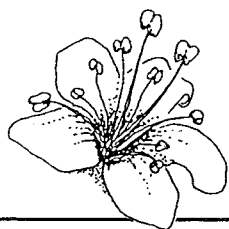


Kelseya uniflora



Kelseya

Vol 8, No 4

SUMMER 1995

Newsletter of the Montana Native Plant Society

FLESHEATERS OF THE PLANT KINGDOM

— Bonnie Heidel

The scruples and grudges of the "Plant Kingdom" were contested before research conducted by Charles Darwin set the record straight in his book on "Insectivorous Plants." Darwin was one of the first 19th century naturalists to study the bizarre adaptation represented in carnivorous plants, which continues to foster the imagination, the nursery trade, and the horror movie industry as well.

Water, earth, and energy from the sun fully meet the needs of most plants. But in peatlands and other relatively sterile settings across the world, there are 450 vascular plant species that compensate for the nitrogen poor environment by "eating," mainly small invertebrates, including insects, small aquatic crustaceans and copepods.

Probably the most widely-known carnivorous plant is the Venus fly trap (*Dionaea muscipula*), whose sticky leaves fold in half over their prey. This popular houseplant grows wild only in the Carolinas, and is propagated by growers from seeds.

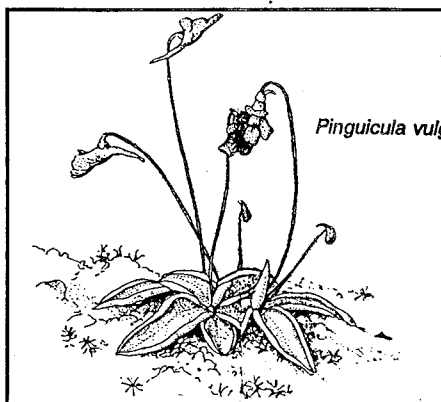
Research on Venus fly trap offered some of the earliest examples of "plant behavior." Despite the fly trap's lack of nerve cells, action potentials travel as a wave of charged ions from the sensory hairs, which detect an insect's arrival, to the outer surfaces of the hinged "mouth." The electrical flux causes some of the plant cells to expand very rapidly, squeezing the maw shut – albeit on the time scale of a couple of seconds rather than the thousandths of a second reaction time seen in animals.

Montana is home to seven flesh-eating species of plants in the wild, and most are restricted to peatlands. They have distinct strategies for capturing prey, the "passive capture" of sundews and butterwort, and the "active capture" of bladderworts. (Note: They do not attack people, none having the capacity to trap even small rodents or birds as do the world's largest carnivorous plant in Malaysia.)

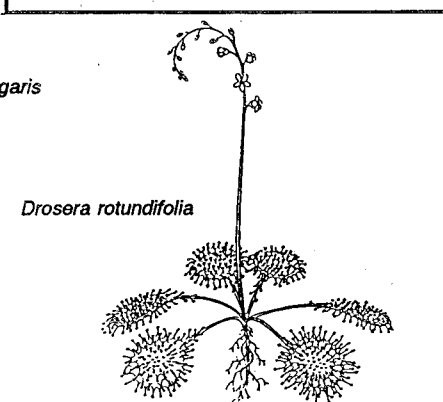
Butterwort (*Pinguicula*) has the simplest capture strategy: the upper surface of its thick leaves are covered by glands emitting a sticky ooze. The outermost edges of its leaves can roll inward slightly but do not engulf insects like the Venus fly trap. It dwells at high latitudes and elevations, restricted in Montana to the northern end of the Rocky Mountains. There it grows in wet alpine settings, though in much of its range it occupies peatlands, like the "blanket bogs" of the British Isles. Its name comes from its butter-color yellow flowers [though our species have lavender flowers].

"Wort" refers to a German word for plant.

Sundews (*Drosera*) also have sticky leaves that trap insects, with glandular hairs that respond to touch and nitrogen-rich solutions such as insect proteins by s-l-o-w-l-y flexing inward. The raised glands release large



Pinguicula vulgaris



Drosera rotundifolia

Illustrations from Slack, *Carnivorous Plants*, and Porter, *Taxonomy of Flowering Plants*.

sticky drops that literally glitter in the sun like dew. The three sundews of Montana include English sundew (*Drosera anglica*), linear-leaved sundew (*Drosera linearis*) and round-leaved sundew (*Drosera rotundifolia*); the first two live only in peatlands.

Acids and digestive enzymes are released from butterwort and sundews when they are in contact with prey; which break down proteins like the digestive tracts of vertebrates. In fact, butterwort leaves have been used in northern Europe to break down festering sores on animals for healing, and to curdle milk in the production of a special cheese. All enzyme activity takes place outside the plant, and its products are absorbed back through the cell walls.

Bladderworts (*Utricularia*), by contrast, have the benefit of a cage with a trap door for capturing prey. The "bladders" look like tiny plastic bags, rarely growing over 1/8 inch (3 mm) long, scattered along the underwater plant among the fine,

— continued on Page Six

From the President

Wildflowers are out in force this year, and I've never seen the prairie so green. While native plants are busy carrying out their life cycles, we're busy studying, nurturing, and enjoying them.

The first-ever Montana Rare Plant Conference was a resounding success, and Bonnie Heidel has written a summary of the conference for this issue. Many thanks to Bonnie, Steve Shelly, Angie Evenden, and all the speakers for their contributions. The Board is making plans for future meetings.

Our thanks to Steve Chadde, a Natural Areas ecologist in Missoula who is leaving the state for Michigan, for designing and producing our membership brochure and updating it numerous times! The brochure has been a great way to advertise MNPS. We really appreciate your efforts, Steve.

Statewide Projects

The committee meetings in the Little Belts should initiate some new projects statewide. The Landscape/Revegetation Committee is beginning a revision of the Montana Native Plant Source Guide and the booklist. Committee members will contact suppliers and update the lists.

The Education Committee will form a Grants Committee to review and award a grant for a native-plant-related project. Applications will be available, and we hope to include one in the autumn KELSEYA.

The Conservation Committee has a new chairman, Peter Lesica. Peter is a strong advocate for plant conservation and has several ideas for working with NRCS and BLM on issues of native prairie, native reclamation, wetland, and riparian issues. Past conservation chairman Sally Orr served for two years and attended both annual meetings and many state board meetings. She helped organize a slate of issues on which to comment and kept us informed on ESA happenings. Thanks for all of your time, Sally!

To get involved in any of these committees or committee projects, please contact the respective chairmen. Nothing happens without your involvement.

More on Rare Plants

Despite the field season rush, several projects concerning rare plants are being initiated by Bonnie Heidel, Kelsey Chapter president and botanist with the Montana Natural Heritage Program. We have received a prospectus from Bonnie seeking partners and sponsors for a Montana Sensitive Plant Handbook, complete with descriptions, photographs, and a map of state distributions. Bonnie has also offered to maintain a rare plant slide collection for MNPS; see her PHOTO ALERT in this issue. We are so lucky to have such a motivated person among our membership. Please let Bonnie know if you can help her with any of these projects.

Update on the Native Plant Notecard Project

And another project has successfully jumped the hurdles and is about to be offered up for sale! Our first official set of notecards will debut at the annual meeting and/or be available through the chapters this fall. Six different plants are featured, one for each chapter. The notecards were designed by Artemisia Chapter members Don Heinze, Mark Taylor, and Rosanna Buehl. Billings artist Marge Brosius generously donated the artwork, and Advanced Litho in Great Falls was the printer. Many, many thanks for all your efforts! We look forward to seeing them.

Finally, the annual meeting report will appear in the autumn KELSEYA in case you were unable to attend or want to reminisce. Thanks to all the organizers of that meeting. Enjoy the summer field trips! – **Linda Iverson**



...<<<<<<<<CONSERVATION BULLETS>>>>>>>>>...

WETLANDS VOLUNTEERS NEEDED

The Montana Audubon Council is looking for a few volunteers to help guide and develop their wetlands program.

If you are interested in helping them develop this program, or want to learn more, contact Janet Ellis at the Audubon office: Montana Audubon Council, P O Box 595, Helena MT 59624, or phone 406-443-3949.

AERO ANNUAL MEETING WATERTON LAKES

The Alternative Energy Resources Organization (AERO) will hold its annual meeting on July 14-15 at Waterton Lakes National Park, Alberta. The program will concentrate on practical and sustainable living options. For registration and other info, contact AERO at 406-443-7272.

MNPS PUBLICATIONS AVAILABLE

We have several special handouts available to our membership. If you missed getting any of these or need more, please write: Linda Iverson, HC 88, Box 3733, Big Timber MT 59011. A SASE (#10 envelope or larger, depending on what you're requesting) is appreciated for any of the following:

List of Native Plant Related Books

A Guide to Montana Native Plant Gardens and Gardeners

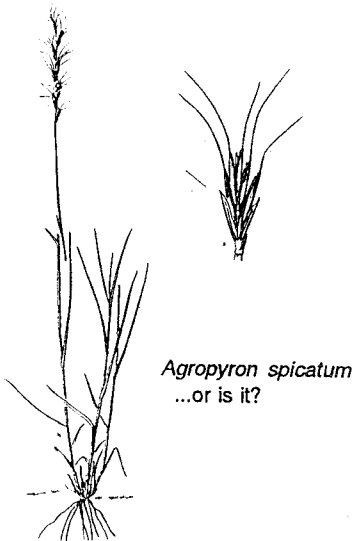
Guidelines for Collecting Native Plants

MNPS introductory brochures

The *Montana Native Plant Source Guide* is also available by sending \$3.00 to the above address. Postage is included in this cost. Please make checks for the *Guides* payable to MNPS.

THE NOMENCLATURE NIGHTMARE...

– Don Heinze



Botany is a dynamic, growing and developing science; therefore, it is ever changing. Taxonomic studies are constantly being made and sometimes paradigms are shattered by these studies. The best example that we can think of is the wheatgrass genus, *Agropyron*. To a person schooled in Range Management, changing this genus is somewhat

akin to desecrating a temple. Yet the genus has been in sad need of an overhaul, which was done with a vengeance: a proposal was made to break the genus into no fewer than nine separate genera. This proposal was met with supreme contempt, if not threats to life and limb.

Robert Dorn, in *Vascular Plants of Montana*, 1984, took a more moderate approach. He left crested wheatgrass in *Agropyron* and threw the rest of the wheatgrasses into the ryegrass genus, *Elymus*. For good measure he threw squirreltail grass (*Sitanion hystrix* J.G.Sm) into *Elymus* also. (We have always suspected that the genus *Sitanion* was phony.) The response was a sulphurous chorus of denouncements of Dorn. Alas, we were among the most vitriolic. Dr Dorn persisted, and compounded the sacrilege by dogmatically sticking to this nomenclature in *Vascular Plants of Wyoming*, 1986.

We confronted him with his heresy at the 1994 annual meeting. He made an excellent case for his changes. So good, as a matter of fact, that we (gasp) agreed with him. Not only that, we too have become pariahs and have adopted his entire nomenclature for our work. We feel that his books reflect the best and most reliable taxonomic work available. This is in spite of the fact that he found the winterfat genus (*Eurotia* or *Ceretooides*) to be more properly named after some Irish person named Krascheninnikov (*Krascheninnikovia*).

The best way to handle a scientific name, at least for scientific papers, is to cite the authority who named it that in the first place. So, when calling western wheatgrass by its properly pretentious name say "*Agropyron smithii* Rydb" (after Per Axel Rydberg) or say "*Elymus smithii* Gould" (after Frank Gould).

Common names are no better, if not worse. One of their worst failings is that not all plants have common names. Phillip Munz, late dean of California botanists, once wrote:

"One of my chief difficulties in writing such a book (for laypeople) is to find usable common names. I am not interested in taking those coined from the scientific name by a

professional botanist who breaks down the genus name into its Greek roots and then adds the species name, such as for example the common name "Mrs Ferris's Club Flower" for *Cordylanthus ferrisianus*."

Woe be it to us to differ with Dr Munz, but we strongly suspect that a layperson would be far less intimidated by "Mrs. Ferris's Club Flower" (as silly as it sounds) than by *Cordylanthus ferrisianus*. Thus, we must do the very thing that Dr. Munz was "not interested in" – create common names from "Latin roots".

By far, our worst common names are those dreamed up for rare or supposedly rare plants (it would seem a bit of an oxymoron to give a common name to a rare plant). Our candidate for the title of "worst common name" is *Platyschuhria* sunflower for *Platyschuhria integrifolia* Rydb.

Attempts to standardize common names are frustrating also. My master professor, J H Robertson, said "Call the genus *Salvia* 'sage' and reserve the name 'sagebrush' for the genus *Artemisia*." This has all kinds of problems. First of all, many members of the genus *Artemisia* are not woody. Many are herbaceous and thus the English language does not permit us to call them "brush," but adds the suffix "-wort." Likewise, there are many "sages" – consider:

Whitesage/winterfat (*Krascheninnikovia*)

Bursage (*Ambrosia*)

Hopsage (*Grayia*)

Bladdersage (*Salazaria*)

Chickensage/false sagebrush (*Sphaeromeria*)

And so it goes. This is what we get for trying to pigeonhole Mother Nature. But you can count on us to stumble fearlessly forth, trying our best to communicate with the rest of humanity!

SELECTED REFERENCES

- Dorn, R, 1984. *Vascular Plants of Montana*. Mountain West Publishing Company, Cheyenne, Wyoming.
Ibid., 1986. *Vascular Plants of Wyoming*. Mountain West Publishing Company, Cheyenne, Wyoming.
Ibid. 1987. Personal correspondence to John Kwiatkowski.
Ibid. 1994. Personal conversation.
Munz, P A, 1959. *A California Flora*. University of California Press. Berkeley and Los Angeles.
Ibid. 1962. *California Desert Wildflowers*. University of California Press. Berkeley, Los Angeles, and London.
Robertson, J H, 1963. College lecture.

Don Heinze, long the moving force behind *Artemisia* Chapter of MNPS, will be moving to Oregon shortly, following his retirement from the Bureau of Land Management. Thanks to Don for all the energy and enthusiasm he has brought to MNPS.



MEETINGS

MONDAY, SEPTEMBER 11, ARTEMISIA CHAPTER:

Tentative location: Rm 101, Alden Hall, Rocky Mountain College campus, Billings. Please watch the *Gazette* for update on location and time, or call Don Heinze at 406-255-2925. Susan Newell is taking a canoe trip to Alaska this summer. We hope to have her show her slides at the meeting.

WEDNESDAY, OCTOBER 4, VALLEY OF FLOWERS CHAPTER:

7 pm at the Emerson Cultural Center Library (2nd floor), Grand and Babcock, Bozeman. This is a "SLIDE POTLUCK" program - bring 8-10 slides of neat flowers you saw or neat places you visited this summer. Please note our new meeting place.

WEDNESDAY, OCTOBER 18, FLATHEAD CHAPTER:

7 pm, at Fish, Wildlife & Parks Bldg, Meridian Ave in Kalispell. Program TBA - see Fall KELSEYA. Business meeting at 5:30 pm - everyone is welcome.

FIELD TRIPS

MEDICINE LAKE NATIONAL WILDLIFE REFUGE,

SUNDAY, JULY 16

Meet at the Wildlife Refuge headquarters at 10 am. We will visit grassland and shoreline areas of the Refuge and see some of the adjacent sandhills. The sandhills area has species that are not found in any other places in northeast Montana. For directions or more info, call Al Joyes, 406-385-2579.

SIYEH PASS TRAIL, JULY 21

Hike Siyeh Pass Trail, Glacier National Park, through numerous plant communities - climb 2600 ft, hike 12 miles. Call Rachel Potter, 892-2446, for reservations & meeting info.

CRAZY MOUNTAIN OVERNIGHT, JULY 22-23

Two day backpack up Big Timber Canyon in the Crazy Mountains, with a day hike along the ridge below Conical Peak for a look at alpine. Botanist Steve Shelly will help us identify the plants along the way.

Contact Linda Iverson at 932-5840 for all the details; number of participants is limited because of fragile terrain, and a reservation IS A MUST. [NOTE: At press time this trip is completely booked up with a waiting list.]

CALENDAR COORDINATOR

Tulli Kerstetter, MNPS vice president, is now serving as coordinator for all meeting and field trip notices, field trip reports, and chapter activity writeups. Please send them typed or on disk (see back page for specs) no later than **September 1** for inclusion in the Autumn issue of the newsletter: KELSEYA, Attn: Tulli Kerstetter, P O Box 6444, Bozeman MT 59771-6444.

PURPLE LOOSESTRIPE PULLOUT, AUGUST 12

This is an ongoing MNPS project to help control invasive weeds. The annual Ninepipe National Wildlife Refuge purple loosestrife pullout is held in conjunction with Flathead Chapter of MNPS and the Audubon Society. Be prepared to wade in the potholes! Call Neal Brown, 837-5018 for instructions.

THAT'S THE BREAKS, AUGUST 20

Maka Flora Chapter offers you an opportunity to explore the breaks of the Yellowstone River of eastern Montana. Time and meeting place to be announced; call Al Joyes at 406-385-2579 for details.

ANNUAL MNPS FALL CANOE TRIP

SATURDAY, SEPTEMBER 30

Our annual end-of-the-season canoe/kayak trip is sponsored by the Flathead Chapter. This year's float is the Flathead River from Dixon to Perma. Meet at 10 am at the Dixon Store, Hwy 200. Bring lunch & water. Call Jean Parker, 273-6412 (Missoula), or Anne Morley, 886-2242 (Swan Lake), for information.



FIELD TRIP REPORTS

ARTEMISIA FIELD TRIPS/ACTIVITIES

The Pompey's Pillar trip, scheduled for May 13, was snowed out. Don Heinze woke up early in the morning to find two inches of snow on the ground and more coming down with a vengeance. He went back to bed. Mark Taylor and Rosanna Buehl heroically made it to the meeting place, but no one else showed up.

Thirteen hardy souls made it to the Meeteetse Spires trip on May 27. The weather was better, but still cold and blustery. We decided to play it safe and not go all the way to the Spires because of the muddy road. Still we saw approximately 35 plant species, most of them plants in bloom. So the indomitable spirit of the plant enthusiasts prevailed again and the trip was a success.

The chapter met on Monday, May 8. Don Heinze gave a talk and demonstration on some of the many books on plants that are available. They ranged from very simple picture books for the newest lay person to complicated books designed for experts.

There was a going away picnic for Don and Linda Heinze at Greg and Ilene McCracken's home. Artemisia chapter members joined together for an evening of good food and good company.

- D Heinze

A RARE Event: FIRST MONTANA RARE PLANT CONFERENCE

Over 100 native plant enthusiasts converged on Missoula for the first Montana Rare Plant Conference, April 26-27, hosted by the Montana Native Plant Society and the Montana Natural Areas Committee. Kinetic energy bounced off the walls when the array of researchers, consultants, agency personnel, avid field botanists, ecologists, geneticists, and interested public coalesced.

We weren't able to publish proceedings, but reprint the list of talk titles and presenters below:

Don Heinze - Sensitive plant and sensitive plant community program of the Bureau of Land Management in Montana

Kirk Horn - Sensitive plant conservation in the Northern Region of the USDA Forest Service

Lori Nordstrom - The Endangered Species Act and its protection of rare plants

Russell Graham - Multi-scale assessments of natural areas and sensitive species in the Interior Columbia River Basin

Melissa Hart - Analysis of natural areas at the landscape level: a case study in the Seeley-Swan Valley of northwestern Montana

Joe Elliott - Rare mosses, rare habitats

Peter Lesica - Rare plant conservation in southwestern Montana

Tom Mitchell-Olds - Conservation genetics of Montana endemic, *Arabis fecunda*

Jack Greenlee - Conservation research on a Montana endemic, *Lesquerella carinata* var. *languida*

Tulli Kerstetter - Species determination as a step toward species conservation: the case study of *Erigeron lackschewitzii*

Juanita Lichthardt - Conservation strategy for *Allotropa virgata*, a disjunct forest species

Caryl Elzinga - Conservation strategy for *Penstemon lemhiensis*, a regionally endemic steppe species

Steve Shelly and Maria Mantas - Conservation strategy for *Howellia aquatilis*, a federally listed wetland species

Questionnaire results summarizing the opinions of attendees are being compiled and will be presented at the MNPS 1995 Annual Meeting, along with preliminary recommendations on future meeting plans.

Results from the workshop on the second day will be distributed in the form of an updated state list cross-referenced with the current USFWS list, the current and proposed USFS list, and the proposed BLM list.

A list of conference attendee names and addresses is also available upon request by contacting Montana Natural Heritage Program, ATTN: Bonnie Heidel, 1515 E 6th Ave, Helena, MT 59620; or 406-444-0536; or bheidel@nris.msl.mt.gov.

...Thanks to everyone who came! - Bonnie Heidel

PHOTO ALERT

Do you have a knack for getting *Drabas* to pose? Do you cart your lenses over hill and vale for the right lighting conditions? ...Then please carry the current Montana list of plant species of special concern along with you on your photo forays.

Montana Natural Heritage Program (MNHP) has offered to maintain a Montana Native Plant Society slide file of state rare species, including both close-up and habitat slides. Its intended use would include talks, publications, and loans. To date, between 10-35% of the state rare species are on file at MNHP, representing a range of photo quality, with no duplicate sets on hand.

A list of slide gaps has been compiled and is available by contacting: Montana Natural Heritage Program, 1515 E 6th Ave, Helena, MT 59620; or call 444-3009. Watch for more information in future newsletters.

NATIVE PLANT BOOK ON TAPE

The Montana Talking Books Library now has available Jeff Hart's book **Montana Native Plants and Early Peoples** on tape, narrated by Bonnie Heidel.

Four-track tape players are needed to play the Talking Books Library cassettes, and are available to disabled patrons throughout Montana. For further information and list of other books available, contact: Montana Talking Books Library, 1515 E 6th Ave, Helena MT 59620.

NEW BOOK:

Aquatic and Wetland Vascular Plants of the Northern Great Plains

Gary E Larson

General Technical Report RM-238, Ft Collins CO
USDA Forest Service, Rocky Mountain Forest & Range
Experiment Station

A taxonomic treatment of aquatic and wetland vascular plants has been developed as a tool for identifying over five hundred plant species inhabiting wetlands of the northern Great Plains region.

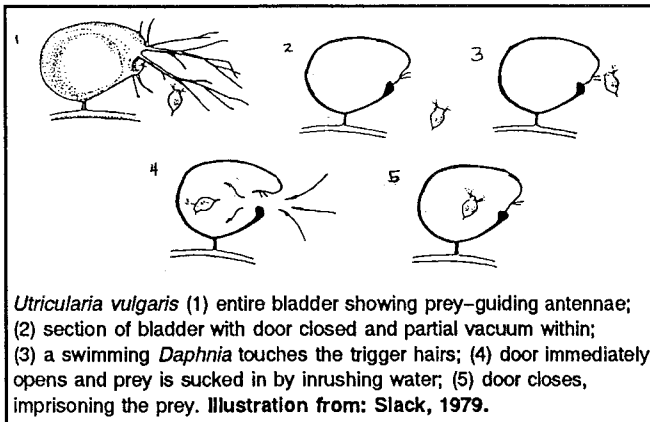
The treatment provides dichotomous keys and botanical descriptions to facilitate identification of all included taxa. Illustrations are provided for selected species. Geographical ranges and habitat preferences are described, and a map is provided for each plant showing its documented occurrences by counties within the region.

Additional information provided with species descriptions includes common names, flowering/fruitlet periods, and nomenclatural synonyms. A glossary of botanical terms is also provided.

Gary E Larson is Professor of Biology and Herbarium Curator at South Dakota State University. The project was jointly funded by The Rocky Mountain Forest and Range Experiment Station, Soil Conservation Service, US Army Corps of Engineers, US Fish & Wildlife Service, and the Central Plains and Mountain Section of the Wildlife Society.

FLESHEATERS OF THE PLANT WORLD, continued from Page One:

thread-like leaves. Minute swimming prey are attracted to empty bladders that are deflated. When the prey brush hairs at the bladder opening, the bladder rapidly inflates and a rush of water sweeps the captive into the bladder, quickly trapped by the valvate door shutting behind.



The flat-leaved bladderwort (*Utricularia intermedia*), lesser bladderwort (*Utricularia minor*) and common bladderwort

(*Utricularia vulgaris*) all grow submerged in water, sending only the flowering stalk and flowers above the water surface where the flowers are pollinated. The first two of these three are found only within peatlands in Montana.

Over half of Montana's carnivorous plant species are restricted to peatlands. Three are rare and are state species of special concern (English sundew, linear-leaved sundew, and flat-leaved bladderwort). They become more common in the far north. Peatland habitat for these flesh-eaters of the Plant Kingdom is some of the most difficult for plants to make a living...and carnivorous plants wouldn't have it any other way!

Note: If you are considering growing any carnivorous plants, do not collect them from the wild, and ask your retailer whether the plants that you buy have been propagated rather than collected from the wild. These plants and their habitats are greatly harmed by collecting.

Further reading on carnivorous plants:
Slack, Adrian, 1979, **Carnivorous Plants**, The MIT Press, Cambridge MA, 240 pp.
Weiss, Rick, 1994. When Plants Act Like Animals, **National Wildlife Magazine**, 33: 18-19.

MNPS BOOK LIST TO BE REVISED

Several years ago, MNPS developed a list of books relating to native plant identification and gardening/landscape use. This fall we will be revising and updating that list, and will publish it as part of the Winter *KELSEYA*.

The updated version will include a NEW section on edible and medicinal uses of native plants. We welcome your suggestions for possible titles to include in this new section. Books or other publications need not necessarily be in print to be included. However, please limit your suggested titles to those relating to the Rocky Mountains/Northern Great Plains/Intermountain regions. There are lots of general books on edibles of the Euell Gibbons/Bradford Angier type, and these are certainly helpful for someone getting started, but often deal with plants that are most common in other parts of the country, or that are introduced, not native to our region.

On each book we need the following: author, complete title, publisher name and city, publication date; if you have price information that is helpful. Please send your recommendations to: *KELSEYA*, Attn: Booklist Update, P O Box 6444, Bozeman MT 59771-6444.

WYOMING RARE PLANT FIELD GUIDE NOW AVAILABLE

The most recent issue of *Castilleja*, newsletter of the Wyoming Native Plant Society, notes that the long-awaited **Wyoming Rare Plant Field Guide** is finally available. This book includes line drawings, range maps, and color photographs of 91 of the rarest plant species in the state, including US Fish & Wildlife Service candidate and Forest Service Sensitive plant species. To find out how to obtain a copy of the guide, please contact Jeff Carroll, State Botanist, Bureau of Land Management, Wyoming State Office, PO Box 1828, Cheyenne, WY 82003.

FRIENDS OF THE UM HERBARIUM

The Herbarium at the University of Montana is an irreplaceable resource for the study of the botany and plant ecology of Montana. Although a collections manager has recently been hired to oversee herbarium activities, there is still a shortage of cabinets and space to house them, as well as a lack of funding to hire work-study students to mount and file specimens.

In these difficult times the UM Herbarium could use some friends. A group of concerned botanists and lay persons is founding the Friends of the University of Montana Herbarium. The mission of Friends of the UM Herbarium is to secure support for and enrichment of the collections and operation of the Herbarium.

If you are interested in joining the Friends, write for a membership application: Dave Dyer, Herbarium, Division of Biological Sciences, University of Montana, Missoula MT 59812.

CALLING ALL BOTANY CONSULTANTS

Montana Natural Heritage Program is preparing a referral list of experienced consultants for botanical work in Montana. This compilation is spurred by the number of queries about experienced consultants directed to the Program and to other agencies and organizations. Currently no central resource "pool" exists. Please send business name and address c/o Bonnie Heidel, Montana Natural Heritage Program 1515 E 6th Ave, Helena, MT 59620.

NORTH AMERICAN DIATOM SYMPOSIUM

The 13th North American Diatom Symposium will be held September 27-30, 1995, at Iowa Lakeside Laboratory, Milford, Iowa. For more information contact Dr. Stephen P. Main, Biology Department, Wartburg College, Waverly Iowa, 50677. Phone (319) 352-8386; FAX (319)352-8582. If email is your thing, use: main@wartburg.edu.

MONTANA NATIVE PLANT SOCIETY *** MEMBERSHIP APPLICATION/RENEWAL

Date _____ New _____ Renewal _____

Please Print:

NAME _____ ADDRESS _____

CITY/STATE/ZIP _____ PHONE _____

STATEWIDE MEMBERSHIP WITH CHAPTER AFFILIATION*

- ☐ \$12 I. Individual
☐ 16 II. Family
☐ 28 III. Business/Organization
☐ 4 IV. Yearly chapter dues for Lifetime Members

MEMBER-AT-LARGE (Statewide membership only)

- ☐ \$ 8 I. Individual
☐ 12 II. Family
☐ 25 III. Business/Organization
☐ 150 IV. Lifetime member (one-time payment)

NOTE: For Canadian subscribers, add \$2.00 to each category

Additional Donation \$ _____

*AREAS COVERED BY CHAPTERS:

ARTEMISIA CHAPTER - Yellowstone and Carbon Counties; southeastern/south-central 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 and Jefferson Counties

MAKA FLORA CHAPTER - Richland, Roosevelt, McCone, Sheridan and Daniels Counties

VALLEY OF THE FLOWERS CHAPTER - Gallatin, Park, Madison and Sweet Grass Counties plus Yellowstone National Park

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

Membership in the 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 included in the Winter issue of KELSEYA. Anyone who has not renewed by the time the Summer KELSEYA is ready to mail will be dropped from the mailing list/MNPS membership roster.

Your mailing label tells your

CLASS OF MEMBERSHIP (I, II, III, IV - see above)

CHAPTER AFFILIATION, if any (ART = Artemisia; CF = Clark Fork; F = Flathead; K = Kelsey; MAK = Maka Flora; VoF = Valley of Flowers)

DATE YOUR MEMBERSHIP EXPIRES: If your label reads "2/96" your membership expires February 28, 1996...use the above coupon to renew your membership any time. Please drop us a note if any information on your label is incorrect.

MAKE CHECKS PAYABLE TO:
MONTANA NATIVE PLANT SOCIETY

MAIL TO: Montana Native Plant Society/Membership
P O Box 8783
Missoula MT 59807-8783

NOW IN PAPERBACK:

Common Poisonous Plants and Mushrooms of North America

Nancy J Turner and Adam F Szczawinski
Timber Press, 1995, \$24.95 (paperback)

This practical and authoritative field guide, compiled and written by two expert botanists, describes hundreds of poisonous plants, including both native and introduced species of vascular plants, as well as many kinds of mushrooms.

The authors provide a clear color photograph for each plant, and a "quick check" description, very useful in emergency situations, to give readers an immediate sense of how poisonous the plant or mushroom might be. A more lengthy description follows, along with information about occurrence, toxicity, and symptoms of poisoning. Most important is the detailed "treatment" section.

Health care workers, parents, hikers, and wild food enthusiasts will all benefit from this book, which was named an Outstanding Reference by the American Library Association. The 324-page book contains 215 color photos to aid identification.

MANAGING YOUR LAND & WATER

There's a new publication available to help you manage your land and water resources, if you live outside a city or town: *Tips on Land Water Management for Small Farms and Ranches in Montana*. The booklet explains how to evaluate your land and make a plan for your property. Even if your acreage is smaller than "small farm" size, you will find many helpful tips and suggestions in the publication.

Contact Allyson Lyle, Conservation District Bureau, Department of Natural Resources and Conservation, P O Box 202301, Helena MT 59620-2301, or call 406-444-6667.



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All newsletter-related items should be
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MONTANA NATIVE PLANT SOCIETY

The Montana Native Plant Society is a 501-C-3 (not-for-profit) corporation chartered for the purpose of learning more about plants native to our state and their habitats, and of sharing that knowledge. Contributions to MNPS are tax deductible, and may be designated for a specific project or chapter, or may be made to the general 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 - almost anything, in fact, that relates to our native plants or the Society. **Please include a one- or two-line "bio" sketch with each article.** Drawings should be in black ink or good-quality photocopy. If you send clippings, please note the source, volume/issue and date.

All meeting and field trip notices, field trip reports or announcements should be mailed to **KELSEYA**, Attn: Calendar, P O Box 6444, Bozeman MT 59771; articles should be sent to Terry Wamsley, P O Box 1304, Harlem MT 59526. All items should be typed or on disk - prefer 3.5" - in WordPerfect 4.2 or better, or in a generic ASCII file.

Changes of address and inquiries about membership in MNPS should be sent to MNPS, Attn: Membership, P O Box 8783, Missoula MT 59807-8783. General correspondence should also be sent to the Missoula address.

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 plants or the interests of MNPS members.

Deadline for the AUTUMN issue is SEPTEMBER 1; please include meeting/field trip notices through mid-January '96. The Autumn issue of **KELSEYA** will be mailed the last week of September.

IF YOU MOVE, **PLEASE** SEND US YOUR CHANGE OF ADDRESS



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