The Vasculum

The Society of Herbarium Curators Newsletter
Volume 5, Number 1 - January 2010

FROM THE EDITOR

Greetings to all of my fellow SHC members! With this newsletter, we begin our fifth year. I have decided to use this space to emphasize two important news items. First, this year's Business Meeting will be held April 9, 2010 (5:30-6:00 P.M.) in Asheville, North Carolina, at the annual Association of Southeastern Biologists meeting. The SHC Executive Board Meeting will be held earlier the same day (9:00-10:00 A.M.). Second, at the above-mentioned Business Meeting, Michael Vincent (Miami University) will begin his term as President of SHC. This meeting will provide an opportunity for members to welcome Michael as President, witness the "passing of the vasculum" from John Nelson to Michael, and express our appreciation to John as he takes on the role of Past President. I look forward to seeing you in Asheville!

- Conley K. McMullen, James Madison University

SHC NEWS

A Message from the President

This will be my last Newsletter message to you as President. In this message I would like to share a couple of thoughts I have for you to consider.

1. Make your herbarium a LOCAL herbarium.

Here at USCH, we came up with a couple of recent bumper stickers that you may have seen... or maybe you have one or both of them. The first one is very simple, reading "Support your local HERBARIUM", with our herbarium's URL printed below that. It's printed in Gamecock garnet, which is a rather popular color around here. We have given these things away with the hope that they would be placed in public places, not necessarily on a car's bumper. Now, if someone with one of these bumper stickers didn't want to advertise OUR herbarium's web site, it's OK to trim that part off. After all, this bumper sticker has two messages: the universal one concerns "your local herbarium", and the secondary one concerns USCH. We invented these stickers in order to share the good message with our colleagues, and of course to get a little free advertising if possible.

The second sticker is a bit brasher, somehow, featuring just a little herbarium humor: white letters on a dark green background read "It's not HIS barium..," a message sure to elicit a chuckle or two, and surely remind the reader of the wonderful sense of humor that botanists have!

(By the way, we have provided these stickers to anybody who wants them. Of course, we can't be cranking them out forever. We've found them rather useful, and a good way of getting people to start thinking about what an herbarium is. If you think these are good designs, please feel free to copy them and design your own version.)

One will conclude after studying these bumper stickers that they are intended, mostly, for readers who don't know what an herbarium is. When you think about it, there really isn't much reason to expect that the general public would know what an herbarium is, or what one does. I still regularly get calls at work from people who think our herbarium is a greenhouse, or perhaps it's the same thing as our arboretum here in town. So it seems that getting the word out to the public as to what we are and what we do will always remain a challenge.

You might think of your herbarium in terms of market economics. Theoretically, there is a big market out there for the goods and services which your herbarium provides. Depending on how much it provides there will be a demand for these commodities. In an active public relations economy, the herbarium will be recouping positive public relations, with corresponding trickle-down (or up) effect, in addition to any other "profit" realized from providing services. For instance, our herbarium has embarked upon a vigorous strategy of advertising our free plant identification service, as well as our endowment, both of which have grown steadily. Thus, we supply free plant identifications, and we "profit" from a local word-of-mouth awareness of what this herbarium is all about, as well as contributions to our endowment. The fact that this activity eventually reaches our Dean's office doesn't hurt, either.

My take on it is that in any given community, there will always be at least some inkling of botanical knowledge. This public knowledge may be little more than knowing whom to call when a weed needs to be identified, or it may be as much as a refined common know-

ledge of local plant biodiversity and interest in municipal gardens. I maintain that local botanical knowledge will always follow the activity of a local herbarium. It's always nice to have a botanist in town, but it's always better when that botanist is backed up by an active herbarium... the local herbarium.

2. Are there enough local herbaria? Can there be too many?

Much has been offered already, and in various ways, concerning the scientific value of herbaria and natural history collections, plus their ancillary roles. SHC has fully embraced this notion, and indeed, the importance of herbaria surely lies at the very core of our Society's being. And, one of our stated roles is the preservation of threatened herbaria, based, of course, upon their perceived importance.

The next several years will find SHC engaged in more activity on a national and international level. While this is taking place, we need to be looking at yet another role, one that bears on the importance of local herbaria.

Given the importance of herbaria in public awareness of plants, as well as critical sources for future systematic botanical study, it is reasonable to conclude that additional herbaria are needed in different parts of the world. There are a number of areas in developing countries featuring high plant diversity with little or no access to a functioning herbarium. Others may be places that currently or have maintained, historically, little interest in local plant life, or in systematic botany. And, it may be that in some instances, it is more important to restore or repair existing facilities than to invent new ones. Of course, directing funding and resources these days to a new herbarium should take place only with careful consideration of need and feasibility, and the likelihood of continued support. Any plans to recommend, develop or establish new collections should only take place following these considerations. I am unable to provide a list of places that need an herbarium; in fact, I'd like to call for continued discussion on this topic. How do we identify such places? What are the criteria involved? We have the ability as a group to recommend for the development of additional collections...do our abilities end there?

These and a variety of other questions and opportunities await our Society. Mike Vincent will be coming along as our new President at the annual meeting in Asheville. We are very fortunate to have him, as he has an exciting background in herbarium administration. I hope that all of you will feel free to engage Mike, and the rest of our Executive Board, and the rest of the Membership, in discussing any thoughts or ideas you may have concerning our Society. Vivat Linnaeus!

- John Nelson, University of South Carolina

HERBARIUM NEWS

Featured Herbarium: GA – University of Georgia Herbarium

Welcome to Georgia! – The state of Georgia has been ranked seventh nationally for vascular plant diversity (ca. 3,000 spp.), second to Florida (3,038 spp.) among the eastern states (Stein 2002). Georgia includes portions of five physiographic regions (Fig. 1) and six ecoregions (Fig. 2). Many unusual and specialized habitats contribute to the high level of biodiversity in Georgia, such as granite outcrops (an arc north of the fall line), limestone ridges (north Georgia), cedar glades (various areas), blackland prairie (upper Coastal Plain), and barrier islands, sand hills, long-leaf pine-wiregrass communities, and tupelo swamps (all lower Coastal Plain; Wharton 1978). Georgia is also a region under grave threat from land development and invasive exotic plant species: among the eastern states, Georgia is exceeded only by Florida in percentage of vascular plant flora at risk (Stein 2002).

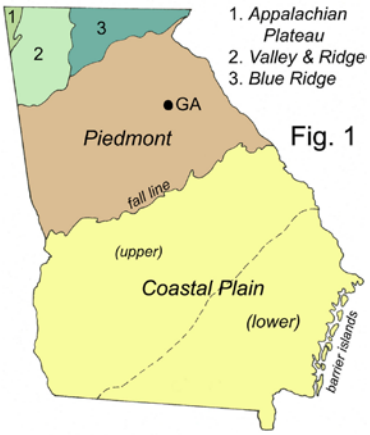

Figure 1. The five physiographic regions of Georgia (based on Brouillet and Whetstone 1993).

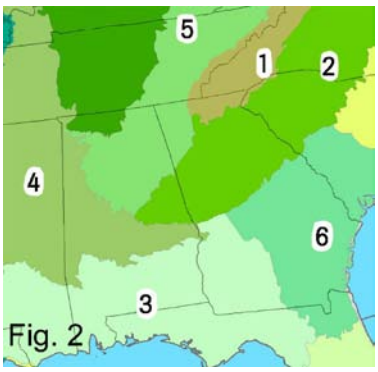

*Figure 2. The six ecoregions of Georgia (Nature Conservancy 2004): **1**–Southern Blue Ridge, **2**–Piedmont, **3**–East Gulf Coastal Plain, **4**–Upper East Gulf Coastal Plain, **5**–Cumberlands and Southern Ridge Valley, **6**–South Atlantic Coastal Plain.*

History and Holdings – The University of Georgia Herbarium [GA] in Athens, northeastern Georgia (Fig. 1), is the primary repository documenting the state's unique flora (see www.plantbio.uga.edu/herbarium/index.html). GA Herbarium was founded in 1920 by John M. "Botany" Reade (1876–1937), Professor of Botany and Director of Biological Laboratories, circa 1908–1937 (Figs. 3, 4; Moore and Giannasi 1994; Sherwood 2009). The collections were significantly expanded by Wilbur Duncan (1910–2005), who served as the second curator from 1938–1978 (Zomlefer and Giannasi 2005a) and who is probably best remembered for his series of popular wildflower books (e.g., Duncan and Duncan 1999). Samuel B. Jones, Director of GA from 1979–1991, brought national prominence to the Herbarium via his research on Asteraceae and a well-regarded textbook, *Plant Systematics* (Jones and Luchsinger 1986).

Figure 3. Photograph (date unknown) of John M. "Botany" Reade, founder of GA Herbarium.

Figure 4. "Botany" Reade's collection of "Pharbitis hederacea" (Ipomoea hederacea) from Rabun County, GA [Reade E8388, 21 Aug. 1911].

GA is the largest herbarium in Georgia (Table 1) and contains over two-thirds of the plant specimens in the state's herbaria. As of this writing, the GA collection comprises 258,000 accessioned vascular plant specimens, including at least 450 types. The geographical scope is mainly North America (Table 2), with emphasis on the flora of Georgia and the southeastern United States (64%; ca. 164,000 specimens). The collection includes significant holdings of many historic and contemporary collectors of the southeastern U.S., including: D. S. Correll, A. H. Curtiss, A. Cuthbert, D. Demaree, W. Duncan, W. R. Faircloth, R. K. Godfrey, J. W. Hardin, R. Kral, S. McDaniel, R. McVaugh, J. K. Small, R. D. Thomas, and R. L. Wilbur. GA has an active loan and exchange program, with accessions increasing ca. 3,000–5,000 specimens per year primarily via research and contract work of the professional staff and students, exchange with other herbaria, and contributions from state agency botanists and amateurs.

GA Herbarium is a unit under the Department of Plant Biology (formerly "Botany") in the College of Arts and Sciences and is also part of the Georgia Museum of Natural History, an alliance of 14 natural history collections on the University of Georgia campus administered by various departments (Spear 2007). The Herbarium's prominent entrance is across the hallway from Department of Plant Biology main office (Miller Plant Sciences Building) and occupies 4,939 ft^2 (nine adjoining rooms). The main collection is housed in 282 cabinets on a two-bay electronic compactor system, established by Jones in 1985 and upgraded with infrared sensors in 2004 via an NSF BRC grant awarded to Wendy Zomlefer and David Giannasi (see Zomlefer and Giannasi 2005b). A unique feature of the GA Herbarium physical plant is the adjoining Plant Taxonomy Class Room, an additional 1,070 ft^2, which has its own well-maintained teaching (synoptic) collection of 3,000+ specimens housed in seven cabinets.

People and Activities – The Department of Plant Biology, provides two permanent salaried herbarium personnel: Curator Wendy B. Zomlefer (Assistant Professor), responsible for collection administration and development of herbarium programs, and Collections Manager Kristian D. Jones (Research Professional I), responsible for day-to-day herbarium activities and support staff supervision (interns, volunteers, and student workers paid on contracts and grants). Emeritus Professor/Director David E. Giannasi (retired) also maintains an office and is actively involved in the herbarium, particularly the *Vascular Plant Atlas of Georgia*, a project he initiated in 1997 (Sweeney and Giannasi 2000). Sources of financial support for herbarium programs include the Plant Biology Department; various (external and internal) contracts and grants obtained by Curator Zomlefer (e.g., Zomlefer et al. 2008; see Fig. 5); and donations to GA Herbarium's endowment fund (e.g., Zomlefer 2008; see Fig. 6).

Table 1. Herbaria in Georgia with plant collections [Holmgren and Holmgren 2009, updated by Zomlefer via on-site Georgia herbaria survey]. *dismantled by GA staff, distributed to 11 herbaria (Apr. 2009), 1,000 specimens to GA; ** = on permanent loan to GA [500 specimens].

Institution [Acronym]	***# Specimens***	***Approx. # from Georgia***
***1.* UNIV. GEORGIA [GA]**	***258,000***	***91,000***
2. Valdosta State Univ. [VSC]	62,000	31,000
3. Georgia Southern Univ. [GAS]	20,000	10,000
4. Emory Univ. [GEO]	17,000	8,000
5. Georgia Southwestern State Univ. [GSW]	13,000	2,000
6. Univ. West Georgia [WGC]	5,000	4,000
7. Columbus State Univ. [COLG]	4,500	3,000
8. Shorter College [SHOR]	4,000	2,500
9. USDA Forest Service [FSSR]	0*	—
10. Agnes Scott College [DECA]	0**	—
Totals:	**383,500**	**151,500**

Table 2. Geographic composition of GA Herbarium collections.

Geographic Area	Percent of specimens	
GEORGIA	35%	**All SE:** 64%
Southeastern United States – AL, FL, LA, MS, NC, SC; excl. GA	29%	
North America north of Mexico – excluding the Southeast U.S.	31%	**All NA:** 95%
Latin America – Mexico, Centr/S. Amer., Caribbean	3%	**Additional:** 5%
Other: Europe, Africa, Asia, Australia	2%	

Figure 5. Herbarium intern Amy Edgerton with John Fry, Chief of Resource Management, collecting voucher specimen of Zornia bracteata along bluffs, Cumberland Island, GA, for National Park Service-funded survey.

Figure 6. Curator Wendy Zomlefer and Emeritus David Giannasi at the UGA Dean's Council Meeting promoting museum collections to potential donors.

GA Herbarium is a very busy place! The nearly 500 visitors per year include local and visiting researchers, private consultants, governmental agency personnel, and students (undergrad to graduate level) from various UGA departments and other institutions. GA personnel also regularly give presentations on the herbarium and local flora to various societies (e.g., Georgia Native Plant Society), and provide ca. 27 herbarium tours per year (upon request) for various university courses, K-12 school groups, clubs, and other organizations (see Fig. 7).

Figure 7. Collections Manager Kristian Jones (front left) leading a herbarium tour (mounting room) for a high school class.

Other GA outreach activities include the Plant Identification service. Some remarkable exemplars: From Plant Pathology Extension–What is the fruit inadvertently being packed with the multi-million dollar blueberry harvest? [*Vitis rotundifolia*]; from UGA Veterinary School–What comprises the congested mass ("bolus") in this sample from a horse intestine? [*Diospyros virginiana* seeds]; What plants are in this dog vomit sample? [*Pulsatilla vulgaris*]; from the County Prosecutors Office–What plants were found near the murder victim's body? [*Hedera helix*, *Salix nigra*, *Smilax bona-nox*]. More mundanely, herbarium staff also provide information (e.g., scientific and common names, authorities, ranges, toxicity) and referrals to appropriate references and Websites.

Besides serving as the primary (only?) outreach function of Plant Biology, the GA Herbarium facility is also integral to instruction and research at UGA (Fig. 8). The collection is extensively incorporated in teaching hundreds of students per year in several formal courses (Fig. 9), including Botanical Illustration, Georgia Plants, Intermediate Scientific Illustration, Natural History Museum Internship, Plants and Society, Plant Taxonomy, and Undergraduate Research. The internship program and independent studies give students hands-on training in modern museum protocols and field techniques (Fig. 10). GA collections are supporting diverse graduate and undergraduate student research projects, ranging from the pollination biology of *Yucca*, to floristics of Coastal Plain limestone forests, to the phylogeny of *Psychotria*.

Figure 8. Graduate student Patrick Lynch scans Wilbur Duncan's extensive 35 mm slide collection for the GA Herbarium's Georgia Wildflowers website.

Figure 9. Art student Ali Fine paints a watercolor of Cirsium muticum based on GA herbarium specimens.

Figure 10. NSF-REU interns Nikki Nelson, Shaun Mitchell, and Ashley Jackson proudly show off their herbarium work!

Current Endeavors – One ongoing electronic project, the *Vascular Plant Atlas of Georgia*, is presently undergoing careful edit by Giannasi and Zomlefer. Besides checklists and county tallies, *Atlas* data graphically document endangered species distribution and target areas requiring floristic study. For example, data from GA specimens for ferns, gymnosperms, and monocots, indicate over half of the state's 159 counties as undercollected!

GA has contracted with *SilverBiology* (see www.SilverBiology.com) for software to produce elegant, interactive *Flash*-based maps with automatic data uploads for updates. Readers of this article can view a preliminary version of the GA *Atlas* at: http://collection.silverbiology.com/uga/herbarium/atlas [USER ID: uga, PASSWORD: plants]. (I stress here the experimental nature of this restricted-access posting and request that readers save comments/criticisms, as the posted version has not yet, for example, even been converted to APG families!)

Another major undertaking of note is GA Herbarium's lead in initiating a Georgia Herbarium Consortium, based on a survey funded by the Georgia Native Plant Society and the Georgia Botanical Society. Zomlefer (assisted by Giannasi and Jones) recently traveled over 3,000 miles throughout Georgia conducting on-site reviews of the nine other recognized plant herbaria in the state (Table 1). The survey provided an opportunity to emphasize the value of these herbaria to appropriate administrators (e.g., Williams 2009). Georgia herbaria are facing difficulties common throughout the nation (see Skog et al. 2009), such as specimen degradation due to benign neglect (e.g., GEO), and unfortunately, GA Herbarium staff dismantled two herbaria, DECA and FSSR, during this project (see Table 1).

A SERNEC-sponsored meeting of Georgia herbarium curators is planned in Athens on 6 March 2010 to discuss potential funding and opportunities so that all herbaria in Georgia may benefit from the expertise available in the state and region. A state-wide network would mobilize efforts at these smaller collections to argue for more permanent staff and funds, upgrading facilities and promoting their value – an umbrella of protection to ensure the survival of the plant archives of Georgia.

Acknowledgments – I thank David E. Giannasi for editorial comments; Kristian D. Jones for scanning several "Botany" Reade specimens; Richard Carter, VSC Curator, for the introductory material on Georgia's flora; and Richard Hanlin, GAM Curator, for the photograph and references for "Botany" Reade, GA Herbarium founder.

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- Wendy Zomlefer, University of Georgia, wendyz@plantbio.uga.edu

Expansion of Consortium of Pacific Northwest Herbaria Portal – University of Washington Herbarium (WTU)

The Consortium of Pacific Northwest Herbaria (http://www.pnwherbaria.org/ - PNW Herbaria portal) was created in 2007 to bring together regional herbaria and provide an online portal to the wealth of existing and emerging information about the flora of the Pacific Northwest (Fig. 1). Our definition of the region includes both U.S. states and Canadian provinces: Alaska, Yukon Territory, British Columbia, Washington, Oregon, Idaho, and Montana. Ben Legler, WTU's Database and Web Manager from 2002-2007, handled all of the programming, database development, and layout for the portal, which initially provided access to over 400,000 vascular plant records from WTU, Oregon State University (OSC), and the University of Alaska (ALA).

The University of Washington Herbarium (WTU) at the Burke Museum received $29,000 from the U.S. Bureau of Land Management (BLM) and U.S. Forest Service (USFS) in spring 2009 to expand the quantity and taxonomic breadth of specimen data available through the portal. This round of funding supported the data basing of 18,000 bryophyte, fungus, and lichen specimens from southwestern Washington and western Oregon. A primary goal of this effort was to reduce the time federal agency botanists spent scouring various online and hard copy resources to obtain diversity and distribution data for these organismal groups in the Pacific Northwest.

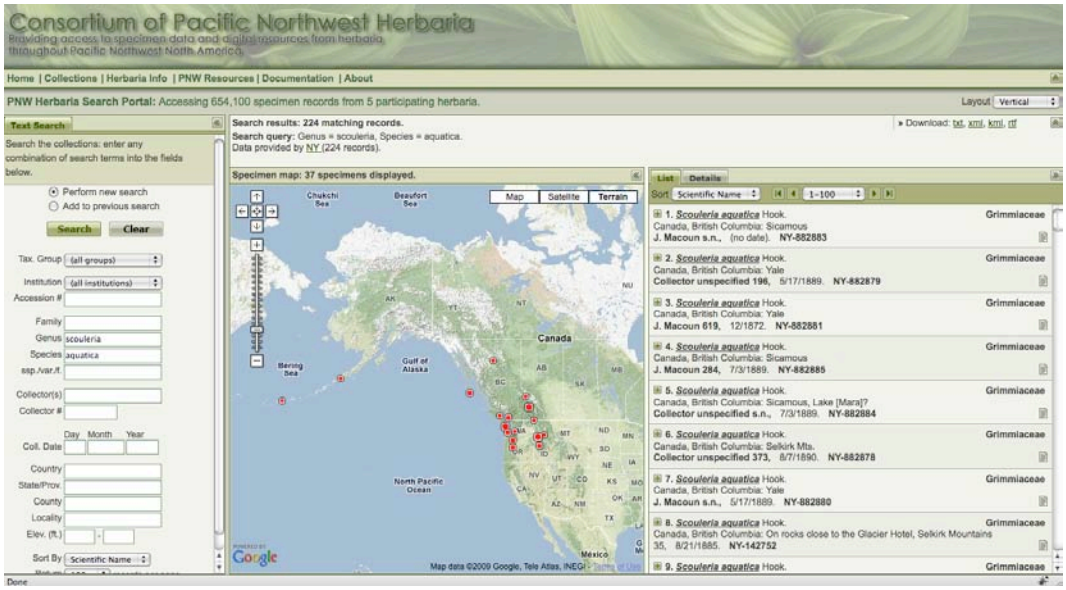
Funds were also used to once again hire Ben Legler, who was on break from his graduate studies at the University of Wyoming with Ron Hartman. During the month that he spent at WTU; Ben constructed a bryophyte/fungus/lichen specimen database, expanded the quantity of specimens available through the portal, and increased the number of herbaria contributing records to the site. For example, visitors can now access 50,000 fungal specimen records from OSC, 80,000 vascular plant and bryophyte records from the New York Botanical Garden, and nearly 7,000 vascular plant records from Bruce Bennett's herbarium in Yukon Territory. Efforts are underway to include specimen records from other herbaria in Canada, such as the University of British Columbia (UBC).

Over 3.3 million specimens are managed by the 53 herbaria in the region, and currently over 650,000 specimen records from five herbaria can be accessed through the portal. Integrated into the search results is an interactive map display that shows a graphical depiction of the distribution of a set of specimens or any species. Users can zoom in to this map allowing, in many cases, visual clarification of the exact collection locations of individual specimens. Search results can also be downloaded in several formats for local use such as importing into Excel or GIS software, printing, or viewing in Google Earth.

We are currently partnering with OSC, University of Idaho (ID), and Montana State University (MONT) to pursue funding that would significantly expand the size of the portal by increasing number of herbaria contributing records to the site. Our goal is to create a truly regional resource with access to nearly 2,000,000 records from both large and small herbaria collections.

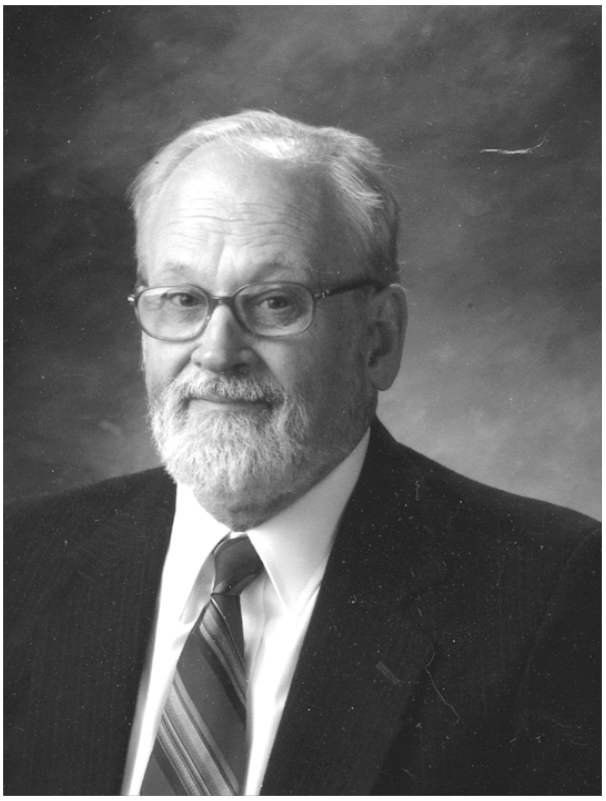
- Richard G. Olmstead, David Giblin, Ben Legler, University of Washington Herbarium (WTU), olmstead@u.washington.edu

Fig. 1 - Screenshot of Pacific Northwest Herbaria portal site showing distribution map and specimen records of the moss *Scouleria aquatica* in the region.



Charles J. Lapham
(1934-2009)

Over the past decade Charles J. Lapham has been one of the more important figures in Kentucky botany, and in the botany of the southeastern United States. Charlie, as he preferred to be called, passed away on October 26, 2009, of non-Hodgkins lymphoma. He had been in poor health for several years, mostly related to heart disease and diabetes, and had only recently diagnosed with lymphoma. In recent emails he informed his close acquaintances of his situation, and was characteristically matter-of-fact in describing his time remaining. He expected to have a few more months, or maybe a few years, but he suffered a major setback on Wednesday, the 21st, and never recovered. He was 75 years old.



Charles J. Lapham - KNPS certified in native plant studies; expert in herbarium databases; designer of Index Kentuckiensis; Technical Associate, Plant Life of Kentucky

Charlie and his wife Arlene had lived for the past 20 years in Glasgow, Kentucky. He was born in Fort Edward, NY, grew up in Glens Falls, NY, and lived many years in Lincoln Park, NJ. Charlie graduated from Clarkson University in Potsdam, NY, with a degree in electrical engineering, and worked many years for Standard Motor Products in Long Island City, NY. Charlie had a life-long interest in science, especially botany, and he began to explore this interest with great enthusiasm after he retired and he and Arlene moved to Kentucky.

Both Charlie and Arlene became active in the Kentucky Native Plant Society in the mid-1990s. In those days the participants had to complete a research project, and Charlie's project was to set up a basic database program for herbarium data management. Charlie and I had discussed databases on a couple of occasions, and he became very interested. This was at a time when university herbaria across the nation were considering the pros and cons of investing in database programs for keeping track of all their dried plant specimens (often numbering in the thousands or even millions), and also to improve capabilities of generating labels and of making maps. Most software at that time was expensive, hard to learn, and difficult to maintain. In Kentucky, several herbaria were investigating the possibilities. We had about 40,000 specimens in the EKU Herbarium at that time, and I suggested to Charlie that he help me set up a database using Microsoft Access. He jumped at the idea, got a manual, taught himself Access, and began working on the program. He later told me that his job in New York had required him to construct similar databases to keep track of auto parts, and that keeping track of herbarium specimens was not that different.

Soon he had a workable system, named *Index Kentuckiensis* (IK), that would allow the inputting of all the data from a herbarium label, sort it in various ways, construct labels, and make maps of the specimen locations using a free online mapping program called MicroCam. This IK system has underwent numerous revisions over the past decade, with Charlie making it more and more sophisticated. Charlie and I began going to meetings of the Association of Southeastern Biologists and giving talks about the capabilities of the software. Other universities were interested, and soon IK was being used at several institutions around the south, and eventually at several institutions across the nation. We were offering it free, and Charlie usually ended up traveling to the institutions to help them set it up. Charlie worked on IK tirelessly, for many years, kept attending meetings and demonstrating the capabilities of IK, and through his efforts many institutions got their first exposures to herbarium databases. Charlie was very sensitive to the "philosophical" differences among taxonomic botanists, especially in how they chose names for their specimens, and worked hard to provide a program that would allow individual flexibility. He was also among the first to use dropdown menus that provided the user with the ability of picking scientific names, collectors, and other items from a list, which cuts down on typographic errors tremendously. He developed such a high degree of data basing expertise that he was able to converse at the highest levels with other databasing specialists across the country, and in some cases he was the one providing the instruction. Charlie was one of the first to develop and promote these databases, and deserves great credit for his services to the botanical community.

Charles J. Lapham is listed on the title page of *Plant Life of Kentucky, An Illustrated Guide to the Vascular*

Flora, as Technical Associate. He is listed because it was through his efforts that about 4,000 images of line drawings were obtained from the 1913 edition of Britton & Brown's *An Illustrated Flora of Northern United States and Canada.* These images were in the public domain, but were not easily accessible. Charlie had connections to a data services company in California, and arranged to send a copy of the 3-volume set to India, to have the black and white illustrations scanned, and then processed into a searchable format. These images were copyrighted as part of the *Index Kentuckiensis* application, and eventually nearly 2,000 of these images were used to illustrate *Plant Life of Kentucky*. So it was through Charlie's expertise and his business associations that these illustrations were obtained, and without his help, it would not have been possible to gather so many illustrations together so fast. It is the illustrations that help to make the book so useful for so many people, and I am forever indebted to Charlie for his tremendous assistance.

Once word got out that we had a CD with about 4,000 illustrations, a number of people and institutions expressed interest in obtaining a copy. PLANTS database web site, (http://plants.usda.gov/) which is today the major web site for botanists to check for information on nomenclature and distributions of North American plants, agreed to pay a fee in exchange for a copy of the CD. This was arranged in the name of the Kentucky Native Plant Society, and today, when a species from eastern North America is selected for viewing, in most cases there is an illustration that states "Courtesy of the Kentucky Native Plant Society."

Charlie's legacy is thus far-reaching, from his local work on saving endangered species, to his state-wide efforts with KNPS, to his regional and national influence on herbaria and botanical science. His involvement in regional botany was fortuitous in many ways for me personally, not only from the standpoint of my book, but for all his efforts with building databases. We still use his IK database at EKU, and now have entered over 50,000 records. We plan to have all our 75,000 specimens data based in the next few months. When finishing up the historical section of *Plant Life of Kentucky*, I devoted a section to private citizens, and Charlie was one of two individuals that I selected as having made the greatest contributions over the last 50 years to botanical science in Kentucky. The book contains a description of his accomplishments and a photo of Charlie, and is indicative of the high regard that I, as well as many other botanists across the nation, held for Charlie.

Charlie is survived by his devoted wife of 54 years, Arlene, his brother, Jerome , his five children, Peter in Glasgow, Suzanne in NY, Thomas in Glasgow, Benjamin in NY, and Jonathan in Glasgow, and their families, including four grandchildren. His was a loving, close-knit family, and it is apparent that his passing touched many; a series of memorial gatherings were held on October 29 by his family and many friends from across the country. In an internet obituary, his family writes "Charlie valued honesty, integrity, hard work, and was at times a self-described connoisseur of silliness. He was never without a project."

His family also noted that "In keeping with his love for science, he has donated his body for medical study at the University of Louisville." His family asks that donations be made to the Nature Conservancy in his memory.

In one of his last emails, Charlie lamented the fact that botanists cannot seem to make up their minds what they want—do they want to finally get their data into consistent formats, or endlessly discuss alternatives… He closed by saying "what we need to do is to put botanists together to discuss this and wait for smoke to come out of the chimney."

And that is what Charlie was about, and that is his legacy—when facing a complicated problem, decide what you want, and attack the problem with intelligence and hard work. Then nearly anything can be accomplished. That is what I will remember about the effect that Charlie had on our botanical community, how he more or less just appeared from nowhere, just plopped down here amongst us botanists, looked around and figured out what kinds of problems we faced, took up the reins, and showed us all how it should be done.

The "real" Charlie.

Charlie was funny, brilliant, and sometimes cantankerous. He was unique, and irreplaceable, and will be missed by all.

- Ronald L. Jones, Eastern Kentucky University, bio-jones@acs.eku.edu

Trillium nivale Riddell (Snow Trillium) Trilliaceae – C.K. McMullen

THE WIRED HERBARIUM

The Pacific Northwest Consortium Website

http://www.pnwherbaria.org/

This is an exciting website, and the Rocky Mountain Herbarium's webpage is using the same interface concept, thanks to a design created by Ben Legler. Overall, I think this page is a good model for presenting herbarium specimen information, although it can certainly be improved.

I found the logo bar at the top of the home page ("Consortium of Pacific Herbaria: providing access to ...") rather hard to read. Some sort of sculpted sans serif font printed in a dark color on a slightly lighter background. But the rest of the home page is very legible. A nice map in the upper right clearly delineates the geographic area covered. The left column lists various links to navigate the site. Personally, in the credits statement at the bottom of the home page I would have included a contact email in preference to a link to the general University of Washington webpage (why would that ever be useful?), but the credits statement does link to the University of Washington herbarium, which manages this site, and in the sidebar to the left of the "Contacts" option includes an excellent statement reminding users that data content questions should be directed to the specific herbarium holding the specimen in question, and a list of three people as contacts, including one designated as the "Technical" contact. It would probably be nice to have similar designations explaining the roles of the two people listed under "Administrative".

This is a work in progress, a fact that I wish was made slightly clearer on the home page. The home page describes "over 3.3 million specimens" from 53 herbaria. However, the search box states "Access 654,296 specimen records from 5 participating herbaria." To learn which these five herbaria are, you will need to click on the link in the left sidebar "Data Providers". I suggest that the home page be slightly rewritten, to something like "Ultimately, we plan to provide online access to more than 3.3 million specimens from 53 herbaria", followed by a statement about the current contents. Particularly important in my opinion, but not provided, is any indication of the last time the data was updated, or whether the complete holdings from the five participating herbaria are included. Elsewhere they do state that only vascular plants are currently included, but I would like the "Data Providers" page to include a statement for each herbarium describing the taxa (e.g. Vascular Plants) and whether the current digitized data are the complete holdings of that herbarium. If they are not, it would be nice to know what is missing, e.g. "252,394 specimens, including all vascular plants except the Monocot families from P to Z."

I searched for *Opuntia fragilis* in the Cactaceae. The search returns a list of 36 specimens, and a map of the entire North American continent that displayed six specimens. Dots get larger as the number of specimens for the site increases. The map itself is zoomable with a Google Earth-type control interface that is intuitive and easy to use. If you click on one of the data points the specimen information will be displayed to the right of the map.

There are some potential problems with this sort of graphical display. For example, for the *Opuntia fragilis* search results, the southernmost dot in Oregon, about halfway between Bend and Ontario, turns out to be a specimen simply from "eastern Oregon, county unknown". It has Lat/Long coordinates, but the associated error term turns out to be huge. (The error term is reported on the web screen without units, but when you download the data it turns out to be meters). Almost certainly this specimen has somehow been retroactively georeferenced, and the display of the dot on the map is terribly misleading since in reality we have only the vaguest idea where this population actually was. Likewise, 30 of the 36 specimens are not displayed on the map. In my opinion it would be strongly preferable to have a filter remove specimens with large error terms.

And, oh joy, data is easy to download! I like to manage my herbarium specimen information in Excel, and it was easy to download the data as a text file, import the text file into Excel, and see the results. Many of the specimens returned in this search have had their coordinates and locality information withheld, so I will need to contact the specific herbarium to request this information. I'm not sure what the "Information Withheld" column is for in the downloadable data, since it was always blank.

There are many other features of this site I've not explored yet, including links to atlases, image collections, and databases. Many of the displays can be modified (vertical vs. horizontal layout, for example). In addition to the "quick" search dialog on the home page, a much

more extensive search page permits searches that are restricted in various ways, so if you wanted to know specimens collected by a particular person since 1960 in Oregon, you can easily get the results.

Suggested improvements: more information about the nature of the "work in progress". Somehow mark or screen out specimens with large georeferencing error terms. Be clearer about the relationship between the geographic area covered and these herbaria: is this site designed to present only information about these five political regions, or to present specimens held by these herbaria worldwide? If not worldwide, then each participating herbarium should develop a way for their complete holdings to be searched, and if it is regional then it is silly to begin with a map of the entire continent. But overall, this is great!

- Eric Ribbens, Western Illinois University, E-Ribbens@wiu.edu

Tropical Dendrology in Costa Rica Two-Week Classes in 2010

April 19-May 1 (Spanish) & June 21-July 3 (English) These classes offer intensive study of tropical trees while traveling through 4 life zones (dry, moist, wet, and cloud forests) in Costa Rica. A highly efficient teaching method is used, and students are able to identify about 80% of the important families and genera of Central America and Northern South America. Details and testimonials are available at http://www.hjimenez.org.

Costs: US$ 1600.00, which covers food and lodging (airfare not included). Contact: Dr. Humberto Jiménez Saa. Phones: (506) 2253-3267; 2231-1236; Email: hjimenez@racsa.co.cr. Ron Jones, who took the course in 2001 can also be contacted for more information at ron.jones@eku.edu.

Erratum

A mistake in editing was discovered in the July 2009 issue of our newsletter. In John Herr's article on the Mini-Plant Press, the first sentence of the final paragraph should have read, "The A. C. Moore Herbarium at the University of South Carolina (USCH) will soon test this approach to plant specimen collecting by providing instruction to elementary and middle school teachers." My apologies to John for this error!

Speaking of these mini-plant presses, John indicated that he would be happy to e-mail line drawings of both presses that he described in the July newsletter to anyone making such a request, so that our readers can make their own presses (herr@biol.sc.edu). I plan on requesting a set of these drawing myself!

- Conley K. McMullen, James Madison University

Name That Plant!

Can you name the following plants? How about their nectar-seeking visitors? E-mail the editor with your answers! All photos © C.K. McMullen 2009.

Photo 1

Photo 2

Photo 3

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