

The Plant Press



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Botany Profile

New Endowment Honors Lyman Smith Legacy

By Nancy Khan and Warren Wagner

The Department of Botany is pleased to announce that a generous gift in 2013 from Christopher C. Smith, Professor Emeritus in the Division of Biology at Kansas State University and son of Lyman and Ruth Smith, has created a new endowment in support of early career research fellows in botany. The endowment, named the **Lyman B. and Ruth C. Smith Endowment Fund**, is designed to provide career development opportunities for young scientists to further their research and education through studies of plants at the U.S. National Herbarium (US) and through interactions with our research staff. This charitable gift will be held in a permanent fund with an annual award made to support and sustain the work of fellows in residence within the department.

Through this endowment Christopher Smith has created an enduring award that will continue to recognize the important contributions that Lyman Smith and his wife Ruth made to the field of botanical research. Lyman Smith began his distinguished career at Harvard University where as a doctoral candidate he made his first collecting trip to South America to collect bromeliads and other tropical plants in Brazil. In 1947 he joined the Smithsonian's Department of Botany and worked as a Research Botanist in the museum for over 40 years, including many years after his retirement.

Lyman Smith was a dedicated taxonomist who studied and identified plants from a broad range of areas and groups and was widely recognized as a world authority on many tropical families,

especially the bromeliads (Bromeliaceae). Over the course of his lengthy career he published prolifically, authoring over 1,700 new taxa and 519 publications, with his seminal work being a reorganization of the Bromeliaceae in *Flora Neotropica* which he completed between 1974 – 1979 during his tenure as an Emeritus Curator in the Department. He was founding member of the Bromeliad Society and accumulated many awards for his contributions to Bromeliad research (*Taxon* 46: 819-824; 1997). At least 50 species have been named in his honor, including two bromeliads discovered in South America as recently as 1999. *Tillandsia lymanii* Rauh and *Mezobromelia lyman-smithii* Rauh & Barthlott are fitting tributes in recognition of his legacy of exceptional scholarship in the field of tropical plants.

While largely unrecognized for her efforts, Ruth Smith provided invaluable assistance and support throughout her husband's career. She proof-read countless papers and classification keys, collected specimens with him on multiple trips to South America, supplied photographs, and co-authored the volume on "Begoniaceae" in the series "*Flora Illustrada Catarinense*" edited by P. Raulino Reitz. Together Ruth and Lyman raised five children, at least two of whom have actively pursued careers in the natural sciences. Christopher Smith taught evolutionary biology at Kansas State University for 33 years. Stephen Smith became the second in the family to pursue a career at the National Museum of Natural History working to identify, catalog, and care for herbarium specimens from 1978 – 2012. Through

this new endowment Christopher Smith has expressed his desire to honor "their exemplary dedication to the exploration, study, and understanding of plants" and hopes "that the recipients of the Lyman B. and Ruth C. Smith Endowment will carry on their tradition of the passionate and earnest pursuit of taxonomic research in botany." We look forward to announcing the first recipient of this award within the year.

This new gift is particularly exciting as it is the first the Department has received specifically in support of research scholarship thus enabling the Department to expand its opportunities for young botanists to develop and pursue their research interests. In addition, it broadens the Department's growing suite of endowments secured by gifts received over the past 80 years. The Department's endowments currently exceed \$2.6 million and are managed by the Office of Investments in accord with the investment goals, objectives, and policies of the Smithsonian Institution. A brief review of the suite of eight discrete funds dedicated to the Department of Botany reveals a genuine and unwavering munificence by donors who have contributed greatly to the longevity and ability of the Department to pursue its core mission of scientific research and collections development.

The earliest source of support for the department, the **Albert S. Hitchcock Fund**, was established in 1937 as a memorial fund to maintain the Hitchcock-Chase Library and Collections. By

Continued on page 11

Vicki Funk traveled to Cape Town, South Africa (1/7 – 1/27) to present a paper at a meeting of the Association for the Taxonomic Study of the Flora of Tropical Africa (AETFAT) and to participate in a field trip to collect Compositae for research; and throughout northern Chile and southern Peru (2/28 – 3/21) to collect specimens of *Werneria* (Compositae) for research.

Rusty Russell traveled to New Haven, Connecticut (3/8 – 3/13) to co-organize and speak at an iDigBio workshop on digitization of source materials for biodiversity at Yale University; and to the Honolulu, Hawaii (3/17 – 3/23) to present an invited lecture at an Ethnobiology Society meeting at the University of Hawaii-Manoa, and to visit collections and collaborate with staff at the Bishop Museum and Lyon Arboretum.

Eric Schuettelpelz traveled to Chin State, Myanmar (3/1 – 3/21) as part of an expedition to survey the flora of Natma Taung National Park.

Laurence Skog traveled to Sarasota, Florida (2/18 – 2/28) to work at Marie Selby Botanical Garden on the unmounted specimens of Gesneriaceae; and to Honolulu, Hawaii (3/22 – 3/29) to visit the Foster Botanical Garden, the herbaria at the University of Hawaii, and the Bishop Museum, as well as to attend the iDigBio workshop at the East-West Center at the University.

Alain Touwaide traveled to Messina, Italy (3/1 – 3/31) to teach an intensive course on the classical scientific tradition at the University of Messina, to present a talk at Locri, the local branch of the International Association for Classical Studies, to present a talk at Messina Academy, and, with **Emanuela Appetiti**, to visit the archeological sites of Kaulonia and Gerace, both rich in archeobotanical material.

Warren Wagner traveled to Hawaii (2/10 – 2/26) to attend a meeting of the Smithsonian Institution National Board, to attend a meeting on the Flora of the Marquesas Islands, and to attend planning meeting for Dimensions of Biodiversity, a multi-institution NSF grant to study Onagraceae and evolution of scent.

Jun Wen traveled to Raleigh, North Carolina (2/28 – 3/2) to attend a graduate

student committee meeting and a student symposium.

Kenneth Wurdack traveled to Bronx, New York (2/19) to use the herbarium, library, and archives at the New York Botanical Garden for research relating to Euphorbiaceae, Malvales, and Guyana floristics.



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Chair of Botany

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Visitors

Carlos García-Robledo, Smithsonian Fellow; Plant-herbivore interaction (7/20/10-7/17/14).

Janelle Burke, New York Botanical Garden; Tropical Polygonaceae and Plumbaginaceae (8/1/12-12/31/14).

Ning Zhang, Pennsylvania State University; Vitaceae (1/7/13-6/30/15).

Maria Kaye, University of Aberdeen, United Kingdom; DNA barcoding (11/25/13-3/25/14).

Niclas Engen, Smithsonian Marine Station at Fort Pierce; Cyanobacteria (1/1-1/16).

Harvey Ballard and Juliana Paula Souza, Ohio University; Violaceae (1/6-1/10).

Sarah Kyle, University of Central Oklahoma; Medieval history of botany (1/6-1/9).

Dara Meekins, George Mason University; Ethnobotany internship (1/6-1/20).

Harlan Svoboda, Ohio University; Passifloraceae (1/6-1/10).

Caetano T Oliveira, Universidade de São Paulo, Brazil; *Mikania* (Asteraceae) (1/7-1/31).

Tom Kaye, Institute for Applied Ecology; Orobanchaceae (1/8-1/9).

Yongli Fan, Xishuangbana Tropical Botanical Garden, China; Pollination studies (1/13/14-1/12/15).

Dave Gammon and 12 students, Elon University; Plant conservation and herbarium tour (1/16).

Kevin Parker, Center for International Environmental Law; Ancient Mediterranean environment (1/20).

Gloria Batista de Vega, Smithsonian Tropical Research Institute; *Eucheuma*

A New Opportunity to Increase Workforce Diversity

The call for diversity in the workforce is often followed by varying degrees of action and inaction. However, in 2013 the Smithsonian Institution “walked the talk” and issued a policy statement which is designed to promote efforts to address diversity in all categories. One new program has made significant inroads in broadening employment opportunities for learning disabled young adults. **Project|SEARCH Smithsonian** is a one year transition program designed for those with intellectual and developmental disabilities who are either in their last year of high school or are recent graduates. The program targets individuals whose main goal is employment and involves total immersion, extensive training, job coaching and feedback from coaches and employers.

One of the participants in the program is a very engaging young man named Edward “Ted” Dalpino who has just arrived in the Department of Botany to

assist with collections duties in the Core Collections Management Unit. Ted comes to us from a recent assignment at the National Air & Space Museum. As with other program participants, Ted will be on-site each school day for six hours over the next ten weeks with the possibility of an extension. Our collections staff, Andrew Clark, Melinda Peters and Meghann Toner, have enthusiastically welcomed Ted and will be providing daily training.

Another participant is Zachary Bergold Lynch, who is working in the Office for Human Resources, the Hirschhorn’s Registrar’s office, and now the Department of Botany for the next ten weeks. Zachary has a very busy day! In Botany, he is scanning pollen micrographs created by Joan Nowicke for her palynological research. Botany’s Information Technology crew will be watching and wondering at his fast progress.

Their Project|SEARCH job coach, Kristina Nabors, is also part of the initial training and will be on-call to Ted, Zachary, and our staff.

This opportunity results from the initiative of Botany staff members Sylvia Orli and Rusty Russell in exploring these opportunities and expressing our willingness to participate in this program and demonstrate our Department’s commitment to a diverse workforce.

What does the future hold for Ted and Zachary? Well, mostly that’s up to them. Their commitment, work ethic, and goals will ensure a brighter future far more than our willingness to provide an opportunity. But we are proud to be a part of their journey and support diversity efforts in the Institution.

- Rusty Russell,
Collections Manager



Ted Dalpino and Zachary Bergold Lynch. (photos by Melinda Peters)

**Chair
With
A
View**

**Warren
L.
Wagner**



and *Kappaphycus* (Solieriaceae) (1/23-1/31).

Lynn Gillespie, Canadian Museum of Nature; Poaceae (1/28).

John Benedict and Selena Smith, University of Michigan; Zingiberales (2/3-2/8).

Bridget Wood, Southern Arkansas University; Ethnobotany internship (2/3-2/21).

Charles Fenster, University of Maryland, College Park; *Arabidopsis thaliana* (Brassicaceae) (2/7).

Gaurav Kandlikar, University of Minnesota; *Isoetes* (Isoetaceae) (2/12-2/13).

Westley Knapp, Maryland Natural Heritage; Juncaceae (2/20).

Madison Downe, Mount Allison University, Canada; Cuatrecasas photo project (2/23-2/28).

Melissa Pevey, University of Maryland, College Park; ARC/GIS maps (2/24-3/22).

Vinicius Souza, University of São Paulo, Brazil; Neotropical Scrophulariaceae (2/27-3/1).

Nancai Pei, Research Institute of Tropical Forestry, China; Plant reproductive traits (3/1-9/1).

Windhoffer Eva, Mark Frey, Liz Matthews and Ryan Tietjen, National Park Service; DC flora (3/4).

Todd Fraley and 10 students, East Caro-

lina University; Herbarium tour (3/10).

Ethan Temeles, Amherst College; Scholarly research (3/17-3/18).

Orestes Mendez, Los Villos Central University, Cuba; Anacardiaceae, Flora of Cuba (3/18-3/19).

Rob Naczi, New York Botanical Garden; Vascular plants of the northeastern United States and adjacent Canada (3/25-3/26).



Staff Research & Activities

On January 8, **Gary Krupnick** organized and spoke at the public program, "How Do Botanical Collections Advance Conservation Action?" at the National Museum of Natural History. The program was presented in collaboration with the Plant Conservation Alliance, a consortium of ten federal government agencies and over 290 non-federal organizations that work together to solve problems related to native plant extinction and native habitat restoration. Joining Krupnick were speakers Peggy Olwell from the Bureau of Land Management, Megan Haidet from Seeds of Success, and Tom Kaye from the Institute for Applied Ecology. The session focused on how botanical collections contribute to conservation assessments and management strategies that safeguard our planet's biodiversity.

Alice Tangerini, for the seventh year in a row, gave a presentation on botanical illustration to the fifth grade students at the annual event known as "The Big Draw" that took place at North Chevy Chase Elementary School on February 28. The morning snow did not deter the other 26 participating artists or the students from attending the four morning classes of various art projects. Tangerini gave a presentation and a lesson on drawing plants to 140 students.

On March 8 Tangerini presented two lectures and drawing lessons to 60 students at the Annandale campus of Northern Virginia Community College as part of the American Association of University Women (AAUW) STEMtastics Career Day for Middle School Girls. AAUW sponsors the event to the students in order to stimulate interest in the sciences. Along with 23 other presenters, Tangerini, who has been participating in this event since 1994, gave a talk on her background leading up to a career in the sciences. The students were supplied sample drawings by Tangerini to use as subjects for practicing pen and ink techniques used in scientific illustration.

In early February, **Meghann Toner** attended the Esri Federal GIS Conference

in Washington, DC. The conference brought together ArcGIS users from throughout the Federal Government to learn ways to better integrate ArcGIS into their work environment. Toner was one of a group of individuals representing the Smithsonian Institution.

Awards & Grants

Warren Wagner is part of a multidisciplinary team of collaborators led by researchers at the Chicago Botanic Garden researchers, who has received a \$1.54 million Dimensions in Biodiversity grant from the National Science Foundation to study the way flowers use scent to attract the pollinators they need to reproduce and survive. The floral scent may also draw flower predators, and this can play an important role in the evolution and diversification of plant species. Chicago Botanic Garden conservation scientist Krissa Skogen is heading the team focusing on four main players: flowers, pollinators, predators and scent. The flowers belong to the evening primrose family, Onagraceae, one of the most diverse plant families growing throughout the western United States. Their pollinators are hawkmoths and bees native to the arid lands. Acting as foe are *Mompha* micromoths, the only known group of lepidopterans to prey specifically on evening primroses. Both friend and foe are attracted to the plant by the heavy scent produced by the flower. Skogen suspects that scent directs the interplay of flower, friend and foe, and may be a key driver of evolutionary changes in all three.

Departures

By *Rusty Russell*

In her book, *The Mind and The Eye*, morphologist, anatomist, and historian of botany Agnes Arber alluded to the critical nature of science support activities in successful scientific outcomes. Earlier this year, support for critical collections and research activities for the United States National Herbarium were dealt a serious blow upon the retirement of **Debbie Bell** and **Linda Hollenberg**. With a combined service record of 75 years, half the history of our herbarium, their departure has meant that multiple generations of Department knowledge and Institutional memory

have slipped out the door.

It is out of the question to even pretend to chronicle their specific achievements over this period. Debbie arrived in 1975, having been recommended by Kittie Parker at George Washington University. Linda arrived about four years later. They arrived at a time when most activities required manual effort, and left at a time when full length motion pictures could fit on a small disk in your pocket. They didn't simply endure the transitions that occurred in the interim; they embraced and incorporated them into Department routines, improving efficiency at a time when staff size was shrinking.

They outlasted an entire generation of research scientists and welcomed in an entirely new research staff. Their knowledge of collections at both the Natural History Building and the Museum Support Center made them the go-to staff for answers to questions, resolution to problems, or simply help when it was needed. It is a tribute to them and their lack of ego that so much of their work went unnoticed.

I have been trying to write this piece for two months, but I kept putting it aside because a) how do you summarize a person's entire outstanding career in one article, and b) I've been in denial. Debbie and Linda are not simply colleagues, they are good friends. Debbie arrived the same day as I (ten minutes earlier which, technically, gives her seniority). We've been essentially joined at the hip ever since. Her approach to helping staff has always been nurturing, and she talked me off the ledge on multiple occasions. We could argue like spouses and party like best friends, but it was always in the best interest of the collections. More than anyone I've ever known ... anyone! ... she cared for collections. You can't teach that. You can't replace that.

Linda took on every job that no one else wanted. She is wired for precision and eats detail for breakfast. She reads blueprints better than many architects, and her tape measure should go to the National Museum of American History. When major facilities projects were done, Linda was behind it. And she has handled and moved more specimens than anyone in the history of the U.S. National Herbarium ... guaranteed. Oh, by the way, she ran our operations at the Museum Support Center in her "spare" time. When it was time to get something done, we were lucky that



Debbie Bell (right) provides in-depth training in plant collecting techniques in Mt. Popa Park. Bell was one of several participants from the Department of Botany to organize and coordinate a botanical training workshop in Myanmar in 1997.

Linda was on our team.

Thankfully, and not surprisingly, Linda and Debbie have continued their relationship with us as Collaborators. Why? Because they know they can still help. Good luck, you two. And welcome to the second half of your life!

Bean Sprout Interns Bloom at National Conferences

Over the past year University of the District of Columbia student interns, **Christopher Wellman** and **Samira Khan**, have been conducting research on legume systematics with Department of Botany Research Associate, **Karen Redden**. These students are part of the NSF-HBCU-UP (Historically Black Colleges and Universities Undergraduate Program) funded STEM (Science, Technology, Engineering and Mathematics) Center for Research and Development. The UDC STEM Center is designed to enhance the quality of undergraduate STEM education and research at UDC, and serves as a means to broaden participation in the nation's STEM workforce.

Using the botanical collections and the molecular facilities at both UDC and the Laboratories of Analytical Biology at the National Museum of Natural History, Wellman and Khan used morphological and molecular characters to better understand the evolutionary relationships of two

genera within Leguminosae subfamily Caesalpinioideae. Using a phylogenetic approach, Khan has been exploring the floral morphology of the diverse genus *Eperua* while Wellman has been investigating the diversity and distribution of *Dicymbe*.

Both interns presented their results at two national conferences: Emerging Researchers National Conference in STEM in Washington, DC, and the National Institution of Science/Beta Kappa Chi Honor Society Annual meet-

ing in Houston, Texas. Both students received travel awards to the two meetings and Khan placed second in the Biological Sciences oral presentation section at the Houston conference. Khan is a graduating senior and will continue her research at the graduate level. Wellman is a junior and will be continuing his research at UDC and the Smithsonian this summer and the next academic year.

American Botanicals: Mid-Atlantic Native Plants

Alice Tangerini is one of 41 artists with her work on display as part of the exhibit, "American Botanicals: Mid-Atlantic Native Plants" at the U.S. Botanic Gardens from February 15 through June 15, 2014. As a member of Botanical Artists for Education and the Environment she submitted two works, *Dirca palustris* and *Yucca filamentosa* as a contribution to the book produced to accompany the exhibit. The book features 60 original works of juried art from 41 artists, including text describing each plant and how each plant and insect is beneficial to gardeners and the environment. Proceeds from the sale of the book will go to non-profit organizations working on native plant education, conservation and horticulture.



Research Associate Karen Redden (center) with student interns Christopher Wellman and Samira Khan.

Identifying the Grasses of Washington, D.C.

Kamal M. Ibrahim and Paul M. Peterson have recently authored “Grasses of Washington, D.C.” (*Smithsonian Contributions to Botany* 99: 1-128. 2014). This new publication was written for anyone who has an interest in learning the names of local grasses, and includes a vegetative key, glossary of terms, descriptions, and illustrations for the identification of 182 native and naturalized grasses that are known to occur in the District of Columbia.

The grass family includes more than 12,000 species worldwide and is a ubiquitous feature of many ecosystems. The most accurate way to identify grasses is to use floral characteristics; however, it is often necessary to identify grasses without mature plants or only portions of those plants without complete spikelets. Under such conditions conventional botanical manuals offer little assistance. Moreover, identification using floral characteristics requires special training in grass taxonomy that is not available to most agronomists, technical field staff, and interested amateurs.

Floras offer a snapshot of the current knowledge about plants from a particular region. The last major work for grasses for the Washington area was completed by Albert Spear Hitchcock and Paul C. Stand-

ley in the Flora of the District of Columbia and Vicinity (*Contributions from the United States National Herbarium* 21: 1-329 & 42 plates. 1919). Recently, the topic of plant conservation has gained acceptance by the public to preserve biodiversity since a ‘morphological form’ or species has an intrinsic value based on ethical, moral, ecological, and economic grounds. Ultimately, the preservation of a suitable habitat is paramount to preserving a species. Most of the grasses in this new flora occur in and among the least disturbed habitats left in DC, primarily along the Potomac and Anacostia drainages and their tributaries. The easy to use keys coupled with illustrations of all the grasses allows an uncomplicated way for amateurs and trained biologists alike to perform a basic science inventory.

Progress is made in Agreements to Transfer Material between Smithsonian and Brazil

Of all the issues encountered on a daily basis over the past decade while attempting to expand and refine the collection at the National Museum of Natural History, one issue stands out for its complexity: How does a museum establish legal title

to the genetic material housed within its own collections or collections the institution wishes to acquire? The issue of legal title and commercial property rights has entered the very cutting edge of collections management, and the growing pains are significant. According to the Smithsonian Institution’s policy on museum acquisitions, the licit quality of an accession should be as complete as possible and should be a matter of public record. Objects with incomplete provenance should not be acquired. The guidance is very clear—either the institution owns the object clearly and without encumbrance or it does not.

After years of watching their natural wealth benefit others, many developing nations have become more proactive in establishing a legal framework by which they can protect their diverse biological patrimony. Many of these countries contain some of the world’s most naturally diverse areas on the planet, and as a result are a hotbed of research and potential exploitation.

In 1992, the Convention on Biological Diversity increased the sense of urgency for many countries to formulate ways to protect their natural resources and biological diversity while still allowing the “fair and equitable sharing of benefits arising from genetic resources.” This greater self-awareness has led to the adoption of laws and regulations that attempt to control the ownership and dissemination of a nation’s biological resources. More specifically the natural history community has seen the advent and adoption of regulations that govern the transmittal and legal title of plant and animal specimens from these countries in an ever increasing and complex manner.

In 2001, the Federative Republic of Brazil adopted Genetic Heritage Management Council Resolution No. 20, (Provisional Act No. 2.186-16/2001). The resolution includes the establishment of “contracts” between research/collecting groups and a sponsoring institution or the Brazilian government. These contracts would later be given a more specific title: Material Transfer Agreement (MTA) in the USA or Termo de Transferência (TTM) in Brazil.

The resolution that was passed by the Brazilian government did not stipulate the content of the agreement nor who had authority to sign said agreement. Since



Chasmanthium latifolium (Michx.) H.O.Yates. (photo by Rob Soreng)



Andrew Clark displays a case of herbarium specimens collected from Brazil that can now be processed due to the valid establishment of Material Transfer Agreements. (photo by Melinda Peters)

2001 this issue has plagued the movement of Brazilian collections to and from the Smithsonian Institution. Collections loaned, exchanged, or gifted from Brazilian institutions languished under dubious legal title and as such they could not be researched or accessioned. In addition, loan requests, exchanges, and gifts from the Smithsonian piled up awaiting shipment to Brazil. To add further complication, Brazilian material previously acquired by other non-Brazilian institutions could not be given or transferred to the Smithsonian Institution unless the initial receiving institution possessed a valid agreement MTA with either the Brazilian government or a Brazilian institution from which the material had been acquired.

To give some perspective on the size of the issue, according to *Index Herbariorum*, there are 149 separate institutions that interact with the Smithsonian Institution. Each institution would require a two part agreement (one for outgoing material from Brazil, and one for incoming material to Brazil) and a separate agreement covering material collected within the United States sent from the Smithsonian Institution to a Brazilian counterpart. For the period of 2001-2014 the Department of Botany accepted 209 Brazilian acquisitions totaling 11,041 specimens, the Department requested 132 Brazilian loans

of 1,260 specimens, and the Department sent out 81 loans to Brazilian institutions totaling 2,538 specimens. Of these transactions an additional 65 acquisitions remain unresolved representing 3,020 specimens, and 35 outgoing loans representing 923 specimens had to be cancelled due to the absence of a valid MTA with the requesting institution.

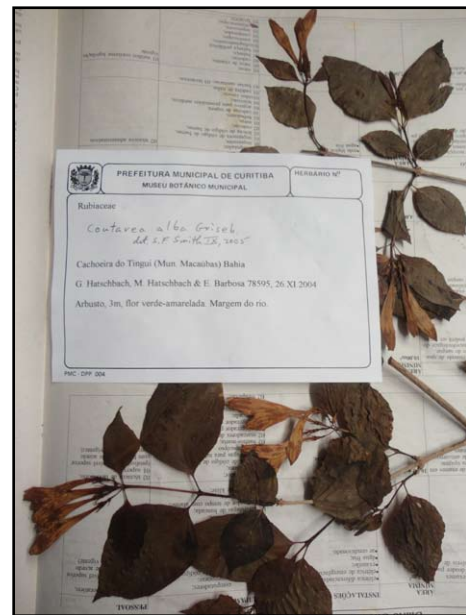
After years with little progress Carol Butler (NMNH Supervisory Collections Management Specialist) asked that authority be delegated to her to act as the official with authority to pursue and approve all MTAs for the entire Smithsonian Institution. With this new authority, and with additional assistance provided by Katherine B. Barker (Program Coordinator, NMNH Research & Collections), Butler designated **Andrew P. Clark** (Museum Specialist, Department of Botany) to negotiate and establish MTAs quickly and efficiently so that research and collecting could continue unimpeded throughout NMNH.

Clark constructed a document that was sent to each Brazilian institution that stated the intentions of the Smithsonian, and reiterated the Institution's desire to continue a long and fruitful research collaboration. Clark doggedly pursued each agreement up the chain of command at each institution, reaching out to a broad

range of university, museum, and governmental officials to seek a positive and efficient resolution to each agreement.

As a result of hard work and determination, agreements have been established with an additional 40 separate Brazilian institutions. In addition to the new agreements put in place in the last two years, Clark has also established 19 retroactive agreements that allow the processing and acquisition of roughly a decade's worth of exchange and gifts sent to the Department of Botany that had been suspended due to the lack of an MTA.

Dealing with this issue has been and continues to be a learning experience. What has become apparent is that this issue is not peculiar to Brazil; in fact many nations (Colombia, Peru, South Africa, Kenya, and Indonesia) are now beginning the process of crafting their own legal agreements that cover national patrimony of natural history materials. In addition to overt actions, many countries and individual institutions have inserted legal phrasing into their loan agreements that establish some of the same legal expectations (i.e. United Kingdom, Australia, and Indonesia).



A specimen of *Coutarea alba* Griseb. (Rubiaceae) from a bundle that will now be processed. The collector, Gerdt Hatschbach, was a prolific collector and botanist from Brazil who passed away last year. Being able to incorporate these specimens into the collections at the U.S. National Herbarium is an important and valuable endeavor.

China Expedition 2013: A Tale of Typhoon-Tossed Kudzu

By Ashley N. Egan

Plants can eat things – large things! Well – figuratively anyway. One of the hungriest plants in the United States is kudzu (*Pueraria montana* (Lour.) Merr. var. *lobata* (Willd.) Maesen & Almeida), a large leguminous vine that can grow up to 60 feet in a growing season, and is often seen engulfing whole structures and damaging forest margins. I first became interested in kudzu while working as a postdoctoral fellow at Cornell University studying the phylogenetics and systematics of Phaseoloid legumes, a group of nearly 2,000 species mostly comprised of vines. During a phylogenetic investigation of subtribe Glycininae, we confirmed massive polyphyly within *Pueraria*. It was then that I determined to study the genus.

Kudzu was introduced into the United States in the late 1800s and touted by the U.S. government as an excellent forage crop and soil erosion solution. However, after escaping cultivation, efforts soon turned from advocacy to eradication, but with little success. Even today, kudzu continues to make headway across the American landscape, now occupying more than 15,000 square miles, costing the U.S. government hundreds of millions of dollars annually in control measures.

This invasive species, along with 20 or so congeners, is native to Southeast Asia where it grows from sea level to around 2000 m in elevation in temperate and (sub) tropical climates. To investigate the introduction history and genetic diversity of kudzu in the U.S. as compared to native ranges, and to decipher the extent of polyphyly in the genus, I set out on my second Asian expedition to collect *Pueraria*.

On 1 September 2013, just two weeks after starting as an Assistant Curator at the Smithsonian Institution, I and my Ph.D. student, Matthew Hansen, flew to Beijing, China – the first stop on a three month expedition that would cover three countries. In Beijing, we met up with Liu Luxian, a first-year Ph.D. student from Zhejiang University studying in Chengxian Fu's lab. After two days of prepara-



Kudzu engulfs a house. (photo by Jon Van Buren 2006)

tions, we boarded a train towards Anshan, Liaoning Province, one of the most industrial cities of China, at the northern edge of kudzu's native range. There, we collected our first kudzu population of the season in the Qianshan Mountains. After returning to Beijing by train and preparing our specimens for travel, we flew to Xi'an, Shaanxi province for the second leg of the expedition.

Our expedition team usually consisted of at least four people, with a driver, translator, and various number of field assistants in tow. In Xi'an, we were met and assisted by a crew from Northwest University, including Ni-Shifeng, who was indispensable in helping us prepare for our next foray that would include over 750 miles of collecting sites spread across the province. Kudzu grows quickly both clonally and through seed, spreading over the landscape in large patches that can be miles long. To ensure that we were collecting separate individuals and not clones, we sampled 'by car' – collecting one individual every 1-2 km. Over the next five days, we collected ~150 individuals from seven roughly-defined populations with individuals at least 1 km from each other and each population about 100 km apart.

From Xi'an, we flew to Changsha where the next leg of our journey took us nearly 1000 miles across the lush landscape of Hunan province. Along the way, we encountered ancient temples, floating mountains, and quaint villages. In one

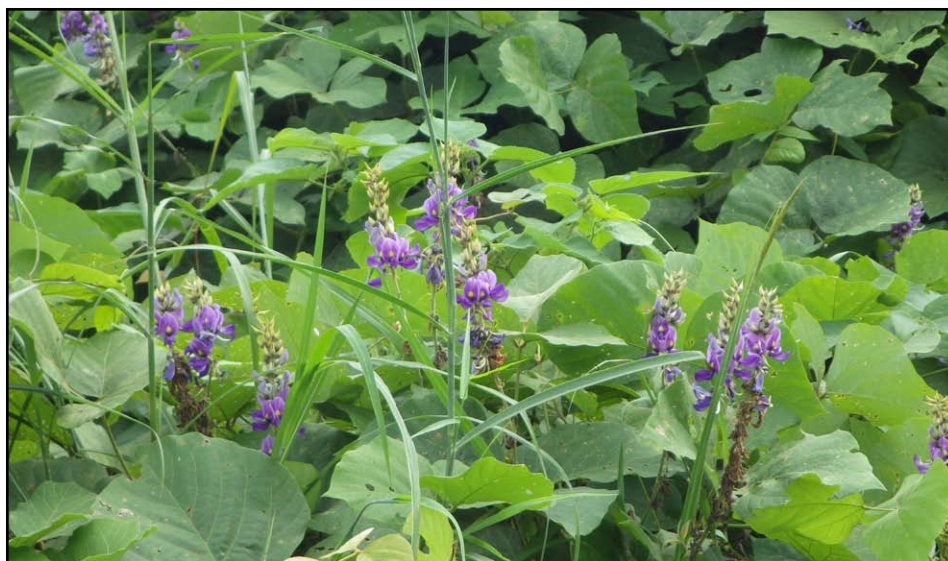
locality, we collected a variety of kudzu that had most likely been cultivated for hundreds of years within the ancient village of Au Tau, south of Wugang, Hunan, China. On several occasions during the expedition, we were approached by curious villagers who, learning of our interest in kudzu, would launch into the virtues and uses of the plant.

The economic significance of *Pueraria* species has been documented since ancient times, with kudzu mentioned in Chinese literature dating as far back as 500 B.C. (*Econ. Bot.* 28: 391-410; 1974) and Japanese literature around 600 A.D. where kudzu was said to be a source of fibers for paper, clothing, cordage, and construction materials. Various species have been heavily tapped as starch sources anciently and in present day cultures across Indo-China and Southeast Asia (*The Book of Kudzu, a culinary and healing guide*, 1977). *Pueraria* species have long been used in traditional Chinese herbal medicine (*Pueraria: The Genus Pueraria*, pg 59-69; 2002) for treating numerous complaints, including skin rashes, dysentery, alcoholism, and hypertension. For thousands of years, Chinese herbalists have prescribed flower and root concoctions of kudzu as a means of curing alcoholism. Preclinical studies showed extracts to significantly decrease free-will consumption of alcohol by the golden hamster, an alcohol-craving rodent, via the action of daidzin, an isoflavone (*PNAS* 92: 8990-8993; 1995), as well as to

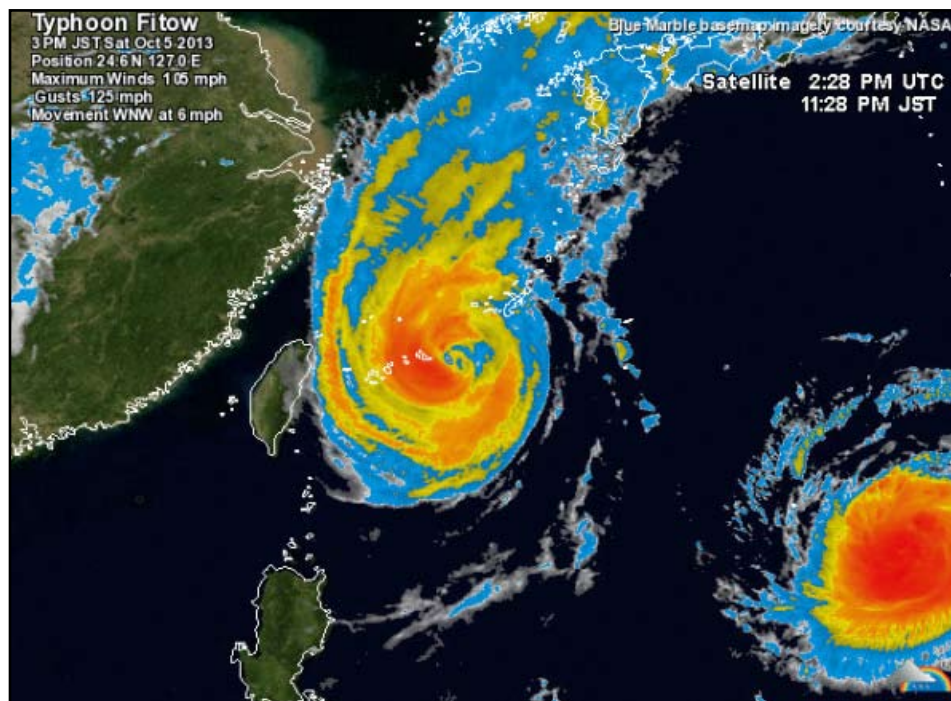
decrease the effects of alcohol hangovers (Alcohol Clin. Exp. Res. 18: 1443-1447; 1994). Human trials of kudzu preparations have been conducted (*Pueraria: The Genus Pueraria*, pg 159-179; 2002).

From Changsha in Hunan province, we were to fly to Guangzhou, the economic center of Guangdong province in the South of China. Enter Super-Typhoon Usagi, the first of five typhoons that would in some way impact my three-month expedition. Just hours before we were to land in Guangzhou, super-typhoon Usagi was bearing down on Hong Kong. Because of the intensity of this storm (equivalent to our category 5 hurricane) and the potential for widespread flooding, road washouts, and disruptions, we decided to reroute and spend our remaining time in southeastern provinces. From Changsha we flew to Hangzhou where we were met by our collaborator Fu.

Over the next two weeks, we made three forays into neighboring provinces, taking a number of Fu's students with us for the ride. Our first foray was near the Huangshan Mountain range in Anhui province, which includes the famed Yellow Mountain, one of China's most important heritage sites and now designated as a UNESCO world natural and cultural heritage site. This area provides protection to a number of threatened plant and animal species. We were hoping to collect *Pueraria stricta* based on historical localities from the Hangzhou herbarium. This would represent a disjunct population from a species I had tried and failed to collect in the wild in 2012. Alas, we failed yet again.



Pueraria montana var. *thomsonii* (Benth.) Wiersema ex. D.B. Ward. (photo by Ashley N. Egan)



Satellite radar image of Typhoon Fitow (center) and Typhoon Danas (lower right).

Most of our collections in China were *Pueraria*, with the hope of collecting samples of every species in the genus. Perhaps the most interesting *Pueraria* we found in China was on our second foray out from Hangzhou, a loop that included collecting in three provinces over the course of over 1000 miles. After four weeks in the car, the endless movement as the landscape skimmed by became monotonous. So much so, that at one point I began to see ghosts – phantom images of what I swore was a white kudzu. We were moving fast along the national highway where we couldn't stop to collect so I didn't think

anything of it. I had never heard of a white kudzu. I was seeing things, surely. But after the fourth such encounter, I realized I was in an area where I was allowed to collect – I loudly yelled “Ting!” *Ting* means ‘park the car’ in Chinese and was the universal signal for the driver to pull over as soon as possible. I or my student had yelled *Ting* over 500 times on this trip. I jumped out of the car and – sure enough – a white variant of kudzu was staring me in the face. We had likely found a white form of *Pueraria tonkinensis* Gagnep., a synonym of *P. montana* (Lour.) Merr. described from Jiangxi province.

Our third and final foray was to Zhoushan, a collection of islands off the east coast of China in the East China Sea. These islands were an important collection locality as they are the closest to Japan, where kudzu is also native and widespread. This foray was threatened yet again by not one – but two typhoons – Fitow and Danas. We ended up cutting our trip short by a day as we raced back to the mainland to avoid the storm surge from Fitow. Danas had pushed Fitow inland towards Hangzhou, just before turning towards Japan, where it would eventually slam into Fukuoka, my next destination. The next three days were spent inside as rains pummeled the city, causing localized flooding and road closures. After a successful five weeks in China in which

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Map showing *Pueraria* collections across Southeast Asia (Japan not shown). Red pushpins represents 2012 expedition, yellow pushpins are 2013 expedition.

Kudzu

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we had collected nearly 500 samples each separated by no less than 1 km, our journey was coming to an end. The next morning I was to put my student on a plane back to the U.S. while I was to continue on to Japan to collect kudzu across the three largest islands. I went to sleep wondering if my flight was going to be canceled, dreaming of collecting kudzu in gale force winds and torrential downpours. Little did I know how soon that nightmare would become reality...but that's a story for another time.

Notes from the Plant Mounting Room: Lima Beans

By Melinda Peters

I have been here over a year now and it is thrilling to see the plant mounting program continue to grow and contribute to the permanent collection of the U.S. National Herbarium. It was a long winter with many snow days, but the plant mounting crew forged on and prepared some 1,876 specimens for the collection. We also have a number of additions to the plant mounting crew this year. Our

new volunteers are Sara Ulfhielm Rekie, Ardith Harle, Pat Zangrillo, and Kenneth Fitzpatrick.

We have been working hard on mounting curator material, plus some interesting material from our legacy collections. Due to Andrew Clark's hard work on helping the Department obtain Material Transfer Agreements with various Brazilian institutions (see page 6), we have been able to accession more material from Brazil and are working on getting it mounted for the permanent collection. We have stressed how important these agreements are, and being able to add this material to the collection is demonstrated in the following example. The featured specimen here is a specimen of Fabaceae that one of our new curators Ashley Egan studies. Egan put together the following story:

Lima Beans! These two simple words are usually followed by a silent or audible 'ew!' – at least by kids. It seems that most children universally hate lima beans – how and where such loathing originated is – I believe – impossible to trace. And yet, it is portrayed in the literature again and again. Perhaps all kids have read the book *Alexander and the Terrible, Horrible, No Good, Very Bad Day* in which poor Alexander experiences a number of trying things, only to be served lima beans for dinner. Or maybe kids just can't overcome

the image of “*The Lima Bean Monster*” conjured by Sammy's repeated attempts to slyly rid his dinner plate of the endless lima beans put there by his mother for dinner day in and day out. And yet, it was only after Camilla Cream admits her love of lima beans that she is cured of her colorful illness brought on by conformity and peer pressure in “*A Bad Case of Stripes*.”

Are lima beans really that bad? As an adult, have you overcome your fear of lima beans? If not, you should! Lima beans are nutritious. They are an excellent source of fiber, and as such, can help to significantly decrease cholesterol levels and lower risk of heart disease. Furthermore, lima beans are an excellent source of folate and magnesium. Folate lowers blood levels of homocysteine, an amino acid often found in elevated levels in patients with heart disease. Magnesium helps to dilate blood vessels, promoting the flow of blood through the body and decreasing risk of heart attack and stroke. As you can see lima beans can promote healthy futures, and they also have an interesting past.

Lima beans comprise a number of varieties that differ in size, color, and shape. Evidence suggests that lima beans have been cultivated for thousands of years in Central and South America. Archeological evidence puts lima beans in cultivation by indigenous peoples of North America by



US 3669621 is a recently mounted specimen of *Phaseolus lunatus* var. *limenianus* (Fabaceae), collected from São Paulo, Brazil, in 1935.

1300 AD with cultivation spreading to the Old World by the 1500s (Motta-Aldana et al., *Crop Science* 50: 1773-1787; 2010).

A number of hypotheses concerning the domestication of lima beans exist, with some researchers postulating domestication of the large-type beans taking place around 2000 BC in the region of Ecuador and northwestern Peru, with the small-type limas being domesticated in Mesoamerica around 800 AD (Motta-Aldana et al. 2010). Some research even suggests multiple domestication events in the Mesoamericas (Andueza-Noh et al., *Genetic Resources and Crop Evolution* 60(3): 1069-1086; 2013). This variety is of the large-type and variably called lima bean or butterbean in the U.S.

Native Orchids Need Their Pollinators

The week of June 16-22 has been designated as Pollinator Week to mark a necessary step toward addressing the urgent issue of declining pollinator and plant populations. Each year the Pollinator Partnership, along with a wide range of partners (including federal agencies, non-profits, and for-profits), design and distribute an educational pollinator poster to promote Pollinator Week. The posters are one of the most popular outreach material items offered. The Pollinator Partnership is the largest non-profit organization in the world dedicated to the protection and promotion of pollinators and their ecosystems. It manages the North American Pollinator Protection Campaign (NAPPC), a consortium of more than 120 affiliated organizations, working to implement, promote and support a clear, continent-wide coordinated action plan to coordinate projects in the areas of pollinator research, education and awareness, conservation and restoration. The National Museum of Natural History (NMNH) has been a partner of NAPPC since its inception in 1999, and NMNH conservation biologist **Gary Krupnick** serves on the NAPPC Steering Committee.

This year NAPPC has teamed up with the North American Orchid Conservation Center (NAOCC) to promote Pollinator Week. The 2014 Pollinator Week poster features illustrations of seven native orchid-pollinator interactions with the theme "Native Orchids Need Their Pollinators." Included among the illustrations



is a mosquito, *Aedes communis*, pollinating the blunt-leaved orchid, *Platanthera obtusata*, a wildflower found in wet forests, sphagnum bogs and true tundra of Alaska, Canada, and New England. Krupnick, co-chair of the NAPPC orchid-pollinator Task Force, led the scientific advisory team in overseeing the production and scientific content of the poster.

Posters are available to order for free (except for shipping and handling) on the Pollinator Partnership website, <http://pollinator.org/posters.htm>. Posters are for educational purposes only and are not intended for resale. The website also features information about the important role of pollinators and the dangers they face. Further information on the orchid species represented in the poster can be found on NAOCC's Go Orchids website, a tool to explore orchids native to the U.S. and Canada.

NMNH and other members of NAPPC will also be hosting events at their institutions to mark Pollinator Week. NMNH will feature a variety of public programs including lectures and family friendly activities that will focus on orchids and their pollinators during the week of June 16. Be sure to check the museum's calendar of events <<http://www.mnh.si.edu/calendar.asp>> for the latest information.

Endowments

Continued from page 1

bequest the library was transferred to the department in the same year to be kept intact with the grass herbarium. Hitchcock and Mary Agnes Chase were pivotal

figures in the founding of the Section of Grasses and subsequent growth of the grass herbarium in the Smithsonian's U.S. National Museum as it was called in the early 1900s. Hitchcock was initially hired by the U.S. Department of Agriculture (USDA) as an agrostologist in 1901, but quickly moved into a position as taxonomist and curator of the grass herbarium in 1905. Soon thereafter, in 1912 he was appointed by the Smithsonian as a custodian without remuneration of the Section of Grasses. Although the USDA herbarium was officially transferred and merged with the Smithsonian collections in 1896 it wasn't until Hitchcock joined the staff of both the USDA and the Smithsonian that the first-rate grass collection was finally transferred to the Smithsonian.

Hitchcock travelled widely and made extensive field collections, eventually depositing over 25,000 specimens at US. In addition to his personal collections deposited at US he facilitated the acquisition of the private herbarium of Lamson-Scribner in 1913, increasing the holdings and importance of the grass herbarium significantly by adding numerous type specimens. Hitchcock was also influential in educating botanists to adopt the type concept for naming species. Over the period of 40 years he published extensively, assembling a body of work that contained more than 250 publications, and accumulating over 6,000 agrostological books and pamphlets (*Science* 83: 222-224; 1936).

Chase joined USDA in 1903 as a

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Lyman and Ruth Smith at home in 1978. (Photo courtesy of Chris and Ann Smith)

Endowments

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botanical illustrator and worked closely with Hitchcock until his death in 1935. She then succeeded him as custodian of the grass herbarium. She also made a large number of field collections and published over 70 articles, monographs, and books including the *First Book of Grasses* and a revision of the *Manual of Grasses of the United States*. She received numerous accolades for her research including recognition as an Honorary Fellow of the Smithsonian in 1959 (Smithsonian Institution Archives, Record Unit 229). Their collection of over 2,707 grass illustrations by them and other artists are on indefinite loan to the Hunt Institute and is available online at <http://fmhibd.library.cmu.edu/HIBD-DB/ArtCat/findrecords.php>. The grass library and collection are now one of the largest in the world and most important for the amount of type material deposited in the herbarium. The Hitchcock Fund has contributed towards the purchase of new volumes, the curation of specimens, illustration and publishing expenses, and the translation of foreign language publications.

The Department's second endowment, the **Mary Vaux Walcott Fund**, originated in 1951 from the sale of *North American Wild Flowers*, a portfolio of 400 watercolor plates painted by Walcott, wife of the Fourth Secretary of the Smithsonian. The five volume collection was first published

in 1925 using a special color process under her personal supervision and private sponsorship. A one-page description of the plant, prepared by Walcott in collaboration with research botanists, accompanied each plate providing scientific data and facts of interest. The original DeLuxe Limited Edition set sold for \$500. As reported in the Annual Report of the Smithsonian Institution for 1952, the Board of Regents established the fund from the proceeds of the plates sold by the Institution over the previous 27 years in recognition of her lifelong interest in Botany.

The Walcott Fund's designated use is for technical publications in botany as related to research undertaken in the U.S. National Herbarium. Projects supported by this fund have included non-salaried aspects of work completed by Alice Tangerini as Department Illustrator, contract botanical illustrations, the preparation of manuscripts to be submitted to the *Smithsonian Contributions in Botany* series, publication costs for numerous research papers published by the Department, digital imaging of the vascular type specimens, and scanning of 35 mm slides for use in website publication. In 1990 the department organized an exhibit of 50 of Walcott's original watercolors to commemorate the 50th anniversary of her death. A complete original set is currently held in the collections of the Smithsonian Institution Archives and can be viewed through the online Biodiversity Heritage Library (Annual Report of the Smithso-

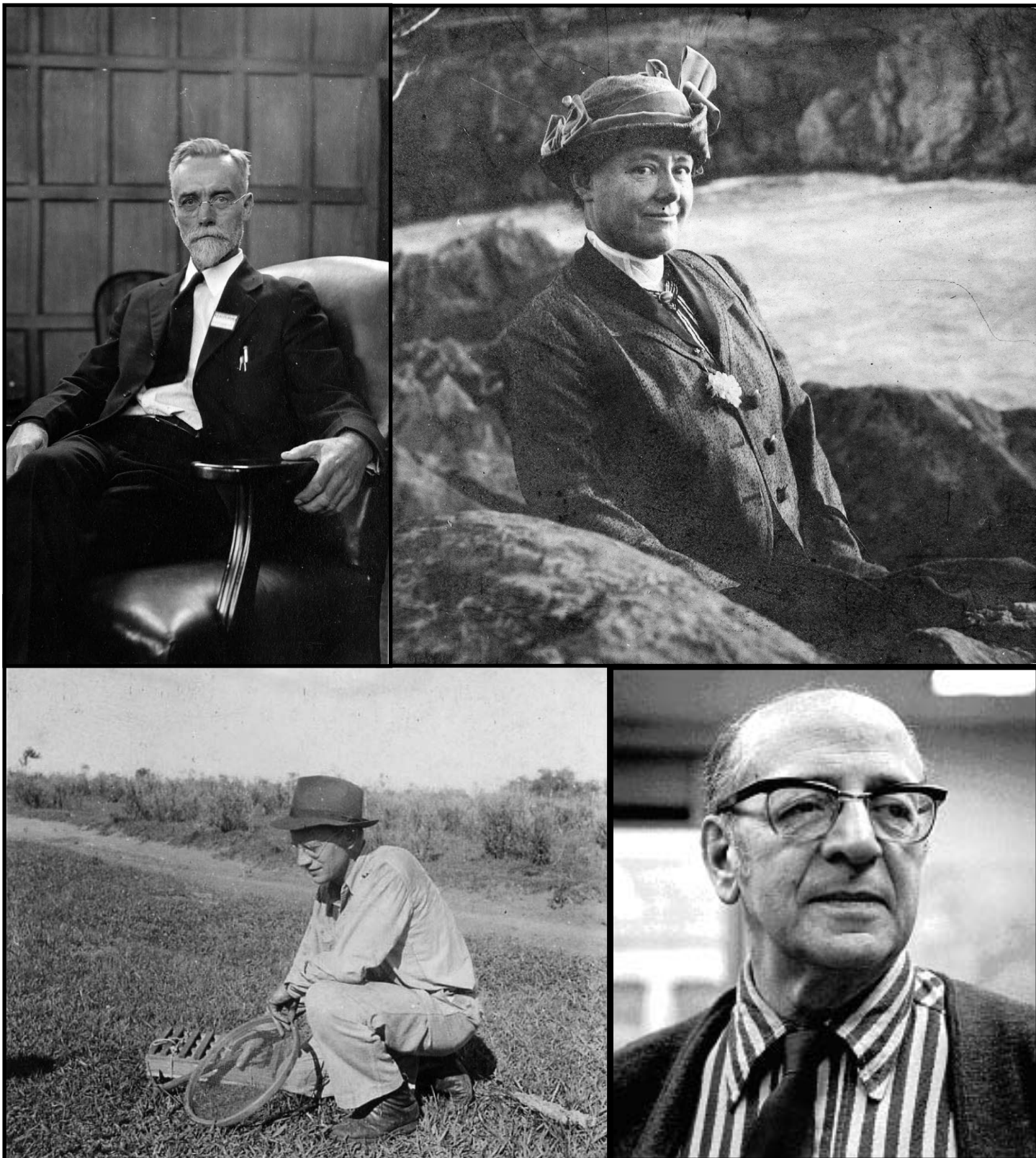
nian Institution, 1952).

In 1966, John A. Stevenson gifted assets to the Department to constitute a fund known as the **John A. Stevenson Mycological Library Fund** to be used for the maintenance and care of the Stevenson Mycological Library or to meet other Departmental objectives if the primary goals have been fulfilled. A dedicated mycologist and bibliophile, Stevenson amassed a large personal collection of mycological and phytopathological reference materials that formed the basis of what has become the world renowned library of the National Fungus Collections. He donated his entire library collection of over 35,000 periodicals and books to the Smithsonian in 1952. Although Stevenson spent most of his professional career in the employment of USDA (1918 – 1960) he was appointed as an Honorary Curator of Fungi at the Smithsonian in 1943 to care for the diverse mycological collection comprised primarily of over 58,000 specimens donated to the Smithsonian in 1928 by the estate of Curtis G. Lloyd as per Stevenson's counsel.

Throughout this period of active curation and dual appointments Stevenson was instrumental in consolidating the fungus herbaria and libraries of the USDA and the Smithsonian through a cooperative agreement between the two institutions, arranging for them to be housed together at the USDA complex in Beltsville, Maryland for the convenience of researchers, and finally in 1953 designating the jointly held, but separately owned, collections as the National Fungus Collections. Stevenson was an active member of the Botanical Society of Washington, the Botanical Society of America, the Washington Academy of Sciences, the Mycological Society of America and many other professional organizations in recognition of his wide-ranging contributions to the field of mycology which he continued well into retirement (*Mycologia* 77: 841-847; 1985. *Taxon* 4: 181-185; 1955). Over the years the original collection has grown to more than 80,000 volumes with funds from the Stevenson endowment providing for their purchase, restoration, and repair as needed.

William Andrew Archer chose to honor his mother through a bequest to the department in 1973. Upon his death an endowment, known as the **Catherine**

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Clockwise from top left: Honorary Curator Albert Spear Hitchcock at Ithaca, New York, in 1926. Wildflower artist Mary Vaux Walcott at Great Falls, Virginia, in 1914. Smithsonian Research Associate José Cuatrecasas, date unknown. Smithsonian Research Associate William Andrew Archer, collecting in Paraguay with circular sieve and plant press in 1936. Hitchcock photo courtesy of Smithsonian Institution Archives, <http://siarchives.si.edu>, Negative # 2003-19483. Walcott photo courtesy of Smithsonian Institution Archives, <http://siarchives.si.edu>, Negative # 85-11419. Cuatrecasas photo from the Botany Department Archives. Archer photo courtesy of Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA.

Endowments

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Beauregard Memorial Fund, was created. As per his wishes, funds support the mission of the Botany Department's library and meet other Departmental objectives if the primary goals have been fulfilled. Archer's affiliation with the Department of Botany was not formalized until 1964 after his retirement from a career with USDA and the National Arboretum when he was appointed as a Research Associate. The main body of his active research focused on plant exploration and collection primarily in Central and South America and Africa for crops, ornamentals, and medicinal plants. He collected over 10,000 specimens, most of which are deposited at US. In retirement he enjoyed working in the herbarium on archival projects as related to the Mexican Boundary Survey (*Taxon* 23: 755-758; 1974).

The Beauregard Fund has proven invaluable because of the duality of the fund's purpose. The first has supported the Botany Library by purchasing books and journals, filling gaps in journal series, and other support for the library and its holdings. Secondly, as Archer specified, once library needs have been met additional funds can be used for other purposes in the Department. In this way it has been a very flexible funding source for various departmental projects such as collections care and research beyond what is provided for through Federal funding levels.

In 1983 at the bequest of Francis Drouet, the U.S. National Herbarium received his personal Cyanophyta collection and related library along with funds (received in 1984) to establish the **Harold B. Louderback – Francis Drouet Fund** providing for the maintenance and permanent storage of these two premier collections. Drouet's remarkable career spanned a 55 year period during which he held appointments in botany at the University of Missouri, Yale University, Chicago Field Museum of Natural History, New Mexico Highlands University, University of Arizona, and Academy of Natural Sciences in Philadelphia (ANSP). His interest in the blue-green algae began during his tenure as the Curator of the Cryptogamic Herbarium at the Chicago Field Museum from 1938 – 1958 and became a lifelong pursuit. He undertook

a thorough and systematic review of all relevant literature, existing herbarium specimens including all type specimens, and his substantial field collections culminating in five monographs revising many groups of Cyanobacteria. Throughout his career he frequently sent specimens to US and maintained professional associations with many former Smithsonian curators including E. Yale Dawson, Mason Hale, and Lyman Smith.

Although Drouet added thousands of specimens to ANSP while on staff he chose to deposit his personal herbarium of over 39,000 specimens and 5,000 type specimens from around the world at US. His friend and colleague, Harold B. Louderback, frequently assisted Drouet on collecting trips and in his research activities. At the Chicago Field Museum Louderback accessioned specimens, assisted with management of the collection, and completed a catalogue of the genera of cryptogams. Specimen records show that they continued to collect together for the remainder of their careers. The Smithsonian was fortunate to receive these collections through the professional relationships Drouet maintained with curatorial staff and the understanding that his collections would be housed in the new state-of-the art facilities at the Museum Support Center in Silver Hill, Maryland (*Proc. Acad. Nat. Sci. Phila.* 135: 267-268; 1983. *Taxon* 33: 159-167; 1984).

The Drouet fund has effectively provided for various aspects of collections support including the maintenance and databasing of the Drouet Collections as well as upgrades to storage facilities. It has also supported other activities related to a modern and well-curated research collection by funding field photography of cyanobacteria, specimen imaging, and expansion of the collection through databasing of other relevant material such as cyanolichens.

The **José Cuatrecasas Botanical Endowment Fund** began with a gift from Pedro and Carol Cuatrecasas in 1997 in memory of Pedro's father, José Cuatrecasas, who is widely considered to be one of the great botanical explorers of South America. The endowment is intended to honor the lifelong botanical work and achievements of this pioneering botanist who spent many years working in the Department of Botany at the Smithsonian. His research, especially in the flowering

plant family Asteraceae, was devoted to the discovery, classification, biogeography, and ecology of plants of the páramo and subpáramo regions of Andean South America. José Cuatrecasas spent his early career in Spain, Colombia, and at the Chicago Field Museum of Natural History before joining the Department of Botany in 1955.

During his long career Cuatrecasas published more than 250 research papers, including 3,308 new taxa of plants. He spent much of his time in the Department working to complete a massive monographic manuscript on the subtribe Espeletiinae of the Compositae (sunflower family). In addition to his monograph, which was published posthumously in 2013 <http://www.nybg.org/press/books_memoirs.php>, he also compiled a remarkable photographic archive with more than 20,000 images. He kept meticulous field notes and recorded many details that aided his discoveries. His extensive notes and the images are actively maintained by the Department as a separate Cuatrecasas Archive which will ultimately be made accessible via a public website. Together with Raymond Fosberg, José Cuatrecasas was largely responsible for establishing the Organization for Flora Neotropica in 1964 in order to further efforts to document all plant taxa in the New World tropics (*Taxon* 46: 132-134; 1997).

The Cuatrecasas Botanical Endowment Fund was set up to honor the extraordinary achievements of José Cuatrecasas by providing funds to support significant research projects that emulate the spirit of the research of Don José Cuatrecasas. Since 2006 the fund has primarily supported fellowship awards for young research botanists to visit the US National Herbarium, use the collections, and interact with research staff. Thus far we have awarded 43 fellowships. Each year we have been fortunate to support more fellows than provided for by the fund's annual disbursement through additional support received from the Director of the National Museum of Natural History. The Department also initiated a special lifetime award, the José Cuatrecasas Medal for Excellence in Tropical Botany, which has been given annually since 2001 to a distinguished botanist. As well, regular lectures and symposia, including special events such as the Smithsonian Botanical Symposium which is now more than a decade

old, have been organized with sponsorship from this endowment.

This fund has benefited greatly from the generosity of many donors, including a separate but matching Challenge Grant received from the Andrew W. Mellon Foundation which is used primarily to extend the scope of activities and projects as relevant to the Cuatrecasas Botanical Endowment Fund. The Department receives an annual gift from the Cuatrecasas Family Foundation that supports either the Smithsonian Botanical Symposium or the continued growth of the endowment.

The Department of Botany is extremely appreciative of the many friends, colleagues, and associates who have given so generously of their encouragement and assets to establish these endowment funds over the past eight decades. These gifts have become a critical source of support for Departmental programs and operations. While the early endowment gifts received by the Department have historically been dedicated to the preservation of literature or physical collections there is an increasing interest by donors to support the pursuit of pioneering research and the communication of significant results. Current or potential donors who are interested in establishing or contributing to an endowment in the Department of Botany should contact the Department directly at (202) 633-0920 or inquire of Warren Wagner, Chair, (202) 633-0968, wagnerw@si.edu.

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Art by Alice Tangerini

***Lymania alvimii* (L.B. Sm. & Read) Read**

Named in honor of Lyman B. Smith, the genus *Lymania* (Bromeliaceae) consists of nine species native to the Bahian coast of the Brazilian rain forest. Robert W. Read published the new genus in the *Journal of the Bromeliad Society* 34(5): 213 in 1984 to celebrate Smith's 80th birthday. Alice Tangerini's drawing of *Lymania alvimii* was made from photographs and living specimens in Read's home greenhouse that he collected on a trip to Bahia, Brazil in 1975. This illustration was first published in *Harvard Papers in Botany* 4(1) in 1999 as part of the festschrift in honor of Lyman B. Smith, edited by Jason R. Grant.



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