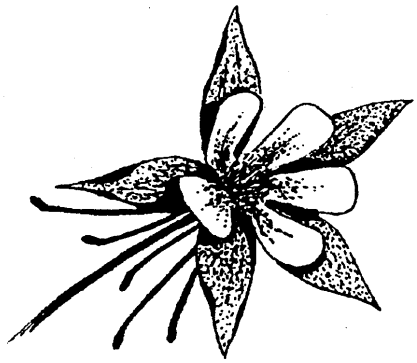
Aquilegia



Newsletter of the Colorado Native Plant Society

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

Volume 14, Number 2 **March/April 1990**

George Kelly: Father of Rocky Mountain Horticulture

David Adamson, The Nature Conservancy

George Whitfield Kelly was born in 1894 in Scotchridge, Ohio, population 15. George's father was a strict evangelist preacher but George chose to preach a little differently. As Earth Day nears, it is appropriate to remember a man who spoke up for environmental education, wilderness preservation, and xeriscaping long before any of this was popular. And 95 years later, from his home in Cortez, George Kelly is still at it.

During the First World War, Kelly came to Denver and through a variety of careers expressed his love for the West and its plants. He owned several nurseries and landscaping businesses and was a tireless (and perhaps lonely) promoter of saving water in gardens and using native plants. He was the first full-time horticulturist for the Colorado Forestry and Horticulture Association, which merged into the Denver Botanic Gardens in the early 1950's. He was the first acting director of the Gardens as well.

But the man who won the 1954 'Johnny Appleseed Award' was not content to simply putter around in the garden. Beginning in the 1920's, he spent as much time as he could introducing people both young and old to Colorado's natural areas. As editor of the Denver Botanic Garden's **Green Thumb** newsletter, he described his travels and the need to protect the areas he visited. The newsletter was also a platform for Kelly to express his other ecological opinions. Those of us who are only now discovering recycling, bicycle transportation, composting, and organic produce might well read his 1950 article *Does the organic movement have a lot of truth and a little fanaticism?*

Kelly was a prolific writer who published more than 100 articles in the **Green Thumb** as well as eleven books on Colorado horticulture and nature appreciation in general. *Useful Native Plants of the Four-Corners Area*, a small pocketbook describing 125 plants used by the Indians and earlier settlers for various purposes, and *A Way to Beauty*, a complete book on appropriate landscape gardening for the Rocky Mountains, are particularly notable and useful. A resolution to understand and use Colorado's native plants with the aid of these books would be a great way to celebrate Earth Day.

On my recent trip to Cortez, the continuing strength of Kelly's passion for nature was revealed. Noting that 'It's later than we think', Kelly feels that healing our global environmental crisis can only come through the inspired teaching of nature educators of many kinds. His books provide a means for us all to follow in his lively and positive footsteps.

Ed. Note: If you'd like to write to Mr. Kelly, his address is: Mr. George Kelly, 15126 Colorado Rd. 6, McElmo Route, Cortez, CO 81321.

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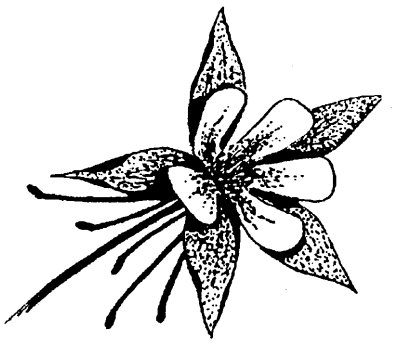
About this Issue

This issue begins our descriptions of field trips for 1990, page 6. A summary of CONPS field trip policy and a reminder about the waiver are also provided with the trip descriptions themselves. If you need a full copy of either the policy or the waiver, contact Jeff Dawson at 722-6758.

We welcome new contributor Rick Brune, whose series on *The Prairie Garden* begins this issue. Rick also promises specific articles on individual plant species useful in prairie landscapes. We especially appreciate his contribution to the ticklish issue of pronunciation of the genus to which little bluestem belongs (see page 10).

Rick can now, we hope, attest to the fact that the process of writing for *Aquilegia* is not too painful for would-be authors. We hope more of you will be encouraged to try it! [For illustrators, the process is even more comfortable!]

In a final (for now) stage in the continuing improvement of *Aquilegia*, we are also pleased to present the first issue to be printed entirely on recycled paper. The Board approved use of recycled paper in January, and we have switched beginning this issue to a 100% recycled stock called Minimal Impact. This paper differs from most other recycled papers in its production, which uses less water, fewer chemicals, and creates one-tenth as much solid waste. The paper is off-white, as it is not bleached, and may vary slightly in color. Please let us know if you have any comments on its readibility, durability, or other thoughts.



recycled paper

Aquilegia

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

Articles from *Aquilegia* may be used by other native plant societies 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 comprised of plant enthusiasts, both professional and non-professional.

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

Schedule of Membership Fees

Life	$250.00
Family or Dual	$ 12.00
Supporting	$ 50.00
Individual	$ 8.00
Organization	$ 25.00
Student or Senior	$ 4.00

Membership Renewals/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:

Peter Root
4915 West 31st Avenue
Denver, CO 80212

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

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Florissant	Mary Edwards	233-8133
Horticulture/ Rehabilitation	Dorothy Udall	482-9826
Membership	Myrna Steinkamp	226-3371
Publicity	Tina Jones	759-9701
Workshops	Bill Jennings	666-8348

CNAP Budget Restored!

On March 15th, the Joint Budget Committee voted 3-2 (really 4 were in favor) to reinstate the Colorado Natural Areas Program (CNAP) budget and keep three full-time employees in the program. Dick Bond (D-Greeley) spearheaded the effort to save CNAP, with the support of Jim Rizzuto (D-Trinidad). Position shifts on the part of Mike Bird (R-Colorado Springs) and Tony Grampsas (R- Metro, Evergreen) reversed the committee's original vote to eliminate the CNAP budget. Both were strongly influenced by the number of calls they received supporting the program.

CNAP staff are profoundly grateful for the support of CONPS members. This demonstrates that the Society continues to be an effective force in conserving Colorado's native floras. The Society's efforts also played a significant role in the landmark BLM Piceance ACEC designations in 1988, which has strongly influenced subsequent BLM planning processes with respect to protection of native plants. The mutual support between CONPS and CNAP is necessary to ensure preservation of unique and important plants and habitats.

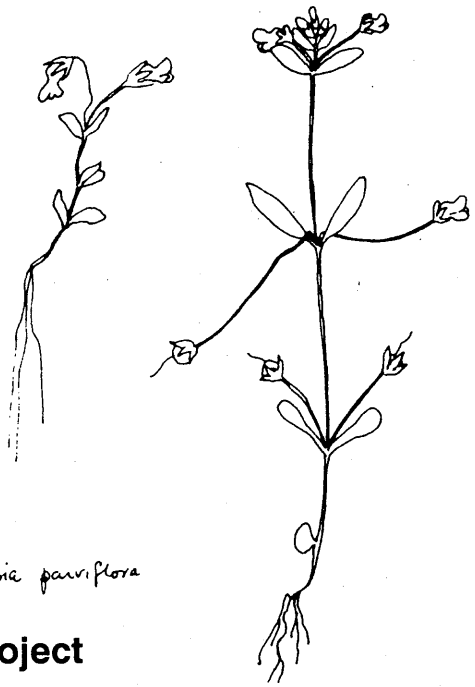
Many thanks to the CONPS members who responded with calls of support. And many thanks are also due to Sue Martin of the Conservation Committee for the prompt notification!

Thanks Team!

Now... perhaps a thank-you call or letter to Mr. Bird and Mr. Grampsas is in order.

Last Call!!

Check your mailing label on this newsletter... if it says 'Paid thru 1989', this is the last newsletter you will receive! Please send your dues and membership questionnaire to CONPS, PO Box 200, Ft. Collins CO 80522.



Collinsia parviflora

Park Cooperative Restoration Project

Dorothy Udall

Many agencies and individuals are concerned with the need for revegetating disturbed areas. The usual techniques involve planting either seed or started plants which often are not native to the site. Little study has been conducted to determine the natural processes of revegetation from seeds or roots which may remain in the soil from the original vegetation, or which may migrate into the site from adjacent undisturbed areas, unassisted or unimpeded by the efforts of man.

During 1989 five CONPS members have been working with Richard Keigley (Ecologist at Rocky Mountain National Park) to investigate this situation. The study site is located on a 10-acre dry south-facing slope on South Deer Ridge Mountain. The disturbed area was previously occupied by an inholding house which was removed in 1988. Soil was brought in from the Longmont area and the site was graded to conform with adjacent slopes.

Every two weeks during this past summer, collections of seedlings, flowering plants and seeds were made in the disturbed and nearby undisturbed areas. About 140 species of plants were found, seven of which were new to the park catalog, and some at least were probably brought in with the imported soil. These collections will be used as a baseline for future studies to determine what comes up in the disturbed area. Other studies will be undertaken to determine what natural factors influence rate of revegetation and plant succession and what treatments may enhance the process.

Another aspect of the study involves control of invasive weedy species, often a problem in revegetation efforts. A CSU weed specialist is being consulted on this concern.

A technique for separating seeds from the soil has been developed and seeds from the summer collection are being photographed in order to be able to identify seeds in soil samples or surface collections.

It is expected that this cooperative project between CONPS and RMNP will continue over several years. The study may provide a model for cooperative research between CONPS and other elements of the Park Service in Colorado. ♣

Chapter News and Schedules

Boulder Meetings

April 10th, 7:30PM: *From Winter Wheat to Western Wheat(grass): The Future of Gunbarrel Hill* The City of Boulder Open Space program has undertaken an exciting prairie restoration project on Gunbarrel Hill. Using federal Conservation Reserve Program funds in coöperation with private agricultural lessees, the city intends to remove from crop production portions of city open space on Gunbarrel Hill, with the land to be returned to a native prairie condition. The program will be presented by Dick Antonio, City of Boulder Open Space Agricultural Manager. This will be a joint meeting with the Boulder Co. Nature Association at the Foothills Nature Center, 4201 N. Broadway in Boulder.

May 8th, 6PM: *Picnic and Hike at Beech Open Space* Bring a sack supper for the final meeting of the season; we'll socialize and exchange ideas for our chapter. This new county open space is known for its Niobrara limestone and shale outcrops, home of the double bladder-pod, *Physaria bellii*. We'll also see *Astragalus tridactylus* and *Townsendia hookeri* and several species of cacti. To reach Beech open space from Boulder, head north on 36 and take a right on Neva Road across from Beech Aircraft. The picnic area is immediately to the right and is covered in case of wet weather.

Boulder meetings are held at 7:30 PM at the Foothills Nature Center, 4201 No. Broadway, Boulder, unless otherwise specified. Call Margie Wortzman (494-1640) or Allison Peck (443-0284) for additional information on chapter activities. ♣

Yamparika Events

Sunday March 11, 3PM: Mr. Paul Gilbert, retired wildlife officer, Colorado Division of Wildlife, and long-time CONPS member from Hot Sulfur Springs, will be guest speaker at our monthly program. His topic is *Native American Use of the Native Flora*; at the Meeker United Methodist Church, 8th & Park, Meeker.

Saturday, April 21, time TBA: Chapter/Society field trip to the Dudley Bluffs Natural Area on Piceance Creek to catch the threatened Dudley Bluffs bladderpod (*Lesquerella congesta*) in bloom and maybe even the Piceance twinpod (*Physaria obcordata*). These species were among those discussed by Rusty Roberts at the February meeting of the chapter.

Sunday, May 13, tentative: Chapter field trip to Dinosaur National Monument out of Dinosaur, Colorado, including a presentation from Park Service personnel on the floristic survey of the Monument recently completed by Colorado Natural Areas Program staff.

Memorial Day Weekend, May 26-28: Hosting CONPS field trip to Rio Blanco County Rare Plants and Natural Areas. Trip will start at the Rangely Museum in Rangely, CO. See trip description, page 6.

For information about this chapter or final details of the activities listed above, please call Reed Kelley (878-4666) or Jean Herron, chapter secretary-treasurer (878-4862). ♣

San Juan Chapter News

The San Juan Chapter met on February 22 for a program on relationships between soils and aspen regrowth. John Murray and Doug Cryer of the Soil Conservation Service presented their research on "seral" versus "stable" aspen soils. This subject is especially of interest to Ouray and Telluride area members concerned about controversial clear-cutting of aspen. Cryer and Murray contend that, contrary to Forest Service doctrine, there are sites in western Colorado where aspen is, if not *climax*, at least stable rather than a transitional stage toward an eventual spruce-fir forest. They are beginning a five-year study which should help in identifying factors for determining whether or not specific stands should be harvested, and predicting the future growth of sites that are cut.

Plans were also made for spring programs. On March 1, members planned to meet for a work party to paint the chapter's new room at the Ouray Historical Museum. This summer, common native plants will be collected for a mini-herbarium where visitors will be able to compare and identify the wildflowers they encounter while hiking and four-wheeling in the San Juans.

On March 15th, the chapter will meet at the new Ridgway Recreation Area to review plans for plantings in the park with the landscape architect.

In late April (date to be set later), members will spend a day at the Wacker Ranch near Montrose, now managed by The Nature Conservancy. They will help search for, map, inventory and monitor populations of *Penstemon retrorsus* and *Lomatium concinnum*.

The May program will be a field trip to Escalante Canyon near Delta. This trip is offered as a scheduled Society function described on page 6. ♣

Denver Chapter Activities

April 25th: Topic to be announced

May 23rd: Election of Officers and pot-luck supper; details later

Meetings are at 7:30 PM in Classroom A at the Denver Botanic Gardens unless otherwise specified. Contact Carol Dawson at 722-6758 for more information.

End of the Season Winter Workshops

The workshop season is extending into April, and there may still be an opportunity to join in the last workshops of the season. Cancellations may create openings up to the day of the workshop, so contact Bill Jennings at 666-8348 if you are interested in:

Colorado Conifers

Saturday, April 7th, 9AM to Noon
Leader: Jim Trammell
at Chatfield Arboretum, SW Denver

Adopt a Rare Plant

Saturday, April 21th, 9AM to 4PM
Leaders: Neely, Naumann, and Jennings; at Foothills Nature Center in Boulder

Full workshop descriptions were printed in Vol. 14, No. 1.



'Undesirable Plants' Defined for Management

Bryan Pritchett, Colo. Weed Mngt. Assoc.

On January 19, the Colorado Undesirable Plant Management Act was introduced to the Colorado State Legislature. The bill has become more widely known as the 'Weed Law' or House Bill 1175 (HB1175).

This piece of legislation states that it is the duty of everyone in this state to manage undesirable plants on property. The bill declares several plants as economic and environmental threats to Colorado. These include leafy spurge (*Euphorbia esula*), and three species of knapweeds: spotted (*Centaurea maculosa*), Russian (*C. repens*), and diffuse (*C. diffusa*). The bill requires that local governments adopt an integrated undesirable plant management program for at least these weeds by January 1, 1992. Local governments may also include other weed species in their programs.

The 'Weed Law' was drafted by the Colorado Weed Management Association (CWMA), a coalition of private and public organizations and individuals interested in managing and minimizing weed impacts on Colorado's agriculture and natural resources.

The bill passed unanimously out of the House Agriculture, Livestock and Natural Resources Committee, and on February 19th was passed out of the House by a vote of 60 in favor, 5 opposed. The Senate Agriculture Committee tabled the bill on February 27th, and no further information was available at press time.

Much discussion has centered on the definitions describing undesirable plants and how they may be interpreted by local governing bodies wishing to add plants other than leafy spurge and knapweeds to their weed control programs.

The bill's primary sponsor, Representative Lewis H. Entz (R-Hooper), has agreed to change these definitions to better represent the intent of HB1175. For example, the term 'exotic plant' has been removed from the text and replaced by the term 'alien plant.' An 'alien plant' is further defined by the bill as "a plant species which is not indigenous to the state of Colorado." It is felt that this will ensure no native plants can be incorporated into any local government's weed management program.

If you have further questions or concerns regarding the law or its intent or purpose, you can call Bryan Pritchett, CWMA President, at 278-5986, or Jim Borland, CONPS President, at 329-9198. ♣

CONPS Field Trip Policies

Just a reminder of the guidelines for participation in Society trips. Contact Jeff Dawson if you need a copy of the full text.

1. Plant collecting is forbidden on CONPS field trips, with two exceptions:

   (1) Collecting for scientific study (with the appropriate permit).

   (2) Instructional purposes by trip leader, not including rare plants.

2. Car-pooling and ride-sharing are encouraged on CONPS trips. All drivers who provide rides to others will graciously accept payment on the scale listed in the March/April 1988 issue.

3. Pets are not permitted on field trips.

4. Field trips are designed primarily for adults, unless state otherwise.

5. CONPS's purpose is to promote appreciation and preservation of our flora. Use it lightly. ♣

Field Trips for 1990

Escalante Canyon

Saturday, May 19
Leader: Jim Ferguson (BLM, Montrose)

Escalante Canyon is a BLM ACEC (Area of Critical Environmental Concern) located near Delta in western Colorado. Outstanding botanical features include Uinta Basin hookless cactus, a listed endangered species; hanging gardens of *Aquilegia micrantha*, *Epipactis gigantea*, and *Mimulus eastwoodiae* on canyon walls; Grand Junction milkvetch (*Astragalus linifolius*), a candidate species for listing as endangered; and several Colorado listed plant communities which are rare in Colorado, such as the alkali cordgrass association, or which are in virtually pre-settlement condition.

This area also has interesting geological and historical features, which will be discussed on the field trip. This area is located on a tributary of the Gunnison River, and swimming will be available at potholes in the river. A trail leads into the nearby Dominguez Wilderness Study Area, for those interested in a hike after the field trip.

Participants will meet at the roadside park located about 10 miles northwest of the Delta city limits on Highway 50. This site is well-marked as the Escalante turnoff, with an interpretative sign, picnic tables, and toilet facilities, and is located immediately adjacent to the highway. The meeting time will be 10:00 AM. Travel will be on a gravel county road, and normal passenger cars will be appropriate. Primitive camping is available in the canyon for people arriving early, but the area may be heavily used, and no potable water is available in the canyon. Delta offers a KOA and several motels.

Bring the usual, including a hand lens, botanical keys, a lunch, water, and insect repellent. Suggested advance reading is Muriel Marshall's *Red Hole in Time*.

For more information and for reservations, call Peggy Lyon at (303) 626-5526. This trip will be the May program for the San Juan chapter, and a regular CONPS field trip. ♣

"Have you ever seen a stud pile?" or Rio Blanco County rare plant and natural areas field trip

Memorial Day Weekend, May 26-28

Leaders: Rusty Roberts, plant specialist and range conservationist, White River Resource Area, BLM; Reed Kelley, president of the Yamparika Chapter and Chairman of the Colorado Natural Areas Council.

This field trip will begin at 10:00 AM, Saturday, May 26th in Rangely, CO (292 miles from Denver), at the Rangely Museum located on the west end of town. The first site visited will be the Raven Ridge Natural Area/BLM Area of Critical Concern. This is a north-south trending exposure of the Green River Formation which supports several species otherwise not found in Colorado. Included are Graham's penstemon (*P. grahamii*), White River penstemon (*P. scariosus albifluvis*), Rollins cat's-eye (*Cryptantha rollinsii*), ephedra buckwheat (*Eriogonum ephedroides*), *Parthenium ligulatum*, and *Phacelia incana*.

In the late afternoon we will visit the Greasewood Creek Natural Areas to look at Uinta gilia (*G. stenothyrsa* and pinyon-juniper, Great Basin grassland, and lowland sage communities. The group will return to the Rangely Museum for an evening barbeque. Motel accomodations and camping facilities are available in Rangely for Saturday night.

Sunday, May 27, will begin with a drive over Calamity Ridge (through wild horse country with stud piles!) to the South Cathedral Bluffs Natural Area. This is a tremendously scenic locale overlooking Douglas Creek which supports populations of Piceance bladderpod (*Lesquerella parviflora*), sun-loving meadowrue (*Thalictrum heliophilum*), and Utah gentian (*Gentianella tortuosa*) as well as more Great Basin grassland.

After lunch on Sunday, the group will drop down onto Piceance Creek to visit the Dudley Bluffs Natural Area, and see the federally threatened Dudley Bluffs bladderpod (*Lesquerella congesta*) and Piceance twinpod (*Physaria obcordata*). From Dudley Bluffs, we will drive up Piceance Creek to the Deer Gulch Natural Area. Here we will walk into an old growth Douglas fir stand and investigate rare Utah fescue (*Festuca dasyclada*) and oil shale columbine (*Aquilegia barnebyi*). The day will end with a Yamparika Chapter sponsored get-together in the Meeker area. Camping and motels are available at Meeker.

Monday, Memorial Day, is open for now. Depending on the interests of the participants we could visit such Meeker phenomena as the White River Museum, Sleepy Cat Resort, or even Trappers Lake in the Flattops Wilderness Area.

Bring lunches and water each day. Regular cars will be appropriate. For more information and to register, call Reed Kelley at (303) 878-4666, Rusty Roberts at (303) 878-3601, or Jeff Dawson (field trip chairman in Denver) at (303) 722-6758. This trip will be limited to about 20 participants. ♣

Southeastern Colorado Canyonlands

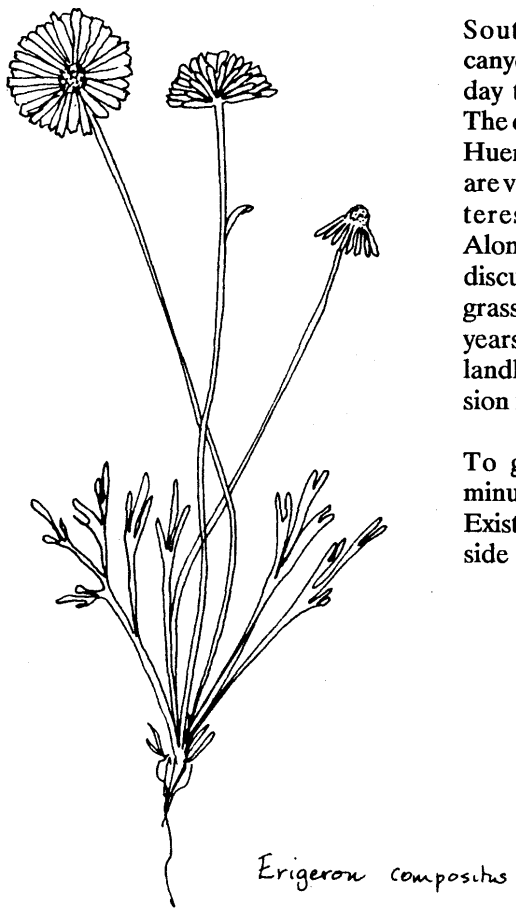
Saturday, June 9, 1990
Leader: Rich Rhoades, District Conservationist, Soil Conservation Service

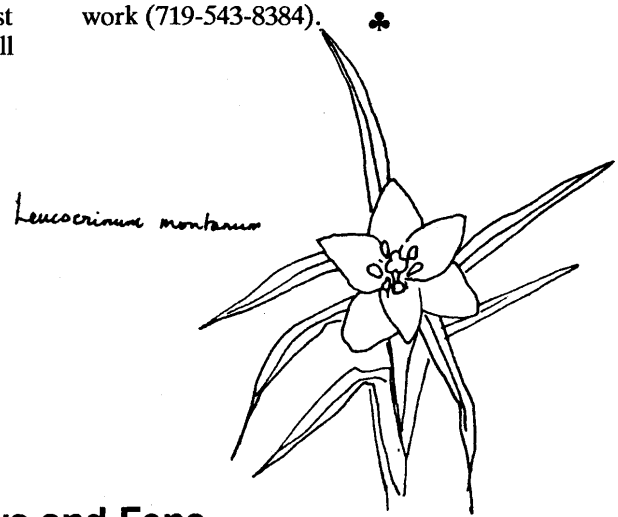
Southeastern Colorado sandstone canyonlands will be the subject of a one-day tour to be held Saturday, June 9. The canyonlands, particularly where the Huerfano and Cucharas Rivers meet, are very scenic and should have some interesting plant species to identify. Along the way we will stop to view and discuss Conservation Reserve Program grass seedings that were established two years ago. All stops will be on private landholdings that have given us permission for this one time only.

To get there, travel on I-25 thirty minutes south of Pueblo to the Graneros Exist (No. 71). We will meet on the east side of the exit at 9:00 AM. We will return to our starting point. If you plan to leave a vehicle and ride with someone else you can do so at the Graneros Exit.

Bring a lunch and water with you. Two wheel drive pick-ups will be sufficient. We will travel on gravel roads and acress rangelands with trail roads. Small pick-ups and high-clearance cars may find the going rough as the trail roads were made by full size pick-ups. We plan to return to Pueblo by 6:00 PM. There will be moderate hiking involved.

You can register by contacting Rich Rhoades at home (719-545-4352) or at work (719-543-8384). ♣





Illustrations by Ann Cooper

Poudre and Laramie River Meadows and Fens

Saturday, June 30, 1990
Leaders: Dieter Wilkin and Jan McKee

This trip will visit several wet meadows and fens along the upper Poudre and Laramie River drainages. Depending on the season we anticipate visiting populations of *Lilium philadelphicum* (wood lily), *Lomatogonium rotatum* (marsh felwort), *Utricularia* (bladderwort), and *Populus balsamifera* (balsam poplar), among many other species expected to be flowering.

This trip will also include a visit to Boston Peak fen, a 10,000 year old glacial kettle remnant, which supports *Salix candida*, *Carex livida*, *C. limosa*, and *C. diandra*, taxa that are relatively rare in Colorado. If time permits we also will visit populations of *Sisyrinchium palidum* and *Penstemon laricifolius* (larch leaf penstemon) along the Laramie River. This trip will include scenic views of the Rawah Wilderness and the opportunity of returning home either via Wood's Landing and Laramie, or across the scenic Sand Creek Pass Road to Cherokee Park or Red Feather lakes.

Participants will meet at 9:00 AM at the **Narrows Picnic Site** along Highway 14, about 20-21 miles west of the junction with US Highway 287 northwest of Fort Collins (formerly Ted's Place). This USFS picnic site is approximatley one mile past the north end of the Big Narrows Gorge. Those desiring to camp nearby should plan to arrive early on Friday, June 29. Several USFS campgrounds are nearby, including Mountain Park and Kelley Flats. Motel accomodations are available in Fort Collins, approximately 1.5 hours from the meeting site.

Reservations are required: Call Dieter Wilken to sign up, at 303-491-6036 (days) or 303-482-2283 (nights). We **strongly** recommend a change of footware or waders for several of the site excursions. In accordance with CONPS policy and both USFS and Colorado Division of Wildlife regulations in effect at most sites to be visited, no plant collecting will be permitted. ♣

The Prairie Garden

Rick Brune

Viewing the lawns of exotic grasses (Kentucky bluegrass, fine fescue, perennial rye, etc.) surrounding us, it is easy to forget that our cities, suburbs, and lawns east of the foothills were once attractive prairies. A prairie remains an appropriate landscape element. Using our imagination, and depending on circumstances, a little or a lot of work (really a labor of love), we can create a landscape resembling that lost prairie. Once established, our homegrown prairie will result in a great reduction in mowing, fertilizing, and watering while providing many enjoyable hours of investigation and observation.

Although there is controversy about whether the shortgrass prairie is a climax ecosystem or a disclimax caused by overgrazing, the shortgrass prairie is a very appropriate plant community to try to recreate here. Seed availability makes the creation of either a blue grama-buffalo grass prairie (*Bouteloua gracilis- Buchlöe dactyloides* Shortgrass Prairie is the formal plant association) or a blue grama prairie the most practicable types. These two prairie types are named for the dominant plants which give them their overall character. Both are well adapted to most eastern Colorado soils except aeolian (wind-deposited) sand or gravelly or very rocky soils.

Blue grama and buffalo grass are easily seeded into realistic-looking prairies. These shorter grasses fill in quickly and suppress weed growth. Many species of wildflowers grow very well in this shortgrass environment.

Dozens of other prairie types occur in Colorado. Some, such as tallgrass prairies, climax sandhills prairies, and loess prairies, are on the verge of extirpation here. Most of these other prairies contain attractive taller elements which conservative Colorado neighborhoods may not be ready to accept. Use them in smaller areas at first. There is always, for example, that too-big vegetable garden, part of which could become a tallgrass prairie project! Tallgrass prairie plantings are now increasingly accepted landscape elements in yards of the Midwest – so with time perhaps there's hope.

Depending on our sense of perfection, tallgrass prairie species (for example, big bluestem, *Andropogon gerardii*, and indiangrass, *Sorghastrum nutans*) need to be set out as individual plants if we want to grow them in small areas in realistic climax-approximating densities. The spaces between individual tallgrass plants are open to weeds for several years until the grasses mature and shade the ground. At this stage, a tallgrass prairie is probably more resistant to weeds than a shortgrass prairie. The elegant beauty of the tallgrasses and their attractive fall foliage should earn them a place in every garden.

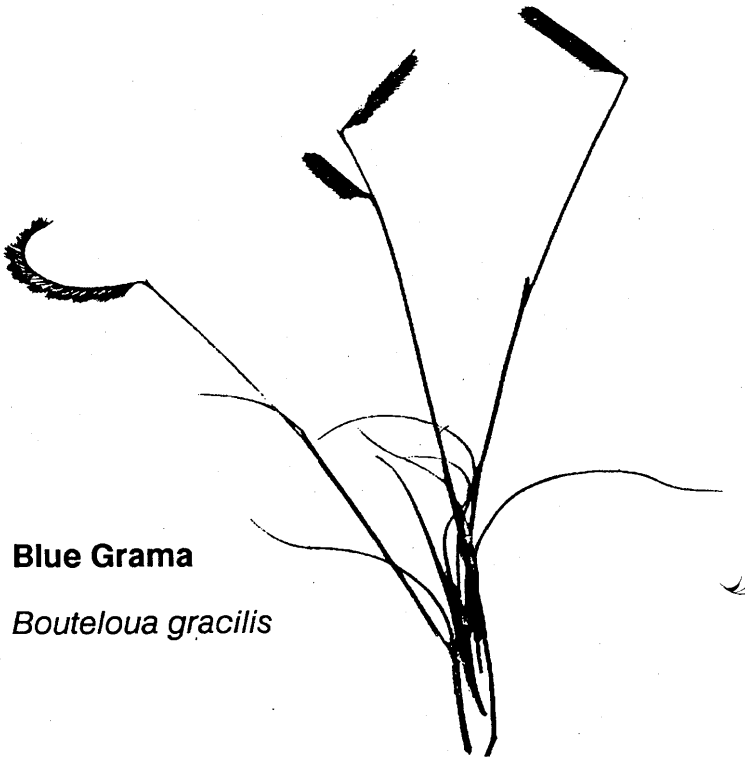
Prairies dominated by mid-grasses (about knee-high) usually have large quantities of needle grasses such as needle- and-thread (*Stipa comata*). The very sharp seeds of the Stipas greatly reduce their desir-ability in the prairie garden if the gardener enjoys walking bare-foot in the grass. Stipas are a desirable addition, however. Try some New Mexico feathergrass (*Stipa neomexicana*).

The prairie garden is only one imaginative step away from planting a buffalo grass and/or blue grama lawn. Detractors of buffalo grass lawns complain that this species doesn't stay 'green' yearround. Neither does the prairie garden. However, many of these same detractors live in a temperate climate because they *enjoy* the other changes the seasons bring – fall colors in leaves, spring bulbs, skiing, etc. Our prairie landscape doesn't just turn brown in fall and winter. It becomes every warm and cheerful shade of yellow, gold, bronze, maroon, purple, and red.

In short, a golden winter prairie provides a mental lift during winter that you can't get from a dingy-green traditional lawn. On wintry nights, your tawny prairie will glow among the dark holes of neighboring yards.

Our homegrown prairie will never be a true replica of the real prairie. John Weaver, in *North American Prairie*, states that

> "Climax prairie is the outcome of thousands of years of sorting out of species and adaptations to the soil and climate. The vegetation represents not only an evaluation of the present environmental conditions but also those of the past. It is exceedingly complex and remarkably stable."



Blue Grama

Bouteloua gracilis

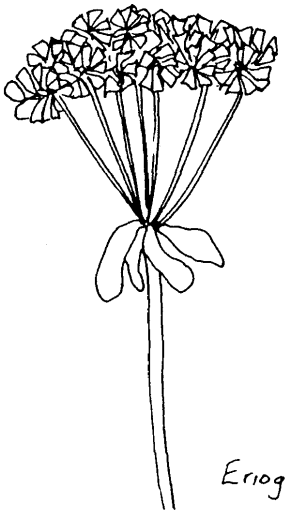
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When we plant our prairie, we can take advantage of some of those thousands of years of sorting out, but we can't recreate the vegetative history in the soil, climate, and the plants and effects of herbivores, carnivores, large and small, that are part of the real prairie. It's infinitely better to preserve existing prairie than to try to recreate it.

What can we expect from our homegrown prairie? Certainly expect the frustrations of weeding that are part of any new garden, but also expect the satisfaction of watching weeds succumb to the vigor of prairie plants. Expect the disappointment of seeing your hard-earned seedlings damp off, but also the thrill of coming home from an evening stroll to the fragrance of the evening-blooming sand verbena (*Abronia fragrans*) permeating your house and yard.

We will anxiously wait three years for the first spectacular bloom on our bush morning-glory (*Ipomoea leptophylla*), and wonder why we only planted one. We will learn that there are hundreds of prairie plants we can use in the landscape, each fascinating in its own right. **Most important**, we will be educating people to appreciate and conserve Colorado's native flora. ♣

This introductory article is the first in a series in which Rick will share the trials and joys of prairie gardening. Look for The Prairie Garden: Getting Started *in the next issue of Aquilegia.*



Eriogonum umbellatum

CONPS Supports Land Transfer

Rick Brune

The US Forest Service, Farmers Home Administration (FmHA), environmental organizations, local farmers and ranchers, and interested citizens discussed the transfer of FmHA land to the Pawnee National Grassland at a public meeting in New Raymer, Colorado on January 18, 1990.

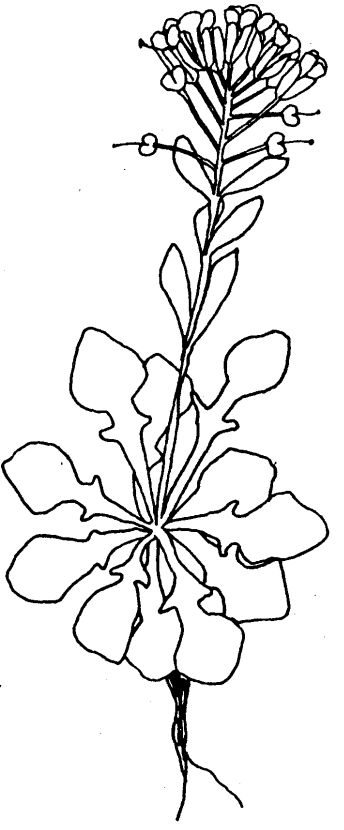
FmHA currently holds 5060 acres of foreclosed farm and rangeland on the Pawnee National Grassland. The Forest Service wants to transfer 3160 acreas of this land to the National Grassland. This transfer would be done without cost to the Forest Service.

The land proposed for transfer is adjacent to current Forest Service owned land. Implementing the proposed transfer will help reduce the unmanageable checkerboard ownership pattern of public and private land on the eastern half of the Pawnee. A more consolidated ownership pattern will also allow greater flexibility for trying different grazing systems in an attempt to improve the quality of the grasslands. Two areas of wetlands with potholes are included in the proposed transfer. The Forest Service believes it can improve the quality of these wetlands and provide better wildlife habitat in the process.

At the public meeting (no public hearing is required), testimony by area residents was heatedly against the creation of additional public land on the Pawnee. Many viewed this as an attempt by the Forest Service to acquire all private land on the Pawnee and force local farmers and ranchers out of business. Others were opposed on the grounds that there is already far too much government intervention in their operations. Some preferred eliminating the National Grasslands and all public land in general.

Rick Brune and Sue Martin attended the meeting on behalf of CONPS. They presented statements supporting the transfer of additional land to the Forest Service. Rick encouraged the FmHA to investigate possible land exchanges which would eventually result in the transfer of more native or revegetated prairie to the Forest Service. As far as we can determine, the proposed transfer will have no real adverse effect on any ranching or farming operation. The land proposed for transfer will be available for grazing at the usual below-market rates.

Other environmental groups speaking in favor of the land transfer were the Colorado Environmental Coalition, Denver Audubon Society, and Greeley Audubon Society. The Colorado Native Plant Society has sent a letter in support of the land transfer to the Forest Service and FmHA. Unfortunately, by the time you read this, the deadline for public comment will have passed. The final decision will be made by FmHA in Washington, D.C. ♣



Physaria vitulifera

Little Bluestem in the Landscape

Rick Brune

Little bluestem (*Schizachyrium scoparium**) is an ornamental native prairie grass that deserves much more use in our landscapes. Once you have seen the beautiful maroon to red fall foliage, I think you will be convinced of the value of this warm-season perennial.

Although many plants add a pleasant touch of fall color to our yards, the first snowfall usually removes the colorful leaves, leaving a scene dominated by greys. Only a few plants provide color in the form of leaves and stems during winter.

The red stems (culms) and leaves of little bluestem will add a cheery winter accent to any yard or garden. Furthermore, the red color is long-lasting, fading little during winter. The stiffly erect stems are resistant to being flattened by wind or snow. Peak fall color is reached in mid-October, yet in mid-February mine looks almost as good as it did four months ago. I expect it to look good at the end of March, too.

Not only are the leaves and stems very attractive shades of red, but they are topped by an inflorescence (flower stalk) made up of many hairy spikelets which are strikingly silver-white when backlit by the sun. In an indoor dried arrangement, or in a vase by itself, little bluestem is in a class with the best. Indoors, the color lasts for years, which is good because your friends will probably be harvesting your outdoor crop for their own use!

Little bluestem grows in every state except California, Oregon, Washington, and Nevada. It reaches its greatest abundance in states formerly covered with tallgrass prairie. The red colors of the tallgrass prairies in fall are due in large part to the presence of little bluestem. In Colorado, it is a dominant plant in little bluestem mixed prairie, little bluestem loess prairie, big bluestem (*Andropogon gerardii*)–little bluestem xeric tallgrass prairie, and it is sometimes an important part of the understory in piñon-juniper woodland. It typically grows on gravelly hill crests or exposed rocky slopes. It may also be found on heavier soils where additional moisture collects.

In a mesic tallgrass prairie environment, little bluestem reaches a height of 3.5 feet. On gravel breaks, it is usually 1.5 to 2.0 feet tall. The latter height is typically reached in the home landscape with minimal supplemental watering. Because this is a bunchgrass, its lushness may be controlled by varying the amount of water it receives without having rhizomes sprouting in undesirable places.

Little bluestem is definitely not a turfgrass. It is easily damaged by trampling and should not, therefore, be planted where it will be walked on. It decreases with overgrazing, probably because removal of the growing tip will stop growth for the season. Similarly, it should not be mowed too often during the growing season.

During the drought of the 1930's, large areas of little bluestem prairie died. Many 'dead' plants were later to provide an example of the amazing resiliency of prairie plants. John Weaver of the University of Nebraska reported in his classic work *North American Prairie* that little bluestem began to break its long drought-induced dormancy after only one year of good rainfall. He reported "In 1943 it revived in certain places on dry south slopes where it had not been seen since 1934. At first only a few stems appeared even from large bunches. Often the remainder of the crown was dead."

Little bluestem is easily grown from seed. Moist stratification at 5°C (41°F) is recommended but I find that I get all the plants I need without stratifying. Seed should be planted about 0.5 inches deep with the soil gently firmed over the seed to insure good contact between the fluffy seed and the moist soil. Daytime temperatures around 27°C (81°F) followed by nighttime temperatures around 17°C (63°F) are reported to enhance germination. Seed germinates within one week but growth is very slow and plants may be only one inch tall after six weeks.

Newly seeded little bluestem is very fragile, often barelly attached to the ground. Plants remain only two or three inches tall for most of the first growing season. Late August or early September often sees a surge of growth and some first-year bloom, an indication that the slow-growing plants of summer were putting energy into the root system to ensure survival before risking energy for top growth and reproduction. Second-year plants are fairly robust. Plants should be watered enough the second and third years to prevent them from going dormant (or dead). After that, they should be able to take whatever our climate dishes out. Like other prairie plants, it prefers a sunny exposure.

Little bluestem seed is available from Arkansas Valley Seed Co. in Denver. As of February 1990, their price for native seed was $4.98 per pound. ♣

**Schizachyrium* is derived from the Greek *schizein*, to split, and *achyron*, chaff, and refers to the split palea in the type species. Schizophrenia and schizoid are derived from the same Greek root and refer to split personality disorders. The preferred pronunciations are: shiz-a-kirium or skiz-a-kirium.



Shrubs in Season

Sally White

Wildflowers may charm the spirit, but shrubs and grasses are the matrix of the foothills and plains environments. At this time of year, the mosaic of shrubs provides a particular fascination. At other seasons, the foothills shrublands may seem a jumbled or uniform matrix, but a pattern becomes evident in spring as shrubs leaf out and flower in response to different climatic signals. Botanists and other plant specialists have long used the concept of cool- and warm-season grasses. Here's a brief look at the seasonality of our native shrubs, based on my observations in the foothills at the base of Mt. Falcon.

First to show themselves are the wax currants (*Ribes cereum*): They will suddenly appear bright green on the distant hillside while all else remains lifeless. Other currants, such as the golden currant (*Ribes aureum*), are also early, but less obvious in this landscape. In the course of a few more weeks, the mountain mahogany (*Cercocarpus montanus*) begins to turn gray-green, sorting itself out sharply from the skunkbush sumac (*Rhus trilobata*) sharing the hillside. Eventually the sumac follows suit, its brownish-purple clumps first developing a yellowish cast as it flowers, then fully leafing out. In summer, these shrubs blend together again in a range of greens. A closer look at some of the species involved suggests that their seasonal appearance is related to broader geographic affinities.

The skunkbush sumac is last to show leaves in spring, first to show color in fall – clearly cooler temperatures are not hospitable to it. Our other sumacs behave similarly, none seeming to depart from this basic preference for warmth. All are members of the genus *Rhus* in the Anacardiaceae, the Cashew family. This plant family is dominated by tropical species, with only a few temperate representatives. These few, if we can judge by their phenology, retain their fondness for tropical regimes even though they thrive here. Their close relatives, after all, are the cashews, pistachios, mangoes, and other tropical species. Even poison ivy follows the trend, being slower still to leaf out than the skunkbush.

Many of our foothills shrubs belong to the Rose Family, a family perhaps too big and widespread for generalization, but one most of us would probably associate with temperate situations. Our local species seem to come along just behind the currants as spring progresses. Now, in mid-March, serviceberry, mountain mahogany, pincherry, chokecherry, and wild plum are content to wait a while longer before showing themselves.

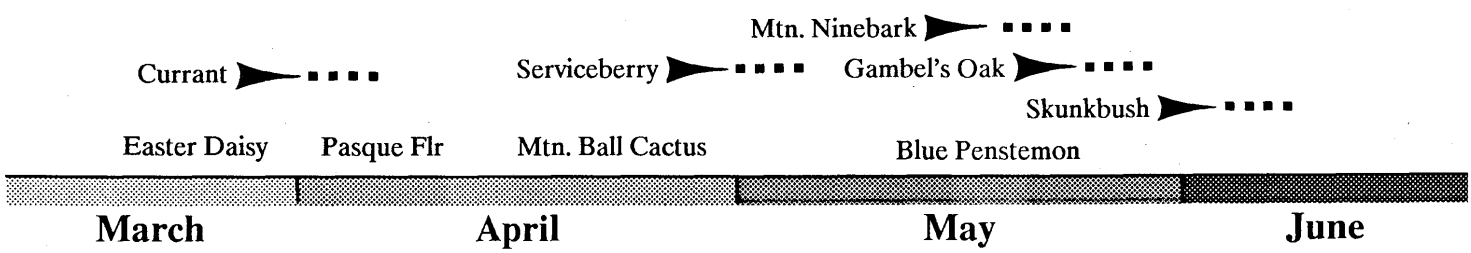
When the currant leaves are fully mature, and the serviceberry (*Amelanchier alnifolia*) is in full leaf and flower, the Gambel's oak still waits. The Fagaceae is also largely a subtropical family, and the genus *Quercus* has strong southern affinities. Gambel's oak (*Quercus gambelii*), the only member of the family in most of Colorado, reaches its present northeastern limit only a mile or two from where I watch its development. In mid-May, the flower buds are just fattening, the leaf primordia expanding toward visibility. It displays no hint that next week is officially spring.

This late habit is shared with other genera as well, and even has a predictive value, at least as a gross generalization. Having made the connection, I thought of the buckbrush (*Ceanothus fendleri*) on up the trail, guessed it was also a warm-season shrub and went to check its progress. In early May, it remained completely lifeless in appearance, behind even the sumacs. True to our generalization, the Rhamnaceae, a "widely distributed" family of 50 genera, is "commoner in warmer regions" (Porter, 1967).

And what of our *Ribes*? The family to which it belongs, the Grossulariaceae, has about 130 species "in temperate and alpine regions" (Porter, 1967). This seems to confirm the northern affinity suggested by the extremely early appearance of its leaves and flowers. As I write this in mid-March, it's just beginning to show green in its buds. They're iced over today, but they're green!

Such characters are not very useful in taxonomy, but they do help those of us interested in the behaviors of plants to understand and speculate on both genetic and geographic relationships among species. And they do aid basic identification, especially for non-botanists, because they are such obvious characteristics. Working within a relatively limited area, with a manageable shrub flora and a somewhat mixed climatic message, the concept of warm- and cool-season shrubs has much to recommend it. With or without a working knowledge of plant geography, simple observation enables us to recognize that the oaks and sumacs respond to a different signal, one carried on a warm wind from the south.

Porter, C.L. 1967. *Taxonomy of Flowering Plants.* W.H. Freeman & Co.



Sketch of approximate sequence – Based on 1989, at ~6000-7000 ft.

Calendar Overview

Additional information about calendar items will be found throughout this issue.

1990 Workshops

April 7th — **Colorado Conifers**

Jim Trammell

April 21th — **Adopt a Rare Plant**

Neely, Naumann, Jennings

Other Events

Chapter Activities — **Page 4**

Denver Meetings: April 25th, May 23rd

Boulder Meetings: April 10th, May 8th

Yamparika Trips: April 21, May 13

1990 Field Trips

May 19 — **Escalante Canyon**

Leader: Jim Ferguson

May 26–28 — **Rio Blanco Rarities**

Leaders: Rusty Roberts, Reed Kelley

June 9 — **Southeastern Canyons**

Leader: Rich Rhoades

June 30 — **Poudre/Laramie Fens**

Leaders: Dieter Wilkin, Jan McKee

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