Montgomery Botanical News

Advancing Research, Conservation, and Education through Scientific Plant Collections

Fall/Winter 2018 *Volume 26, Number 2*

To advance science, education & conservation of tropical plants, emphasizing palms and cycads, Montgomery Botanical Center grows living plants from around the world in population-based, documented, scientific collections in a 120-acre botanical garden exemplifying excellent landscape design.

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

Montgomery Botanical News is published twice a year 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

Edited by Tracy Magellan

Printed on recycled paper

From the Executive Director

Dear Friends,

Plant Exploration is *at the absolute heart* of what we do at Montgomery. Every garden is built around a plant collection – and our plant collection is built around science and conservation. In my opinion, nothing replaces firsthand experience with these living treasures, directly in the field.

But how is plant exploration accomplished? Careful logistics and planning have always been essential since the earliest botanical expeditions; just read the letters of Wilson Popenoe. Wilson's writings also show how essential it is to develop these field projects on a foundation of collaboration and cooperation, often across international boundaries.

That principle is why I am thrilled to announce a new fund that supports exactly those goals – *internationally collaborative botanical exploration projects*. See opposite this letter, page 3, for MBC's new Plant Exploration Fund, and join me in thanking Lin Lougheed for his amazing generosity!

At Montgomery, Plant Exploration is *personified* by our esteemed Palm Biologist, Larry Noblick. In this issue he shares how his early explorations inform and shape his current botanical endeavors – just compare the back cover with the front cover! Larry's remote fieldwork and his intrepid character set a great example for the next generation at Montgomery. Page 7 details Montgomery's leadership in the early career training of those botanists and horticulturists, leveraging the experience and knowledge of our longer term experts to encourage that next wave of talent.

These transitions are sometimes more sudden than we wish; on page 6, please see my tribute to Lee Anderson. Lee leaves a great physical legacy upon the landsite with his decades of dedicated effort. We miss Lee and honor his contributions to our success. Because of the efforts of Lee, of the experts that came before him, and of the experts here today, Montgomery continues on an upward trajectory. I am glad to have you with us as we continue that progress!

PS: It has been over a year since we survived Hurricane Irma – the progress is incredible! Thank you for your support, help, and good wishes; our garden is thriving once more – please visit and see.

Pictured: Dr. Griffith with *Microcycas calocoma* in Cuba.

Local Explorer

Funds International Plant Exploration

Lin Lougheed, center holding Explorers Club flag, with botanical teams from Madagascar and Fairchild Tropical Botanic Garden, August 2006. This collaborative expedition led to the discovery of a new palm species!

US and Colombian botanists Michael Calonje, Cristina Lopez-Gallego, and Jonatan Castro with a rare natural hybrid cycad in Colombia, June 2018 – an international field study supported by the Plant Exploration Fund.

VITAL SUPPORT FOR BOTANY AND CONSERVATION

Dr. Lin Lougheed, Miami Beach author and explorer, and Dr. Patrick Griffith, Executive Director of Montgomery, announce the creation of the MBC Plant Exploration Fund. Dr. Lougheed, a longtime supporter of MBC expeditions, felt Montgomery's important work demanded a more consistent funding. As the Fund's founder, Lin will give a matching gift of $100,000 to encourage others who believe in the irreplaceable value of plants to contribute to the Fund.

The new fund supports botanical expeditions by Montgomery and its international colleagues and collaborators. This generous gift builds international bridges to advance botanical science and conserve endangered plants. Montgomery's best work is absolutely tied to sustained international collaborations, and this amazing support from Dr. Lougheed will move those efforts much further forward.

Dr. Lougheed sees the great importance of collaborative efforts. As a Fellow of the NYC Explorers Club, Lin carried the club flag to Madagascar on an expedition of local and American scientists that discovered a palm unknown to science (see photo above). An internationally recognized expert in English language instruction, Dr. Lougheed started his language teaching career in 1968 as a Peace Corps volunteer in Turkey. Lin received two Fulbright Awards: a scholar grant in Sri Lanka and a professor grant in Tunisia, and has written over 40 English as a Foreign Language texts. For many years he also had a daily radio show in China on business English. All of these experiences shaped Lin's deep belief in the value of international cooperation.

Dr. Lougheed also funded a Fairchild Tropical Botanic Garden project in a village on the east coast of Madagascar to help the locals procure a source of income not dependent on poaching valuable forest. Along with Montgomery, Lin shares a great commitment to plant conservation: "You can't help endangered animals and plants without preserving and conserving their habitat. All things depend on plants."

Background photo: Lin's support for botanical fieldwork in the Dominican Republic advanced conservation horticulture for this rare palm, *Copernicia berteroana* (published by US and Dominican botanists in *HortTechnology* 26, pages 811-815).

New Eyes on Bahia

Hidden treasures are there if you look!

Left: *Syagrus cataphracta* was rediscovered in the dry interior of Bahia. This palm was originally described as a variety of *Cocos flexuosa* in 1826! Larry moved this species into the genus *Syagrus* and elevated it to species as part of his major work on the genus in 2017. **Center:** Larry Noblick and Lazaro Silva stand with an impressive individual of *Attalea pindobassu*. **Right:** Larry with *Syagrus santosii*, also seen in the background photo. Larry and his colleagues brought these imperiled palms into protective cultivation.

On the Cover: Dr. Larry Noblick and colleagues climbed many inselbergs (abrupt, isolated, rocky hills) in search of palms. This one was home to *Syagrus pseudococos* and *Allagoptera caudescens*.

Background: *Syagrus santosii* only grows in one river valley that was recently dammed. This killed most of the original palm population, leaving only these plants above the new water line.

A new discovery! *Syagrus guaratingensis* only grows on inaccessible granite inselbergs such as the one featured on the cover. These nearly inaccessible granite walls hold amazing botanical treasures.

Bahia, Brazil is like my second home. I spent time there as a Peace Corp volunteer, university herbarium curator, and doing my doctorate research. Nevertheless, I am amazed by the novelties that continue to be discovered. Its diversity of habitats is equally matched by its diversity of palms. Just this week I reviewed a new palm species, which brings the total in Bahia to 74. Compare that to just 15 in the Continental US!

I again explored Bahia recently and we discovered another new species near Guaratinga: *Syagrus guaratingensis*. In reality, I first saw it in 1989 on an isolated inselberg in the Atlantic Forest (see page 8), but only now, armed with more knowledge, was I able to recognize it as distinct. A similar thing happened with the rediscovery of *Syagrus cataphracta* from the Bahia's drier interior. The lesson here is never be afraid to revisit, you may be surprised what you discover with your "new eyes." You may stumble onto a rare find as we did, or as my friends did with the new palm species they discovered growing on a single inselberg less than two miles from where we collected *S. guaratingensis.*

Dr. Larry Noblick, MBC Palm Biologist
larryn@montgomerybotanical.org

Acknowledgements: I would like to thank the Brazilian National Council for Scientific Research and Technological Development (CNPq) for funding the Pindorama Project in collaboration with the Universidade Estadual da Bahia and Universidade Federal da Bahia, and especially the help of Dr. Lazaro Silva, Dr. Francisco de A. R. Santos, and Carlos Alex Guimaraes. Lillian Fessenden and The MBC Plant Exploration Fund helped support travel.

LEE ANDERSON, 1947-2018 – Our longtime Superintendent passed away unexpectedly on May 24, 2018, after dedicating over 22 years of great work to Montgomery. When Lee began here, this landscape was just getting reborn with a new Master Plan. Lee's diligent leadership and effort physically transformed this place into the amazing, unique landscape we see today.

Very patient and collaborative, Lee was my trusted colleague all the way through. Lee brought a great sense of humor to all things – a line, or a quip, or just a single word – but he always found the humor in anything. Lee was also very well read and experienced. He brought a deep vocabulary, eloquence, and "classic thinking" to his work, writing and speaking about landscapes and turf.

Lee dedicated great effort to promoting the environmental health of the landsite. Looking carefully at water use, Lee was a recognized expert in Best Management Practices for the green industry. He also developed the best plant recycling operation in the neighborhood, supplying mulch, compost and soil to community projects, schools, and libraries.

The beautiful landscapes of Montgomery were Lee's *Life's Work*. Lee always said his goal was to keep things "Clean and Green," and seeing our garden today, Lee absolutely met and exceeded that goal. Please let me adapt a great quote from Tracy Magellan, and a favorite term of Lee's – "*enjoy that great greensward in the sky*."

M. Patrick Griffith, Executive Director
patrick@montgomerybotanical.org

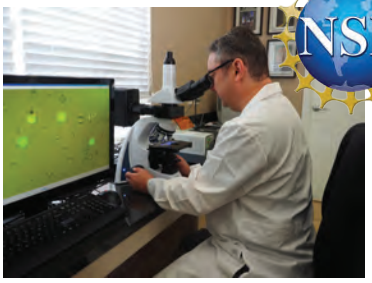

Lee Anderson

Research and Conservation Updates

Science advances at Montgomery! In addition to all the plant progress mentioned on pages 3, 4, 5, and 8, our team has put forward many other studies:

- **Joanna Tucker Lima** published her study of palm flowering biology in the journal Plant Ecology. The study looked carefully at how deforestation changes blooming on native palms. Joanna also presented this work at the recent 69th Brazilian Botanical Congress.
- Yet another Brazilian palm conservation study was published by an international team including **Joanna,** appearing in the Brazilian journal Rodriguesia. This paper reviewed the understory palms of southern Brazil.
- **Michael Calonje,** working with **Greg Barber** and **Claudia Calonje** developed new methods for pollen curation at subzero temperatures. This major update to our Seedbank protocols was supported by the Stanley Smith Horticultural Trust and the National Science Foundation (DBI 1203242 and DBI 1561346). These grants provided specialized humidity chambers, sensitive balances, ultra-low freezer equipment, microscopy, and backup generators to ensure and monitor optimum environmental conditions for long term storage of viable pollen. Michael presented these methods and findings at the worldwide Cycad Conference "Cycad 2018" in South Africa in August.
- Our National Leadership Project, Safeguarding our Plant Collections, made possible in part by the Institute of Museum and Library Services [MG-30-16-0085-16], began analysis of DNA data this summer. **Patrick Griffith** reported preliminary findings at lectures and conferences in California, South Africa, and Miami.


Joanna Tucker Lima with *Attalea* in Brazil.


Michael Calonje observing pollen with florescence microscope.

Team News

Promotions and advancements keep the Montgomery Team moving forward:

- **Xavier Gratacos** was promoted to Superintendent, leading our Horticulture and Facilities Department. Xavier's leadership role comes after six years of increasing responsibility in various roles at MBC, including coordinating hurricane recovery and facilities recertification projects.
- Our new Assistant Cycad Horticulturist, **Vince Ramirez**, comes from the University of Florida. Vince is completing his degree in Agricultural Education, and brings tremendous enthusiasm and effort to our cycad collection.
- **Jason Maldonado** was promoted to Facilities Specialist in June. Jason has been on our horticulture team since 2014, but also holds a special talent for all things mechanical. In his new role, Jason keeps our equipment and buildings in top shape.

Many new people are here through the support of our generous donors! Montgomery is an emerging leader in training early career "plant people" – our specialized internships and fellowships saw great growth this year:

- Our 2018 Peter R. and Stuart Y. Jennings Intern, **Imeña Valdes**, studied our *Nypa* palms over the summer. Bringing her exceptional talent from FIU, Imeña diligently observed the flowering and pollination of these palms, supporting two separate scientific projects with MBC's biologists. Through the support of the Plant Exploration Fund (see page 3), Imeña also travelled to Curaçao to survey and map rare native palms with an international student team.
- **Chad Evans** and **Julian Lentz**, Geography students from Eastern Carolina University, interned at MBC this summer, supported by a wonderful donation from Lyman Dickerson. Chad and Julian improved our mapping and labeling operation with their great work.
- Thanks to funding from the Batchelor Foundation and Christiane Tyson, MBC doubled the size of the *Conservation Horticulture Fellows Program*, with four Fellows this year! **Christina Chavez**, **Julian Fiuza**, **Eliza Gonzalez**, and **Daniela Noblick** began in June, developing horticulture skills and helping our plants to thrive. Their work is essential to our garden!

MONTGOMERY BOTANICAL CENTER
11901 Old Cutler Road
Coral Gables, FL 33156-4242

NON-PROFIT ORG.
U.S. POSTAGE
PAID
MIAMI FL
PERMIT NO. 1302

ADDRESS SERVICE REQUESTED

CORAL GABLES
THE CITY BEAUTIFUL

FROM THE MONTGOMERY ARCHIVE

Plant Exploration in 1989

A single and yet unidentified *Syagrus* palm stands in the background in a field of bromeliads atop a granite inselberg near Guaratinga, Bahia, Brazil. This photograph was taken by Palm Biologist Larry Noblick during exploratory fieldwork early in his career. In his recent study* Larry recalls:

> The weather was dry, so I courageously or perhaps foolishly climbed up the steep crystalline granite rock face to the trees. When I reached the palms, my precarious perch made it difficult to photograph the palm, as with one hand I clung onto cracks in the rock or whatever was available to keep from falling or rather sliding back down the granite rock face, while taking the picture with my other hand... I would never have attempted the climb on a wet day, when scaling the rain-slick granite would have been impossible. Equally challenging was getting back down the rock face with the palm collections without damaging the camera.

With 30 subsequent years of in-depth experience, Larry revisited these palms as part of an international team, and determined they were in fact a new species (see pages 4-5). Seeing plants afield for firsthand observation – Plant Exploration – is a vital and irreplaceable part of botanical science. Montgomery is deeply grateful for the commitment of our supporters to this exciting work – see page 3 for a great announcement!

* Noblick, L. R. 2018. *Syagrus guaratingensis*, a New Species from Bahia, Brazil. Palms 62(2):77-86.