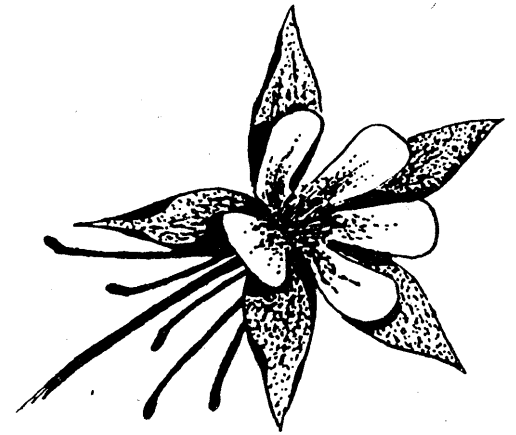


Aquilegia



Newsletter of the Colorado Native Plant Society

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

Volume 19 Number 3

July — September 1995

Friends In Low Places...

Jim Von Loh
Colorado Natural Areas Program

This article first appeared in the Colorado Forestry Association Newsletter Vol. 14 No. 3 and is reprinted here with permission.

Part 1. WILLOW ESTABLISHMENT

One of the key natural elements in embankment stabilization along streams and reservoirs is the armoring provided by the roots of willow and other wetland/riparian plants. The top growth of shrubs and small trees also contribute to the structural values of wildlife habitat and provide shade and cover for any fisheries present. Establishing species of willow is a very simple operation, requiring knowledge of the ground water elevation and fluctuations, using the techniques described below.

Dormant cuttings from willow shrubs are selected from stands growing near the site. Care should be taken to select only healthy stems (no cankers, hail damage, scale insect infestations, etc.) while plants are dormant (late winter/early spring). Willow cuttings are prepared by removing mature stems (1/2 to 7/8 inch in diameter) from selected shrubs with lopping shears, trimming all lateral growth with a pruning shears and cutting the stems to lengths of 18 to 30 inches. These cuttings are

immediately placed in a container with the lower six inches in water, then transferred directly to the introduction site.

Willow cuttings do best when planted so only the lower portion (12 to 24 inches) of the stem is in contact with the ground water table. Do not plant cuttings in areas where soils are under water or are saturated at the surface through the growing season. Depending on the type of soil, cuttings could be pressed directly into the soil, or inserted into guide holes made by spikes constructed from 5/8-inch steel reinforcement bars. Approximately four to six inches of the stem should remain exposed above the ground surface. Following insertion, the soil should be tamped around the cutting.

Willow cuttings are probably most successful when planted vertically into the

soil. However, planting at an angle of up to 45 degrees is acceptable, as long as the ground water contact with the lower stem portion is maintained during the growing season. Planting densities should be determined by need, on a site-specific basis, but a good rule of thumb is placing cuttings two to four feet apart. It is often wise to plant additional cuttings, since some may not survive. Should monitoring show this to be true, it is very simple to replace willow cuttings the following spring, although the ground water elevations may also require re-evaluation, to determine if adequate moisture is available to support the cuttings.

New growth from willow cuttings may be selected for preferred forage by elk and deer. For the most part, no long term ill effects result, but "bushier" shrubs will result from this type of use. The important part of the plant for stabilization is the root

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1995 Annual Meeting—Don't Miss It!

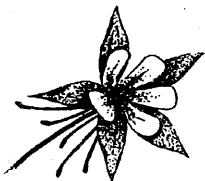
Arctostaphylos uva-ursi
Artist: O.V. Kirkton

The Colorado Native Plant Society Annual Meeting will take place October 7th and 8th at Colorado State University in Fort Collins. This year's theme is "Conserving Colorado's Flora—Threatened Habitats and Conservation Tools." Saturday's events will include guest speakers, followed on Sunday by a local field trip.

Dr. William A. Weber, Curator Emeritus of the University of Colorado Herbarium, will give the keynote: "Fifty Years of Colorado Rare Plants." Other invited speakers include Ron Abbott, Tom Andrews, Mark Burget, Carol Dawson, Lucy Jordan, Fritz Knopf, Will Moir, Tamara Naumann, Betsy Neely, and Steve O'Kane. Society members are invited to bring posters or exhibits for display. If you would like to share some of your summer findings in either a short talk or by setting up a poster, contact Chris Pague at the Colorado Natural Heritage Program, 110 Natural Resources Building, Colorado State University, Fort Collins CO 80523, 970-491-1309.



Colorado Native Plant Society



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, Colorado Native Plant Society, P.O. Box 200, Fort Collins, CO 80522. Please direct all other inquiries regarding the Society to the Secretary at the same address.

Aquilegia

Aquilegia is published four to six times per 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*.

Newsletter Contributions

Please direct all contributions to the newsletter to:

Nina Williams
976 Cherryvale Road
Boulder, CO 80303

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.



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	and	Tamara Naumann ..
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	and	William A. Weber ..
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Hort/Restoration	Tina Jones	794-2647
	and	Ann Armstrong
		494-0545
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	and	Sue Martin
		226-3371
Publicity	VACANT	
Workshops	Bill Jennings	666-8348

ANNOUNCEMENTS

1995 Natural Areas Conference "Exploring the Power of Collaboration"

October 25-28, 1995

University of Arkansas
Center for Continuing Education
and the
Fayetteville Hilton

FAYETTEVILLE, ARKANSAS

Co-Hosts:

Natural Areas Association
Arkansas Natural Heritage Commission

Technical Sessions, Symposia, Field Trips

Concurrent Meetings:

- Eastern USA Ancient Forest Symposium
- Association for Biodiversity Information
- USFWS Bottomland Hardwood Symposium

To request a conference program and registration forms, send your name, address and telephone number along with your request to:

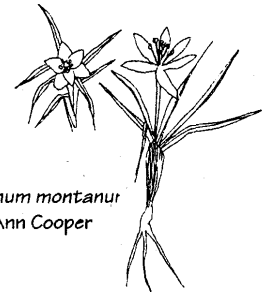
Shellie Melson
University of Arkansas
Division of Continuing Education
#2 University Center
Fayetteville, AR 72701

NEW PUBLICATION

The *Boulder County Native Landscape Guide* promotes the use of native plants in home and commercial landscaping. This 20-page booklet highlights several publicly-accessible landscapes in Boulder County that feature native plants as part of their design. The *Guide* provides an introduction to the particular concerns and requirements contributing to each design, followed by detailed profiles of the key native species used. Brief prefaces on the general advantages to using native plants, as well as the hazards from introducing aggressive exotics, help to educate and inspire the potential landscape gardener to explore the subject further. The *Guide* also includes a list of exotics to avoid, and encourages gardeners to ask their local nurseries to provide native alternatives. A bibliography and a list of addresses for more information then round out this useful publication.

You can obtain a free copy of the *Boulder County Native Landscape Guide* from:

Boulder Energy Conservation Center
1720 13th Street
P.O. Box 791
Boulder CO 80306
(303) 441-3278



Leucocrocinum montanum
Artist: Ann Cooper

This publication was funded by the Colorado Native Plant Society, City of Boulder Water Conservation Office, and Boulder County Parks and Open Space. CoNPS funding was provided in the hope that this guide would inspire similar projects in other communities around the state.

CoNPS DISPLAY TAKES 1st AWARD AT BOULDER COUNTY FAIR

The theme of the horticulture education show at this year's Boulder County Fair was "Our Extraordinary Planet." Kathy Damas entered a Colorado Native Plant Society display in the competition and took the 1st Award! The display, entitled *Responsible Landscaping: A Global Ecological Perspective*, included information on native plants and invasive ornamental escapees. Good work Kathy! This is a great way to get our message out.

If you have other experiences or ideas for informing others about the CoNPS mission, let's hear from you. Your experiences will provide ideas for others.

Aquilegia
is printed on 100%
recycled paper

SYMPOSIUM: ENVIRONMENTAL ISSUES IN OIL and GAS OPERATIONS

The Colorado School of Mines Office of Special Programs and Continuing Education, in conjunction with the U. S. Bureau of Land Management, will host the 1995 Rocky Mountain Symposium on Environmental Issues in Oil and Gas Operations: Practical Solutions for the 90s, October 16-18. Contact the Office of Special Programs and Continuing Education at Colorado School of Mines in Golden (303) 273-3321 for additional information.

Continued from page 1

mass. Although dependent on the species selected and the site location, first-year growth of four to 12 feet has been observed.

Part 2. EMERGENT WETLAND ESTABLISHMENT

Establishment of emergent wetland species has taken three or four general forms historically. One method simply relies on adjacent wetlands to grow into a disturbed site, or generate seeds which are transported via air, water, or wildlife. Another method relies on stockpiling emergent vegetation and the associated soils from a site to be disturbed, then spreading this material across a revegetation site, allowing "God to sort the species out" relative to the hydrologic regime. Seeding of sites to be revegetated is also commonly performed, but exotic species usually comprise the seed mix of choice. Perhaps the best way to introduce most wetland species, however, and in the appropriate hydrologic regimes, is through the use of sod plugs.

Transferring plugs of wetland sod taken from nearby or on-site wetlands, or stockpiling sod from a disturbed area for reintroduction elsewhere are reliable methods of introducing emergent wetland species. Sod plugs ranging from six to eight inches in diameter and 12 to 16 inches deep provide adequate material for rapid growth on a revegetation site.

When possible, an effort should be made to collect plugs along ecotone boundaries, so that more than one species occur in the individual plug. This allows an increase in species diversity and provides a hedge against sometimes fluctuating hydrologic regimes. Collections are made using standard tile spades (sharpshooters) to cut the rhizome/root mass and form the plug.

Following collection, the plugs are transported directly to the transplant sites and planted. Care should be taken to duplicate the hydrology of introduction sites. The holes from which plugs were collected will close through freeze/thaw action in the winter and sediment deposition during high flows. Temporary fencing should be placed around the collection area to insure safety.



Spartina pectinata
Artist: Kris Meiring

The wetland sod plugs are introduced by placing the upper soil surface of the plug at the same elevation as the transplant surface. Following plug introduction, the existing top growth can be clipped back with a hedge clipper approximately one-third to one-half its length to promote vegetative growth rather than flowering.

Seed collected from adjacent wetlands or purchased from a reliable vendor, can also be introduced to provide erosion control and assist in site revegetation. If a natural condition is desired, all sod, seed, and cuttings should be obtained on-site or in the immediate site vicinity.

Part 3. POLE PLANTINGS

Cottonwood trees and probably other tree species of the willow family (aspen, peach-

leaf willow, Goodding willow, etc.) can be grown from poles. Poles are the trunks of sapling trees, that are usually between two and four inches in diameter at the base, one to three inches in diameter at the top, and four to eight feet in length. These are thinned from the dense stands of saplings that grow, generally following flooding events, along river courses.

Like willow cuttings, poles are more successfully transplanted when collected in the dormant state (late winter-early spring). Poles are sawn off at the base, then lateral branches are removed with a pruning shears prior to planting. They should be oriented in the ground the same way they were growing (small end up!). Perhaps the easiest method to place dormant poles into the soil is to use a hand auger with an appropriately sized bit to drill the holes (shaft extensions may be required to reach appropriate depths).

Cottonwood poles should be planted where the ground water table is within three to five feet of the ground surface. The ground water level is determined by augering test holes. (Note: ground water normally fluctuates from a high in June-July to a low in December-January, therefore monitoring these levels monthly for one year prior to planting will greatly increase planting success).

Plant the poles in areas where approximately one-half to two-thirds of their lower length is in contact with the ground water table. The base of the pole is often scarified with a hatchet (from one to two feet) to increase the area from which new roots may develop. Approximately one foot of the pole is left above the soil surface and marked, so that it does not become a safety hazard.

This form of transplanting cottonwoods will result in very bushy growth and ultimately, multiple-trunked trees. Similar results can also be expected by using shoots formed on peach-leaf willow trunks and branches and from aspen roots. These shoot and root cuttings should be sufficient diameter (one-half inch to three inches) to support new root and shoot development following planting.



FIELD TRIP REPORT

CHAPTER NEWS

The morning of July 15, 1995 found 15 native plant enthusiasts gathered on the plains

Phantom Canyon Preserve Led by Heather Knight Report by Kathy Damas

to 1,000 years old, and probably represent one eagle family's legacy.

northwest of Fort Collins, enjoying clear blue skies and a pleasant coolness in the air from the previous night's rain. We were greeted by Heather Knight, Stewardship Assistant at The Nature Conservancy's Phantom Canyon Preserve, and the leader of our field trip. As Heather escorted us across the private ranch neighboring the Preserve, turkey vultures soared overhead and pronghorn watched us from a safe distance.

Upon entering the Preserve itself, we armed ourselves with lists of the botanical, mammalian and avian species that we might encounter along our way. The upland prairie we were now passing through was in very good condition, blooming with wildflowers too numerous to mention here (although we did record them on our species list). The prickly pear flowers alone lent a spectacular variety to the landscape, their colors ranging from bright lemon-yellow to a subdued shade of rosy apricot.

At the heart of the Phantom Canyon Preserve is the last roadless river canyon in the state. As the name suggests, the presence of this amazing canyon remains elusive from even a short distance away. With Heather to guide us, we reached the canyon rim and began the thousand-foot descent (from an initial altitude of 6800 feet) to the river below.

As we descended, Heather acquainted us with many stories concerning the plants and animals that live in the Preserve. From one we learned that eagles mate for life and have multiple nests within their territory. Each spring the female adds a few sticks to each nest while she decides which nest to use that year. Scientists have removed sticks from the bottom of some of the more massive eagle nests around the country, and have discovered that nests as old as 6,000 years are not uncommon. Heather explained that the nests in Phantom Canyon may be up

Once in the lower part of the canyon, we learned that some of the native vegetation near the river has succumbed to the invasion of many weedy exotic species. Nature Conservancy staff are now actively working to manage these alien invaders. For example, plantings of Great Basin wild rye have begun to show some success in reclaiming areas formerly dominated by cheatgrass and bindweed.

At the opposite end of the plant spectrum is the rare Larimer aletes (*Aletes humilis*), known only from Boulder and Larimer Counties in Colorado and Albany County in Wyoming. Heather told us that the largest population of *Aletes humilis* is protected on the Preserve's canyon walls. She explained that these plants may live to be 60 to 100 years old, sometimes appearing to have died, only to revive a few years later. Undoubtedly this adds an exciting twist to the research and monitoring work being conducted on this special population!

After lunch, we began our ascent back up to the plains. A rufous-sided towhee invited us to "drink-your-teeeaaa"—a civilized way to end a lovely field trip. Thanks again to Heather for her knowledge, patience (as we slowly botanized along the way), and grace.

Metro-Denver Chapter

September 27: Member's Slide Show
Don't put your summer pictures away yet! Bring them to an end-of-summer show-and-tell. Bring 10-15 slides or other props for a five to ten minute presentation.

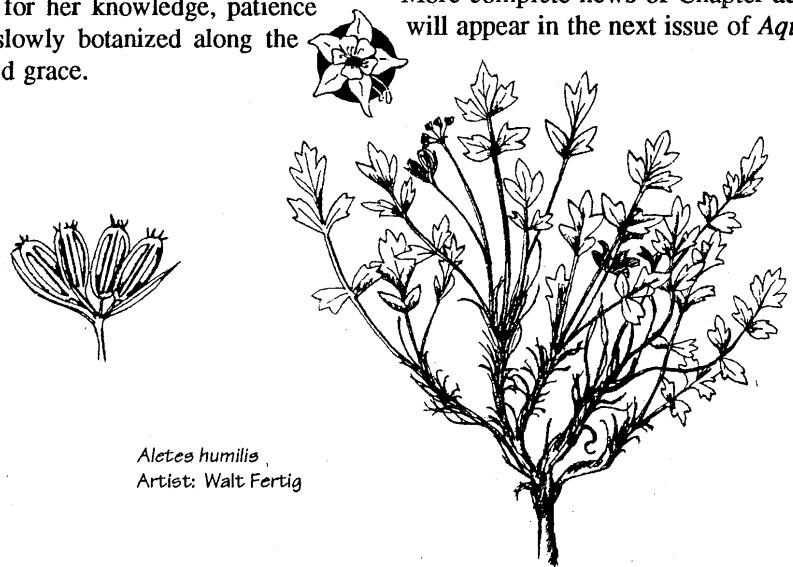
October 25: Southeast Utah Flora
Lorraine Yeatts' slides of southeast Utah native plants are sure to be spectacular. Chapter elections will also be held at this meeting.

December 6: Hummingbird Gardening
Tina Jones will present ideas and advice for creating hummingbird gardens in the Denver metro area.

Monthly meetings are held from September through May on the **4th Wednesday** of the month at **7:30 p.m.** at the **Denver Botanic Garden (DBG) Morrison Center, 909 York Street**, unless otherwise noted. For more information call Jeff Dawson at (303) 722-6758.

Other Chapters

Contact your Chapter President for information on early fall meetings (see masthead on page 2 for telephone numbers). More complete news of Chapter activities will appear in the next issue of *Aquilegia*.



Aletes humilis
Artist: Walt Fertig

FALL & WINTER WORKSHOPS—1995-1996

The Colorado Native Plant Society workshop series was established in 1985 to provide members with wintertime activities when field trips are impractical. Workshops bring native plant lovers together with a well-informed instructor who may have herbarium specimens, live plants, photographs, identification keys, and other materials available 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. There are no exams, grades, or homework, and working together is encouraged. The goal is to demystify plant identification and to enhance our enjoyment and understanding of Colorado's native flora.

Bill Jennings has come out of retirement to reassume the workshop coordinator position. A dedicated telephone line has been installed at Bill's home to take workshop registrations. Please call 665-6903 (a local call in metro Denver-Boulder; area code 303 for long distance) and leave a message on the answering machine. You may also register by mail, P.O. Box 952, Louisville, CO 80027. Be sure to provide your name, address, telephone number, and which workshops you wish to attend. If multiple sessions are scheduled, be sure to indicate preference. Receipt of your registration request will be acknowledged within a few days.

About 10 days prior to the workshop, registrants will receive notice by mail regarding location, time, lunch, references, and supplies, with a list of other registrants to encourage carpooling. The fee for each workshop is \$10 for CoNPS members and \$22 for non-members (\$10 workshop; \$12 to join the society). Payment is made on the day of the workshop.

Workshops have been very popular in the past, with multiple sessions frequently scheduled to meet demand, or with long waiting lists for the seats available. However, no-shows have been a problem. There are only so many seats available in the

classrooms and labs where these workshops are held, and we are holding a seat for you. If you find that you CANNOT attend a workshop for which you are registered, please call and cancel your registration as soon as possible!

Long-time members of CoNPS may recall that Bill has done much of the organizing, taking registrations, sending notices, taking payments, providing refreshments, as well as teaching occasional workshops. This year, we encourage CoNPS members to join the workshop committee; this will ensure continuation of the program. To spread the responsibility around, committee members will be asked to help with one workshop and then be off the hook until next season. Here is your opportunity to express tangible support for this popular program.

Volunteers are needed to lead workshops, particularly for plant families with few representatives in Colorado. If you have a favorite plant family or genus, or there is a family or genus about which you wish to know more, then consider leading a workshop on the topic. Refer to the books by Dr. William A. Weber (*Colorado Flora: Eastern Slope; Colorado Flora: Western Slope; or Rocky Mountain Flora*) to determine the number of species in a given family or genus. Full-day workshops dedicated to a single family or genus usually cover 15 to 30 species; a half-day workshop is practical for 7 to 15 species. Call Bill Jennings and he will tell you what is involved in preparing a workshop. If you volunteer NOW, you will have all winter to work in the herbarium, all next summer to look at plants in the field, and the fall of 1996 to organize your program before presentation in the winter of 1996-1997. Remember, on the day of the workshop, no one will know more about the topic than you!



Campanula rotundifolia
Artist: C. J. Marvin

It takes considerable time and effort for the instructors to plan and develop workshops or field trips. Please let us know how you like the activities offered by CoNPS. We need your suggestions for future workshops and field trips. We appreciate feedback, whether you find them informative and exciting or dull and uninteresting.

FALL & WINTER WORKSHOPS—1995-1996

CUCURBITACEAE: THE GOURD FAMILY IN BOTANY, COMMERCE AND ART

Leader: Carolyn Crawford

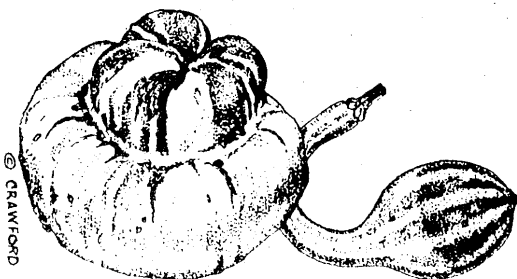
Location: University of Colorado - Boulder

First session: Saturday, November 4, 1995

Second session: Sunday, November 5, 1995

Good Gourd, a workshop about the Cucurbits! Although Colorado has only three native gourds, there are many more species in the Southwest and southward into old Mexico. The gourds have been used for food, utensils, and art since antiquity. Carolyn will discuss the botany of the approximately 25 species of gourds native to the western United States, will present the traditional uses of the gourds, and will show how they are used in art by such artists as Robert Rivera. Be sure to bring to the workshop your favorite gourd (coyote melon, balsam-apple, watermelon, zucchini, cucumber, pumpkin, cantaloupe, etc.) in your favorite form (jack-o-lantern, zucchini bread, gourd birdhouse, pickles, iced watermelon, dried display, pumpkin pie, decorated gourd, etc.) and be ready to share with your classmates.

You'll go out of your gourd over this unique workshop!



KEYING TO TRIBE IN THE ASTERACEAE

Leader: Dr. David L. Buckner

Location: Foothills Nature Center

First session: Saturday, December 9, 1995

Second session: Sunday, December 10, 1995

The Aster or Composite family is so huge that, when confronted with a new or unusual member of the daisy family, most persons throw up their hands in horror at the thought of plowing through the endless pages of the key to the Asteraceae. However, the Asteraceae is organized into tribes, with fewer than a dozen represented in Colorado. The largest tribes are broken into subtribes. Recognition of the tribes/subtribes and the organization of the family will aid greatly in reducing the time required to key specimens. Dr. Buckner will demonstrate the relationships of the aster family by providing specimens and keys.



Townsendia hookeri
Artist: Ann Cooper

TRICHOMES, OR PLANT HAIRS

Leader: Dr. Miriam Denham

Location: University of Colorado - Boulder

First session: Saturday, January 13, 1996

Second session: Sunday, January 14, 1996

Plant hairs are a special fascination for Dr. Denham. Technically known as trichomes, hairs can take on a myriad of shapes, from simple and straight, to incredibly complex, multiple-branched shapes. They can be long or short, stand erect or lie flat, be soft and silky, or stiff and bristly. Why all the interest in a feature that can barely be seen? Plant hairs are an invaluable aid to plant identification, and all keys eventually mention hair characteristics. In some families, notably the Brassicaceae, hairs clearly separate species. Dr. Denham will present the terminology of plant hairs, provide examples of the different hairs, and explain their uses in plant identification. This is a most unusual topic, applicable to all plant families, and is not to be missed.

MORE TO COME... Other workshops are being organized for January-April, 1996 and for the 1996-1997 season. Look for formal announcements in the next issue of *Aquilegia*. Tentative topics include: Beginning Plant Identification; Showy Monocots 4 (Iridaceae, Commelinaceae, Agavaceae, Nolinaceae); the Saxifragaceae; the Solanaceae; the Primulaceae; the Chenopodiaceae; Colorado's Missing Plants—Extinct or Extirpated Species; the Chihuahuan Element in the Colorado Flora; and Computerized Plant Identification.

Klaus Lackschewitz—Montana's Alpine Botanist

William A. Weber
Curator Emeritus
University of Colorado Herbarium

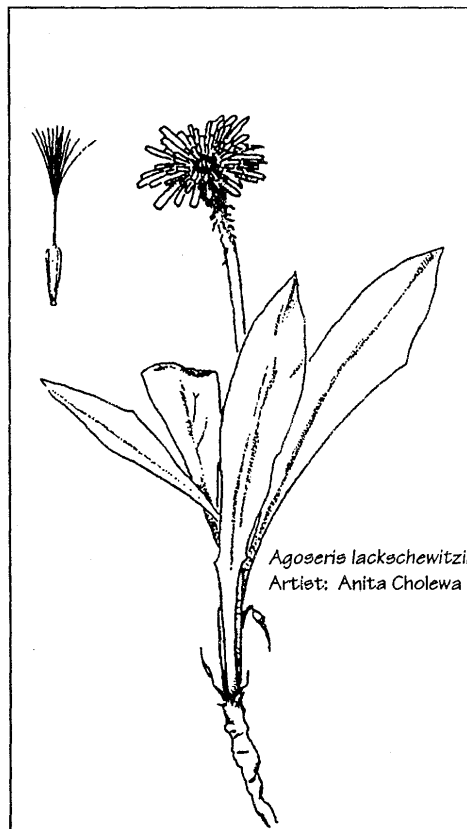
One of the finest alpine field botanists I know is Klaus Lackschewitz. I learned of him when he wrote me that he had discovered *Saussurea weberi* in western Montana. He invited me to Missoula to meet him and go to the locality, his favorite locality of Goat Flats in the Anaconda-Pintlar Wilderness. I found Klaus to be a strong, earnest, and knowledgeable botanist, and we have corresponded since then over several years. He was especially interested in writing a flora of the Bitterroot Mountains, and in 1991 published, through the Forest Service Intermountain Research Station, an excellent, complete flora, with keys, descriptions, and illustrations: *Vascular Plants of West Central Montana — Identification Guidebook*, 648 pages. With this book, Klaus became one of the most important floristic men of Montana botany. He has been in declining health for several years, and sent me this account of his life with his permission to publish it here.

KLAUS H. LACKSCHEWITZ: AUTOBIOGRAPHICAL NOTES

I was born May 4, 1911, in a rural forester's residence in the then Russian province of Livonia, which was in 1918 to become the independent Republic of Latvia. Shortly after the founding of the new state, my father, who had earned his forestry degree in Germany, was appointed to the State Department of Forestry in Riga. There I spent my high school years, graduating from a German Gymnasium with a Classics emphasis. My interest in the Natural Sciences was strongly supported by gifted teachers and a father who came from a family of literati in the Natural Sciences. I attended botany and zoology courses for several years at the *Institutum Herderianum Rigense*, a German college.

The political climate in the early thirties in a country bordering on the Stalinist Soviet Union was virulent. The German minority in the Baltic States was gradually

disenfranchised and put under severe economic pressure. Like many of my countrymen, I turned from an academic to a practical career, hoping to survive and stay in the country of my forefathers which we all loved very much. I took a two-year crash course at an agricultural college near Berlin, and from 1935 to 1939 managed and leased a farm in Latvia.



Species named in honor of Klaus Lackschewitz:

Agoseris lackschewitzii Henderson & Moseley, Syst. Bot. 15:463. 1990

Erigeron lackschewitzii Nesom & Weber, Madroño 30:245. 1982.

Lesquerella klausii Rollins, Contrib. Gray Herb. 214:10. 1984.

After war broke out in the Fall of 1939, all our hopes of holding on to a place in our homeland were dashed when the Hitler/Stalin Pact assigned Latvia as a "sphere of interest" to the Soviet Union. The 150,000 or so ethnic Germans whose forebears had lived there for 500 years were ordered out

and shipped on boats to resettle in western Poland on lands taken away from Polish proprietors. Soon after being "settled," I was called to the German army. I served on the Russian southern front from 1941 to 1945, which then advanced into the Caucasus area. My familiarity with Russian language and culture helped to open my eyes and ears in encounters and trading with the population later on, when I was wounded, captured, and transferred about in POW camps in northern Russia. I was able to serve as interpreter between the camp authorities and my fellow prisoners, which gave me some advantage under nearly unbearable conditions. My knowledge of edible plants helped here and there to augment our starving rations. With shattered health (I was diagnosed with tuberculosis), I almost miraculously made it into a contingent of returnees in 1947, and stumbled back into war-devastated West Germany, which was then almost a foreign country to me.

After recovering, I worked odd jobs. I decided to emigrate to the United States or Canada, where many of my countrymen had gone. In the Spring of 1952 my papers were complete, and I crossed the ocean, in a contingent of "deported persons", in an old military transport ship. My German-born sponsor had hired me to rehabilitate an abandoned farm in New Jersey, a project that had little prospect of success. So I turned my old hobby, gardening, into a livelihood. I worked in greenhouses and with landscaping companies, learning about American plants and gardens (and the English language). I specialized in foundation plantings and rock gardens. Although I was impressed by the richness of the flora of the East Coast I never felt quite at home in it.

When my wife, Gertrud, obtained a position at the University of Montana in 1960, I was happy to move west to Missoula. I was immediately taken by the beautiful open landscapes and mountains, and drawn to investigate the native flora, especially of the alpine regions. Friends like Frank Rose,

who had been gathering native plants for commercial purposes, introduced me to their favorite collecting places. Tor Fageraas, at that time head gardener of the university campus and an experienced mountain climber, accompanied me on many a field trip up in the Bitterroots to collect higher elevation plants for the university herbarium. I also became much interested in the use of native plants for horticultural purposes, and established a rock garden at my house. Since 1965, I have served the Botany Department of the university as superintendent of greenhouses, and was subsequently given a workplace in the herbarium. I could now pursue my two major passions: investigating and collecting native plants in their natural habitats to further our knowledge about them, and weaving their austere beauty into our garden design.

Until 1994, I collected specimens for over 12,000 herbarium sheets, mostly from Montana mountain ranges. Next to the Bitterroot, the greatest amounts were taken from the Anaconda Pintlar Mountains, the Front Range east of the Continental Divide, and the Beartooth Plateau. I visited many of the other mountain ranges, but only a few times each. After all, I had become a mountain man only after the age of 50. A number of species found had not been collected before in Montana. Three turned out to be undescribed species.

The major fruit of my observations is contained in my guide book, *Vascular Plants of West Central Montana*, 1991 and 1993. In order to facilitate plant identification by the lay user, the material is organized by habitat (Which plant am I likely to find here?) and by frequency of occurrence. The

descriptions again take into account the surrounding plant associations.

In 1966 I had the opportunity to realize our plan for a Native Plant Garden around the university Botany Building. Chairman Sherman Preece shared my enthusiasm, secured the means, and personally helped to collect the plant material. He mobilized the faculty and graduate students for the actual groundwork of laying out and planting the garden. Work Study students were found to pluck the weeds, and for a time, new plants were added every year. Several years ago, the Native Plant Society took the garden on as its responsibility. Volunteer workers have graciously contributed their time and effort to maintain the plantings. Thanks to this ongoing labor of love, the garden has been improved as a teaching tool and a display of the beauty of our native flora.



Wanted: Photographers and Artists

The Second Edition of *Rare Plants of Colorado* Is Just Around the Corner

It's been six years since the first edition of *Rare Plants of Colorado* was published. The first edition is essentially sold out, although it is still available from the Society. The committee that brought us the first edition is hard at work on a second revised edition. An update on the revision appeared last year in *Aquilegia* (Vol. 18 No. 3). The committee has sent us a renewed appeal for photographs of several of the rare species under consideration for inclusion in the second edition.

If you have color slides of any of the species listed below, the committee would like to hear from you. If your slides are very high quality, they could be used in the publication. Even if they are not publication quality, they may help an artist render a better line drawing. If you can help with this important project, contact or send slides to: Myrna Steinkamp
4700 Venturi Lane
Fort Collins, CO 80525
(970) 226-3371

Botanical illustrators are needed, too! Many of the species listed below could be represented as black-and-white line drawings in the revised edition. A small honorarium will be awarded to artists for

Botrychium lineare
Botrychium lunaria
Botrychium pallidum
Carex leptalea
Carex livida
Carex sychnocephala
(possibly a chance introduction)
Centunculus minimus
= *Anagallis minima*
Chenopodium cycloides
Draba grayana
Draba streptobrachia
Eriophorum gracile
Festuca hallii
Festuca campestris
Goodyera repens
Heuchera richardsonii

each illustration. If you would like to contribute your artistic talents, contact Myrna Steinkamp in Fort Collins (970) 226-3371.

Koenigia islandica
Musineon tenuifolium
= *Aletes tenuifolius*
Oenothera kleinii
(thought to be extinct)
Oxybaphus rotundifolius
Parnassia kotzebuei
Phippsia algida
Potentilla ambigens
Selaginella selaginoides
Thalictrum heliophilum
Thamnosma texana
(thought to be extinct)
Townsendia strigosa
Trillium ovatum
Viola selkirkii



High Stakes In the High Country—Rio Grande National Forest

Roz McClellan Southern Rockies Ecosystem Project

The future of the Rio Grande National Forest is up for public review with the recent release of a new draft management plan. At stake are 1.8 million acres of highly diverse ecosystems in the eastern part of the San Juan Mountains. These ecosystems—many still roadless—are habitat for rare species such as lynx, wolverine, boreal toad, boreal owls, Ripley milkvetch and others.

The Rio Grande National Forest is under pressure to increase the timber cut from the multi-national corporation, Stone Container. The Forest is also under pressure from local—and vocal—Wise Use groups to open up the forest for more recreation and motor vehicle use. Public input on the draft management plan will help to determine the balance the Forest Service strikes between commercial and ecological uses of the forest.

The Rio Grande Forest is fragmented by 616 miles of motorized access trails and

2200 miles of roads (2200 miles is the approximate distance between Los Angeles and Washington, D.C.). To maintain biodiversity, the Forest Service needs to establish effective wildlife corridors for wide ranging species such as lynx, wolverine, elk, black bear and mountain lion. However, faced with demands from off-road vehicle interests, the Forest Service is considering upgrading and even paving some dirt roads, establishing popular “loop” trails (fun for people, not fun for wildlife), and otherwise drawing people into the backcountry.

To demonstrate what biological management would look like, The Southern Rockies Ecosystem Project (SREP), The Sierra Club, the Colorado Environmental Coalition (CEC) and other groups have developed a conservation plan for the Rio Grande National Forest that includes large, roadless habitat preserves, restoration areas, and wildlife corridors. The plan is designed to protect all native species, represent a full range of habitats, restore landscape connections and allow the reintroduction of natural processes. At the

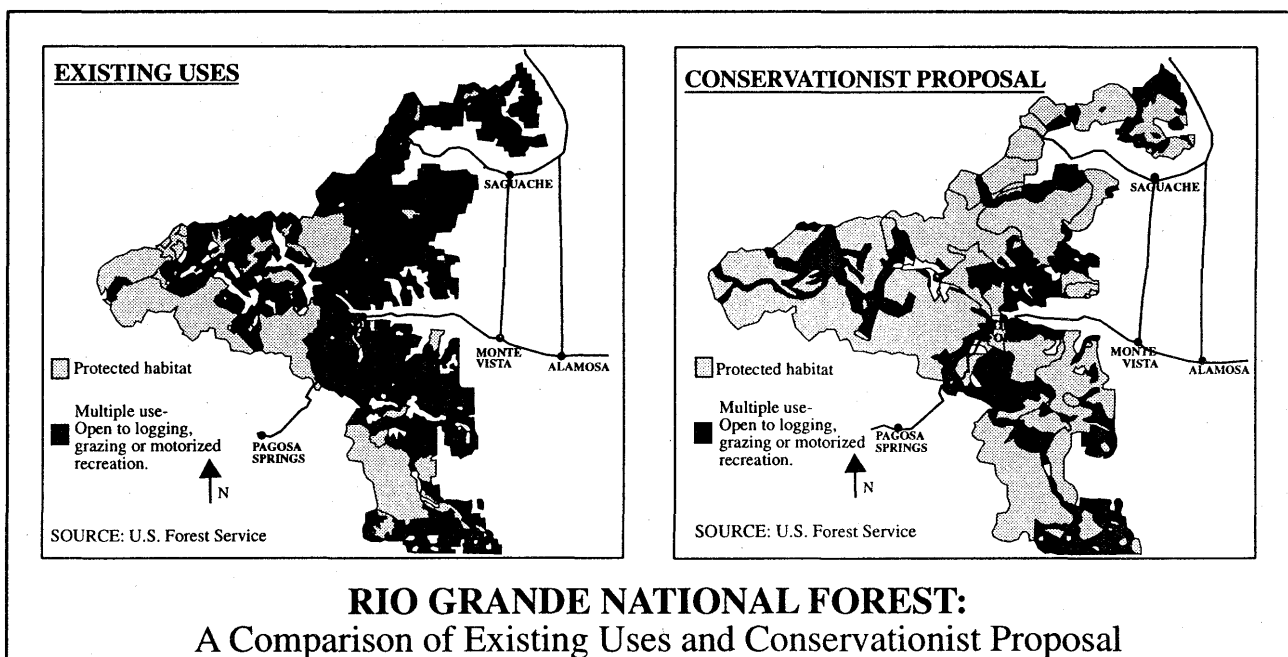
groups' request, the Forest Service has included the conservation plan as one of a range of management alternatives under consideration.

Public lands such as Rio Grande National Forest are the last places where ecosystems can be saved on a landscape scale. Biodiversity protection on private lands is generally confined to small available parcels. Only in the large blocks of roadless habitat found mainly on public lands can the needs of wide-ranging species be met and natural processes restored.

To have a say in how the Rio Grande National Forest is managed, get a copy of the Draft Forest Plan from:

Rio Grande National Forest
1803 West Highway 160
Monte Vista, CO 81144
(719) 852-5941

For more information about the Southern Rockies Ecosystem Project, call Roz McClellan (303) 447-9409 or Colorado Environmental Coalition (303) 837-8704.



Editor's note: Articles submitted to *Aquilegia* from other non-profit environmental and horticultural organizations are printed with the understanding that space will be provided in future issues for appropriate rebuttals or other forms of response. The Board of Directors of the Colorado Native Plant Society is committed to facilitating constructive exchanges of information and ideas toward the Society's stated goal of enhancing appreciation and conservation of Colorado's native flora.

FOR YOUR LIBRARY

CENTER FOR PLANT CONSERVATION PUBLICATIONS

The *1995 Plant Conservation Directory* is now available from the Center for Plant Conservation. In this newly-revised directory, the Center has compiled the names, addresses, and telephone numbers of botanical, conservation, governmental, and scientific personnel and organizations nationwide and by state. These personnel and organizations may be able to assist with your plant conservation efforts. In addition, the directory identifies rare plant laws and rare and endangered plant lists by state.

Also just published is the Center's *Guidelines for the Management of Orthodox Seeds*. This 78-page booklet is primarily intended for use by the Center's Participating Institutions, but will also provide other organizations and interested individuals with a source of practical ideas regarding orthodox seed collection, storage, and management. A comprehensive bibliography on seeds and seed storage is also included.

To order either publication, complete the form below and return it, along with a check or money order made payable to the Center for Plant Conservation. Please mail your order to:

Publications
Center for Plant Conservation
P.O. Box 299
St. Louis, MO 63166-0299

Please send:

_____ copies of the *1995 Plant Conservation Directory* at \$18.00 each.

_____ copies of *Guidelines for the Management of Orthodox Seeds* at \$14.00 each.

Total enclosed: \$ _____

Name: _____

Institution: _____

Address: _____

Phone: _____

WEEDS OF NEBRASKA & THE GREAT PLAINS

The Nebraska Department of Agriculture is pleased to announce the publication of *Weeds of Nebraska and the Great Plains*. This collaborative effort between the University of Nebraska and the Nebraska Department of Agriculture is authored by James Stubbendick, Geir Friisoe, and Margaret Bolick.

Weeds of Nebraska and the Great Plains is a 7" x 10", 589-page hardbound book which features:

- Detailed descriptions of 396 weeds;
- Detailed line drawings of 265 weeds to assist in identification;
- 5 1/2" x 7" full-color photographs;
- Close-up photographs of weed flowers, seedlings, and key identification characteristics;
- Identification methods to distinguish similar species;
- Historical attributes and uses of each weed; and
- Plant habitats and information on plant distribution.

To order a copy, complete the form below and return it, along with a check or money order made payable to the Nebraska Department of Agriculture. Please mail your order to:

Nebraska Department of Agriculture
Bureau of Plant Industry
P.O. Box 94756
Lincoln, NE 68509

Please send:

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Institution: _____

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Zip: _____

Phone: _____

CALENDAR OVERVIEW

1995 ANNUAL MEETING

October 7-8
Colorado State University
Fort Collins

**Conserving Colorado's Flora:
Threatened Habitats and Conservation Tools**

1995-1996 WORKSHOPS

Nov 4 Cucurbitaceae: The Gourd Family in Botany, Commerce and Art (1st session) with Carolyn Crawford

Nov 5 Cucurbitaceae: The Gourd Family in Botany, Commerce and Art (2nd session) with Carolyn Crawford

Dec 9 Keying to Tribe in Asteraceae (1st session) with David Buckner

Dec 10 Keying to Tribe in Asteraceae (2nd session) with David Buckner

Jan 13 Trichomes, or Plant Hairs (1st session) with Miriam Denham

Jan 14 Trichomes, or Plant Hairs (2nd session) with Miriam Denham

CHAPTER MEETINGS

Metro-Denver Chapter

- Sep 27** Member's Slide Show
Oct 25 Southeast Utah Native Plants
Dec 6 Hummingbird Gardening



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

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