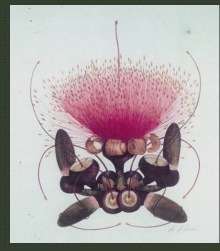


Gifford Arboretum Newsletter

Fall 2008

Volume 7, Issue 1



Re-Opening Tour of Renovated Arboretum



Aldridge Curator John Cozza shows off the new Ylang-ylang tree (whose flowers produce a key aroma used in Chanel No. 5™) in the new "Basal Angiosperms" exhibit at the Re-Opening Tour.

Under a light drizzle, dozens of Friends of the Arboretum gathered on the evening of March 20, 2008 to celebrate the much awaited re-opening of the renovated Gifford Arboretum. A champagne toast, made by Director Carol Horvitz to herald the "launching" of the new journey of lifelong learning among our living tropical trees was followed by an exciting tour led by Aldridge Curator John Cozza.

The renovated collection features 14 exhibit areas and over 550 plants; ten exhibits are taxonomically-based (families and orders) and three are thematic: "South Florida Natives," "What is a tree?" and the "Maya Cocoa Garden."

The "launch" culminated over two years of planning and planting. The Gifford Arboretum, unique on a college campus, has become a more beautiful and more educational collection of tropical trees and shrubs than ever before.

Following the devastation of the 2005 hurricane season (the triple whammy of Katrina, Rita and Wilma), the restoration process included: obtaining funding (from the IMLS with matching funds from UM and Friends of the Arboretum), inventorying the collection, interviewing user groups, obtaining a master plan, developing a wish list, creating detailed planting designs, tree safe-

ris to regional nurseries, obtaining permits from the City of Coral Gables, installation of plants (in holes customized in size and substrate to each individual specimen), addition of interpretive signage throughout. Visitors are treated to an exciting array of species with unusual flowers, leaves, trunks, scents.

Thank you, Unicco!

Unicco's efforts in the restoration of the Gifford Arboretum were celebrated at a special barbecue and ceremony held on June 12, 2008. Biology graduate students and faculty thanked the crews for their outstanding efforts in enhancing the beauty and educational value of the Arboretum.

Graduate student Aldridge Curator John Cozza organized the barbecue and noted, "Unicco's enthusiasm and ongoing collaboration in planting and caring for the new specimens was key to being ready for the re-opening and continues to be crucial for the survival of the new plants."



Each member of the crews and their supervisors received a certificate of appreciation, a t-shirt and a chance to win a book or a plant. Recipients included Julio Tejera Mark Sigars, Freddie Valle, Amado Cabrera, Jesus Casada, Armando Avila, Yosiel Dominguez, Daniel Aguiar, Alfredo Perez, Carlos Dorta Sr., Juan Brito, Joe Jaramillo, David Acosta, Oscar Aleman, Manuel Montes, Luis Avila, Junior Nuñez, Saul Fuentes, Francisco Delgado, Norberto Delgado, Francisco Carballo, Carlos Dorta, Jr., Ivan Baez, Ramon Garcia, Ramon Martinez.

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Standing Room only at the 20th Annual Gifford Lecture

The lecture hall was overflowing, with standing room only and people peeking in from the hallways as Julie S. Denslow, Ph.D., Scientist Emerita, Institute of Pacific Island Forestry presented the Annual Gifford Arboretum Lecture on March 20, 2008, speaking on “Weeds in paradise: Invasive plants in the South Pacific.”

The welcoming remarks for the event were presented by UM President Donna Shalala, who told the overflow crowd that she is a big supporter of the Gifford Arboretum and that it is one of her favorite spots on campus. She welcomed the audience which, in addition to the usual plant-loving public and botanical academics of Miami, also included some special guests. One who received particular recognition was Denslow’s cousin Janet Reno, former Attorney General of the U.S. who served in the Clinton presidency along with Shalala. UM President Shalala enjoyed the lecture and attended the lovely wine and cheese reception afterwards, visiting with her colleague.

Denslow, native Miamian and University of Miami alum (M.S. 1969), is a distinguished tropical forest ecologist, renowned for her significant intellectual contributions and appreciated for her dedicated service to tropical biology (significant long-term leadership roles in ATBC and in OTS and also in ESA; as well as service on editorial boards and NSF panels). Her work and reputation is worldwide: she has explored forest ecology in south and central America, in southern Louisiana and in the Pacific Islands.

Denslow’s lecture began by explaining that exotic organisms (those reaching a new area of the globe by human transport rather than natural biogeographic processes) can become invasive and have wide ranging ecological and economic costs.

The lecture featured new results on exotics throughout the Pacific Islands. One intriguing pattern is that the *number of paved runways* best predicts the number of exotic species on an island. This contrasts to traditional island biogeography where the number of (native) species is best predicted by proximity to the mainland together with island size.



Psidium cattleianum

www.botany.hawaii.edu

Denslow went on to discuss the special problem presented to Hawaii by one particularly invasive species, “Strawberry Guava” *Psidium cattleianum* (Myrtaceae). This pest plant forms dense thickets completely excluding native vegetation. It also harbors large populations of fruit flies that damage commercially important crops. Denslow is studying how the plant infestation can be controlled by a little scale insect introduced from its native range (SE Brazil). The insect, *Tectococcus ovatus*, feeds only on this one plant species and is expected to slow down its growth and recruitment.

Denslow’s M.S. thesis (UM ’69) was “Cytomorpho-taxonomy of a population of the fern *Thelypteris augescens*”, advised by M.J. Dijkman. Her Ph.D. (University of Wisconsin ’78) was on secondary succession and life history strategies of tropical trees in Colombian rainforests. Denslow has had a number of non-traditional appointments. For example, she was the director of the Tropical Deforestation Film Project for a consortium of gardens and NGO’s for several years and course co-coordinator for OTS courses. And she has had visiting professor appointments at Duke University and at UF Gainesville. She subsequently occupied the Boyd Chair at Tulane University. She had almost settled down in a traditional faculty position at LSU, when instead she decided to learn about another region of the world and moved to Hawaii as Research Ecologist and Team Leader in the Institute of Pacific Islands Forestry.

Denslow’s >70 papers include some of the most highly cited studies in tropical forest succession and tropical forest invasion biology. Honors include: Senior Fellow of the Smithsonian Institution and the Andrew Mellon Foundation, the Wilder Chair in Botany at the University of Hawaii – Manoa and Fellow of AAAS.

The lecture event was co-sponsored by the Montgomery Botanical Center and the Kampong of the National Tropical Botanical Garden.



Julie Denslow at the Re-Opening Tour of the Arboretum

Director's Notes

by Carol C. Horvitz, Ph.D.
Professor of Biology, Director of the John C. Gifford Arboretum

So much has happened for the Gifford Arboretum since my last column that I don't even know where to start. The Arboretum has transformed from being on the brink of disappearing after the 2005 hurricane season to being celebrated as a significant and favorite institutional component of UM's campus and programs (see UM President Shalala's remarks at the 20th Annual Lecture, p.2), with the enthusiastic support by the new Chair of Biology, Kathryn Tosney.

At this writing, I am happy to report that, for the first time ever, being the Director of the Gifford Arboretum is university level academic administrative appointment made by the Provost's office. I occupy this post at the moment, but even more exciting is that we will soon engage in an extramural search to add to the Biology Department faculty a scientist with expertise in managing living collections who will become the Arboretum Director in the future.

The importance of having received federal funding from the IMLS (the Institute for Museum and Library Services, the federal agency that funds museums and libraries) can not be overstated. These funds, together with the matching funds provided by UM and raised from donations made by the Friends of the Gifford Arboretum, allowed us to engage in an extensive planning and renovation process. The Arboretum being recognized as a living museum by the federal government was not lost locally, the value of this unique resource for teaching and learning about tropical trees, unmatched on a college campus anywhere.

That John Cozza happened to be a graduate student in our department at this critical time is amazingly great luck. John truly has a calling for using living botanical collections in education at all levels, from school kids to college students to the lay public (see article by his undergrad assistant Jason Downing, p. 4).

For his "service above and beyond the call of duty to the John C. Gifford Arboretum and to its higher mission of promoting knowledge about tropical trees," John received UM Graduate School's 2008 Graduate Award for Excellence. This award recognizes John's leadership in synthesizing ideas from diverse user-groups, conceiving 14 new exhibits, compiling the wish list for over 300 new specimens based on educational value, finding and purchasing specimens, designing plantings to maximize diversity in a small

Malvales



Kola Nut
Cola acuminata

The Mallow Order has 3,500 species

- Hand-like branching of leaf veins
- Tiny star-shaped hairs on leaves
- Mucilage in canals and cavities

Example: Kola Nut

- Seed extracts used in early Coca-Cola
- Stimulant and euphoriant, W. Africa
- Caffeine, theobromine, theophylline, catechines, phenolics, and more...

The order has 10 families & includes:

- Baobabs
- Kapok
- Hibiscus
- Annatto
- Chocolate
- The Shaving Brush Tree (our logo)

One of 14 interpretive signs now found standing among the trees to provide information to visitors about the exhibits. Each features a photograph of an example species for the exhibit as well as some key features of the group and a few of the other famous species in it.

space, providing detailed maps for permits, supervising the installations and tirelessly caring for the new specimens.

Our program of monthly meetings on the first Wednesday of each month (see p. 5) Sept-May continues to be a great success, with Lecturer Malancha Sarkar having taken charge of the refreshments.

Finally I note changes to our Advisory Board, I will miss Alan Weber, Director of Contracts Administration and champion of the Arboretum, as he retires from UM. I welcome two new members, Patrick Griffith, Ph.D., Director of the Montgomery Botanical Center, and Jeff Shimonski, V.P. for Horticulture Jungle Island. Thanks for invaluable input and support!

Letter from UM Botany Alum

Arthur Boike (BS Botany '52) on 12-17-07 wrote, "I can't help writing to someone who is protecting the Gifford Arboretum. You see, I helped start it and planted some of the trees 1950-52 ... It brings me many good memories of the U. at that time when the botany department was located in all-wooden buildings with Dr. Alexander as head (that office was the only one with AC!) ... the herbarium was there too with Julia and Kendall Morton's Collectanea. Also in the Department was Mr. Woodbury, taxonomist, and Drs. Ockse and Dijkman (old Dutchman who perfected the rubber plantations in Indonesia). I was glad to know Dr. Okse as well as Dr. David Fairchild ...

"I remember not too long ago they wanted to do away with the Arboretum, FORBID THAT! I haven't been down that way for decades, but know of changes at the University... I don't read of people from the Botany Department. Probably they have all gone to where our tropical rainforests have gone!!!"

Learning while working

By Jason Lamar Downing

This year, while pursuing post-baccalaureate studies in the UM Biology Department and at the Rosenstil School, I had the opportunity to work as a student assistant in the Gifford Arboretum.



Invaluable to the Arboretum are the undergraduate assistants who help with everything from office work, to mapping, trail maintenance and skilled horticultural tasks. Pictured here are Max Marks (left) and Jason Downing (right). Diane Toledo (not pictured) was another terrific student assistant during the last academic year.

One particular plant and story that especially moved me while working in the arboretum was that of the cotton plant, which is part of our new 'Malvales' exhibit. Aside from the fact that cotton plants are interesting plants in their own right, they also have a significant place in American history. In pre-civil war times, there were two strains of cotton grown, the white and the brown. The white cotton was reserved exclusively for the slave owners and the brown was to be used by the slaves.



Instead of being a representative of a tragic time in American history, in the Gifford Arboretum they are used as tribute to the unique diversity of America and are planted side by side. Like the cotton plant, all of the new additions transcend pure science and offer a glimpse at our history and culture.

Learning more about cultural applications and ethnobotany added to experience of working for the arboretum, but working hands on with the plants has been the most rewarding.

Growing a tree like the Marula (*Sclerocarya birrea*) of Africa, from a dormant seed to a thriving young plant was an adventure. The inner pit of the marula fruit is extremely hard, and normally this may prevent the seed from germinating for several years. To speed things up, it is necessary to use pliers to carefully open small preformed "doors" in the pit, to allow water to reach the seeds within, yet without crushing the delicate seeds. This is no easy task. And so it seems I have become an expert on cracking a Marula pit, a skill that enhances anyone's curriculum vitae. Now we have to figure out which of the seedlings I germinated are male and which are female, in hopes of growing one tree of each sex, and eventually obtaining fruit. If I could only differentiate the sexes, I would really be in high demand!

Leaves that move: middle schoolers learn about nature's moving solar panels

Do plants behave? Some plants, like the prayer plant (Marantaceae), have leaves that change their angles all day long. Are they tracking the sun to optimize capture of solar radiation?

UM graduate student Jane Indorf (left) investigated this hypothesis with South Miami Middle School kids and their science teacher, Murray Sill (not pictured) using solar panels. They changed the angle of the panels to mimic leaf movement and measured the amount of solar energy received at each angle.

This experiment was only one of many supervised by UM grad students at middle schools throughout Miami-Dade County as part of the Science Made Sensible Project, led by UM Biology Professor Michael Gaines, funded by NSF.

Friends of the Gifford Arboretum Fall 2008

Meetings & Activities

✕**MEETING**✕ Wednesday, September 3, 7 pm
Cox Science Building, Room 166, University of Miami
"Past, present and future of the Wertheim Conservatory"
by Dr. Scott Zona, Curator of the Wertheim Conservatory and Greenhouses
Florida International University
Featured family of the month: Theaceae

●**TOUR**● Wednesday September 10, 5 pm
"Secret Lives of Trees" tour featuring our 300 new trees!
Meet at the stone bench in the Arboretum

✕**MEETING**✕ Wednesday October 1, 7 pm
Cox Science Building, Room 166, University of Miami
"Its easy being green: Creating a yard that wildlife loves using natives"
by Joy Klein, Forest Restorationist and Education Coordinator
Miami-Dade County DERM
Featured family of the month: Zygophyllaceae

●**TOUR**● Thursday October 30, 5 pm
"Sacred and Magical Trees" tour
Meet at the stone bench in the Arboretum

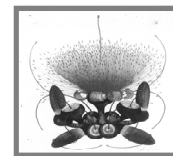
✕**MEETING**✕ Wednesday November 5, 7 pm
Cox Science Building, Room 166, University of Miami
"Tree canopy in Miami-Dade County: What we've got and why it matters"
by Dr. Francisco Escobedo, School of Forest Resources and Conservation
University of Florida, Gainesville
Featured family of the month: Meliaceae

●**PICNIC AND TOUR**● Saturday, December 6, 2008, 11:30-3:30
John C. Gifford Arboretum Annual Picnic

SAVE THE DATE: April 16, 2009, 7 pm
The 21st Annual Gifford Arboretum Lecture
(Evolution of Bignoniaceae)
Dr. Lucia Lohmann, Universidade de São Paulo, Brazil



The Gifford Arboretum of the University of Miami is a collection of living tropical and subtropical trees. Our goal is to promote appreciation of and knowledge about tropical trees, both native and from around the world



These events are free and open to the public.

For more information, call (305) 284-5364 or visit our website: www.bio.miami.edu/arboretum

The Gifford Arboretum is located at the NW Corner of the Campus, near San Amaro and Robbia. Take Red Road to Miller Road, then Miller east to the University of Miami; Turn left and look for the sign on the right: the third entrance to UM. Park and find the back of Cox Science Building (or the Arboretum, for events there). Free parking will be available

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