Spring/Summer 2021 Volume 29, Number 1

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Advancing Research, Conservation, and Education through Scientific Plant Collections

Montgomery Botanical Center Established 1959

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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.

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From the Executive Director

Dear Friends,

Despite challenging times, we finished 2020 very strongly. Perhaps Voltaire said it best? *"Il faut cultiver son jardin"* (YOU MUST CULTIVATE YOUR GARDEN). Keeping our focus <u>right there</u> moved us ahead: Montgomery's verdant beauty and feel – trunks, foliage, vistas and views – lighted our way forward.

Our pathway has never been so smooth! Pages 6 and 7 describe a major upgrade to our garden, a carefully designed road system linking our lowlands and lakes in a graceful sweep. Walter Haynes deserves our thanks not only for that gift, but also for his FIFTY YEARS of leadership and generosity.

I am happy to share Professor Christine Bacon's recent expedition in search of a remote Amazonian palm (pages 4 and 5). Montgomery's PLANT EXPLORATION FUND continues to foster these amazing collaborations. Christine's detailed approach to these fascinating botanical questions will lead to further discoveries – and research here at Montgomery also continues to advance (page 8).

All of these successes illustrate how great people carry us forward. And we are fortunate to have so many of you on our team! Your efforts, generosity, and enthusiasm – evident on pages 9, 10 and 11 – make all of this possible. Thank you for all of your help!



Pictured: Dr. Griffith with the largest banyan at Montgomery. This species (*Ficus altissima*) is often called the Council Tree, as large groups can gather in its ample shade. **On the Cover:** This aerial view of our Lowland Palmetum shows the new roads weaving through the palm collection – see pages 6 and 7 for details. Montgomery currently grows 422 different kinds of palms! Page 8 provides details on our diverse collection.



Bringing Cycads Together

Montgomery hosts a new effort to network cycads around the world – the GLOBAL CONSERVATION CONSORTIUM FOR CYCADS (GCCC). Funded by a 3-year National Leadership Grant to the Morton Arboretum, this project will link botanic gardens with important living cycads into a 'metacollection' that supports global conservation work.

This project is a continuation of Montgomery's work to study how gardens working together capture more diversity than any single garden – please see our Spring 2020 Newsletter. The current project will implement networks based on that metacollection idea, ensuring that no cycad species will go extinct.

The Cycad Consortium joins other Consortia for magnolias, rhododendrons, oaks, and maples, under a program of Botanic Gardens Conservation International. Montgomery is well suited for this leadership role in cycads, given that the Global Programme Office for the CYCAD SPECIALIST GROUP is also based here.

Dr. Vanessa Handley, GCCC Project Leader, adds, "Despite our increased emphasis on conservation, recent years have borne witness to an ongoing decline in cycad populations. This paradox speaks to the complexity of the issues and highlights the need for greatly accelerated action."

Dr. Patrick Griffith, who also serves as co-chair of the Cycad Specialist Group, states: "The consortium for cycads comes at a perfect time when our understanding of genetic conservation is increasing rapidly, enthusiasm to network plants across gardens is strong, and cycads are more imperiled than before. It is great to see gardens adopting such a collaborative approach!"

We thank the Institute of Museum and Library Services for funding this important project (Grant # MG-245575-OMS-20).



This project also studies the genetic conservation of *Zamia integrifolia*, the only US Native cycad. This species was nearly wiped out for starch extraction in the 19th and 20th centuries.

The Cycad Consortium project ensures that no species will go extinct.

Dr. Vanessa Handley (see page 9) with Encephalartos lanatus in South Africa. Many species of Encephalartos are highly threatened, with some extinct except for those growing in botanic gardens. Dr. Handley's research centers on how such plants in cultivation can support long-term conservation.

Palms and People Studies in the Colombian Amazon

Christine D. Bacon, María Fernanda Torres Jiménez, and Heléne Aronsson

The sun sets early in the tropics, and even earlier under the dense, diverse forest of Amazonia. With so little time left in the day, we quickened our pace in pursuit of a very rare palm. Our local Bora guide had seen what we sought near El Zafire. But it was our last day together as a team, and we still hadn't found it...

Months earlier in the dark Swedish winter, we planned and prepared this expedition -ascientific endeavor to study a remote palm, Geonoma macrostachys variety acaulis. Data from this palm could illuminate the process of plant speciation, as these palms seem to be separating at this very time. We arranged schedules, hired guides and a cinematographer, and together formulated a plan.

Later in Colombia we rode



overloaded trucks down the sole regional road to meet our guides. Now 18 strong, we backpacked two weeks of supplies, equipment, and materials eight hours deep into the Colombian Amazon to the Brazilian border. For two weeks we collected hundreds of plant samples, soil samples, and seeds, recorded hours of film, took hundreds of photos, strengthened our international collaborations with Colombian, Bora, and Uitoto partners - and made unforgettable memories.





Experts from the Bora, Uitoto, and Miraña communities invited us to discuss threats to their forest home. We shared our palm study – and they too noted how leaves and stems vary depending on where a palm grows. These local leaders highlighted how bringing scientific and traditional knowledge together can better preserve this forest and its palms. We realized their knowledge is of exceptional value, as they have known this forest for much longer than anyone.

And as dusk fell on the forest on that last day, we finally came upon our first *Geonoma macrostachys* variety *acaulis*, with shiny leaflets and fruits gleaming in the final rays. Like the seeds we sow in botanic gardens, we will continue to foster these collaborations, and connect with the broader community through our outreach. We look to see both palm seedlings and new researchers growing in the future.

Contact: christinedbacon@gmail.com



Ana Ospina, Christine D. Bacon, and Sara Carvalho on the border between Colombia and Brazil, a few kilometers from Zafire.

ACKNOWLEDGEMENTS

We thank the Zafire Biological Station and collaboration with Universidad la CES for permission to collect. This work was generously supported by the Plant Exploration Fund of Montgomery Botanical Center, the International Palm Society, the Biodiversity and Ecosystem Services in a Changing Climate Strategic Research Area (BECC) at the University of Gothenburg, and the Swedish Research Council. Photos: María Fernanda Torres Jiménez, María José Sanín, Michael Calonje, and Tatiana Vila -Endemica Studios.

The Path forward

Montgomery dedicated its roads as the WALTER HAYNES GARDEN WAYS. Our Board of Directors wished to recognize Walter for his lifelong service to Montgomery and his very generous gifts to improve the infrastructure here.

Walter has served tirelessly on Montgomery's Board since 1970 – five full decades of leadership, guidance and support through many big changes. His vision for the landscape and mission laid a clear path to the successful, beautiful garden we now enjoy. He expresses his motivation for his very generous donations: "Good landscape design for our scientific plant collections is an important goal for Montgomery. Our roads provide a way to travel through the collections. The design of the roads attracts the vision to the collections and helps frame them while the smooth curves of the roads provide a feeling of serenity."

Walter's most recent gift allows a full circuit of the landsite – one and a half miles – around the lakes. A capstone of his infrastructure gifts spanning both the last decade and all 120 acres, these roads now allow all-weather access to the lowland palmetum and lakes – providing essential views and vistas for every visitor.

Walter always shows us *the way forward* at Montgomery – and we are glad to honor his work!

These roads provide essential views and vistas for every visitor



Walter's passion for landscape design has taken him to many botanic gardens worldwide. Montgomery's own landscape has benefited greatly by Walter's experience, leadership and vision. New vistas can now be seen as the roads curve beneath the palms and around the lakes. This graceful route allows all visitors to experience these views in a tranquil manner – a smooth course through a unique landscape.

ANNAMIA

Joe Hibbard, our Landscape Architect and Honorary Member, provided guidance and design for these projects. He states:

"The garden roads are an important functional and visual part of the Montgomery Botanical Center landscape. The roads are the principal vantage point from which we all gain our experience of moving through this special landscape. The system includes the historic roads such as the original Old Cutler Road and the Royal Palm Colonnade that date back to Colonel Montgomery's original property plan. The garden roads reflect the practical considerations of providing efficient access to the collections, but their form is also purposefully expressive to bring pleasure and calmness of mind to those who travel them.

Since the mid-1990s the expansion and renewal of the garden road system has proceeded hand in hand with the rapid growth of the Living Collections. During this time, no person has done more to guide, support and extend the tradition of sensitive design of the property's garden roads than Walter Haynes."

Walter Haynes Garden Ways

Named in honor of Walter's dedication to Montgomery including his five decades as a Director, four years of service as its President, forty-six years of service as its Treasurer and for that which is most recognizable to its visitors: his dedication to Montgomery's landscape design and his generous gift of these roads.

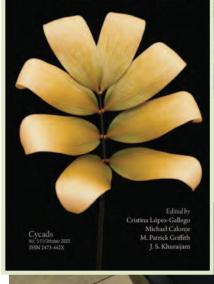
"Not the destination, but the journey." November 2020 Montgomery Botanical Center

Research Updates

A group of biologists from Zurich, Cornell, and Montgomery studied the challenges of conserving both rare *Zamia* and the rare butterflies that feed on them. Atala butterflies are a rare and cherished species, and Montgomery has the largest concentration of these beauties in Florida – because we grow their food so abundantly. The study is featured on the cover of the FLORIDA ENTOMOLOGIST.

★ A Doctoral Student from Cornell, Ayress Grinage (left), studied our *Sabal* collections, making a large number of specimens. Her review of our plants highlighted some interesting novelties not yet noticed – such as how the elusive "Miami Palmetto" (*Sabal miamiensis*) might be more widespread than previously thought. Here, she works with Jessica Sparks (right), MBC Seedbank Coordinator, in the Chris Tyson Plant Conservation Building.

PROCEEDINGS OF CYCAD 2015 The 10th International Conference on Cycad Biology



The PROCEEDINGS OF CYCAD 2015, containing 7 chapters and the *Medellin Declaration* for Cycad Conservation is now available as a free, online resource (please see cycadgroup.org). This book documents the advances highlighted at the TENTH INTERNATIONAL CONFERENCE ON CYCAD BIOLOGY. Montgomery was deeply involved in that gathering and the production of this important book. A limited number of hardcover copies are also available.

> Space limits what we can highlight here – please visit our website for a full view of our work in botany, horticulture, and conservation. www.montgomerybotanical.org

omolo

MONTGOMERY BOTANICAL CENTER 2020 COLLECTION INVENTORY

	Palms	Cycads	Other		Palms	Cycads	Other
Total Taxa in ground in nursery	422 386 107	261 236 86	512 502 15	Total Plants in ground in nursery	9,066 6,652 2,414	7,032 5,563 1,469	2,316 2,276 40
Total Accessions in ground in nursery	2,238 1,975 316	1,879 1,681 270	1,929 1,918 16		18,414 Plants !		

Team News

Laurie Danielson, our Palm Curator, retired from Montgomery on October 30 after 26 years of excellent work. The health and vibrancy of our palm collection is due to her diligent efforts; some older palms here show the record of when she began here – you can see the difference in their swollen upper trunks! Laurie continues to volunteer at Montgomery.

Our palms are now cared for by **Andrew Street**, who was promoted into the role of Palm Curator. Andrew brings an extensive knowledge of palm care to the position, and he also serves on the board of the International Palm Society.

To lead our efforts on a Global Conservation Consortium for Cycads (see page 3), Montgomery has hired **Dr. Vanessa Handley**. Dr. Handley comes to us from the University of California Botanical Garden at Berkeley, and has extensive experience with cycads and working with botanic gardens.

Charles P. Sacher greatly expanded his service to Montgomery this past summer. Upon retiring from a 55 year career in law, Charles is now potting plants in our Nursery, removing vines in our natural forest areas, and hauling fallen palm fronds to our plant recycling center. In late summer, Charles single-handedly brought our volunteer hours back to pre-covid levels! Neither weather nor injury has deterred his diligent work. This volunteer labor is in addition to his 20 years of dedicated service on our Board of Directors (see page 2). Please see below for a full list of our volunteers!



THANK YOU TO OUR 2020 VOLUNTEERS

Aleman, Priscilla Barrera, Maria Bauders, Max Booth, Blaise Booth, Brian Booth, Conrad Brusberg, Marian Cahill-Booth, Lara Chavez, Christina Chebli, Emily Cold, Marsha Crow, Alex Danielson, Laurie English, Ed English, Janet Gailey, Anna Galetti, Leo Griffith, Bella

Griffith, Clara Gulliver Academy Hicks, Trish Jacobson, Kay Jordan, Vivian Kay, Judy † Kraus, Mark Leverett, Lynn Martin, Margaret Martinez, Marcie MBC Board of Directors (page 2) Morales, Jessica Morgan, Cody Nghiem-Phu, Lan Noblick, Daniela Palmetto High, Dr. Edelman Class Park, Lane Piriyakul, Jorge Richardson, Maggie Sacher, Charles P. St. Philips Episcopal 2nd graders Street, Jensen Street, Michael Wilson, Michael Glenn

MONTGOMERY BOTANICAL CENTER Gratefully Acknowledges Your 2020 Support

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GRANT FOR FELLOWSHIP IN CONSERVATION HORTICULTURE Batchelor Foundation

IN SUPPORT OF THE PLANT EXPLORATION FUND

Faith Bishock/Fessenden Family Fund Ellen Gall & Joe Penchansky Gregory Hood Dale Kammerlohr Nancy Lee & Jonathan Kemper Lin Lougheed Peter Mayotte Lelan Nishek Steve Pearson Lazaro Priegues Charles P. Sacher Sam Schmerler Judy Shaw/

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> IN SUPPORT OF HAMMOCK RESTORATION Karl & Charlotte Smiley

> > IN SUPPORT OF THE ROADS UPGRADE Walter Haynes

IN SUPPORT OF THE PALM RESEARCH IN MEXICO Tim Gregory

IN SUPPORT OF CYCAD CONSERVATION IN COLOMBIA Tim Gregory

IN SUPPORT OF CYCAD CONSERVATION IN ZIMBABWE Tim Gregory

IN SUPPORT OF GENETIC RESEARCH Institute of Museum & Library Services, via Chicago Botanic Garden

> **GRANT FOR COVID-19 RELIEF** Stanley Smith Horticultural Trust

GRANT FOR CYCAD BED RECONFIGURATION Stanley Smith Horticultural Trust GRANT FOR STUDIO RESTORATION The Villagers

GRANT FOR 1932 GREENHOUSE RESTORATION The Villagers

GRANT FOR PLANT RESEARCH IN HAITI Global Botanic Garden Fund BGCI

GRANT FOR CULTURAL DEVELOPMENT City of Coral Gables

GRANTS IN SUPPORT OF OUR WORK Central Florida Palm & Cycad Society Coconut Grove Garden Club

IN HONOR OF WALTER HAYNES Beaty Family Fund

IN HONOR OF MARGARET MEISTER & TIAGO GARCIA Patrick & Tonya Griffith

IN HONOR OF CHARLES P. SACHER'S RETIREMENT Pamela Poulos Martha Rogers Haas

IN HONOR OF CHARLES P. SACHER ON HIS BIRTHDAY Pamela Poulos Martha Rogers Haas

IN HONOR OF SAN DIEGO BOTANIC GARDEN'S COMMITMENT TO CYCAD CONSERVATION Kopfstein, Robert

IN SUPPORT OF THE NURSERY Lane Park & F. Lynn Leverett Margaret & Serge Martin Patricia Hicks

IN SUPPORT OF LARRY NOBLICK'S PALM RESEARCH Jill Menzel

IN SUPPORT OF FIELDWORK IN CUBA Elvis Cruz

IN SUPPORT OF THE EVENING WALKING TOUR Patrick & Luisa Kelly

SUPPORT FOR PALM CONSERVATION IN BELIZE Horace Hobbs

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IN MEMORY OF SARA HAMBLEY MANZ Elizabeth Davis IN MEMORY OF AUNT NELL Matt & Linda Foster

IN MEMORY OF JOHN DEMOTT, IN SUPPORT OF THE MBC SEEDBANK Curtis Brown

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> IN MEMORY OF JUDY KAY Kay Jacobson

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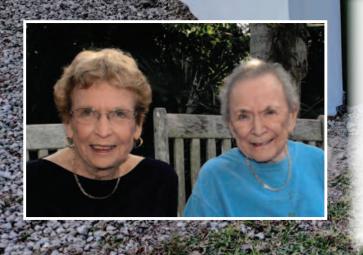
Tessy Foundation Beatriz Cardona Katherine Clase Carlos II Panilla

IN SUPPORT OF THE SIDERIS-QUINTERO FAMILY FUND Liliana Quintero

SUPPORT FOR TOOLS AND GLOVES Billy & Lydia Yeh

SUPPORT FOR PLANT LABELS Stephen & Laurie Anderson

GROWING OUR TREASURES



A generous gift from Lynn Leverett and Lane Park provided the Loyd G. Kelly Conservation Nursery with an upgraded cooling system – keeping our precious seedlings at the optimum conditions for health and vigor. In addition, their support allowed us to replace our aging wooden soil bin with a new masonry structure that matches the 1932 design of the Gatehouse. Soil is an essential element here – to paraphrase Xenophon: *to be successful, first know your soil*. Lynn and Lane grow our successes even higher with their generous gift!

Montgomery gratefully acknowledges your unrestricted contributions in 2020

Abess, Leonard & Jayne Adt, James Alexiou, Jon Alfele, Patricia Anderson, Stephen & Laurie Anonymous (x 7) Banks, Duane Bass, Anne Bauer, Brian Bauer, Lynn Bauer, Nick Batule, Gloria **Beatty Family Fund** Beck, Charles Brenner, F. C. Brown, Marilyn Brumbaugh, John & Wendy Coles Cahill, William & Frances Carrington, Patricia Chesney, Bruce Clancy, Keith Clase, Katherine & Jose Diaz Curtis, Alan Cuthbertson, R. Bruce Deane, Elizabeth de Koning, Joep

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Labor & materials Susan Butler - Cycads

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MISC. INCOME Explorers Club, South Florida Chapter FNGLA Griffith, Patrick Location Resources, Inc. Philanthropic Educational Organization Roads Scholar SAAGA Family Wealth St. Philips Episcopal School University of Pennsylvania

Montgomery apologizes for any omissions or errors in accuracy

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FROMTHE MONTGOMERY ARCHIVE

HISTORIC ROADS

This 1938 photograph shows the view from the second floor of the Gatehouse, looking south towards Nell's House, which can be seen in the distance. The gravel-surfaced driveway gently curves through a colonnade of Royal Palms.

This now-paved driveway lies upon the overland route known as the "Cutler Road," connecting Coconut Grove and Cutler. Nell's House was built on the highest point of the landsite, also the site of the roadway. Remnants of this ancient road – believed to be 12,000 years old – are still preserved at



Montgomery, Chapman Field, and the Deering Estate. Today, the current "Old Cutler Road" runs to the north and west of these three landmarks.

Correspondence in the late 1940s between the Montgomerys and the City document their efforts to preserve the Old Cutler Road name over the city's planned designation of Ingraham Highway (Robert and Nell prevailed). This historic photograph shows the same graceful road design principles as those seen on the front cover (see pages 6-7).