DEPARTMENT OF BOTANY www.botany.wisc.edu

ALUMNI NEWSLETTER

Dear Alumni

It is with pleasure that I write my first chair's letter for the *Alumni Newsletter*. This letter provides me with a welcome opportunity to reflect on the past year and to highlight noteworthy goings on in Birge Hall.

It was a sad year because of the passing of two emeritus professors, **John Thomson** and **Grant Cottam,** and the untimely death of **Stanley Dodson,** a professor of Zoology and colleague and friend of many in Botany. We dedicate this newsletter to them and their contributions to UW.

Turning to the good news, we have every reason to feel very good about the state of the department: the teaching, research, and outreach missions are all thriving. On the teaching front, Botany faculty and teaching assistants continue to earn awards. For example this year **Tim Allen** and **Bret Larget** were voted Honored Instructor by students living in University Residence Halls. Also, we nominated several graduate students for TA awards, and **Ben Grady** received the L&S Teaching Fellow Award.

As you will see from the pages of this newsletter our faculty and academic staff continue to conduct cutting-edge, federally funded research across the full spectrum of Botany. This research not only generates important scientific knowledge, but also contributes to our education mission by providing opportunities for many excellent undergraduates, graduate students, and post-doctoral fellows to learn the "art of science". As a small indication of how highly our faculty are viewed by their peers, three professors received prestigious honors from the scholarly societies to which they belong, **Edgar Spalding** was made a fellow of the American Society of Plant Biologists, and both **Tim Allen** and **Eve Emshwiller** became society presidents (The International Society for the Systems Sciences and The Society of Economic Botanists, respectively).

Members of the department were also active in service and outreach. **Mo Fayyaz, Kandis Elliot,** and **Claudia Lipke** created and distributed botanical posters, which are both beautiful and educational. Botany faculty and students participated in a major outreach education symposium in February to celebrate the 200th birthday of Charles Darwin. In addition, our faculty gave many public talks and media interviews. And, as always, the Wisconsin State Herbarium served the public and state agencies with plant identification.

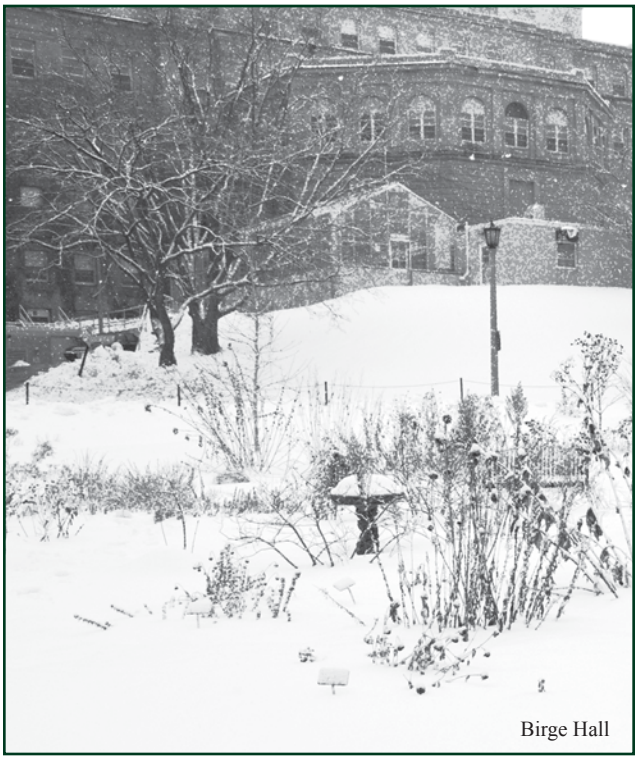
You may wonder how we managed to sustain our national and international stature despite the financial crisis and flu pandemic. While the downturn had an effect, we are blessed with a committed and efficient staff who kept the impact to a minimum. Also, we received kind support from a number of alumni and friends. For example, one generous donor, who wishes to remain anonymous, contributed over $140,000 in recent years to support undergraduate research in plant physiology, to help initiate high-risk research projects, and to contribute towards the start-up costs of a future hire in Plant Biochemistry. Such help is especially appreciated in these hard times!

Looking to the future, we are developing a vision for how the Botany Department can continue to thrive despite profound changes in the nature of the biological sciences. In various discussions related to a proposal for a new biology building, the department affirmed its commitment to the liberal arts vision of the College of Letter and Sciences. As an offshoot we held a joint faculty retreat with the Department

of Zoology—the first such joint session for as long as anybody can remember. At this pleasant and cordial event, we articulated the value of maintaining separate departments, while also noting huge potential benefits to better coordination. We formed a joint committee to explore how best to align our two graduate programs and asked the committee to consider various options, including a single joint Biology Ph.D. and M.S. programs, perhaps with a track in Botany.

Overall, the Botany Department had a very good year and I hope the same was true for all of you! On behalf of the entire department I would like to wish all our alumni and friends a happy and rewarding 2010!

David Baum
Chaira



Birge Hall

Botany Department is on Facebook
http://www.facebook.com/pages/Madison-WI/Botany/76427643998

Awards

David Baum, Professor and Chair in the Botany Department, received the 2009 Hamel Family Letters & Science Faculty Fellow Award, including $50,000 in non-lapsing flexible funds available in five annual $10,000 increments. The L&S Faculty Fellows program was initially created with a generous gift from George Hamel & his wife Pamela. It has grown to include five other donors. Special thanks to all our supporters. Baum's Hamel fellowship will be used in part to study the genetic and biochemical processes that control the production of spots of pigment in the petals of a Californian wildflower *(Clarkia gracilis)* and also for the molecular and field studies to elucidate the evolution of slipper spurges, which diversified in Mexico and around the Caribbean.

Edgar Spalding was selected as a Fellow of the American Society of Plant Biology. This society has over 5,000 members devoted to the advancement of the plant sciences.

Edgar also received a 3-year $500,000 grant from the National Science Foundation to study the molecules that enable seedlings to respond appropriately to light as they transition from an embryo within the seed to an established, independent plant. The molecules being investigated include cryptochrome, a photoreceptor that detects light signals in plants (and also in human eyes), and a multidrug resistance transporter, which moves the hormone auxin across cellular membranes.

Eve Emshwiller began her position as President of the Society for Economic Botany (SEB) at the Society's 50th Annual Meeting in June 2009. SEB publishes "Economic Botany," the leading journal in the field of ethnobotany, which publishes work on relationships between human cultures and the plants they utilize. Emshwiller's research focuses on human-plant interactions. Her lab includes 4 graduate students. Emshwiller has developed an undergraduate course in Ethnobotany (Botany 474).

Sue Bader, the Botany Department Student Status Examiner received the 2009 Student Personnel Association Frontline Award. This award recognizes a classified staff member who positively influences students' perceptions of the UW Madison campus. This award was in recognition of her work with the College of the Menominee

Nation at both the Green Bay and Keshena campuses. Sue accompanied graduate students **Shana Ederer** and **Sarah Wright** to discuss factors that might facilitate a successful transition for College of Menominee Nation transfer students to UW–Madison.

Tim Allen and **T. B. Starr** crossed the 1500 citations milestone for *Hierarchy, Perspectives for Ecological Complexity* (1982) Univ of Chicago. A second edition is planned.

Awards honoring our Botany students in 2009.

Undergrad Awards • Highest GPA Award winner was **Thomas Kleist;** Frits Went Plant Biology Awards were given to **Jeremy Berg, Michael Gardner, David Gronwall, Jessica Skarlupka.**

Graduate Awards • Newcomb Teaching Award winner was **Rachel Jabaily;** ON and EK Allen Fellowship was awarded to **Bryan Drew** and **Beth Lawrence** [one semester for each]; Croxdale Award was given to **Natalia Ivalu Cacho;** the Eldon and Joy Newcomb Fellowship was given to **Ben Grady.**

Davis Summer Research Fellowships were given to **Emily Butler, Sessa Roe** and **Maren Roe;** Davis Research Grants were awarded to **Rafael Arevalo, Jane Bradbury, Shana Ederer, Beth Lawrence, Stephanie Lyon, Erika Mudrak, Joshua Sulman, Brian Walsh, Evelyn Williams;** and Kenneth Raper Travel Grants were given to **Natalia Ivalu Cacho, Bryan Drew, Michelle Haynes, Katie Konchar, Erika Mudrak. Ben Grady** also won the Letters & Science Teaching Fellow award.

Where are they now?

Former L&S Teaching Fellow Recipients

1992 • **Hilary Callahan & Scott Kroken** • Hilary is at Barnard College in the Biological Sciences Dept in NY; Scott is in Tucson, AZ.

1994 • **Harvey Ballard** is at The Department of Environmental and Plant Biology, Ohio University in Athens.

1995 • **Christina Trivett** lives in Bristol, WI.

1996 • **Chris Pires** is Assistant Professor in the Biological Sciences Division, U of MO–Columbia,

1998 • **David Hanson** is at the U of NM–Albuquerque.

1999 • **Evan Lau** is at Harvard University.

2000 • **Jocelyn Hall** teaches in the Department of Biological Sciences, University of Alberta, Canada.

2001 • **Owen Boyle** is in Milwaukee, WI.

2002 • **Andrew Hipp** is at the Morton Arboretum in Chicago, Illinois.

2007 • **Rachel Jabaily** is going to a postdoc position at Old Dominion, Virginia.

2009 • **Ben Grady** is working on his PhD degree here is Birge Hall, UW–Madison.

Department Chair David Baum presents 2009 awards to Rachel Jabaily and Tom Kleist. Photos by Claudia Lipke.

Of Interest to All

Bronze Bust of John Muir

The bronze bust of John Muir that graces Birge Hall, presented to the University of Wisconsin by Thomas E. Brittingham, was done by C. S. Pietro of New York and is a duplicate of that made for the American Museum of Natural History. At dedication ceremonies in Music Hall on December 6, 1916, President Charles R. Van Hise said:

"It was especially fitting that, in recognition of Muir's great public service to conservation through advancing the movement for the creation of forest reserves and national parks, the University of Wisconsin, many years after his regretful farewell, granted him her highest academic honor, the degree of Doctor of Laws.

"It is indeed fortunate and most appropriate that through the decades and centuries to come, the youth of the University may behold this beautiful bronze bust which has so faithfully caught the thoughtful countenance of Muir, as if in meditation upon the meaning of the order of the Universe–which so prolifically creates, which so lavishly destroys, and which through innumerable alternations of life and death in some mysterious way ever climbs to higher things." The bust is located in Birge Hall and carries the inscription, "A Priest at Nature's Shrine."

Botanizing On Muir's Lake In 1956

By Hugh H. Iltis, Curator Emeritus, Herbarium, University of Wisconsin

There is much enjoyment in observing plants in Wisconsin. Since I was a newcomer to the state, anxious to learn the variety and whereabouts of Wisconsin's flora, I gladly accepted an invitation by Mr. Trenk to accompany him to the woods and waters of Muir's Lake. The two afternoons (July 14 and September 13, 1956) spent in surveying the plants of the area yielded a wealth of species and many botanical surprises. Among the 300 collections were many new records for that part of Wisconsin, showing the area to be of unusual botanical interest.

The alkaline, wet sedge-grass fen grading to damp prairie surrounding the lake is to me perhaps the botanically richest community in the area, aside from being, as Muir called it, a "Beautiful meadow lying warm in the spring sunshine." Species include the Marsh Fern (*Dryopteris thelypteris*); the Osmunda ferns (*Osmunda regalis, O. claytoniana*) which, together with many of the following, are listed by Muir in his charming description of the area in "My Boyhood and Youth;" Sandburg's Birch (*Betula sandbergii*), apparently a hybrid between the Paper and Bog Birch; Nine Bark (*Physocarpus opulifolius*); Wild Phlox (*Phlox pilosa*); and several species of Aster, Violets (*V. neprophylla, V. sagittata*), and Bedstraws (*Galium trifidum, G. labradoricum, G. boreale*).

The late summer showed this meadow in its glory. Large numbers of pink Blazing Stars (*Liatris pycnostachya*), with a few scattered Bottle Gentians (*Gentiana andrewsii*) and Fringed Gentians (*Gentiana procera*) blanketed the northern end; in other places, Grass-of-Parnassus (*Parnassia caroliniana*), the blue *Lobelia kalmii,* Ladies Tresses (*Spiranthes cernuua*), Goldenrod (*Solidago riddellii*), Swamp Thistle (*Cirsium muticum*), and the purple New England Aster (*A. novae-angliae*) made a lovely sight. Among the many sedges (*Cladium mariscoides, Rhynchospora capillacea, Carex interior* and others), a most inconspicuous yet very abundant one with tiny pebble-like white fruits, proved to be a most exciting find, for this Whorled Nut Sedge (*Scleria verticillata*) was previously known in the state from only one station in southeastern Wisconsin (Delavan, Walworth Co.).

The marly lake itself has some large colonies of yellow Spatterdock (*Nuphar advena*), two species of

the carnivorous Bladderwort (*Utricularia intermedia, U. vulgaris*), and other pondweeds.

At the south end, bordering the meadow, was a healthy stand of Poison Sumac (*Rhus vernix*), from which visitors will want to keep a healthy distance; then a steep, densely-wooded slope with Columbine (*Aquilegia canadensis*), Scotch Bluebell (*Campanula rotundifolia*), Sandwort (*Arenaria lateriflora*), Wild Geranium (*Geranium maculatum*), and probably many spring flowers that had withdrawn to their roots without a trace. Finally, on top of the hills above the lake, rather extensive, grazed "oak-openings" and very sandy prairie with abundant Needle Grass (*Stipa spartea*), Side-oats Grama (*Bouteloua curtipendula*), Grama Grass (*Bouteloua hirsuta*), Jointweed (*Polygonella articulata*), Low Juniper (*Juniperus communis* var. *depressa*), and the pink Fame Flower (*Talinum rugospermum*). On one open patch there survived, despite the grazing, some of the typical dry prairie species: Leadplant (*Amorpha canescens*), Prairie Cinquefoil (*Potentilla arguta*), Purple and White Prairie Clover (*Petalostemon purpureum, P. candidum*), Leonard's Skullcap (*Scutellaria leonardii*), the brilliantly-orange Puccoons (*Lithospermum canescens, L. croceum*), and a number of milkweeds (*Asclepias* ssp.), some at their northernmost recorded stations in Wisconsin.

A few prairie species, which apparently were exterminated by cows, still grow on the other side of the fence along the roadside of County Trunk F. Thus we may expect that the beautiful silky Aster (*A. sericeus*), will re-seed within these 35 acres, provided the roadsides are not sprayed with 2-4-D. Now that grazing has been stopped and occasional burning is practiced, the prairie should rival the sedge meadow in color and abundance of flowers.

Many of the flowers listed by Muir were not seen. Of the Michigan Lily (*Lilium michiganense*), there was only one plant, and that in a roadside ditch off the grounds. The many orchids that Muir listed may still be there (or possibly on the other side of the lake which is still in private hands), and we shall look for them at an earlier season next year.

With his backyard containing such a great diversity of plant life, only a small portion of which is listed above, it is not surprising that young John Muir received the great stimulation that enabled him to become one of America's most influential naturalists and conservationists. It is therefore highly fitting to preserve this spot, not only for the inherent richness of the flora, but also as a memorial to a man with much wisdom and vision. The many interested persons and organizations of Marquette County, and all the others responsible for setting aside this living monument, deserve our sincere thanks.

John Thomas Curtis • 1913–1961

By David Mladenoff & Robert Burgess

Professor Curtis was born in Waukesha on September 20, 1913, 20 miles west of Milwaukee. John received his BA from Carroll College in 1934 and his PhD from UW–Madison in 1937. He published his first scientific paper, "Bird Migration," in 1932 in BIOS 3:82-90. By the time he received his PhD he published 8 more scientific papers on ornithology, radiation effects on microorganisms, and orchid taxonomy/physiology. His early training was as a plant physiologist, and during World War II, he directed a research institute in Haiti, where he studied the potential of *Cryptostegia* to produce rubber.

In 1946, Curtis transferred his energies from plant physiology to plant ecology. He felt that physiological studies could best be interpreted in the light of the responses of plants growing under natural conditions. With many graduate students, he devised new field sampling methods, inventoried the plant communities of Wisconsin, and rediscovered, revised and championed the continuum theory of plant communities based on quantitative measurements. Their collective work formed the basis for his book: *The Vegetation of Wisconsin,* published in 1959. Curtis was a brilliant teacher, and his plant ecology course inspired many students. His incisive analytical thought process provided invaluable aid to programs throughout the campus.

Curtis was elected a Fellow of the American Association for the Advancement of Science in December 1947. He was appointed a Research Associate in Botany at the Milwaukee Public Museum in March of 1955. After his death in 1961 the UW Arboretum prairie was named the "John T. Curtis Prairie" with official ceremonies taking place in October 1962. Following the ceremony, the Friends of the Arboretum was organized and became major supporters of the Arboretum. In 1964, the Curtis Memorial Scientific Area was dedicated in Wyalusing State Park, and in 1966, the John Curtis House Floor 5-b in the "A" wing of Witte Hall was dedicated to his memory.

Curtis produced more than 110 papers, reviews, and books during his tenure at UW–Madison.

Many of them expressed strong advocacy for the conservation of natural resources. He received two Guggenheim Fellowships. He served on the State Board for the Preservation of Scientific Areas and review panels for the National Science Foundation and the Atomic Energy Commission. Dr John Curtis died on June 7, 1961, after a long illness.

News from the Botany Greenhouses

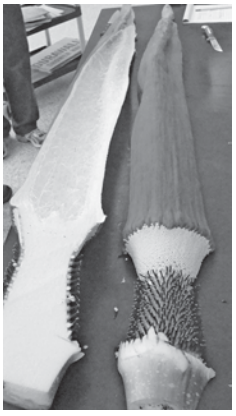
Early in 2009, **Big Bucky,** our record-setting *Amorphophallus titanum,* bloomed not once but twice within weeks. The first bloom was self-pollinated and is now producing fruit. The second bloom was turned into a herbarium specimen. Next, **Little Stinker**, our smallest and cutest Titan Arum, got into the act. First came two complex leaf structures, then a flower.

Since a titan arum issues either a leaf or a flower, never both at once, our wealth of titan blooms evidently indicate that the massive bulbs have split, and each producing either a leaf or a bloom. We have to wait until these two plants enter dormancy, when we can check the state of their bulbs. Perhaps we will have to rewrite botanical history!

Other Corpse flower blooms (from seedlings of Big Bucky's historic first bloom in 2001) occurred at the Milwaukee Public Museum in November 2008, and at Madison's Olbrich Gardens in November 2009.

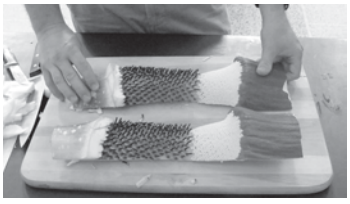
The "buckettes" Two blooms from Big Bucky 2009

Greenhouse Director Mo Fayyaz, Herbarium Director Ken Cameron, and Curators Ted Cochrane and Mark Wetter examine the Patient



Whacked in half

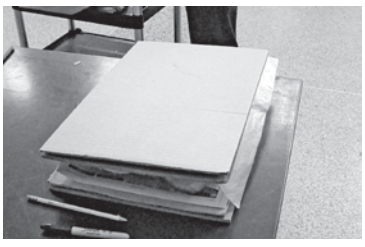
The spathe



The privates

Making an herbarium specimen out of a Titan Arum bloom.

Sponges



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News from the Wisconsin State Herbarium (WIS)

Educational Outreach

In addition to providing educational resources for courses taught within the Department of Botany (e.g., "Vascular Flora of Wisconsin" and "Plant Systematics"), the Herbarium added several extra-departmental programs this year. As part of a new course in "Museum Studies" launched by the UW–Zoology Museum, Herbarium staff provided instruction on plant collecting, preservation, and curation. A course on the "History of Science, Technology, and Medicine" also added a Herbarium module in which students study digital images of plants collected by Linnaeus 250 years ago, then visit Birge Hall to examine, touch, and smell those species in living form and as pressed herbarium specimens. They compare and contrast the value of information available electronically with the museum specimens. In addition, Mark Wetter, Senior Academic Curator, mentored interns from Museum Studies who earned academic credit for the experience. Each intern helped the Herbarium with daily tasks (e.g., mount specimens, file, and process loans), in addition to conducting a semester-long project, such as processing a backlog collection, curating a family or group of families, or databasing specimens

Field Research Report: Traveling in Colombia

With support from a UW Academic Staff Professional Development Grant, Theodore S. Cochrane, Senior Academic Curator, visited Colombia for three weeks during July and August. His work was part of a long-term taxonomic revision of the vascular plant genus *Podandrogyne*, of the family Cleomaceae, which ranges along the main cordilleras from Guatemala to Bolivia. Ted worked in the National Herbarium of Colombia in Bogotá and in three herbaria in Medellín (U. of Antioquia, National U. of Colombia-Medellín Center, and the Joaquín Antonio Uribe Botanical Garden). He checked identities of museum specimens, photographed them, accumulated data for formal botanical descriptions, and cited collections of each taxon to voucher the biological record. He also conducted field work in remnant patches of cloud forest and ravines with local Colombian botanists and graduate students. Accessory benefits included the good relations that Ted established with Colombian botanists, with an eye toward future specimen exchanges and research collaborations, while improving his ability to advise graduate students who might be contemplating research in tropical settings.

Celebrating Darwin's Birthday

On February 12, 2009, the world celebrated Charles Darwin's 200th birthday, and the Wisconsin State Herbarium joined the party. Darwin's contributions to the study of evolution and human origins are well known, but his botanical research is underappreciated. He published eight books on domesticated plants, insectivorous plants, climbing plants, orchids, and other botanical subjects. A new exhibit in the Birge Hall lobby features three herbarium specimens of tree daisies (*Scalesia* species) collected from the Galapagos Islands and a map of the islands from the Herbarium's collection. These help illustrate Darwin's travels aboard the Beagle and a book from the Herbarium's library collection showcases his fascination with orchid pollination by insects. Nine herbarium specimens of horsetail (*Equisetum arvense*) provide an example of variation in plants species—a topic of special interest to Darwin. The tribute to Darwin will be on display at least through January 2010.

Lichens Go Live

With financial support from the Botanical Club of Wisconsin and guidance from Dr. Jim Bennett, Honorary Fellow in Botany, the Wisconsin State Herbarium updated its Wisconsin Lichens website: www.botany.wisc.edu/wislichens/ and made the database searchable online. Phase I of the effort targets fruticose and foliose macrolichens from Wisconsin, which total approximately 8,000 from the entire WIS collection of approximately 136,000 lichen specimens. Future databasing efforts within this world class collection will make it easier to share specimen information with researchers around the world.

Type Specimen Digitization Update

A two-year project funded by the Andrew W. Mellon Foundation databased and imaged an estimated 4,500 'type' specimens. Herbarium Director, Ken Cameron, and Senior Curator, Mark

Wetter, travelled to New York for hands-on training by the staff of The New York Botanical Garden. They also attended the Annual Meeting of the international initiative in Buenos Aires, Argentina. Funds were used to purchase a dedicated scanner and computer and to hire a graduate student Project Assistant.

Efforts began with vascular plants, and a painstaking search through the large collection led to approximately 3,600 vascular plant type specimens. Some 2,377 (66%) of these specimens have been databased, and 1,899 (52%) of them have been imaged. In the coming year attention will turn to the fungi, lichen, and bryophyte collections. Watch the WIS website for data and specimen images.

Research News

This has been a very exciting and busy year in the **Baum lab.** David Baum has assumed a lot more responsibilities this year, as he is now chair of the Department. He was also fortunate to be awarded a Hamel Family, L&S Faculty Fellows Award and to finally get around to publishing a long overdue theoretical paper on the "species problem:" how species are defined and how they are delimited in practice. The lab has grown quite a bit: two new graduate students joined our lab and two international scholars visited for a few months.

Abigail Mazie, one of the new graduate students, joined us from Pittsburgh, and will be expanding on the evo-devo area of the lab by focusing her dissertation on the evolution of trichomes in Brassicaceae. She received an honorable mention from the NSF Graduate Research Fellowship Program based on a proposal for this work. **Pulikesi Rajangam,** who joined us this year from India, will embark on an evo-devo exploration as well, using transgenomics to identify genes involved in determining seed and fruit development in *Arabidopsis* and *Leavenworthia*. We are very excited to have them, and look forward to hearing about their future findings!

Two very bright scholars came to visit us this year. **Maria Logacheva,** a post-doctoral scientist from Moscow, Russia, joined us for five months. She took advantage of our evo-devo and plant transformation expertise to study floral development in buckwheat (of pancake fame), an important crop in Russia. **Marília Cristina Duarte,** a graduate student from São Paulo, Brazil, stayed with us for four months. Her dissertation involves studying the taxonomy and phylogeny of *Eriotheca* a mainly Brazilian genus of Bombacoideae. Due to our long history of work in Malvaceae and Bombacoideae systematics, she joined us to collect data for her phylogenetic analyses and in so doing to help resolve the broader phylogeny of Bombacoideae.

Baum lab veterans also made a lot progress on their projects. Post-doc **Ning Liu** did a diversity of experiments to understand how the TERMINAL FLOWER1 gene has diverged in function between *Arabidopsis* and *Leavenworthia*. **Ivalú Cacho,** who recently graduated, conducted extensive phylogenetic work on the systematics of a subclade of *Euphorbia*. In addition to the systematics work, she discovered an exciting case of a circum-Caribbean ring species. She has submitted the systematics work for publication and is currently wrapping up the ring-species work. Ivalú was a the recipient for the Judy Croxdale Award for graduate women in science. This is the first time this award is being granted, and it is an honor to the Baum Lab that one of our members received such distinction. **Raul Correa** made a lot of progress this year in his transgenomics research. In this ambitious project, Raul moved very large pieces of DNA from *Leavenworthia alabamica* to *Arabidopsis thaliana,* hoping to uncover genes responsible for the differences in plant architecture that exist between these two species. He found that some transgenes caused some very interesting changes in the development of *Arabidopsis* plants. He is in the process of identifying the genes that are present in these clones, and he is currently writing up this work. Raul hopes to graduate next year. **Talline Martins** made a lot of progress in her quest to determine how petal spots are made in *Clarkia gracilis*. She found that

a gene responsible for production of petal pigment is only active where petal spots are made. She is also in the process of writing-up her work. Talline was awarded a Ford Foundation Diversity Dissertation Fellowship for the next (and final) year of her graduate training. She hopes to use this time to finish up her work and publish her findings.

The Baum lab continues to have a tradition of mentoring undergraduate students, and this year we were fortunate to have several outstanding students that greatly contributed to several projects in the lab. **Amanda Teschke** was an excellent research assistant for Ning, and is now spending the summer in South Africa pursuing her interests in paleoanthropology. **Rebecka Pralle,** who just graduated, **Tanjina Shabu,** and **Jeremy Berg** were great assets in the transgenomics project. They helped Raul with extensive plant transformations and phenotyping. Jeremy is a multi-tasker and also works on the *Clarkia* project. He was one of this year's recipients for the Frits Went Award. This scholarship will allow him to work on the activity of proteins involved in petal spot formation. **Steven Blinka** also works on the *Clarkia* project, and has plans to use particle bombardment to introduce pigment genes into unspotted petals to see if he can induce the production of pigment spots. He graduated and applied to medical school in the fall. We wish them all good luck in the years ahead!

Ken Cameron's Lab came into being this past year as he moved into laboratory space in Birge Hall 222. The lab is now equipped to conduct molecular systematics research, with adjacent space designated for graduate students, undergraduates, and visiting scientists. A bench dedicated to electrophoresis and gel-imaging is being shared by the Cameron and Baum labs. New silver-block thermalcyclers for gene amplification, pipettes, freezers, and computers have made the lab fully functional.

Among the first residents to collect data this year have been undergraduate scholars. **Matt Hintz**, a Biology Honors student from the Minneapolis area, and Bioengineering student **David Campbell** from Milwaukee, spent Spring 2009 sampling leaf fragments of native tree species from dried specimens with the Wisconsin State Herbarium. In the lab, DNA was extracted from these samples and genes amplified by PCR to evaluate the feasibility of acquiring samples from museum collections to be used in constructing a library of so-called "DNA barcodes". The preliminary results of their study were presented as a poster at the 2009 campus wide undergraduate research symposium held in the Memorial Union.

Two new graduate students are: **Brian Sidoti,** who completed a B.S. degree at Colby College and a M.S. degree at Florida International University; his interests are systematics and biogeography of Caribbean Bromeliaceae, especially the *Tillandsia fasciculata* complex; and **Rafael Arevalo**, from Bogota, Colombia; he also researched Bromeliaceae systematics for his M.S. degree, but now intends to explore the Orchidacaceae, with an emphasis on phylogeny, taxonomy, and pollination biology of the Neotropical orchid genus *Mormolyca*. Rafael's Davis Research Fund travel grant allowed him to study important herbarium collections in Boston, New York, Washington, and St. Louis.

During summer 2009, a graduate student visited from Medellin, Colombia, supported by a number of small grants and donations from various international and national orchid societies and organizations. **Elsy Buitrago** sequenced DNA from species of the orchid genus *Poroglossum* in order to reconstruct the phylogeny of this group. Her M.S. research documented their vegetative and floral anatomy, which is remarkable in that the flowers have an active trigger mechanism that quickly closes the flower, thereby trapping unsuspecting insect visitors (not unlike a Venus' flytrap). Elsy hopes to return to the USA next year to pursue a Ph.D. degree.

At the 2009 annual meeting of the North American Native Orchid Conference in Green Bay, Ken spoke and all participated in field excursions to see and photograph rare native orchids. The Colombians in the party were especially thrilled to see hundreds of pink lady's slippers (*Cypripedium acaule*)! Ken, Brian, and Rafael also traveled to Snowbird, Utah, for the Botanical Society's 2009 Meeting.

At the invitation of the People's Government of Guanxi Province, Ken traveled to China and gave the a keynote speech at the first international orchid conservation symposium, held in rural Leye County in southwest Guanxi not far from the Vietnam border. The symposium formally dedicated the Yachang Nature Reserve, China's first natural area dedicated to the protection of endangered orchids. Botanists have already identified more than 130 orchid species within the Yachang Reserve, a small forested area of only 220 km^2. These include 14 species of *Cymbidium* which are highly endangered in China

due to over-collecting for the traditional medicine market. Through on-site sustainable harvest and cultivation practices, as well as international research collaboration, the Yachang Reserve represents a bright spot for plant conservation in rapidly developing China. Dr. Cameron remained in China for three weeks to collect specimens and strengthen his collaboration with botanists at Zhejiang University in Hangzhou.

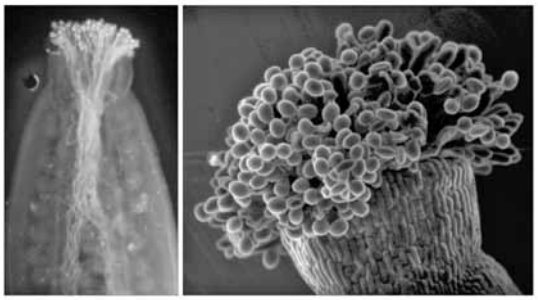
Eve Emshwiller's Lab had another productive year of research in the areas of ethnobotany, crop evolution, and systematics. **Katie Konchar** completed her M.S. degree in Botany in summer 2009 on *Fritillaria cirrhosa*, a member of the Liliaceae used medicinally in China to suppress cough. Katie analyzed alkaloid content in the bulbs, focusing on assessing the accuracy of common beliefs about bulb medicinal quality in relation to harvest time, altitude, phenology, and whether the plants were cultivated or harvested from the wild. Katie is the first graduate student from the Emshwiller lab to finish her degree – we will miss her!

Brian Walsh, Ph.D. student, is working on a phylogeny of the North American *Chenopodium*, which will form the framework for study of the origins for the extinct North American domesticated *Chenopodium*. This past year he collected *Chenopodium* samples (with the support of the Davis Fund) and found informative genetic regions to use in constructing a phylogeny of the genus. In the coming year, he plans to collect more samples for analysis, as well as begin work with ancient DNA from archeological samples of the extinct *Chenopodium* domesticate. **Andy Gardner,** Ph.D. student, mentored several undergraduate students in the lab, and together they generated DNA sequence data of both nuclear and chloroplast loci for most of the Mexican and North American species needed to build a phylogeny for the bulb-bearing *Oxalis*. In addition, Andy pioneered work on methods to quantify and compare bulb morphology throughout the genus, to examine the evolutionary history of bulbs in the genus *Oxalis*. He used georeferenced specimens to create distribution maps for the bulb-bearing species of the New World, which he will compare with climate data, quantified bulb morphology, and results of molecular phylogenetic analysis, to create niche models to test correlations of ecological factors (e.g., climate) with quantified morphological characters. **Jane Bradbury,** Ph.D. student, took a second research trip to Peru to compare pH in tubers of cultivated "oca," *Oxalis tuberosa*, with help from the Davis Research Fund. Jane is investigating the potential biochemical differences between two types of oca, those that are usually eaten fresh after sunning ("sweet") and those that are processed into a dried, storable food product known as *khaya* ("sour" ocas). Her recent research in Peru suggests a meaningful difference in acid production in the two categories of oca tubers. Next, Jane aims to begin agricultural trials with oca in Peru, to acquire more controlled data on organic acid production in oca tubers. **Mark Lawton's** Senior Thesis reviewed the literature on the health benefits of the anthocyanins found in mulberries, an additional reason to enjoy these common summer fruits of Wisconsin!

Dr. Emshwiller returned to her earlier question about the origins of the genomes of octoploid oca, to further address this issue using different sources of data than in her earlier research. Interestingly, these new sources of data tell a more complex story of the origins of the crop. Results with AFLP fingerprinting data for the crop and four wild, tuber-bearing taxa, generated by former post-doc **Terra Theim** have been accepted for publication by the *American Journal of Botany*. These results challenge some of the conclusions of Eve's earlier work – keeping the research ever interesting! To further examine the same question, DNA sequence data of chloroplast data have been generated as part of the research projects of **Jane Bradbury** and undergraduates **Emily Hatas** and **Idrees Tariq**. These data point to Bolivian and Argentinean Andes as the possible area of the origin of oca, suggesting the need for more thorough sampling in those areas, and more exciting adventures ahead for the Emshwiller team! Most of the lab attended the 50th annual meeting of the Society for Economic Botany Conference in Charleston, SC, in early June. At that meeting, Dr. Emshwiller began a year term as President of the society. Oral presentations were given by Katie Konchar, Jane Bradbury, Brian Walsh, and Eve Emshwiller; and Jane Bradbury presented a poster, for which she received an honorable mention. Andy Gardner and Eve Emshwiller gave talks at the Botany and Mycology 2009 conference in Utah.

Fernandez Lab - Members of an ancient group of regulatory factors regulate pollen germination and tube growth.

In **Donna Fernandez's lab, Benjamin Adamczyk** completed his Ph.D and a multi-year study of the MIKC* factors in Arabidopsis. These six genes form a distinct clade within the larger MADS-box family of transcriptional regulators. Genes encoding MIKC* factors have been found in mosses and lycopods as well as seed plants. Using genetics and analyses of RNA expression, Ben showed that, although this group is ancient in origin, the Arabidopsis factors primarily play roles in pollen development. If mutations affecting two key genes (*AGAMOUS-LIKE 104* and *AGAMOUS-LIKE 66*) are combined, the double mutant is extremely infertile. In fact, seed is rarely produced even if the plants are "helped" with a pair of tweezers! Ben showed that this is because the transferred pollen either fail to germinate on the stigma or have limited and slow tube growth. In the presence of competing wild type pollen, the mutant pollen don't stand a chance. Ben used microarray analyses to look at changes in gene expression in the mutants. Almost 4500 genes show changes in transcript abundance in the mutants. The major results of Ben's Ph.D. work appeared in: Adamczyk, B.J. and D.E. Fernandez (2009), Plant Physiology 149: 1712-1723.



Mutant pollen

Life in **Simon Gilroy's lab** is very exciting and busy after being in Madison two years and becoming fully settled. The three postdocs who moved with the lab (**Sarah Swanson, Gaby Monshausen and Peter Dowd**) are all working on projects ranging from defining the cellular mechanisms behind plant touch responses, to the mode of hormone action during rice seed germination. In May, a new graduate student, **Alexandra Chanoca,** joined us from Brazil to work on the molecular mechanisms behind root branching. Let's hope the Madison winter doesn't shock her too much. Another graduate student, **Greg Richter** worked on the root branching project for several years, defended his thesis at the beginning of the year, and moved on to a postdoctoral position in Purdue (congratulations Greg!). In November, **Dr. Won-Gyu Choi** will be joining us from the University of Tennesee as a postdoc on a new NASA-funded joint project with the Spalding and Masson labs. We will all apply state-of-the art imaging technologies to see (literally) how plants sense and respond to gravity. Two undergraduates, are also great help. **Michael Gardner** has been working with Peter Dowd on our rice germination project and **Scott Klasek** signed on to help Sarah Swanson with our Ca^{2+} signaling work. Both balance class work with time in the lab, now that summer is over! We are also very excited that **Gaby Monshausen** accepted an assistant professorship in the Biology Department at Penn State. We will be sad to see her leave, but we all wish her the success she richly deserves as she takes the helm of her own lab.

As for me (Simon), I had a busy summer working on the steering committee for a review of the next 10 year's basic biological and physical research for NASA's space program. It involved quite a few trips to Washington but the big plus has been learning a lot about NASA and meeting some great new colleagues in areas ranging from astronaut physiology to combustion physics! The review will be finished early next year. Yes, there has been a long history of plant research by NASA. One of the agency's goals is to understand how gravity affects all kinds of life. Gravity does have profound effects on the development plant architecture, and space offers a unique environment in which to ask how gravity affects plant growth and how gravity-sensing systems work. Plants are also central to NASA's plans for a bio-regenerative life support system to provide food and to purify the air and water in long-duration space flight, possibly for outposts on the moon and, in the distant future, even an expedition to Mars.

Linda Graham's lab is working with UW-Madison engineering colleagues to design methods and devices for growing algae to clean pollutants from effluents and use the biomass to produce renewable fuels and other useful chemicals. We are supported by a grant from the State of Wisconsin, specifically the Wisconsin Energy Independence Fund. Although numerous labs are researching the utility of algae for biodiesel, our approach is a bit different in that we focus on environmental remediation and use algae

that are otherwise considered to be nuisance species, which are quite robust in cultivation. Our goal is to develop the renewable fuels production process well enough that it can subsidize the cost of effluent treatment. We are strongly motivated to reduce the amount of minerals in wastewater that contribute to formation of oceanic dead zones. We are also interested in using algae to sequester carbon, as a way helping to reduce atmospheric CO^2. Our team includes 3 faculty, 2 postdocs, several grad students, 2 technicians, 2 honorary fellows, and several engineering undergraduates.

Reese Zulkifly and **Ben (Izak) Smith** hunting for useful algae in L. Mendota

Don Waller's Lab continues to pursue work comparing the composition of Wisconsin Forests today to what these forests were like when they were surveyed by John Curtis and his students in the 1940s and 50s. The recent paper in Conservation Biology with lead author **Dave Rogers** (Botany PhD 2006) demonstrated the 'extinction debt' - that forests fragmented by urbanization, housing, and roads are declining in plant abundance and diversity across southern Wisconsin. This earned a story in U.S. News and World Report. They also launched a new website to document the work done by our colleagues of the past and present relating to the work of the UW-Madison Plant Ecology Laboratory (PEL). This website, implemented by undergraduate **Logan Peterman**, highlights the work done by Curtis and his contemporaries and sharing findings from recent resurveys of these sites. See: www.botany.wisc.edu/PEL.

The lab continues NSF- and USDA-funded projects. The new aspect involves plant functional traits, what they can tell us about how and why species (including invasives) respond to changes in local and landscape conditions. Our field team (including **Chris Noll**, **Lola Hoon** and **Mary Crawford**) collected data on plant traits and our GIS team (**Steve Horn** and **Simon Ignatowski**) extracted landscape information from fly-over photos. The combined results provide an overall picture of how human-induced landscape disturbance interacts with plant traits to change species abundances. Post-Doc **Kathryn Amatangelo** is overseeing these efforts while investigating community changes along an edaphic gradient in northern upland forests. High school senior **Sam Greene** worked with us as a Madison School Summer Research Intern. Sam took his project on the plasticity of plant traits and adaptation to climate change to the International Science Fair.

Two graduate students completed their M.S. Degrees: **Ann Busche** (M.S. Conservation Biology & Sustainable Development) evaluated how forest certification (FSC, etc.) worked at two Mexican ejidos (forestry collectives) while **Sarah Klionsky** (M.S. Botany and Environment and Resources) studied the above- and below-ground effects of *Rhamnus cathartica* (European buckthorn) on four Wisconsin understory forbs.

Five students marched towards their PhD's. **Sarah Johnson** (Botany) finished her field studies, resampling 50 floodplain forests originally sampled by Curtis student George Ware (1955). **Erika Mudrak** (Botany) finished up her field work and embarked on analyzing how understory plant species are distributed spatially within and among forests across Wisconsin. She is comparing two mapped forests using data collected in the late 1950s by Botany alumni Gwen Struik Bray (1960) and Robert Burgess (1961). **Evelyn Williams** (Botany) continued her field studies in the Upper Peninsula of Michigan on the genetics and ecology of the 'moonwort' ferns in the genus *Botrychium*. Undergraduate **Crys Bochte** assisted by completing her senior thesis on the morphometrics of these ferns.. **Michelle Haynes** (Botany) worked in Yunnan, China all year investigating how climate change, shifts in fire management, and yak grazing affect highly diverse alpine plant communities in and near the Bai Ma Nature Reserve. She presented this work at the Society for Conservation Biology meeting in Beijing in July and expanded her data collection in summer, exploring functional traits and biomass in exclosures. Her work is part of NSF-IGERT Biodiversity Conservation and Sustainable Development project in SW China. **Alycia Crall** (Environment and Resources) is studying what motivates people to become 'citizen scientists'

concerned about invasive species, the quality of the data they collect, and how their data can be harnessed to answer important research questions. She organized a large event at the UW Arboretum to test the effectiveness of various methods used to train citizen scientists, and she collected data on volunteers' ability to recognize and track invasive species in the field.

Finally, **Don Waller** (reluctantly) returned from his sabbatical in Montpellier, France, ready for another year of teaching, service (chairing the Biological Aspects of Conservation major), and research. He managed to do about half the writing he had hoped to, but this included the long-awaited Deer Impact Monitoring Report for the National Park Service and papers with his present and past students. Don also extended his interest in carnivores to include plants by exploring the ecological conditions and morphological steps through which Venus's Flytrap evolved its remarkable snap-trap. He and his co-author Tom Gibson endeavored to channel Darwin for this work which just appeared in a special issue of The New Phytologist on 'Plant adaptation, following in Darwin's footsteps.'

Joy Zedler's Lab • In June 2009, a year of planning culminated in the international conference of the Society of Wetland Scientists (SWS) at Monona Terrace. We broke the Society's record for attendance (over 700 registered) and heard many compliments on the quality of the science and the plenary talks. Congratulations to **Beth Lawrence** for receiving the "Best Student Paper" award from SWS. This is not only great recognition for Beth but also a strong endorsement of our lab-meeting peer-review process, in which all participate. Beth was also awarded an O.N. Allen Fellowship from the Botany Department and an NSF Doctoral Dissertation Improvement Grant to support her continuing investigation of *Carex stricta* tussock formation, persistence, and ability to sequester carbon. **Erik Olson**, MS student in the Nelson Inst., was a summer intern for the Wildlife Conservation Society based in Quito, Ecuador. His field work focused on camera-trap surveys for large mammals in *indigenas* communities within the Amazon rainforest and the Cuyabeno National Park. He also assisted turtle conservation and environmental education programs within Yasuni National Park; the development of an underwater environmental interpretation center within Nueva Providencia, a Kichwa community; and a water quality assessment of the Cuyabeno National Park done by the Cofan Foundation. Back at the Society office, he used the camera-trap imagery to tally jaguars, ocelots, pacas, and giant armadillos and helped analyze data to estimate population attributes. After work (of course), he enjoyed *chicha*, the local drink based on manioc or yucca. In 2009-10, his Doris Duke fellowship will support the completion of his thesis (advised jointly by Dr. Steve Ventura) on the invasive Eurasian water milfoil in northwestern Wisconsin. Erik and his wife are expecting their first child in October. **Sally Gallagher's** is helping the Arboretum keep track of its stormwater management projects and assist researchers who are integrating research and stormwater management. She also helps Arboretum Ecologist Brad Herrick interact with the consulting engineers, whose goals and priorities are not always compatible with those of research and ecosystem management. Sally continued to investigate the effect of adding nitrogen and manipulating water levels on *Carex stricta*, the native tussock sedge. This research will help both scientists and restorationists plan and implement wetland restoration projects. Sally presented her findings at the SWS conference. **Jim Doherty** and UM-Duluth Herbarium Curator Deb Pomroy completed a baseline survey of vegetation at Grand Portage National Monument, which the fall 2009 Adaptive Restoration class (Botany 670) is using to design plans for restoring and sustaining populations of four plant species—sweetgrass, sunchokes, chives and caraway—all of which are culturally important at this historical, fur-trading site at the northeastermost corner of Minnesota. For his thesis, Jim is testing a popular ecological theory, that diversity increases ecosystem functioning. To the contrary, Jim found that aboveground productivity decreased with species richness in the Arboretum's Curtis Prairie and in a restored salt marsh in southern California. In 2009, he continued the search for an ecosystem function that might increase with diversity by testing for increased resilience in relation to species richness. Dr . **Tracy Rittenhouse**, amphibian ecologist, reared multiple frog species in the Arboretum Mesocosm Facility and found that supplying reed canary grass in abundance as a base of the food web impaired frog development. In Fall 2009, our lab expanded to include **Hadley Boehm** (Nelson Institute graduate student), **Nate Fayram** (Wisconsin DNR, who is working on *Carex*

pensylvanica as an invasive plant in DNR restoration projects), **Chun Ma** (visiting PhD student from Nanking U. near Beijing), and Dr. **Yaffa Grossman** (on sabbatical from Beloit College).

Two new leaflets were uploaded to the web: The Botany 950 seminar included "a galaxy of presentations" in celebration of the Arboretum's 75th **Anniversary Seminar**. Notable speakers joined us by videoconference and provided their views on the future of Restoration Ecology. A summary of all contributions including students' summaries of key advances in restoration over the past 75 years, appears in a new Leaflet. Also in celebration of the Arboretum's anniversary, Mark Wegener, Arboretum Geospatial Specialist, provided a new collection of maps for Leaflet #18, entitled **Taking Stock**, which describes Arboretum properties and displays historical soils, storm water inflows, current land status, and other background information of use to those who use the Arboretum in their teaching and research, as well as the public. Both leaflets can be downloaded from http://botany.wisc.edu/zedler/leaflets.html.

Arboretum Sandhill Crane family

Alumni Updates

Alexander, David (MS 2005) • is working at an Environmental Consulting Firm in Austin, TX.

Alexander, Mara (PhD 2005 Limnology w/Botany Minor) • is working for the Fish & Wildlife Service south Austin, TX. Mara previously worked in the Hotchkiss lab.

Boers, Aaron (PhD 2006) • is an environmental consultant in Houston, TX working for URS Corp.

Bogen, Sarah (MS 2007 Land Res) • is working for the Wisconsin DNR. Sarah worked in the Hotchkiss lab.

Bonilla-Warford, Cristina (MS 2000) • is the Coordinator of Teacher Resources at the Peggy Notebaert Nature Museum in Chicago.

Bonin, Catherine • (MS 2007) • is doctoral student at Virginia Tech.

Booth, Robert • is an Assistant Professor @ Lehigh University in PA. Robert was an Assistant Scientist in the Hotchkiss lab prior to accepting the Lehigh position.

Cacho, Ivalu (PhD 2009) • accepted a Post Doc position at the University of California-Davis.

Callahan, Hilary (PhD 1996) • was a co-leader for the symposia "Phylogenetic and functional patterns of host plants and their associated fungi: implications for symbiotic co-evolution, community interactions, and ecosystem processes" for the Botany & Mycology conference 2009 along with Louise Comas.

Cameron, John (BS 2008) • is serving in the Peace Corps in Malawi AFRICA. John was in the Spalding lab prior to joining the Peace Corps.

Comas, Louise (BS 1993) • is a Restoration Ecology Technician at the Washington Conservation Corps/Americorps Program. Louise received a PhD from Penn State University.

Coop, Jonathan (PhD 2005) • is a Colorado-based ecologist engaged in teaching, research, and conservation projects across a variety of mountain ecosystems.

Ewers, Frank (BS 1976) • received his PhD in 1982 from the University of California-Berkeley and then went on to do postdoctoral work at Harvard Forest from 1982-1984. From 1984 until 2006 he was on the faculty at Michigan State University and since January 2007 he has been the Chair of the Biology Department at Cal Poly Pomona. His research is on the anatomy and physiological ecology of woody plants, including tropical lianas, mangrove trees, and California native plants. Frank has many fond memories of his days as

an undergraduate in the Botany Department at the UW, and he greatly appreciates all the caring personal attention and encouragement he received from the Botany professor and graduate students. The faculty challenged the students to think deeply about the subject matter; their enthusiasm for plants, algae and fungi was overwhelming. The field trips and lab exercises were awesome, as were opportunities to pursue individual research projects. The passionate Botany professors from that time have all retired or passed away, but they are hardly forgotten. Many of the Teaching Assistants from that time are still enjoying outstanding careers in the plant sciences, as are so many of Frank's former classmates.

Foster, Susan (BS 1975) • is a Professor and Chair of the Biology Department at Clark University. She is president elect of the Animal Behavior Society and will take office in 2009-10. Susan received her PhD from the University of Washington in 1984.

Frieswyk, Christin (PhD 2005) • was a researcher at Cleveland Botanical Garden. She moved to Michigan in Fall 2008.

Fuller, Douglas (BS 1983/MA 1988 Ibero-American Studies) • is an Associate Professor of Geography at the University of Miami. His work deals with remote sensing of plant canopies and biogeography; work that was inspired by the terrific courses in Botany at the UW. He uses imagery from weather and other satellites to map and monitor patterns of forest fragmentation, tropical deforestation, wildfires, invasive species, and other phenomena related to human impacts on the biosphere. Doug teaches physical geography, remote sensing, and GIS. Doug was a contemporary of Tim Dickson, taking many classes together, including Dendrology with Dr Adams and Physiology with Dr Keegstra. After leaving Madison, Douglas worked for the World Wildlife Fund, then returned to the UW to complete his master's degree. From there, he completed a PhD at the University of Maryland, working on the optical properties of savanna plant canopies and foliar phenology.

Haber, James (BS 1954; MS 1957; PhD 1959) • retired as a Professor of Botany at the University of Montana @ Missoula. James arrived on the UW campus just 2 months after Walter Mueggler had graduated. His major professor here was Jon Curtis. James got to know many early day Curtis-Cottam students as well as interacting with his own cohort of students and then greeting the new arrivals as he was leaving. Both James Walt spent their entire careers in the Northern Rocky Mountains, mostly in Montana; Walt as a research scientist at the Bozeman Forestry Sciences lab, and I, at the University of Montana in Missoula, as a professor of plant ecology from 1960 until 1995. Over the many decades Walt and I met at meetings and exchanged information about plant ecology problems in the Intermountain West. I still hike and botanize the mountains in western Montant also known as "The Last Best Place!"

Hall, Steven (MS 2008) • is a doctoral student at UC-Berkeley.

Hapeman, Jeffrey (MS 1997) • founded Network Technology Solutions, Inc and held the position of Chief Executive Officer from Nov 1997 • May 2003 when he sold the business; he then took a position as Chief Technology Officer with The Clifton Gunderson, LLP one of the nation's largest certified public accounting and consulting firms from June 2003-May 2007; he currently has the position of Chief Technology Officer with Wilshire Associates, Inc who is a leading global investment technology, investment consulting and investment management firm from May 2007 to the present.

Healy, Michael (MS 2009) • is the Principal Ecologist at Adaptive Restoration LLC in Madison, WI.

Herr-Turoff, Andrea (PhD 2005) • lives in Madison WI.

Hillhouse, Heidi (PhD 2008) • accepted a position as a Post Doctoral Research Associate in the Agronomy Department at the University of Nebraska-Lincoln.

Jelinski, Nick (MS 2007) • is in the Army Reserves, currently serving in Iraq.

Kaplan, Samantha (MS 1994 Geog; PhD 2003 Geog w/Geol minor) • is an Assistant Professor at UW-Stevens Point. Samantha was previously in the Hotchkiss lab.

Kercher, Suzanne (PhD 2003) • is a restoration ecologist and practitioner in Madison WI.

Knauft, David (BS 1973) • was one of 7 or 8 undergrad majors at a time when there were 80 or so graduate students. He cherished his time in Madison and indicated that Botany the curriculum provided an excellent foundation in Botany. He completed a PhD in Plant Breeding & Biometry at Cornel. From there he was on the faculty at the University of Florida for 15 years, teaching genetics, plant breeding, and crop production. He also had a program on breeding and genetics of peanuts, resulting in many cultivars and some utility patents for his work with

high oleic acid peanuts. He became a Fellow of AAAS and three other professional organizations. From there he went into administration and served in the position as head of the Crop Science Department at NC State for five years, then went to the University of Georgia where he served as the Associate Dean for Academic Affairs in the College of agricultural and Environmental Sciences. After 7 years in that position, he went to the Horticulture Department as a breeder of ornamental plants and teacher for plant breeding and organic gardening. This past fall, he accepted an invitation to become the Associate Dean of the Graduate School at the University of Georgia. David enjoys reconnecting with the Botany Department through the Alumni Newsletter.

Koopman, Margaret (PhD 2008) • accepted a position as a Post Doc in the Carstens Lab at Louisiana State University.

Larkin, Daniel J (PhD 2006) • is a postdoctoral fellow in the Biology Dept and Center for Urban Environmental Research and Policy @ Loyola University in Chicago working at the Lake Shore Campus.

Lewis, Daniel (PhD 2008) • accepted a position as a Post Doctoral Research Associate at Wake Forest.

Lindig-Cisneros, Roberto (PhD 2001) • is a professor of Restoration Ecology at UNAM-Moralia in Michoacan, Mexico.

Maurer, Debbie (MS 2001) • is the Restoration Ecologist for the Lake County Forest Preserve in Illinois.

Miller, Nathan (PhD 2009) • accepted a position as a Research Associate here at UW-Madison in the Spalding Lab.

Miller, Rebecca (MS 2001) • works with USDA in northern California.

Morzaria-Luna, Hem Nalini (PhD 2004) • is researching salt marshes in the Gulf of California for the Intercultural Center for the Study of Deserts and Oceans.

Mueggler, Walter (MS 1953) • retired as an Emeritus Scientist/Ecologist for the Intermountain Research Station. Grant Cottam was his major professor. The following notice from page 10 of the "2008 Research Accomplishments: USDA Forest Service, Rocky Mtn Res Sta." The newly established Butler Fork Research Natural Area was dedicated in honor of Walter F Mueggler, a former aspen scientist who worked at the Stations's Forestry Sciences laboratory in Logan, UT for much of his career. This Research Natural Area, located on the Unita-Wasatch-Cache National Forest, southeast of Salt Lake City, provides a much-needed source for studying aspen ecosystems in near-pristine condition.

O'Brien, Erin (MS 2003) • is the Wetlands Policy & Conservation Specialist with the Wisconsin Wetlands Association.

Parks, Brian • is an Associate Research Associate with the Zoology Department here at UW-Madison. Brian worked in the Spalding lab prior to his appointment in the Zoology Department.

Peach, Michelle (MS 2004) • was the manager for The Nature Conservancy's Tug Hill Reserve in upper New York state; she is now pursuing her Ph.D. degree at SUNY.

Peet, Robert (BA 1969; MS 1971) • is Professor of Biology at UNC-Chapel Hill and has been named to the North Carolina State Museum of Natural Sciences Advisory Commission.

Qi, Zhi (PhD 2005) • is a Post Doctoral Fellow in the Plant Science Department of the University of Connecticut in the Danforth Plant Science Center.

Riina, Ricarda (MS 2003; PhD 2006) • is a Post Doctoral Fellow at the University of Michigan in the Department of Ecology & Evolutionary Biology. Her research is focused on floristics, biogeography, conservation, taxonomy, and systematics of plant groups and floras of tropical regions and the Neotropics in particular.

Rogers, David (MS 2003; PhD 2006) • is an Assistant Professor in the Department of Biological Sciences at UW-Parkside.

Rooney, Thomas (PhD 2000) • is an Assistant Professor at Wright State University where he works on both basic and applied problems in population ecology, community ecology, and conservation biology.

Schoennagel, Tania (PhD 2003) • is a Research Associate in the Department of Geography at the University of Colorado-Boulder. Her research addresses the causes and consequences of western forest disturbances, primarily wildfire and insect outbreaks. As a landscape ecologist, she conducts research at multiple spatial and temporal scales to examine: (1) disturbance dynamics and successional patterns, (2) effects of past climate variability and future climate change, and (3) ecological implications of forest management policy and changing land use. She employs field studies, dendrochronology, GIS analyses and spatial modeling to address fundamental ecological aspects of forest management, land-use policy and climate change.

Shake, Roy (MS 1956) • sent the following letter which is typed verbatim. "I enjoyed very much reading the latest updates on the UW Botany/

Ecology programs and wanted to share some things which I enjoyed as Arboretum Botanist 1954-1965. I graduated from Eastern Illinois University with a major in Botany/Zoology and minors in Education and Geology. Upon graduation I applied to Wisconsin, Ohio State & Purdue. (Pretty update for a farm boy from Olvey, Illinois). Within a couple days I received a letter from John Curtis listing 13 assistantships at UW—and he indicated list your order of preference. I selected Arb Bot and within a couple days received a letter—your #1 choice has been approved—How soon can you come? Incidentally, I was later accepted at Purdue & Ohio State. So the trip to Madison. At that time there were 10-12 grad students working with Dr Curtis. Dr Curtis & Dr Cottam shared an office and on my weekly consultations the office was 'hazy' with cigarette smoke. Curtis smoked Phillip Morris & Cottam 'Raleigh 903' as I remember. The graduate students chided Dr Curtis about smoking & lung cancer but he sort of 'he hawed' about it. I enjoyed the courses with Dr Curtis, Dr Levi, Dr Trewartha and many others. My Arboretum job was to collect seeds, plants etc for the Arboretum. We scarified hard coated seeds, dug trenches to plant them with snow so they were ready to plant come spring—and to exchange seeds collected with other arboreta. Dr Green & I traveled collecting and it was very enjoyable. I met my wife at church and we were married in Presbyterian Church near the Arboretum on June 7, 1975. We celebrated our 50th in '07. We have 7 children & 11 grandchildren and have fostered over 100 foster children who have been placed. I taught High School in Monticello, Illinois but came to Abilene Christian University in 1958. I went to the University of Florida in '62 to work on PhD, took course work but 5 of 6 on my committee left me (& Florida) high & dry in '64, I then taught 1 yr at Polk County Junior College at Barton hoping to salvage but it didn't work out so we returned to Abilene and I completed 50 years at ACU as of Jan 1, 2007. I thoroughly enjoyed teaching and am so glad of the great teachers I had through the years. I still retain many of my notes from yesteryear. I have a picture of the dedication of the John Curtis Prairie (1961) with Dr Cottam and Dr Green present. I don't recognize most of the others. I have many other fond memories of my stay at UW, but am especially thankful for my training and friendships while there. I guess as we get older (now 76) memories return and we realize how fortunate we have been. I hope you continue in the great job you are doing. Sincerely, Roy E Shake"

Skalitzky, Courtney (MS 2006) • works for Roche NimbleGen as a Senior Technician. Roche NimbleGen is a microarray company in the Biotechnology industry. She works in the R&D section on the Gene Expression product line. While at NimbleGen, she has been involved in the development of the 4-plex and 12-plex microarray platforms.

Smith, Stacey (PhD 2006) • is finishing up her time as a post doc in the lab of Mark Rausher at Duke University. Her project in the Rausher lab has focused on the genetic basis of flower color differences in lochroma (*Solanaceae*). Beyond the world of anthocyanin pigments, working at Duke has provided excellent opportunities, such as comparative methods classes at the National Evolutionary Synthesis Center and salsa dancing in the Casino-Rueda style. Next summer Stacey will begin a faculty position in the Biology Department at the University of Nebraska-Lincoln, and she looks forward to continuing her adventures with the Andean iochromas.

Stevens, Michael (MS 1998; PhD 2005) • accepted a faculty position at California State University-Stanislaus. Michael conducts research in two major areas: plant ecology and biology education. As a plant ecologist, he studies plant-herbivore interactions, especially plant responses to herbivory and how genes and the environment interact to affect the expression of plant traits. Using aspen (*Populus tremuloides*) and its insect herbivores, he studies the evolution of plant defense strategies such as herbivory resistance (traits that reduce the preference of performance of herbivores) and herbivory tolerance (traits that facilitate regrowth after damage). Michael is also interested in physiological mechanisms behind plant adaptation to insect damage including growth-defense tradeoffs, induction of resistance chemicals, photosynthetic responses, and whole-plant biomass redistributions after herbivory. Michael uses the Alaska paper birch (*Betula neoalaskana*) to study biogeographic patterns in resistance to mammalian herbivores. As a biology educator, Michael looks for ways to improve science content understanding and science teaching methods at the university-level, especially in classes populated by future elementary and secondary teachers. He also studies the roles that Science Faculty with Education Specialties plays in university systems.

Tweiten, Michael (PhD 2008) • is working in Hawaii as a Post Doc in the Hotchkiss Lab.

Van Ee, Benjamin (PhD 2006) • is a Mercer Fellow at Harvard University in the Arnold Arboretum.

Varty, Alison (MS 2007) • worked at Loyola University in Chicago, where she developed the Solutions to Environmental Problems (STEP)

program and taught associated courses. STEP is a service-learning program that educates Loyola undergraduates and graduate students about a global environmental problem and then engages them in campus sustainability initiatives that address that problem on the local scale. In fall 2009, she joined the faculty at College of the Siskiyous (COS) in northern California, where she is teaching biology courses and developing an environmental science/ecology program.

Veltman, Rachel (MS 2002) • is a staff ecologist with Natural Resources Consulting, Inc in Madison, Wisconsin.

Walker, Jay B (PhD 2006) • is a member of the Flora of Oklahoma Committee and is living in Sapulpa OK.

Wallace, Katy (MS 2001) • consults on health and nature in Madison, WI.

Weise, Sean (PhD 2005) • is a Visiting Research Associate at Michigan State University in the Sharkey lab.

Wilcox, Julia (MS 2004) • moved from the Wisconsin DNR to France in the Fall of 2008.

Woo, Isa (MS 2000) • restores marshes as a Wetlands and Wildlife Biologist with the US Geological Survey, at the San Francisco Bay Estuary Field Station.

Wright, Madison (MS 1950 Agronomy; PhD 1952) • is an Emeritus Professor of Cornell University. Dr Stauffer and H. L. Ahlgren were co-chairs on his PhD committee.

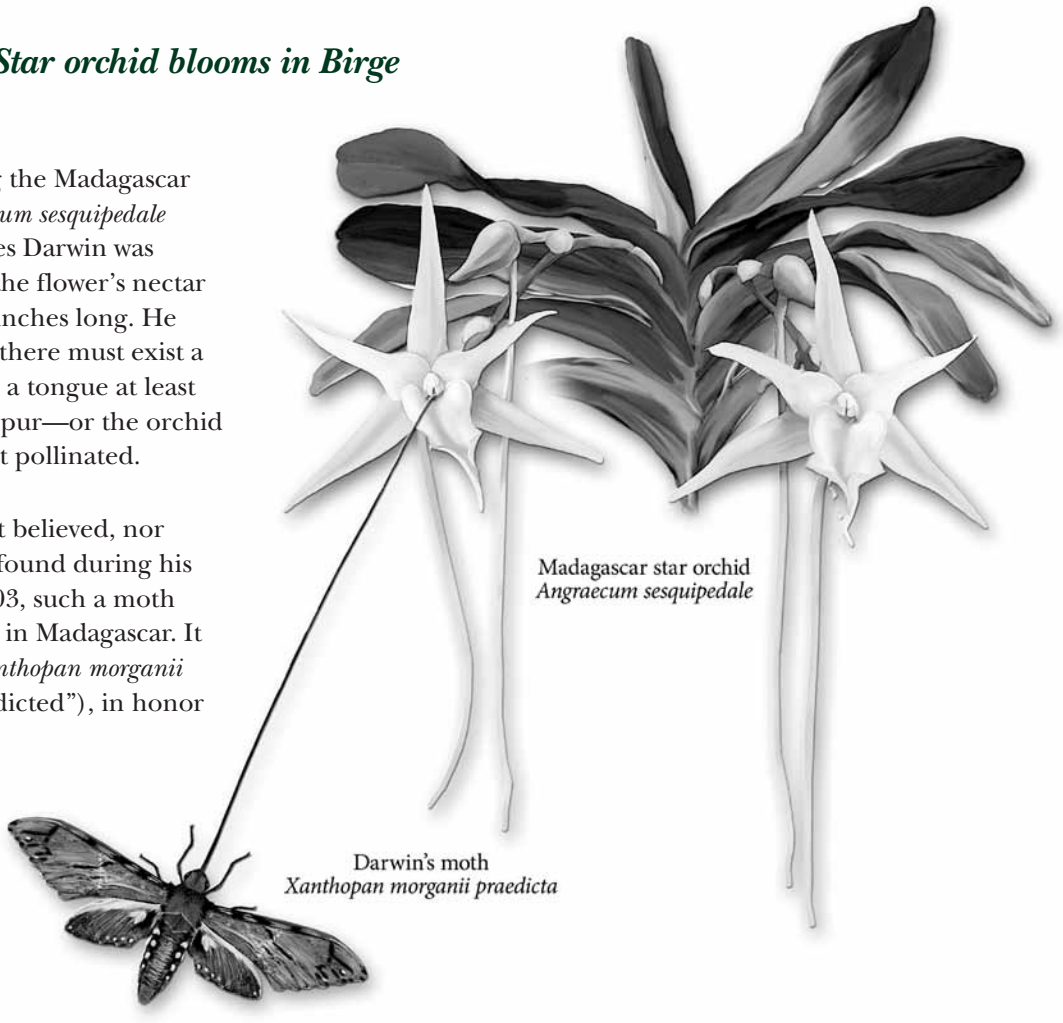
Wright, Sarah (MS 2008) • is an Outreach Associate for the Center for Biology Education (CBE). CBE offers many opportunities and resources for graduate students and post docs interested in the improvement of undergraduates in the Biological Sciences. Some of resources include: Biology Instruction Brownbags; SyMBiosis interdisciplinary seminars; Summer Science Institute; PEOPLE program; IBS-SRP; the School of Education's Science Education Scholars research experience; Ways of Knowing Biology; Biology Interest Groups; and some teaching resources.

Yanger, Corie (BS 2006 BAC) • works for the National Pacific Park Service in Hawaii.

Madagascar Star orchid blooms in Birge

When studying the Madagascar orchid *Angraecum sesquipedale* in 1862, Charles Darwin was astonished by the flower's nectar spur, up to 14 inches long. He theorized that there must exist a pollinator with a tongue at least as long as the spur—or the orchid could never get pollinated.

Darwin was not believed, nor the pollinator found during his lifetime. In 1903, such a moth was discovered in Madagascar. It was named *Xanthopan morganii praedicta* ("predicted"), in honor of Darwin.



In Memorandum

Allen, Ethel K (BA 1928 in Botany/MS 1930 in Bacteriology) age 99, Ethel died on May 7, 2006 at the Attic Angel Place in Middleton. Ethel Kullmann was born on July 13, 1906 and married Oscar Nelson Allen on July 11, 1930. She was the devoted wife of the late Dr. Oscar Nelson Allen, who was a distinguished Professor Emeritus at the UW-Madison from 1948 to 1975. Ethel conducted important research on leguminous plants and in collaboration with her late husband compiled and published authoritative work in the field of legumes. . She began her professorial career as a research fellow at the UW; in 1933 she worked with her late husband first at the University of Hawaii from 1933 until 1945 and then here at the UW. Together they wrote over 40 publications on their research. Ethel was awarded an honorary Doctor of Science Degree in 1982 Ethel's widespread generosity to the UW and to the cultural scene and the world in general has been appreciated by many, including the International Crane Foundation, the Milwaukee Public Museum and the Department of Biology, the Wisconsin-Madison Herbarium and the science libraries of the UW. The Allen Centennial Gardens are a constant reminder of Ethel's devotion to the UW and was named for her late husband. [Information from the Obituary in Wisconsin State Journal]

Andrew, Robert H (BA 1938 Botany/PhD 1942 Agronomy & Genetics) age 90, Robert died at home on December 25, 2006. He was an internationally and nationally recognized and respected as a researcher of the genetics, physiology, quality, pest resistance, culture and yield of sweet corn (*Zea maize* L.). He designed and taught courses in genetics, plant breeding and crop ecology and was extremely effective as an instructor. Robert was born on August 2, 1916 in Platteville, Wisconsin. Upon obtaining his PhD he was employed by the Agronomy Department as a corn seed specialist and in 1946 as an assistant professor. Dr Andrew quietly devoted his life to the improvement of one of the world's delicacies – sweet corn. His research led to significant yield and quality improvements in the US sweet corn food processing industry and for home gardeners. His research had a mission – to understand and solve the complex problems of sweet corn. First, he improved the palatability for the consumer, and secondly, the yield level for the grower. His improved inbred lines (28) formed the foundation of America's sweet corn industry. In Wisconsin alone, sweet corn acreage increased 59% and yield 129% due to his contributions. His extensive research findings appeared in over 85 publications and covered the classic genetic studies concerning quality traits and he developed improved technology for the culture of the species as well as made substantial contributions to its disease and insect resistance. Dr Andrew trained over 60 graduate advisees including many international and minority students. Many of these students have gone to leadership positions in government, universities and industry. [Obtained info from Memorial Resolution of the Faculty at UW-Madison]

Archbald, David (MS 1950/PhD 1954) age 83, died on October 27, 2008 in Buffalo NY. David was born on May 16, 1925 and attended Nichols School. He received his BA in 1949 from SUNY-Buffalo. The obituary appeared in the Buffalo News from November 5–9, 2008.

Backus, Ruth K (BA 1940) age 89, passed away on May 1, 2008 at Prescott Samaritan Village in Arizona. Ruth Koehler was born on August 31, 1918 in Madison, Wisconsin. She married Edward James Backus on June 22, 1940. Ruth had been a resident of Prescott since 1973 when she moved there in retirement from Pearl River, New York. Her husband, Edward, was a retired microbiologist who died in December 1998 after 58 blissful years of marriage to Ruth. Ruth lived at the Willow Wind assisted living residence from 1999 until 2006. [Obtained info from The Daily Courier on May 4, 2008]

Bartsch, Alfred 'Fritz' (PhD 1939) age 95, passed away peacefully February 1, 2009 at Regency Park Assisted Living in Portland, Oregon. Fritz was born November 30, 1913 in Kaukauna, Wisconsin. Fritz received his BA in 1936 from the University of Minnesota-Twin Cities. He was a member of the Society of Sigma Psi Scientific Honor Society

and was awarded the Thomas F. Andrews Prize for his undergraduate research. He married the love of his life, Winnie Ireland on September 1, 1937 and they were married nearly 68 years before her death in July 2005. Of the more than 100 trips to foreign countries, Fritz's favorite trip was to Rio de Janeiro many years ago, where the people were "the friendliest I'd ever met." His career was devoted to researching and protecting the world's aquatic environments, as laboratory director for the Environmental Protection Agency, receiving numerous awards including the Gold Medal for Distinguished Service to the EPA. Throughout his career, Fritz assisted many foreign governments to resolve their water pollution issues. [Information obtained from the Obituary in The Oregonian from February 10, 2009.]

Bernhardt, Arthur (BS 1974) age 55, passed from this life to eternal life on December 20, 2007. His passing marked the end of a valiant and courageous, six year battle with cancer. His fight against cancer was an inspiration to all who know him. Art was born in Wisconsin Rapids on September 21, 1952 and grew up in Port Edwards. In 1975, he began his career working for the DNR as a Wildlife Research Biologist at Sandhill Wildlife area. He moved to Rhinelander in 1976 and then to Eau Claire DNR office in 1977 where he remained until illness forced him to retire in 2003. He served as the West Central Region Water Leader from 1996 until his retirement. Art loved his work, his co-workers and the "water team," and took great satisfaction in helping to conserve and enhance the environment. Art was admired for his leadership, problem solving ability, dedication, innovation, professionalism and competence. He was known for his "Attitude is Everything" philosophy as proclaimed by a sign by his office door. His "can do" attitude was contagious. In 1976, while working for the DNR in Rhinelander, he met fellow DNR employee and future wife, Barbara MacNaughton. They worked, canoed, kayaked, hiked, cross-country skied and explored the Northwoods. They married on September 18, 1982 in Green Bay. [Information obtained from the Obituary in the Chippewa newspaper for December 20 – 23, 2007]

Buell, Katherine M (PhD 1951) age 94, died on July 19, 2007 in Crete, Nebraska. Katherine was born on November 26, 1912 in Grand Island, Nebraska. She received her AB degree in 1933 from Oberlin College; her MS in 1935 from Washington University. In 1998 Katherine retired as a Distinguished Emeritus Professor from Doane College. A celebration of her life was held on July 25, 2007. [Information obtained from the Obituary in the Journal Star Newspaper in Lincoln, Nebraska.]

Cottam, Grant (PhD 1948 Botany & Zoology) age 91, died May 13, 2009 at the Sebring Assisted Care Residence in Madison, Wisconsin. Grant was born in Sandy, Utah August 28, 1918, to a prominent Utah family. His interest in ecology was stimulated by childhood experiences hiking and camping in the western mountains and by his father, who was a professor of Botany and an outspoken conservationist opposed to the destructive land use practices prevalent in the West. He obtained a BS degree at the University of Utah in 1939. His graduate schooling was interrupted by his Army service in World War II during which time he earned a Silver Cross, a Bronze Star, and a field promotion to captain. He married Diana McQuarrie in 1942. After the war they returned to Wisconsin where Grant completed his PhD degree working with John T. Curtis. He accepted a position at the University of Hawaii after graduation but was called back by an offer of a professorship in Madison to work with the growing program in Plant Ecology. As a key member of the Botany Department's Plant Ecology Lab, Grant contributed vegetation sampling methods that facilitated the rapid collection of quantitative data across Wisconsin. His "quarter method" is still in wide use today. He was awarded a Guggenheim fellowship in 1954-55, received many NSF and other research grants. Grant directed 27 doctoral theses and 15 master's theses at UW-Madison. He influenced innumerable undergraduates who took Plant Ecology, then General Ecology, which he regularly co-taught up to his retirement in 1986. His graduate Ecological Methods course was considered essential to any aspiring field ecologist. In the late 1970's Grant and the late Virginia Kline (UW-Arboretum) developed the popular undergraduate course, The Vegetation of Wisconsin, which they co-taught until his retirement as a full professor in 1986. Grant occupied key administrative positions on campus. He was Department Chair in Botany from 1970-73 and again in 1979-82. From 1974-78 he was the

academic chair of the Institute for Environmental Studies (now the Nelson Institute); from 1969-77 he directed the former Center for Biotic Systems; and from 1961-70 he chaired the Arboretum Committee. Grant's conservation activities extended well beyond the UW campus. As an early trustee of the Wisconsin chapter of the Nature Conservancy, he helped guide that organization to its current prominence. During the 1970s Grant chaired the Governor's Coordinating Committee for the Kickapoo River (in western Wisconsin), opposing plans for a large dam-building project, and ensuring that impacts were adequately addressed. Today the Kickapoo Reserve is considered a model of culturally and ecologically sensitive management. Despite the pope and tweedy sport coat, Grant was the antithesis of a pontificating academic. He was direct, sometimes to a fault. He delighted in taking students unaware with his random challenges, often preceded by "So, hotshot…". He had a love of limericks and of bowties. He inspired great loyalty among his students, though as with any strong personality, there were some who were not charmed. His students, many now retired, are spread throughout the field of ecology. Three are current UW-Madison faculty members: Evelyn Howell (Landscape Architecture), David Mladenoff (Forest & Wildlife Ecology), and Paul Zedler (Nelson Institute). A memorial service was held on June 14, 2009 [Information from Memorial Resolution by Paul Zedler, Suzy Will-Wolf, Tim Allen, and information in the Obituary in the Wisconsin State Journal.]

Crosswhite, Frank S (MS 1965/PhD 1971) age 68, died December 12, 2008 at St. Luke's Hospital in Phoenix after a long illness. Frank was born in Atchison, Kansas on September 23, 1940. Frank received a BS degree from Arizona State University. After receiving his PhD degree Frank returned to Arizona as the Curator of the Boyce Thompson Southwestern Arboretum and held faculty status at the University of Arizona. While at the Arboretum Frank expanded its programs, developed its popular plant sales, and devised innovative displays and events for the visiting public. He was the founding editor of the scholarly journal Desert Plants, published by the University of Arizona as well as the first president and charter member of the Arizona Native Plants Society. As a taxonomist, he identified a number of new plant species that bear his name. Frank was a leading expert on beard-tongue (*Penstemon*) and wrote extensively on cacti and other succulents, desert ecology, and the history of botany. One of his lifelong research interests was the use and cultural significance of native plants to indigenous Americans. He was the recipient of professional awards as well as serving as a reviewer for the National Science Foundation. In 1961 he married Carol Diane Chaney of Fallbrook, CA who was Curator of Zoology at the Arboretum until their retirement in 2002. Frank's major professor at the UW was Dr Hugh Iltis. [Information obtained from the Obituary in the Arizona Daily Star.]

Dodson, Stanley Professor Emeritus of the Zoology Department passed away August 23, 2009 after a tragic bicycle accident in Colorado. His lively presence on campus will be remembered by many as will his passion for zooplankton, ecology, and teaching. Stanley had retired after being at the UW from 1970–2009. He was a freshwater ecologist, focusing on community ecology of zooplankton and population ecology of *Daphnia*. Stanley taught courses in general ecology, plankton ecology, summer limnology, and supervised an ecology internship and service learning program. Stanley was the Chair of the Biological Aspects of Conservation (BAC) Program [an undergraduate major program with about 100 majors] and a member of the Limnology and Marine Science Program. He was also on the editorial board of the journal *Hydrobiologia*. The last seminar Stanley taught in the department was titled "Widening Ripples," his way of nudging us all to think about the ripples that radiate away from our own lives to others and the world around us. The "ripples" of Stanley's life have left a lasting legacy. He will be sorely missed. A memorial service was held on September 4, 2009. [Information obtained from the UW-Madison Zoology web site.]

Dugger, Willie Mack (MS 1942) age 89 passed away on December 26, 2008. He was born on July 28, 1919 in Adel, Georgia. Mack received his Bachelor's degree from the University of Georgia-Athens with a major in Soil Science and Botany. His Botany area of focus was plant physiology at the UW-Madison. After graduation he was inducted into the UW Army in 1942 where he became

a 1st Lieutenant and a Company Commander. After his discharge in 1946 he continued his graduate studies and received the 1st PhD degree in Botany from North Carolina State University-Raleigh in 1950. His academic career began as an Assistant Professor at the University of Maryland from 1950-1955; then as an Associate Professor at the University of Florida from 1955-1960; when he was recruited for a research position in the Air Pollution Research Center of the Horticulture Department at UC Riverside. He would then serve as the Major Advisor for UW-Madison Botany Emeritus Professor Michael Adams. During his tenure at UC Riverside, Mack was involved in studies of the effects of various air pollutants on plants resulting in several seminal papers being published. Mack was the first to ask what physiological shifts were caused by pollution, rather than just measuring the decline in plant productivity. His 1970 paper in Annual Reviews of Plant Physiology is still quoted and caused a shift in plant and air pollutant studies. Mack served as Dean for 13 years and returned to the Botany and Plant Sciences Department where he was actively involved in research and teaching until he formally retired from the University in 1990. He was active in the American Society of Plant Physiologists and served on their Board. He was responsible for starting the Yearly Symposium in Plant Physiology where he tried to get the best to come to UCR as speakers or to organize a course for a quarter. He was honored with UCR's prestigious Emeritus Faculty Award for 1996-97.

Elander, Richard (PhD 1960) age 76 passed away on July 10, 2008 in La Jolla, California from complications related to cancer. Richard was born in Worcester, Massachusetts on September 17, 1932. He graduated from Fitchburg High School with high honors. Dick received his BS degree from the University of Detroit in 1954 followed by a Master's degree in 1956. He met Barbara while he was at the University of Detroit. They were married on February 8, 1958 while in Madison. He began his career at the Eli Lilly and Company in Indianapolis, Indiana in March 1960. He was the senior microbiologist in the Antibiotic Fermentation Development Department of the Antibiotics Division. In 1967, Dick moved to Wyeth Laboratories, Inc. in West Chester, Pennsylvania as the department head of Strain Development, Pilot Plant, Process Improvement, chemical Recovery and Sanitation. In 1972, Dick was invited to head up industrial microbiology at Smith-Kline in King of Prussia, Pennsylvania. From there he joined the Industrial Division of Bristol-Myers Squibb Company in Syracuse, NY in 1975 as director of fermentation development. In 1980, he was vice-president of Biotechnology Development. From 1983-1987 Dick served as research professor in the Biology Department of Syracuse University, while at Bristol-Myers Squibb. He also served on the Advisory Board at the University of Detroit-Mercy and as an advisor at the UW. Dick retired from Bristol-Myers Squibb in 1997. During his retirement, Dick remained active, writing scientific reviews and book reviews, he read countless scientific journals, attended SIM annual meetings, served as a consultant to several companies, including Phyton Catalytic, Panlabs Biologics, and Nereus Pharmaceuticals. Dick passionately advised literally dozens of scientists and colleagues during his life, offering support and encouragement as well as true friendship. [Information obtained the March/April 2009 SIM News Remembrance article]

Gough, Stephen B (PhD 1976) Stephen was born on September 13, 1950 in New Castle, Indiana. He graduated from Carroll College in Waukesha, Wisconsin. After earning the PhD at UW-Madison, Stephen taught at both Germanna Community College and Mary Washington College and also was a member of Sigma XI. His great loves were for his family, the environment, nature and photography. [Obtained info from the Fredericksburg newspaper obituary]

Grosklags, James H (MS 1955/PhD 1960) age 78 passed away on November 3, 2007 in DeKalb, Illinois. James was born on June 20, 1929 in Milwaukee, Wisconsin. He married Violet on September 7, 1957. James retired from Northern Illinois University as a Professor Emeritus of Biosciences in 2000. [Obtained info from the Daily-Chronicle newspaper obituary]

Jones, James H (BPH 1943) age 86 passed away on June 22, 2007. James was born on March 19, 1921 in Hartford, Wisconsin. After earning his BPH degree at the UW he graduated with a MS degree in Education from the University of Southern California in 1955. James was retired from the Los Angeles Unified School District where he was the Assistant principal. [Obtained info from the UW Foundation Alumni database]

Keister, Claire M (MS 1976) age 58 passed away on September 18, 2008 in Minneapolis, Minnesota. Claire was born on May 16, 1950 in Chicago, Illinois. She received a BA degree from Grinnell College in 1972. [Obtained from an email and the UW Foundation Alumni database]

Lind, Jenny J (BSE 1934 in Botany/MS 1950 in Social Work) age 94 passed away on March 20, 2007 at Haack's Tendercare of Liberty Square in Sun Prairie. She was born on June 27, 1912 in Baraboo, Wisconsin. She was an enthusiastic advocate for the Girl Scouts and was on the National Girl Scout staff in Indiana. Jenny was actively involved with the American Camping Association, receiving the "Acorn" for her work. She was a 75-year member of Alpha Chi Omega Sorority with the UW-Madison chapter. She retired from the State of Wisconsin in 1977 as a supervisor of volunteerism, under the governor. Jenny was an avid naturalist and outdoor enthusiast, teaching people about trees, flowers and birds. A memorial service was held at HospiceCare Chapel on April 13, 2007. [Obtained from Wisconsin State Journal obituary.]

McAleavey, Jane A (MS 1937) age 95 died on August 6, 2008. She was a person of energy and intelligence who gave to her family and the communities in which she lived. She had a lifelong interest in both the natural world and human culture. She earned a Master's degree in Botany in an era when attending college at all was a rarity for women. Born Jennie Louisa Ayers in Hooper, Washington on May 28, 1913, she grew up in Topeka, Kansas. She graduated from Washburn College and attended UW-Madison during the summers in the 1930s taking courses toward the MS degree. A change in residency requirements made it possible for Jane to be awarded the retro MS degree in May 2002. In 1936 she married Frank L. McAleavey, who became an architect. They lived briefly in Ithaca, NY and Washington, DC before settling in Wichita, Kansas, in 1940. Jane taught at Washburn College from 1934-38. She also taught at Wichita State University occasionally during the period of 1948-68. Jane was active in several organizations in Wichita, including Girl Scouts, PTA, and St James Episcopal Church. She devoted many hours to guiding nature walks and promoting conservation, and modeled keen observation and respect for nature in her daily life. She shared her parents' interest in genealogy and history, and belonged to the Mayflower Society, Daughters of the American Colonists, and Daughters of the American Revolution. From 1970 until 2005 they lived in Fort Worth, Texas. There she was active in the Fort Worth Botanical Society, serving as it s president. Jane was highly regarded for her talks on diverse topics, illustrated with photos taken during her travels. She and Frank often volunteered at the Japanese Garden, and they shared a love for the arts, frequenting the Kimbell and other galleries in Fort Worth and Dallas as well as around the world. Jane was a state judge in flower arranging. [Obtained from obituary written by family.]

Otto, Robert H (BA 1950 Botany/MS 1953 Bacteriology/PhD 1955 Biochemistry) age 81 passed away October 16, 2007 at his home. Robert was born May 31, 1926 in Milwaukee, Wisconsin. He married Alice Hengst on August 30, 1952. He was retired from Abbott Laboratories after 32 years as a microbiologist. A memorial service was held on October 20, 2007 in Westminster. [Obtained from obituary in Greenville News]

Peloquin, Stanley J (MS 1951 Genetics/PhD 1952 Botany & Genetics major) age 87 passed away July 27, 2008 at HospiceCare in Fitchburg. Stanley was born in Baron, Wisconsin on July 22, 1921. He received a BS degree in 1942 from UW-River Falls and a MS degree in 1949 from Marquette University. Stanley was a Professor Emeritus at the UW in the departments of Horticulture and Genetics. He was a world-renowned potato geneticist and breeder. His work contributed significantly to understanding fundamental mechanisms of chromosome manipulation and behavior. His broad interests and visionary insights uniquely merged basic and applied research yielding answers to problems of world hunger. Stanley taught Biology at Marquette University for five years before joining the UW-Madison Genetics Department in 1957. His position required him to spend the summers at the Experiment Station in Door County resulting in the acquisition of a cottage on the shores of Lake Michigan. Since 1962, he held a joint appointment in Horticulture and Genetics. Since retiring in 1994 he remained active in his field while enjoying the opportunity for world travel and spirited support of UW football and

basketball holding season tickets for more than 40 years. Professor Peloquin's major research achievements include developing potato plants from unfertilized eggs; the discovery of the mechanisms behind formation of reproductive cells with parental chromosome number; and the development of breeding strategies for the use of true potato seed rather than tubers for growing potatoes. Among the honors Stanley received were the appointment as a Campbell-Bascom Professor of Horticulture and Genetics in 1983; elected to the national Academy of Science in 1984; and an honorary degree from the University of Naples in 2002. He will be dearly missed by all for his generosity, good humor, optimism, wit, inspiration, stimulation, and decency. [Obtained from obituary in Wisconsin State Journal newspaper.]

Pierce, Elinore E (BA 1948) age 84 died February 5, 2009. Elinore was born on a farm in Merrill, Wisconsin on April 2, 1924. She worked in a tank factory in Detroit during WWII. After completing her BA degree at the UW, Elinore went on to earn her teaching certificate and taught science in Bangkok, Thailand; Frankfurt, Germany, and Rock Island, Illinois. Elinore loved to travel, visiting Australia, Asia, and Europe. [Obtained info from obituary in Minneapolis-St Paul Star Tribune newspaper.]

Slattery, Robert J (BS 1966) age 64 died on November 18, 2007. Robert was born on February 18, 1943. [Obtained from UW Foundation database.]

Thomson, John W (MA 1937; PhD 1939) age 95 died peacefully February 20, 2009. John was born on July 9, 1913 in Cockenzie Scotland. He received his AB degree from Columbia University in 1935. John was a world-renowned botanist and lichenologist, an inspiring/dedicated teacher, and a conservationist. He was strongly influenced by Raymond Torrey, Norman Fassett and Aldo Leopold. His first job after graduating was at Superior State Teachers College before returning to UW-Madison to join the Botany Department faculty. Until retiring four decades later, his popular course in plant taxonomy greatly influenced at least two generations of students in biology and conservation including many professionals presently working in organizations like Wisconsin's Department of Natural Resources, as well as uncounted hundreds of volunteers who continue to contribute their time to organizations involved in natural area preservation. Referred to as the "Dean of North American Lichens," John's Arctic explorations, research, papers and five books led the science for more than 60 years. His last two volume set on lichens of the Arctic was completed after retiring in 1984 from the UW. John and Olive's passionate interests in and dedication to education, ecology and conservation led to more than seven decades of leadership in organizations like the Wisconsin Academy of Sciences, Arts and Letters, Citizen's Natural Resources Association, The Nature Conservancy and The Prairie Enthusiasts. Southwestern Wisconsin now has 636 acres of prairie lands recognized with the family name. A memorial gathering was held at the Schurch-Thomson Prairie barn on May 9th.

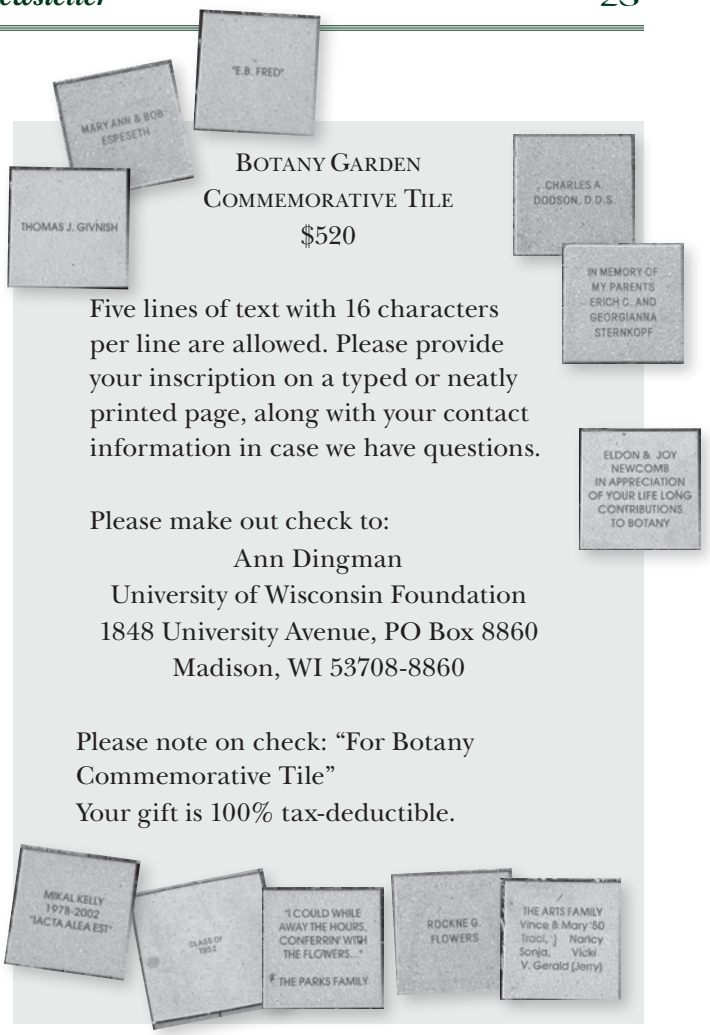
Unger, James W (MS 1948; PhD 1954) age 86 passed away on August 22, 2008. James was born on April 1, 1921 in Marshfield, Wisconsin. He married Dorothy Kalbus on August 1, 1948. James retired from UW-Oshkosh after 14 years of service.

Wagner, Edward F (BS 1952) age 79 died September 8, 2008. Ed was born on April 28, 1929 in Menomonie, Wisconsin. Ed was a member of the Lions Club, American Library Association and the University of Wisconsin 40-year Graduate Club. He served as a corporal in the US Army 1954-56 and was stationed for 18 months in Nuremberg, Germany. Upon his return Ed earned a BS degree in Education from UW-Eau Claire in 1956. He then completed a MS degree in Library Science for the UW-Madison campus. He taught briefly at a high school in Wisconsin before going to the University of Northern Iowa where he served as a reference librarian for 37 years before retiring in 1994. Ed was an active supporter and patron of the arts in the Cedar Valley. An avid reader, interesting conversationalist and a true gentleman, he charmed his nurses and friends. Ed loved plants and flowers, had beautiful gardens and sometimes said that he would have liked to have been a landscape architect. A memorial gathering was held on September 21st in the Hearst Center for the Arts in Cedar Falls.

Wiggins, Samuel (PhD 1951) age 86 died on December 2, 2008 in Newport News, Virginia. Sam was born on September 2, 1922 in Lincoln, Nebraska. He graduated from Jackson High School in 1940. He then entered the University

of Nebraska-Lincoln where he was a member of the Farmhouse Fraternity. In 1942 Sam enlisted in the US Army and attended Army Officers Candidate School until graduating in 1944. As a 2nd Lieutenant, he served in the Pacific Theater during World War II from 1944 to 1946 in the Philippines. Then he returned to the University of Nebraska-Lincoln to complete his BS degree in 1947 with a major of Agricultural Chemistry. He then earned a MS degree at UW-Madison in 1948 with a double major of Agronomy and Genetics. After receiving his PhD degree, Sam went to Iowa State University to teach and conduct research in the Agronomy Department. It was there he met his future wife, Ruth Littlefield, who was a Home Economics Teacher. They were married in Ames, Iowa on September 7, 1951. Sam and Ruth then moved to Stillwater, Oklahoma in 1958 where Sam accepted a position as Associate Professor of Agronomy at Oklahoma State University. In 1963 Sam accepted the position of Chairman of the Horticulture Department at the University of Vermont-Burlington (UVM). He held this position for 17 years. In 1980, Ruth and Sam relocated to Annandale, Virginia where Sam became Principal Horticulturist for the Cooperative State Research Service in the US Department of Agriculture in Washington DC. He subsequently retired from UVM as a Professor Emeritus in 1984 and from the USDA in 1990. Sam and Ruth traveled spending time in Vermont, Washington DC, and Florida. Dr Wiggans was a founding member of the American Horticultural Therapy Association and was made a Fellow in the American Society for Horticultural Science in 1991. A memorial service was held on December 7, 2008 in the Amory Funeral Home, Grafton, Virginia.

Teaching tip sent by Edward E. (Ned) Gilbert (class of '47), whose father, E. M. Gilbert was an early Chair of the Botany Department:
"I never attended one of his lectures; but he enjoyed [giving]the Big Botany introduction lecture and I was once told that he had a student who often fell asleep during his lectures. So the story as I was told is that, in my father's lecture voice, he asked the students to please leave the room quietly and he would continue with his lecture, which he did, and eventually the sleeper woke up, looked around and ran out never to return."
—Says Ned, "I suspect rules today would not permit it."



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- ❒ Department of Botany General Fund—serves as the department's "general" account.
- ❒ Botany Greenhouse/Garden Expansion Fund
- ❒ E. K. and O. N. Allen Herbarium Fund—supports varied activities of the UW Herbarium.
- ❒ O. N. Allen Graduate Fellowship—provides a fellowship for an outstanding graduate student.
- ❒ McCullough Fund—used at the Chair's discretion, primarily for faculty and academic staff development.
- ❒ Curtis Fund—provides an award for the best Ecology undergraduate student paper.
- ❒ Raper Fund—provides funds to enable graduate students to travel to meetings.
- ❒ Judith Croxdale Fund—memorial fund to support women beginning research careers.
- ❒ Folke Skoog Fund—memorial fund to support Dr. Skoog's research and teaching initiatives.
- ❒ Bleecker Fund—memorial fund for Plant Imaging Facility.

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- ❒ Paul J. Allen Memorial Lecture—supports a lecture by an eminent scientist in the Botany Colloquium series.
- ❒ John J. Davis Fund—supports research activities of the department, including graduate student fellowships, travel support, and funds to provide speakers for the Botany Colloquium series.

For donations to these two funds, please make checks payable to the University of Wisconsin and send to:

Chairman
Department of Botany
University of Wisconsin-Madison
430 Lincoln Drive
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Address Correction and Alumni News

Please use this form to update our information on your activities for use in the next issue of the newsletter. Feel free to send news clippings, articles about yourself, etc. for your permanent file. Be sure to keep us informed of address changes so that we can continue to send you mailings from the department. You can also send us update information via email to: **smbader@wisc.edu**.

Sue Bader
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Please tell us what you've been up to since graduation and any special items you'd like to share in the next newsletter. We'd also be interested in any thoughts you have about your educational experience here. Attach extra pages as necessary. PHOTOS WELCOME!

This newsletter is published by the Department of Botany at the University of Wisconsin, Madison, for alumni, colleagues and friends. Dr. Joy Zedler and Suzanne Bader, editors; Kandis Elliot, art and layout; Claudia Lipke, photos. Submissions are welcome. Please send comments, ideas, and photos to:

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