The Vasculum

The Society of Herbarium Curators Newsletter
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FROM THE EDITOR

Welcome to another issue of *The Vasculum*! In this issue, our featured herbarium (RSA-POM) is brought to us courtesy of SHC's new treasurer, Mare Nazaire. If you're like me, one of the highlights of these articles is the historical photographs that accompany them. What a rich, proud history we have! It's always such fun to see photos of those who preceded us, those whose names are so intimately linked with our chosen fields of study. I know that you will find all of the articles in this issue equally interesting. Keep the submissions coming, and thanks!

- Conley K. McMullen, James Madison University, mcmullck@jmu.edu

Ipomoea pes-caprae (Convolvulaceae) in Galápagos Islands - Ecuador. C.K. McMullen

SHC NEWS

A Message from the President

It's an honor to be the new President of the Society of Herbarium Curators. I am excited to be a part of an organization with such a laser focus on empowering herbaria. I thank the past officers, committee chairs and members, grants reviewers, and others who worked to so successfully position the society for the great things ahead. And, I thank the current SHC leadership who have been working hard behind the scenes "to promote and expand the role of herbaria in botanical research, teaching, and service to the community at large, to provide a forum for discussion and action on all issues confronting herbaria, and to extend its efforts and interject its influence toward the protection and preservation of endangered herbaria" (SHC Constitution).

The SHC executive board met online in October 2016, at which time Botany 2017 (Fort Worth, TX, USA; June 24-28) was chosen to be the venue for the SHC Executive Board and Business Meetings this year. We encourage you to attend that conference, if you are able. SHC has organized an event again for the Botany conference. This year, we are collaborating with iDigBio to bring you "Strategic Planning for YOUR Herbarium." Thank you to David Jennings and Andrea Weeks for co-organizing this workshop with me. I've pasted the abstract below:

What is strategic planning? Why is it valuable? Where does one begin? Join us for a morning of discussion and talks facilitated by a professional project manager. Learn from your colleagues' experiences and build a plan for initiating the process within your own herbarium. Although we've done a good job with strategic planning across the collections community as a whole, relatively few herbaria have undertaken the activity for themselves. Strategic planning is important because it forms the foundation for long-term sustainability and helps communicate your herbarium's value and vision to administrators, the public, colleagues, and policymakers. Come and start YOUR strategic planning process today.

We are also discussing the possibility of facilitating a 6-week online training course on this topic in the lead-up to the workshop, involving perhaps an hour online each week and a bit of homework. Attendance at both (the

workshop and the course) would not be required to participate. That is, one could do the course but not the workshop and vice versa. However, the training course would likely inform the activities of the workshop (e.g., as a source of speakers).

Thank you to those 78 members who responded to our survey regarding your conference plans and symposium interests for the next two years. Though I can't go into great detail in this space, I will mention a few results. I've ordered the responses to the question "Which conferences do you plan to attend?" based on the decreasing sum of "yes" and "maybe": Botany 2018 - 36.4% yes, 32.5% maybe; Botany 2017 - 33% yes, 29.5% maybe; SPNHC 2017 - 16.9% yes, 18.2% maybe; SPNHC 2018 - 5.2% yes, 24.7% maybe; IBC 2017 - 14.3% yes, 9.1% maybe. The most commonly mentioned other conference that our members plan to attend is that of the Association of Southeastern Biologists. The most common symposium topics mentioned were digitization and sustainability. Since there are other Botany 2017 symposia planned on the topic of digitization, we chose to target sustainability. Furthermore, we chose to use a workshop format, following feedback from the Botany 2016 event that participants would have liked more time to discuss the topic. Responses regarding preferred timing of the workshop were similar for each of the timeslots, and we have requested a Thursday morning slot for the workshop due to conflicts with activities already scheduled for Sunday.

For the first time, SHC will serve as a sponsor of the annual Society for the Preservation of Natural History Collections Conference (Denver, CO, USA; June 18-24). I see opportunities for both societies to further their goals through new collaborations. SHC will have a table at which we can clearly articulate our mission, successes, etc., and I have been invited to give a plenary talk on our new initiatives. I'm also very pleased that SHC's Southeastern US Chapter has organized the symposium "Advancing Herbaria in the Age of Digitization" for the Association of Southeastern Biologists Conference, and I thank Wendy Zomlefer and Richard Carter for leading that.

We have an energetic and talented slate of new committee chairs, including Kathy Mathews (Western Carolina University Herbarium; Grants), Erica Krimmel (Chicago Academy of Sciences - Peggy Notebaert Nature Museum Herbarium; Membership), and Melissa Islam (Denver Botanic Gardens Herbarium; Herbarium Assistance). I'm also pleased that John Schenk (Georgia Southern University) is lined up to replace Conley McMullen as Newsletter Editor when Conley steps down from that position later this year. Kathy, Erica, Melissa, and John will join the SHC executive board as their terms begin. With these additions, the SHC leadership is firing on all cylinders. In the coming weeks, we will finalize membership in all SHC committees. If you are interested in contributing to the society as a committee member, please contact me. I especially encourage our members based outside the United States to help us engage perspectives the world over.

Finally, I am pleased to say that there are the stirrings of a nascent SHC student chapter. Katie Pearson (Florida State University's Robert K. Godfrey Herbarium; kds15e@my.fsu.edu) is developing this, and I encourage you to contact her if you are interested. This might require changes to the SHC Constitution, which I will be looking at with volunteers from our executive board in the coming months. It is likely that there will be changes to the SHC Constitution and Bylaws voted on at the Business Meeting at Botany 2017 this year, and I encourage you to attend if you are able.

Thank you for your past and ongoing support of SHC, our collective voice for the herbarium community. If you have any thoughts on how to make SHC even more successful, please don't hesitate to email me.

- Austin Mast, Florida State University,
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HERBARIUM NEWS

Featured Herbarium: RSA-POM - The Herbarium at Rancho Santa Ana Botanic Garden

History of the RSA-POM Herbarium - The Herbarium (rsabg.org/herbarium) at Rancho Santa Ana Botanic Garden (RSABG), located in Claremont, California, comprises over 1.2 million specimens of vascular plants, and represents the combined holdings of the RSABG Herbarium (RSA) and the Pomona College Herbarium (POM). POM, established in 1908 was based on the large private herbarium (totaling nearly 100,000 specimens) of Charles Fuller Baker, professor of Botany at Pomona College (Lenz 1977). Other important early contributors to POM include Frank W. Peirson, Philip A. Munz, Lyman D. Benson, and Marcus E. Jones. Rancho Santa Ana Botanic Garden was founded in 1927 by Susanna Bixby Bryant (1880–1946), in memory of her father John W. Bixby, on the original Rancho Santa Ana (the Bixby Ranch) in Santa Ana Canyon, Orange County, California (Fig. 1). Bryant emphasized the need to document and preserve California's native flora, protect some of California's rarest plants, and bring together as complete a collection of California's rich plant diversity in one location as possible. With this purpose in mind, Bryant communicated with California's most notable experts on the California flora, seeking advice and guidance on establishing a collection of living native plants, the RSA Herbarium, and a botanical library (Fig 2). Among Mrs. Bryant's leading advisors were Theodore Payne, a pioneering native plant nurseryman in Lost Angeles; Charles Sprague Sargent, Director of the Arnold

Arboretum and Arnold Professor of Arboriculture at Harvard University; and Willis Lynn Jepson, Professor of Botany at the University of California, Berkeley. At the recommendation of Jepson, Bryant hired John Thomas Howell as the Garden's first resident botanist. A graduate student at the University of California, Howell's duties as botanist were to "classify and make herbarium records of the native plants on the ranch" (Fig. 3).

Figure 1 - Founder of Rancho Santa Ana Botanic Garden, Susanna Bixby Bryant.

Figure 2 - Trustees, council and staff of RSABG, 1934, left to right: Roy Lacy, Dr. H. J. Webber, Dr. Henry O. Eversole, R.V. Cavers, Theodore Payne, Susanna Bixby Bryant, Byron D. Stark, Allen L. Chickering, Dr. Carl B. Wolf, Alice Eastwood, Dr. D. D. Waynick, Dr. LeRoy Abrams, E. R. Johnson, Dr. Philip A. Munz, Ernest A. Bryant, Jr., John Treanor, Terry E. Stephenson.

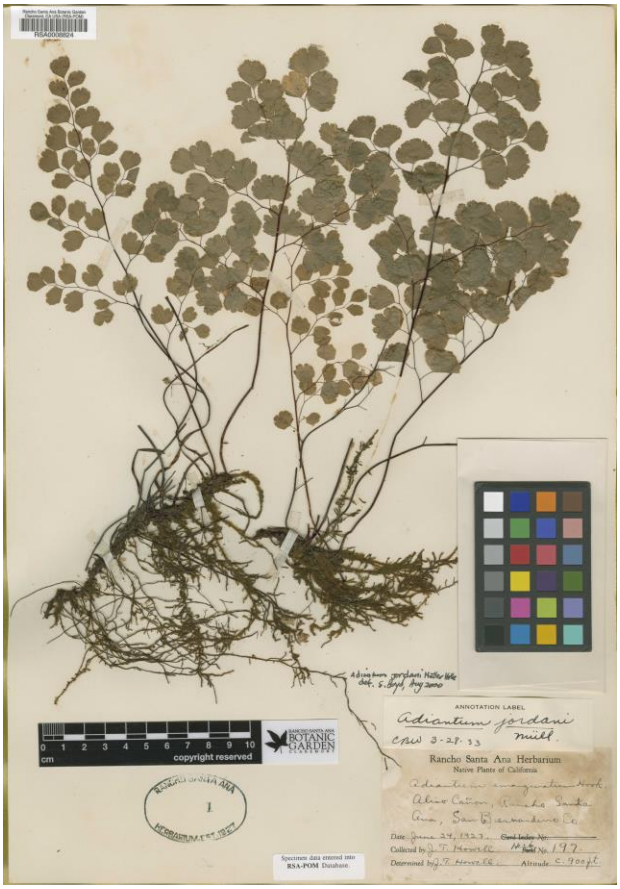

Figure 3 - The first specimen accessioned into RSABG's Herbarium, Adiantum jordanii, collected by J. T. Howell in Aliso Canyon, near the original location of Rancho Santa Ana Botanic Garden.

In 1951, plans to move the Garden from its original location in Orange County to its present 86-acre location in Claremont were carried out by then Garden director, Dr. Philip A. Munz. Munz believed that the Garden would benefit from affiliation with the Claremont Colleges, in particular, with Pomona College and The Claremont Graduate University where Munz was formerly a professor of Botany. Following the relocation, Pomona College deposited its herbarium at RSABG (at that time the POM collection comprised more than 300,000 sheets, RSA ~80,000 sheets), along with a portion of their botanical library. RSA and POM were maintained as separate collections by separate curators until 1965, when the two collections were merged (Munz 1968). However, it was not until 1998 when ownership of POM was formally transferred to RSA.

RSA-POM is unique in that its holdings have grown substantially in a relatively short amount of time; by comparison, several other herbaria of similar size are much older than RSA-POM. This is in large part due to a number of resident botanists who made significant contributions to the Herbarium over the years. Especially noteworthy of RSABG's botanists (but certainly not lim-

ited to!) are Carl B. Wolf, Lyman D. Benson, Sherwin Carlquist, and Robert F. Thorne. Carl B. Wolf (1905–1974; Fig. 4) joined the Garden as Botanist in 1930, replacing J. T. Howell. He traveled widely throughout California, collecting specimens, seeds, and propagules to be deposited in the Herbarium and for use in the Garden's experimental research. His great interest in horticulture and taxonomy helped to advance the Garden and Herbarium in its initial stages of development. Among his accomplishments, Wolf is known for his work on California tree crops and cypresses.

Figure 4 - Carl B. Wolf, Saddlebag Lake, in the high Sierra Nevada, California, August 7 1933.

An active botanist in California and the western U.S., Lyman D. Benson (1909–1993) is best known for his extensive work on Cactaceae and *Ranunculus*. As Chair of the Botany Department and Director of the Herbarium at Pomona College, Benson added as many as 21,000 specimens to POM from his personal collections. His work on Cactaceae resulted in several books, including *The Cacti of Arizona* (1940), *The Native Cacti of California* (1969), and *Cacti of the United States and Canada* (1982), and he remains well known for *Plant Classification* (1957), among the first such texts to emphasize plants of western North America.

In 1956, Dr. Sherwin Carlquist (b. 1930) was hired by RSABG as Plant Anatomist and appointed as Assistant Professor of Botany at the Claremont Graduate School (in 1976 he was given a joint appointment with Pomona College; he is now Professor Emeritus at CGU, Pomona College, and UC Santa Barbara). Over the course of his distinguished career, Carlquist made significant contributions in systematic, phylogenetic, and ecological plant anatomy and structure, and studies of island plant diversity, and published prolifically on these subjects. Because of his systematically based research goals, Carlquist collected voucher specimens from some of the most diverse and under-collected parts of the world, many of which are not otherwise well represented in herbaria. As a result, Carlquist's research contributions have enriched the Garden and the geographic breadth and taxonomic diversity of RSA-POM.

For RSA-POM, the 1960s and 1970s were a time of considerable growth, under the direction of Dr. Robert F. Thorne (1920–2015). Thorne came to RSABG as Taxonomist and Curator of the Herbarium in 1962, and is best known nationally and internationally for his synoptic work to develop a classification system to accommodate all flowering plants (Thorne 1975, 1976, 1992). Thorne's work on flowering plants was supported by decades of field trips and active collecting, including some of the most botanically significant parts of the world. Regarding RSA-POM, Thorne worked toward the expansion of a worldwide emphasis of the collection to include all flowering plant families, but was also very active in building the California holdings (Fig. 5). Thorne was also instrumental in encouraging masters students to conduct intense floristic studies of local regions in California to learn the flora. Thorne's collections, which number more than 65,000, have special significance because many are from regions (e.g., Australia, New Caledonia, Baja California, Mexico) and of taxa that are poorly represented in United States herbaria. Moreover, Thorne had many connections with botanists and plant systematists worldwide who sent him material from all over the world.

Figure 5 - Specimen of Calochortus catalinae, collected on Santa Catalina Island by Robert F. Thorne in 1966.

Growth of RSA-POM continued in the 1980s, punctuated by the acquisition of 115,000 vascular plant specimens from the Natural History Museum of Los Angeles County (LAM). This included the holdings of University of Southern California (USC) and Alan Hancock Foundation (AHFH) herbaria. An invaluable addition to RSA-POM, these collections are especially rich in historical specimens from Southern California.

During the last 20 years, RSA-POM has incorporated several orphaned collections, including California State Polytechnic University of Pomona (CSPU) in 2000 (~4,500 vascular plant specimens); Santa Ana College in 2004 (~5,500 vascular plant specimens); and Pierce College in 2014 (~1,500 vascular plant specimens).

Today, RSA-POM is continuously augmented through active field research conducted by Garden staff, students, faculty, and research associates (detailed below), and through gifts, exchanges, and acquisitions of specimens. Over the last ten years, RSA-POM has accessioned more than 150,000 specimens into its collection, and annually accessions between 13,000 and 16,000 new specimens (Fig 6).

Figure 6 - Curatorial Assistant Grace Rice files specimens into the collection.

Collections and Facilities - RSA-POM is the 3rd largest herbarium in California, and one of the world's larger repositories for specimens of vascular plants collected in California, notably southern California; nearly 40% of RSA-POM's holdings are from California. RSA-POM's holdings from the southern ~1/3 of the state are the world's largest, with more than 50% of the California specimens (>250,000 specimens) from the southernmost counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura. RSA-POM is also worldwide in geographic scope, with significant holdings from the southwest US, Mexico, Australia, Russia, and other regions of arid, semi-arid, and Mediterranean climates. The collection has a broad phylogenetic representation, with most families of flowering plants represented.

The vast majority of RSA-POM's holdings are traditional herbarium mounts. Ancillary collections, estimated at more than 40,000 specimens, include extensive holdings of wood samples, fluid-preserved specimens, fruits and cones, and a large collection of anatomical and palynological slides. RSA-POM houses more than 7,000 type specimens, including those of nearly 700 types of taxa described by Marcus E. Jones. The Jones types are especially important to researchers working on taxa from western North America and Mexico and are frequently consulted. Taxa that are well represented in the type collection as well as the main collection include Asteraceae, North American *Astragalus*, Cactaceae, *Cupressus*, *Eriogonum*, *Iris*, *Oenothera*, *Penstemon*, *Phacelia*, Poaceae, Polemoniaceae, *Ranunculus*, *Rhamnus*, and *Stylidium*. RSA-POM also maintains a California Synoptic Collection and a small collection of bryophytes.

RSA-POM specimens are frequently requested for loan by researchers and students from other institutions worldwide (primarily for phylogenetic and systematic research); 2-3% of RSA-POM's holdings are out on loan at any given time. The majority of loan requests are for taxa with strong representation in California, western North America, and adjacent areas of northern Mexico; however, requests for specimens from other regions of the world, including South America, Africa, Asia, and Europe are common. Additionally, RSA-POM receives numerous requests from researchers and students for specimen data, images of specimens, and leaf material for DNA extraction or flower/fruit material for morphological studies.

Staff and Volunteers - RSA-POM is under the direction of Lucinda A. McDade, and is managed by Collections Manager Mare Nazaire. RSA-POM has five permanent curatorial assistants and three curatorial staff on grant-funded projects. Curation tasks are also undertaken by a dedicated cadre of trained volunteers who annually provide >1,500 hours of service to the Herbarium. At any given time, 20-25 volunteers work for the Herbarium, assisting with databasing, specimen repair, special curato-

rial projects, and also the vast majority of specimen mounting (Fig 7).

Figure 7 - Fifteen of RSA-POM's 32 curatorial staff (s), interns (i), and volunteers (v), left to right: Rachel Poutasse (s), Louise Gish (v), Marion Swick (v), Virginia Herd (v), Jill Azzolini (s), LeRoy Gross (s), Sierra Sutton (s) David Gish (v), Joy England (s), Valerie Smissen (i), Grace Rice (s), Starla Madrigal (i), Grace Clark (v), Janice Tsuma (v), Mare Nazaire (Collections Manager).

Digitization and Projects - One of the main objectives at RSA-POM is to make the collections more widely accessible to researchers, students, and the public through various digitization projects. Databasing RSA-POM's holdings of California specimens was first launched in 1987. Efforts to database and georeference targeted California specimens were later organized through a collaborative endeavor of more than 35 participating institutions in the Consortium of California Herbaria (CCH; ucjeps.berkeley.edu/consortium/about.html), and funded by the National Science Foundation, Collections in Support of Biological Research (CSBR). Additionally, a supplement award enabled RSA-POM and several other California herbaria to database ~20,000 specimens (RSA-POM was tasked with databasing and georeferencing ~7,000) of rare, threatened, endangered, and endemic taxa of the California Floristic Province (CFP) in Baja California, Mexico. To date, more than 500,000 specimens in the RSA-POM collection have been databased, which includes all California specimens (databasing of California specimens was completed in 2014) as well as many specimens collected in North America and worldwide. RSA-POM now databases all incoming specimens. Specimen records are served online via the web portal (http://specify.rsaherbarium.org/specify-solr/). All of RSA-POM's California and CFP records are served through the CCH portal hosted by University of California, Berkeley. Additionally, specimen records are shared with iDigBio.

RSA-POM received support from The Andrew W. Mellon Foundation to digitize and make available the archives and collections of Marcus E. Jones. Geologist, mining engineer, and self-trained botanist, Jones (1852–1934) became one of the more prominent botanists of the American West. Most active during the late 19th century into the early part of the 20th century, Jones traveled extensively throughout the western United States and Mexico, collecting thousands of plants, and photographing and recording detailed notes of the regions he traveled in. Jones' plant collecting at the turn of the century provided an early comprehensive characterization of the flora of the West; he collected in areas that were poorly known, some of which have since been developed. Jones also described hundreds of new species. Jones' influence on botany is great, and his specimens, library, and archives, housed at RSABG, are continually sought. Prioritization of this project first focused on the archives and plant collections associated with several trips that Jones made to Mexico between 1882 and 1930 (Fig 8). Herbarium staff has moved forward with this project to database and image his collections from western North America. To date, more than 12,000 of Jones' specimens and 1,400 archived items (photographs, lantern slides, field notes, correspondence) have been digitized. Data and images of Jones' collections are available through the Global Plants Initiative portal on JSTOR.

Figure 8 - Specimen of Acacia hindsii collected by Marcus E. Jones in Colima, Mexico, 1892.

As herbaria serve expanding needs for research, education, and conservation management, it is critical that collections of historic, taxonomic, and geographic significance are curated and digitized, ensuring their availability for research and, importantly, for long-term preservation. In April 2016, RSA-POM began a three-year project funded by National Science Foundation's CSBR to curate and digitize approximately 30,000 plant specimens collected by ten significant 20th century botanists, among them, Edward E. Palmer, David W. Griffiths, David W. Goodall, Sherwin Carlquist, Lyman D. Benson, and Bonnie C. Templeton. The Herbarium had acquired these specimens through various sources; they were retrieved from an inadequate off-site storage facility, sorted, researched, and evaluated for their value. Of these specimens, 70% were collected from 15 of 34 designated world biodiversity hotspots; 30% represent the CFP biodiversity hotspot alone. These specimens were collected between 40 and 115 years ago and contribute to the characterization of the areas in which these botanists had worked. Moreover, several specimens had been identified as valuable type material previously thought to have been lost. Integral to this project are the activities that involve participation from RSABG's graduate students, undergraduates, and high school students. As discussed in greater detail below, RSA-POM is actively recruiting underserved youth from the Greater Los Angeles metropolitan area to participate in both Undergraduate and Junior Intern programs.

Education and Outreach - Educating youth about the value of plants, biodiversity, and natural history collections is a critical component of RSABG's efforts. RSA-POM plays major roles in education, with an emphasis on RSABG's graduate program in botany, but also extends to undergraduate courses, high school and middle school programs, and internships. Herbarium resources are relied upon heavily in RSABG's graduate curriculum and are used routinely in undergraduate courses taught at the five adjacent Claremont Colleges. In addition, many colleges and universities in southern California integrate herbarium tours into their course curricula. Herbarium staff provides tours to students from colleges, universities, and high schools, staff from regional and national botanic gardens, artists, and the general public. During special Garden events (e.g., National Public Gardens Day, Special Members Day, Free Admission Day) behind-the-scenes herbarium tours are routinely offered. More than 200 individuals visit RSA-POM on tours each year.

RSA-POM also actively engages in public outreach through special exhibits of the collection. For example, in 2015, the Herbarium participated in curating the exhibit *A Living Legacy: the Collections of Rancho Santa Ana Botanic Garden*. Through selected items from RSABG's five collections (herbarium, library, archives, living, and seeds), this exhibit shared the Garden's history and role in California botany and plant conservation. Currently, the Herbarium and RSABG's Library and Archives are preparing an exhibit about the life and career of "botanical maverick" Marcus E. Jones. Please see: rsabg.org/garden-events/1132-marcusejones.

Internships - RSABG has a long-standing and successful internship program spanning more than 25 years. Providing training to 70 interns over the last five years (53% of whom were drawn from underserved groups), RSABG's internship program provides hands-on training in botany, conservation, and herbarium curation. Herbarium internships offer instruction and hands-on training in curation, digitization, and collections management, usually beginning with mounting and accessioning specimens and progressing to more involved tasks such as databasing, imaging, and georeferencing. Interns have participated in several collection improvement projects, including curating the cone and fruit collection, organizing the bryophyte collection, and inventorying the fluid preserved collection. A new initiative in the Herbarium's internships is the Junior Intern Program, funded through NSF's CSBR (Fig. 9). The Junior Intern Program is designed to provide hands-on experiential learning in curation and digitization to underserved high school students who are either at-risk or are youth in transition out of the foster care system. This six-week summer internship provides youth an opportunity to consider career possibilities in the plant sciences and natural history collections. Over the three-year duration of the project, the Herbarium in partnership with local foster care programs, will recruit and train a total of nine youth.

Figure 9 - Junior Intern Adriana Lopez prepares a specimen for mounting.

Conservation and Research - Many staff members at RSABG are involved in the Applied Plant Conservation Program and Field Studies Program. Both programs aim to support conservation of California's native flora through lab- and field-based studies, including floristic inventories, rare plant monitoring, and molecular work. A number of staff, graduate students, and research associates at RSABG are also actively involved in floristic

and systematic studies, with emphasis on documentation of the California flora and that of southern California and Baja California, Mexico, in particular (e.g., Harper et al. 2011; Fraga 2012; Fraga & Bell 2012; Soza et al. 2013). Floristic projects currently underway include: Upper Rock Creek Watershed, eastern Sierra Nevada; Bighorn Mountain Wilderness, San Bernardino Mountains; Tejon Ranch, Kern County; Adobe Valley and Hills, Mono County; all in California. All specimens collected from these studies are housed at RSA-POM.

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Atlas of Georgia Plants Portal Now Available

The Atlas of Georgia Plants portal (Zomlefer et al. 2016a), with images of specimens from the University of Georgia Herbarium (GA) and Valdosta State University Herbarium (VSC), has been available since June 2016. The portal is hosted on a server at Louisiana State University, Department of Biological Sciences.

Digitization work of GA collections has been funded by a series of three NSF grants to Curator Wendy Zomlefer over the past 13 years, including a collaborative NSF grant awarded to the University of Georgia (Zomlefer and David Giannasi, DBI-1054329) and Valdosta State University (Richard Carter, DBI-1054366). *The Atlas of Georgia Plants* portal currently comprises all University of Georgia Herbarium specimens *collected in Georgia* (ca. 93,000 sheets. e.g., Fig. 1) and all specimens in Valdosta State University Herbarium (66,600 sheets).

Figure 1 - GA Herbarium specimens of Sarracenia rubra, old and new! Left: Forth Worth County, GA (Chandler s.n.; 1927); right: Lanier County, GA (Young 196; 1988).

Below is the link with directions to access basic features of the portal. The contents are not static - herbarium personnel are constantly updating, correcting, and adding new images and data: GA Herbarium staff have imaged the ca. 185,000 out-of-state specimens and are currently entering skeletal data via funding, in part, from the large collaborative NSF-TCN awarded to Zack Murrell (NSF DBI-1410069) at Appalachian State University (see Zomlefer et al. 2016b, NSF DBI-1410081).

1. **Link** to *The Atlas of Georgia Plants* at: http://www.georgiaherbaria.org/

2. **Basic Directions**:

(1) Click on "Search Collection," then fill in genus and specific epithet. The various other search filters (left-hand side of screen) are self-explanatory (e.g., Collection Code, Collector, Collector #, Cultivation status).

(2) Click on the small green squares (left of the barcode numbers in the list) to access the specimen image.

(3) The image can be enlarged via the "Switch to Interactive View" option (lower left); this higher resolution image may need a few seconds to load.

(4) The many other output options (top and bottom menu bars) include a distribution map for a specimen; county/statewide maps for a taxon (Fig. 2), collector, or herbarium; and various reports.

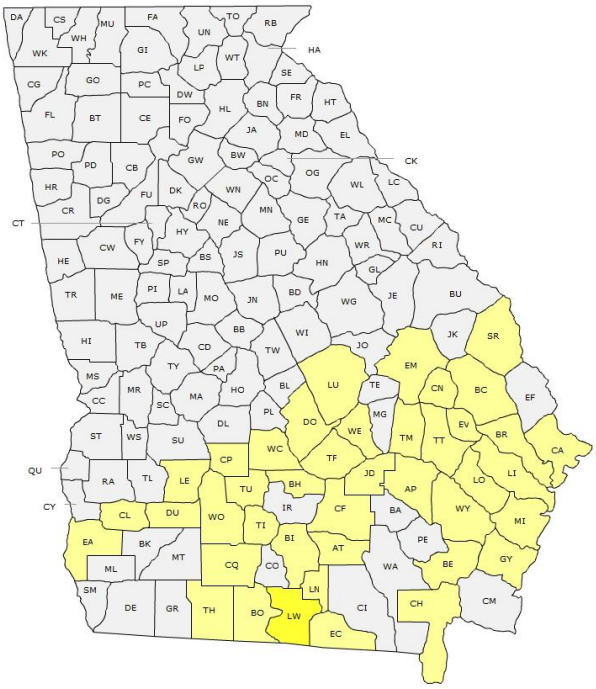

Figure 2 - Map generated directly from the The Vascular Plant Atlas of Georgia portal (Zomlefer & Giannasi 2016) for all specimens of Sarracenia rubra in GA Herbarium, clearly showing the coastal plain distribution of the taxon.

A very popular, segregate portal, *The Vascular Plant Atlas of Georgia* (Zomlefer & Giannasi 2016) provides easy access to the same county maps (Fig. 2) for University of Georgia Herbarium specimens from Georgia: http://www.georgiaherbaria.org/atlas/.

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Acknowledgments:

Posting the *Georgia Plant Atlas* portal would not have been possible without the generosity of Tom Sasek (NLU) and Lowell Urbatsch, Jennifer Kluse, and Eric Maxell (all LSU), and the software designed by Michael Giddens (formerly SilverBiology). Over the years, GA Herbarium collections managers Kelly Bettinger, Steven Hughes, Kristian Jones, Laura Lucas, Cristin Walters, and Brenda Wichmann established protocols, maintained quality control, and supervised crews of student workers who have digitized tens of thousands of specimens; Steven deserves special commendation for his on-going management of data uploads and stakeholder requests. Various phases of GA Herbarium specimen digitization have been funded, in part, by NSF awards DBI-0345226, DBI-1054329, and DBI-1410081.

– Wendy Zomlefer, University of Georgia Herbarium, wendyz@uga.edu

Georgia Southern University Receives NSF CSBR Grant

The Georgia Southern University Herbarium (GAS) was awarded the Collections in Support of Biological Research grant from the National Science Foundation in August, 2016. GAS curates 21,127 accessioned specimens, but an estimated 26,500 specimens documenting the regional diversity of southeastern Georgia and its coastal plain, including rare species, collections from sparsely sampled areas, and the orphaned Youth Museum of Savannah Herbarium and the Flora of Fort Stewart are backlogged and inaccessible. The proposed project

will strengthen GAS holdings and assure the security of an invaluable collection for many years to come. Integrating the entire 26,500-specimen backlog and updating the facilities with the tools necessary for research and preservation will more than double the size of the collection and provide researchers and students access to the most comprehensive collection of plant diversity in the region through loans, visits, and online databases.

- John Schenk, GAS Curator, Georgia Southern University, jschenk@georgiasouthern.edu

Cordia lutea (Boraginaceae) in Galápagos Islands - Ecuador. C.K. McMullen

PH Has New Collections Manager

The herbarium of the Academy of Natural Sciences of Drexel University (PH) has a new collections manager, Jordan Teisher, Ph.D., who recently completed his dissertation on grass phylogenomics at Washington University. For correspondence about the herbarium, please email ans_ph_herbarium@drexel.edu.

- Tatyana Livshultz, Assistant Curator, Academy of Natural Sciences, tatyana.livshultz@drexel.edu

In Memory of Dr. Hugh H. Iltis, 1925-2016

We were saddened to learn of the passing of Emeritus Professor of Botany and long-time Director of the Wisconsin State Herbarium (WIS), Dr. Hugh H. Iltis, who died on Monday, Dec. 19, 2016. He was 91. Born on 7 April 1925, in Brno, Czechoslovakia, he became a US citizen in 1944. Dr. Iltis attended the University of Tennessee and Washington University, taught at the University of Arkansas, and came to the University of Wisconsin-Madison as an Assistant Professor and Curator in 1955. A plant taxonomist and biogeographer, he studied the floras of Wisconsin and western Mexico and the classification and evolution of Cleomaceae, Capparaceae, and *Zea* (maize).

Dr. Iltis was a pioneer in advocating for conservation and environmental preservation and a tireless promoter of human ecology ("man's need for nature") and the preservation of genetic diversity in indigenous crops and their ancestral species. He exemplified the best of an environmentally, socially, and politically aware citizen and scientist, and he will be missed. For additional information on Dr. Iltis' life and botanical career, see http://news.wisc.edu/hugh-iltis-uws-battling-botanist-dies-at-91/.

- Kenneth M. Cameron, Director, WIS, University of Wisconsin, Madison, kmcameron@wisc.edu

NAME THAT THING!

I received no suggestions from our members as to what "thing" was covering the stump pictured in the July 2016 issue of *The Vasculum* (also see below). My best guess is *Cryptococcus macerans* (Frederiksen) Phaff & Fell, Basidiomycota, Tremellaceae. Please don't hesitate to correct me via email if I have erred!

- Conley K. McMullen, James Madison University, mcmullck@jmu.edu

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