

Kelseya

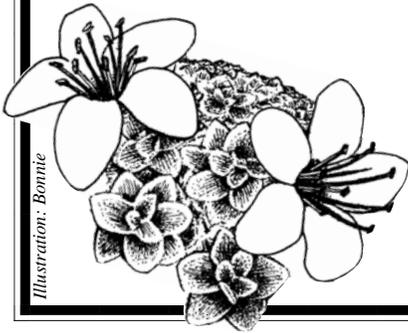


Illustration: Bonnie

Kelseya

Newsletter of the Montana Native Plant Society

www.umt.edu/mnps/

KEEPING TRACK—

notes on keeping an illustrated journal

by Lyn Baldwin

When we first walked through the meadow last summer, I hardly noticed the tall stalks of *Frasera speciosa*, commonly known as green gentian or monument plant. But when Marc and the dogs descended down towards Ford Creek leaving me to ramble through the meadow with my field journal open, the uniqueness of the green gentian plants became abundantly clear. Each plant bore greenish-yellow, open flowers distributed along its main stalk. In this meadow of flowers dominated by the bright colors of lupine, flax, delphinium, and potentilla, the green-colored flowers were unusual enough, but I was particularly intrigued by the small furry ridges that bisected each petal and by the long silky hairs that swathed the base of the petals. I immediately tried to imagine what pollinator would be attracted to these flowers. Questions surrounded my quick sketch of the flowers (see page 10).

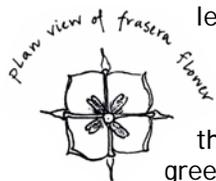
Later, when I researched the pollination biology of green gentian, I found the story was even odder than I had imagined. Green gentian is visited by a wide variety of potential pollinators, including social and solitary bees, wasps, sawflies, hoverflies, moths, butterflies and several species of beetles, which come to either collect pollen grains or drink nectar from the furry ridges (actually

nectar-producing canals). Furthermore, demographic studies in Colorado have shown that this long-lived perennial tends to flower synchronously on a four-year cycle. Thousands of plants will bloom one summer and then very few for the next three summers. This floral synchrony is viewed as a strategy for predator avoidance. By flowering so abundantly, green gentian ensures that when it does flower there will be more flowers than predators, and by only flowering intermittently, green gentian does not provide a continual resource for predator populations. Without my field journal as a prompt to explore the contours of gentian flowers, I might never have stopped long enough to ask questions about this curious plant.

For the last five years, my field journals have been wandering farther and farther afield from the rigid outlines of field notes that I learned to keep in graduate school. My journals are big—handbound with luscious, blank paper that is smooth enough for a pen to

skim across and sturdy enough to accept watercolors. The writing isn't always in straight lines and sometimes the illustrations may not make much sense to anyone but me, but nearly every page in my journals represents a series of lessons that I learned in the field. The decision to include drawings in my field journal has been a pivotal step in my development as a naturalist. While I risked the terror of learning to draw, I also gained the deep pleasure of increasing my observational skills. The attempt to trace the contours of petals and stamens taught me that although I knew the names of many

(Continued on page 10)



ALONG the WEST BUD

May 26, 2000



An entry from one of Lyn's beautiful journals; you should see them in color!



President's Platform

Betty Kuropat



Happy holidays to you!

I hope you are warm and surrounded by your friends, family, and your favorite plant books.

I have been reading one called *The Plant Hunters, Tales of the Botanist-Explorers Who Enriched Our Gardens* by Tyler Whittle. It chronicles the adventures of botanical treasure hunters from the 1400's through the mid-1900's. Mr. Whittle was an English priest and his writing style reads a little slow for me. But the plant hunters' devotion to their quests is interesting and still apparent in modern day botanists. "You don't have to be crazy to be a plant hunter ... but it helps" (from the Foreword). Mr. Whittle included an appendix called *Plant Collecting*. His suggestions are similar to our own MNPS *Guidelines for Collecting Native Plants* and *Plant Collection Guidelines for Teachers* with a little more emphasis on collecting rather than other methods of enjoyment. Whittle's introduction to plant collecting states, "Anyone with sufficient interest to go out and collect generally knows what he is doing. He will not gather a single specimen or one of a small colony if the species is rare. He is aware that plants are stimulated to more vigorous growth by being thinned, and—though a collector—he has the interests of the species much in mind and will never do

a hundredth of the harm done to wild life by "legitimate" despoilers such as farmers, roadmen, roadmakers, and urban developers. This is the answer to those cranky conservators who maintain that the only proper method of "collecting" plants at the present time is with a camera."

I like to browse through plant guides, floras, and herbalist field guides in the winter. I keep trying to learn more about plants and their uses. I'm glad to have references, because I'm poor in the memory department. My newest favorite is the *Flora of Glacier National Park*, by Peter Lesica (see page 5). It's really handy for those of us who live and play close to Glacier.

The other plant-related (sort of) thing I do is try to keep up with Society business. Your Board of Directors is a busy bunch. The fall Board meeting was November 2, in Helena. I got a bad cold and missed it. Pattie Brown ran the meeting without warning or prep time. Thank you, Pattie. She did a fantastic job with some tough issues and even adjourned the meeting on time. They decided on several project funding requests for the 2003 budget. The Conservation and Landscape Committees are jointly working on guidelines for selecting non-invasive plants for landscapers and nursery professionals. The Education Committee wants to

print the *Plant Collection Guidelines for Teachers* and distribute copies to schools and county extension agents. Funding for both projects was approved with suggestions of ways to distribute, such as the MNPS website and targeted newsletters. The Small Grants Committee request to increase grants from \$500 to \$1000 was reconfirmed. Funding was approved for the Clark Fork Chapter to develop a native grassland garden at the Missoula Library, for Western Montana At-large to support the Bull River Outdoor Education Association's summer field classes, and for a special committee to develop a brochure on Lewis and Clark plants in Montana. If you have ideas for projects that promote the mission of MNPS, talk to your Chapter Representative or a Committee Chair to prepare a proposal for the fall 2003 Board meeting, or consider requesting a Small Grant (see Call for Proposals in this newsletter).

The next Board of Directors meeting is planned for March 1, 2003 in Helena. If you have topics that need attention, get them to me or any other Board member at least a week before the meeting.

Until then, if you'll excuse me, I have a tree to decorate, a Flathead Chapter party to host, books to read, and skis waiting. Have a fun winter.

Betty Kuropat

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

Call For MNPS Board of Directors Nominations

The following positions are up for election: President, Treasurer and Western Director-at-large. If you would like to nominate someone for any of these positions, please contact Linda Iverson at 932-5840 or Peter Lesica at 728-8740. The deadline for nominations is February 15 and the ballot will be included in the spring *Kelseyia*.

The “Endangered” Endangered Species Act

The Federal Endangered Species Act (ESA) is perhaps the single most effective means we have to protect imperiled ecosystems and the species they support. Passed in 1973 by the U.S. Congress and signed into law by President Nixon, the purpose of the ESA is to conserve “the ecosystems upon which endangered and threatened species depend” and to conserve and recover listed species so they no longer require the protection of the ESA to survive. Congress recognized the value of biological diversity and the fact that many plants and animals were in danger of becoming extinct. Under the ESA, a species may be listed as “endangered” or “threatened”. Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future. The ESA is administered by the Interior Department’s U.S. Fish and Wildlife Service that has responsibility for terrestrial and freshwater organisms, and the Commerce Department’s National Marine Fisheries Service that oversees marine species. Montana supports 17 species protected by the ESA. The list includes 3 plant species listed as threatened: *Howellia aquatilis* (water howellia), *Silene spaldingii* (Spalding’s catchfly) and *Spiranthes diluvialis* (Ute ladies-tresses). There are also 14 animals listed as threatened, endangered or as experimental populations. The ESA has seen political ups and downs, with lots of downs as of late. The Act was due for reauthorized in 1993, but the required legislation has not yet been enacted. The following 3 pieces give a brief glimpse into the complexity of endangered species protection with a success story about a plant recovered from the brink of extinction, a disheartening bit of news about one of the many current threats the program faces and a positive report on how we can become involved in native plant protection.

Kathy Lloyd



A Plant Success Story

In late August 2002 the U. S. Fish and Wildlife Service removed *Potentilla robbinsiana* (Robbins’ cinquefoil) from the federal List of Endangered and Threatened Plants. Robbins’ cinquefoil occurs only in the alpine zone of the White Mountain National Forest in New Hampshire. Prior to ESA protection in 1980, the population numbered 3,700 individuals. Today the population totals more than 14,000 plants. The success of Robbins’ cinquefoil was possible because of a partnership between the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Appalachian Mountain Club and the New England Wild Flower Society. The partners worked together to implement the Recovery Plan, which was approved in 1983. Robbins’ cinquefoil was threatened by plant collectors and disturbance from hikers along the Appalachian Trail. Recovery tasks included relocating a portion of the trail and propagating the species for transplanting to suitable locations in the White Mountain National Forest. Robbins’ cinquefoil is now a recovered species! For more information visit: <http://news.fws.gov/>



Bill Filed to Remove Plants from ESA

House Resources Chairman James V. Hansen (R Utah) filed a bill that would exempt military lands, private property and all plant life from the Endangered Species Act. Calling the bill the “Life, Liberty, and Property Protection Act” the bill would remove what little protection plants now have under the ESA. Apparently “life” doesn’t apply to our nation’s native and irreplaceable flora. The bill, one of 50 that have been introduced that affect the Endangered Species Act, has been sent to the House Committee on Resources and merits our close attention. Be prepared to contact your Senators and Representatives in support of our native plant resources.

The Native Plant Conservation

MNPS Joins the Native Plant Conservation Campaign

Campaign (NPCC) is a project of the California Native Plant Society and the Center for Biological Diversity. We are assembling a national network of native plant societies, botanical gardens, and other plant conservation organizations that will collaborate to exchange information and create a strong national voice to promote native plant conservation through policies and initiatives such as:

- improved staffing and funding for Federal botany programs
- prevention and control of infestations by invasive exotic plants
- use of local natives in restoration
- increased plant science research and education, and
- equal protection for plants under the Federal Endangered Species Act and other laws

NPCC network affiliates lend their names and prestige to the NPCC, share expertise and information, and work together to solve plant conservation problems. Network affiliates distribute information to their members and collaborators regarding national native plant conservation issues. The Montana Native Plant Society is now affiliated with the NPCC network.

The NPCC is an outgrowth of an ongoing California Native Plant Society project called the Equal Protection for Plants Campaign. That Campaign advocates amendment of the Federal Endangered Species Act so that plants and animals receive equivalent protection. It has been endorsed by over 40 regional and national scientific and conservation organizations, including the Botanical Society of America, the American Society for Plant Taxonomy, and the Society for Conservation Biology. Publications and information are available by visiting: <http://www.cnps.org/npsc.htm>

Emily B. Roberson, Ph.D., Director
Native Plant Conservation Campaign
emilyr@cnps.org

CONSERVATION

Did you know?

- Over 70% of our imperiled plants are found outside Federal lands where they receive only limited protection under the ESA.
- Despite the staggering economic value of native ecosystems, U.S. taxpayers spend on average less than 34 cents per year on endangered species conservation - less than the price of a postage stamp.
- According to the World Conservation Union, a larger percentage of the flora of the U.S. is imperiled than in any other "developed" country.
- Between 1960-1990, sprawl consumed an area about the size of West Virginia.
- Approximately 80% of the nation's coastal ecosystems have been damaged or destroyed by development.
- Less than 5% of our ancient forests remain intact.
- More than 50% of the nation's native wetlands have been destroyed.
- The World Conservation Union reports that 29% of plant species in the U.S. are at risk of extinction and that 1 plant species in 8 is at risk worldwide.

NPCC's *Wild Plants Wild Places*

State Old Growth

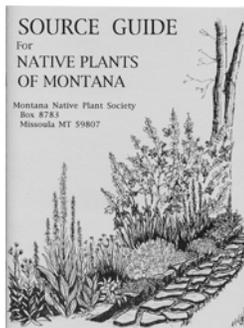
Six years ago the Montana Department of Natural Resources and Conservation (DNRC) adopted a forest management plan that prescribed maintaining at least 50% of presettlement levels of old growth on its lands. The Montana Legislature responded to this enlightened conservation policy by passing a law that prohibited any land from being set aside for conservation unless the state was given full compensation for the appraised value of the timber. DNRC rewrote its management rules to exclude any prescribed "set asides." The proposed policy now allows for conservation but no longer mandates it; much is left to the discretion of the managers. The Montana Native Plant Society commented on the proposed rules, suggesting several ways to improve on the conservation intent (e.g., helicopter logging when possible and minimal use of heavy equipment near wetlands and riparian areas). The rules will be voted on by the State Land Board. The only effective way to achieve protection of old growth and biological values on state lands is to elect a more enlightened legislature and governor.

Peter Lesica

Thanks to the Source Guide Committee

The following committee successfully completed the 3rd edition of the *Source Guide for Native Plants of Montana*. We are indebted to them for providing this valuable resource.

THANK YOU!



Harvey Bjornlie provided a plant list from each source in the last guide, put everything into a computer database, sent Linda camera ready pages, and created the common name index; Rachel Potter submitted sources from the Flathead area; Cathie Jean submitted sources from the Helena and Great Falls areas; Madeline Mazurski submitted sources from Missoula and out-of-state, and helped with text and cover design; and Linda Iverson submitted sources from Bozeman, Billings, and out-of-state areas, coordinated everybody, worked with the printer, and distributes the guide. Other contributors include Jean Pfeiffer who provided original art for the cover; John Pierce who helped with the common name index and nomenclature; and Peter Lesica who edited the final plant list.

Maka Flora Round-up

Our 2002 field trip season was quite successful. May 18 started our plant walks with a journey to public land near Fort Peck reservoir. Several members hiked into the badlands and identified spring flora. On June 21, we traveled north of Medicine Lake to Comertown and helped biologist Mike Rabenberg with plant and bird counts in the area of a possible conservation easement for the Medicine Lake Refuge. We celebrated the Summer Solstice with a barbeque at the old Comertown park. This was the biggest outing of the season. Then, a great field trip to the National Grasslands near Medora, North Dakota. Remember, Maka Flora members live closer to North Dakota than we do to Montana! The season culminated with a mild, easy canoe trip down the Missouri River from Big Muddy Creek to the Culbertson Bridge. One of our participants was a fine lady in her 80's. Our resident plant expert, Doug Smith, helped the group identify plants on sandbars along the way. Out here in the northeast "empty quarter" our field trips take us far and wide to remote sites and interesting places!

Rebecca Kallevig

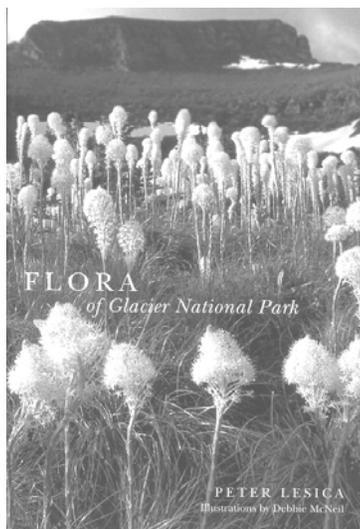
Small Grant Report

The spring of 2002 found Longfellow School students, staff and parent and community volunteers adding to the aesthetic beauty of Bozeman through a native plant garden project. Fifth grade students, under the guidance of teachers Linda Babcock and Carol Rae Cambianica and Landscape Designer Linda Iverson, prepared a landscape plan for the front of Longfellow School. They spent several days preparing two garden areas on S. Tracy near the entrances to the school. The weeding, tilling, planting, installation of an irrigation system and mulching resulted in a beautiful addition to the community that includes a native plant garden and a garden designed to attract butterflies. The efforts were recognized by the Bozeman Beautification Advisory Board this fall and the school received the Young People's Achievement Award for Local Beautification on October 10, 2002. Future plans include the addition of student made plant identification signs, stepping stones and further plantings. Much of this has been made possible by a grant from the Montana Native Plant Society.

Randy Walthall, Principal

PUBLICATIONS

Flora of Glacier National Park
by Peter Lesica. Oregon State University Press, 2002.



Botanists who ponder plants in Glacier National Park have a new and welcome friend: The *Flora of Glacier National Park*, by Peter Lesica (illustrated by Debbie McNeil). Published in 2002 by Oregon State University Press, this comprehensive manual to the plants of Glacier Park has already sold more than 550 copies. Not bad for a book specific to one national park in a relatively remote section of northwest Montana, and proof that the vegetation of Glacier is as interesting as it is complex.

Lesica's botanical expertise throughout Montana is quite well known. Perhaps less recognized is his extensive work in Glacier Park over the past 20 years. Using the early work of botanist Paul Standley, who published a small manual to the flora of Glacier National Park in 1921, Lesica began educating himself on Glacier's plants in the mid-1980's. Since then Lesica has made yearly trips to Glacier studying various aspects of the park's plant life and building the park herbarium collections to a respectable level. Lesica's *Checklist of the Vascular Plants in Glacier National Park* was published in 1996, giving the park an official list of plant species. While researching and collecting plants in Glacier, he identified almost 50 plants not previously known in the park.

The book itself has made the work of identifying plants in Glacier Park

considerably easier, to put it mildly. As a botanist working in Glacier, I have struggled alongside my colleagues with multiple plant keys (Dorn on my right, Hitchcock and Cronquist on my left, Lesica's checklist on my lap and a plant in my mouth). The *Flora of Glacier National Park* eliminates the need to use several reference sources. In addition, Lesica has written many of the plant keys within family and genus in a language that is easy to understand. Botanical terms can make even the proficient botanist grow weary; Lesica simplifies many descriptions without compromising the scientific information needed to accurately work through the keys. In short, this book makes it much more fun to key plants out in the field.

Lesica's book includes a well-written summary of the climate and geography of Glacier Park, which play important roles in the park's vegetation patterns. Lesica also provides detailed descriptions of the park's vegetation zones and the various vegetation types that occur within each zone. Of particular interest to history fans is Lesica's account of early botanical exploration in the park, with information on many of the noteworthy botanists who visited Glacier during the first few years following its designation as a National Park.

Debbie McNeil, an accomplished artist from that remote corner of Montana known as "The Yaak," has created lovely illustrations of Glacier Park's most common species. McNeil is familiar to many MNPS members as the creator of those beautiful botanical paintings that have been awarded as "outstanding service awards" to several special members over the years. Her meticulous drawings provide excellent references to the minute details that distinguish plant species from one another, and are works of art in themselves (see page 6).

The *Flora of Glacier National Park* is available from the Flathead Chapter at a discounted price of \$25 plus \$2 shipping. Through an arrangement with the publisher, a portion of the proceeds will benefit MNPS. To order your copy, contact Mel Waggy

Available from MNPS

The third edition of the *Source Guide for Native Plants of Montana* is now available. The cost is \$6.00 and you can 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.

Available free from MNPS Publications: MNPS membership brochures, *Plant Collection Guidelines for Teachers* brochures, and *Echinacea Cultivation Information*. 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 entire landscaping 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 free from the Editors: *Weeds Listed as Noxious by Montana Counties*. This all-inclusive list of weeds that are targeted by each county is available as an electronic file. e-mail: drakekath64@msn.com

at P.O. Box 1932, Columbia Falls, MT 59912, call 406-257-9051, or e-mail: mtwaggy@hotmail.com. The book is also available at the University of Montana bookstore (406-243-1234) and the Glacier Natural History Association bookstore in West Glacier (406-888-5756).

Congratulations, Peter, on your remarkable achievement. Your book will be used and enjoyed by botanists who find their way to Glacier Park for many years.

Shannon Kimball

What Happened to all the Lilies?

by Robert Dorn

Reprinted with permission from the October 2002 issue of *Castilleja*, a publication of the Wyoming Native Plant Society

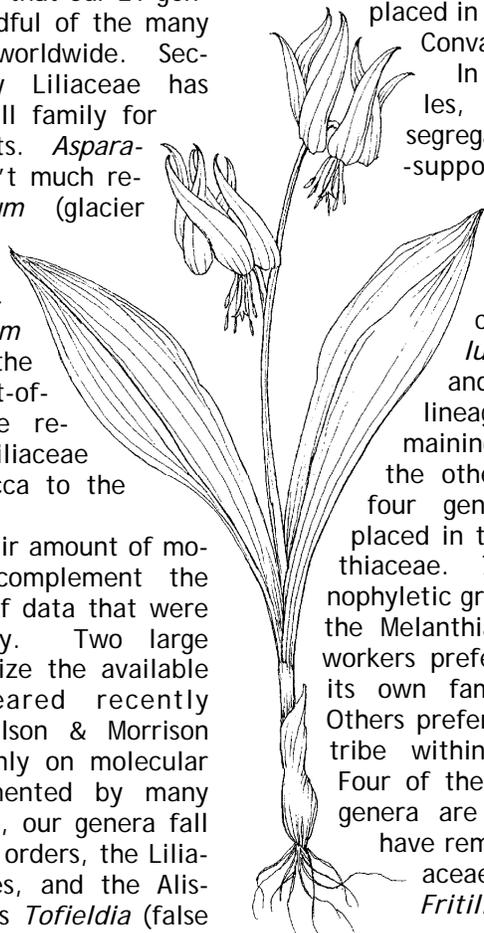
In the 2nd edition of *Vascular Plants of Wyoming*, there were 21 genera in the lily family. In the 3rd edition there were only four. What happened to the other 17 genera? First we must appreciate that our 21 genera are only a handful of the many genera that occur worldwide. Secondly, the family Liliaceae has served as a catchall family for rather diverse plants. *Asparagus* certainly doesn't much resemble *Erythronium* (glacier lily), and *Xerophyllum* (beargrass) doesn't much resemble *Allium* (onion). Some of the more obviously out-of-place genera were removed from the Liliaceae earlier such as yucca to the Agavaceae.

We now have a fair amount of molecular data to complement the many other types of data that were available previously. Two large books that summarize the available data have appeared recently (Kubitzki 1998; Wilson & Morrison 2000). Based mainly on molecular data, but supplemented by many other kinds of data, our genera fall into three different orders, the Liliales, the Asparagales, and the Alismatales. The genus *Tofieldia* (false asphodel) falls within the Alismatales which is far removed from the Liliales, so the family Tofieldiaceae can be justified easily. Eight genera fall within the Asparagales, an order that is more closely related to grasses, sedges, irises, and orchids than it is to lilies. It is rather easy to justify removing these eight genera from the lily family. The remaining 12 genera fall within the Liliales. These are a little more difficult to deal with and there is still disagreement on how some of these should be treated.

Let us first look at the Asparagales genera. Within this order, our eight genera segregate into five clades so we can justify five different families: Alliaceae for *Allium* (onion), Anthericaceae for *Leucocrinum* (sand lily), Hyacinthaceae for *Camassia* (camas), Themidaceae for *Androstephium* (funnel lily) and *Triteleia*, and Asparagaceae for *Asparagus*. *Maianthemum* (false lily-of-the-valley) and *Polygonatum* (Solomon's seal) with their broad leaves and other differences fall into the same clade as *Asparagus* so they can justifiably be placed in their own family, Convallariaceae.

In the order Liliales, our 12 genera segregate into two well-supported lineages:

Veratrum (false hellebore), *Zigadenus* (death camas), *Xerophyllum* (beargrass), and *Trillium* in one lineage, and the remaining eight genera in the other. The former four genera have been placed in the family Melanthiaceae. *Trillium* is a monophyletic group embedded in the Melanthiaceae and some workers prefer to place it in its own family, Trilliaceae. Others prefer to treat it as a tribe within Melanthiaceae. Four of the remaining eight genera are true lilies that have remained in the Liliaceae: *Erythronium*, *Fritillaria*, *Lilium*, and



Erythronium grandiflorum, glacier lily, remains in the lily family.
Drawing by Debbie McNiel.

Lloydia. That leaves four more genera to deal with: *Calochortus* (mariposa), *Prosartes* (fairybell, formerly *Disporum*), *Streptopus* (twisted stalk), and *Smilax* (greenbriar). Historically, it is interesting to note that Aven Nelson in the Coulter and Nelson Manual of 1909 included *Disporum* and *Streptopus* in the family Convallariaceae and *Smilax* (as *Nemexia*) in its own family

Smilacaceae. In recent years *Smilax* has been placed in its own family Smilacaceae by more workers and it can now be justified with molecular data. Embryological, karyological, and molecular data support placing *Streptopus*, *Prosartes*, and *Calochortus* into a separate family Calochortaceae. There is some disagreement here, however, and some workers keep these three genera in the Liliaceae.

There are other families that have served as catchall families such as the Scrophulariaceae and Rosaceae. The former is already in the process of being broken up. Perhaps in the future the rank of order will become the convenient first level for identification much like the family has been. On the other hand, with computerization, it should be easier to bypass these higher groups altogether. The drawback of that approach is that we may then lose our ability to see relationships.

References:

Kubitzki, K. (ed.). 1998. The families and genera of vascular plants. III. Flowering plants. Monocotyledons. Liliales (except Orchidaceae). 478 pp.

Wilson, K.L. & D. A. Morrison (eds.). 2000. Monocots: systematics and evolution. CSIRO Publishing, Collingwood, Australia. 738 pp.

Definitions:

Clade: branch; a phylogenetic group or lineage of organisms, defined as any species and all of its descendants

Karyological: associated with the form and number of chromosomes

Lewis & Clark in Montana

A small committee of interested MNPS members is developing a brochure on Lewis and Clark plants in Montana. If you have ideas of what you would like to see, or want to help with this project, call Kathy at 406-449-6586 or e-mail: drakekath64@msn.com

Peter Lesica:

20 years work culminates in the *Flora of Glacier National Park*

by Dennis Nicholls

One summer not long ago a famous radio personality in the Flathead reported on a news broadcast seeing a "mountain worshipper" on his hands and knees, face to the ground, doing heaven only knows what in genuflection to the peaks surrounding him. From a distance, it appeared this nature freak was hunched over in some odd act of obeisance to the spirits of the high alpine terrain. This "news" was reported with just a little tongue-in-cheek audacity, but was treated as information worthy of thousands of

From a distance, it appeared this mountain worshipper was hunched over in some odd act of obeisance to the spirits of the high alpine terrain...

radio listeners' ears.

That "mountain worshipper" was none other than Peter Lesica, a botanist, educator and resource management consultant from Missoula; a charter member of the Montana Native Plant Society; and probably one of the most knowledgeable botanists to ever reside in the state of Montana. His close inspection of a research transect in Glacier National Park is what prompted the morning news item about a mountain worshipper on Mt. Reynolds.

Not only has Pete spent a great deal of time and miles on his feet in America's crown jewel among parks, he has also spent more time than perhaps anyone else on his hands and knees there as well; not in homage to the deities of the wild, but carefully studying the diminutive plants of the alpine tundra.

Thirty years after his first visit to the Big Sky state, which included a hike in Glacier, Pete is now regarded as one of the leading authorities on the flora of the park and his knowledge has been published in the long-awaited book titled the *Flora of Glacier National Park*. It treats every vascular plant known to occur there -

all 1132 species found in 86 families and 345 genera.

Of those species 1005 are natives and the other 127 are immigrants. The largest family of plants is the Asteraceae represented by 124 native species and 26 introduced species. There are 21 species of trees, one of them a non-native, 149 annuals and biennials, 868 herbaceous perennials and 94 shrubs and vines. Information like this, and a great deal more, can be found within the 512 pages of the most complete work ever published about Glacier's flowering plants (see the book review on page 5).

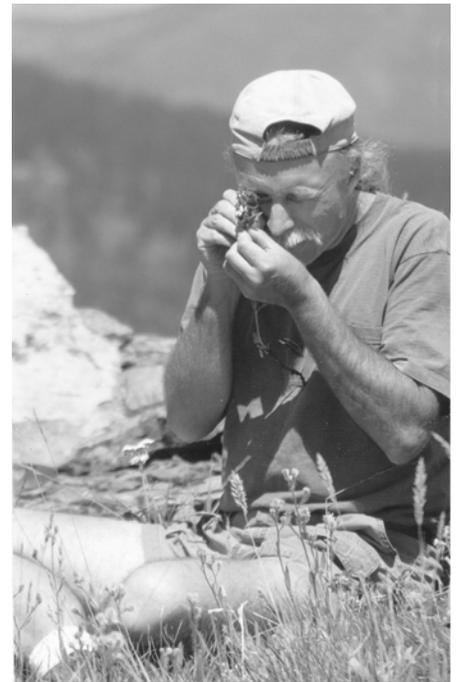
The process that culminated in the *Flora of Glacier National Park* stretched over 20 years. But maybe the seeds of such a lifetime accomplishment were sown more than twice as long ago as that. Pete, now 52 (though he no longer looks it - as if he ever did - since removing the mustache that shielded his upper lip for over 30 years; he said shaving it may be a precursor to cutting his hair and the trademark ponytail without which, in all likelihood, no one in this state has ever known him), said he loved insects, nature and wild plants as a child growing up in Milwaukee, Wisconsin and near Chicago.

He attended the University of

He attended the University of Wisconsin, like John Muir, but, like John Muir, he dropped out for "the university of the world"...

Wisconsin, like John Muir, but, like John Muir, he dropped out for "the university of the world" even though he had but one semester left. He said he always wanted to be outside and so he spent the next ten years engaged in farm work in orchards in Oregon and Montana.

Pete's introduction to Montana came in 1972 and about eight years later he moved here for good. He explained that he was particularly fond of wet, rain forest-like habitats



Pete examines a species he admitted to never having seen before during a field trip in northwest Montana's Bull River valley. The diminutive plant's identification proved to be *Githopsis specularioides*, a new record for the state - and one of more than 50 new plants Pete has discovered in Montana.

Photo by Dennis Nicholls

found on the west slope of the Cascades and he discovered that Montana had some of that kind of habitat and a lot fewer people crowding into and around it. So he ventured into the Flathead and got a job in the cherry orchards arrayed around Flathead Lake.

The work he did was largely conducted in the spring and fall, so he found himself with plenty of time during the summer to explore his newly adopted state. Because of his childhood love for nature and a blossoming knowledge of plants, he landed some botanical work with the BLM and a consulting firm. In fact, he and Jerry Moore launched a study of Montana's rare plants in the early '80s because, he said, of the "gross embarrassment" that Montana was the only state in the nation that did not have a rare plant inventory.

Several books, numerous technical and professional papers, and thousands of miles by foot and knee later, Pete's career has reached a new level of achievement with the *Flora of Glacier National Park*. But maybe this is only a precursor as well. He expressed an interest in producing a flora of

(Continued on page 8)

Mosses –

Biological Antifreeze?

by Joe Elliott

Many mosses are as green and delectable looking as your average sedge, root, or flower, but very few insects, birds or mammals deign to eat them. This selective avoidance of mosses has puzzled many biologists and has prompted a few short notes in scientific journals when a keen observer has actually documented an animal eating a moss.

Why do so few invertebrates and vertebrates eat mosses, even though the nutritional and caloric values of mosses are similar to those of higher plants? Part of the answer may be that mosses contain high concentrations of less easily digested components, such as polyphenolic, lignin-like compounds. These compounds have antibiotic properties that could affect grazers either directly or indirectly by inhibiting gut microorganisms. These chemicals in the cell walls of mosses may prevent digestion of cellulose and polysaccharides.



A couple of years ago, I started working with the late Jim Reichel of the Montana Natural Heritage Program on a study of the food habits of the northern bog lemming (*Synaptomys borealis*), a rare mammal that inhabits moss-dominated fens. Northern bog lemmings in Montana are often found in rich fens (i.e., peatlands with high concentrations of sodium bicarbonate, calcium, and magnesium; high electrical conductivities; and neutral or basic pH values). Ground cover in rich fens is dominated by *Sphagnum warnstorffii* and "brown" mosses (Amblystegiaceae). Common vascular plants include sedges, often with a shrub canopy dominated by bog birch (*Betula glandulosa*).

Little is known about northern bog lemming life history or food habits. Dense moss communities provide cover for bog lemmings, evidenced by tunnels in the moss carpet, but mosses are not known to be an important food.

In analyzing the stomach contents of bog lemmings, Jim and I were surprised to find that mosses made up from 20 to more than 90 percent of the stomach contents. A literature search turned up reports of brown lemmings in Scandinavia also eating

mosses.

Based on the low amounts of digestible energy that lemmings appear to derive from mosses, one biologist suggested that lemmings and other vertebrates of cold climates eat mosses for reasons other than nutrition. He hypothesized that ingestion of a highly un-saturated fatty acid, arachidonic acid, may be an adaptive mechanism that helps protect against low temperatures. Animals do not synthesize arachidonic acid and its concentration in mosses (up to 35 percent of fatty acids) is the highest reported in plants.

This compound may help protect cell membranes against very low temperatures. If this is true, moss consumption may be an adaptive mechanism despite these plants low digestibility. Habitats that harbor bog lemmings are cold environments that may be refugia, with microclimates similar to those of cooler and wetter periods like the Pleistocene, 10,000 years ago, when glaciers receded. Adaptation of bog lemmings to cold fen habitats may be partially associated with cold resistance resulting from mosses providing large amounts of arachidonic acid. This could be a wild hypothesis and it appeals to my sense of moss mystery, but I'm not sure that snacking on mosses to avoid hypothermia is something I would recommend for

...Peter (Continued from page 7)

Montana. Though many people know the plants of various parts of the state as well as he, Pete is in the unique position of having traveled and studied plant life throughout the state perhaps more than anyone ever has, and he's inclined to share that knowledge someday; knowledge that includes two plant species, both endemic to Montana, he discovered which were new to science (*Lesquerella pulchella* and the species bearing his name, *L. lesicii*).

No matter where you hike this summer in Montana, be on the look out for a mountain worshipper bent over, nose to the ground, in some odd act of obeisance to Mother Nature. It may actually be Peter Lesica positioning himself for a close-up look at some tiny little plant.

We're a lucky bunch for having him in our midst. Thanks, Pete, for everything.

MEMBERSHIPS DUE

Your membership in MNPS is about to expire! Watch for a reminder in the mail and don't forget to send it in. Your support is critical for Montana's native flora.

THE FLORA OF DISCOVERY 2003 Annual Meeting

The Calypso Chapter is gearing up to host the Montana Native Plant Society 2003 Annual Meeting during the weekend of June 20-22. Enjoy southwest Montana's beauty at Birch Creek Center. The Center is located in the picturesque setting of the East Pioneer Mountains within the Beaverhead-Deerlodge National Forest, 22 miles northwest of Dillon. Numerous field trips are planned in surrounding areas. Two guest speakers will enlighten us on Lewis and Clark. Mark your calendar now.

WELCOME new members!

Fred Allendorf, Jeremy Anderson, Sharon Auerbach, John & Melody Taft, Susan Waldron, and Brenda Yankoviak.

Your participation and support are important to us. Contact your local representative with any questions or suggestions you may have.

CALENDAR

ARTEMISIA CHAPTER

Hal Vosen 234-8160

CALYPSO CHAPTER

Catherine Cain 267-3362

CLARK FORK CHAPTER

Thursday, January 9, 7:30 p.m.

Forest Service ecologist Steve Sutherland shows slides of his days working with The Nature Conservancy on "The Prairies of Ohio, Tallgrass to Shortgrass and North to South." Missoula Public Library, 301 E. Main, large meeting room.

Tuesday, January 28, 7:30 p.m.

Herbarium Night. You've always wanted to "Learn Your Lupines!" Now you can with Peter Lesica. Rm 303, Botany Bldg., UM Campus.

Thursday, February 13, 7:30 p.m.

Recently returned from sabbatical leave to the Dark Continent, UM professor Ray Callaway will show slides of "Plant Safari in Southern Africa: Savannah to Fynbos". Rm L09 Gallagher Business Bldg., UM Campus.

Tuesday, February 25, 7:30 p.m.

Herbarium Night. "Gamopetalous, Zygomorphic, Montana Veronicas" with Peter Stickney. If you don't know what this title means, you'd better come. Rm 303, Botany Bldg., UM Campus.

Thursday, March 13, 7:30 p.m.

Fire affects our forests in many ways. UM soil scientist Tom DeLuca will give us the inside story on the "Interdependencies between Fire Cycles, Nutrient Cycles and Leguminous Wildflowers". Rm L09 Gallagher Business Bldg., UM Campus.

Tuesday, March 25, 7:30 p.m.

Herbarium Night. Forest Service botanist Steve Shelly will introduce us to the love of his younger years - "Phacelias of the Pacific Northwest". Rm 303, Botany Bldg., UM Campus.

Thursday, April 10, 7:30 p.m.

Join Clark Fork Chapter photographers for an early-season refresher when they show slides of "Montana's Naturalized Wildflowers (a.k.a.

Weeds)". Rm L09 Gallagher Business 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. The conference room door is at the back of the building. Everyone is invited to the 5:30 general meeting. Programs start at 7:00. Call Rachel Potter (892-2446) for more information.

Wednesday, January 15

Paul Hansen of Bitterroot Restoration Inc. will give a program on the practical aspects of "Lakeshore and Streamside Restoration."

Wednesday, February 19

A panel of local experts will educate us about native species selection, site prep, and many other aspects of "Gardening with Native Plants".

Wednesday, March 19

"Orchids of Montana" will be presented by Wayne Phillips, former MNPS president and USFS ecologist.

Wednesday, April 16

Naturalist Ralph Waldt will give a stunning slide show on the "Northern Continental Divide Ecosystem."

Wednesday, May 21

Dr. Chuck Miller will give a program on "Paleobotany."

KELSEY CHAPTER

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

Tuesday, January 14, 7:00 p.m.

Hands-on study night! Drake Barton will lead us on an adventure into the often confusing world of "Asters and Erigerons". Bring your hand lens and keys to Carroll College science bldg. room 321.

Friday, January 24, 7:00 p.m.

Ecologist Helen Smith will present a program titled "Whitebark Pine: A

Species in Peril". Lewis & Clark Library, large meeting room.

Tuesday, February 11, 7:00 p.m.

Hands-on study night! Scott Mincemoyer will lead us through a look at the "Wily Willows". Bring your hand lens and keys to Carroll College science bldg. room 321.

Thursday, February 20, 7:00 p.m.

The last 2 films in the David Attenborough series *The Private Life of Plants*. Lewis & Clark Library, large meeting room. Popcorn provided; bring your own bowl!

Tuesday, March 11, 7:00 p.m.

Hands-on study night! Jane Horton will host a "Grass Class". Isn't it time you took a look at grasses? Bring your hand lens and keys to Carroll College science bldg. room 321.

MAKA FLORA CHAPTER

Al Joyes 385-2579

VALLEY OF FLOWERS

Valley of Flowers Chapter meets the third Monday of each month. Programs will begin at 7:00 p.m. in Room 108 (on the first floor using the door at the bend of the "L") of the Agbioscience Building on South 11th. Parking is available in the lot to the north of the building (they do not require a permit at night). For info call Joanne Jennings at 586-9585.

Monday, January 20

Monica Porkorny will give us the low-down on "Knapweed" and what happens to the plant communities in the area. Monica has been a graduate student working with weed problems.

Monday February 17

John Austin will present a program about "Buffalo Birdwoman's Garden". John grew flowers and vegetables from native seed at the Museum of the Rockies after researching methods and sources.

Monday, March 17

Lynn Burton, Range Manager Specialist for the Gallatin National Forest will tell us about "Reseeding on National Forest Lands".

WESTERN MONTANA

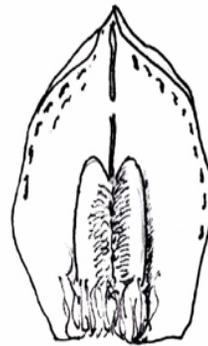
...*Journal* (Continued from page 1)

of the flowers, I often didn't know much more about them. In her book, *Drawing on the Right Side of the Brain*, Betty Edwards explains that drawing utilizes a completely different part of our brain than writing. By doing both, we gain a much more holistic understanding of whatever it is we are trying to record. I also learned that this deeper understanding is not dependent upon already being a fine artist. The first drawings in my journals are rudimentary—stick drawings of plants showing branching patterns and simple shapes of leaves. Even making these simple diagrams forced me to slow down and truly observe what I was attempting to draw.

Field sketching has been a tool long used by naturalists. In Montana, perhaps the most famous illustrated field journals are those by Lewis and Clark. During the Corps of Discovery's expedition, both Meriwether Lewis and William Clark peppered their journals with illustrations. Many of their illustrations stand alone, others are folded into the text of their journals, with the outlines of sword fern and vine maple leaves surrounded by their written words. Field sketching is a tool for anyone who wishes to learn from nature. Today, books like *A Trail through Leaves* by Hannah Hinchman and *Nature Drawing* by Claire Walker Leslie continue to provide inspiration and advice for those wishing to start their own illustrated journal.

Once the "fear of the white page" is conquered, there is magic in creating an illustrated journal page. Although many of my journal pages read left to right, the handwriting itself can create visual spaces and tone on the

page by changes in orientation or style. Crinkly leaves seem to call out for spidery text; elongated letters make good companions for the elegant spires of glaciated mountains. Likewise, the density of images or of line can vary from one page to the next. I am drawn to keep an illustrated journal through my love of the natural world, but over the last five years I have become addicted to the sense of play that comes when I'm reaching for a new way to illustrate a particular moment. Most importantly, however, the juxtaposition of words and images in my journal allows me to see, to truly observe, the startling minutiae of moments that might have gone unnoticed. Although my completed journals sit in a line on my bookshelf, it is the process they represent that has made my life so much richer in texture.



- greenish yellow petals marked by purple dots
- hairy ridges along midline - what for?
- long silky hairs at petal base
- who pollinates?

"Zoom in" on petal

Frasera speciosa from Lyn's journal

About our President...

As many of you know, Betty Kuropat has a real job as Operations Forester for the Hungry Horse/Glacier View Ranger Districts of the Flathead National Forest. On November 6, in Charleston, South Carolina, Betty received the Forest Products Employee of the Year Award. This is what they said about Betty!

"Betty has excelled in both the special forest products area and her leadership in stewardship contracting. Betty, along with Maria Mantas, Forest Botanist, developed the Forest's Products Permit Guidelines that are used extensively by our frontliners to assist collectors/harvesters understand what products are available for collection from the Forest and whether a permit is necessary or not. Betty has taken the lead to implement the Forest Products plans into the Timber Information Management system (TIM). This summer

Betty provided the leadership for the mushroom harvest from last summer's Moose Fire. The Moose fire burned approximately 36,000 acres in the Big Creek drainage on the Glacier View Ranger District that resulted in excellent mushroom growth this spring and summer. To assure both personal use and commercial harvesters received harvesting guidelines, permits were required for both categories. Thanks to Betty's guidance, the harvest occurred relatively smoothly considering the number of both migrant harvesters and locals seeking morel mushrooms. The second area that Betty is recognized for is her leadership role in stewardship contracting. Betty has volunteered her time to meet with the Flathead Forestry group that is a pioneer in collaborative forestry projects. The group has successfully implemented several stewardship projects on state, private, and National Forest lands. Betty's knowledge of both

service contracts and timber sale contracts has helped bridge the two concepts into a working model. She has helped in organizing the monitoring team for the project and helped guide them into facets of the project they could meaningfully measure. She is currently designing the contracting tools to implement a fuels reduction project that will cross both private and National Forest lands in a high fire risk urban interface area. Betty's contracting knowledge, skills working with our collaborative partners and creativity will assure success of this project also."

These projects demonstrate how much Betty cares about the land. Her work is beyond job description; clearly it is a passion. Thank you Betty; we are so proud. Betty shared with me what she was thinking as she received the award, "I'm so glad they noticed."

Pattie Brown

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)

- | | | |
|---|--|--|
| <p><input type="checkbox"/> \$18 I. Individual</p> <p><input type="checkbox"/> \$22 II. Family</p> <p><input type="checkbox"/> \$35 III. Business/Organization</p> <p><input type="checkbox"/> \$300 IV. Lifetime Membership (one-time payment)</p> | <p><input type="checkbox"/> Artemisia</p> <p><input type="checkbox"/> Calypso</p> <p><input type="checkbox"/> Clark Fork</p> <p><input type="checkbox"/> Flathead</p> <p><input type="checkbox"/> Kelsey</p> <p><input type="checkbox"/> Maka Flora</p> <p><input type="checkbox"/> Valley of Flowers</p> <p><input type="checkbox"/> Eastern-at-large</p> | <p><input type="checkbox"/> \$12 I. Individual</p> <p><input type="checkbox"/> \$18 II. Family</p> <p><input type="checkbox"/> \$30 III. Business</p> <p><input type="checkbox"/> Western-at-large</p> |
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MAKE CHECKS PAYABLE TO:
 Montana Native Plant Society
 P.O. Box 8783
 Missoula, MT 59807-8783



Canadian subscribers please add \$4.00 to cover mailing costs. Additional donations may be specified for a particular project.

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 newsletter of MNPS, published quarterly. We welcome your articles, clippings, 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. If you send clippings, please note the source, volume/issue, and date. All meeting and field trip notices, field trip reports, articles or announcements should be mailed to *Kelseya* Editors, 314 Travis Creek Rd., Clancy, MT 59634. All items should be typed and if possible 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.

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/ or contact our webmaster Marilyn Marler at: marler@bigsky.net

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MONTANA NATIVE PLANT SOCIETY

2003 SMALL GRANTS PROGRAM

CALL FOR PROPOSALS

The Montana Native Plant Society (MNPS) is pleased to announce the eighth annual Small Grants Program for research, study, and appreciation of Montana's native plants. Grants of up to \$1,000 each will be awarded in 2003 to fund projects or studies supporting conservation of native plants in Montana.

The purpose of the MNPS Small Grants Program is to stimulate research, conservation, and educational activities that help foster an appreciation for Montana's native plants and plant communities. These grants are intended to promote native plant conservation through better understanding of our native flora and the factors affecting their survival. The grant competition is open to residents of Montana or members of MNPS. For membership information visit: www.umt.edu/mnps

In 2002, the Small Grants Program helped fund a student-made native plant garden at Longfellow School in Bozeman that was awarded the Young People's Achievement Award for Local Beautification, and a conservation study on *Trillium ovatum* in western Montana. These projects will make a significant contribution to promoting awareness, appreciation and conservation of Montana's native plants.

We encourage anyone who has a project that meets these broad objectives to consider submitting a proposal! Please submit an application that includes the following information by **January 31, 2003**:

PROJECT EXPENSES ELIGIBLE FOR COVERAGE:

- Direct costs of travel, meals, and lodging for research, conservation or educational projects
- Supply and service expenses used for the sole purpose of the native plant project (laboratory chemicals, film, photocopying, phone, and computer time)
- Printing costs for public outreach projects or research publications
- Do not include wages, equipment, or expenses that are non-essential to the project

APPLICATION PROCEDURE & REQUIREMENTS:

- Submit two copies of your proposal. It should be no longer than three pages, double-spaced type.
- Include a project title.
- Identify a contact person, organization affiliation if any, and give an address, phone number, and e-mail, if applicable.
- Describe the project (objectives, methods, description of final product) and explain how the project will benefit native plant conservation in Montana.
- Outline an overall project budget, including the amount you are requesting from MNPS (\$1,000 or less) as well as other funding sources.
- Give a time frame for completion of the project.
- Give a brief statement describing the applicant's qualifications or a short biography.

Project or study proposals must pertain to native plants of Montana. Preference will be given to proposals expected to generate research data or public support that advances the conservation of native plants in the wild. Proposals that demonstrate initiative and cooperation with other organizations or agencies are also preferred. Please limit small grant requests to \$1,000 or less.

Successful applicants will be required to submit a final report documenting study or project accomplishments to the Montana Native Plant Society. We also require successful applicants to write a brief summary of the work for publication in *Kelsey*, the Society's newsletter. **Submit your project proposal to:**

Chairman, Small Grants Committee
Montana Native Plant Society
P.O. Box 8783
Missoula, MT 59807-8783

**Remember the deadline for applications is January 31, 2003.
Grants will be awarded by March 15, 2003.**

