the island and made our way over the tall ridge that runs down the center and then started down to the northern side. At the bottom of the ridge was a low swampy area. From here, the ground rose gently but steadily toward the beach. It was here that I saw something that I will never forget. It was a forest of *Z. neurophyllidia*. This forest was narrow, starting at the beach and continuing back toward the swamp for maybe 100 meters. It continued for about 1.5 km and contained literally thousands of individuals, maybe tens of thousands of plants. Plants were in all stages of development, from

2001 Collection Inventory Statistics

	Planted in the Ground	Growing in Our Nursery	Total in Collection ³
PALMS			
Taxa ¹	360	217	471
Accessions ²	1,865	467	2,073
Plants	5,043	-	-
CYCADS			
Taxa ¹	165	161	241
Accessions ²	1,312	672	1,381
Plants	2,375	-	-
OTHER			
Taxa ¹	642	21	653
Accessions ²	2,181	32	2,185
Plants	2,804	-	-

¹ Species, varieties, etc. ² A collection of seeds from one source or one locality.

³ A taxon or accession may be represented in both the Ground and Nursery.

Shown in the background is a germinating seed of the palm *Nypa fruticans*.

Thanks for Your Support in 2001!

Financial Contributions

Andrews Family - Kathleen, Marcia, Barbara,
and Mary
Anonymous
Baltin, E. L.
Beaty, John T.
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Bohner, Marion (in honor of Mayna & Bob
Hutchinson)
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Curtis, Mary Ann & Alan
Cycad Society Seed Bank
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Delevoryas, Ted
DeMott, John (Redland Nursery)
Dennis Family Foundation
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Fessenden, Lillian
Florida Nurserymen & Growers Association
(Dade Chapter)
General Mills Foundation
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Merritt, Michael
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Noblick, Florence
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Shea, Catherine & Michael
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Sternner, Delphine
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In Memory of Evelyn Smiley

Bellamy, Jeanne
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Kambour, Michael
Kelly, Eileen & Loyd
Manz, Jean & Peter
Mark, Thomas
Scott, James Jr.
Stoker, Charlotte & Charles
Walters, Deena & Terrence

In Memory of Paul Anderson

Mclwain, Tom

Goods & Services Donations

Besse, Libby
Block, Jeffrey
Chemnick, Jeff
Dhar, Shri
Edwards, Ian
Fisher, Jack
Ganna Walska Lotusland
Gregory, Timothy
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Smiley, Karl
Smiley, Mark (MCS Engineering)
Stark, Jean (Stark Connections)
Tomlinson, Barry

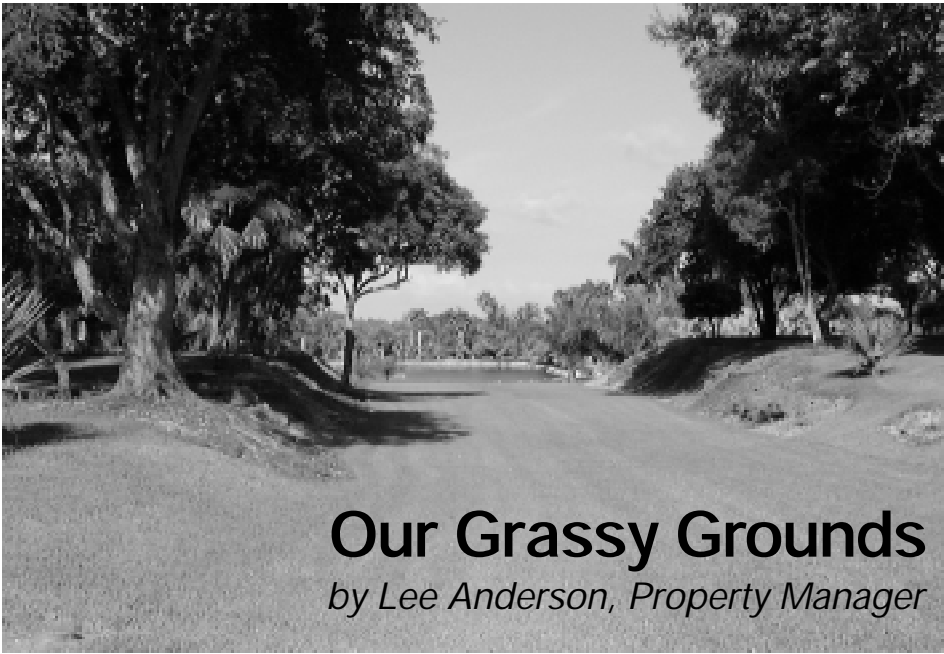
Plant Donations

African Rattan Research Programme
Chemnick, Jeff
Corman, Murray (Garden of Delights)
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Gregory, Tim
Kress, John
Kyburz, Rolf
National Tropical Botanical Garden
South African Palm Society
Sweet, Samuel
Whitelock, Loran & Eva (Cycad Gardens)

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Andrews, Mary
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Banks, Duane
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Bellamy, Jeanne
Biggane, Jacquelyn
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Mahaffey, Libby
Manz, Peter
Murasaki, Dennis
Renshaw, Merilynn
Sacher, Charles P.
Smiley, Karl
Stark, Jean
Whitney, Brenda

*MBC's volunteers donated
3,230 hours of work in 2001.*



Our Grassy Grounds

by Lee Anderson, Property Manager

Our horticultural mission of showcasing exemplary horticultural and landscape practices must include all elements of our landscape, from the plant collections to our lakes and waterways and the 50+ acres of greenswards. Effective and efficient turf management practices are used to accentuate the scientific collections as well as to enhance the overall landscape design.

The landscape crew, headed up by Grounds Supervisor Orlando Coy, employs a variety of turfgrass species on the property. St. Augustine (*Stenotaphrum secundatum*), for example, is used in the traditional, historic areas, such as the Coconut Grove Palmetum around Nell’s House and the grand allée extending out to the lakes (photo above). In the allée, the turf’s rough texture compliments the rough texture of the exposed limestone flanks of the vista. Landscaper Willie Dye has the responsibility of maintaining a shade-tolerant cultivar of St. Augustine called ‘Seville’ throughout the Cycad Walk. Randy Russ spends a lot of time working with the bahia (*Paspalum notatum*) cultivars ‘Argentine’ and ‘Pensacola’ in the Palm Walk. The drought tolerance of bahia grass allows horticulturists to tailor their irrigation schedules to meet the requirements of their collections, not the turf.

The “fairway” design feature of the Palm Walk is planted in the ‘Sunstar’ cultivar of bermuda grass (*Cynodon dactylon*). This cultivar has a high drought tolerance and is typically used on golf course greens where it gives

a long, rolling fairways-like appearance. (So much so that we are always hearing comments, such as from palm scientist Dr. Andrew Henderson of New York Botanical Garden, who talks wistfully of “The Links at Montgomery” or of establishing “The Montgomery Invitational” as a source of funding.) Landscaper Mario Barrotto uses a special hydraulic three-reel gang mower—donated by the Gulliver Academy Athletic Department—with a six-foot cutting swath to make quick work of mowing the 500-yard Palm Walk greensward.

The lowlands of MBC present a different set of challenges for the landscape team. The area has no permanent irrigation installed, and is subject to periodic tidal inundations of brackish water. Stands of zoysia (*Zoysia japonica*) thrive with very little maintenance in soils that are continually wet. In other areas,



Dr. Phil Busey (left), a turf scientist with the University of Florida, consulted with MBC’s Grounds Team in December concerning the maintenance, irrigation, and disease and pest control of our turf species. He also introduced us to new cultivars that are being developed.

Orlando and his landscaping team of Willie Payne, Jessie Pender, and Juan Serrano (supported by equipment operators Abbie Dasher and Hostilio Torres) have developed a series of test plots to evaluate seashore paspalum (*Paspalum vaginatum*) and Durban smothergrass (*Dactyloctenium australe*). The paspalum is enjoying a revival in popularity as a formal turfgrass with excellent salt tolerance, to the point that it can handle levels of salts in irrigation water that would wipe out other grasses.

Seashore paspalum has an interesting history. Supposedly, it is indigenous to the western coast of Africa. It is, however, found growing wild at sites along the southeastern coastline of the United States. Many of these North American sites are places that were involved with the 19th century slave trade. One interesting theory is that the grass was used as bedding in the slave ships, and when the ships were cleaned out at the end of a voyage, the discarded grass established itself along the coastlines of Florida, Georgia and the Carolinas. Paspalum was first introduced for commercial use in South Florida in the mid 1950s by Dr. Julia Morton of the University of Miami. She convinced renowned golf course designer Mark Mahannah to use this grass at the Riviera Country Club in Coral Gables.

Durban smothergrass also has an interesting background. It is a stoloniferous turfgrass native to South Africa, where its properties of compact growth and shade and drought tolerance make it ideal as a ground cover in macadamia nut groves. MBC’s landscape team hopes to be able to propagate this grass for use in areas with low ambient light levels, such as in the Flowering Tree Collection.

MBC’s landscape team continues to experiment with a variety of grass species to determine the optimal cultivars for specific sites, balancing the ideals of horticultural design with the realities of available resources.

Who We Are

Terrence Walters, Ph.D.
Executive Director

Lee Anderson
Property Manager

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Field Assistant

Claudine Bachman
Administration Assistant

Jack Bauer
Facilities Supervisor

Barbara Bohnsack
Field Supervisor

Mario Borroto
Landscape

Juan Corona
Equipment Specialist

Orlando Coy
Grounds Supervisor

Stella Cuestas
Assistant Cycad Horticulturist

Laurie Danielson
Palm Horticulturist

Abbie Dasher
Landscape

Willy Dye
Landscape

Barbara Judd
Nursery Horticulturist

Sue Katz
Database Supervisor

Judith Kay
Seedbank Coordinator

Marta Lagos
Housekeeper

Scott Massey
Dicot Horticulturist

Vickie Murphy
Assistant Palm Horticulturist

Larry Noblick, Ph.D.
Collections Manager

Willie Payne
Landscape

Jessie Pender
Landscape

Randy Russ
Landscape

Juan Serrano
Spray Technician

Eric Shroyer
Cycad Horticulturist

Ansel Thomas
Irrigation Specialist

Hostilio Torres
Equipment Operator

Marino Valcourt
Maintenance Assistant

Evelyn Young
Administration Manager/
Volunteer Coordinator

The Montgomery News

Deena Decker-Walters, Ph.D.
Publications Coordinator, Editor

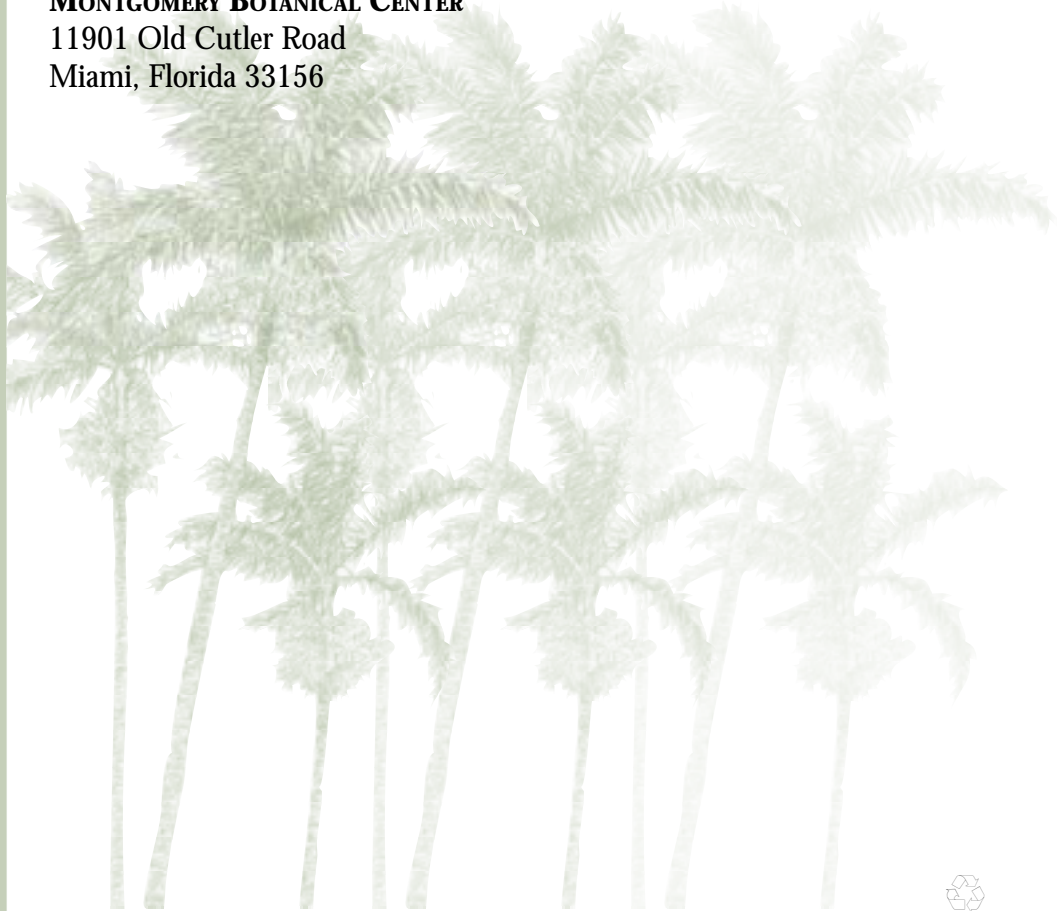
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We can be reached by telephone (305-667-3800), by fax (305-661-5984), and by email (montgome@fiu.edu). Our website address is www.MontgomeryBotanical.org. Our normal operating hours are 7:00-3:30 Monday-Friday.

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From the Montgomery Archive comes this circa 1940s photo of Nell and Robert Montgomery standing on the Silver Bluff Limestone Escarpment at Montgomery Botanical Center.

