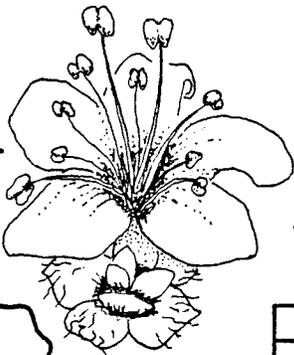


Vol 2,
Number 4

Kelseya
uniflora



Kelseya

Summer 1989

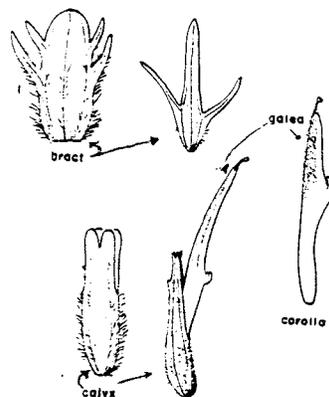
NEWSLETTER OF THE MONTANA NATIVE PLANT SOCIETY

Paintbrushes are BEAUTIFUL BANDITS

- Peter Lesica

Although most people are familiar with the showy red or yellow inflorescences of the various paintbrush species, not so many have examined them closely. The actual flower petals are usually greenish, and the stunning colors that attract pollinators are provided by the bracts that subtend each flower. The petals are united to form a tube that is 2-lipped at the mouth. The upper lip (galea) is hood-shaped and encloses the anthers, protecting the pollen from rain, while the lower lip is greatly reduced. Nectar is produced at the base of the ovary and fills the bottom of the tube.

Paintbrushes are most often pollinated by bees or hummingbirds. In either case the anthers come down from the galea and brush pollen on the insect or bird as it enters the tube to reach the nectar. Although hummingbirds are said to be most attracted to red, they will readily visit yellow paintbrushes as well.



Illustrations from Hitchcock, Cronquist et al, *Vascular Plants of the Pacific Northwest*.

Certainly among the showiest and best known wildflowers in the Northern Rocky Mountains are the paintbrushes or Indian paintbrushes. There are approximately 150 species of paintbrush (genus *Castilleja*) worldwide, and most of these are found in western North America. In Montana alone, there are 21 species, all but one of which are perennials. They occupy such different habitats as semi-arid grasslands, alkaline marshes, montane meadows, and alpine tundra and fellfields. Many species, like the Great Plains downy painted cup (*C. sessiliflora*) and the common scarlet paintbrush (*C. miniata*) are found throughout much of Montana and are widespread in the western states. Others like the cock's-comb paintbrush (*C. crista-galli*), which occurs only around Yellowstone National Park, are more restricted in distribution. Paintbrushes are often difficult to identify because hybridization is common in this genus, and some plants will have characteristics of two or more different described species. Don't get discouraged when trying to key out a paintbrush - even the experts have a hard time.

Paintbrushes are in the subfamily Rhinanthoideae of the Figwort family (Scrophulariaceae). Other plants in this tribe include lousewort and elephanthead (*Pedicularis*) and owl clover (*Orthocarpus*). All members of this tribe are partially parasitic (hemiparasitic) on the roots of

- continued on Page Seven

ANNOUNCEMENTS

LEAFY SPURGE SYMPOSIUM, JULY 12-13

A two-day symposium on the management and control of leafy spurge is scheduled at the Holiday Inn in Bozeman on Wednesday and Thursday, July 12-13.

Sponsored by the Montana State University Agricultural Experiment Station, it will present results of current research and technical developments for the cultural, biological and chemical management of leafy spurge. Co-Chairs of the conference are entomologist Robert Nowierski and plant scientist Pete Fay.

Preregistration costs \$35; make checks payable to the MSU Agricultural Experiment Station and mail to Entomology Research Lab, Montana State University, Bozeman, MT 59717. Registration at the door is \$45.

TENTH BIENNIAL DIATOM SYMPOSIUM

The Tenth Biennial North American Diatom Symposium will be held Wednesday through Saturday, October 11-14, at the Forestry and Biological Station of the University of Minnesota, Lake Itasca MN.

MNPS member Loren Bahls, whose excellent article on diatoms appeared in the spring issue of KELSEYA, suggests that any other "diatomaniacs" among our membership would find this symposium very interesting.

Preregistration is \$25 (\$30 at the door); preregistrations which are received by July 15 will be sent information on abstracts for presentations and posters, as well as more information on the conference location. Write: David B Czarnecki, Dept. of Biology, Loras College, Dubuque, IA 52004-0178, or phone (319) 588-7231.

NOTEWORTHY COLLECTIONS: Goodyera repens (L) R.Br.

Goodyera repens, northern or dwarf rattlesnake plainain, was collected on August 3, 1987, by MNPS member Wayne Phillips in the Little Belt Mountains on Sandpoint Creek of the Lost Fork of the Judith River (Judith Basin County). The location is 42 km south-southwest of Stanford, at an elevation of 1860 m (Phillips 870803-34 -C), verified by J.S. Shelly and P.F. Stickney, MRC.

Approximately 200 plants were found in a 400-square-meter

area on a north-facing slope in dense shade of an old-growth Douglas fir/lodgepole pine forest. The site is an Abies lasiocarpa/Linnaea borealis habitat type on limestone substrate. The orchids were found in an unburned "island" in the center of a large 1985 burn, growing in thick mats of the mosses Drepanocladus uncinatus, Hylocomnium splendens, and Pleurozium schreberi (det: J.C. Elliott). Other associated species include Linnaea borealis, Pyrola secunda, Galium boreale, Clematis columbinana, Thalictrum occidentale, Smilacina stellata, Juniperus communis, Pseudotsuga menziesii, Abies lasiocarpa and Picea engelmannii.

Significance: Second record for Montana. Previously known from a single collection (by Jerry DeSanto, Glacier National Park, August 6, 1980) made near Upper Kintla Lake, 370 km northwest of the location discovered by Wayne. This site is also disjunct by 600 km from the next closest known US station in the Black Hills of South Dakota. In addition to Montana, western US distribution includes Colorado, New Mexico and Arizona. The species is not known from the adjacent states of Wyoming and Idaho.

Thanks to Wayne Phillips (MNPS state secretary) for sharing news of this interesting find with us!

NATIVE GARDEN GROWS AT THE CAPITOL

Thanks to the efforts of the Kelsey Chapter of MNPS, Helena, visitors to the State Capitol complex have an opportunity this summer to visit a "Centennial garden" featuring more than a dozen native species of plants.

The idea was originally suggested by Wayne Phillips, and the members of Kelsey Chapter took the suggestion and ran with it! Approximately 700 square feet of space is divided into five areas, with such species as lupine (Lupinus), gayfeather (Liatris) and pussytoes (Antennaria). The plants were generously donated by Bitterroot Native Growers, and chapter members Lisa Larsen and Les Pedersen put together the plan for the garden. Maintenance will be provided by the state department of Fish, Wildlife and Parks, and by chapter volunteers.

Next time you're in Helena, stop by to visit "the natives" in Capitol Park, east of the Justice Building on the east edge of the complex.



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MONTANA NATIVE PLANT SOCIETY

The Montana Native Plant Society is a non-profit (501-C-3) corporation chartered for the purpose of learning more about plants native to our state and their habitats, and to share that knowledge. Contributions to MNPS are tax deductible, and may be designated for a specific project or chapter, or be made to the general fund.

KELSEYA, newsletter of MNPS, is published quarterly. We welcome your articles, clippings, field trip reports, meeting notices, book reviews, cartoons or drawings - almost anything, in fact, that relates to our native plants or the Society. Please include a one- or two-line "bio" sketch with articles.

Drawings should be done in black ink with a fine-point pen. If you send clippings, please note the source, volume/issue and date. We especially need short (one to three paragraph) items which can be tucked in anywhere.

Changes of address and inquiries about membership or MNPS should be sent to MNPS, PO Box 992, Bozeman, MT 59771-0992. All newsletter material should be mailed to Jan Nixon at the same address.

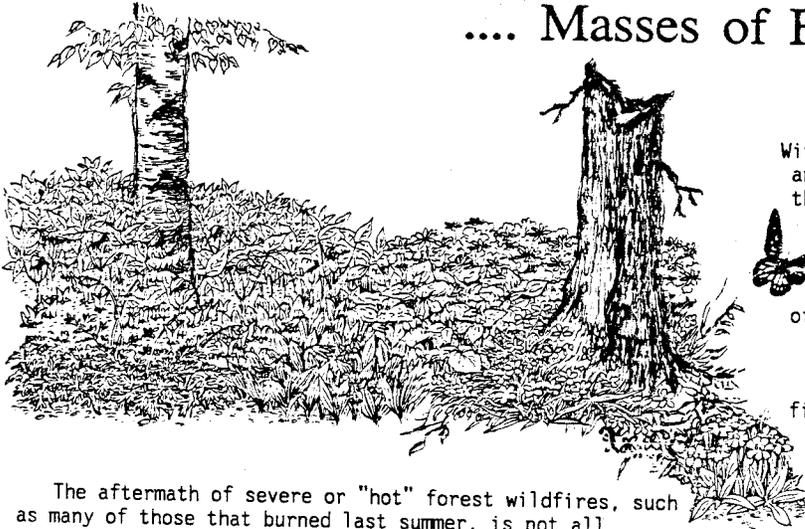
Advertising space is available in each issue at \$5/column inch. Ads must be camera-ready, and must meet the guidelines set by the Board of Directors for suitable subject matter: that is, be related in some way to plants or the interests of MNPS members.

Deadline for the Autumn issue is SEPTEMBER 1; newsletters will be mailed the third week of September.

After Forest Wildfire, then what?

... Masses of Flowers!

- Peter Stickney
- from WORDS ON WILDERNESS,
newsletter of the Wilderness Studies
and Information Center, University of
Montana; reprinted with permission.



The aftermath of severe or "hot" forest wildfires, such as many of those that burned last summer, is not all ashes, char and eternal desolation. While the general perception may be that tree-killing fires are an unmitigated disaster that destroys the forest, in reality the opposite is true.

Severe fire alters rather than destroys the forest community, making it uninhabitable for some organisms such as dwarf mistletoe and bark beetles. And at the same time it serves as a rejuvenating and regenerating force creating a habitable site for a distinctive group of plants and animals (including insects, mosses and fungi) that flourish in an early postfire environment. A large number of plants in the Northern Rocky Mountains, up to 70% of the plant species in some forests, are well adapted to survive severe burning. An examination of all the plants emerging from the ashes and char in a year-old burned forest would reveal that each green shoot arises either as regrowth from a rootcrown or underground stem or as a newly germinated seedling. The regrowths are survivors of plants present in the forest at the time of the fire. The seedlings are colonizers that germinate from seeds stored in the ground, in the cones of fire-killed trees, or from seeds that have dispersed from unburned areas.

A newly burned forest is a unique place at a unique time in the cycle of forest succession. For shrubs such as snowbrush and wildflowers such as dragonhead and wild hollyhock, the first year after the fire is the only time their seedlings may be seen during an entire 100-300 year succession cycle. This first year is also the best time for the establishment of shade-intolerant, often commercially-important, conifer tree seedlings.

One of the more interesting and attractive events resulting from fire is mass flowering, a phenomenon where all plants of one species flower simultaneously. Without the conditions created by fire, mass flowering of some herb and shrub species would never take place. With mass flowering, an entire mountainside may burst into color against the blackened snags with sheets of yellow arnica, rose-purple fireweed, pink wild hollyhock, lavender-blue aster, purple lupine, white spirea, or straw-colored pinegrass.

For some plant species, mass flowering occurs only once during the succession cycle. If you are not at the right place at the right time you miss the spectacle until the next fire comes along.

Mass flowering for the short-lived annual geranium and biennial dragonhead is a singular event after which all

the plants die and the species disappear from the site. With the longer-lived perennials such as arnica, pinegrass and spirea, mass flowering occurs only once shortly after the fire, usually in the second year. For perennials like fireweed and wild hollyhock, mass flowering occurs several times early in succession, with fireweed starting as early as the first year.

Fire has long been an integral and natural force of disturbance to our coniferous forests. As a result it creates conditions favorable, even vital, to the regeneration and establishment of a specific group of herbs, shrubs and trees. Many others are adapted to survive fire's periodic alterations of the forest community. The continued presence of fire is required to ensure and maintain the biological diversity associated with the broad range of forest types inhabiting the Northern Rocky Mountains.

Those interested in this postfire phenomenon should look for mass flowering in burned forests at mid to lower



elevations in the mountains of Montana during mid-June and July of the first and second years after the fire. The occurrence and extent of most mass flowerings depend upon the presence and abundance of the species in the unburned forest at the time of the fire. If you are aware of sites where arnica, lupine or other plants mentioned above were abundant in the forest before the fire, those are the places to particularly watch.

Peter Stickney is a range scientist at the Intermountain Research Station's Forest Science Laboratory on the University of Montana campus.

ANNOUNCEMENT

THIRD ANNUAL KNAPWEED PULLOUT, JULY 11

For the third year in a row, we're "getting a handle" on spotted knapweed and other nasties at the Kirk Hill Nature Area, just off S 19th Road, south of Bozeman. A joint effort of the Museum of the Rockies volunteers and staff, Sacajawea Audubon Society and Valley of the Flowers Chapter of MNPS, we're continuing an intensive program of hand cultivation aimed at doing away with invasive species while protecting the outstanding plant diversity of this Nature Area.

Come join us from 6 p.m. until dark (or as much time as you can spare) on Tuesday, July 11. Ice cold lemonade will be provided. A screwdriver makes an ideal digging tool, and you may want gloves as well.

There will be a regular Tuesday-evening weeding crew at work throughout the summer from mid-June on, so if you can't make it on the 11th, any Tuesday from 6 p.m. until dark there'll be someone there to show you where and what to pull. COME HELP US OUT!

FROM THE PRESIDENT

At the Second Annual Meeting, May 5-7, we had 52 participants and raised over \$400 for our treasury through the registration fee and silent auction. We had many fine items for the Silent Auction - a hearty THANKS to all the donors of auction items!

Thanks to all who participated in the state gathering in Helena, and a special thanks to the Kelsey Chapter for hosting the event. They spent a great deal of effort to put on a very successful program. Lisa Schassberger outdid herself in making an outstanding printed program, as well as all the other organizing for the meeting. Special thanks also to Anne Bradley, Pete Lesica, Marti Crane, Steve Shelly and DeeDee Dowden for directing the Plant ID, Rare Plant and Drawing workshops on Friday and Saturday. WELL DONE and MANY THANKS!!

Joe Duft of Boise, Idaho, one of our scheduled speakers, was unable to make it to Helena due to car trouble en route. However, Leita Dickman graciously filled in with a wonderful slide presentation on the flora of the Montana foothills. WELL DONE and MANY THANKS, Leita!

Thanks also to Maria Ash for an excellent presentation on Wildflower Photography as our featured speaker on Saturday evening. Her presentation included not only her own fine slides but a number belonging to Steve Wirt and Dee Strickler as well. We should all have better slides to show in the future! WELL DONE and MANY THANKS, Maria!!

Steve Shelly and Joe Elliot led field trips on Sunday for spring flowers and mosses, respectively. Although the weather was not totally cooperative, the trips were great...THANKS, Steve and Joe!!

On Saturday morning installation of our new officers was held. I am now your President, and Roxa French was installed as your Treasurer. Shelly (Bruce) Engler and Wayne Phillips have one more year remaining on their terms as Vice President and Secretary, respectively.

I would like you all to thank Kathy Ahlenslager, our past President, for such an excellent job in getting MNPS started and organized, and for her exhaustive work in keeping our society progressing. Without the work that Kathy has done over the past two years, we wouldn't be where we are today. A SUPER THANKS from all of us, Kathy! We haven't totally let her off the hook, however, as the Bylaws were amended at the meeting to make the Past President a voting member of the Board of Directors, to help maintain continuity in the organization. We gotcha, Kathy!

My thanks also to John Pierce, our outgoing Treasurer, for his efforts the past two years. He has overseen the financial growth of MNPS as no one else could have, and knows the headaches and ministrations of getting an organization started. WELL DONE and MANY THANKS, JOHN!! John is now the President of the Clark Fork Chapter, so we will still have his services on tap.

At our general meeting Saturday afternoon the major item of business was the possible rewording of the Bylaws. The passage in the Bylaws reads:

ARTICLE II. PURPOSE:

The purposes of the Montana Native Plant Society shall be as follows:
The preservation, conservation and study of the native plants and plant communities of Montana and the education of the public to the values of the native flora and its habitat.

After much discussion, the members voted to retain the current wording of the Bylaws. Please let me know if any of you want a copy of the Bylaws.

One of my prime objectives for the coming year is to forge ahead in getting you members to participate more. With that thought in mind we spent Saturday afternoon in committee meetings developing priorities and itineraries for the coming year. The committees that met were:

Newsletter/Publications/Outreach, Jan Nixon, temporary chair;

Programs and Field Trips, Juanita Lichthardt, Chair;
Landscape, Lisa Larsen, temporary chair;
Conservation, Allen Cook, Chair.

The results of those meetings are reported below. HOWEVER, the committees can only be as good as our membership is at providing suggestions and participating in the events or projects that are planned by these committees. PLEASE CONVEY YOUR DESIRES, INTERESTS, EXPECTATIONS AND HELP TO THESE COMMITTEES, AND THEN PARTICIPATE! We still need a Membership Committee Chair, so please contact me ASAP if you are interested in chairing (or even being on) such a committee. Please, we need some help here! In the next newsletter I will devote my column to discussing these committees in more detail.

Please be reminded that MNPS is a Non-Profit Organization registered with the IRS, so private or corporate donations of materials or money are tax deductible.

I hope all of you will participate in state or chapter field trips this summer...or better yet, lead a trip. Keep Jan Nixon informed of trips and meetings for the newsletter.

Feel free to call me any time to discuss events, ideas or problems: home 586-1348, work 994-4212 (leave a message if need be). I am here to serve you, the members. I look forward to the next two years as President, and beyond as a participant.

- Stephen J Harvey



COMMITTEE REPORTS

FIELD TRIP COMMITTEE

Our committee discussed problems of low turnout for trips and programs, and possible remedies such as additional publicity in the form of flyers and news releases.

There was discussion about possible speakers for next year's Annual Meeting, and the possibility that the meeting might have a central theme based on the keynote speaker. We solicited suggestions for speakers and were advised of one or two likely candidates. We remain open to suggestions.

We touched on the subject of membership distribution and how this might affect state-wide field trips. It became clear that the time of year is an overriding consideration in planning trips. We want to restate that trips planned by any individual chapter are open to interested persons statewide.

Decisions were made to:

- (1) begin planning a June '90 trip to the Pine Butte Preserve;
- (2) turn a McWeneger Slough canoe trip, proposed by the Flathead Chapter for September 9, into a fall state-wide field trip;
- (3) solicit input from members on programs and trips for next year that would be of general interest and attract people from across the state.
- (4) Scheduling of trips needs to be finalized early in the year, before everyone's schedule gets filled up.



CONSERVATION/EDUCATION/OUTREACH COMMITTEE

The outcome of this committee's meeting follows:

- (1) Recommendation that a resolutions process be investigated for the future. Legal requirements and the membership's wishes about such a process should be discussed before a vote to institute it.
- (2) Recommendation that "Outreach" issues be directed to "Membership" Committee (felt that this is a public relations issue).
- (3) This committee plans to communicate prior to the October Board meeting, to discuss and make recommendations

- continued on Page Five

CONSERVATION/EDUCATION/OUTREACH COMMITTEE
...continued from Page Four

regarding all issues raised during this meeting.

- (4) Education projects could include:
- children's publication (similar to Ranger Rick) about plants and habitats
 - slide show/program for schools
 - library and phone tree for efficient communication so that members can educate press, communities, agencies etc. about an issue
 - school packets
 - use of the press to educate

(5) Vote about Bylaws change should be prefaced through education about consequences of that change.

(6) Regardless of the outcome of the vote (during Annual Meeting, the vote about change in Bylaw regarding language of education), the Conservation/Education Committee, Board, membership and chapters should work together over the long term to clarify levels of involvement and advocacy/education about issues. During that time, the Board will make case-by-case decisions about involvement and reaction to issues.



NEWSLETTER/PUBLICITY/PUBLICATIONS

Our committee discussed a number of issues which have implications for membership/outreach as well as our own topics.

Each chapter should designate one person to serve as newsletter liaison (could be the secretary/treasurer, or just someone who volunteers). That person would be responsible for submitting meeting and field trip notices, would generate articles for the newsletter (or at least identify people in their area who might be willing to write an article), and should approach potential advertisers (such as nurseries, garden centers, bookstores etc) about advertising. Rates are \$5/column inch, and ads must be camera ready (i.e., no typesetting or layout by us).

Currently the cost of the newsletter, including mailing under our bulk permit, runs approximately \$.50 each. We are receiving ample material to run a ten or twelve page issue each time instead of the present eight pages. Mailing costs would not increase, but additional printing costs are estimated at \$.13, for a unit cost of \$.63. As publication costs rise, it becomes more desirable to have advertising to help defray some of the additional printing charges. It is possible also that we could cut some costs by photocopying the newsletter, rather than printing it - Jan will look into this.

Chapters which want to do separate mailings of their own can obtain labels for them from Jan very inexpensively (less than a cent a label). If a chapter has a minimum of 200 identical pieces, the mailing can go under our bulk permit for \$.085 each instead of first class. The chapter then would reimburse the newsletter for the label/ mailing cost.

We discussed a "Ranger Rick" type of publication aimed at 5th-6th graders, and will get some ideas together before fall so that this can be touted at the Montana Education Assn fall meeting in late October. We also considered doing a mailing to middle-school or junior/senior high science teachers statewide about such a publication.

Since all chapters now charge \$4 for chapter membership, Jan proposed that we simplify the new/renewal membership process by having all checks mailed to one address (the newsletter) first. After the mailing list input/update is completed, the check will be forwarded to the appropriate chapter treasurer, who will deposit the check, deduct the \$2 chapter kickback, and forward the rest to the state treasurer. The checks of members at large (no chapter affiliation) will be sent directly from the newsletter to the state treasurer. This method of handling new/renewals means the membership form can be trimmed down considerably, and should be much less confusing.

It was also noted that the state treasurer will need to

be notified of how much each chapter has in its checking account before October (preferably by September 15) so that proper accounting can be made to the IRS.

We discussed the need to do followup mailings to people who have indicated an interest in MNPS in the past but have never joined. This task was tabled until the fall.

Carol Morris has prepared a draft of a very attractive brochure which presents basic information about MNPS, to be used with our traveling display and given/mailed to people who request information on what we're all about. Kathy had circulated this draft to the various chapters, and we discussed editing suggestions that had been made. Costs should be fairly low (6-7 cents each, double sided), and these can be made available to public libraries, chambers of commerce and other places where people might inquire about things to do and see. Our aim is to have the finished product available by fall.

There is a very popular Wildflower Hotline operating in Utah which offers frequently-updated tips on wildflower-viewing hotspots, and we discussed possible ways of obtaining and operating such a hotline for MNPS. The most desirable option would be to solicit donations from corporations/foundations which would provide not only the equipment but an 800 number, so that people could call toll free for info about what's blooming as well as field trip details (especially changes or cancellations). We strongly recommend to the Board of Directors that this idea be pursued.

Another idea proposed is to solicit corporate/foundation donation of a computer, primarily for the newsletter and membership records. Chapters could then submit information on a floppy. This idea received enthusiastic support, as well.



LANDSCAPE COMMITTEE

The outcome of our committee's session was as follows:

- (1) The need for a landscape column in the newsletter.
- (2) The need to monitor Montana nurseries [and other plant outlets] for propagation and sale of noxious weeds and rare or sensitive native species.
- (3) The ethics of propagation of native species is a subject that a sub-committee has been formed for and will report to the Society at the Fall Meeting.
- (4) Propagation of natives for the revegetation of disturbed areas such as road construction projects.
- (5) Native Plant Gardens in Montana. Lisa Schassberger requested the members to submit information on the location of existing native-plant gardens in the state for a directory that could be used by the members to visit when in the various parts of the state.

FINANCIAL STATEMENT OF THE MONTANA NATIVE PLANT SOCIETY - FEBRUARY 1988 thru FEBRUARY 1989

EXPENSES:	
Printing	\$ 498.83
Postage	463.62
Telephone	182.86
Miscellaneous	<u>666.48</u>
TOTAL EXPENSES:	1,811.79
INCOME:	
Membership dues	1,663.00
Donations and other income	<u>493.15</u>
TOTAL INCOME:	2,156.15



Paintbrushes are BEAUTIFUL BANDITS

(continued from Page One)

neighboring plants. When a paintbrush root comes in contact with those of another plant, it forms a short side branch (haustorium) that penetrates the neighbor's root. Hemiparasites in the Figwort family are not host specific, and a variety of plant species (including a neighbor hemiparasite) may be used by the same species. Researchers have determined that paintbrushes and other hemiparasites obtain water, mineral nutrients such as nitrogen and phosphorus, and carbon compounds such as sugars and amino acids from their hosts. It has been determined that hemiparasites transpire more water than most other plants. Thus they are able to exert a kind of suction on their hosts, pulling water and sap through the haustoria into their own roots and stems. Under laboratory conditions, paintbrushes with a host have a greater height, more branching and earlier flowering than those without hosts. Although most species of paintbrush are able to flower and produce seed in the greenhouse without a host, a parasitic relationship is probably necessary under the more

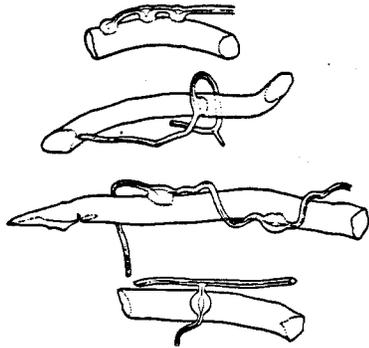


FIG. 2. Haustoria of *C. coccinea* attached to host roots. Drawings from specimens ready for embedding and sectioning (15X).

Malcolm, W.M., *Ecology* 42(2)

stressful conditions occurring in native plant communities. Biologists have noted that in drought-stressed grasslands host plants will be withered, while neighboring paintbrush plants appear healthy and completely turgid. This is something to watch for the next time drought conditions occur here in Montana.

The Broomrape family (Orobanchaceae) are a group of obligate parasites closely related to the paintbrushes and other hemiparasites of the Rhinanthoideae. Evolutionary biologists postulate that non-obligate hemiparasitism is the first step in the evolution of full parasitism, and these two groups of plants are a good example of this evolutionary path. While hemiparasites in the Rhinanthoideae have green leaves and can - under optimal conditions - complete their life cycle without a host, broomrapes lack green leaves and are obligate parasites. In addition, paintbrushes and their relatives have a wide range of hosts and do not require host exudates for germination, while broomrapes are relatively host specific and will not germinate unless in close contact with a host.

Next time you see a paintbrush with its striking colors, keep in mind all that's happening underground that can't be seen.

Suggested reading:

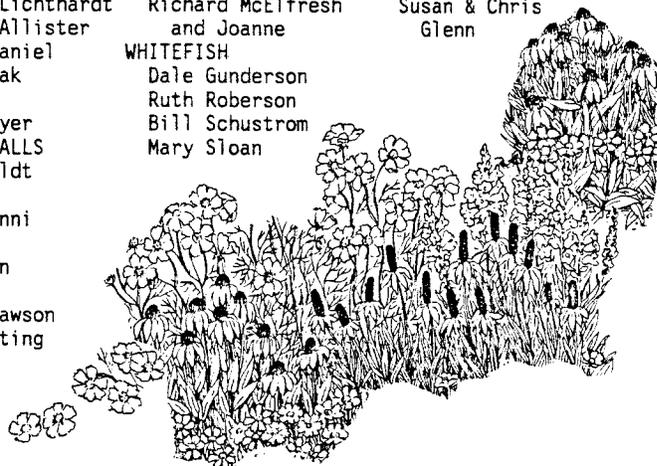
Heckard, L.R., 1962. Root Parasitism in Castilleja. *Botanical Gazette* 124:21-29.

Kuijt, J., 1969. *The Biology of Parasitic Flowering Plants*. University of California Press, Berkeley.

Peter Lesica, Clark Fork Chapter, was one of the early organizers of MNPS. He works as a contract botanist for the Natural Heritage Program and for the University of Montana.

PLEASE WELCOME THESE NEW MNPS MEMBERS:

MONTANA		NORTH DAKOTA
BIGFORK	LAME DEER	LINTON
Ben Hilley	Bill Tallbull	Richard Williams
Chris Moritz	MISSOULA	
BOZEMAN	Frances Coover	WYOMING
Mary Carr	Peter M Rice	POWELL
David Clark	Ellen Voss	Nicol Price
Diane Clutter	PARADISE	THERMOPOLIS
Lee Faulkner	Gisela Herberger	Robin Jones
Matt Lavin	STEVENSVILLE	YELLOWSTONE PARK
Juanita Lichthardt	Richard McElfresh	Susan & Chris
Byron McAllister	and Joanne	Glenn
Paul McDaniel	WHITEFISH	
Judy Suvak	Dale Gunderson	
BUTTE	Ruth Roberson	
Paul Sawyer	Bill Schustrom	
COLUMBIA FALLS	Mary Sloan	
Ralph Waldt		
CULBERTSON		
Avis Zoanni		
HELENA		
Tim Byron		
KALISPELL		
Cheryl Dawson		
Brad Whiting		



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MONTANA NATIVE PLANT SOCIETY **** MEMBERSHIP APPLICATION

DATE _____ NEW _____ RENEWAL _____
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STATEWIDE MEMBERSHIP WITH CHAPTER AFFILIATION *		MEMBER-AT-LARGE (Statewide membership only)	
___ \$12	I. Individual	___ \$ 8	I. Individual
___ 16	II. Family	___ 12	II. Family
___ 29	III. Business/Organization	___ 25	III. Business/Organization
___ 4	IV. Yearly chapter dues for Lifetime Members	___ 150	IV. Lifetime member (one-time payment)

* AREAS COVERED BY CHAPTERS:

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

All of the chapters welcome members from areas other than those counties 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 in other areas; watch for announcements of meetings in your area. 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 process by the end of June each year will expire the following February; those processed after the first of July will expire in February of the year after. Membership renewal notices are included in the Winter and Spring issues of KELSEYA. Anyone who has not renewed by the Summer edition of KELSEYA will be dropped from the mailing list/Society roster.

Your mailing label tells your
 CLASS OF MEMBERSHIP (I, II, III, IV - see above)
 CHAPTER AFFILIATION, IF ANY (CF=Clark Fork; F=Flathead; K=Kelsey; VoF=Valley of the Flowers)
 DATE YOUR MEMBERSHIP EXPIRES: If your label reads "x2/89" your membership expired this past February...please send in your renewal today! If you mailed in a renewal by June 20, your label should read "x2/90."
 New memberships received by June 20 will also read "x2/90." 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
 P O Box 992
 Bozeman MT 59771-0992

GNP EXOTIC PLANT MANAGEMENT PLAN

...continued from Page Eight

serious concern for the perpetuation of native plant communities, wildlife habitat, quality recreational opportunities, and potential for further spread to land adjacent to the Park... Documentation clearly indicates these plants are spreading beyond developed areas into native plant communities, and may cause the subsequent displacement of native plants."

The goal of the Park's plant management program is to preserve biological diversity of native species. Priorities are established for management actions based on ranking of exotics into categories, location of occurrence, and plant communities targeted for treatment. The management emphasis since 1983 has been biocontrol, but many exotic populations have not only persisted but spread during that time. The Draft Plan recommends Integrated Pest Management (IPM) as the preferred choice. This approach targets an individual plan species, then selects the method or combination of methods that will best achieve the desired management result. Alternatives considered for weed control when IPM is implemented typically utilize physical, mechanical, biological, sociological and cultural treatments.

The use of herbicides may be considered to control exotics within selected developed areas, if other treatments are ineffective or unacceptable in achieving control objectives. Herbicides are not being considered as an alternative treatment within the proposed wilderness of GNP, however. In the event herbicides might be considered, a separate environmental assessment would be prepared before such use, on a site-specific basis.

Review copies of the Exotic Plant Management Plan are available at Park headquarters in West Glacier. Copies are also available by writing: Superintendent, Glacier National Park, West Glacier, MT 59936, or by calling (406) 888-5441.

MEETINGS

THURSDAY, JULY 6, KELSEY CHAPTER: 7 p.m. at the Lewis and Clark Library, Helena. All chapter members/interested people please plan to attend.

THURSDAY, OCTOBER 5, VALLEY OF THE FLOWERS CHAPTER: 7:30 p.m., Fish, Wildlife & Parks building on South 19th. The program is tentative at this point, but bring 6-8 of your favorite slides from this summer and let us see what you've been doing!

FIELD TRIP REPORT

LOMATIUM LOVERS: On May 13, seventeen flower enthusiasts joined Peter Stickney for a walk up Mt. Sentinel near Missoula. Under a clear blue sky we climbed 800 feet over one mile, via a long transverse trail to the "M". En route we encountered over 70 plant species, 30 of which were in bloom. This much diversity over an 800 foot elevation gain is exciting, especially since knapweed dominates some areas of this hillside. Five species of the biscuit-roots were blooming: Lomatium ambiquum, L. cous, L. dissectum, L. macrocarpum, and L. triternatum. The Greek word "loma" means "a border" and refers to the winged fruit of these plants. Lomatiums are in the parsley family, Apiaceae (Umbelliferae).
 - Kathy Ahlenslager



"The painted cup is in its prime. It reddens the meadow, painted-cup meadow. It is a splendid show of brilliant scarlet, the color of the cardinal flower, and surpassing it in mass and profusion.... I do not like the name. It does not remind me of a cup, rather of a flame when it first appears. It might be called flame-flower, or scarlet tip. Here is a large meadow full of it, and yet very few in the town have ever seen it. It is startling to see a leaf thus brilliantly painted, as if its tip were dipped into some scarlet tincture, surpassing most flowers in intensity of color."
 ...Thoreau

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**IMMINENCE OF EXTINCTION WITHIN THE
NEXT TEN YEARS**

- Virginia Vincent

In the United States alone, 680 kinds of native plants are in imminent danger of not being with us by 2000 A.D. This estimate is distinct from inferring endangerment mainly from numerical rarity. Estimates for plants most at risk are now available, as prepared by the Center for Plant Conservation for 253 plant taxa to be **gone** in the next five years, and 427 more that may be extinct after the next ten years has passed.

Three-fourths of these plants occur in California, Florida, Hawaii, Puerto Rico and Texas. A "Priority Regions Program" will focus national attention on these five areas. Collections and research with living specimens will be inaugurated to help habitat managers conserve and restore wild populations.

A grant of \$100,000 from the W. Alton Jones Foundation will launch plans for a steering committee comprised of governmental and private organizations, and a conservation plan for each taxon will be prepared, with the Center for Plant Conservation, botanical gardens and arboreta working closely with local conservationists.

And what is this energetic Center for Plant Conservation? The organization calls Jamaica Plain, Massachusetts, home. There are thirteen Trustees and an Advisory Council of twelve persons, plus a National Office staff. Dedicated to conserving rare and endangered plants of the USA, the CPC includes a network of 19 botanical gardens and arboreta. The Center has just completed its third volume of a quarterly newsletter...very nice and concise. The latest issue highlights a botanic garden, discusses five species of imminently endangered plants,

spotlights two species and the success story of their propagation, and notes national news and the organization's activities. All this and clear black and white photos are in eight pages!

The Center solicits memberships, noting: "Extinction is forever; once a species is gone it is lost. It cannot be recovered. Our job is to keep this from happening." Write them at 125 Arborway, Jamaica Plain, MA, 02130.

Virginia Vincent is former KELSEYA editor and member of the Clark Fork Chapter, Missoula.

**EXOTIC PLANT MANAGEMENT PLAN AVAILABLE FOR
GLACIER NATIONAL PARK**

Public comment and review is being sought by Glacier National Park managers for the recently-completed Draft Exotic Plant Management Plan. During the 30-day review period public meetings will be held: Thursday, July 6, at 7 p.m. in the East Glacier Community Center; and Monday, July 10, 7 p.m. in the Colt 45 Room, Outlaw Inn, Kalispell. Written comments will be accepted through July 28.

Native plants are an important natural resource in national parks. The invasion and spread of non-native plants threatens the integrity of the park and its entire ecosystem. More than 120 species of exotic plants have been identified in Glacier, many of them intentionally or inadvertently introduced by modern man. A number of these species are increasing in quantity, area and density. Of primary concern are spotted knapweed (*Centaurea maculosa*), leafy spurge (*Euphorbia esula*), and St. Johnswort (*Hypericum perforatum*).

GNP Resource Management Specialist Dave Lange notes, "The proliferation of these non-native plants poses a

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