

# Kelseya

Newsletter of the Montana Native Plant Society

www.umt.edu/mnps/

## Agropyron by Any Other Name is Still a Wheatgrass

by Peter Lesica & Matt Lavin

**I**t seems that every few months now we are confronted with the unwanted news that members of our flora have "new" scientific names. "Which of the several scientific names should I be using" is a refrain often heard. Actually, it is often the case that many of these new names were proposed decades ago. Regardless, it wasn't easy learning all those Linnaean binomials, and few appreciate having to repeat the effort. In our first plant taxonomy courses we were told that scientific names were essential because they were stable and universal, while common names varied depending on region and generation. These days it seems that the common names are more stable; *Elymus spicatus*, *Agropyron spicatum* and *Pseudoroegneria spicata* are all currently used scientific names for bluebunch wheatgrass. So why are we burdened with all this nomenclatural instability?

To explore this question we must first recall the history of biological naming. Our modern system was developed by Carl von Linnaeus, a Swedish biologist in the middle of the 18<sup>th</sup> Century. He proposed the binomial system in which each species is identified by a unique Latinized epithet and a generic epithet shared by other similar species. Linnaeus pri-

marily used stamen characters to assign degree of similarity. He developed this system before Darwin and Wallace introduced the ideas of natural selection and the evolution of species. Once it was accepted that newer species evolved from older species, taxonomists strove to construct classifications based on principles of Darwinian evolution. Thus, taxonomic nomenclature came to serve two functions: (1) providing standardized names to facilitate communication and (2) reflecting evolutionary relationships. Unfortunately, serving two functions often causes conflict.

Reasons for the current round of scientific name changes relate to one or the other of taxonomy's functions. A perennial cause of nomenclatural instability centers around the debate over what delineates a species. In plant taxonomy the issue has turned as much on opinion as data. "Splitters" believe there is merit in recognizing small but consistent variation at the species level, while "lumpers" prefer to emphasize the close relationship among variants. In the first half of the last century Kenneth Mackenzie and others recognized many different species of similar-appearing sedges. Then Arthur Cronquist, who authored floras for much of North America in the latter part of the century, lumped many of these sedge species together. Now sedge experts are more inclined to be splitters, and many of the species recognized during Mackenzie's time



Debbie

*Poa secunda* (Sandberg bluegrass)

### BEYOND THE TREES 2004 Annual Meeting

The 2004 Annual Meeting will be hosted by the Artemisia Chapter on July 9-11 at the Timbercrest Girl Scout Camp up the West Fork of Rock Creek, about 5 miles from Red Lodge. There will be a variety of field trips "beyond the trees" featuring the Beartooth Plateau. Mark your calendars and start preparing the legs and lungs!

Leslie Marty

(Continued on page 8)



# President's Platform

## Betty Kuropat



Winter has come quickly on the heels of fall. I have skied more in the first week of December than I did in the whole month last year. I hope you have a wonderful holiday season and find ways to bring plants into your frozen world.

The fall board meeting was November 1, in Helena. We put the new project funding guidelines to work and approved several projects for the 2004 budget. Artemisia Chapter presented a very thorough request for a native plant display garden at Zoo-Montana. We approved it for \$1000; with the condition they develop a maintenance plan. Clark Fork Chapter requested, and we approved, \$680 to install labels at the University of Montana native plant garden for the species described by Lewis and Clark. We again approved \$250, through the Western Montana at-large members, to support the Bull River Outdoor Education Association

summer field classes. Watch for reports in the *Kelseya* over the next year as these projects are accomplished. We discussed the Society's printing needs and costs and talked about what types of information should be added to the website. Education and information exchange is fundamental to our mission and we welcome ideas for improvement. Please share your ideas with your representatives.

After hearing the committee and chapter reports, I was impressed with how much you all are doing for and with native plants. Check out the *Kelseya* Calendar to see how you can participate with your local chapter.

Here are some 2004 dates to remember:

**January 31**—deadline for Small Grants proposals.

**February 15**—Nominations are due for Vice-president, Secretary, and

Eastern Director-at-large. Please consider running for an office or submitting a nomination to the nominating committee (see below).

**February 29**—memberships expire, reminders will be sent in January.

**March 6**—Board of Directors meeting in Helena.

**March 10**—deadline for spring *Kelseya*, including spring and early summer field trips.

**April 1**—Outstanding Service Award and Special Achievement Award nominations are due. If you want to recognize someone for their service to MNPS and native plants, submit a nomination (see page 6).

**April 10**—deadline for summer field trips booklet.

**July 9, 10, 11**—Annual Meeting "Beyond the Trees" near Red Lodge, hosted by the Artemisia Chapter.

Betty Kuropat

Betty can be reached at 2688 Witty Ln. Columbia Falls, MT 59912 406-892-0129 e-mail: kuropat@bigsky.net

### MONTANA ACADEMY OF SCIENCES INVITES YOU TO PARTICIPATE

in their Annual Meeting April 16-17, 2004 at MSU-Billings. April 16: Symposium—*Invasive Species*, April 17: Contributed Papers: Abstracts will be placed on MAS website <http://www.mtacademyofsciences.org>

### Your Membership is Due!

MNPS membership renewals will expire March 1, 2004. Renewal notices will be mailed on a postcard to each MNPS member in January. Please make sure to update any address, phone, or e-mail changes and respond with your membership dues to MNPS, P.O. Box 8783, Missoula, MT 59807. Make checks payable to the MNPS. If you have questions regarding the price of membership dues, please visit the website at: [www.w.m.t.e.d.u/m.n.p.s/](http://www.w.m.t.e.d.u/m.n.p.s/)

### PAST ISSUES OF KELSEYA WANTED

The Mansfield Library at the University of Montana would like to archive records of the Montana Native Plant Society. Included in the documents will be copies of all past issues of *Kelseya*. If you have old issues you would like to contribute please call Peter Lesica, who is coordinating the effort. Peter's number is 728-8740.

### Call For MNPS Board of Directors Nominations

The following positions are up for election: Vice-president, Secretary and Eastern Director-at-large. If you would like to nominate someone for any of these positions, please contact Peter Lesica at 728-8740. The deadline for nominations is February 15 and the ballot will be included in the spring *Kelseya*.



### WELCOME new members!

Kemmie Aasheim, Jamie Belt, Dwayne Bondy, Barbara Coppock, Grouse Springs Nursery, Sue Hartmann, Enid & Russ Huotari, Leah Jarrett, Denis Johnston, Leslie Kline, Greg Kudray, Darlene Lavelle, Corry & Betty Mordeaux, Bob Person, Julie & Rob Robbins, Wendy Roberts, Jamie Smidt, and Dan Stewart.

Your participation and support are important to us! Please contact your chapter representative with any ideas or suggestions you may have.

## Green Wheatgrass: Reclamation Savior or Ecological Demon?

by Garth Wruck, reprinted from *Native Plant News*, newsletter of the Native Plant Society of Saskatchewan Inc. Seed and Restoration Special Edition, 2003

Green wheatgrass (*Elymus hoffmannii* K.B. Jensen & K.H. Asay) is a hybrid of quackgrass (*Elytrigia repens* (L.) Nevski) and bluebunch wheatgrass (*Pseudoroegneria spicata* (Pursh.) A. Love). The USDA-ARS Forage and Range Research Laboratory in Logan, Utah has developed and released a variety of this perennial grass called 'NewHy'. 'NewHy' was registered in the United States in February 1991 and has been licensed under Title 5 of the U.S. Plant Variety Protection Act (1970). Because of the seed's similarity in appearance to quackgrass seed, and to avoid problems with noxious weed regulations, the seed was registered and licensed so it can only be marketed as certified seed. This has led to recommendations that the species be registered and licensed in Canada as well.

This presents a problem. Although this licensing and registration protects 'NewHy' seed from being mistaken as quackgrass in seed analyses, quackgrass may now have the ability to masquerade as 'NewHy'. This means that seed lots with quackgrass mistaken as 'NewHy' may still receive certification and be seeded on a large scale. The above recommendations come in response to the fact that green wheatgrass seed is already entering Canada and being used; therefore, it is believed by some that the variety should be registered so that its use can be regulated.

'NewHy' has undergone field evaluation in Utah, Idaho, Montana, and Saskatchewan. The species has shown remarkable performance under moderate to severely saline conditions that receive at least 330 mm (over 13 inches) of precipitation annually. The species has vigorous establishment from spring seeding on dryland sites under harsh conditions

and, being a long-lived perennial, is well adapted for use as hay and pasture.

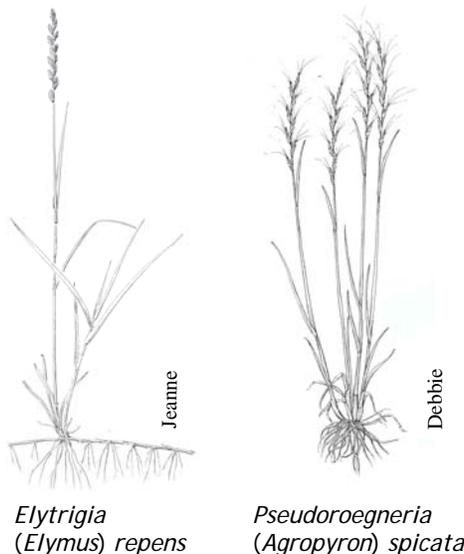
It is anticipated that this species, because of its productivity and palatability, will be a widely used species around sloughs in cultivated land. Green wheatgrass's salt tolerance allows it to establish in these areas like its parent quackgrass, but unlike quackgrass provides attractive forage for livestock. It can be foreseen that this species may also have great potential in reclamation for the revegetation of well sites contaminated by highly saline brine spills or roadsides that experience elevated levels of salinity from de-icing salts. Is this species the answer to these revegetation problems?

It seems that we have heard the story of a valiant forage species saving the prairies before, and the outcome is all too familiar. Although crested wheatgrass kept the prairie soils from blowing into the Atlantic following the droughts of the 1930s, it has now become one of the most invasive species in the Northern Great Plains. Similarly, smooth brome and downy brome were going to be saviors by providing forage for livestock, but no one knew that they would leave their seeded fields and invade almost every native grassland ecosystem in the prairies, choking out native species and becoming two of the most difficult and costly species to control. The first question we should ask ourselves when we are

breeding or planning to introduce a new forage species is: are we creating another ecological demon?

The Semi-arid Plains Research Centre in Swift Current tested the green wheatgrass variety 'NewHy' for vegetative spread. They found that the hybrid had an average vegetative spread less than quackgrass but greater than 'Carlton' smooth brome. We know the problems smooth brome has caused with its ability to reproduce both vegetatively and through seed, and here we are talking about introducing a species that not only has a greater ability to spread vegetatively than smooth brome, but is a hybrid that is fully fertile and can produce through seed like smooth brome, as well. The potential also exists for green wheatgrass to backcross with the parent species, which could potentially lead to genetic pollution of populations of native bluebunch wheatgrass. In addition, because green wheatgrass is a hybrid of introduced quackgrass and native bluebunch wheatgrass, it will not only have the ability to establish in low, moist areas but could also invade dry, upland areas where it may out-compete native grass species.

There are native grass species that are adapted to saline conditions that provide good quality, palatable forage for livestock that through development could meet the demands for uses in agriculture and reclamation. Is green wheatgrass a species we should develop, register and promote or should we rely on our experience and acknowledge the "red flags" the research into this species has raised? Although unusual, it may be more beneficial to recommend that this species be added to the Canada Seeds Act as a weed species, possibly avoiding a problem rather than facilitating one.



**Exotic quackgrass + native  
bluebunch wheatgrass =  
trouble?**

# PUBLICATIONS

## Available from MNPS

The third edition of the *Source Guide for Native Plants of Montana* is now available. The cost is \$6.00. Send a check made out to MNPS to: MNPS Publications, 1270 Lower Sweet Grass Road, Big Timber, Montana 59011. The cost will cover postage. The guide lists 55 sources for over 500 species of trees, shrubs, forbs and grasses. This edition has e-mail and website addresses for many sources and a handy common name index. The guide is a must for home landscapers, native plant gardeners and those involved in restoration projects. The Source Guide will include an insert with recent updates for each source. Contact information for several new sources is included but their plants are not listed. If you already purchased a Guide, you can find the update on the website or send a SASE to MNPS Publications (see address above).

Available free from MNPS Publications: MNPS membership brochures, *Plant Collection Guidelines for Teachers* brochures, and *Echinacea Cultivation Information*. Also available are additional copies of *Plants Collected in Montana During the Lewis & Clark Expedition*.

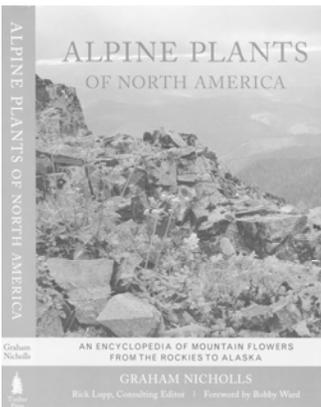
Please send a SASE to the address above to receive any of these publications.

Available from the Flathead Chapter: *Native Plant Gardening and Landscaping References and Recommended Species for Native Plant Gardening in the Flathead*. The packet can be mailed to you for \$2.50. Contact Tara Carolin at P.O. Box 382, West Glacier, MT 59936, call 406-888-7919 or e-mail: Tara\_Carolin@nps.gov

Available from the Kelsey Chapter: a packet of information on landscaping with natives in the Helena area. The packet will be mailed to you for \$3.50. Contact Kathy at 449-6586 or e-mail: drakekath64@msn.com to order.

Visit the MNPS website at [www.umt.edu/mnps](http://www.umt.edu/mnps) to download in pdf format *Weeds Listed as Noxious by Montana Counties*, a list of weeds that are targeted by each county; *Guidelines for Selecting Horticultural Plant Material for Montana*, voluntary guidelines by MNPS and the Montana Nursery and Landscape Association; and *Lewis & Clark Plants Collected Elsewhere That Occur in Montana*, an inclusive list of Lewis & Clark plants found in the state.

## Alpine Plants of North America by Graham Nicholls, published by Timber Press



*Alpine Plants of North America* presents almost 650 species in 54 genera of alpine plants, many of

them common to Montana flora enthusiasts. There are 495 color photographs of alpine plants in their native habitats as well as in rock gardens and containers. The author, Graham Nicholls, is a British nurseryman who specializes in North American alpine plants. His enthusiasm for plants common to Montana and other high-elevation areas is evident. Nicholls took five years to write the book, and many of the photographs are his. The book includes plants that are not in the strict sense "alpine" plants, but are plants that share many of the characteristics of their above-timberline, alpine relatives. The

book includes a discussion of the regions covered, the southern Rocky Mountains to the Brooks Range in Alaska, and has a check list of common alpine plants arranged by state. The main portion of the book is an alphabetical listing by species of alpine plants, under what conditions and where they grow natively, and how to cultivate or propagate them. Of particular interest to me was the section on *Kelseya uniflora*, our emblematic species and a plant that I've always heard is extremely difficult to grow. Nicholls has successfully grown plants from seeds and from cuttings, and makes me think it may be possible! The section on *Lewisia*, one of Nicholls' favorites, is particularly rich and includes many beautiful photographs, many of species not found in Montana. It is exciting to see a more complete expression of the range of the genus and how that expression varies. The book also has a section on cultivation that includes information on container gardening, rock gardening, and sand and raised beds. Some of the photographs of trough gardens were spectacular. The book is beautiful and inspiring and will make a welcome addition to your collection, whether you are a gardener or not.

Kathy Lloyd

## Whitebark Pine Communities Ecology and Restoration

Edited by Diana F. Tomback,  
Stephen F. Arno, and Robert E.  
Keane

This book is now available for the low price of \$12 (U.S. dollars), which includes shipping and handling. However, you must order it through the Whitebark Pine Ecosystem Foundation's website, on the web at [www.whitebarkfound.org](http://www.whitebarkfound.org). This book normally sells for \$37.50 plus shipping.

"Tomback, Arno, and Keane have orchestrated a superb scientific and managerial symphony on whitebark pine: a keystone book on a keystone species. The scale of human impact on our most remote and inaccessible forest type in the West is incredible. The commitment of the editors and authors to document this impact and to provide prescriptions for restoration gives us hope for the future of



whitebark pine communities."  
James K. Agee, Professor of Forest Ecology, University of Washington, Seattle

## How to make our website work for you: guidelines for posting your chapter's events for the world to see!

The Montana Native Plant Society joined the computer age about 3 years ago with the establishment of our website at [www.umt.edu/mnps](http://www.umt.edu/mnps). The website does many things for the Society. It helps us stay in contact with each other across Montana and within our local chapters, it helps us reach our mission statement objectives by making information about native plants more available to the global community, and it gives us a way to attract new members from all over the western United States. Marijka Wessner, our membership chair, says that the vast majority of renewals and new memberships are accompanied by the web version of the membership form.

The website currently contains information about the Society's goals and activities, as well as articles on everything from native plant landscaping to guidelines for plant collecting with students. You can get information about applying for a MNPS small grant, or get details about the annual meeting.

One important function of the website is to provide an outlet for chapters to advertise their local events. This way, people who are curious about the Society can see our overall mission as well as specific ways to get involved. Additionally, those of us who are paper-challenged can easily bookmark the schedule of events and not have to worry about losing the information.

The website is a constantly evolving project and here are some guidelines for posting chapter events.

**WHAT to send:** Schedules of events, contact information, and photos.

**HOW to send it:** via e-mail. I can work with most word processing software, and can use text sent in the body of an e-mail.

**WHERE to send it:** [marler@bigsky.net](mailto:marler@bigsky.net)

**WHEN to send it:** at the same time you submit information for publication in *Kelsey*. Those dates are March 10, June 10, September 10 and

December 10.

Keep in mind that sending an announcement for a field trip or lecture a week or two before the event will NOT result in a web posting. The website is not effective for flash messaging; the web calendars need to be updated well in advance of your events.

Finally, it would be great if you could check your chapter's page and the general website and let me know if you see any errors.

Keeping the website current takes a bit of effort on my part, but I rely on you for timely updates from the chapters. The MNPS holds many impressive events, and we should be proud of our activities! So send in those events.

Mariilyn Marler: [marler@bigsky.net](mailto:marler@bigsky.net)

### Prairie Wildflowers Featured

*Montana Magazine's* March/April 2004 issue will include a special feature article by Steve Shelly about spring on Montana's prairie ecosystems. A photo portfolio by regional photographers will highlight the stunning native wildflowers found there, and activities and projects of the Montana Native Plant Society will also be included. For more information about Montana Magazine, go to their website: [montanamagazine.com](http://montanamagazine.com) or pick up the phone and call 888-666-

### *Ultralight Wildflower Guide to the Central Montana Rocky Mountains* by Andy Kukolax

I'd like to introduce you to my new book *Ultralight Wildflower Guide to the Central Montana Rocky Mountains*. This is the book I wish I'd had when I first started learning Montana flowers 30 years ago. It specifically covers the Central Montana area and has photos of every major flower that you might stumble across without a lot of plants from other areas that you probably will never see.

*Ultralight* describes my new book well. At 1-½ ounces and 3 x 5 inches it disappears in a daypack or pocket and lives there on every trip. When you need it, it will be there to guide you.

No nonsense also describes this book. It contains no title pages; no introductions; no blank pages; no

heavy cover and very small margins. The tough hand-sewn binding can be held open flat on any page with one hand. Phrases are used in lieu of complete sentences and descriptions are limited to relevant ID characteristics. A comprehensive index, a relevant glossary, and drawings of flower parts, inflorescences and leaf shapes are also included. Common names, scientific names and descriptions are located directly below photos for less page-flipping.

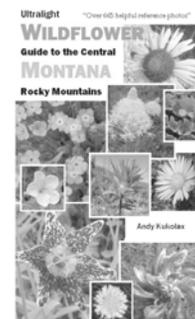
Every page, except the index, is in full color with more than 665 color photos and a handful of drawings by the author to help identify the 333 species covered. A typical flower shows a close-up and one or two relevant ID characteristic photo (such as the fruit or leaf). Print is smaller than most, but is crystal clear for correctable vision.

Useable describes my book, too. If there's a prominent flower under your feet in this area, it's probably in this book. The species included are the result of more than 200 recent hikes and all photos were taken right here. Organization is by family rather than color. Several knowledgeable wildflower writers and botanists reviewed this book and graciously gave their suggestions, comments and corrections.

Concerned about ruining a book in the rain, or sweating on it or a leaky water bottle destroying it? Not to worry! The entire book is printed on waterproof map paper and can be submersed days without harm, but it's a little harder to read underwater.

*Ultralight Wildflower Guide to the Central Montana Rocky Mountains* is available by sending \$19.95 plus \$2.00 USA shipping (checks payable to the publisher) to Diamond Springs Press, 8085 Diamond Springs Drive, Helena, MT 59602-9312.

Andy Kukolax



## Fall in the Flathead

Every year when asked if I will lead a field trip for our local chapter I eagerly step forward and offer some all day hike somewhere in the mountains of the Flathead. I love using the opportunity to see new country and spend the day with friends, old and new. I've had great fun taking brave and trusting souls to places like Standard Peak in the Whitefish Range and Logan Creek in the Flathead Range, where we ended up swimming through alder and nettles (sorry gang!).

Over the last few years, I've noticed that, although our assortment of trips is plentiful and diverse, very few late season hikes were offered. It is obvious, of course, why this is—there just aren't that many native plants blooming that time of year. But I got to thinking; this is the Native *Plant* Society, not the Native *Blooming* Plant Society! So I decided to start a new tradition and make at least one of my trips an early fall hike. It occurred to me that even if few plants are blooming, my best hikes of the year seem to occur in September and October, a time when the crisp autumn weather has driven the heat and smoke from the summer's fires away, and perhaps even left a dusting of snow on the peaks against a clear blue sky to remind us winter is not far away. And of course there are the colors: brilliant yellows, reds, and oranges that take one's breath away. Yes, I thought, I don't know where I will go, but put me down for an all-day hike somewhere in the beautiful mountains of the Flathead and I'll see if I get any takers.

Sure enough, as the date in late September drew near, I got a few calls, so I pulled out my map and picked a spot. Crater Notch just east of Bigfork in the Swan Range. Yes, that's where we'll go. I'd never been all the way to the top, and it seemed like the colors would be good up there. Seven of us met early on what turned out to be a cool, clear, sunny morning. We spent several hours hiking till we reached an amazing overlook of the Flathead Valley just below the "notch", which is a pass in the Swan Range. The colors

were out of this world. We actually had a contest naming the shade globe huckleberry turns this time of year: plum red, barn red and several others, none that really fit the incredible purple-red hue that covers nearly every slope in this part of Montana. It was hard to ask the group to pack up their lunches and start back down the mountain; we all wanted to stay just a bit longer.

After this experiment I am convinced. I will keep up this fall tradition, for there is still a lot to enjoy this time of year. True, we saw only a few flowers the whole day, but the shades of the foliage made the place more colorful than a high mountain meadow in June. After all, flowers aren't our only gig, we are the Native Plant Society!

Maria Mantas

### RepRep with Western Rep.

#### Dennis Nicholls

After seven months of being cut off from the rest of the world, voluntarily I might add, I am connected once again to our modern communications network. If you need to contact me faster than a letter will sail through the USPS, you can do so at 295-4768 or [hikingfool@frontiernet.net](mailto:hikingfool@frontiernet.net)

### MNPS Award Nominations Due

The Montana Native Plant Society presents two awards. The **Outstanding Service Award** is given no more than once a year to a member of MNPS for service to the Society. The award consists of a certificate accompanied by an individualized gift. The **Special Achievement Award** may be awarded to anyone, member or not, whose work has contributed to the mission and goals of MNPS. The award consists of a certificate and possibly a small gift. The awards will be presented at the annual meeting of the Society. Any member may make a nomination and now is the time. The awards committee must receive nominations no later than April 1. Send your nominations to Drake and Kathy at [drakekath64@msn.com](mailto:drakekath64@msn.com) or 314 Travis Creek Rd., Clancy, MT 59634. All nominations should include a brief statement about the nominee's contribution to MNPS and relate why the nominee should receive an award.

## FRIENDS OF THE UM HERBARIUM...how about you?

The Friends of the Herbarium (FOH) was founded in 1995 to provide advocacy and fund raising for the well-being of the UM Herbarium. At last count, there were over 129,000 specimens in the collection, which is used by graduate students, professors, consultants and visiting researchers for various aspects of plant identification, biological, ecological and conservation-oriented studies. Until FOH got involved, the Herbarium suffered from a crippling lack of cabinet space, which limited growth and management of the collections. Since its inception, FOH has purchased 17 new cabinets and provided an honorarium for a volunteer to work part-time in the Herbarium. A current goal is to computerize the Herbarium, making record keeping, data inquiries, and label making more efficient and accurate for Herbarium users. This project will eventually allow researchers to access the collections over the internet.

MNPS is a regular financial supporter of FOH. Your spring issue of *Kelseya* came with a copy of the FOH 2003 newsletter, which included a cover article describing the mutualism between the two groups. If you would like to support the important work of FOH and help protect the irreplaceable research collections at UM, please consider joining us. Membership in the Friends of the Herbarium is only \$15 for two years, and includes the annual newsletter. Send your check to: Friends of UM Herbarium, Division of Biological Sciences, University of Montana, Missoula MT 59812. For more information contact Maria Mantas at 862-6494.

### 2004 Noxious Weed Calendar

The annual noxious weed calendar is now available. Called *Pulling Together to Implement the Montana Weed Management Plan*, the calendar features examples of how people can work together to help slow the spread of invasive plants. The calendar includes images by several MNPS members. Contact your chapter representative or local weed district to get your copy.

## Joseph Edward Kirkwood: Early Montana Plant Explorer

by James R. Habeck

On the north end of the University of Montana's (UM) campus, in a small wooded site near the Van Buren Street footbridge, there is a twenty-ton boulder with a bronze plaque attached. This is the "Kirkwood Rock" standing amidst remnants of the "Kirkwood Grove." This memorial, to Dr. Joseph Edward Kirkwood, represents a tribute from early day forestry students to UM's first Professor of Botany and the founder of UM's School of Forestry. The modern cluster of trees itself is a tiny remnant of the Montana State Tree Nursery, once located on the UM campus. It was intended that the Kirkwood Grove be an arboretum composed of representative native Montana trees.

Dr. Kirkwood was born in 1872 and grew up in Cedar Rapids, Iowa. He attended and graduated from Pacific University, Forest Grove, Oregon (AB 1898). He continued his graduate training in classical botany at Princeton University (MA 1902) and at Columbia University (Ph.D. 1903). He taught botany on several eastern college campuses, and spent a year at the Tucson, Arizona Desert Laboratory. In 1909, at age 37, Joseph Kirkwood joined the University of Montana's (then "MSU") biology faculty at the invitation of Dr. Morton Elrod, UM's first biologist. His assigned task was to develop a botany program, which he did, and later became the first chairman of the new, independent botany department. In 1910 he toured northern Idaho while the now historic fires were raging all around him and wrote a lengthy report of his experiences that summer. Copies of this report are in the UM Library for those interested.

Biology and botany were taught in the basement floor of University Hall, where the University's first museum and herbarium collections were maintained. Professor Kirkwood also founded, soon after he arrived, a professional forest ranger training program, given during winter quarters in space provided in Bell Tower! This forestry program was the beginning of UM's forestry school.

Joseph Kirkwood's travels ac-

quainted him with the floras and vegetation types of many parts of North America. He converted much of his observations and interpretations into published reports that focused on the plant geography and forest ecology of the Pacific Northwest and Northern Rockies. He was also well-versed and published material on topics in plant anatomy, plant cell physiology and comparative em-



"The Kirkwood Rock"

Photo: Scott Mincemoyer

bryology. This was not the age of narrow specialization! Once established on the Missoula campus, Kirkwood gave greater attention to field botany, ecology and forestry. A book appeared in 1922, *Forest Distribution in the Northern Rocky Mountains*, wherein Kirkwood provided in-depth descriptions and interpretations of vegetation zones occurring throughout Montana. This book reveals Professor Kirkwood understood much about the physical and plant geography of Montana; he outlined, in this treatment, his ideas about the likely origins of the floristic elements making up Montana's flora. His writings also suggest he had become well acquainted with contemporary ecological theories of vegetation patterns and distribution, such as C. Hart Merriam's life zone classification, and ideas similar to Henry Gleason's individualistic concept of plant community organization, applying these ideas to Montana's forests and major tree species.

Dr. Kirkwood made major contributions to UM's Herbarium collections

during the relatively short period between 1910 and 1928. Kirkwood spent the 1925-1927 period undertaking three extensive botanical explorations in what were then remote, little known parts of western Montana and northern Idaho. All three plant-collecting trips were described in several issues of *Scientific Monthly*, employing an easy-to-read writing style, and including many photographs. These collection trips, involving hundreds of trail miles on horseback and on foot, were made in what are now the Selway-Bitterroot Wilderness, the Big Burn-Lolo Trail area west of Missoula in northern Idaho, and the Bob Marshall Wilderness. Plants were collected at all elevations, yielding a diverse assortment for the university's herbarium. Professor Kirkwood made complete collections in the East and West Forks of the Bitterroot River drainage, as well as in the Kootenai country and Cabinet Ranges in northwest Montana. Some collections were range extensions at the time.

Kirkwood's interest in forestry expressed itself in a variety of forest seedling experiments, such as testing comparative shade tolerances, and transplanting conifer seedlings on the west slope of Mt. Sentinel and measuring their survival. He was interested in understanding the factors related to forest growth and perpetuation. There didn't seem to be a line, in Kirkwood's mind, between the sciences of botany and forestry. Kirkwood published some of his tree studies in 1928, and at the time of his death had nearly completed a manuscript on the woody plants in the northern Rockies. This effort, *Northern Rocky Mountain Trees and Shrubs*, was published posthumously in 1930 by Stanford University Press.

He died unexpectedly in August 1928 while conducting summer research at UM's Yellow Bay Biological Station. He was a member of a multi-disciplinary team of scientists studying all aspects of the Flathead Lake ecosystem; Kirkwood was studying the lake's algae. He was only 56 years old when he died, but had already led a full life as a Montana botanist.

...**NAMES** (Continued from page 1)

have been resurrected in the new *Flora of North America* treatment. What's old is new again, and those of us who cut our teeth on Cronquist's treatments will be learning a lot of new old names. This seems like the most arbitrary reason for nomenclatural instability, but it will probably continue as long as taxonomists remain human.

The most understandable reason for nomenclatural revisions has to do with standardization. A great many botanical names were generated during the latter part of the 19<sup>th</sup> and early part of the 20<sup>th</sup> centuries. These names were published in journals and books that had limited geographic distribution at the time. Presl described *Poa secunda* as new to science in an obscure European publication in 1830 based on a collection from Chile. More than 60 years later Vasey described the same species as *Poa sandbergii* in the *Contributions to the U.S. National Herbarium*, apparently unaware of Presl's description. All this began to change when communication and travel increased dramatically following World War II. Museum specimens and literature were exchanged freely, and Elizabeth Kellogg, working at Harvard, realized that these two bluegrass species were the same. International rules of nomenclature specify that the earliest published name takes precedence, so the correct scientific name for Sandberg bluegrass became *Poa secunda*, both in South America and here. It's the globalization of botany.

Many recent name changes at the level of genus and family are due to new insights on evolutionary relationships. For example, there is now unequivocal evidence that tall fescue (*Festuca arundinacea*) and meadow fescue (*F. pratensis*), two tame hay meadow grasses, are more closely related to species of ryegrass (*Lolium* spp.) than they are to other fescues. Indeed, hybrids between meadow fescue and other ryegrasses are often used in lawn seed mixes. So these former fescue grasses have been transferred to *Lolium*. There is good evidence that some members of the goldenweed genus (*Haplopappus*) are

more closely related to goldenrods (*Solidago*), while others are closer to rabbitbrush (*Chrysothamnus*). Some of these insights come from new analytical methods made possible by computers. Others can be traced to recent advances in molecular biology. Up until about 50 years ago, plant taxonomy relied entirely on morphological characters such as fruit shape, number of stamens, type of hairs, etc. Chemical and chromosomal traits became important in the middle of the last century. Shared traits can be an unreliable indication of close relationship because they can also evolve in unrelated groups as a result of convergent natural selection. For example, many species of cushion plants occur on windswept alpine ridges. They superficially resemble each other because they suffer the same harsh conditions, but they come from many different and unrelated plant families. Modern plant systematists are using portions of DNA and computers that can analyze lots of data to uncover past misunderstandings in evolutionary relationships made using earlier morphological methods. Although molecular characters and analytical methods have advanced the field of biological taxonomy, these approaches may not

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**In many cases it would be a good idea to continue using traditional names until enough solid evidence compels us to change.**

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always yield a definitive answer. Analyzing two different regions of DNA sometimes fails to give congruent classifications, and phylogenetic analysis yields only the most likely classification. Nonetheless, plant systematists are constructing classifications that better reflect the course of past evolution, and they are changing the nomenclature to reflect their new understanding.

Unfortunately for users of scientific names, many recently proposed name changes are based more on opinion than sound scientific evidence. There may be preliminary evidence suggesting that the traditional scientific names don't accu-

rately reflect evolutionary relationships. However, there is often not enough genetic or morphological evidence yet available to determine how the names should be changed to remedy the problem. New Linnaean binomials derived from inadequate, preliminary evidence will often prove no better than the names in current use. In many cases it would be a good idea to continue using traditional names until enough solid evidence compels us to change.

There are often several synonyms for a particular species, but few of us have the time or skill to evaluate all the evidence buried in the scientific literature. How should we choose the name to use? There are a couple of good websites that provide synonyms for scientific names. These include Tropicos at the Missouri Botanical Garden website (<http://mobot.org/W3T/Search/vast.html>) and the International Plant Names Index (<http://www.ipni.org/index.html>). The U.S. Department of Agriculture "Plants" website (<http://plants.usda.gov/index.html>) even suggests which names to accept. However, there is no such thing as a botanical nomenclature arbitration committee to decide which name should be in use. We agree with Wayne Ferren and Robert Haller, former editors for the California Botanical Society. Confusion can be minimized by adopting the nomenclature presented in a credible regional or local flora and reporting that source when you use scientific names.

Most plant systematists are students of evolution, and having classifications that reflect evolutionary processes is, in the long run, a valuable goal. Unfortunately, in the short term this goal is at odds with the other function of taxonomic nomenclature—stability and standardization. Like it or not, we're in for a period of nomenclatural revolution, but we hope to know more about the workings of nature in the process. We just wish our memories were as good as when we were twenty.

Additional Reading:

Dorn, R. 2003. What Happened to all the lilies? *Kelseyia* 16 (2): 6.

Ferren, W. R. and J. R. Haller. 1986. Editorial. *Madrono* 33: 83.

# CALENDAR

## ARTEMISIA CHAPTER

Leslie Marty 445-9178

## CALYPSO CHAPTER

Catherine Cain 267-3362

## CLARK FORK CHAPTER

Thursday, January 8, 7:30 p.m.

Joe Elliott has been studying the mosses of Montana for four decades; few people have spent as much time weaseling around in the undergrowth. Now he's going to tell us about "Mosses: Think Small." Rm L09 Gallagher Business Bldg., UM Campus.

Tuesday, January 27, 7:30 p.m.

Herbarium Night. It's our "Third Grapple With Grasses." Join Peter Stickney for a reintroduction to the grass plant and tips for recognizing the common ones. Rm 303, Botany Bldg., UM Campus.

Thursday, February 12, 7:30 p.m.

Have you ever wondered "What Makes A Good Flower Year?" UM Professor Elizabeth Crone thinks there's more here than meets the eye. Come and listen as she tells us why. Rm L09 Gallagher Business Bldg., UM Campus.

Tuesday, February 24, 7:30 p.m.

Forest Service biologist and native plant gardener Mike Young will share what he's learned over the years about "Montana Penstemons." Rm 303, Botany Bldg., UM Campus.

Thursday, March 11, 7:30 p.m.

Biology graduate student Tarn Ream has had her nose to the forest floor for years and even got a MNPS grant to do it. Now she's ready to come clean with the "Secrets of *Trillium* Revealed." Rm L09 Gallagher Business Bldg., UM Campus.

Tuesday, March 30, 7:30 p.m.

Move over, Rover, "You'll Be In Clover" when Peter Lesica gives us a look at a group of legumes with both economically important exotics and attractive natives. Rm 303, Botany Bldg., UM Campus.

## EASTERN MONTANA

Jennifer Walker 538-9054

## FLATHEAD CHAPTER

All Flathead Chapter meetings are at the Montana Logging Association Building, 2224 Highway 35, east of

Kalispell, across and just east of Hooper's Nursery (except December party). The conference room door is at the back of the building. Call Rachel Potter (892-2446) for more information. At 5:30 p.m., everyone is welcome to join in a working meeting. Instead of business meetings, we are working as a group to complete projects. On January 21, the chapter will be working on revising the Flathead Native Gardening Packet. Additional projects will be announced at future meetings. All programs, listed below, begin at 7:00 p.m.

Wednesday, Dec. 17, 5:30 p.m.

"Annual Christmas Party" at Edd and Betty Kuropat's in Columbia Falls. Come at 5:30, potluck at 6:30. Bring a recycled or under \$5 gift. Call Betty (892-0129) or watch your mail for a map.

Wednesday, January 21, 7:00 p.m.

Jami Belt, program director for the Glacier Institute's field camp will talk about "Edible Plants in the Crown of the Continent Ecosystem." There will be a short slide show, a discussion about uses and recipes, and a demonstration of rope making from natural plant fibers.

Wednesday, February 18, 7:00 p.m.

Helen Smith will give a program on "Champion Trees of Montana" and how to nominate new record-breakers. Helen is the Montana Big Tree Register Coordinator and an ecologist with the Forest Service Rocky Mountain Research Station in Missoula.

Wednesday, March 17, 7:00 p.m.

Valerie Cox will guide us in "Sketching Wildflowers." All levels, particularly beginners, welcome. Bring a hand lens and pencils if you have them.

Wednesday, April 21, 7:00 p.m.

Join us on a breathtaking journey through the "Crown of the Continent Ecosystem" with a slideshow from naturalist and photographer Ralph Waldt.

Wednesday, May 19, 5:30 p.m.

Evening field trip to be announced. We are hoping this will be an evening of mushroom identification.

## KELSEY CHAPTER

For more information about Kelsey Chapter programs and events, call Kathy at 449-6586.

Tuesday, January 13, 7:00 p.m.

Phil Johnson will present "Why do the Roadsides Look Like They Do?" Get all your questions about Montana's highway vegetation answered! Lewis and Clark Library in Helena.

January, date to be announced

"Hands-on Flora Night: Back to the Basics" with Drake Barton. Call for details: 449-6586.

Tuesday, February 10, 7:00 p.m.

Lyn Baldwin will present "Seeing the Forest for the Bryophytes: the effects of Habitat Fragmentation on Mosses and Liverworts in Coastal British Columbia." Lewis and Clark Library.

Tuesday, March 2, 7:00 p.m.

Greg Kudray, ecologist at the Montana Natural Heritage Program will present "Wetlands of Upper Michigan or 200,000 Acres of Wetlands: Confessions of an Ecosystems Mapper." Lewis and Clark Library.

## MAKA FLORA CHAPTER

Rebecca Kallevig 488-5455

## VALLEY OF FLOWERS

The Valley of the Flowers will meet on the second Monday of the month in Room 108 of the Agbioscience Building on South 11th. Parking is OK in the evening in the lot to the north. Meetings begin at 7:00 p.m. For info call Joanne Jennings at 586-9585.

Monday, January 12, 7:00 p.m.

Don Mazzola will speak about the "Gallatin Travel Plan." Don is the Community Outreach Coordinator of the Friends of the Gallatin Forest.

Monday, February 9, 7:00 p.m.

Robyn Klein will let us know "Why Flowers are Colored." Robyn is an herbal specialist and has some facts about flowers and their coloration.

Monday, March 8, 7:00 p.m.

Peter Husby will take us on an "Indoor Water Walk" to see what plants we can see along waterways. Pete works for the Natural Resources Conservation Service in Bozeman.

## WESTERN MONTANA

Dennis Nicholls 295-4768

## **POWERFUL GLACIERS form TINY WETLANDS for Fragile Flowers**

### **Water *Howellia* Interpretive Sign**

On October 18, 2003 the long-awaited interpretive sign about water howellia (*Howellia aquatilis*) was installed. Twelve hard workers spent the day toting supplies, digging holes, mixing concrete, eating donuts, laughing, and for some, a hike to Holland Falls afterwards. The volunteers included members and friends of all the partners: Montana Native Plant Society, The Garden Club of America - Partners for Plants, and Flathead National Forest. There were plenty of bosses and photographers, and enough workers to get the job done. We had a scary moment when we couldn't find the special (tiny) wrench to bolt the sign to the posts. But, it was found and it worked. The sign's home is now on the edge of a marsh along the interpretive trail near Holland Lake. A rustic log bench invites walkers to relax and read the sign while they gaze over the wetland and off to the Swan Range. The Montana Native Plant Society gave Flathead Chapter the \$840 balance of the "Water *Howellia* Fund" and \$660 from the 2001 special projects fund to contribute to the sign. These, along with funds from the Garden Club of America and Flathead National Forest, bought a very professional, sturdy, and weather-proof sign. The "Water *Howellia* Fund" was generously donated to MNPS by Mary Gray from sales of her *Howellia* Chocolates. She specified that it be used for the conservation of water howellia. The Garden Club of America and Flathead Chapter MNPS have also donated huge amounts of volunteer work fencing howellia ponds to protect them from cattle trampling.

The water howellia story is portrayed on the sign through photos and the following words:

### **Powerful Glaciers form Tiny Wetlands for Fragile Flowers.**

Remarkably, more water howellia plants live in the shallow glacial potholes in the Swan Valley than anywhere else in the world. Yet the plant remains threatened because of its unique habitat and restricted distribution—outside of Montana, it's only found in Washington,

northern California, and Idaho.

Massive glaciers carved the Swan Valley, forming the dramatic landscape you see around you. The retreating glaciers left large chunks of ice that created hundreds of pothole ponds in the valley floor. Because of this powerful glacial force, we now enjoy spectacular vistas and a tiny, rare aquatic plant.

Water howellia (*Howellia aquatilis*) grows in glacial pothole ponds that fill with snowmelt and rain in spring, but dry by summer's end. How does this fragile plant survive such a changeable environment? By being adaptable.

In spring, several feet of water fills the ponds that allow the plant's underwater stems to flourish. As the pond water recedes during the hot summer months, the plant's flowers form both above and below the water's surface.

After the ponds dry, seeds exposed to air germinate after the first fall frost. These tiny seedlings survive under the snow through the winter—waiting for the spring rains to return and to begin the cycle again.

In unusually wet years, the ponds may not fully dry, leaving many water howellia seeds underwater. Without exposure to air, these seeds cannot germinate, so the following summer the plants can be very scarce. Fortunately, seeds trapped underwater can live up to several years, waiting for a dry summer that will allow them to germinate and replenish the population.

Betty Kuropat



Photo: Paula

Twelve volunteers from the Montana Native Plant Society, the Garden Club of America, and Flathead National Forest are proud of their new water howellia interpretive sign, installed near Holland Lake this fall.

**MNPS Chapters & the Areas They Serve:**

- ARTEMISIA CHAPTER - Yellowstone and Carbon counties; southeastern/south-central Montana
- CALYPSO CHAPTER - Beaverhead, Madison, Deer Lodge and Silver Bow counties; southwestern Montana
- CLARK FORK CHAPTER - Lake, Mineral, Missoula, Powell and Ravalli counties
- FLATHEAD CHAPTER - Flathead and Lake counties plus Glacier National Park
- KELSEY CHAPTER - Lewis & Clark, Jefferson and Broadwater counties
- MAKA FLORA CHAPTER - Richland, Roosevelt, McCone, Sheridan and Daniels counties
- VALLEY OF FLOWERS CHAPTER - Gallatin, Park and Sweet Grass counties plus Yellowstone National Park

All MNPS chapters welcome members from areas other than those indicated. We've listed counties just to give you some idea of what part of the state is served by each chapter. Watch for meeting announcements in your local newspaper. Ten paid members are required for a chapter to be eligible for acceptance in MNPS.

Your mailing label tells you the following:

CLASS OF MEMBERSHIP: See I, II, III, IV below

CHAPTER AFFILIATION: ART= Artemisia; CAL=Calypso; CF=Clark Fork; F=Flathead; K=Kelsey; MF= Maka Flora; VOF=Valley of Flowers

DATE YOUR MEMBERSHIP EXPIRES: If your label reads "2/99" your membership expired February 28, 1999. Use this form to renew your membership TODAY! Please drop us a note if any information on your label is incorrect. Please notify us promptly of address changes.

Membership in Montana Native Plant Society is on a calendar-year basis, March 1 through the end of February of the following year. New-member applications processed before the end of October each year will expire the following February; those processed after November 1 will expire in February of the year after. Membership renewal notices are mailed to each member in January. Please renew your membership before the summer issue of *Kelseya* so your name is not dropped from our mailing list. Your continued support is crucial to the conservation of native plants in Montana. THANK YOU!

**MONTANA NATIVE PLANT SOCIETY MEMBERSHIP**

DATE \_\_\_\_\_

NAME (please print) \_\_\_\_\_ E-MAIL \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY/STATE/ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ NEW MEMBERSHIP \_\_\_\_\_ RENEWAL \_\_\_\_\_

STATEWIDE MEMBERSHIP WITH AFFILIATION (check chapter below)

MEMBER-AT-LARGE (check East or West below) or LIVING LIGHTLY (check chapter below)

- |                                |  |  |                               |               |
|--------------------------------|--|--|-------------------------------|---------------|
| <input type="checkbox"/> \$18  | I. Individual                              | <input type="checkbox"/> Artemisia         | <input type="checkbox"/> \$12 | I. Individual |
| <input type="checkbox"/> \$22  | II. Family                                 | <input type="checkbox"/> Calypso           | <input type="checkbox"/> \$18 | II. Family    |
| <input type="checkbox"/> \$35  | III. Business/Organization                 | <input type="checkbox"/> Clark Fork        | <input type="checkbox"/> \$30 | III. Business |
| <input type="checkbox"/> \$300 | IV. Lifetime Membership (one-time payment) | <input type="checkbox"/> Flathead          |                               |               |
|                                |  | <input type="checkbox"/> Kelsey            |                               |               |
|                                |  | <input type="checkbox"/> Maka Flora        |                               |               |
|                                |  | <input type="checkbox"/> Valley of Flowers |                               |               |
|                                |  | <input type="checkbox"/> Eastern at-large  |                               |               |
|                                |  | <input type="checkbox"/> Western at-large  |                               |               |

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## Montana Native Plant Society

The Montana Native Plant Society (MNPS) is a 501(c)(3) not-for-profit corporation chartered for the purpose of preserving, conserving and studying the native plants and plant communities of Montana, and educating the public about the value of our native flora. Contributions to MNPS are tax deductible, and may be designated for a specific project or chapter, for the Small Grants fund, or the general operating fund.

Your yearly membership fee includes a subscription to *Kelseya*, the quarterly newsletter of MNPS. We welcome your articles, field trip reports, meeting notices, book reviews or anything that relates to native plants or the Society. Please include a line or two of "bio" information with each article. Drawings should be in black ink or a good quality photocopy. All submissions should be mailed to *Kelseya* Editors, 314 Travis Creek Rd., Clancy, MT 59634. All items should be typed and put on a 3.5" disk and saved in Microsoft Word or rich text format (rtf.) for a PC. Please include a hard copy with your disk. They can also be sent electronically in the same format as above to: drakekath64@msn.com

Changes of address, inquires about membership and general correspondence should be sent to MNPS Membership, P.O. Box 8783, Missoula, MT 59807-8783.

Advertising space is available in each issue at \$5/column inch. Ads must be camera-ready and must meet the guidelines set by the Board of Directors for suitable subject matter; that is, be related in some way to native plants or the interests of MNPS members.

The deadline for each issue is: Fall— September 10; Winter— December 10; Spring— March 10; Summer— June 10. Please send web items to our webmaster concurrent with these dates.

If you want extra copies of *Kelseya* for friends or family, call the Newsletter Editors, write to the above address or e-mail: drakekath64@msn.com

Visit our website at: [www.umt.edu/mnps/](http://www.umt.edu/mnps/) or contact our webmaster Marilyn Marler at: [marler@bigsky.net](mailto:marler@bigsky.net)

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