# Aquilegia

Newsletter of the Colorado Native Plant Society

"...dedicated to the appreciation and conservation of the Colorado native flora"

Volume 16 Number 5 September/October 1992


## Hoosier Ridge Research Natural Area in Jeopardy


**Nina Williams**
**Colorado Natural Areas Program**


When word came from Washington in October of 1991 that the decision to designate a Research Natural Area (RNA) at Hoosier Ridge had been made by the U.S. Forest Service, Colorado Natural Areas Program staff and the botanical community began to celebrate. After more than a decade of work, Colorado could finally designate its forty-seventh state natural area in cooperation with the U.S. Forest Service.



*Acomastylis rossii*
Artist: Janet Wingate

Establishment of the Hoosier Ridge RNA would protect an incredible wealth of botanical diversity, including several of Colorado's rarest alpine plants. The celebration ended abruptly, however, when less than three months after publication of the decision, U.S. Forest Service Chief, F. Dale Robertson, withdrew the action. His reason? Appeals from the mining community.

Straddling the Continental Divide in central Colorado's Mosquito Range, Hoosier Ridge has long been known for its diversity of rare plants and high quality examples of Colorado alpine plant communities.

*Deschampsia caespitosa* and *Acomastylis rossii* ssp. *turbinata* dominate the north-facing mesic alpine meadows; the alpine avens creates the autumn tundra's deep red glow. On the more xeric windblown ridges and sites of early snowmelt, *Kobresia myosuroides* takes root. *Salix glauca* and *S. brachycarpa* characterize the alpine scrub communities.

While these tundra communities are fairly common in the southern Rocky Mountains, the assemblage of rare, endemic and disjunct species found on Hoosier Ridge is unique. *Saussarea weberi* is known only from the Hoosier Ridge area, Montana's Belt Mountains, and the Beartooth Mountains in northwestern Wyoming; its closest relative, *S. viscida* var. *yukonensis,* occurs in Saskatchewan. *Armeria scabra* ssp. *sibirica* is another extremely rare arctic disjunct, found again in Mongolia and the Northwest Territories. *Ipomopsis globularis* is endemic to the Mosquito Range. *Astragalus molybdenus, Braya humilis* ssp. *ventosa,*

*- continued on page 4*

### Contents


| | | | |
|---|---|---|---|
| President's Report | 2 | Field Trip Report | 9 |
| Announcements | 3 | News From Florissant | 10 |
| Letters to the Editor | 3 | Chapter Activities | 10 |
| Winter-Spring Workshops | 6-7 | Book Review | 11 |
| | | For Your Library | 11 |
| Field Notes | 8 | Calendar | 12 |

## President's Report
## Carol Dawson

If you were able to attend the Annual Meeting of the Colorado Native Plant Society on October 3rd, I'm sure you will agree that it was one of the most successful meetings ever! Comments from attendees indicate that the program was both informative and exciting. Tina Jones, who served as our 1991-92 vice president and program committee chair, deserves ***special thanks*** for her incredible effort in coordinating this conference.

I would like to welcome the following new Board Members:
Mark Gershman, Wetlands and Wildlife Coordinator with the City of Boulder Planning and Open Space Departments, Chris Pague, Coordinator for the Colorado Natural Heritage Program, Tom Ranker, Curator of the University of Colorado Boulder Herbarium (COLO) at Boulder, Velma Richards, Volunteer in the Herbarium at the Denver Botanic Gardens, and Nina Williams, Botanist with the Colorado Natural Areas Program.

At the board of Directors meeting, the following officers were elected:
Tamara Naumann as vice president, Myrna Steinkamp as treasurer, and Mark Gershman as secretary.

Finally, I would like to thank the following retiring Board members for their hard work during the last two years: Peter Henson, Tina Jones, Betsy Neely (who is the new Boulder Chapter president), Rob Udall, Sally White (who will continue as conservation committee chair), and Janet Wingate. Your committment to the goals of the Colorado Native Plant Society is sincerely appreciated.



*Aquilegia*
**is printed on 100% recycled paper**

*Aquilegia*

*Aquilegia* is published six times a year by the Colorado Native Plant Society. This newsletter is available to members of the Society and to others with an interest in native plants. Contact the Society for subscription information.

Articles from *Aquilegia* may be used by other native plant societies or non-profit groups if fully cited to author and attributed to *Aquilegia*.

The Colorado Native Plant Society is a non-profit organization dedicated to the appreciation and conservation of the Colorado native flora. Membership is open to all with an interest in our native plants, and is composed of plant enthusiasts both professional and non-professional.

Please join us in helping to encourage interest in enjoying and protecting Colorado's native plants. The Society sponsors field trips, workshops and other activities through local chapters and statewide. Contact the Society, a chapter representative, or committee chair for more information.

**Schedule of Membership Fees**

| | |
|---|---|
| Life | $250 |
| Supporting | $ 50 |
| Organization | $ 30 |
| Family or Dual | $ 15 |
| Individual | $ 12 |
| Student or Senior | $ 8 |

**Membership Renewal/Information**

Please direct all membership applications, renewals and address changes to the Membership chairperson, in care of the Society's mailing address. Please direct all other inquiries regarding the Society to the Secretary in care of the Society's mailing address.

**Newsletter Contributions**

Please direct all contributions to the newsletter to:

**Tamara Naumann**
**940 Quinn Street**
**Boulder, CO 80303**

Deadlines for newsletter materials are February 15, April 15, June 15, August 15, October 15, and December 15.

Short items such as unusual information about a plant, a little known botanical term, etc. are especially welcome. Camera-ready line art or other illustrations are also solicited.

Please include author's name and address, although items will be printed anonymously if requested. Articles submitted on disks (IBM or Mac) are appreciated. Please indicate word processing software and version.

**Officers**

| | | |
|---|---|---|
| President | Carol Dawson | 722-6758 |
| Vice-President | Tamara Naumann | 440-8933 |
| Secretary | Mark Gershman | 443-9365 |
| Treasurer | Myrna Steinkamp | 226-3371 |

**Board of Directors**

| | | |
|---|---|---|
| Jeff Dawson (93) | Denver | 722-6758 |
| Gary Finstad (93) | Denver | 791-3790 |
| Mark Gershman (94) | Boulder | 443-9365 |
| Bill Jennings (93) | Louisville | 666-8348 |
| Tamara Naumann (93) | Boulder | 440-8933 |
| Chris Pague (94) | Lyons | 492-4719 |
| Tom Ranker (94) | Boulder | 794-5432 |
| Velma Richards (94) | Englewood | 794-5432 |
| Vicky Trammell (93) | Littleton | 795-5843 |
| Nina Williams (94) | Gold Hill | 443-8079 |

**Chapter Presidents**

| | | |
|---|---|---|
| Boulder | Betsy Neely | 443-8094 |
| Denver-Metro | Ron Abbott | 333-6151 |
| Fort Collins | Mike Scott | 490-1788 |
| Yamparika | Reed Kelley | 878-4666 |
| San Juan | Peggy Lyon | 626-5526 |

**Committees**

| | | |
|---|---|---|
| Conservation | Sally White | 697-5439 |
| Editorial | Tamara Naumann | 440-8933 |
| Education | Gary Finstad | 791-3790 |
| Field Trips | Jeff Dawson | 722-6758 |
| Field Studies | Mary Edwards | 233-8133 |
| Hort/Restoration | Dorothy Udall | 482-9826 |
| Membership | Myrna Steinkamp | 226-3371 |
| Publicity | Julia Carlson | 752-2738 |
| Workshops | Bill Jennings | 666-8348 |

# ANNOUNCEMENTS

We recently received a small, but significant contribution to the newsletter. Artist Jan North Bishop sent us a drawing of an *Aquilegia* flower to help us let you know when you've reached the end of an article. Her original is a little bit bigger than the one you see in the background here. Our resident Computer Wizard, Mark Gershman, scanned Jan's image into the computer and we shrunk it down so it looks like this..... Thanks Jan! We plan to use alot of these little columbines.



## Chapters Getting Organized After the Summer Field Season...

The Boulder Chapter held an organizational potluck in October. The food was great and the company was even better. New officers "volunteered." Betsy Neely is president; Elaine Hill is vice president; Anne Maley and Elaine Smith are refreshment coordinators; and Lynn Riedel handles publicity. It's a real team effort!

The Metro-Denver Chapter is up-and-running! Ron Abbott was re-elected president; Chris Hartung is vice president; Virginia Knowlton is secretary-treasurer. Congratulations to the Metro-Denver team!

We'll look for news from Fort Collins, San Juan, and Yamparika next time!

# LETTERS to the EDITOR

### COLLECTING ETHICS

Okay, maybe getting one's introduction to Colorado botany in Rocky Mountain National Park isn't the best approach. But if it warped me for life, it also taught me respect for the plants and environments we study. Twenty-odd years later, I still can't cross the tundra without tip-toeing. Our state and local parks go to great lengths to indoctrinate visitors with the same ethic as do national parks: **Take only pictures**. Can we afford a different standard for the Society?

One reason for carefully evaluating our stance on this question is the fundamental difficulty of maintaining a double standard. To do so, we must establish that we, as botanists or Society members, are somehow different and more privileged than other people interested in plants, whether wildflower lovers, herbalists, interior decorators, or home gardeners, whose depredations on local floras we often lament. When we are out with plant enthusiasts who have absorbed park standards, their ethics regarding casually pulling, picking, or snipping plants or plant parts for more convenient observation far exceed ours--in fact, they're apt to be horrified at our behavior.

I'm not comfortable in the field with people who are horrified at my behavior or that of my companions, and I was chagrined recently to have the discrepancy in our ethical stance pointed out to me by some folks with whom I was botanizing. Apart from the question of collecting true voucher specimens (when appropriate and necessary), they raised the concern of gratuitous plucking and its effects. The "scientific" fraction of my brain quickly pointed out that most plants aren't seriously damaged by such minor losses, but that's not the point. Even if no lasting harm is done to a plant, a harmful message is sent: *Those who know, and presumably appreciate plants best, find this practice acceptable beyond question -- or even notice.* Those who ought to be setting the best example for others are in fact setting the worst example, and are undermining the good results park naturalists everywhere are trying to achieve.

The number of people out on our dwindling natural lands has become far too large for the cumulative effects of minor damages to remain unnoticeable. Most folks perhaps have good intentions but short attention spans. We've all had the experience of finding wilted flowers discarded on the trail. How is our thoughtless grazing any different? We need to learn to recognize and correct the destructive side of our interest in plants.

I'm reminded of the turn-of-the-century expeditions to what is now Rocky Mountain National Park, and the folks who collected wildflowers literally by the bushel to adorn their dark Victorian parlors in Denver. A plant doesn't need to be rare to succumb to such treatment, and the effects of historic wildflower picking on park ecology are real and lasting. Park rangers have good reason for promoting a stronger ethic.

Times have changed, thank goodness. Collecting an armful of wildflowers is no longer in vogue. Times have changed for botanists, too. We're no longer documenting an entirely new flora, as Nuttall, Gray and others were. We, too, have good reason for promoting stronger ethics.

I'm writing this in hopes of correcting any role I may have played in giving a bad impression of the Society, because I know this is a good group of people. I hope those who are doing formal plant collections will read and follow the Society's Guidelines (Vol. 16, No. 3, pages 9-11) and their own consciences. I hope the rest of us will think more conscientiously about whether the casual snipping we are doing is the thing to do, whether we are willing to have others witness us doing it--and whether we'd be willing to have others (especially those with less ability to distinguish rare from common plants) imitate our behavior. Read the line on page one under the Society's logo again. As members, we claim a special responsibility to Colorado's flora. We need to cultivate better field habits.

**Sally White**
**CONPS Conservation Committee**

**Hoosier Ridge,** *continued from front page*



*Sibbaldia procumbens*
Artist: Janet Wingate

*Draba borealis, D. porsildii, Papaver kluanense, Phippsia algida,* and *Townsendia rothrockii* are rare plants also growing in the Hoosier Ridge area.

The main source of controversy between the mining and conservation communities is the endemic Pleistocene relict, *Eutrema penlandii* (syn. = *Eutrema edwardsii* ssp. *penlandii).* First collected in 1935 near Hoosier Pass by C. William T. Penland, Penland's alpine fen mustard is known only from fourteen scattered populations within its narrow range, approximately seventeen miles long and one mile wide, along the crest of the Mosquito Range. Numerous searches have failed to extend the species' range. *Eutrema's* closest relative, and only other North American member of the genus is *Eutrema edwardsii,* a circumboreal species of arctic North America and Siberia.

Penland's eutrema is very narrowly restricted to certain perennially saturated moss-covered peatlands above 12,000 feet. Permanent snowfields provide the continuous water source for substrate saturation. Field reports from this summer reveal a tendency for *Eutrema* to grow along eutrophic waters, often evidenced by filamentous blue-green algae. Additional questions remain unanswered about the role of geologic substrate, soil pH, and water quality in defining *Eutrema's* distribution.



*Rhodiola integrifolia*
Artist: Janet Wingate

*Eutrema* is tiny and easily overlooked. It is a glabrous, tap-rooted perennial with inflorescences sometimes reaching 7 centimeters in height. Its ovate to cordate, long-petioled basal leaves range from 5 to 10 millimeters in length, although moss sometimes obscures the petioles, giving them a false sessile appearance. Cauline leaves are sessile and narrowly oblong. The microscopic white petals measure less than 1 millimeter wide, 2-3.5 millimeter long and the quadrangular siliques are strongly ribbed. Flowering occurs in early to mid July, and fruiting lasts through August.

*Eutrema penlandii* was proposed for endangered species status in 1975 and 1976. It was not until 1988 that a detailed inventory and status report recommended threatened status. Following this recommendation, the U.S. Fish and Wildlife Service published its intention to list *Eutrema* in October of 1990. Two years later, the fen mustard remains unlisted, placing the Service in violation of the Endangered Species Act, which requires a listing action on species within 365 days following publication of intent.

Factors influencing the decision to list *Eutrema* include the "high degree of habitat specificity" of the species (evidenced by its absence from seemingly suitable habitat elsewhere in the Rocky Mountains), the fragile and critical hydrologic regime in which the species is found, and multiple threats to the species' habitat.

Alpine ecosystems are extremely susceptible to prolonged trampling and disturbance. Annual burro races from Fairplay to Leadville follow a route over Mosquito Pass through a population of *Eutrema.* Off-road vehicle use is popular in this area. Proponents of the Colorado Divide Trail (CDT) want the trail to bisect the natural area, which straddles the Continental Divide. Routing the CDT on the divide through the natural area was abandoned as a suitable alternative when RNA establishment appeared imminent. Since Chief Robertson's withdrawal, however, rumors suggest that the Hoosier Ridge route is back on the drawing table. Nature herself might prove *Eutrema's* best ally; this summer the Forest Service indicated that lightning-related safety issues may force the trail off the divide.

*Eutrema's* worst enemy is the mining that made Leadville and Alma famous. Ditching associated with mining activities alters the hydrology and can desiccate peat habitat. Acid run-off may alter the water quality beyond the range of *Eutrema's* tolerance. Exotic species used in state-required reclamation could present a new source of potentially detrimental competition for the native flora.

Mining issues form the basis of the appeals resulting in the withdrawal of the Hoosier Ridge RNA. Appellants accuse the Forest Service of failing to assess the area's high mineral content and list the seven active (patented) mining claims within the RNA boundaries. This summer the entire natural area was found staked in what appeared to be mining claim patterns.

One appeal cites the 1991 Alma American Mining Corporation study that documented an increase in the number of known *Eutrema* individuals from approximately 6,000 plants to 16,000. Mr. Gregory Hahn, Vice-President of St. Mary's Minerals and author of the appeal, concludes from this "evidence" that *Eutrema* does not warrant threatened status. Hahn fails to acknowledge that the Alma report did not significantly extend the range of the diminutive mustard. Janet Coles, Colorado Natural Areas Program ecologist, is wary of using annual population numbers to predict species status. "Viability of the species can not be judged accurately by population number counts because of the wide fluctuation of individuals from year to year," she says.

Appellants also argue that the Forest Service established the RNA for **preservation** of rare plants, and not for **research**. They quote the following federal regulations: "When appropriate, the Chief shall establish a series of research natural areas...to illustrate adequately or typify for research or educational purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest or importance." The Forest Service Manual, however, lists preservation of pristine representative alpine habitats with unique attributes and preservation of genetic diversity as valid objectives of RNA establishment. Finally, the appellants object to withdrawing the 695 acre parcel from multiple use, a withdrawal that was "enthusiastically endorsed" by the Park County Commissioners in 1988. Unlike these appeals from mining interests, most conservation-based appeals of federal actions are routinely denied, and rarely cause a decision to be rescinded.

**Hoosier Ridge,** *continued from page 4*

The fate of Hoosier Ridge remains unclear and I am certainly not optimistic. The White River and Pike-San Isabel National Forests jointly manage the area and are reevaluating the RNA in light of the recent appeals. A Botanical Special Management Area would be a weak compromise, affording no protection from development. If proposed mining activities involve filling wetlands, projects could be postponed or denied under Section 404 of the Clean Water Act. The U.S. Army Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Forest Service would all be involved in the decision-making. Listing *Eutrema penlandii* as threatened would provide the most protection for its habitat, but will not directly affect other rare species and communities. No alternative action can duplicate the level of protection afforded *Eutrema* and its fragile ecosystem. Research opportunities in the unique and richly diverse botanical habitat found on Hoosier Ridge could be forever lost.

## What You Can Do

1. Write to Regional Forester, Elizabeth Estill; express your concerns or opinions about management of Hoosier Ridge. Ask her to continue to work toward designation of this outstanding Research Natural Area. Encourage placement of the Continental Divide Trail outside the boundaries of the proposed RNA. Suggest placement of interpretive signs near the RNA boundary to inform hikers of its important botanical value, and of the fragile nature of the habitat.

   Elizabeth Estill, Regional Forester
   U.S.D.A. Forest Service
   Rocky Mountain Regional Office
   P.O. Box 25127
   Lakewood, Colorado 80225

2. Send copies of your letter to the Forest Supervisors on the Pike-San Isabel (south slope of Hoosier Ridge) and White River (north slope) National Forests.

   Forest Supervisor
   Pike-San Isabel National Forest
   1920 Valley Drive
   Pueblo, Colorado 81008

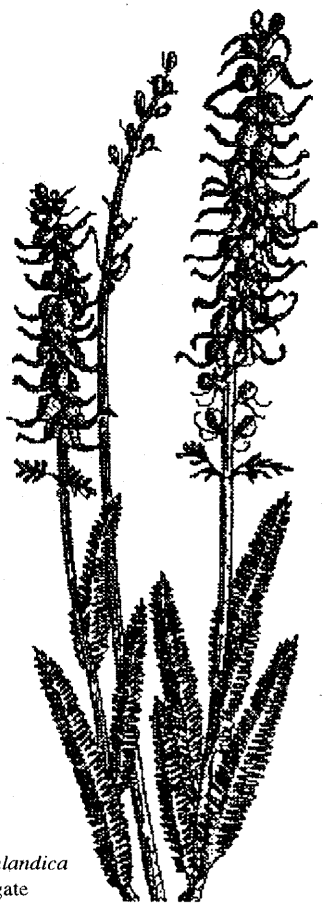
   Forest Supervisor
   White River National Forest
   P.O. Box 948
   Glenwood Springs, Colorado 81602

3. Write to the Regional Director of the U.S. Fish and Wildlife Service requesting immediate action on the proposed listing of *Eutrema penlandii* as a threatened species.

   Regional Director
   U.S. Fish and Wildlife Service
   P.O. 25486
   Denver Federal Center
   Denver, Colorado 80225

4. Send a copy of your letter to the Colorado State Office Supervisor, U.S. Fish and Wildlife Service.

   Supervisor, Colorado State Office
   U.S. Fish and Wildlife Service
   730 Simms Street, Room 292
   Golden, Colorado 80401



*Pedicularis groenlandica*
Artist: Janet Wingate

### Botanical Esoterica

or little known facts about plants...

Did you know that wasabi (Japanese horseradish) is actually a species of Eutrema, and thus related to one of our rarest native crucifers? (See Nina Williams' article on page 1.) Think about that the next time you eat sushi!

# Workshops - Winter 1992 & Spring 1993

The Colorado Native Plant Society workshop series was established in 1985 to provide members with winter-time activities when field trips are impossible. CONPS members have attended more than 79 workshops over the years. Workshops bring native plant lovers together with a well-informed instructor who may have photographs, herbarium specimens, live plants, or other materials for hands-on study. The opportunity to receive one-on-one instruction and informative lectures has made the workshop series one of the most popular Native Plant Society programs. Attendees need no special skills or background; a love of plants and a desire to learn are the only prerequisites. The goal is to demystify plant identification and to enhance in all of us our enjoyment and understanding of Colorado's native flora.

Please **mail** your registration to Bill Jennings, P.O. Box 952, Louisville, CO 80027. Indicate the workshops for which you would like to register, and include your name, address, and telephone number. Phone registrations will also be accepted (666-8348). Register promptly, as workshops tend to fill up quickly. The fee for each full-day workshop is $10 for CONPS members and $22 for non-members ($10 for the workshop and $12 to join the Society). Payment is made on the day of the workshop. About two weeks prior to the workshop, registrants will receive information by mail about location, time, lunch, and suggested references or materials to bring to the workshop.

It takes considerable time and effort for the instructors to plan and develop workshops and field trips. Please let us know how you like the activities offered by CONPS. We need your suggestions for future workshops and trips. We also appreciate feedback on whether you find them informative and exciting or dull and uninteresting. We'd like your opinion on how well we are serving you, our membership.

## COLORADO CONIFERS

**leader: Vickey Trammell**
**location: Arapahoe Community College, Littleton**
**first session: Saturday, January 16, 1993**
**second session: Sunday, January 17, 1993**

Is a Douglas-fir tree a fir tree? Is Spruce Tree House at Mesa Verde National Park named because of the spruce trees growing there? Are there cedar trees in Colorado? Learning to recognize the native conifer trees of Colorado will be the subject of this workshop. Participants will learn simple field characteristics of the leaves (needles) and the cones to aid in tree identification. Interesting facts and stories of the natural history of native conifer trees will also be discussed. This will be a half-day class (10 a.m. - 2 p.m.) at Arapahoe Community College in Littleton with a field trip afterward to see trees at Chatfield Arboretum, weather permitting.

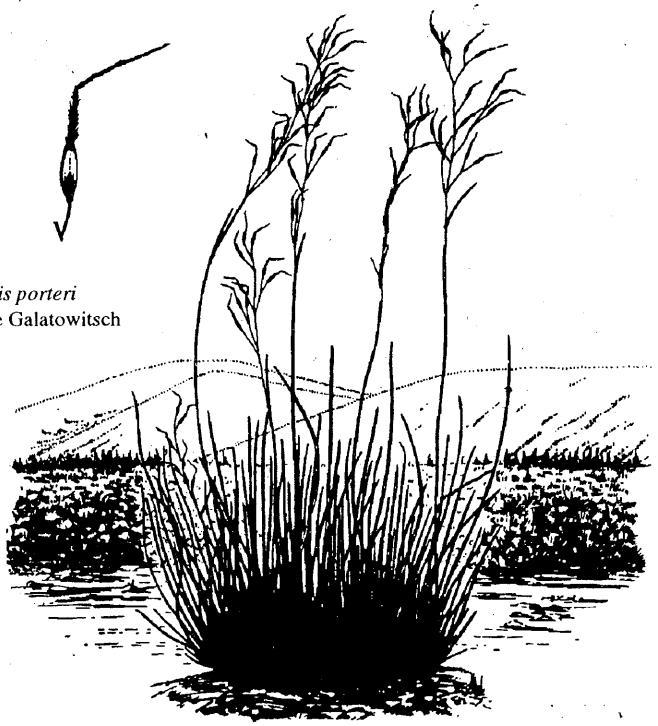
## MONTANE and SUBALPINE GRASSES

**Location: Foothills Nature Center, Boulder**

**First Session: Saturday December 5, 1992**
**Leader: Dr. Alan Carpenter**

**Second Session: Sunday, December 6, 1992**
**Leader: Dr. David Buckner**

Drs. Carpenter and Buckner will take us through the fascinating and confusing world of the grasses of the mountains. After covering the terminology necessary to study the grasses, they will distribute numerous specimens for us to dissect and identify. This will be an unique and rewarding workshop, continuing our series on identification of this important group. Every Colorado botanist should have a working knowledge of the grasses.



*Ptilagrostis porteri*
Artist: Sue Galatowitsch

## CENTURY PLANTS (AGAVES) of the SOUTHWEST

**Leader: Dr. Wendy Hodgson**
**Location: University of Colorado, Boulder**
**First session: Saturday, February 6, 1993**
**Second session: Sunday, February 7, 1993**

Although Colorado has no native species of genus *Agave*, any person who has travelled to the deserts of the Southwest cannot help but notice these striking succulent plants, with the tall stalk of tubular flowers and the huge rosette of spine-tipped leaves. Native Americans used these plants in a variety of ways, and Aztec uses of agaves are mentioned in the Denver Museum of Natural History's current Aztec exhibit. The species *Agave utahensis* is winter hardy in Colorado and has bloomed in the Denver Botanic Garden's Rock & Alpine Garden. Some smaller species are suitable as house plants. The Colorado Native Plant Society is pleased to present this workshop to be led by Dr. Wendy Hodgson, curator of the herbarium at the Desert Botanical Gardenin Phoenix. Dr. Hodgson will focus on identification of the fewer than two dozen species native north of the Mexican border and on the problems of species limits in a complex genus.

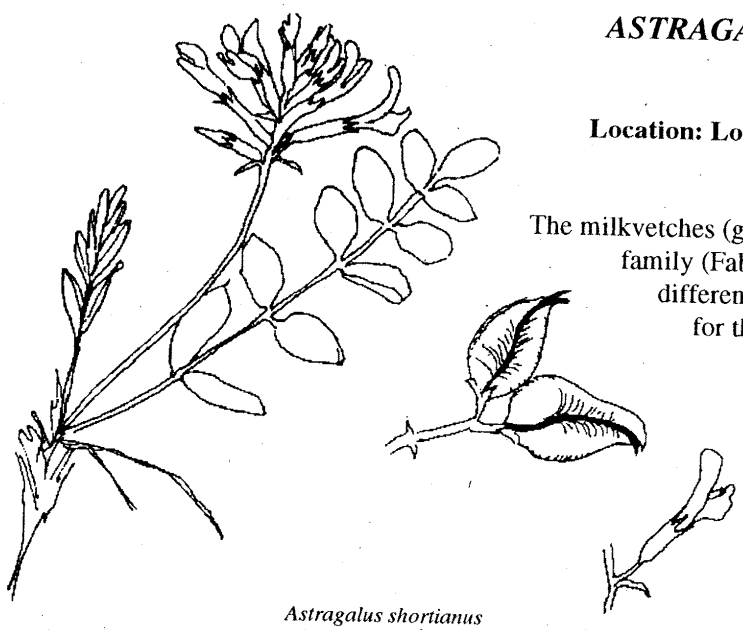
Dr. Hodgson will give a special lecture on century plants Friday evening, February 5, possibly in conjunction with the American Rock Garden Society and the Cactus and Succulent Society.

## WEEDS of COLORADO

**Leader: Dr. Richard Old**
**Location: Univ. of Colorado, Boulder**
**First session: Saturday, February 27, 1993**
**Second session: Sunday, February 28, 1993**

Aggressive plants that crowd out the natural vegetation are a serious botanical problem, not to mention economic and aesthetic disasters as well. The weed situation is particularly bad where urbanization and agricultural practices have significantly disturbed the natural vegetation, such as in the Front Range Urban Corridor. Following a thorough indoctrination of "What is a Weed?," workshop participants will be introduced to the species currently on the Colorado Noxious Weed List. Biological and identificational characteristics of these and a few others will be discussed. Dr. Richard Old is a weed specialist affiliated with Washington State University in Pullman, Washington, who consults on weed problems all over the West.

In addition to the workshops, Dr. Old will present a special lecture Friday night, February 26, on current methodologies for computerized identification of plants, a technology that seems destined to replace the dichotomous keys currently in use in virtually all botanical manuals.



*Astragalus shortianus*
Artist: Ann Cooper

## *ASTRAGALI* of the COLORADO FRONT RANGE

**Leader: Loraine Yeatts**
**Location: Lookout Mountain Nature Center, Golden (tentative)**
**Saturday, March 20, 1993**

The milkvetches (genus *Astragalus*) comprise a very large group of plants in a large family (Fabaceae). With such a large number of species, many of which are differentiated on technical characteristics, identification can be daunting for the wildflower lover. Many of these species are showy and attract attention at roadside in the spring and summer. Loraine Yeatts has agreed to tackle the Front Range species and will present her observations in this workshop. You will learn the important parts of the pea family flower and how to key the Front Range species.

# FIELD NOTES

**William A. Weber and Ronald C. Wittman**
**University of Colorado Herbarium**

**Dicentra uniflora**: In *Aquilegia* 15, No. 2, p. 11, Michael L. Peterson, a retired Soil Conservation Service employee, reported finding and photographing this species in Garfield, Mesa, and Rio Blanco counties. In correspondence with Mr. Peterson we learned that he saw the plant at three localities: GARFIELD CO.: West Divide Creek drainage, off road to Uncle Bob Mt., before USFS boundary, T7S R91W S32, Gibson Gulch Quad., 7 May 1975; under sagebrush, gravelly surface, in soils derived from aeolian loess mixed with basaltic stones, slope 12-15%; plants 5 cm tall. GARFIELD CO.: Northwest Creek area on Naval Oil Shale Reserve on BLM property, T5S R94WS7, Anvil Points and Rio Blanco Quads. (access is shown on Anvil Points Quad.), E-facing slope 6%, soils deep silty loess, 16 May 1975. MESA CO.: T8S R91W S20, Flatiron Mountain Quad., S-facing slope, 10%, in sagebrush; soils loess with a few gravels, over basalt, some *Mahonia* nearby, 15 May 1975. Mr. Peterson furnished the herbarium with a splendid color print of the plant.

Ron Wittmann and I visited the first two localities on 9-11 May 1992 in hopes of finding and collecting voucher herbarium specimens. The Uncle Bob locality is accessible by driving the Dry Hollow Road south from Silt. We found the road heavy going with deep mud and had to walk the last few miles, but although this date was close to the anniversary of the first discovery, we found no plants. In fact, the season was very far along and such an early bloomer surely had withered and disappeared. One of the fine surprises was for us to see great stands of *Pedicularis centranthera* everywhere under the pinon and juniper. The Anvil Points locality was reached by way of the Cow Creek road out of Piceance Creek. Here we were stopped by snow drifts in the small forested patches along the crest, and here, too, the season was much too far advanced to find *Dicentra*.

When we reported our bad luck to Mr. Peterson, he told us that the 1974-75 winter was one of the wettest snow winters that the Soil Conservation Service has ever measured. Therefore, the season had to have been greatly delayed. When he found *Dicentra*, the early-flowering *Phlox hoodii*, *Hydrophyllum capitatum*, and *Pulsatilla* were already almost finished blooming. If we want to find *Dicentra* we need to get up into the mountain sagebrush just as soon as the snow leaves, and look beneath sheltering sagebrush plants. This means abandoning vehicles that can't make it through the greasy mud, and going on foot as far as necessary.

I would urge Western Slope CONPS members to establish this plant as a priority, for until we have voucher specimens in the herbarium the record will remain unofficial, despite the color photograph. Since this is a species that is common in the arid areas of the Pacific Northwest, east of the Cascade Range, it is likely that we should find it on the plateaus of Dinosaur National Monument, where access to the high sagebrush meadows might be a bit earlier.

Learning about the behavior of *Dicentra uniflora* raises our hopes of finding *Hesperochiron pumilum* (Hydrophyllaceae) in similar sites. This little, extremely early spring flower has a few oblong basal leaves and a single waxy white flower about an inch in diameter, the whole plant hardly getting more than a centimeter above the ground. The collector was anonymous, but the locality is known: Montezuma National Forest; Milk Ranch, 7,000 ft. alt., 28 April 1914, associated with sagebrush and weeds, west slope, dry soil. I saw this specimen in the Forest Service Range Management Herbarium. In 1955 I was able to find the locality of the so-called Milk Ranch. It was in Montezuma County, on House Creek, T38N R15W S28. Like *Dicentra*, the *Hesperochiron* grows in the same places, blossoms at the same time, and disappears very soon after blooming. These two plants should be sought after by our Western Slope members.



# Field Trip Report

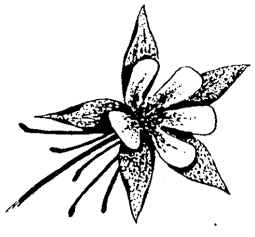
## Aiken Canyon: A Place of Beauty and Botanical Interest
## led by Alan Carpenter
### Report by Ron Abbott

The sky may have been gray and gloomy just south of Colorado Springs on June 6th, but the spirits of participants were bright during the CONPS field trip to Aiken Canyon, one of The Nature Conservancy's newest and largest preserves in Colorado and perhaps the finest remaining example of a relatively undisturbed foothills canyon along the Front Range. Spanning the high plains/lower montane ecotone, Aiken Canyon includes vegetation types characterized by short grasses, Gambel oak, mountain-mahogany and coniferous trees.

*Quercus gambelii* is most prevalent at the preserve, its late-spring growth appearing especially verdant under overcast skies the day of our visit. Alan Carpenter, TNC's Colorado land steward and our trip guide, explained that the extensive Gambel oak is responsible for an abundant megafauna at Aiken canyon, notably mule deer, elk, and black bear; the scat of all three was, in fact, found and identified during the day by our widely-versed leader. Where well-fed, large herbivores live, one expects feline predators, and mountain lion footprints have been found earlier this year within the bounds of the preserve. And in addition to large mammals, the dense oak thickets support numerous birds, especially the rufous-sided towhee whose calls accompanied our hiking all day long.

While undeniably important to animals, scrub oak vegetation is rather uniform, offering few opportunities for discovery to curious botanists. Of greater interest are open, grassy areas within the scrub where the greater species diversity includes a few herbaceous plants. *Thelesperma filifolium, Erigeron flagellaris, Echinocereus viridiflorus, Aphyllon fasciculatum, Penstemon secundiflorus,* and *Castilleja integra* virtually carpeted these areas, while the marvelous sage fragrance of *Artemisia frigida* perfumed the damp air -- heady stuff! The most common grasses at these sites, *Chondrosum gracile*, for instance, are warm-season species and were still mostly in a less conspicuous vegetative growth phase.

As often happens on CONPS field trips, our rapid traverse of the countryside was initially sacrificed to an engrossing, meter-by-meter identification of plant species at the site of the moment. Consequently, we spent most of our time in the scrub oak/open grass mosaic closer to the preserve's southeast entrance with only a quick-strike penetration after lunch of the coniferous vegetation up-canyon to the west. Short though our westward trek was, it was worth making if only to experience the dramatically abrupt transition to a more montane setting.



Once penetrated, the area revealed many expected shrub and herbaceous species: *Oreobatus deliciosus, Physocarpus monogynus, Jamesia americana, Rosa woodsii, Campanula rotundifolia, Monarda fistulosa,* etc. Found nestled among the Boulder raspberry and ninebark by our ever-enthusiastic Linda Senser, was a crenate-leaved shrub that no one present was able to identify -- maybe something unusual? [Dr. Weber suggests *Holodiscus* as a possibility.] Two notable plants encountered at this site were handsome representatives of species near their northernmost extensions along the Front Range: a large sapling of white fir, *Abies concolor*, nearly perfectly symmetrical and almost glistening against a background of darker green, and an equally attractive stand of fragrant shiny-leaved hoptree, *Ptelea trifoliata.*

Alan Carpenter explained that The Nature Conservancy's plans for management of Aiken Canyon, will express various aspects of the conservation philosophy practiced by TNC. The preserve will eventually have a developed trail system -- an acknowledgement of man as part of nature, if only as visitor. Two known infestations of ponderosa pine mistletoe will be isolated from surrounding healthy trees by selective cutting, yet allowed to develop in order to eventually provide habitat for primary and secondary tree cavity dwellers. Preserve management strategies attempt to include and encourage the widest possible range of natural processes in this unique canyon ecosystem. One or more grassy areas will be selectively burned to quell invasion by juniper and increase populations of big and little bluestem, sand dropseed, and other representatives of mid- and tall-grass relict communities, to maintain diversity of plant community types and restore a species mix thought to have preceded domestic livestock grazing and fire suppression,

Perhaps most promising of all is the potential for Aiken Canyon Preserve to serve as a keystone for preservation over a wide area at the ecosystem level. If TNC can secure certain acreage surrounding the preserve, the canyon will then function as a connecting corridor between BLM's Beaver Creek Wilderness Study Area to the west and the expanse of Fort Carson to the east, an accomplishment that would protect the entire drainage.

Altogether, it is a privilege to have explored this relatively undisturbed foothills region, and I am certain that we all look forward to the possibility of future visits, and to its continued preservation under wise management.



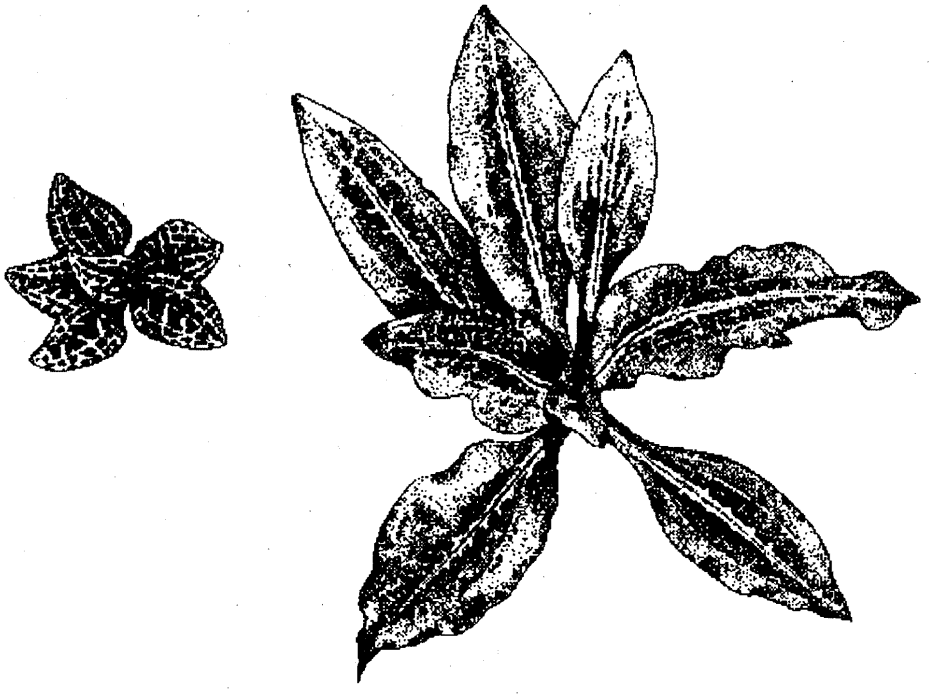
## New Information on a Florissant Fossil Plant

**Sue Martin**

Add to your store of information on Colorado plants this tidbit: there is a fossil plant known as *Florissantia*! You probably can guess the origin of the name (and some of the fossils): the Florissant fossil beds. In a recent paper, Dr. Steven Manchester of the Florida Museum of Natural History, University of Florida, explores details of this genus. Once placed in the genus *Porana* (Convolvulaceae), then in *Holmskioldia* (Verbenaceae), *Florissantia*, according to Manchester's research and interpretation, is an extinct genus that had features found today in the Tiliaceae, Bombacaceae, and Sterculiaceae, families in the order Malvales. Tentatively, Manchester places *Florissantia* in the Sterculiaceae. (Here's a test for you: do we have any members of this plant family in the flora of Colorado today??)

Features of *Florissantia* flowers suggest they were insect or bird pollinated, and the samara-like fruits probably were wind-dispersed. Manchester describes three species of *Florissantia*, of which the Colorado species is *Florissantia speirii*; fossils of this species also come from Wyoming, Montana, and Oregon. He believes the genus, known only from western North America (central Colorado to southern Alaska), was an important component of lakeside vegetation in volcanic areas.

To learn more about this interesting Colorado fossil plant, visit your library and read Manchester's article [American Journal of Botany 79(9): 996-1008 (1992)], which has beautiful photographs of the fossils and an artist's reconstruction of the flower.



*Goodyera repens* (rattlesnake plantain)
Artist: Carolyn Crawford

## Chapter News

### Boulder Chapter

**December 8: Yampa River Preserve**
Holly Richter, from the CSU Range Science Department, will discuss her efforts to develop an ecological model for preserve selection, design, and stewardship planning for one of the last relatively unregulated tributaries in the Colorado River system.

**January 12: U.S. Forest Service Report**
Joan Friedlander, Coordinator for Sensitive Species in the Region 2 office of the U.S. Forest Service, will report on Sensitive Species and Ecosystem Management Initiatives in the Rocky Mountain Region.

Monthly meetings are held from September through April on the 2nd Tuesday of the month at 7:15 p.m. in the Boulder Public Library meeting room, 11th and Arapahoe, unless otherwise noted. For information, call Betsy Neely at 443-8094 or Elaine Hill at 494-7873.

### Denver Chapter

**December 9: Colorado Riparian Areas**
Gwen Kittel, riparian ecologist with The Nature Conservancy, will present her work on classification and modeling of Colorado's riparian plant communities. Note: this combined November/December meeting will be held on the 2nd Wednesday of December in the Morrison Center at the Denver Botanic Gardens (DBG).

**January 27: Alpine Tundra Plants of Horseshoe Cirque**
Barbara Siems will present a program on the alpine tundra plants of the Horseshoe Cirque basin in the Mosquito Range. Whether you attended the field trip to Horseshoe Cirque or not, you will enjoy this program! The meeting will be held in the Morrison Center at DBG.

Monthly meetings are held from September through May on the 4th Wednesday of the month at 7:30 p.m. at the **Denver Botanic Gardens,** 909 York Street, unless otherwise noted. For information, call Ron Abbott at 333-6151.

# BOOK REVIEW

## Jim Borland

**The Xeriscape Flower Gardener: A Waterwise Guide for the Rocky Mountain Region.** *1991. Jim Knopf. Johnson Books, Boulder. 240 pages. paper. $14.95.*

---

It's about time. At last a gardening book aimed at gardeners in the Rocky Mountain West which does not merely repeat the same tired refrain of eastern gardening. Ostensibly covering a section of the country which includes all of the high, cold elevations of the west, excluding the traditional Southwest, western California, and the Pacific Northwest, the text reveals strongly the author's main area of experience, namely Boulder and Denver, Colorado.

Between the covers, the reader will find discussions on topics such as planning, designing, building, and maintaining a waterwise garden. Several pages are devoted to meadow gardening and the inclusion and handling of animals in the garden.

This book's forte, at least as far as plant people are concerned, is the extensive list of plants recommended for this area. Included are many Colorado Native plants, both herbaceous and woody, some of which are not generally available in nurseries or even known outside the Denver metropolitan area. This fact is not a detraction, but an added bonus, since most nurseries currently do not carry a wide selection of plant materials. We Native Plant Society types should scold them on this count, from time to time.

Somewhat tedious, in my opinion, is the information on determining exactly how much water your landscape will use and just how much this water will cost. While some may find this information useful, I would like to have seen more information how to have a grand garden **without** the use of supplemental water. Since Mother Nature does it all the time, we should be able to do it as well.

Mr. Knopf is to be congratulated for taking professional as well as political stands on issues. While most gardening literature seems to speak without regard to its relationship with (and impact upon) the rest of the world, this author ignores tradition; he notes the rape and pillage of mountain peat areas [see feature article on mountain peat in the last issue of *Aquilegia*--Vol.16 No.5] and the folly of Two Forks dam, both of which are current Colorado topics.

While I could nitpick some of the details on propagation and what constitutes a "water-wise" plant, this book is (and not only by virtue of its being first) the best of its kind on the market. Buy it!



***Note:***
*Jim Knopf's* The Xeriscape Flower Gardener *is available in many local bookstores. Copies can be ordered directly from Johnson Books, 1880 South 57th Court, Boulder, CO 80301, (303)443-1679. Send $14.95 plus $2.00 shipping. Colorado residents must add 3% sales tax.*

# FOR YOUR LIBRARY

Oregon State University Press has recently reprinted ***Botanical Exploration of the Trans-Mississippi West*** by Susan Delano McKelvey. This classic history of the botanical explorations of the West from 1790 to 1850 was first published in 1955 by the Arnold Arboretum of Harvard University and has been out of print for several years. It is now back in print with a foreword and annotated bibliographic supplement by Joseph Ewan of the Missouri Botanical Garden and an introduction by Stephen Dow Beckham of Lewis and Clark College.

The accounts of the travels and collections of botanical explorers range from the well known--such as Lewis and Clark, Menzies, and Douglas--to the obscure. *Botanical Exploration of the Trans-Mississippi West* describes the cultural and historical setting for the development of natural history studies throughout the American West. McKelvey chronicles the life, labors, field work, and publications of dozens of botanical explorers who helped document our rich natural history. This book is a significant reference work for botanists, historians, cultural resource specialists, museum workers, interpreters, and others with an interest in exploration, history, and botany.

The Northwest Reprints edition reproduces McKelvey's text in its entirety, along with nine original maps by Erwin Raisz. A new map, drawn especially for this edition and reproduced in full color on the endsheets of the book, shows the routes of all the journeys discussed in the text.

The author, Susan Delano McKelvey, was a member of New York's elite and a cousin of Franklin D. Roosevelt. She joined the staff of the Arnold Arboretum as a botanist after World War I. Her other works include: *The Lilac: A Monograph* and *Yuccas of the Southwest United States.*

*Botanical Exploration of the Trans-Mississippi West* (1200 pages) is available in hardcover from Oregon State University Press, Waldo Hall 101, Corvallis, Oregon 97331-6407, (503)737-3166. The price is $85.00 plus shipping.



# Calendar Overview

## Chapter Meetings

**Boulder Chapter**

**Dec 8** Yampa River Preserve
**Jan 12** U.S. Forest Service Report

**Denver Chapter**

**Dec 9** Colorado Riparian Areas
**Jan 27** Alpine Tundra Plants of Horseshoe Cirque

## 1992-93 Winter & Spring Workshops

**Dec 5-6** **Montane & Subalpine Grasses**
with Alan Carpenter or David Buckner

**Jan 16-17** **Colorado Conifers**
with Vickey Trammell

**Feb 6-7** **Century Plants (Agaves) of the Southwest**
with Wendy Hodgson

**Feb 27-28** **Weeds of Colorado**
with Richard Old

**March 20** ***Astragalus* of the Front Range**
with Loraine Yeatts

**Colorado Native Plant Society**
P.O. Box 200
Fort Collins, Colorado 80522

Non-profit
Organization
U.S. Postage
PAID
Permit #1475
Denver, Colorado