

Spring 2010

2010 Friends of The University of Montana Herbarium Newsletter

Peter Lesica

David Dyer

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FRIENDS

*OF THE UNIVERSITY
OF MONTANA*

HERBARIUM

Spring 2010

Forest Service's MRC Herbarium Moves Across Campus

By Peter Lesica & Peter Stickney

The herbarium at the University of Montana is not the only one in Missoula. The U.S. Forest Service's Rocky Mountain Research Station also has one, and this year, with the help of Peter Stickney and Dean Pearson, the two are being combined. The Forest Service's Missoula herbarium had beginnings first in the Regional Office (District Office in those days). In 1911, the Regional Forester's office started a herbarium for their range management program. Two decades later a second herbarium was begun by the Northern Rocky Mountain Experiment Station that was also housed in the Regional Office. This herbarium was created to contain specimens related to both range and wildlife habitat research programs and eventually came to house collections from the Miles City, Vigilante, and Spokane research centers. Shortly after Peter Stickney arrived in Missoula in 1957 to work for the Missoula Research Center (the name applied to the research wing of the F.S. in Missoula), the regional and research herbaria, each containing a few thousand specimens, were combined. The chore of putting the two together was accomplished by Irene Sammons, a Botany graduate student at the University of Montana. In 1967, the Missoula Research Center moved from the Regional Office to the newly-built Forestry Science Lab on the UM Campus. The combined herbarium was re-divided with the research portion ensconced in the basement of the new building where it resided for more than 40 years. Four years later this herbarium of approximately 5,000 specimens was officially registered with Index Herbariorum, the international catalog of herbaria. The acronym MRC (Missoula Research Center) was assigned to Missoula's Forest Service's research herbarium.

Since that time MRC has grown, and Peter Stickney was the curator. In the early 1960's, even before the herbarium moved from the Regional Office, Peter acquired part

of Walt Mueggler's Forest Service Wildlife Habitat Project research collection in Spokane. In the mid-1970's, MRC acquired numerous collections made by Gerald Moore, Richard Presby, Bernard Kovalchik, and Steve Arno working on the Forest Habitat Types of Montana project. Ten years later there were collections from Steve Cooper and Dave Roberts on the Forest Habitat Types of Northern Idaho project. During this time Peter again acquired collections from Walt Mueggler's research projects done at the Forest Service Research Lab in Bozeman. In 1993, Angela Evenden and Peter retrieved the specimens of the Regional Foresters Herbarium from a Forest Service warehouse, and Karen Gray intercalated them into MRC. Without a doubt the most important collector for the MRC Herbarium is Peter Stickney who contributed approximately 3,000 specimens. Other important MRC collectors include L. C. Ellison, A. B. Evanko, H. R. Flint, L. C. Hurtt, F. F. Liebig, M. Mantas, S. A. Mincemoyer, E. T. Pedersen, J. E. Schmutz, W. W. White, J. C. Whitham, and E. J. Woolfolk. Many of the MRC specimens have been determined by taxonomic experts such as Swallen (Poaceae), Barneby (Fabaceae), Hermann (Cyperaceae), Johnson (Boraginaceae), and Ball

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Peter Stickney, MRC curator, was instrumental in transferring the collection to MONTU.

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Drake Barton and Kathy Lloyd

Activities

The Clark Fork Chapter of the Montana Native Plant Society held three meetings in the herbarium during the winter of 2009. In January, Peter Stickney told us about Montana's Wintergreens. In February, Peter Lesica led the group in keying out and learning the anatomy of Currants and Gooseberries. In March, Steve Cooper came from Helena to show us how to identify Sagebrushes.

Notes from the Board

When one considers the many kinds of scientific studies for which herbarium specimens are used, some that come to mind include: determining the geographic ranges of species; discerning the abundance of rare and endangered species; understanding habitat relationships (since many specimen labels include information on the environments in which the plants occur, and the other species they occur with); and conducting taxonomic or systematic studies, where the morphology and even the genetic variation of populations can be evaluated.

But herbarium collections offer an additional very important opportunity that is drawing more rigorous attention from researchers: understanding the effects that a changing climate may have on plant species. Numerous published studies from Europe, North America, and other continents have already demonstrated that many plant species are on the move, both farther poleward and higher in elevation, as global climatic conditions change. As populations shift spatially in response to climate change, herbarium specimens can serve as baseline reference points for understanding these distributional changes. Changes in the composition of plant communities, as species sort themselves out into new assemblages on the landscape, might also be detected using herbarium records.

Specimens also offer a temporal perspective that experiments or current observations often cannot provide; good collections – combined with contemporary field surveys – can inform us not only about shifts in distribution, but also about changes in life history variables such as the timing of flowering (Cherry 2009). In a unique study that compared plant flowering times between those documented with historical specimens and those more recently observed in living collections, Miller-Rushing *et al.* (2004) found that flowering of plants at the Arnold Arboretum is occurring earlier. Closer to home, an example is provided by one of our earliest blooming species, *Ranunculus glaberrimus* (sagebrush buttercup). A few years ago, when western Montana experienced one of the warmest winters on record, this species was found blooming by the end of January in the Missoula and Bitterroot valleys. A survey of specimens at MONTU revealed that the earliest previously observed blooming times for this species – at least based on the specimen record – were in February and March. The baseline reference provided by the specimens gave a glimpse of the way in which phenology may be shifting as climatic conditions change.

From all of these standpoints, herbarium collections can really be thought of as long-term monitoring tools – a sort of permanent benchmark for understanding in greater depth the ways in which plants are responding to changing environmental conditions, not only at a local level, but across their geographic ranges.

Steve Shelly

References:

- Cherry, M.I. 2009. What can museum and herbarium collections tell us about climate change? *South African Journal of Science* 105: 87-88.
- Miller-Rushing, A.J., et al. 2004. Herbarium specimens as a novel tool for climate change research. *Arnoldia* 63: 26-32.

MONTU People

...Blaine and Gloria Mooers

The vast majority of people who have collected plants for our herbarium practiced their hobby, avocation, or work in only one part of the state. The husband and wife team of Blaine and Gloria Mooers is an exception. It almost seems like they purposely did the exact opposite. Their collections come from the Great Plains in the extreme northeastern part of Montana and from the mountains on the Idaho border. The result is that MONTU has good specimens from two under-collected parts of the state.

Blaine spent his younger years in the West, mainly Corvallis, Oregon and then moved to Florida where he learned to camp and hike in the Everglades. Immediately after graduating from high school in Delaware, Blaine headed back west to Montana in the spring of 1979. He spent the summer working on a bison ranch in Missouri River country in Garfield County and then enrolled in the University of Montana's School of Forestry in the fall. He went to school in western Montana, but he worked in eastern Montana, fighting fires on Custer National Forest and monitoring vegetation on coal mine reclamation projects near Colstrip. He went on week-long backpacking trips in the Bob Marshall and Selway-Bitterroot Wilderness Areas between school terms. However, it was among the draglines, smokestacks, and trains at Colstrip where Blaine started to take plant identification seriously. Blaine majored in Forest and Range Management with a minor in Botany. His favorite topic was Plant Ecology, and he was inspired by the writings of John E. Weaver, the pioneer prairie ecologist. He remembers being influenced by Kathy Peterson and Mel Morris, but the biggest influence was Roger Rosentretter, a graduate student studying lichens and sagebrush steppe. Roger would curate lichens late into the night and showed Blaine how to curate plants. Roger's enthusiasm was contagious and inspired Blaine to tackle the minutiae necessary to identify grasses and sedges in Agrostology. Before long Blaine was collecting plants.



Gloria and Blaine Mooers at Holland Lake.

After graduating from UM in the spring of 1984, Blaine started a seasonal job as a Forest Service technician mapping range condition in the San Juan Mountains of southern Colorado. He started collecting plants during the day and identifying them at night. At the end of the season he deposited about 600 specimens with herbaria at Colorado State University and the Missouri Botanical Garden. About 200 of these specimens were first collections from Del Norte and Mineral Counties. This experience impressed upon Blaine the value of collecting plants in remote places distant from active herbaria. Blaine got a job the following spring searching for rare plants in Hell's Canyon of Idaho, hiking and keying out plants, and working for his friend, Roger Rosentretter.

Between the two jobs, Blaine married Gloria Berg, a graduate student in Range Management at UM. Gloria grew up in the Sacramento Valley of California. She spent three years at UC Berkeley before moving to Montana to save money and work for the Forest Service in the summers. During graduate school Gloria worked on the Cimarron National Grassland in Kansas, and she and Blaine returned to the Cimarron for a couple months. Blaine again made plant collections which he sent to the New York Botanical Garden.

Their jobs ended early that summer, so Blaine and Gloria headed back to the mountains of western Montana. Before leaving UM Missoula that spring, Blaine met Klaus Lack-schewitz and John Pierce in the herbarium, and they inspired him to collect plants in the mountains. So Blaine and Gloria spent a week in August hiking in the Anaconda-Pintlar Wilderness and then another trip in the Great Burn Wilderness. They collected dozens of specimens on each trip and deposited them in the UM Herbarium.

The fall of 1985, Blaine got his first permanent job with the Soil Conservation Service, first in Baker and then Culbertson in far-eastern Montana. Gloria finished her Master's degree in the spring of 1986. Her thesis was about the ecology of spotted knapweed, *Centaurea maculosa*, in northwestern Montana. The peak of plant collecting for the Mooers came in the spring and summer of 1986. Blaine was working as a soil conservationist in Roosevelt County. He and Gloria collected plants after work in the long summer evenings and on weekends. In mid-August he collected *Liatrix ligulistylis*, one of only two Montana collections of this rare gayfeather in our herbarium. On some weekends he and Gloria went hiking on Medicine Lake Wildlife Refuge, and they collected plants there as well. The sandhills on the Refuge are one of only two places in Montana where *Cryptantha fendleri*, a sandhills specialist, occurs. Blaine and Gloria found it and collected it. In early August they again took a vacation to western Montana. This time they did two, four-day backpacking trips into the Cabinet Range, one on the east side of the wilderness and the other on the west side. Blaine carried one of his several home-made plant presses into the backcountry to make sure he came away with good collections. All of these collections went to MONTU, and duplicates of the eastern Montana specimens went to Rocky Mountain Herbarium in Laramie, Wyoming.

Blaine was becoming more interested in doing scientific research in plant ecophysiology. He started a graduate program at Montana State University in 1987 and did his field research on weekends in northern Richland County, not far from Culbertson. Meanwhile, Gloria was hired as a soil conservationist with

(Continued on page 5)

MONTU NEWS BRIEFS

New Acquisitions

U.S. Forest Service – Peter Stickney’s MRC Herbarium: ca. 13,000 specimens.

Peter Zika, University of Washington: 15 specimens from the Pacific Northwest, including one isotype.

Roger Rosentretter: 10 lichens from MT, ID, OR, CO, and AK.

Peter Lesica: 225 specimens from Montana.

Judy Hoy: 4 moss specimens from Ravalli Co., MT, including one new species for Montana.

Andrea Pipp: one lichen from Blaine Co., MT.

Virginia Vincent: one Fungi specimen from Missoula Co., MT.

Robert Pal, visiting researcher from Hungary: 5 specimens of *Papaver* and *Galinsoga*.

John Pierce: 30 aquatic plants from MT, ID, and WA.

Robert Dorn: 5 specimens from MT.

Loren Bahls: 100 diatom slides from MT and CA for the Montana Diatom Collection.

Yelena Kosovich-Anderson: 24 bryophyte specimens from MT and ID.

Exchange Acquisitions

Snake River Plains Herbarium: 157 specimens from Idaho.

Washington State University Herbarium: 61 specimens from MT, ID, and WA.

NY Botanical Garden: 285 specimens from UT and NV.

Loans for Research

Michigan State University, Garrett Crow: 18 sheets of *Pinguicula* for Flora of North America treatment.

University of Alaska – Fairbanks, David Murray: 33 sheets of *Eritrichium* for Flora of North America treatment.

Millersville University, PA, Jorge Mena-Ali and Christopher Hardy: 182 sheets of *Claytonia*, *Montia*, and *Lewisia* for a study of smut disease (*Microbotryum* sp.) on species of Montiaceae.

Publications Based on MONTU Specimens

Bahls, L. 2009. A checklist of diatoms from inland waters of the northwestern United States. *Proc. Acad. Nat. Sci.*, Vol.158: 1-35.

Bahls, L. *et al.* 2009. *Aulacoseira canadensis* and *A. crassipunctata* (Bacillariophyta) in North America. *Nova Hedwigia*, Beiheft 135: 167-184.

Lesica, P. 2009. *Draba calcifuga* (Brassicaceae), a new species from the Rocky Mountains of North America. *Novon*, Vol. 19: 182-186.

Lesica, P. and W. Fertig. 2009. Noteworthy Collections – Montana. *Madrono*, 56(1): p.67.

Examples of Information Requests

Barre Hellquist, Mass. College of Liberal Arts: information on *Potamogeton* from Yellowstone National Park.

Andrea Pipp, MT Natural Heritage Program: numbers of moss specimens at MONTU from MTNHP Species of Concern list.

Susy Fuentes, PhD. student, Germany: seeking information on a type specimen of *Chenopodium*.

Visitors to the University of Montana Herbarium in 2009

General Public and Private Consultants

Drake Barton, Cedar Brant, Steve Kohler, Joe Mussulman, John Pierce, Rachel Potter (+4 H.S. students), Gina Sandon, Nancy Seiler, Peter Stickney, Byron Weber

UM Researchers and Students

Amanda Ackerman, Mary Bricker, Eveluna Kallioniemi, Dan Kerslake, Elliott Parsons, Patrick Rhea, Adam Shreading, Lauren Stoffel, Mat Wegener

Out-of-town Academic Researchers

Donald Davis (Gustavus Adolphus), Anne Jäkäläniemi (Finland), Robert Pal (Hungary), Susan Rolfsmeier (Kansas State)

Federal, State, Tribal, NGO Biologists

Cheryl Beyer
Paul Hendricks (MTNHP)
John Hill (BLM)
Lisa Lawrence (BLM)
Scott Mincemoyer (MTNHP)
Susan Rinehart (USFS)

Thanks to new members of the Friends!

Your continued interest and support is what makes us effective. Thanks, and welcome to these members, new since the last newsletter.

Geum Environmental Consulting, Hamilton
Robert and Lois Olsen, Helena
Jennifer Whipple, Yellowstone National Park

2010 FRIENDS OF THE UM HERBARIUM ANNUAL MEETING

The Annual Meeting of the Friends of the UM Herbarium will be held Saturday, November 6 from 10:00 AM to 2:00 PM. The meeting will be held in Rm. 202 of the Natural Sciences Building on the UM Campus. This is the annual meeting of the Board of Directors and is open to the membership.

Pacific Northwest Online Portal Comes to Montana

Over the last decade, the National Science Foundation's (NSF) Biological Research Collections program has funded the digitization of over 500,000 vascular plant specimens at several herbaria in the Pacific Northwest. The University of Washington Herbarium (WTU) has been at the forefront of an effort to bring together plant specimen data from throughout the entire Pacific Northwest region. This effort is called the Consortium for Pacific Northwest Herbaria Online Portal (<http://www.pnwherbaria.org>; or PNW Portal). The goal of the project is to use informatics tools and emerging technologies to provide unified portal access to more than 1,000,000 research specimens from multiple groups held at Pacific Northwest herbaria. WTU just received a second NSF grant, allowing them to reach their goal of providing access to Pacific Northwest specimen collections.

The University of Montana Herbarium will be part of this effort. MONTU has digitized approximately 70,000 Montana specimens, thanks to a NSF grant that is now complete. The new NSF grant to WTU will allow our herbarium to become part of this project. Starting this spring, a bioinformatics expert at the University of Washington will begin writing a program to access and transfer data from the UM Herbarium database to the PNW Portal. Label information on Montana specimens from herbaria throughout the Pacific Northwest will be available from one website. There will be automated synonymy checks for new specimen records, regional specimen-based checklists for each taxonomic group, and automated loan request messages to multiple institutions.

This work facilitates systematics and floristics research worldwide by integrating a wealth of currently inaccessible or disparate biodiversity data through a single, fully searchable website. Beyond the scientific research community, agency/professional botanists, educators, and amateur enthusiasts will benefit from this project. Resource managers currently do not have easy access to regional information regarding the diversity and distribution of the biota on their lands. Conservation and weed management personnel will have access to regionally-relevant information from a single resource. Educators and amateur enthusiasts will be able to use the online resources developed in this project to create county level species lists and to access images to support presentations, brochures, and self-guided learning.

The UM Herbarium website will continue to provide access to the MONTU database (<http://herbarium.dbs.umt.edu/database/Default.aspx>) and a link to the PNW Portal (<http://www.pnwherbaria.org>). The website also has past issues of our newsletter as well as descriptions of the collections and herbarium policies.

Stop by for a visit.

Peter Lesica

...MRC (Continued from page 1)

(Salicaceae). By 2009, MRC had grown to over 10,000 specimens.

Peter Stickney retired from the Forest Service in 1995, but has continued to curate MRC ever since. In 2009, Peter, Dean Pearson, and other Forest Service representatives, after a good deal of politicking, recommended that MRC be transferred to the University of Montana Herbarium (MONTU). The Rocky Mountain Research Station of the U.S. Forest Service and the UM Division of Biological Sciences entered into a memorandum of understanding. The agreement states that the MRC Herbarium collections will be on indefinite loan to MONTU. None of the MRC specimens can be traded or given away. The Forest Service provided \$10,000 to move the cabinets and specimens, and to curate and enter label data into the MONTU database. The move began in November 2009, when Peter Stickney single-handedly boxed up all of the specimens. The cabinets were moved to a university warehouse in early December, and the specimens were moved to MONTU in early January. Since then, MRC specimen label data are being entered into the UM Herbarium database and will soon be available on-line. This spring, the cabinets will be moved into a room adjacent to MONTU and reunited with the MRC specimens. The MRC collections will be kept separate from MONTU. Peter Stickney's fifty years of curation has been impeccable, and the specimens are from throughout the state as well as Idaho, making the MRC collections a valuable addition to the UM Herbarium.

...Mooers (Continued from page 3)

the Soil Conservation Service in adjoining Richland County, and they lived in Sidney. During this time Blaine also did a stint as Eastern Representative for the Montana Native Plant Society. Blaine completed his course work and received his M.S. in the spring of 1989.

Shortly after receiving his degree, Blaine and Gloria moved to Corvallis, Oregon, the home of Blaine's early childhood, and they both started graduate school—Blaine in Rangeland Science and Plant Physiology, Gloria in Biochemistry. After a couple of years their daughter was born. Blaine changed his focus to Biochemistry to have more time at home, and Gloria left school in order spend time with their daughter. Blaine used X-ray crystallography to study unusual DNA structures and finished his dissertation in 1997. The family moved to Eugene where Blaine had a post-doctoral position at the University of Oregon. Their son was born during this time. In 2006, Blaine started a faculty position in biochemistry at the University of Oklahoma Health Sciences Center. Blaine and Gloria take their children camping and backpacking whenever they can, and last year, on their way to Yellowstone National Park, they returned to Montana for the first time since their collecting days. After 25 years their collections still constitute the majority of MONTU's specimens from Roosevelt County.

Peter Lesica

Antennaria and Apomixis

A few years ago, I became interested in the genus *Antennaria* after realizing that identifying specimens from the group was not always an easy task. Certainly *Antennaria* is not alone in this category, but I generally had not thought of it as a particularly difficult group. Realizing my naivete, I immersed myself in numerous taxonomic treatments and the published literature. I quickly started to understand why I was having difficulty.

Antennaria, like numerous other plant genera, is composed of sexually reproducing diploid species and an assemblage of apomictic, polyploid species complexes. This scenario is relatively common in the plant world and is also found in other genera common to Montana including *Crepis* (Asteraceae), *Taraxacum* (Asteraceae), *Boechera* (Brassicaceae), and *Crataegus* (Rosaceae). Specifically, these species complexes are the result of hybridization among two or more of the sexually reproducing diploid species, which results in polyploid offspring and possible backcrosses that are only capable of reproducing through agamospermy (i.e. the production of seed without pollination), a type of asexual reproduction, which results in progeny that are identical to the parent plant. This scenario by itself or as a single event may not greatly complicate taxonomic matters. However, hybridization events likely happen more than once, they may involve more than two species, agamospermous offspring may potentially cross with diploid species or other agamospermous clones, or seeds of agamospermous clones may be different from the parent as a result of a genetic mutation. All of these potential events will result in a unique clone or genetic line. Each of these clones, though genetically distinct, may appear very similar morphologically, and they may eventually become geographically widespread or remain more localized in distribution. Consequently, many of these clones (also called apomicts or microspecies) have been given recognition at the species level based on slight morphological differences. However, naming all of these slight variations results in a large number of named entities and consequently in an unusable taxonomy for the majority of users. In North America alone, over 350 names have been published in *Antennaria*, most based on the recognition of minor apomictic variants (Bayer and Stebbins 1993). A more common method employed by recent taxonomists is to group similar clones into species complexes that share a similar morphology and hopefully a related genetic background.

One of the most interesting and variable of these apomicts is *A. rosea*. It has often been included in *A. microphylla* (one of its likely parent species) by numerous authors, though it undoubtedly deserves to be treated as distinct from that species based on its more complicated parentage and reproductive isolation. It is believed that *A. rosea* is the result of hybridization among at least three

species (*A. corymbosa*, *A. microphylla* and *A. umbrinella*) and perhaps as many as eight species depending upon how broadly one treats this complex (Bayer 1990, Chmielewski, Chinnappa and Semple 1990). One only needs to compare the treatment of the species in the Flora of North America by Bayer with the contrasting views presented by Chmielewski in the published literature to realize that one harmonious viewpoint does not yet exist. This is unfortunately the case for a few of the other widely recognized species in Montana as well.

In Montana, at least 17 species are known, six of which are apomictic, polyploid complexes (*A. alpina*, *A. howellii*, *A. media*, *A. monocephala*, *A. parvifolia* and *A. rosea*). Specimens of these species are often identifiable without much trouble. In other cases, they are only separable from one of the related diploid species with great difficulty, and in other instances individual specimens appear intermediate between two of the complexes and not readily assignable to either one. Examples of the latter case can be observed in alpine specimens at the MONTU Herbarium that are difficult to assign to either *A. alpina* or *A. media* and in specimens that appear intermediate between *A. media* and *A. rosea*. This difficulty in assignment is obvious on some specimen sheets by the sheer number of annotation labels present and in the conflicting treatments presented in the literature (Chmielewski 1997).

Perhaps one day the answer to the identity of these misfit specimens will become clear with improved genetic techniques. Similarly, wider agreement on the taxonomy of particular sections of the genus may be possible. In the meantime, they provide the mystery and excitement which continues to make taxonomy and plant identification an intriguing endeavor.

Bayer, R.J. 1990. Investigations into the evolutionary history of the *Antennaria rosea* (Asteraceae: Inuleae) polyploid complex. *Pl. Syst. Evol* 169: 97-110.

Bayer, R.J. and G.L. Stebbins. 1993. A synopsis with keys for the genus *Antennaria* (Asteraceae: Inuleae: Gnaphaliinae) of North America. *Can. J. Bot.* 71:1589-1604.

Chmielewski, J.G. 1997. A taxonomic revision of the *Antennaria media* (Asteraceae: Inuleae) polyploid species complex in western North America. *Brittonia* 49(3): 309-327.

Chmielewski, J.G., C.C. Chinnappa and J.C. Semple. 1990. The genus *Antennaria* (Asteraceae: Inuleae) in western North America: morphometric analysis of *Antennaria alborosea*, *A. corymbosa*, *A. marginata*, *A. microphylla*, *A. parvifolia*, *A. rosea* and *A. umbrinella*. *Pl. Syst. Evol* 169: 151-175.

Scott Mincemoyer

Don't Forget to Pay Your Dues!

If you haven't already done so, send in your membership renewal. You won't want to miss a single issue of the newsletter or miss out on what is happening at the herbarium. Use the membership renewal insert included in this newsletter, or the membership form on page 8. Gift memberships are also available and are a great idea for friends.

Ahvi and Talasi...Two New Genera in the Herbarium!?

Although Ahvi and Talasi may sound like new plant genera in the herbarium, they are actually our two new student workers! Ahvi has been working in the herbarium since last summer and Talasi just began this winter. Both come with experience and are accomplished students. We are glad to have them with us for the year. Also, we are pleased that we have been able to add Adam Shreading to our staff!

Ahvi Potticary is a senior with a double major in Biology and Psychology. Originally from Portland, Oregon, Ahvi has interests in both plants and animals which is consistent with her long-term goals in ecology and conservation biology. She has worked at the U.M. Flight Lab, in Tom Martin's bird research program, and now in the herbarium. Following graduation, she plans to continue with her bird research and eventually would like to attend graduate school. In the meantime, she'd like to travel with the bird research group to either their Arizona field site, or better yet, to their Borneo site! No doubt she'll be just as interested in the flora as in the birds!

So what does an Honors student, experienced traveler, excellent birder, and artist do for relaxation? She plays a little pool. But someone like Ahvi doesn't just "play pool." She entered a tournament and went on to represent Montana and then the entire northwestern United States in a national pool tournament in Tucson!

Talasi Brooks is a graduate student in the Environmental Studies Program. Her name is Hopi for the corn-tassel flower (one more reason why she fits into the herbarium so well!). She grew up in Connecticut and had many adventures before landing in Missoula. While still in high school she spent a year in Bordeaux, France as an exchange student. This was a memorable experience which left her fluent in French. Before graduating *magna cum laude* from the University of Connecticut, she enrolled in the semester-long National Outdoor Leadership School in Lander, Wyoming. This renowned and grueling

program consisted of backpacking, river-running, and mountaineering across the western U.S.

Since then Talasi has had a series of positions leading trail crews in construction and maintenance of wilderness trails from the Appalachian Trail in Connecticut, Massachusetts, and New York, to the John Muir Wilderness in the Sierras of California. Her specialty is construction of trail features using dry stone masonry. In fact, she is in such demand that she may be working again this summer in the Nez Perce National Forest in Idaho.

Talasi's future plans include attending to U.M.'s Law School to study in the joint program between the Law School and the Environmental Studies Program. She would eventually like to do advocacy work on behalf of wilderness.

We also welcome Adam Shreading to the herbarium staff. Adam worked with us this past year on the NSF grant to computerize Montana collections. Now that the grant is over, Adam will continue with us by working on the USFS grant that came with the recent donation of the MRC collections.

Originally from Bakersfield, California, Adam graduated in 2009 with a degree in Wildlife Biology from U.M. He has a long-term interest in plants, and minored in Wildland Restoration. He also worked on the plant crew for California State Parks, doing plant restoration and dealing with invasive species. Tired of the heat of Bakersfield, his field work was in the more pleasant coastal environment of Morro Bay.

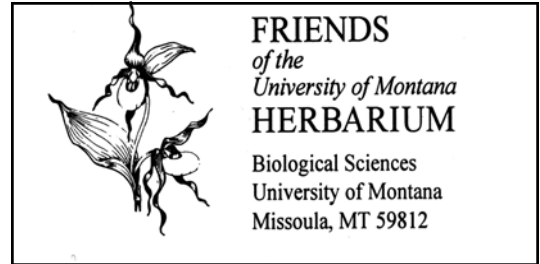
Before attending U.M., Adam, along with Lauren Stoffel (see the 2008 newsletter), spent two months travelling in Costa Rica. They enjoyed being immersed in the flora, fauna, and culture of the country for such a long period. Adam plans to attend graduate school in the future to study raptors, and we hope it will be at U.M.!

Dave Dyer



YES! *I want to help protect the irreplaceable collections and enhance the facilities of the University of Montana Herbarium*

- | | | |
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Dues may also be paid online at: <http://umfoundation.onlinemontana.org>

1. Click on “Click here to Submit a Gift”

2. In the list of possible funds to donate to, **uncheck** the first box, scroll down to the last entry “Other”, and type in “Friends of UM Herbarium, Fund #29H”.

3. Under “Comments” indicate “Membership for Friends of UM Herbarium, Fund #29H”



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