

Montgomery Botanical NEWS

Advancing Research, Conservation, and Education
through Scientific Plant Collections

Spring/Summer 2010

Volume 18, Number 1

A UNIQUE PALM IN THE WINDWARD ISLANDS

Continental drift is a geological fact and in no place is it more evident than in the Windward and Leeward Islands of the Caribbean. Here the South American plate is sliding under the Caribbean plate, remelting and resurfacing as an arc of volcanic islands that we know as the Leeward (e.g. Dominica, Guadeloupe, & Monserrat) and Windward Islands (e.g. St. Lucia & Martinique).

A SPECIAL PALM

These islands have fascinating floras, including endemics, like *Syagrus amara*. The genus *Syagrus* is distributed throughout most of South America. It is a mystery how it came to populate only these five aforementioned islands in the Caribbean, which are quite distant from mainland South America. Why no species of *Syagrus* is found on any of the islands between St. Lucia and mainland South America is puzzling. Differences in the seed structure have led some scientists to suggest that *S. amara* should be in its own genus, *Rhyticocos*, but morphological and molecular evidence confirm that *S. amara* belongs in *Syagrus*. In 1996, Montgomery obtained its first *S. amara* from Guadeloupe with the help of Dr. William Hahn. In 2002, Dr. Scott Zona and Katherine Maidman (FTBG) collected and donated seed from Dominica to MBC.

FURTHER COLLECTIONS

In March of 2009, I flew to St. Lucia and stayed in a guesthouse in Gros Islet run by Roger Graveson, a local botany expert. Mr. Graveson and I worked with

of the island. With Mr. Sealys' help I was able to visit most of the palm species of St. Lucia and collect fruit and herbarium vouchers from many of them. Mr. Sealys dried the herbarium vouchers while I traveled to Martinique for 6 days of collecting.

The collecting in Martinique was organized by Pierre-Olivier Albano, president of the local palm society. Andy Peters, a local nurseryman and palm enthusiast, met me at the Martinique airport in Fort de France. Martinique is a part of Europe, with Euros and European customs, literally France in the Caribbean. It has wonderfully preserved areas from which we were able to collect four separate *S. amara* populations along with other fruiting palm species. Without Andy's logistical support and Pierre-Olivier's palm knowledge, I would have been quite lost on the island with all of its roadways and roundabouts.

SUCCESSFUL WORK

I returned to St. Lucia to process the plant material and procure the export permits. We collected 695 palm seeds and 15 cuttings of a very rare, endangered gymnosperm, *Juniperus barbadensis*.

This year, I plan to visit Monserrat to complete our Caribbean collection of *S. amara*.



Dr. Noblick collecting *Syagrus amara* fruit in St. Lucia

Chris (Virginie) Sealys, curator of the St. Lucia Forestry Department to organize the collecting trip. Together, we collected on both the Caribbean and Atlantic side

Larry Noblick, Ph.D., Palm Biologist
larryn@montgomerybotanical.org

Montgomery Botanical Center
Established 1959

Board of Directors

Charles P. Sacher, Esq., *President*
Karl Smiley, M.D., *Vice President*
Walter D. Haynes, Esq., *Sec./Treasurer*
Charles S. Sacher, Esq., *Asst. Treasurer*
Nicholas D. Kelly
David Manz, Esq.
Peter A. Manz
Mark Smiley

Executive Director

M. Patrick Griffith, Ph.D., M.B.A.

Botanical Consultant

John Popenoe, Ph.D.

**Montgomery Botanical
Research Fellows**

John Dowe, Ph.D.
William Hahn, Ph.D.
Damon P. Little, Ph.D.
Cristina Lopez-Gallego, Ph.D.
Mónica Moraes R., Ph.D.
Silvia Salas-Morales
Alberto S. Taylor B., Ph.D.

To advance science, education, conservation and horticultural knowledge of tropical plants, emphasizing palms and cycads, Montgomery Botanical Center keeps living plants from around the world in population-based, documented, scientific collections, for use by botanists, scientists, and educators, in a 120-acre botanical garden exemplifying excellent design.

Montgomery Botanical Center is a tax-exempt, nonprofit institution established by Nell Montgomery Jennings in memory of her husband, Colonel Robert H. Montgomery, and his love of palms and cycads.

Montgomery Botanical News is published biannually by Montgomery Botanical Center.

11901 Old Cutler Road
Coral Gables, Florida 33156

Phone 305.667.3800
Fax 305.661.5984

mbc@montgomerybotanical.org
www.montgomerybotanical.org

Masthead photo of Montgomery Palm
(*Veitchia arecina*)

Printed on recycled paper

F r o m t h e
Executive Director



Dear Friends,

I love to measure work with numbers. Numbers show how far we have gone, and how much further we can go. Numbers are comparable and objective. When numbers are simple, visible and clear, we know how to move forward. Truly, as it has been said many times, “you get what you measure.”

So I was excited to see a recent study on scientific output at major botanical gardens, such as Kew and NYBG. The volume of scientific work at major gardens is amazing; there are literally hundreds of papers each year. The report counted these publications, and divided by the number of scientists at each garden – an elegant productivity metric. Here was a clear yardstick for “science output, efficiently delivered.”

For the largest gardens, annual output ranges from 2.6 to 3.8 peer-reviewed works per researcher. How do we measure up? Last year, MBC had eight such papers. Our 2.7 reviewed papers per researcher are right inside the range with the major gardens. Given our smaller scale and defined focus, it is an accomplishment to match the largest gardens in research efficiency.

Botany research is important here, but so is our other work. MBC conducted seven expeditions in 2009 (see pages 1, 3, & 5), benefited more botanical colleagues and collaborators (page 9), saw broadened support (page 10), and worked with more volunteers (page 11). This year will see further advancements: we will dedicate the Chris Tyson Plant Conservation Building, begin our nursery upgrade, perform further fieldwork, and broaden our collaborations.

Montgomery’s focus is right where it should be. Resources here are efficiently applied to important work with plants. I am grateful for your support and collegueship; you enable our success, and I look forward to more success with you this year.

Pictured: Dr. Griffith at the MBC 50th Anniversary (see page 4).

BAHAMAS CYCAD EXPLORATION BEGINS

Over the past few years, I have conducted cycad fieldwork for MBC in Puerto Rico, Jamaica, and the Dominican Republic. These trips are contributing to an extensive project coordinated by Dr. Alan Meerow of the USDA, which seeks to study the evolution and origin of Caribbean *Zamia*. The project team also includes Dr. Javier Francisco-Ortega (FIU/FTBG), Dr. Dennis Stevenson (New York Botanical Garden), and botanists from the Greater Antilles (see MONTGOMERY BOTANICAL NEWS, Fall 2008, Fall 2009). Together, we aim to conduct fieldwork in the seven countries where Caribbean *Zamia* occur.

Thanks to Javier, the team received support from the Mohammed Bin Zayed Species Conservation Fund to study *Zamia* in The Bahamas on six separate islands. Carried out in partnership with The Bahamas National Trust (BNT), this work will focus primarily on *Zamia lucayana*, an endangered species endemic to Long Island. As part of the research, the conservation status of *Zamia lucayana* will be evaluated by locating and mapping wild populations and analyzing current and future threats to its survival. Genetic data will help determine relationships and conservation priorities. The combination of field and molecular data will be used to prepare a conservation action plan for this species. An outreach component aims to increase awareness for cycad conservation in the Bahamian archipelago.

FIELDWORK

In December of 2009, Javier, Lindy Knowles (BNT), and I began the Bahamian fieldwork by traveling to Long Island to study populations of *Zamia lucayana*. On a ten day survey studying *Zamia lucayana* populations, we found that it occurs only on a narrow strip of coastal sand dunes. This habitat is less than 200 feet wide, and only about 4 miles long.

Although severely limited in distribution, this species was locally abundant at some locations, forming dense stands in beach sand right along the coast with sea lily (*Hymenocallis arenicola*) and sea grape (*Coccoloba uvifera*). The plants seemed remarkably adapted to this harsh coastal environment, looking equally healthy while growing under sea grape or in full sun, and apparently unbothered by the salt spray that was clearly visible on its leaves. The seeds of *Zamia lucayana* seemed to be an important food source for hermit crabs, as dozens of them



Hermit crab feeding on the ripe red seed sarcotesta

Zamia and Seagrape



Dr. Javier Francisco-Ortega and Michael Calonje with *Zamia lucayana*

were observed feeding on the ripe red seed sarcotesta. While the seeds appeared too large for hermit crabs to aid in long-distance dispersal, the removal of the sarcotesta most likely helped the seeds germinate more readily.

CONSERVATION NEEDS

The pristine white sand and turquoise blue Caribbean waters made this one of the most beautiful cycad habitats we had ever encountered. The stunning scenery also means that the habitat is in danger of future residential or tourism development. Additional visits to Long Island and other Bahamian islands in 2010 will aid in the conservation of native *Zamia* species by adding to our knowledge, increasing local conservation awareness, providing recommendations to environmental decision makers in The Bahamas, and making seed available to *ex situ* conservation collections.

Michael Calonje, M.S., Cycad Biologist
michaelt@montgomerybotanical.org

MBC 50TH ANNIVERSARY: A MILESTONE CELEBRATED

Since Nell founded this organization in 1959, we have fostered many contributions to botany. On November 14, 2009, we gathered the whole team — colleagues, supporters, volunteers, board, and staff — to commemorate the first 50 years of MBC. We hosted nine lectures organized around the history of Montgomery and research conducted using our living collections. Each speaker shared a personal perspective on MBC and the science we support.

The conference began rooted in tradition. Walter Haynes presented our history, drawing from the Montgomery Archive and his work as a Member and Director since 1969. Walter's history was augmented by Javier Francisco-Ortega, who drew connections between early botanical exploration and the modern

work of MBC. Two long-term colleagues, Dennis Stevenson and Barry Tomlinson, further exemplified our botanical history, as they presented studies on MBC cycads and palms over the past decades. Lloyd Singleton, representing our lead sponsor for the event — The Breakers Palm Beach — offered innovative strategies for sustainable horticulture.

The historical theme progressed to recent exploratory work. Angelica Cibrian and Carl Lewis carried our botanical tradition westward into the Pacific and forward into the very recent past — Angelica's cutting edge research with cycads and Carl's search for palms were shared with the group. We were thrilled to



Keynote speaker Dr. John Dransfield from Royal Botanic Gardens, Kew discussing his favorite palms.

also have John Dransfield here to deliver the keynote lecture. John discussed his favorite palms from throughout his distinguished career.

We met for a reception and dinner at Nell's House, and I concluded the evening with my favorite images of plants, people, and places important to Montgomery. The Board and I were very happy to bring so many friends and colleagues together for such a meaningful milestone.

*M. Patrick Griffith, Ph.D., Executive Director
patrick@montgomerybotanical.org*



Guests of the 50th Anniversary Event in the Nixon Smiley Meeting Room.



Photographs and the conference program can be viewed on the MBC website:

www.montgomerybotanical.org

We are very grateful to our sponsors for the 50th anniversary events: The Breakers Palm Beach, Randal Moore, and A. R. Ramos. Thank you also to Kelly Tractor, Larry and Colleen Schokman, and The Kampong for additional support.

PACIFIC PALM RESEARCH: TONGA AND FIJI ISLANDS

I conducted fieldwork for MBC in the Pacific in late 2009, visiting remote field sites in Tonga and Fiji to collect data and seed for research and conservation purposes. On behalf of MBC, I obtained important conservation material of many Pacific palms, and helped support collaborative studies in support of palm research. Fieldwork on the islands of 'Eua (Tonga) and Viti Levu (Fiji) successfully led to the collection of important conservation material and DNA for future laboratory work. International cooperation, with faculty at the University of the South Pacific and with local villages, helped accomplish the goals of the expedition and increase collaboration for future fieldwork and research on the palms of the Pacific basin.

AN IMPORTANT *PRITCHARDIA*

Pritchardia thurstonii was the focus of the expedition. This species is of particular interest. Based on DNA studies *P. thurstonii* is the closest relative to the 26 currently recognized species of *Pritchardia* on the Hawaiian islands. The *Pritchardia thurstonii* found on Fiji and Tonga are not as affected by seed predation from rats when compared to most species of Hawaiian *Pritchardia*. The Hawaiian *Pritchardia* have no self-replacement because of seed caching and predation. Therefore, *P. thurstonii* can approximate the genetics of Hawaiian *Pritchardia* before the arrival of rats. This type of information may also aid in identifying particular populations of conservation concern.

I studied and collected *P. thurstonii* populations on the island of 'Eua, in Tonga. I also took the opportunity to visit remote higher elevation sites to document and sample from some of Fiji's most rare and endangered palms, including *Balaka*, *Cyphosperma*, and *Neoveitchia*. Due to the rarity of these palms, few mother plants were collected for seed, but complete and duplicate herbarium specimens were made for each of the species visited. All of the Fijian palms collected are endemic to the islands and require further study to discern their inter-generic relationships.

OUTCOMES

The fifteen days of fieldwork provided MBC with seeds for *ex situ* conservation of these palm species, as well as an extensive DNA source for future work on these endemic palms.



Collecting *Clinostigma exorrhizum*,
Tomaniivi Nature Reserve, Fiji.



Pritchardia thurstonii in 'Eua National Park,
'Eua Island, Tonga.

Fieldwork for this project was performed at four sites across two island nations: 'Eua National Park (Tonga), USP campus (Fiji), Colo-i-Suva Forest Park (Fiji), and in the Tomaniivi Nature Reserve (Fiji). This expedition resulted in the collection of hundreds of seeds from nine species endemic to either Tonga or Fiji, 17 herbarium specimens with duplicates for herbaria at the Bishop Museum (BISH), the Royal Botanic Garden Kew (K), the New York Botanical Garden (NY), and the University of the South Pacific (USP). Seeds were obtained from native populations and *ex situ* live collections. All specimens were extensively documented via images and GPS data. Collaborative links between Montgomery Botanical Center, the University of South Pacific, and local Tongan and Fijian villages were formed and strengthened through this project, which will lead to further successes for all involved. *Pritchardia* is a unique genus of island plants, and this field project will advance our understanding of this and other Pacific palms.

Christine D. Bacon, MBC Research Associate
Ph.D. Candidate, Colorado State University
cbacon@rams.colostate.edu

VOLUNTEERS, INTERNS, AND SERVICE LEARNERS AT MONTGOMERY

MBC's volunteer program has grown substantially in the last year. Volunteers, interns, and Service Learners donated 2,864 hours of hard work to MBC in 2009. With forty-five dedicated individuals and six special group projects (see page 11), 2009 was our biggest year ever. Through a combination of individual volunteers and affiliations with Miami Dade College and Florida International University, MBC has increased the diversity of service programs offered.

Volunteers and interns help with every aspect of plant care. In addition to potting, planting, mulching, weeding, and trimming, they also lend their organizational skills to create labels for the collection, load taxonomic records into the database, and assist with mapping.



Tree Curator Christina Dupuy teaches intern Joe Marquez about proper trimming techniques.

Since MBC became involved with the Center for Community Involvement many students from Miami-Dade College have completed Service Learning Projects at Montgomery Botanical Center. Service Learners learn the inner workings of a botanic garden, become part of the MBC community, and gain a sense of environmental responsibility.

Montgomery Botanical Center is deeply grateful to the wonderful individuals and institutions that make up our service programs. Volunteers, interns, and Service Learners all help advance our mission of research, conservation, and education.

Tracy Magellan, MEd, Outreach Manager
tracym@montgomerybotanical.org

MBC INTERN MAPS UNCHARTED TERRITORY

Thirty acres of the botanic garden lie undeveloped and comprise the southeast corner of Montgomery Botanical Center. The vegetation on the thirty acres has been altered since the nineteenth century, primarily by farming. When left fallow in the 1950s, Brazilian pepper became established, yet some mangroves still remain.

For my internship project, I sought to map and characterize the current vegetation of the thirty acres to aid in planning at MBC. While surveying this area, I also sought to find the relationship between mangroves and Brazilian pepper on the site. I approached this task by breaking the thirty acres into quadrants, assigning random points, and collecting data along transect lines at those points. By adding new information to our bank of mapping data, the results are useful for planning at Montgomery.

I found that dense Brazilian pepper dominates the western portion of the thirty acres. In most environments, Brazilian pepper dominates by shading out competing trees. In this case,



Sara Edelman with red mangrove (*Rhizophora mangle*)

Brazilian pepper is choking itself out as well, creating an impenetrable thicket of dead branches in the understory and mid-story. Due to the marl soil, Brazilian pepper seedlings currently have a 0% survivorship rate; there are no Brazilian pepper saplings and Brazilian pepper trees are not increasing in number. Mangrove populations are healthy in the eastern portion of the site, and some appear to be seeding. Overall, mangroves are fewer in number and percentage than Brazilian pepper.

This survey helped determine the potential scope of the Brazilian pepper removal work while allowing MBC to protect the desired mangroves. These salt-loving mangrove species are another desirable asset enriching the property—much like the live oak and gumbo limbo.

Sara Edelman, Department of Environmental Science
University of Florida, Gainesville



CONSERVATION COLLECTIONS AND INVASIVE PLANT CONCERNS

For centuries botanic gardens have introduced plants into cultivation from throughout the world. These introductions have allowed access to plant diversity in a way that would otherwise be impossible. The benefits of botanical collections to science and human well being have been tremendous thanks to the efforts of botanical philanthropists, such as Colonel Robert Montgomery, to establish exceptional plant collections and bequeath them to future generations.

Non-native plants occasionally escape from cultivation and become established in native plant communities. This establishment has raised concern in the botanic garden world regarding plant introductions that may become invasive. As a result, weed risk assessment (WRA) procedures are being developed to assess botanic garden collections for characteristics that may lead to weediness.

I have been collaborating on a project with Dr. Hong Liu to evaluate the potential weediness of botanical garden plants introduced for conservation versus those introduced

for horticulture. To do this project, we evaluated the conservation collections at MBC and Fairchild Tropical Botanic Garden (FTBG) using the WRA, and compared these collections to a sample of FTBG annual horticultural distribution plants from 1955 to 1979, before such plants were screened for potential weediness.

The WRA scores for the conservation plants were significantly lower than those for the horticultural distribution plants and on average well within the acceptable range. This result demonstrates that conservation collections, such as those at MBC, present low risk of becoming weeds. Furthermore, palms, cycads and tropical conifers seem exceptionally free of weedy tendencies due to their combinations of biological characteristics.

Colonel Montgomery was very wise to focus on groups that are both exceptional for their beauty and well behaved in the garden.

*Chad Husby, Ph.D., Collections Manager and Botanist
chad@montgomerybotanical.org*



Dr. Husby with *Roystonea borinquena*, one of the species analyzed.

TO MULCH OR TO MOW: BEST PRACTICES AT MBC

Various state and local agencies in Florida have devised a recent guide delineating Best Management Practices for the “Green Industries” to better protect the state’s environmental resources in general and water resources in particular. Even though this is a relatively new initiative, adopted state-wide in 2006, it is no surprise that the MBC Horticulture Team has been employing many of these practices for years.

The main components of this initiative include guidelines for fertilizing, irrigation, mowing, mulching, pest management, and vegetative waste recycling. This spring, the landscapers have been concentrating on fine-tuning the relationship between mowing and mulching. More and more often, the question has arisen as to whether it is more efficient, given finite resources, to maintain turf or mulched beds. We have found

that at MBC, there is no absolute rule, and a site by site evaluation of each area is important.

A mulched bed tends to enlarge over time: herbicide applications around the edges coupled with the occasional loss of plant material in the original collection ultimately expand the margins, requiring more time and material to maintain. At a certain point, then, the landscapers and curators re-evaluate the site and determine whether it has become more cost efficient to maintain the mulch or to let the bed revert back to a mowable ground cover.

Entropy in the landscape is an anathema for the Horticulture Team. The ongoing evaluation of turf vs. mulch is one more garden challenge we gladly meet.

*Lee Anderson, B.S., Superintendent
land@montgomerybotanical.org*



Mario, Stella, and Marino with *Encephalartos* collections.

ZAMIA SOCONUSCENSIS AT MBC

Arguably among the most spectacular and desirable species of the genus, *Zamia soconuscensis* is also among the most rarely encountered, either in cultivation or in habitat. Known from only two sites in the Sierra del Soconusco of Chiapas, and requiring the permission of the locals to even view the plants in habitat, it is not surprising that the plant is seldom seen outside its natural range. In addition, the fact that *Zamia soconuscensis* is less cold tolerant than most Mexican cycads, and that it requires tropical or subtropical conditions to survive, it is apparent that Montgomery Botanical Center is perfectly situated for the cultivation and *ex situ* conservation of this species and we are fortunate to have a thriving population.

Dr. Andrew Vovides of Instituto de Ecología in Xalapa, Veracruz, has shared details of the species habitat which is on steep slopes under the canopy of cloud forest, or the transitional area between rain forest and cloud forest, at elevations of between 3000 and 4000 feet. The plants grow in deep shade and are quite numerous in the understory.

Dr. Vovides has also been instrumental in helping to establish nurseries in several areas of Mexico, operated by local farmers, for the purpose of raising endangered cycad species from wild collected seed. *Zamia soconuscensis* has been under cultivation at one of these nurseries in Chiapas since 1995.

It is hoped that this species will soon become more readily available, as it would make a wonderful addition to the South Florida landscape.

John Harshaw, B.S., Assistant Curator
johnh@montgomerybotanical.org

A CHILL IN THE AIR

South Florida in the wintertime is beautiful. Temperatures from December through February average from 61° to 78°F. Bright sun, calm wind, mild humidity and few mosquitoes; this time of year is when the rest of the country looks at us with great envy, as they shovel snow from the front stoop.

Well, not the winter of 2010. Winter came to South Florida and brought with it temperatures that would test historic lows and leave many of us shivering in our long johns and fleeces.

At Montgomery, protocols are in place to protect our plant collections from a brief winter chill. Cold snaps, however, are typically short lived, lasting a day or two followed by extended periods of warm weather. It was just the opposite in 2010. The new year greeted MBC with a cold snap historic in both duration and temperature. From January 2 through 13, overnight temperatures remained in the low 40°s and upper 30°s. The average twelve day temperature for this period was 53° F, the coldest on record since the 1940s. The impact to the palm collection from the extended cold temperature was significant. Severe cold damage destroys plant tissue. Dramatic leaf die back occurred in some of our palm species. Some had over 85% of the foliage damaged or killed by the cold. *Bactris*, *Arenga*, *Hydriastele*,

Rhaphia and *Aiphanes* are some of the genera hardest hit. Only the spear leaf remains green on our *Nypa fruticans* and there is no evidence of green tissue on our *Elaeis oleifera*.

MBC is committed to giving our injured palms the best possible chance at recovery. To this end, damaged leaves are left on the palm to provide the bud or apical meristem with insulating protection by the leaf bases. Also, some green tissue may remain on the petiole and rachis of the palm, and this tissue will allow the plant to continue photosynthetic activity. In some cases, the bud of the palm will need protection from secondary infections that can cause the spear leaf to rot. Copper fungicide or Zerotel, an oxidizing agent, can help to sanitize the bud region. Our goal is to keep the area free of bacteria and fungus until new growth emerges. Come March, a healthy dose of fertilizer will be applied to the collection to promote solid growth through the spring.

It could take the better part of a year before we really know how MBC's palm collection fared this winter. I can only hope that it is another 70 years before a winter like 2010 passes our way again.

Laurie Danielson, B.S., Palm Curator
lauried@montgomerybotanical.org



Cold damage to *Aiphanes minima* fronds.

WORKING IN SERVICE OF BOTANY: MONTGOMERY BOTANICAL CENTER 2009 COLLABORATORS

Abell, Shaun
Adams, Brett
Agrocampus-Ouest, France
Ahmad, Amna
Albano, Pierre-Olivier
American Horticultural Society
American Museum of Natural History
American Public Gardens Association
Anderson, Patti Ph.D.
Arley-Ramos, Yan
Arnold Arboretum
Atlanta Botanical Garden
Ayala-Silva, Tomas Ph.D.
Bacon, Christine
Bahamas National Trust
Belize Botanic Gardens
Belize Forest Department
Bergquist, Jacqueline
Bermuda Department of Parks
Bohl, Kerry
Botanic Garden of Geneva
Brady, Steve
The Breakers Palm Beach
Brookhaven National Laboratory
Campos, Ricardo
Carpenter, James Ph.D.
Central Florida Palm and Cycad Society
Central Washington University
Chamyan, Gabriel M.D.
Chormanski, Theresa
Cibrian, Angelica Ph.D.
Cienfuegos Botanical Garden
City of Coral Gables Cultural Development Board
Clancy, Keith Ph.D.
Cole, Ian
Colvos Creek Nursery
Condon, Warren
Cox, Paul Ph.D.
Cozza, John Ph.D.
Craft, Paul
The Cycad Society
Davidson, Amy Ph.D.
Davis, Chuck Ph.D.
Dearden, Arden Ph.D.
de Laubenfels, David Ph.D.
Determann, Ron
Dolmetsch Arboretum
Dosmann, Michael Ph.D.
Dowe, John Ph.D.
Dransfield, John Ph.D.
duPlooy, Heather
duPlooy, Judy
Ellen Trout Zoo
Elliott, Monica Ph.D.
Everglades National Park
Fairchild Challenge
Fairchild Tropical Botanic Garden
Filonenko, Andrew
Fisher, Jack Ph.D.
Florida DPI
Florida International University
Florida Nursery, Growers & Landscape Association
Forbes, Holly
Francisco-Ortega, Javier Ph.D.
Garcia, Nicholas
Garcia, Ricardo
GCU Botanic Garden, Pakistan
Gemini Gardens
Gernandt, David Ph.D.
Gifford Arboretum
Goldman, Doug Ph.D.
Graveson, Roger
Green Hills Botanical Collections, Belize
Gymnosperm ATOL Project
Hall, Brett
Hamilton, Martin Ph.D.
Harvard University
Hird, Abby
Hodel, Don Ph.D.
Hoesel, Geoff
Holzman, Greg
Horn, Jay Ph.D.
Horvitz, Carol Ph.D.
Huntington Botanical Gardens
Idarraga, Alvaro
Inimod, Hubert
Institute for EthnoMedicine
Instituto de Ecología y Sistemática, Cuba
Instituto de Ecología, Xalapa, Mexico
Instituto Plantarum, Brazil
International Palm Society
IUCN Cycad Specialist Group
James Cook University, Australia
Jardín Botánico Eloy Valenzuela, Colombia
Jardín Botánico Nacional Dr. Rafael Ma. Moscoso
Jiménez Rodríguez, Francisco
Jones, David
Jungle Island
Junior League of Miami
The Kampong
Kanapaha Botanical Garden
Kelch, Dean Ph.D.
Kelly, Bradley
Khorsand, Roxaneh
Knopf, Patrick
Knowles, Lindy
Kramer, Andrea Ph.D.
Kruger, Lisa Ph.D.
LeCourff, Josianne Ph.D.
Lee, David Ph.D.
Leon, Yelitza Ph.D.
Lewis, Carl Ph.D.
Liston, Aaron Ph.D.
Little, Damon Ph.D.
Liu, Hong Ph.D.
Longwood Graduate Program
Lopez-Gallego, Cristina Ph.D.
Lorenzi, Harri
Los Angeles County Arboretum
Lowman, Lucia Ph.D.
Ma, Helen
MacLean, David
Madison Middle School
Main Botanic Garden of the Russian Academy Of Science
Mater Academy
Matthews, Sarah Ph.D.
Meerman, Jan
Meerow, Alan Ph.D.
Menzel, Jill
Miami-Dade College
Montgomery Pinetum
Moore, Randal
Mounts Botanical Garden
Moyroud, Richard
Muséum National d'Histoire Naturelle de Paris
Musial, Kathy
Nan, Li Ph.D.
Naples Botanical Garden
National Tropical Botanical Garden
The New York Botanical Garden
North American Plant Collections Consortium
North Carolina State University
Oberli, Andreas
Oviedo Prieto, Ramona
Pacific Cycad Nursery
Palm Beach Palm & Cycad Society
Palm Society of South Texas
Parsons, Ann
Peter, Andy
Pinecrest Gardens
Rasmussen, Reinhold Ph.D.
Raubeson, Linda Ph.D.
Redland Nursery
Rojas, Alicia
Rothwell, Gar Ph.D.
Royal Botanic Garden Edinburgh
Royal Botanic Gardens, Kew
Ruhr-University Bochum, Germany
Ruland, David
Saint Lucia Forestry Department
Sanchez, Michele
Santiago, Eugenio Ph.D.
Schokman, Larry
Schultz, Christian Ph.D.
Sealys, Chris
Shanks, Chris
Shenzhen Fairy Lake Botanical Garden, China
Shimonski, Jeff
Singleton, Lloyd
Smith, Jason Ph.D.
Smith, Melvin
Smithsonian
South Florida Palm Society
Stauffer, Fred Ph.D.
Stevenson, Dennis Ph.D.
Stockey, Ruth Ph.D.
Taylor, Alberto Ph.D.
Thomas, Romain
Tingley, David
Ti-Palm, the Martique and French Guyana Palm Society
Tomlinson, Barry Ph.D.
Tropical Flowering Tree Society
Tyson, Christiane
UC Santa Cruz Arboretum
United States Botanic Garden
Universidad de Antioquia, Colombia
Universidad Tecnológica del Chocó, Colombia
Université Paris-Sud, France
University of California
University of Dundee, UK
University of Florida
University of Miami
University of Delaware
University of Puerto Rico
University of São Paulo
University of South Florida
University of Venezuela
USDA-Chapman Field
UT Austin
Vendrame, Wagner Ph.D.
The Villagers
Viveiro Campos
Vovides, Andrew Ph.D.
Wageningen University
Wanless, Harold Ph.D.
Warchefsky, Emily
Welbourn, Cal Ph.D.
Wenzel, Michael
West Palm Beach Palm and Cycad Society
Wilson Botanic Garden
Yu, Xiaohong Ph.D.
Zahawi, Zak Ph.D.
Zona, Scott, Ph.D.

Above are individuals and institutions that received MBC plant material, service, in-kind support, or worked with MBC to advance botanical science, conservation, or education in 2009. MBC apologizes for any omissions or errors in accuracy.

MONTGOMERY BOTANICAL CENTER

GRATEFULLY ACKNOWLEDGES YOUR 2009 SUPPORT

50th ANNIVERSARY SUPPORT

A. R. Ramos Enterprises, Inc.
The Breakers Palm Beach
Moore, Randall

GIFT FOR INFRASTRUCTURE IMPROVEMENTS

Haynes, Walter

PLEDGE FOR INFRASTRUCTURE DEVELOPMENT

Haynes, Walter

IN HONOR OF CHRISTIANE TYSON

Pearson, Steve

IN HONOR OF CHRISTOPHER TYSON

Brock, Carol S.
Burke, Josephine H.
Emerson, Doris M.
Long, Teresa C.
Meister, Tonya
Metcalf, George & Elizabeth
Monnin, Charles & Joanne
Morrison, Christopher & Deborah
Nanni, Antonio & Valeria
Nutt, Randy & Carol Horvitz
Schokman, Coleen & Larry
Schuler, Lyn
Steele, Jordan & Margaret
Woodbridge, Yolanda V.

IN HONOR OF WALTER HAYNES

Beaty, Terry

IN HONOR OF MARTIN JOSEPH TESSY

Castellar, Peter
Tessy, Paul & Beatriz
Tessy Tree Planting Group

IN MEMORY OF DR. ALFRED R. ROBERTS

Roberts, Susan C.

IN SUPPORT OF THE MBC NURSERY

Hicks, Patricia
Martin, Margaret

2009 GRANT SUPPORT

Conservation Leadership Programme
Coconut Grove Garden Club
Environmental Systems Research
Institute (ESRI)
Florida Nursery, Growers & Landscape
Association
The Institute for Museum and Library
Services

The Kelly Foundation
The Villagers
Mohammad bin Zayed Species
Conservation Fund
Association for Zoological Horticulture
Stanley Smith Horticultural Trust
Coral Gables Cultural Development
Board

DONATIONS

Adt, James
Anderson, Patti
Barber, Randall E., Jr.
Barber, Randall E., Sr.
Besse, Elizabeth & Byron
Bishock, Faith
Brown, Edwin III
Brown, Sally
Butler, Laurence M.
Castellar, Peter
Chait, Jeffrey
Clancy, Keith
Clarke, Patricia H.
Cole, Andrea & Carlton
Craft, Paul
Curtis, Alan
Davis, Elizabeth
Davis, Matthew
DeBoe, William S.
Delevoryas, Ted
Dewsnap, David C.
Dosmann, Michael
Dowdy, Thomas
Ebbert, Marlin
Ebsary, Richard
Fessenden, Lillian
Fuentes, Norma
Gaubatz, Kathy
Graves, Kenneth
Gundlach, William &
Ruth
Hamann, Gregg & Debra
Harris, Michael
Haynes, Marion D.

Haynes, Walter
Hibbard, Joe
Hibnick, Charles &
Cynthia
Hicks, Patricia
Hochman, Seth
Holley, Brian E.
Holton, Dale F.
Jimenez, Marcos D.
Johnson, Beverley
Johnson, Bob &
Catherine
Keller, Kathleen & Karl
Kelly, L. Patrick
Kelly, Nicholas & Barbara
Kennelly, Edward J.
Kinney, Douglas M.
Leaser, David
Lynch, Susan E.
Manz, Peter A. & Jean
McNaughton, Robert &
Patricia
Merwin, Melissa &
Friends
Metcalf, George
Monnin, Charles
Moore, Allen
Moore, Randal & Cindy
Murphy, Vickie
Noblick, Florence
Norman, Bonita
Nutt, Randy & Carol
Horvitz
Olwell, Brian & Therese

Palm Society of S. Texas
Petrine, Louise
Priegues, Lazaro
Reynolds, Jean & Charles
Roberts, Susan
Robinson, Nettie Belle
Sacher, Charles P. &
Dorothy
Sacher, Charles S. & Ana
Sacher, Richard &
Annamaria
Schokman, Larry &
Colleen
Schubert, David
Schuler, Robert
Solomon, Cheryl
South Florida Palm
Society
Sparkman, George &
Gisela
Stark, Jean C.
Tabak, Jeremy
Talbot, Linda
Thorne, Robert & Mae
Turnbull, Sabra
Uhl, Natalie
Van De Water, Thomas &
Jeanette
Wallace, Milton &
Patricia
Welbourne, Cal
Wilson, Jane F.
Wright, Jim
Young Evelyn

IN-KIND DONATIONS

Apex Network Services
Banyan Tree Service
Bauer, Adam
Danielson, Laurie

The Kampong
Kelly Tractor
McDaniel, Irvin
Moyroud, Richard

Scherban, Bernard
Smiley, Karl
Stevenson, Dennis
Starbucks Coffee

Trees, Inc.
Tyson, Christiane
Whole Foods Market

Montgomery Botanical Center apologizes for any omissions or errors in accuracy.

THANK YOU TO OUR 2009 VOLUNTEERS

Antonio Juan	Ed English	Marta Magellan
Amy Tavares	Eduardo Ibarra	Marilyn Johnson
Bernard Scherban	Erica Torres	Max Sanchez
Bettye Douglas	FTBG-Challenge Team	Merilynn Renshaw
Boy Scouts of America Troop 457	Florida Trail Association	Melanny Araguez
Brenda Whitney	Francis Oliver	Miami Dade College Service Learners
Brian Witcher	Guiby Sarduy	Nora Denslow
Brittany Rymes	Janet English	Penelope Twining
Carlos Rivas	Jonas Cinquini	Rebecca Huertas
Caroline Dickenson	Jenny Martin	Sara Edelman
Chris Tyson	Judy Griffis	Smita Sen
Cliff Renshaw	Karl Smiley, M.D.	Tessy Tree Planting Group
Cristina Strader	Kevin Lennon	Tiffany Lum
Cynthia Shore	Larry Aronson	Trish Hicks
Daneel Martinez	Lisselot Mesa	UM-HOPE Team
Daniela Noblick	Luis Torres	UPS Global Volunteers
Debb DuMond	Margaret Martin	Vivian Jordan
Denise Disla	Mariatne Martinez	

**Want to Volunteer at Montgomery?
Call (305)667-3800 ext. 114 or email
tracym@montgomerybotanical.org**

MBC TEAM NEWS

Vickie Murphy received her Bachelor of Science in Horticulture degree in December 2009 from the University of Florida. Please join us in congratulating Vickie on her achievement.

RESEARCH HIGHLIGHTS AT MONTGOMERY

Dr. John Dowe, James Cook University and MBC Research Fellow, recently published an authoritative new book, *AUSTRALIAN PALMS*, available through CSIRO publishing. The book details each species of palm in Australia. MBC is hosting the supplementary data for the work on our website (www.montgomerybotanical.org).

Dr. Alan Meerow of Chapman Field and his colleagues (including Dr. Larry Noblick) published an extensive study on the origins of the coconut palm, in the *PLOS ONE* journal. This work clearly shows that *Syagrus* palms are the closest living relatives of the coconut, and diverged about 35 million years ago.

A new species, *Syagrus evansiana*, was described by **Dr. Larry Noblick** of MBC. This stemless palm is native to rocky open fields in Minas Gerais, Brazil. The new species appears in the journal *PALMS*.

MONTGOMERY BOTANICAL CENTER 2009 COLLECTION INVENTORY

	PALMS	CYCADS	OTHER
TOTAL TAXA	431	254	570
IN GROUND	361	227	475
IN NURSERY	153	108	132
TOTAL ACCESSIONS	2,310	1,872	2,292
IN GROUND	1,850	1,484	2,070
IN NURSERY	532	540	240
TOTAL PLANTS	14,890	7,880	2,893
IN GROUND	5,460	3,756	2,439
IN NURSERY	9,430	4,132	454

We added many accessions this year.

“Other” includes tropical conifers and tropical flowering trees.

In this inventory, taxa counts are of species, subspecies, and varieties.

An accession is a collection of seeds from one source or locality.

CORAL GABLES THE CITY BEAUTIFUL

SUPPORTS MBC

This year the city of Coral Gables Cultural Development Board awarded Montgomery Botanical Center a significant grant to support cultural development in Coral Gables.

Montgomery Botanical Center enriches the community through a variety of events such as The Villagers Home and Garden Tours, the South Florida Palm Society's Spring Palm Sale, and various scientific lectures. Each day, more and more local residents and international guests are becoming familiar with Montgomery Botanical Center.

Please join us in thanking the Coral Gables Cultural Development Board, and please attend our next event. We look forward to seeing you.

Tracy Magellan, MEd, Outreach Manager
tracym@montgomerybotanical.org

FROM THE MONTGOMERY ARCHIVE



R.M.S. CARONIA.
Round the World Cruise. 1951.

In this 1951 photo, Nell and Robert Montgomery show their passion for plants and gardens at a costume party onboard the R.M.S. Caronia. Their hats read “Seed Collector” and “Plant Explorer.” They are laden with baskets of plant specimens, fruits, seeds, bulbs, and cameras.

A bound volume in the Montgomery Archive, *Letters EnRoute*, documents this trip. Nell and Robert exchanged material with botanic gardens at every port, and Nell describes her excitement at seeing so many new or familiar palms, conifers, orchids, and trees. Nell wasted no time in organizing and chairing the “Caronia Garden Club” at the start of the 4 month voyage. Robert, in his unique voice, summarizes the trip:

“Sometimes we saw a ravishingly beautiful flower garden instead of a musty tomb, but we knew exactly what we wanted to see and were not accountable for the taste of others! . . . We had a grand trip and the seeds we brought back will live and flourish and their blooms will bring pleasure to others and thus more than repay any troubles we had in collecting them.”

Note especially: Nell and Robert have incorporated USDA plant quarantine labels into their costume. These labels remain vital to our modern work, and have not changed in the last 60 years. Please see the current USDA label for comparison.

