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2016 Friends of The University of Montana Herbarium Newsletter

Peter Lesica

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My first Montana adventure was in the summer of 1972 when I hitchhiked out from Wisconsin. There wasn’t a lot of room in my backpack, and the only wildflower book I had was *A Field Guide to Rocky Mountain Wildflowers* by John and Frank Craighead and Ray Davis. It was published in 1963 and at the time it may have been the only wildflower guide that covered western Montana. It was one of my main books on Montana botany for many years. I hadn’t really thought about this book in recent decades, but that changed a short while ago.

Early in 2014, three steamer trunks were delivered to the UM Herbarium by John (Johnny) Craighead Jr. These trunks contained nearly a thousand mounted plant specimens collected in 1941-42, 1946-47, and 1961-62. Almost all of the specimens were taken in northwest Wyoming in the vicinity of Grand Teton and Yellowstone National Parks. The Craighead twin brothers are famous for their grizzly bear research and their advocacy for the Wild and Scenic Rivers Act. Frank Craighead is no longer with us, but John, who will be 100 this year, and his wife Margaret still reside outside of Missoula close by their son, Johnny.

According to Johnny, the Craighead brothers got the idea for a wildflower guidebook while on a trip to India where they were unable to find any easily accessible literature on common Indian plants or birds. Willis Smith, a seasonal ranger at Grand Teton National Park, suggested to the brothers that they produce a photograph-illustrated field guide to the wildflowers of the Yellowstone National Park area. The brothers set out to get the photographs they needed and the voucher specimens to make sure their identifications were correct. Interestingly, John, who obtained most of the plant specimens, was assisted in this endeavor in the early 1940s by Smith’s daughter, Margaret, who had previous experience identifying and collecting plants in the Yellowstone-Teton area. Many of the collections from that time list Margaret Smith as the collector. Johnny described his parents as “going off into the mountains, holding hands and doing a bit of collecting.” Nothing like beautiful scenery to help a budding romance.

The brothers put the project aside to do survival training for the U.S. Navy during World War II. They resumed their plant collecting and photography when they returned to the Jackson Hole area in 1946 after the War. It was

(Continued on page 5)
**Notes from the Board**

Most of us think of an herbarium as a static place where not much changes. Cabinet after cabinet of old, brittle plants, some collected more than 100 years ago, some collected last year. Certainly new plant specimens are accessioned every year and stored on the shelves. The collection is utilized throughout the year by various individuals for a wide assortment of reasons and projects. And occasionally groups of plants are sent off upon request to another herbarium or institution for research purposes. But for the most part, not much appears to change. At least on the surface.

When I first started as a member of the board in 2004, each specimen was assigned an accession number and entered into a log book by hand. This, and the information on the specimen sheet, was state-of-the-art in data recording. Not that we would necessarily use that term, but at the time the collection and record keeping were certainly entirely analog. But this collection of plants in our herbarium was just starting the journey into the digital age.

In 2005 MONTU was awarded a National Science Foundation grant to review the collection, update the nomenclature, and digitize the label information. The process was slow, but information was soon available online at MONTU’s own website.

Not long after all the digitizing was completed the opportunity arose to merge the freshly digitized data with other regional herbaria (including several others from Montana) in the Consortium for Pacific Northwest Herbaria Online Portal. This made the collection searchable within the greater context of regional distribution.

Montana State received a NSF grant to digitize and photograph the MONT Herbarium collection and link the data to the Consortium Portal. Once they completed that project they loaned the camera and set up to MONTU. The process of digitally photographing all of the specimen sheets, which will also be available online at http://www.pnwherbaria.org/, is making steady headway.

Currently the bryophyte and lichen collections from MONT are being digitized and photographed to be part of a national database of non-vascular plants (See Matt Lavin’s Notes from the Board, 2013). MONTU plans to begin the same process in the near future.

When you walk into the MONTU herbarium today it most likely won’t look much different than it did 10 years ago, and spending a pleasant afternoon looking at plants in the herbarium is still the best way to help determine unknown specimens. But thanks to the many thousands of hours of staff, students, and volunteers, you can now also search online for help in the determination of a plant, and certainly better understand distribution and phenology within our geographical region. MONTU, welcome to the twenty-first century! Next up, space, the final frontier.

Drake Barton

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**Friends of the University of Montana Herbarium**

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The Friends Newsletter  
Edited by  
Peter Lesica

Layout & Copy Editing by  
Drake Barton and Kathy Lloyd

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**Thanks to new members of the Friends!**

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

Bryce Maxell, Blackfoot Native Plants,  
Marirose Kuhlman, Denise Small
Celebrating Virginia Vincent

MONTU’s longtime volunteer, Virginia Vincent, retired from her herbarium duties in 2015. To honor Virginia’s countless contributions to MONTU the Friends of the Herbarium commissioned a watercolor illustration of *Idahoa scapigera* by Missoula artist Stephanie Frostad. Virginia discovered the first state record of this plant in 1983 while exploring the mountains of Ravalli County. It is a tiny, unique, and beautiful member of the mustard family that grows on vernaly moist rock ledges and is found in only about a dozen locations in western Montana.

As a tribute to Virginia’s 13 years of service we are reprinting a 2002 article from this newsletter by Peter Lesica (see below). It very pointedly reflects Virginia’s outstanding gifts of time and energy to MONTU, the University of Montana, and the Friends of the Herbarium.

Shannon Kimball

**A Friend in the Herbarium**

There’s a new face in the University of Montana Herbarium these days, and she’s making things happen. Nearly all of the day-to-day work at the UM Herbarium is done by work-study students. Most of the student help has been great. Unfortunately, student workers stay for one or two years at the most and then lose their funding or graduate. Students mount, catalog, and file specimens and prepare loans, but they rarely gain the understanding required to locate misfiled specimens or make decisions about the value of gift or exchange material. Most large herbaria have a staff technician with intimate knowledge of the museum’s workings who works right along with the students. Such a person brings continuity to the operation of the herbarium. The UM Herbarium has never been assigned a technician position. The Friends of the UM Herbarium have always been on the lookout to rectify this situation, and now we think we have the answer.

Enter Virginia Vincent. Virginia is a septuagenarian with a long history in western Montana. A graduate of the University of Vermont, she came to Missoula in 1956 to study Wildlife Biology at the University of Montana, and she never left. Since 1970, she has been a fire lookout on Stark Mountain northwest of Missoula every season but one. For the last 30 years she studied and made plant collections near her summer home in the mountains. Virginia has become a well-known Missoulian with appearances on television and an article about her mountain life in the Washington Post. And she’s no stranger to natural history museums. Virginia worked in the vertebrate museum and the Botany Department during her student years at UM and has collected plants for the Forest Service herbarium on the UM campus. Now she’s helping out in the UM Herbarium.

Virginia started volunteering in the herbarium in January of last year, and a lot has happened since. She and Erin, the work-study student, prepared and filed nearly 400 specimens. They assembled and sent out research loans and processed exchange material received from three other herbaria. In addition, Virginia continues an ongoing pest inspection program to detect harmful insects before they can do too much damage. Virginia also monitors the temperature and humidity of the facility. She even helped a visiting researcher identify some local plants. This winter Virginia hopes to begin processing and mounting some of the specimens that have been backlogged for years!

Virginia spent over 80 hours working as a volunteer in the UM Herbarium last winter. The Board of Directors of the Friends of the UM Herbarium were so impressed and grateful that they voted to give Virginia an honorarium of $600 to show their appreciation. Virginia is back this winter, and we hope she will keep coming back. We also hope to continue to give her an honorarium in appreciation of her contribution to the care of our museum. To this end the Board of Directors agreed to start an honorarium fund. The fund will be used to reward trained volunteers who donate large amounts of time to the curation of the herbarium. We anticipate needing about $1,000 each year. Some of the money can come from our general fund, but some must be raised beyond what we receive as membership dues. Please consider giving to the Friend’s Honorarium Fund; the money will help people who are giving their time to improve our facilities.

Peter Lesica

**2016 FOH Annual Meeting and Celebration!**

The annual business meeting of the Friends of the UM Herbarium will be held Saturday, November 12 from 10 AM to 12:30 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. Following the meeting there will be a light lunch and celebration to commemorate 20 years of FOH accomplishments. You are welcome to join us for good cheer and conversation.
Friends of the UM Herbarium Hits Twenty: a Short History

More than 20 years ago, the U.S. Fish and Wildlife Service’s University of Montana Cooperative began mapping the vegetation of Montana using satellite imagery. The project was well-funded and they were able to convince the University to give them space in the Natural Sciences Building that previously belonged to the UM Herbarium (MONTU). Those of us who used the herbarium were alarmed that the transfer happened so quickly and without our input. Since Kathy Peterson, UM’s last plant systematist, left in 1987, there has been little faculty involvement in the herbarium; use was primarily by students, botanists, and numerous agency biologists. Besides losing space, the herbarium was in need of cabinets to store the increasing number of specimens. It was time for the UM Herbarium to have a support group.

An ad hoc group of Montana Native Plant Society members got together in 1995 and decided to form a support organization under the umbrella of the University of Montana Foundation. The steering committee sent out letters soliciting membership and nominations for the board of directors for the new Friends of the UM Herbarium (FOH). The first FOH board meeting was held in December of 1995, and the first newsletter came out in the spring of 1996. So we’re 20 years old! And what have we been doing these past 20 years?

Over the past 20 years the Friends of the UM Herbarium has raised over $35,000. FOH immediately started a fundraising drive to purchase new cabinets to provide more space for the increasing collections. The drive ended five years later after raising $13,000 and using it to purchase 16 new cabinets, enough space for 32,000 specimens. The congestion was relieved temporarily. Since 2005, the FOH board has awarded an honorarium of approximately $700/year to Virginia Vincent (see page 3) to act as assistant to the herbarium manager. The current FOH balance is over $15,000, and this may be used in an effort to again increase cabinet space.

The Friends of the UM Herbarium Board of Directors has been involved in making herbarium policy. Experts as well as non-experts examine specimens, and sometimes they annotate a specimen as to its identity. The annotation of an expert increases the value of that specimen, but the annotation of an

Continued on page 5

MONTU NEWS BRIEFS

New Acquisitions

Peter Lesica: 146 vouchers from 2014 summer collections, primarily from western Montana.

Marirose Kuhlman: 13 specimens from across Montana.

University of Washington: 29 specimens from Montana, Washington, Idaho, and Oregon, 1 from Brazil, and 43 from Beaverhead National Forest, MT.

Jessie Salix & Samuel Larkin: 1 voucher of Erythronium grandiflorum var. candidum.

Andrea Pipp: 5 lichen specimens collected by John Pierce, and 11 vascular plants from various Montana locations.

Drake Barton: 1 voucher of Cirsium longistylum from Meagher County, MT.

John Pierce: 42 specimens, primarily aquatics, from locations in Montana and surrounding states.

Ian MacDonald: Calylophus serrulata voucher (range extension) from Lewis and Clark County, MT.

Gifts and Exchanges

Flathead Valley Community College: Duplicate specimens from 2014 Tom Watson collection.

Loans for Research

David Giblin, University of Washington: 1 specimen of Castilleja puberula, a Montana state record.

Flathead Valley Community College: 32 specimens of Bal-samorhiza sagittata for morphometric analysis within this genus.

Loren Bahl: 7 diatom slides, various species, for determination.

Sarah Hoot and Keir Wefferling, University of Wisconsin: 6 specimens of Caltha leptosepala for phylogenetic analysis.

Barbara Ertter, Boise State University: 5 sheets of Abronia spp. and 37 of Potentilla spp. for determination.

Dale Vitt, Southern Illinois University: 1 specimen of Orthotrichum praemorsum for determination.

Visitors to the University of Montana Herbarium in 2015

General Public and Private Consultants

Molly Galusha, Grant Parker, Drake Barton, Kathy Lloyd, Scott Miles, Lowell Anderson, Ron Pagel, SpectrUM students, Marirose Kuhlman (MPG Ranch), Amy Chadwick (Great West Engineering), Will Widener, Stacy Jacobson, Jordan Meyer-Morey (MPG Ranch), Lauren Sullivan (MPG Ranch), Nicole Ichtteaz, Heidi Faessel, Isabella Yeager, Joe Elliott

UM Researchers and Students

James Habecck, Martha Apple (UM Butte), Peter Rice, Daniel Azaryahu, Phillip Hahn, Riley Ange, John Harris

Federal, State, Tribal, NGO Biologists

Andrea Pipp (MTNHP), Susan Rinehart (USFS), Layla Dunlop (USFS), Kathy Martin (USFS)

Other Academic Researchers

Craighead (Continued from page 1)
during that time that John and Margaret were married.
John and Frank dropped the botany project again in 1948
to go back to survival training, and just a few years later
the twins split up. John went to the University of Monta-
tana to serve as director of the Wildlife Cooperative Unit,
and Frank held several federal agency and academic posi-
tions. In 1959 the brothers got together again to work on
a long-term study of grizzly bears in the Yellowstone Na-
tional Park area.

Amidst all this activity the Craigheads had not forgotten
their wildflower book. During that time Ray J. Davis,
Professor of Botany at Idaho State University, had pub-
lished his Flora of Idaho, and the Craigheads enlisted him
to be the botanical expert for their wildflower book, veri-
fying specimens and supplying technical descriptions.
The specimens that voucheder their photographs are the
ones that came to MONTU in 2014. Fewer than 150 of
the Craighead specimens were made in 1961 and 1962,
and these were most likely made as part of their grizzly
bear research because their wildflower book was probably
already in preparation or in press by that time. Many of
the specimens from the early 1960s were collected by M.
J. Stephen, probably a graduate student or technician
working for the brothers.

Most of the specimens collected for that project were of
common species, as would be expected for vouchering a
wildflower book. However, there are several interesting
finds. In 1941, John and Margaret found Pedicularis
crenulata south of Jackson and the rare Draba crassa in
the Wind River Range. In 1947, they collected the early-
flowering Orogenia linearifolia near Moose, and in 1962
M. J. Stephen found Hesperochiron pumilus near Canyon
Village in Yellowstone National Park. Interestingly, there
are numerous collections of grasses and sedges taken in
the 1940s, although only one grass and one sedge photo
made it into their book.

With the help of a generous grant from Craighead Ber-
ingia South, the UM Herbarium staff and volunteers
sorted through the specimens to determine which could be
put into the collections. Those without labels were put
into the teaching collection. Many of the specimens had
to be annotated to bring the nomenclature up to date. Ap-
proximately 160 duplicate specimens were transferred to
the Herbarium at Yellowstone National Park. After that,
the label information and a photograph of each specimen
were entered into the Consortium of Pacific Northwest
Herbaria database. The Craighead collection can now be
searched by going to http://www.pnwherbaria.org/data/
search.php and typing “Craighead Collection” into the
Collector field. These collections add to our holdings
from nearby northwest Wyoming and are testimony to
another part of the Craighead legacy.

Twenty Years (Continued from page 4)
amateur just causes confusion. The FOH board developed an
annotation policy. Every year it becomes easier to obtain a
genetic fingerprint from dried specimens, so there have been an
increasing number of requests to use MONTU specimens in
this manner. The board helped fashion a policy for this
“destructive sampling” as well as a standardized loan policy.
MONTU has specimen exchanges with other herbaria in which
we exchange unmounted duplicate specimens, mainly from
Montana, for specimens from other parts of the country. In
light of the ever-dwindling cabinet space the FOH board fash-
oned a mission statement and geographic scope that prioritizes
from which states MONTU will accept exchanges.

Six years ago the FOH board worked with the Forestry Sci-
cences Lab on the UM Campus to accession their well-curated
herbarium into MONTU. That process is nearly complete. The
board is currently working with the UM Division of Biological
Sciences and the Montana Natural Heritage Program
(MTNHP), to make a space trade which will allow more room
for cabinets. Stay tuned.

One of the most important services FOH has made to the
Montana botanical community has been the annual newsletter.
The newsletter has kept members abreast of what’s happening
at MONTU. In addition, the newsletter has helped document
the history of the collections by publishing biographies of a
dozen botanists and 14 students who made significant contribu-
tions of effort and specimens. New acquisitions to the collec-
tions and publications based on the collections are documented
every year. Since 2010 there have been articles on taxonomy
and floristics. Anyone interested in Montana botany will find
something of interest.

The Friends of the UM Herbarium has been fortunate to have
had 22 dedicated botanists, agency biologists, academics, ama-
teur naturalists, and interested lay persons on the Board of Di-
rectors. Thank you to Drake Barton, Mark Behan, Barry
Brown, Tara Carolin, Elizabeth Crone, Joe Elliott, Bonnie Hei-
del, James Habeck, Peter Husby, Matt Lavin, Peter Lesica,
Maria Mantas, Marilyn Marler, Bruce McClay, Scott
Mincemoyer, Jean Parker, Dean Pearson, Andrea Pipp, Rich
Prodgers, Jessie Salix, Steve Shelly, and Peter Stickney. We
look forward to the sustained support of FOH members so the
mission of preserving Montana’s floristic heritage at MONTU
will continue.

Peter Lesica

Note: See Notes from the Board for more about FOH’s
accomplishments.
Activities

The Clark Fork Chapter of the Montana Native Plant Society held one meeting in the herbarium during the winter of 2016. In January, Peter Lesica presented on adaptations of pappus and phyllaries in the Aster Family.

James L. Reveal (1941-2015)
By Peter Lesica

Eriogonum, the buckwheat genus, contains about 250 species; it is the fourth largest genus in North America and the second largest genus found only in North America. James L. Reveal, who died in January of 2015, was the god of Eriogonum. He authored the 210-page treatment of the genus for the Flora of North America, as well as the treatment for the Intermountain Flora. Reveal named 56 of the 195 Eriogonum species found in the Intermountain Flora as well as numerous varietal names. He was also an expert on other genera in the Polygonaceae and contributed to Flora of North America treatments in the Rosaceae and Primulaceae. Kathy Peterson, curator of the University of Montana Herbarium (MONTU) from 1979 to 1987 (see 2004 FOH newsletter), was mentored by Jim on the genus Salvia, which she monographed for her Ph.D. at the University of Maryland.

Jim Reveal was born in March of 1941 in Reno, Nevada and later the Reveal family relocated to the foothills of the Sierra Nevada in California. Jim attended Utah State University where he majored in Botany and prepared a checklist of the Intermountain flora for his senior thesis. He continued at Utah State for a M.S. degree, and in the summer of 1964 he and Noel Holmgren were hired by Arthur Cronquist at the New York Botanical Garden to collect material for the newly-hatched Intermountain Flora project. Reveal did his Ph.D. thesis on Eriogonum under Stanley Welsh at Brigham Young University. Shortly after receiving his degree in 1969, he took a job as professor of Botany at the University of Maryland where he stayed for the next 30 years.

Jim retired in 1999, and he and his wife Rose moved to Colorado for the next eight years. The pair traveled widely, visited herbaria, and collected plant specimens across the West. It was during that time that Reveal completed his Eriogonum monograph for the Flora of North America. On September 16, 2003, Jim visited MONTU. He came in the late afternoon and stayed most of the night, examining and annotating hundreds of specimens. The guy must have been a night owl. The following year he and Curtis Bjork described Eriogonum soliceps, which is endemic to southwest Montana and adjacent Idaho. The Reveals moved to Ithaca, New York in 2007, and Jim went back to mentoring graduate students at Cornell University and working on the treatment of the Polygonaceae for the last volume of the Intermountain Flora.

Although Reveal is best known for his hundreds of articles and monographs on plant taxonomy, he was also interested in the history of botany. While he was still teaching at the University of Maryland Jim wrote Gentle Conquest: The Botanical Discovery of North America, a history of North American botanical exploration up through the 19th century. During his Colorado years he coauthored Lewis and Clark’s Green World: The Expedition and its Plants with Scott Earle. The authors traveled much of the route of the Voyage of Discovery, including Montana in 2002 and perhaps 2003. The book narrates the expedition in chronological order, and has photographs and descriptions of all the plants they encountered on each leg of the journey.

The botanical community will miss Jim Reveal. Who am I going to send my buckwheat specimens to now?

References


Jim Reveal, Montana, July 2002. Courtesy Dolly Baker

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.
Volunteers, Work-study Students, and Staff

After volunteering for a couple of years in the herbarium Jordan Meyer-Morey joined our staff as a winter employee in December of 2014. Hard work and attention to detail are Jordan’s specialties. She’s assisted with several projects and helps the curator with verifying the identity of newly acquired specimens. In her free time she plays guitar and sings in a great local band called No Fancy.

Lauren Sullivan helps out in the herbarium by mounting the steady stream of new plant specimens that MONTU acquires each year. She’s also helping us photograph our way through the cabinets. Lauren is taking classes to finish a degree in Resource Conservation. Her summers are spent managing the native plant nursery for Watershed Consulting in Missoula.

Anne Schuschke is our newest recruit. She quickly picked up on the skills needed to work with our incoming plant collections. Anne has a Bachelor’s Degree in Education and works in Denali National Park during the summer. In her spare time she loves to rock climb, backcountry ski, and travel.

Julia Douglas started volunteering last year, primarily mounting new plant specimens. She’s a gifted artist and we’ve appreciated her expertise and commitment to volunteering. Julia hails from the Hawaiian Islands, where she obviously grew up with a very different winter experience. She has a great sense of adventure and loves anything outdoors.

Tiffany Shelton joined MONTU’s team as an undergraduate student volunteer in 2014, and moved into a work-study position in 2015. With speed and precision she enters data from new specimens into the database and moves new collections through a multi-step process of accessioning. Tiffany is also helping update the decades-old index that is used to locate specimens within our archive cabinets. She never hesitates to take on a new project. Tiffany will graduate this spring with a degree in Ecological Restoration and a minor in Biology.

Over the many years she’s worked in the herbarium Grace Johnson has done just about every herbarium job in the book. She’s majoring in Broad-Field Science and Secondary Education and is working as the Lead Science Educator at Spectrum Discovery Area. Grace’s spare time is mostly spent with her family (son Evan and husband Benjamin), and she’s expecting a new baby in October.

Dan Pendergraph is working on a major in Resource Conservation with a minor in Wildlife Biology. He’s been volunteering time in the herbarium for the last two years and has become an expert on mounting new plant material. During the summer Dan is a Citizen Science Field Leader with the Wilderness Institute, leading volunteers on ecological monitoring trips in the Absaroka-Beartooth Wilderness. His hobbies include fishing, splitboarding, hunting, and botany, especially Poaceae.

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

- Regular Member: $15
- Sustaining Member: $25
- Contributing Member: $50
- Organization: $50
- Life Membership: $300
- Special Gift: $____
- Honorarium Fund: $____

Dues are for a period of **two** years. Dues for current members are payable in even-numbered years. New memberships are accepted at any time. All contributions to the Friends are tax deductible to the full extent provided by law. All checks should be made payable to: U.M. Foundation/Friends of the U.M. Herbarium-Fund #29H.

Join or renew online: [www.hs.umt.edu/herbarium/support.php](http://www.hs.umt.edu/herbarium/support.php)

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