The Boom of Echinacea Harvesting in Eastern Montana

By Monique Kolster and Curley Youpee

The scars on the landscape tell the story. Thousands of holes pocketing entire hillsides, and tire tracks matted into the grass, leading the harvesters to the highly valued plant.

"Echinacea covered this area last year," one buyer told me. In fact, Echinacea angustifolia once prolifically grew throughout the twenty-mile radius of this northeastern Montana community, before the "gold fever" of wild Echinacea harvesting hit. After sweeping across the Great Plains does not make the task easy. So, instead of digging a few feet down to excavate the entire root, harvesters trade off root poundage for time saved by breaking the root only as deep as the tool allows (6-8 inches). As the tool pops the root apart, diggers pull up the plant, detach and discard the aerial parts, and throw the root in bags or the back of trucks. And then move onto the next plant, often without covering exposed holes.

Experienced harvesters focus on digging older plants. Since profit is determined by root weight, diggers calculate they make more money in the same amount of time by selectively uprooting older, usually larger plants. However, with waves of people now searching the same areas, the only large roots left often are young plants.

Echinacea angustifolia's deep taproot

The harvesting of Echinacea root traditionally occurs in the spring or fall when the root is dormant and more medicinally potent. Yet timing is not a factor when money is offered throughout the year. With the warmer winter this year, people dug nearly year round and stopped only in January when the ground was too frozen and the snow too deep. As one concerned local explained, "It says something about Echinacea when people fight the cold to find the root."

However, depending on root size, stand abundance, harvesting experience and number of harvesters, amounts collected may yield anywhere from two to six pounds an hour. With prices ranging from $6 to $8 per pound of wet Echinacea root, people can make a higher profit than from wages in local full time jobs. But hidden costs such as gas, travel time, weather conditions and wear & tear on vehicles are not taken into account.

Continued on page 4

Cryptobiotic Soil Crusts in the Sagebrush Steppe Grasslands of Western Montana

By Wendy M. Belliveau
Division of Biological Sciences
University of Montana

This is a report on the second of two small grants awarded by MNPS in 1997.

Cryptobiotic soil crusts cover much of the soil's surface over extensive portions of the arid and semi-arid regions of western North America, including the sagebrush steppe communities of western Montana. These soil crusts are composed primarily of cyanobacteria, lichens, algae and bryophytes. The free-living cyanobacteria and cyanobacterial components of lichens in cryptobiotic soil crusts fix atmospheric nitrogen much of the year. Thus, due to their physiological properties as well as their common and widespread occurrence in western North America, their interactions with associated vascular plants may be a very important factor in determining community structure.

I conducted field and greenhouse experiments to examine the roles of cryptobiotic soil crusts in vascular plant establishment, growth and survival. I found that cryptobiotic soil crusts have beneficial effects on the rate of germination, CO2 assimilation, growth, and survival of Idaho fescue (Festuca idahoensis) and sagebrush (Artemesia tridentata), dominant native vascular plant species commonly associated with these soil crusts in western Montana.

Laboratory cultures of western Montana sagebrush steppe cryptobiotic soil crusts revealed that these soil crusts are comprised of four predominant genera of cyanobacteria. Two of these genera, Scytoneema and Nostoc, are strong...
Spring Blooms

In the Spring *Kelseya* I asked about your earliest flower observations. Drake Barton reported Hood’s phlox in bloom on Mt. Helena March 14th, for the earliest observation reported.

Wildcrafting of Native Herbs

I received some nice responses from herbalist members concerning the overharvest of *Echinacea*.

Mary Wulff-Tilford in the Bitterroot wrote: “Greg and I, being herbalists, always preach about NOT using wildcrafted *Echinacea*, and in our products we use only organically cultivated *Echinacea*. We have the same concern about Goldenseal... Thanks for spreading the word...”.

Mike Gaul, owner of “Walk’n and Talk’n Classes” in Bigfork responded by writing an editorial to the herbal community in which he said (in part), “... All native plants not considered weeds (i.e., St. Johnswort) should be off limits to commercial harvesting. The use of herbs as medicine is growing rapidly... If the present rate of destruction to our native plants continues, we are headed for major problems...”.

Sarah Walker, of Peck, Idaho, shares the concerns and is reproducing my wildcrafting editorial comments from the Spring *Kelseya* in the Idaho Native Plant Society’s newsletter.

See Monique Kolster’s article in this *Kelseya*, which brings the issue home to Montana, big time!

Sustainable wildcrafting and a tour of the Montana Arnica Organic Herb Farm are featured on the interesting agenda of the 1998 Herb Gathering, June 27-28 in the Bitterroot Valley. For more information call Bronwyn Troutman, (406)728-2872.

1998 Field Trips

The Chapters have done a great job of scheduling fabulous field trips to exotic places. I wish I could attend them all! Our newest chapters, Beartooth and Calypso, have especially ambitious field trip agendas. Congratulations to Jean Redonski, Paul Sawyer and Annie Greene for their energy.

Annual Meeting at Seeley Lake

Looks like a great agenda! Don’t miss the excitement, comraderie and opportunity to botanize on field trips from canoeing the Clearwater River with John Pierce to alpine wildflowers with Maria Mants. See you there! - Wayne P.

Wayne can be reached at 2601 Third Ave. North, Great Falls, MT 59401
e-mail: hwayne@mcn.net

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Gather among the Tamaracks

This year’s Annual Meeting of the Montana Native Plant Society will be held at Camp Paxson on the south shore of Seeley Lake, just west of the town by the same name, July 10-12. The Seeley-Swan Valley is situated between two of the most spectacular mountain ranges in the state – the Missions to the west and the Swan Range to the east. Seeley Lake is a mere 60 miles northeast of Missoula. Turn off Highway 200 onto Highway 83 and go 17 miles. At the south end of town take Boy Scout Road west for 2.5 miles. Cross the Clearwater River at the south end of the lake and proceed less than 100 yards to the Camp Paxson turnoff. The camp is nestled amongst 200 acres of old growth larch, and the largest western larch (*Larix occidentalis*) in the world is found nearby.

Location Map

Don’t forget to register for the Annual Meeting and Saturday night’s dinner. Send registration to MNPS, P.O. Box 8783, Missoula, MT 59807

Kelseya Summer 1998
Ten years. It can seem like a long time. But anymore, a decade flies by like a month of Sundays. Those first ten years, however – the years of discovery, the years of youth – can seem like a lifetime. And if a decade is a lifetime, then I have lived fifty lifetimes since those first ten years.

You see, ten years before Columbus sailed the ocean blue, if the nursery rhyme about 1492 is correct, a seed germinated on a ridge above Sparrow Gulch, and I was born. The first thing I remember hearing was the song of the river a quarter mile away. The canyon narrows precipitously just below here, and the Vermilion tumbles through a gorge in a series of spectacular cascades, falls and rapids. The melody was a soothing lullaby day after day in the early years, like the voice of the land singing and laughing. It has since become a thread woven into the very fabric of my existence.

I am a Larch, or a Tamarack, some will call me. And this year, 1997, I turned 515 years old. I never knew Christopher Columbus, but I can tell you I was a strapping young sapling the day he “discovered” the New World.

1482 was a good seed year for larch. Following some long forgotten fire, my ancestors cast a bumper crop of cones upon the land, and a bunch of us seedlings sprouted. We grew to be a forest in the isolated heart of the Vermilion River canyon, with our cousins the Douglas fir and pines, the cedar and cottonwoods along the river, the spruce and subalpine fir on the mountaintops above.

They’re all gone now, those pines and fir and spruce, and most of the larch from those days. But there are four of us left. I can see the other three from where I stand, though they likely cannot see me. Nearly a century ago I lost my top. My memory fails me, but I guess some big wind swept upriver from the big valley and snapped it like a toothpick. I’m barely a hundred feet tall now.

The big fellow down below also had his top snap off years ago, but he was so huge that I can still see his limbs raking the sky. In the more fertile soil of the creek bottom, he reached six feet in diameter and twice the height I am now.

Further up the slope, one of the other two is having quite the struggle, and I fear we’ll lose him some year soon. Perhaps he is already dead. From my vantage point, I can’t tell. All I see are skeletal gray branches stark against the azure summer sky.

My nearest companion appears to be in the best shape of any of us, though that doesn’t really say much. He’s got a full green crown, but every limb looks to be infected with mistletoe. Though he’s near the ridgeline, like I am, he’s seeming like a lifetime!

It’s okay, though. I reckon me and my friends ought to count ourselves lucky to still be here. A lot of younger, smaller trees have fallen to the saw and been cut into lumber. Maybe that’s my fate, too. Just a week ago, a man wrapped his measuring tape around my belly and sunk a steel bore into my wood to see how big and old I am.

I didn’t feel a thing; but then, I’ve been on this mountain through fires and storms and bitter cold. The forest has come and gone a dozen times. Flames have scorched my bark and singed my branches. Ice has coated my trunk and snow has piled up on my head. The wind has rushed through my foliage like waters over the falls in the gorge below. But don’t think I’ve grown numb after all these years, these decades, these five centuries-plus. I am still alive.

The world is a fascinating place, even from the single isolated ridge from which I have surveyed it through time. I don’t expect I’ll be here another 500 years, but where else could I have grown up and grown old that is more beautiful, more enchanting than right here in the Cabinet Mountains?

I still hear the melody of the river. It never stops. I never cease listening. I can’t. It feeds me, nourishes me. We are bound by the land that cradles us like a mother protectively embracing her young. And today she hums a lullaby, the same soft music that welcomed me into this world before Columbus came to these shores.

In that, I have found contentment for 500 years. I will leave this world when my time comes, but the music will continue unabated.

Editor’s Note: I was the man who measured and bored that ancient larch in the summer of 1997. And standing quietly in its presence, at the base of its massive trunk, I, too, heard the music.

By the way, the larch referred to that might have been dead, was in fact alive, with a dead top. Sparrow Gulch was consumed in the stand-replacing fires of 1910, but those four larch survived.

This article is reprinted from The River Journal (Sept 97), a monthly publication in Noxon, Montana.
Echinacea
From page one
When comparing this rate to professional wildcrafters earnings of $10-$30 per pound for the wet root, the undervalue of the root is revealed. To compound the issue, most of the roots dug are sent out of Montana to companies in the U.S. or Germany and then sent back as capsules, tinctures or other forms in processed bottles. So not only are we losing our plants in yet another form of resource extraction, but people and a rich cultural heritage are being exploited.

What does this mean for the plant? As of this spring, figures from harvesters and buyers estimate that 100,000 pounds of wet root have been removed from the northeastern part of the state. If seven average wet roots equal a pound, then we have lost 700,000 plants!

The digging season is well underway and talk abounds on expanding the market to sell seeds. Since we know little about Echinacea’s reproductive biology and resiliency to massive disturbance, we are risking the survival of this wild plant. At this rate of harvesting, one man predicts that Echinacea will be gone from these areas in two or three years.

Since it has started with a gold rush mentality, Echinacea harvesting may follow the typical boom and bust cycle so familiar in Montana, and leave families again in unemployment. So the question becomes whether harvesting can be conducted in a manner to sustain community livelihoods and population viability. Today’s high demand for Echinacea products makes that unlikely. However, efforts are underway to promote responsible harvesting in conjunction with sustainable rural economic development.

In the meantime, we need to be aware of where our medicines come from, and the sociological and ecological impacts we induce when reaching for the latest wonder herb. And if this sounds like too much research, then please simply change your purchase to an organically grown Echinacea product.

What we can do to reduce impacts to wild Echinacea:

- Only buy organically grown Echinacea products. If the label does not say it is cultivated, chances are it’s gathered from wild stands.
- Limit your use of Echinacea. Ryan Drum, herbalist and ethical wildcrafter in Washington, estimates up to 90% of Echinacea is wasted due to improper use and misconceptions of its healing ability.
- Research whether Echinacea products are, in fact, beneficial in a product or is a marketing ploy.
- Request stores to provide organically cultivated Echinacea products.
- Write companies which produce and sell wildcrafted Echinacea products and request products be organically cultivated.
- Encourage local commercial growing and processing of Echinacea.
- Grow your own!

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Soil Crusts
From page one
nitrogen fixers, while the remaining two genera, Microcoleus and Phormidium, are weak nitrogen fixers. Under natural field conditions, sagebrush steppe cryptobiotic soil crusts are subjected to several significant abiotic stresses, including UV radiation, extreme temperatures and drought. Results of laboratory experiments suggest that cryptobiotic soil crusts are able to fix a potentially significant amount of nitrogen under these natural field conditions, which may contribute to the fertility of the semi-arid sagebrush steppe communities in which they occur.

My field and greenhouse experiments with western Montana sagebrush steppe cryptobiotic soil crusts and their associated vascular plant communities provide strong evidence that Idaho fescue and Sagebrush seed germination, establishment, growth and survival are enhanced by soil crusts. Additionally, results of field experiments suggest that both cryptobiotic soil crust nitrogen fixation as well as improved soil moisture retention and infiltration by cryptobiotic soil crusts may positively affect vascular plant performance.

It is thus very important that we continue to gain a better understanding of cryptobiotic soil crusts, as these organisms may be of primary importance to the arid and semi-arid communities in which they occur. And in much of the West, sagebrush steppe communities have dwindled, now covering only 25% of their former range. Cryptogamic soil crusts have also been virtually eliminated in large areas due to agricultural development, livestock grazing, recreational land use and other land development. Thus, increased knowledge of cryptobiotic soil crusts may additionally aid in arid land conservation efforts.

Kelsey Summer 1998
Exploring Mount Helena
a Huge Success!

HELENA — Over 100 people gathered in the Lewis & Clark Library on Friday, May 29th to celebrate Helena’s most popular natural feature and to hear from various experts on the mountain’s natural history and possible future land acquisitions. Jointly sponsored by the Kelsey chapter of the Montana Native Plant Society, Last Chance Audubon, Prickly Pear Land Trust, Falcon Publishing, the City of Helena Parks Department and the Lewis & Clark Library, the event pulled together a diverse group of interests for the purpose of educating the public about Helena’s natural history.

Each of the involved groups presented a short summary of the organization’s interest in Mount Helena. Kelsey Chapter reviewed long-standing interest in the mountain and talked about public hikes, efforts to control weeds, the Independent Record Wildflower Series, and the progress of the Mount Helena mounted specimen project to be featured in the Lewis & Clark Library. Falcon Publishing’s recently released book called “Exploring Mount Helena” provided the framework for investigating the mountain. Book chapter authors were on hand and short presentations were made by Dan Sullivan on Mount Helena’s birds and bird habitat, Gayle Joslin on the mountain’s animals and animal habitat, and the Montana Native Plant Society’s own Wayne Phillips delivered tales of the mountain’s earlier days as a park and showed slides of plant communities. Jerry Debacker from the Prickly Pear Land Trust talked about future land acquisitions and had aerial photos and maps to clearly illustrate present boundaries and future possibilities.

May 30th, the celebration continued with hikes on Mount Helena. Despite unsettled weather, hikes were well attended and featured morning and afternoon hikes in geology, birds, animals, plants and plant communities. The bugs and butterflies hike was postponed due to the rain, but the other hikes continued and received high marks for interest.

It is clear that Mount Helena is important to the community and that people are anxious to learn about the natural history of the area.

Plant Partnership

VICTOR — The Clark Fork Chapter’s annual native plant sale had a new twist in 1998. We partnered up with Victor School and the Montana Natural History Center and were able to sell more native plants and do some education at the same time. Here’s how it worked.

Victor School had just built a new greenhouse, and some of the teachers were looking for projects to help teach the students about plants. MNPS member Lisa Hendricks and Nathan Beckwith, teachers at Victor, got together with the MNPS plant sale committee and cut a deal. We supplied them with seed and guidance necessary to raise some native plants. With help from MNPS member Lori Campbell of Kinship Gardens, the students used the plants to landscape the school courtyard, and they sold what was left at Hamilton’s farmers market to start a greenhouse maintenance fund. In exchange for our help, they raised over 300 pots of our native plants in their heated greenhouse, enabling us to have more and larger plants than ever before. The result was our best sale ever, netting over $550. The Clark Fork Chapter then donated $110 of the sale money to enable two Victor students to attend Montana Natural History Center’s summer courses.

Jane Rider of the Missoulian wrote a feature article on the partnership, part of which is reprinted here (with permission).

“The walkways and landscape at Victor Schools will soon have more color and life, thanks to a classroom of fifth graders who learned a lot from playing in the dirt a little this spring.

The youngsters from Lisa Hendricks’ class are planting native wildflowers and shrubs they grew over the past few months in the school’s new greenhouse. The project was launched in cooperation the Montana Native Plant Society.

“We’re now working with the landscaper and planning it out — where we will put everything,” said William Blake, 11, while eyeing the latest landscape design planned for the walkways straddling Fourth Avenue.

Blake’s favorite part of the project was getting the seeds to germinate. He explained how the kids then separated the seedlings into individual cups (getting them ready) to transplant outdoors.

Hendricks worked out a trade with the native plant society... The deal called for Victor School to grow and house some of the plants that the society sold at the Farmers Market in Missoula. In exchange, the society gave students wildflower seeds to plant themselves.

The wildflowers and some native shrubs, donated by Bitterroot Restoration, Inc. of Corvallis, are what students (planted) outside Victor Schools.

The trade worked out so well, Hendricks said, the society and school plan to team up again next year.

“We learned a lot about Montana has a lot of different wildflowers and shrubs that adapt good to this area,” said Cori Garrod, 11, another fifth grader who worked on the project. “But if you keep taking wildflowers and pulling them out by the roots, there won’t be any left for future generations to enjoy.”
New Director at MTNHP

HELENA – Sue Crispin stepped in as the new Director of the Montana Natural Heritage Program in March. She brings 18 years of experience working with Natural Heritage programs to the job. Sue has been the botanist/director of the Michigan Natural Heritage Program, Director of the Canadian Heritage Task Force (Nature Conservancy) and Director of the Great Lakes Program (Nature Conservancy).

Last year, Margaret Beer quietly assumed the role of Assistant Director in addition to her Data Coordinator duties. At Margaret’s initiative, the MTNHP leads the nationwide heritage network in GIS mapping technology and in providing Internet access to natural heritage data.

Sue and Margaret hope to help MTNHP become an even more useful source of information for Montana’s citizens, agencies and institutions. Future newsletters will feature the new tools and additional contacts for directing plant-related questions. If you need to reach Sue, call (406)444-3019 (e-mail: scrispin@nris.state.mt.us), or Margaret at (406)444-0914 (e-mail: mbeer@nris.state.mt.us).

Native Plant Summit IV: Native Plant Production and Utilization

CALGARY – You are invited to participate in a conference November 2-4, 1998 in Calgary, Alberta at the Sheraton Cavalier Hotel. The conference will attract native plant specialists from all the prairie provinces of Canada and the northern Great Plains states.

Interest in using native plants for reclamation and restoration projects has increased dramatically across North America. Increased public awareness of natural environment and biodiversity conservation, mandates of land management agencies requiring the use of native plants and advances in native plant materials research and development have contributed to increased native plant use. The greatest obstacle to using native plants in reclamation and restoration is the limited range and volume of commercially available material.

This conference is designed to be a forum for the exchange of information that will address the current challenges facing both producers and users of native species. The conference is organized by government agencies, industry and non-profit organizations who would like to see an increase in native plant material to meet the demand created by reclamation and restoration projects; including Alberta Research Council, Alberta Native Plant Council, Ducks Unlimited Canada, Flower and Herb Growers Association of Alberta, Bedrock Seed Bank, Prairie Seeds, Inc. and United Grain Growers.

Glacier Institute kicks off 1998 season

KALISPELL – The Glacier Institute began its 1998 season this spring with the start of a slate of 40 field courses. From Montana Mushrooms to Ancient Forests, there is an opportunity for everyone to experience first-hand the amazing natural diversity found in the mountains, valleys, forests and meadows of Glacier National Park and the surrounding region.

New in June was Orchids of Glacier, led by well-known botanist Jerry DeSanto. The search for orchids covered wet meadows and beneath the forest canopy for some of these beauties. Much was learned about their specific habitat requirements.

If you’d prefer a more artistic approach to flowers, join us for Watercolor on Location: Wildflowers, in July. Under the instruction of Barbara Mellbom learn to paint the early-season wildflowers that accent Glaciers forests and meadows – from Indian paintbrush and larkspur to bog orchids and arnica.

In August, Rachel Potter will be teaching Flowering Plants of the High Country. Experience the high-elevation environments in Glacier where the plants have developed an impressive array of adaptive strategies to withstand climatic extremes. We’ll hike each day in the high country, paying special attention to the diverse and colorful array of wildflowers that adorn this impressive landscape.

1998 marks the Glacier Institute’s 15th year of field-based education in the Crown of the Continent Ecosystem. We hope you’ll join us for an educational adventure and help us celebrate this milestone.

For more information or a complete course brochure, call (406)755-1211 or e-mail at glacinst@digisys.net.

Course Information

- WATERCOLOR ON LOCATION: WILDFLOWERS
  July 8, $45.
- WILD MEDICINAL HERBS I & II, July 17 & 31, $48.
- MAKING WILD MEDICINES
  July 18-19, $90 (lodging and meals $60).
- WILDFLOWER WANDERINGS I & II
  July 25-26, $45.
- FLOWERING PLANTS OF THE HIGH COUNTRY
  August 3-4, $110.
- ANCIENT FORESTS
  August 10-11, $110.
- FALL MUSHROOM FORAY
  September 25-27, $120 (lodging and 2 dinners $80).
**CALENDAR: A Summer for Hiking!**

- **Friday thru Sunday, July 10-12,** Annual Meeting hosted by the Clark Fork Chapter at Camp Paxson, Seeley Lake. Field trips all day Saturday and half day Sunday. Dorothy, 549-1415.

- **Saturday, July 11,** 10:00am – Martin Creek Research Natural Area. Hike with Lou Kuennen, soil scientist for the Kootenai National Forest, and learn how research natural areas are being used for scientific research. Meet at the Cabinet Ranger Station west of Trout Creek. Sponsored by the Bull River nature Education Committee. Call Debby Boots, 847-2602.

- **Thursday, July 18,** 9:30am – Basin and Cataract Creek drainages, north of Basin. Abandoned mine reclamation is planned for this area, removing streamside hazardous waste to less sensitive repository sites. We will also inventory three potential repository sites and prepare plant species lists. Meet at historical marker pullout on the way into Basin (Basin exit on I-15). Bring lunches, boots, and plant ID guides. Betsy Follman, 225-3391 or 225-3650. Calypso Chapter.

- **Saturday, July 18,** 9:00am – **The Clark Fork/Coeur d’Alene Divide.** Pete Lesica will lead a group onto the high ridges of the northern Bitterroot Mountains in search of alpine wildflowers and some species not yet known to occur in Montana. Bring lunch, boots, rain gear. Meet at the phone booth by the Naughty Pine Saloon on Highway 200 in Trout Creek. Dennis Nicholls, 847-2040.

- **Sunday, July 19 – Red Mountain.** The Helena National Forest and the Kelsey Chapter will join forces to explore one of the landmarks of the area. This vigorous hike will be led by Keith Leatherman. 443-1920, or Kathy at 449-6586 to register.

- **Mid to Late July – Self Guided Gravelly Mountain Tour.** Enjoy the splendor of southwest Montana. See carpets of blooming flowers from a road that opens in early to mid July. Call Kevin Suzuki, 682-4253 or 682-7628. Calypso Chapter.

- **Thursday, July 23,** 6:30pm – **Warm Water Springs at Dempsey Creek.** This trip will observe the rare Epipactis gigantea and other rare plants west of Galen. Meet in the Butte Plaza Mall parking lot. Bring a sack dinner, wear boots. John Joy, 287-3514. Calypso Chapter.

- **Saturday, July 25,** 9:00am – **Indian Meadows Research Natural Area.** A trip north of Lincoln led by John Beaver, with John Pierce who did the initial plant survey for this RNA. See some interesting fens during this easy hike. Bring bug repellent, rubber boots and lunch. Meet on south side of the County Market parking lot. 449-6586.

- **Saturday, July 25,** 10:00am – **Local Medicinal Plants for Healing.** With Jill Davies; she will show how to turn plants you can find in your own neighborhood into healing tinctures, salves, teas and essences at Noxon Community Center on Highway 200 one mile west of the Noxon bridge. Call Debby Boots, 847-2602. Sponsored by Bull River Nature Education Committee.

- **Monday, July 27,** 5:30pm – **Beartooth Pass, Red Lodge.** Wayne Phillips will host an alpine wildflower ID program on top of Beartooth Pass at Gardiner Lake. Jean Radonski, 446-3907. Beartooth Mtns Chapter.

- **Thursday, July 30,** 5:30pm – **Fleecer Mountain, near Butte.** Visit a willow site with several species. Meet in the Butte Plaza Mall parking lot on north end. Be prepared for a wet site. John Joy, 287-3514. Calypso Chapter.

- **Saturday, August 1,** 8:00am – **Edith Lake area.** Rachel Feigly from the Helena National Forest will lead this hike into the Big Belt Mountains. We will be looking for Juncus hallii (Hall’s Rush), listed as sensitive. Meet at Townsend Ranger Station to carpool to trailhead.

- **Saturday, August 8,** 9:00am – **Goat Flat in the Anaconda-Pintlar Wilderness.** Join Pete Lesica and see a stand of Alpine Larch, find Saussarea weberi, and search for a rare sword fern. A strenuous hike; bring food, rain gear, boots, etc. Meet at Storm Lake turnout east of Georgetown Lake. Annie Greene, 683-6594. Calypso Chapter.

- **Saturday, August 8,** 10:00am – **Purple Loosestrife pull at Ninepipe Refuge.** Sponsored jointly with the Flathead Audubon. Help birds and native aquatic vegetation by reducing competition from this invasive weed. We’re making progress after ten diligent years! Bring gloves, lunch, water, shoes to get wet. Neal Brown, 837-5018. Flathead Chapter.

- **Sunday, August 9,** 9:00am – **Casey Meadows.** A hike into the Elkhorn Wildlife Management Unit, looking for late bloomers and moose. Led by Joanne Thuin. Meet in Albertson’s parking lot on the east end of Helena. Kathy, 449-6586. Kelsey Chapter, joining up with the Outdoor Club.

- **Monday, August 10,** 12:00 noon – **South Cottonwood Canyon.** Robyn Lein of the Sweetgrass School of Herbalism will this hike featuring “Medicinal Plants of Montana.” Call 585-8006. Valley of the Flowers Chapter.

- **Saturday, August 15 – Coal Ridge Lookout.** Subalpine forest, meadows and wetlands, with views of Glacier and the Whitefish Range. Bring a huckleberry container. An 8-mile hike, sponsored with Flathead Audubon. Meet at Nite Owl Cafe parking lot in Columbia Falls. Call Betty Kuropat, 862-0877 or 387-3800.

- **Saturday, August 22,** 10:00am – **Incredible Edible Weeds.** Debby Boots will be at the Whitepine Grange hall east of Trout Creek to amaze you with the nutritional and gourmet talents of common backyard weeds. She’ll be serving some wonderfully wild concoctions. For info call 847-2602.

- **Saturday, September 19,** 1:00 to 5:00pm, **Headwaters State Park.** Sharon Eversman of the Montana State University Biology Department will lead a trip to this park near Three Forks, east of Bozeman. A look at lichens and soil crusts. Call 587-3446 for details.

- **Saturday, September 26,** **Link Lake and Lake Mountain.** Subalpine and alpine forest with whitebark pine and alpine larch turning yellow. A 5-mile hike. Meet at Tally Lake Ranger Station. Call Steve Wirt, 862-5452 or 387-3800.

Inevitably, we’ve probably missed someone’s field trip or activity in this listing, and if so, we apologize. But contact your local Native Plant Society chapter representative for more information from your part of the state. Their phone numbers are listed on the back page.

- Editor
napweed: Is there a danger in pulling it?

Jerry Niehoff, Idaho Panhandle National Forest

"About five years ago, I had spent most of a mid July day pulling knapweed with my bare hands. At the end of the day, I had broken my skin on the little finger and the adjacent ring finger on my right hand. I also suspect that in pulling the knapweed, I broke stems and got sap directly into my tissues through the broken skin. I noticed that the injured sites in the joints of these two fingers were slow in healing, and I always seemed to have pain in them.

About six months later, I started to develop a lump in my little finger, so I decided to see my family doctor. He said it was in a bad location, with lots of nerves and tendons, and if it continued to bother me, I was supposed to see a hand surgeon and have it removed.

Another six months after my initial doctor’s visit, the finger got worse, so I went to the hand surgeon. He operated and found the lump to be what he called a very aggressive benign tumor.

A month or two after the surgery, it came back, only worse, so they operated again. After the second surgery, the tumor really started to spread towards the hand, so the little finger was removed. Shortly after that, I started to get tumors in my ring finger. This time I went to the cancer center at the University of Washington. Following several surgeries on that finger, with similar results, that finger was also removed.

The tumors generally occurred in the tendon sheath, and doctors could never get at it all until they removed the entire finger. They cannot treat the tumors I had with chemo or radiation; only with physical removal.

There are research articles that identify the compounds (Repin) in knapweed that cause cytotoxic effects in many animals. There is little information on Repin’s effects on humans.

It has been two and a half years since my last surgery, and no problems have occurred in my other fingers. My advice is to wear gloves when pulling knapweed or any other weeds. I am convinced that the knapweed produced my hand problems, and gloves would have protected me from those problems."

Hitchcock and Cronquist, in Flora of the Pacific Northwest, lists a dozen species of knapweed (Centaurea). Pretty much all of western Montana is infested with several of these species. Plants thrive in disturbed sites, but can now be found in undisturbed forest environments on harsh growing sites. I have seen it a thousand vertical feet above the nearest road, and nowhere near a trail, on rocky, exposed slopes. Probably the most widespread of any noxious weed in the state, its aggressive nature displaces many native species and other desirable cultivated species. - Editor
**Erigeron linearis**

**Introduction**

Thar’s gold in them thar hills, but it ain’t always nuggets. It’s sometimes petals, little yellow petals blowing in the wind, and some are in the form of yellow composites. This artificial group in the *Asteraceae* is made up of several genera, and brings glee or grief to the botanist (such as, “Oh joy, look, another composite to key out!”, or, “Oh, good grief, not another composite to key out!”). In Montana, the only species of *Erigeron* that fits into this group is Linearleaf Fleabane (*Erigeron linearis*). It is known from several southwestern counties, where it is found in the foothills and on lower montane slopes. This species has only been collected in the state four times, from widely scattered localities.

**Description**

Linearleaf Fleabane has unbranched stems that are 5-30 cm tall and which arise from a stout taproot and branched rootcrown. The mostly basal leaves are — can you guess? — yes, that’s right, linear, and are 1-9 cm long. The bases of the stems and leaves are enlarged and straw-colored or purplish. The herbage is covered with... no, not fleas, but fine gray hairs. The flower heads are usually solitary at the ends of the stems. Involucral bracts (say that fast five times) are 4-7 mm long and are covered with... ah, ah... long, appressed hairs and occasionally fleas. I mean, glands. The 15-45 yellow rays are 4-11 mm long and the yellow disk flowers are 3-5 mm long. There are 10-20 pappus bristles at the top of each achene. Flowering season is May through early June, when fleas are doing acrobatics on dogs’ backs.

**Diagnostic Characteristics**

This is the only *Erigeron* in our area with yellow rays. It superficially resembles the *Happopappus* genus, but has taproots, narrow bracts and relatively short, flat style appendages.

**Habitat**

Where fleas flourish. Not really. Actually, on dry, rocky soil from the plains and foothills to moderate elevations in the mountains, often among sagebrush. Elevation: 3900-6020 feet.

**Distribution**

Southern British Columbia south through eastern Washington and Oregon to northern Nevada and Yosemite National Park, east through central Idaho to Yellowstone and adjacent Montana. Within Montana, *Erigeron linearis* is known from four locations in three counties: Beaverhead County (Ermont Gulch and Grasshopper Creek); Ravalli County (Sheafman Creek) and Lewis and Clark County (Scratchgravel Hills — could those hills have been named that because of fleas?).

**Particulars**

*Erigeron linearis* (Hook.) Piper — Linearleaf Fleabane. Family: *Asteraceae*

**Global Rank:** G5 (secure)

USFS Status: Sensitive

State Rank: S1 (rare)

For more information about this plant, contact the Montana Natural Heritage Program in Helena. And look closely at your dog when it is scratching — could it be Linearleaf Fleabane blooming in its furry hide?

Good grief.
"This is My Bitterroot"
Reviewed by Jerry DeSanto

This Is My Bitterroot, by Henry Hamilton Grant, is, as the author writes, "...my Bitterroot memorabilia." It was written "for the enjoyment of all you fellow Bitterrooters."

I wondered about the poet, Ralph Waldo Emerson, whose work appears on p. 54. Many good historical photographs are included, and the reader will get an idea of the early agricultural and logging history of the Bitterroot Valley. The poetry is prefaced by a few pages of Grant family history, and scattered here and there are historical morsels as either brief essays (like Charlo Heights Club House, p. 89) or picture captions.

The plant person will find all too little about Lewisia rediviva, even though Henry Grant lived among the flowers for almost ninety years, and was an eminently successful grower of the species for 40 years.

Although the author told us little, what he does tell us is very good. Most interesting to me is the mention of the rare "yellow bitterroot" (the subject, incidentally, of a brief discussion in a recent issue of the Bulletin of the North American Rock Garden Society). The yellow bitterroot is also part of the striking and colorful front cover illustration, the work of Ella B. Stroud, whose delightful pencil sketches appear throughout the book.

Henry Grant was a living legend in the Bitterroot Valley. His practical knowledge of bitterroot cultivation was unsurpassed. Sadly, he passed away on May 19th, but we are grateful for what he has left us. Our sympathy goes out to his family and friends.

Wetlands Education Materials for Montana
Looking for information about wetlands in Montana? A great source is available from your local office of the Natural Resources Conservation Service. A Catalog of Wetlands Education Materials for Montana was printed in March 1998, and was revised for the Education Work Group of the Montana Wetlands Council by Rachel Kyle, an intern for the Montana Watercourse. You can call the Montana Watercourse at (406) 994-6671 for information about the catalog.

Trees of the Central Hardwood Forests
A definitive guide to the native trees of the hardwood forest region has been published by Timber Press in Portland, OR. The book contains identification characteristics and photographs, as well as cultivation information for each species. The authors - Donald J. Leopold, William C. McComb and Robert N. Muller - also discuss the interdependent relationships among species that allow them to flourish in their native environments. The Central Hardwood Forests lie in a band across eastern North America and encompass parts of 28 states and two Canadian provinces.


Announcing:
1999 Montana Plant Conservation Conference

The Salish-Kootenai College, Montana Native Plant Society, Montana Natural Heritage Program and U.S. Forest Service will co-sponsor the biannual Montana Plant Conservation Conference during the last week of March, 1999 in Pablo, Montana. Conference organizers will post exact dates, location and a call for papers in the next issue of Kelsey. The organizing committee is also seeking additional sponsors, so if your organization is interested in supporting the conference, please contact Bonnie Heidel, Montana Natural Heritage Program, at (406)444-3009, or Virgil Dupuis, Salish Kootenai College, (406)675-4800 ext. 306.

Almost 10% of the Montana land base is in reservations; seven reservations represent eleven tribes. Cultural plant conservation will thus be a featured topic at the 1999 conference, along with the themes of rare plant conservation, plant community and natural areas conservation and the use of native plant materials for ecological restoration.

Please mark your calendar now, and plan to attend the conference, or call if you would like to be in on the planning.
MONTANA NATIVE PLANT SOCIETY **Membership Application/Renewal**

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

BEARTOOTH MOUNTAIN CHAPTER - South-central Montana, the Beartooth Plateau country

CALYPSO CHAPTER - Beaverhead, Madison, Deer Lodge, Silver Bow Counties; southwestern Montana

CLARK FORK CHAPTER - Lake, Mineral, Missoula, Powell, 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, 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. Additional 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.

YOUR MAILING LABEL TELLS YOUR

CLASS OF MEMBERSHIP (See I, II, III, IV above)

CHAPTER AFFILIATION: (ART=Artmisia; CAL=Calyps; CF=Clark Fork; F=Flathead; K=Kelsey; MF=Maka Flora; VOF=Valley of the Flowers)

DATE YOUR MEMBERSHIP EXPIRES. If your label reads "2/97" your membership expired February 28, 1997. Use this form to renew your membership **immediately**. Please drop us a note if any information on your label is incorrect. Please notify us promptly of any address changes.

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 KELSEY. Anyone who has not renewed by the time the Summer KELSEY is ready to mail will be dropped from the mailing list/MNPS membership roster.

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Welcome These New Members

MONTANA
Jeanne Hallock, Bear Creek
Leslie Stoltz, Big Sky
Jim & Peggy Good, Billings
Maggie Mackay, Billings
Carrolla Nelson, Billings
Karen Davis, Billings
Deborah Koop, Boulder
Quincetta Thompson, Boulder
Robin Cox, Bozeman

Valerie Harms, Bozeman
Deborah Kurtz, Bozeman
Gretchen Ann Meier, Bozeman
Mark & Kathy Shoehan, Bozeman
Helen Fee, Clancy
Alexia Cochrane, Darby
Mark Fitzsimons, Dillon
Won Shic Hong, Great Falls
Dr. Lexa W. Lee, Great Falls
Dawn M. White, Great Falls
Bill Elliott, Helena
Connie Geiger, Helena

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Demaris Sims, Kalispell
Therese Gibson, Libby
Barbara Cooksey, Manhattan
Nancy Cleveland, Missoula
Lisa & Paul Hendricks, Missoula

Horst & Lois Jarka, Missoula
Elizabeth N. Johnston, Missoula
Marilyn Marler, Missoula
Sally Tibbs, Missoula
Jean Albus, Red Lodge
Lola Ashby, Red Lodge
Vivian Beam, Red Lodge
Debra Croff, Red Lodge
John & Melissa Horton, Red Lodge
Anne Laird, Red Lodge
Robert Moran, Red Lodge

David Owen, Red Lodge
Mary Ringer, Red Lodge
Ruth Sheller, Red Lodge
Victoria Spang, Red Lodge
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Rita G. Braun, Sidney
Rebecca Kallevig, Sidney
Karla Murphy, Thompson Falls
Steven F. McGrath,
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Anita Huerta, Whitehall
Julie Broughton,
Carpinteria, California

Kelsey Summer 1998
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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 line or two of “bio” information 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 CALENDAR, P.O. BOX 1632, NOXON, MT 59853. All items should be typed and, if possible, put on a 3.5" diskette in Microsoft Word for Windows. Please include a hard copy with your disk.

CHANGES OF ADDRESS AND INQUIRIES ABOUT MEMBERSHIP IN MNPS SHOULD BE SENT TO: MNPS MEMBERSHIP, P.O. BOX 8783, MISSOULA MT 59807-8783. GENERAL CORRESPONDENCE SHOULD ALSO BE DIRECTED TO THE MISSOULA ADDRESS. Do NOT send to the KelseyA editor.

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 FALL issue is SEPTEMBER 10. Please include meeting/field trip notices through December. The FALL issue of KelseyA will be mailed by October 1.

IF YOU MOVE, PLEASE NOTIFY US AT MNPS MEMBERSHIP, P.O. BOX 8783, MISSOULA MT 59807-8783

MONTANA NATIVE PLANT SOCIETY
KelseyA Editor
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