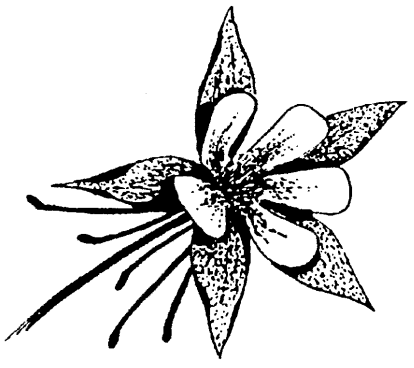
Aquilegia



Newsletter of the Colorado Native Plant Society

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

Volume 15, Number 3 **May/June 1991**

Rare Plant Search Continues

Bill Jennings

Ed. Note: Thanks to the efforts of rare plant adoptive 'parents' over the past year, funding for some specific searches, and the usual serendipity, we have improved our understanding of several Colorado rare plants. In this summary, Bill Jennings provides an update of recent activities in field and herbaria across the state and region. —*S.L.W.*

Limnorchis ensifolia (Limnorchis sparsiflora sensu latu)

The distribution of this bog orchid, also known as *Plantanthera sparsiflora* var. *ensifolia* and *Habenaria sparsiflora*, was studied last year, thanks to funding provided by the USDA Forest Service. There are now 11 known populations of this western bog orchid in Colorado. It is scattered on the Colorado Plateau and adjacent areas in Utah, Arizona, and New Mexico. I was able to relocate 8 of these populations in 1990. One population had not been visited since 1899; three others had not been visited in at least 40 years. A new location was discovered by Scott Ellis of Fort Collins in 1989 in Unaweep Canyon. This species is now known from Saguache, Conejos, Archuleta, San Miguel, Mesa, Pitkin, Eagle, and Routt counties. In **Colorado Flora: Eastern Slope**, Weber reports it has been found on Pikes Peak. That specimen, at Colorado College, is a sparsely flowered *Limnorchis stricta*. The density of the inflorescence, despite the specific epithet, is never a good identification character in bog orchids. The Saguache and Conejos county locations are in the Rio Grande drainage, and thus east of the Continental Divide. There are a few collections from New Mexico from the Rio Grande Valley; it should be sought in springs and seeps in the Rio Grande Gorge near Taos, New Mexico.

Epipactis gigantea

This is another orchid rarely found in Colorado. I found it growing with *Limnorchis ensifolia* in Archuleta County in 1990, the first report for that county. Mark Gershman saw and photographed the orchid in the hot springs at Valley View Hot Springs in 1988, but no specimen has yet been collected. This is the first report for Saguache County. Tamara Naumann reports seeing the orchid (in leaf and last year's dried stems) at a new site in the Mancos Canyon area, on Ute tribal lands, Montezuma County, on May 8, 1991. It was associated with maidenhair fern (*Adiantum capillus-veneris*). There are known sites in the area in Mesa Verde National Park. Tamara also reports that *Astragalus humillimus* was found nearby. In 1875, when T. S. Brandegee collected *A. humillimus*, he collected *Epipactis gigantea* at about the same time. Tamara may have recovered Brandegee's site. *Epipactis gigantea* is now known from Moffat, Mesa, Delta, Montrose, Montezuma, Archuleta, Saguache, and Chaffee counties. There are no known sites along the San Miguel or Dolores Rivers, but its presence there seems almost certain.

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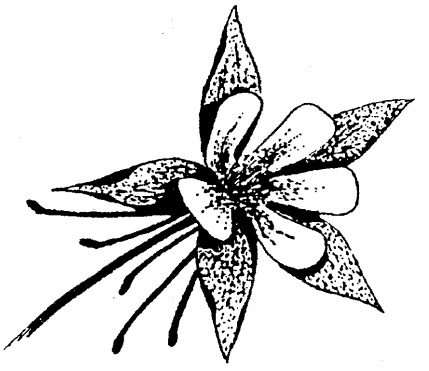
Notes from Here

With this issue, the Colorado Native Plant Society "newsletter" begins to look more like a "dataletter" than a newsletter! A special pullout section, pages 5 through 8, offers you the opportunity to review and use a new key to the willows of Colorado prepared by Dr. David Cooper. As you use the key, please send comments, corrections, etc. to David at 3803 Silverplume, Boulder, CO 80302. He plans to publish a final version after further revisions are incorporated and welcomes feedback from Society members.

Future issues of *Aquilegia* continue the dataletter theme, as we plan to publish a historical review and plant list for Summit Lake by Dr. William A. Weber in Vol. 15/4; lists of sensitive species by National Forest are being considered for future issues; and we're always looking out for other items, data or news, of interest to readers.

Speaking of news, we hope that as the summer winds down you will share your news of native plants with other Society members. Send us field trip notes, new plant sightings, chapter activities, and other plant-related information you've gleaned from summer wanderings. After all, we do want this to remain, in some sense, a "news"letter! Those of you who have been practicing your illustration skills after last spring's workshops are reminded that non-text items are also solicited!

—S.L.W.



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Aquilegia

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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 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
Supporting	$ 50.00
Family or Dual	$ 12.00
Organization	$ 25.00
Individual	$ 8.00
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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Announcements

CNAP in Transition

Change is the major process at the Colorado Natural Areas Program this summer. The program remains funded in the state Dept. of Natural Resources at the level of three full-time positions, but resignations of Dave Kuntz and Tamara Naumann have left Janet Cowles the sole staff person there. It may be fall before the vacant positions can be filled, and activities may be curtailed until then.

The rare plant database CNAP managed in cooperation with The Nature Conservancy (TNC) is now housed at the Colorado Division of Wildlife. TNC will be funding one full-time staff person to maintain the database until a more permanent solution can be developed.

Separating the rare plant database from natural areas responsibilities could ultimately benefit both programs if support is maintained and strengthened. But it may be some time before the effects of the changes can be evaluated.

The Grasslands Dilemma: Another Rainforest? 1991 Annual Meeting Preview

Plan now to attend the Society's annual meeting, November 2nd at the Denver Museum of Natural History (DMNH). The planning committee has developed an exciting program that explores one of our most threatened, and most neglected, vegetation types, the North American prairie.

The destruction and loss of diversity now occurring in the tropical rainforests parallels the history of North America during the development and conquest of our native grasslands. Speakers will go beyond botanical emphasis to explore the relationships among plant communities, animals, and the early and modern human inhabitants of the prairies of the United States. An overall historical viewpoint will lend the program a sense of how sweeping changes occurred to this once-vast biome, and how we can help protect and restore the ecosystems of the Great Plains.

The Denver Museum of Natural History is co-sponsoring this discussion of the grassland ecosystems that are an important part of Colorado's history—and its future. We hope Society members will come, and also encourage others with an interest in grasslands to come along!

Program

8:00	**Registration**
8:45	Opening Remarks: Gayle Weinstein, president
9:00	**History of the Grasslands** Jane Bock, CU Boulder
9:45	**Mammalian Life on the Prairie** David Armstrong, CU Boulder Museum
10:30	Break
10:45	**Human Influences on the Grasslands**: Joyce Herold, DMNH; Dean Kanode, Crow Valley Ranch Assoc.
11:45	Annual Meeting Brief (voting for Board and bylaws)
12:00	Lunch, Board meeting Self-guided tour of DMNH Colorado Ecosystems dioramas
1:15	Introduction of New Board
1:30	**Loss of Community** Dr. Ed Gerrand, Berry Botanic Gardens
2:30	**Restoration and Preservation of the Grasslands** Bill Floyd, USFS, Pawnee Grasslands
3:30	Adjournment

WANTED: Bromopsis inermis

Gary Finstad

Seeking character references for widely alleged aggressive invader, aka *Bromus inermis*, Smooth Bromegrass. May be threat to native plant communities in Colorado. Possibly armed and dangerous.

Concerned citizens have called for this alien to be removed from revegetation seed mixes and water-conserving landscape plant lists. Does its social value as a water-conserving alternative turfgrass, in which situations it is limited to vegetative growth, compensate the community for its alleged misdemeanors? Is the mere presence of smooth brome in a native plant community evidence of its invasiveness? Are there any circumstances where this notorious grass can be allowed a degree of freedom?

Are these feelings, opinions, and attitudes grounded in fact, or has this useful grass been condemned without due process? Do we need more information before rendering a verdict? Please send any evidence, direct observations, fact, rumors, or other information to:

G. Finstad
491 E. Spring Grove Ave.
Highlands Ranch, CO 80126

We'll also be interested in case localities where evidence of these crimes is apparent. I'll compile information received and share it with the Society. Perhaps results can be used to make sure the accused is properly exonerated or convicted and to formulate Society policy on use of indigenous and introduced plant

Golden Gate Collection Trips

Collection trips are continuing for the plant inventory for Golden Gate Canyon State Park. Participants are limited to five each trip. The next scheduled trip will be Saturday August 10. Additional trips will be made at other times on very short notice. Contact Steve Austin for registration and instructions (see phone number and times below).

Steve reports that more than 50 species had been collected by mid-June, at least a dozen of which were additions to the park list, which contained approximately 250 species before the inventory. Three orchids have been recorded: the fairy slipper, spotted coralroot, and a bog-orchid. There's much more to be seen and done at Golden Gate. Steve is especially seeking help with the grasses and sedges.

Destinations will vary with each trip. Participants should bring field equipment and supplies for a full day of field work, including appropriate collection tools (hand lens, cutting and digging tools, and a plant press if you have one).

Participants will meet at the park visitor center at 9 A.M. The park will waive entrance fees for participants in the collection trips. Registration for the collection trips should be made with Steve Austin at 722-8084 or Jeff Dawson at 722-6758. Steve can only be reached weekday mornings from 6 to 9:30 A.M. or evenings from 9 to 10.

Upcoming Field Trip

Sept 14th

Sterling Sandhills

Leader:
Dr. William A. Weber

Details next issue

Geologic, Botanic, and Butterfly Tour of the Unaweep Canyon Saturday, August 10

Leader: Scott Ellis

We will traverse the Unaweep Canyon from Whitewater (vicinity of Grand Junction) to Gateway on the Dolores River in Mesa County. The granite-walled Unaweep Canyon cuts laterally across the Uncompahgre Plateau, and encompasses an intermingling of the Rocky Mountain montane floristic elements with those of the Colorado Plateau and Great Basin. The emphasis of this trip will be on the Unaweep Seep Area of Critical Environmental Concern (ACEC) east of Gateway along West Creek. The Unaweep Seep ACEC was designated to protect the Great Basin Silverspot butterfly, federally proposed for Threatened status under the Endangered Species Act. This butterfly is an obligate wetland species that lives in small spring-fed meadows. Mr. Ellis will provide a field presentation on the biology and wetland habitat requirements of the Silverspot, which should be flying on this date.

We will also examine populations of some disjunct eastern tallgrass prairie and hanging garden species (*Panicum virgatum, Dichanthelium lanuginosum, Sorghastrum nutans, Eupatorium maculatum*), as well as several uncommon orchids (*Epipactis gigantea, Limnorchis ensifolia*) that inhabit this unique wetland. We will then travel toward Gateway to look at some Colorado Plateau floristic elements, such as blackbrush (*Coleogyne ramossimima*), *Cercocarpus ledifolius*, and hanging garden plants along the Dolores River, if time allows. We will return to Whitewater by late afternoon.

This trip will require walking up and down steep, muddy slopes under hot weather conditions for about 1 to 2 hours. Hiking will be completed before the hottest part of the day. Total distance walked will be less than 1 mile. Rubber boots, or sneakers that can be sacrificed, are required. Deerflies are sometimes a nuisance.

Participants will carpool from the intersection of Highway 50 and State Highway 141 at Whitewater, which is about 10 miles south of Grand Junction. Meet there at 9:00 A.M. This trip will be limited to about 20 people, or 5-6 cars because of parking and site access considerations. Motel accommodations are available in Grand Junction; camping sites are available in Colorado National Monument and on Grand Mesa. Campsites on the Uncompahgre Plateau are limited and difficult to reach; there are no accomodations in Gateway. To register, contact Scott Ellis (303/493-6069) or Jeff Dawson (303/722-6758). ♣

Preliminary Key to Genus Salix (willows) of Colorado - 4th DRAFT (7/15/91)

(Prepared by David J. Cooper)

Editor's Note: This is a fourth draft in what may be a series of six before final publication. Please use the key during your field work, and return any questions or suggestions to David Cooper at 3803 Silver Plume Circle, Boulder 80303. Previous versions of this key were reviewed by willow authorities, but because some of their more substantive comments have not yet been incorporated in this draft, significant changes are still likely.

Dr. Cooper appreciates the comments and assistance of participants in the CONPS *Salix* workshops, and especially the help of Bill Jennings on earlier drafts.

1 Habitat at streamside on the eastern plains and western Colorado but many species occur only in towns or at ranch houses, some species reach into the lowermost mountain canyons; generally below 6000 feet elevation, some species occasionally seen as high as 7500 feet 2

1 Habitat at higher elevations in mountains in moist to wet situations at streamside, canyons, marshes, fens, moist tundra, or even dry hillsides away from water, generally above 6000 feet elevation, some species occasionally seen as low as 5500 feet in canyons 8

A. Willows of the Plains

2 Leaves opposite as well as alternate; shrubs; adventive near Colorado Springs and probably elsewhere . . . . . .*Salix purpurea* [basket willow]

2 Leaves never opposite; always alternate 3

3 Leaves always linear, many times longer than wide, 20-80 mm long x 3-10 mm wide; capsules glabrous or pubescent; large or small shrub; native . . . *Salix exigua* . . . . . .(including *Salix interior*) [sandbar willow]

3 Leaves lanceolate, acuminate, etc., but never linear; capsules always glabrous; trees, even though trunk may be short 4

4 Leaves serrate 5

4 Leaves entire 6

5 Leaves thick and not transparent, bark brownish, branches brittle at base; trees usually as large as cottonwoods; adventive and usually near towns . . . . . *Salix fragilis* [crack willow]

5 Leaves thin, nearly transparent, with acuminate tips and usually glaucous beneath, serrations on leaves lacking glands; bark light colored; small native trees usually with multiple stems . . . . . .*Salix amygdaloides* [peach-leaved willow]

6 Branches pendulous or crown nearly spherical; adventive trees in and near towns, ranches 7

6 Branches not pendulous or crown not spherical; branches golden yellow; adventive trees commonly used as windbreaks on ranches . . . . . *Salix alba* [golden osier]

7 Crown spherical; adventive trees in Arkansas and Colorado River Valleys . . . . . .*Salix matsudana* [globe willow]

7 Branches pendulous (weeping willow); adventive trees . . . . . *Salix babylonica* [weeping willow]

8 Habitat alpine tundra . . . . . 9 [SECTION B]

8 Habitat in the mountains, but not alpine 15

15 Plants of the low alpine and subalpine to upper montane basins. Plants usually with low stature, up to 1 m in height, not prostrate or creeping. Many of the species are peatland specialists . . . . 16 [SECTION C]

15 Plants in the montane and subalpine in warmer habitats. Plants of taller stature, usually 2 m or more, occurring along streams, in beaver ponds, in dense tall willow carrs, not usually peatlands . . . . . 21 [SECTION D]

SECTION B. Alpine Willows

9 Capsules glabrous; leaf blades mostly 7 mm or less long, not glaucous, alpine and sublpine on limestone (not yet known for Colorado, but in Wyoming) . . . . . *Salix rotundifolia* var. *dodgeana*

9 Capsules pubescent; leaf blades longer, often glaucous beneath 10

10 Leaves rounded, glaucous and reticulate beneath, leaves thick and somewhat leathery; catkins less than 3 cm long, styles less than 0.5 mm long, ... *Salix reticulata* (*Salix nivalis*; *Salix saximontana*)

10 Leaves usually pointed, the blades not leathery, usually not reticulate beneath; styles usually 0.3-2 mm long . 11

11 Prostrate shrubs usually less than 10 cm tall 12

11 Erect shrubs, usually taller than 20 cm 13

12 Leaves lanceolate, acute; catkins 1-5 cm long . . . . . *Salix arctica*

12 Leaf blades narrowly elliptic to elliptic, usually green beneath, the old leaves often persisting; catkins 0.6-2 cm long. Not yet found in Colorado but to be expected in the Medicine Bow and other northern ranges. . . . . *Salix cascadensis*

13 Leaves nearly glabrous, glaucous beneath; twigs purplish; catkins not on leafy peduncles. Always in wetlands. Abundant in subalpine basins throughout Colorado forming dense low thickets . . . . . *Salix planifolia*

13 Leaves densely hairy beneath; twigs brown and usually hairy 14

14 Young twigs wooly hairy; stems thick; catkins more than 4 cm long. Wet margins of Horsehoe Lake, known only from Horseshoe Cirque, Park County . . . . . Salix lanata ssp. *calcicola* (*Salix calcicola*)

14 Young twigs not wooly hairy; stems not thick; leaves hairy beneath but not lanate; twigs brownish; catkins less than 4 cm long, on leafy peduncles. On wetland margins, not in the wettest portion of the wetland. Abundant in low alpine and subalpine basins . . . . . *Salix brachycarpa*

SECTION C. Short (.5 M Tall) Willows of High Elevation Peatlands and Other Wetlands

16 Capsules glabrous 17

16 Capsules pubescent 19

17 Young twigs wooly hairy; stems thick; catkins more than 4 cm long. Wet margins of Horsehoe Lake, known only from Horseshoe Cirque, Park County . . . . . *Salix lanata* ssp. *calcicola* (*Salix calcicola*)

17 Young twigs not wooly hairy; catkins shorter 18

18 Leaf margins entire, leaves with short hairs on both surfaces, veins inconspicuous, oblanceolate, olive-colored in the field; catkins 1 cm long. Widespread in peatlands and wet meadows throughout western Colorado . . . . . *Salix wolfii*

18 Leaves serrate, glabrous, with prominent veins; catkins 3-4 cm long; capsules yellowish. Known only from a few calcareous peatlands in South Park . . . *Salix myrtillifolia*

19 Leaves oblanceolate to narrowly elliptic, thick, with revolute margins, densely tomentose pubescence beneath, dark green above, occasionally strongly glaucous beneath with sparser tomentum; stems very thick; capsules white tomentose; plants erect with a few branches at the top. In extremely rich fens in South Park and Laramie River valley . . . . . *Salix candida*

19 Leaves not revolute nor densely tomentose beneath . 20

20 Leaves glabrous, glossy dark green above; twigs purplish; catkins not on leafy peduncles. Always in wetlands. Abundant in subalpine basins throughout Colorado forming dense low thickets . . . . . *Salix planifolia*

20 Leaves hairy beneath; twigs brownish; catkins on leafy peduncles. On wetland margins, not in the wettest portion of the wetland. Abundant in low alpine and subalpine basins . . . . . *Salix brachycarpa*

D. Tall Willows Of Mid To Low Elevation Carrs And Streamsides In The MountainS

21 Twigs with a purplish bloom (pruinose); "blue-stem" willows 22

21 Twigs lacking a purplish bloom 25

22 Capsules glabrous; leaves glabrous, at least some leaves serrate; plants of streamsides in the lower foothills . . . . . *Salix irrorata*

22 Capsules pubescent; plants of willow carrs and streamsides in the montane and lower subalpine 23

23 Catkins 8-20 mm long, on pubescent leafy peduncles; leaves with small tooth at apex . . . . . *Salix geyeriana*

23 Catkins 20-50 mm long, usually sessile; leaves without tooth at apex 24

24 Leaves dark green and glossy above, strongly glaucous beneath, usually glabrous . . . . . *Salix planifolia*

24 Leaves with short silvery hairs beneath, not dark green above nor glaucous beneath . . . . . *Salix drummondiana* (*Salix subcoerulea*)

25 Capsules pubescent 26

25 Capsules glabrous 30

26 Plants of upland forests and forest borders; leaves obovate to oblanceolate, thickish; twigs sometimes velvety pubescent . . . . . *Salix scouleriana*

26 Plants of valley bottoms, willow thickets, streamsides; leaves narrower 27

27 Capsules on long stipes, 2-3 mm long; leaves thin, oblanceolate; twigs of the year reddish, older twigs cracked giving a streaked appearance. A tall willow usually found on the outer edge of willow thickets, not in the wettest sites . . . . . *Salix bebbiana*

27 Capsules on stipes shorter than 2 mm 28

28 Leaves nearly glabrous, mostly entire, dark green and glossy above and glaucous beneath; twigs purplish; catkins not on leafy peduncles. Always in wetlands. Abundant in subalpine basins throughout Colorado forming dense low thickets . . . . . *Salix planifolia*

28 Leaves hairy, either entire or serrate 29

29 Leaves entire, densely hairy beneath, green above. Usually on wetland margins, not in the wettest portion of the wetland . . . . . *Salix brachycarpa*

29 Leaves serrate, usually pubescent above. A northern willow that is only known in Colorado from the vicinity of Estes Park . . . . . *Salix petiolaris* (*S. gracilis*)

30 Floral bracts yellow or green, deciduous 31

30 Floral bracts brown to black, persistent 34

31 Leaves linear . . . . . .*Salix exigua*

31 Leaves broader 32

32 Capsules 7-10 mm long, olive brown and cartilaginous, rachis of catkin very hairy; catkins appearing in mid to late summer; bark silvery . . . . . *Salix serissima*

32 Capsules less than 7 mm long, rachis of catkins with few hairs or glabrous 33

33 Leaves glaucous beneath . . . *Salix lucida* ssp. *lasiandra*

33 Leaves not glaucous beneath . . *Salix lucida* ssp. *caudata*

34 Catkins sessile, without subtending leaves or occasionally on short (1cm long) shoots, catkins on previous years twigs . . . . . *Salix pseudomonticola*

34 Catkins on leafy branches 35

35 Leaves green or pale beneath, but not glaucous 36

35 Leaves glaucous beneath 37

36 Low shrubs, usually 1.5 m tall; leaves silky pubescent on both sides . . . . . .*Salix wolfii*

36 Tall shrub, usually more than 2 m tall; leaves pubescent when young, but not silky pubescent on both sides when mature . . . . . *Salix boothii*

37 Styles averaging 0.7 mm long; leaf bases not strongly tapered . . . . . *Salix monticola*

37 Styles averaging 0.7 mm long; leaf bases strongly tapered 38

38 Twigs reddish-brown, often strongly hairy; pedicels less than 2 mm long; leaves usually entire; floral bracts usually with long hairs . . . . . .*Salix ligulifolia*

38 Twigs yellow or grayish-yellow, sparsely hairy; pedicels more than 2mm long; leaves usually toothed; floral bracts usually with short hairs or glabrous . . . . . *Salix lutea*

Rare Plants, *continued from page 1*

Listera borealis

This diminutive orchid is seldom seen, but can be found in much of western Canada, with scattered sites in the Rockies in Montana, Wyoming, Utah, and Colorado. There are nine known locations for the orchid in Colorado. Again, thanks to the Forest Service, distribution in Colorado was researched in 1990. Four old sites were recovered; one new location was found. This was considered one of Colorado's "lost plants" until 1961, when Joseph Barrell discovered and properly identified a population near Gothic. Most old specimens were misidentified as *Listera convallarioides*. This orchid is now known from Grand, Garfield, Clear Creek, Lake, Chaffee, Mesa, and Gunnison counties.

Listera convallarioides

Also researched at the request of the Forest Service, this orchid is known from only four sites in Boulder, Larimer, and Routt counties. It is more common farther north. The population on Green Mountain, Boulder Mountain Parks, was extended into Lost Gulch. Tim Hogan also reports plants on the north slope of Bear Peak.

Two old literature citations for this species may be *Listera borealis* instead. T. D. A. Cockerell reported in **West America Scientist** 6:134-136 (1889) that he had collected *Listera convallarioides* near Short Creek, in the Sangre de Cristo Range at the west edge of the Wet Mountain Valley. N. L. Britton and A. M. Vail reported in **Bull. Herb. Boissier** 3:197-221 (1895) that Eugene Penard had collected the plant at Caribou, Boulder Co., in 1892. The Cockerell specimen should be at the British Museum; the Penard specimen should be at Geneva. In Colorado at least, *Listera convallarioides* is unknown above 9500 feet in elevation. Both the Cockerell and Penard sites are above 10,000 feet. *Listera borealis* was unknown to Cockerell and Penard, as it was described in 1893 and not reported in the literature for Colorado until 1899, when K. M. Wiegand revised genus *Listera*. A specimen collected by T. S. Brandegee near St. Elmo in 1880 was recognized by Wiegand as the newly described *Listera borealis*.

Spiranthes diluvialis

While examining a specimen of *Alisma plantago-aquatica* at COLO, Harold Dahnke noticed that the label said it was growing with *Spiranthes*. The collector, Joseph A. Ewan, had taught at the University of Colorado in the late 1930's and early 1940's, but had spent most of his career at Tulane University in New Orleans. Professor Ewan, now retired, referred William A. Weber's inquiry about the specimen to the curator of the Tulane Herbarium, who sent a photocopy of both the specimen and Ewan's notebook for the collection day. The specimen is indeed *Spiranthes diluvialis*, collected in a *Typha* swamp along the west side of Baseline Reservoir, Boulder County, on August 21, 1941. It is likely that the collection site is on the west side of Cherryvale Road, about halfway between Baseline and South Boulder roads. The orchid has been monitored since 1985 in the area from Baseline to south of US 36 along South Boulder Creek, and this site is part of that area, now city open space. This collection is significant in that it is the oldest collection of this species from Boulder County.

In 1990, I also found an isolated patch of the orchid near 44th Avenue and Field Street in Wheat Ridge, which extends the Clear Creek population of *Spiranthes diluvialis* downstream about a mile. The site was along Clear Creek in Wheat Ridge open space.

Cypripedium fasciculatum

Sandy Righter of Denver collected *Cypripedium fasciculatum* for the first time from Eagle County in 1990. She had seen it at this location previously. In addition, others have reported, but not collected, this species from the Vail Pass/Gore Creek area. It is likely in Summit County as well. The brownie ladies' slipper is known in Colorado from Boulder, Larimer, Jackson, Routt, Grand, and Eagle counties. In Wyoming, this species is found very locally in the Medicine Bow Mountains and the Sierra Madre just north of the Colorado state line. In Utah, there are a few collections from the Uintas and northern Wasatch Mountains. Otherwise, the next nearest stations are in northern Idaho. The Colorado/Wyoming/Utah populations apparently have been isolated long enough to develop a few characteristics that differ slightly from plants of the Pacific Northwest, according to Brownell and Catling (**Lindleyana** 2:53-57, 1987).

Lilium philadelphicum

Perhaps the showiest rare plant in Colorado, wood lily has been collected at least 52 times in the state. However, only six collections are from the last 25 years, and many predate the turn of the century. This may suggest that the lily is disappearing or it may be an indication that people are aware they shouldn't collect showy rare plants. Most specimens were taken in Larimer, Boulder, and Jefferson counties, with the bulk of the remainder from the mountains farther south. Wood lily is rarely found on the West Slope and is unknown in Utah and Arizona. There are a few sites in New Mexico and one in the Guadalupe Mountains of extreme west Texas. Elsewhere in the west, it is known from Wyoming and the Black Hills of South Dakota, as well as over much of the eastern U. S. Carolyn Crawford counted 122 plants in a colony in Custer County in 1990. Tim Hogan and Harold Dahnke counted four plants in Boulder Mountain Parks in 1989. Other recent specimens are from Larimer County (1977 and 1971), Clear Creek County (1972), and Custer County (1969).

Smilax lasioneuron

While searching the University of Kansas herbarium last September, I ran across a specimen of *Smilax lasioneuron* from Douglas County. The label indicated the specimen was collected 20 miles south of Sedalia on the banks of a dry creek. Fortunately, the collector, Dr. Ralph Brooks, is at KANU and

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Rare Plants, *continued from page 9*

described the collection locality to me. Brooks and his collecting partner use a big camper – although he did not remember the exact spot, he suggested I look for a large pullout that could accommodate an oversize vehicle. Upon returning to Colorado, Carolyn Crawford and I drove down Hwy. 105 south from Sedalia. At 18.7 miles, I exclaimed "This is it!" as there was a large pullout next to a bridge over East Plum Creek. Dozens of plants in fruit were found twining through a scrub-oak thicket.

Carrion flower is now known from Larimer, Boulder, Jefferson, Douglas, Elbert, and El Paso counties. It is to be sought in Larimer County, where the most recent collection was in 1927. It also occurs in Wyoming, mostly along the margin of the Black Hills, then extends northeastward into southern Canada, then southeastward into the Midwest. It is not on the Great Plains.

At two sites near Boulder, the plant was observed in bud by Carolyn Crawford and I on May 21, 1991. When less than about three feet tall, the plant stands erect and does not use its tendrils for support. Its flowers do not have the smell of decaying flesh attributed to other species in the genus.

Parthenium alpinum

This little clump-forming member of the Asteraceae has been seen a few times in Colorado in northern Larimer County, mostly on private land. Adopt-a-rare-plant volunteer Sue Kamal of Greeley was unable to secure permission from the landowner to search for additional populations during 1990.

While checking at RM, Bill Jennings found two specimens collected by Ron Hartman that were taken at roadside. These two sites were visited May 17, 1991, and plants were found at both sites. Photographs were taken, but no additional specimens were collected. The plant was in flower at one site. It seems reasonable to expect more populations in the Rockport area and rocky or sandy outcrops at roadside should be checked as well as similar sites in the western portion of the Pawnee National Grasslands. Rocky outcrops near Pawnee Buttes were checked, but no plants were seen. The nearest sites in Wyoming are in Platte County, some distance north of Cheyenne. The species has recently been reported for New Mexico.

Sisyrinchium pallidum

The pale blue-eyed grass was studied last year, through funding provided by the Nature Conservancy. Ten sites are known in Park County, where the blue-eyed grass is usually associated with *Pedicularis crenulata* and other wetland plants, and two sites are known in Larimer County. The species has also been found near Laramie, Wyoming.

Where present in South Park, this species is abundant. The fields at the base of Kenosha Pass near Jefferson and the area along Hwy. 9 southeast of Fairplay have thousands of plants. Other sites are much smaller. It is, of course, found at High Creek Fen, perhaps the finest peat fen in Colorado.

Astragalus proximus

This milkvetch is found near Chimney Rock, in the Piedra River drainage, Archuleta County. Mary Edwards adopted this plant; she relocated two sites in 1989 and two more in 1990. A fifth site attributed to the species was based on a misidentification. About 500 plants were seen at the Chimney Rock Archeological Area on June 1, 1990.

Penstemon cyathophorus

Karen Caddis-Burrell of Fort Collins researched this plant as part of the adoption program. Four populations were located in 1990. A site near Granby had about 300 plants at roadside. Four other sites were searched without success. In Colorado, this penstemon is known from Jackson and Grand counties. It apparently hybridizes with *Penstemon harringtonii* where the ranges meet near Kremmling.

Penstemon harringtonii

Sandy Righter of Denver spent several days in the field during 1990 searching for this plant, which she adopted in 1989. Sandy has decided to continue studying the plant again this year. Four sites were rechecked in 1990 and five new sites were located, all in Eagle County. The largest population included about 150 plants. Karen Caddis-Burrell also located some plants of this penstemon while checking *Penstemon cyathophorus* sites near Kremmling.

Ptilagrostis porteri

Tom Schwab of Colorado Springs adopted this rare grass in 1989. He visited five sites in 1989 and six sites in 1990, one of which was a new discovery. As currently known it is limited to Park and Lake counties.

Ribes americanum

This eastern species of gooseberry is disjunct at a few scattered sites at the base of the mountains between Fort Collins and Castle Rock. Alice Eastwood first reported this species for Colorado in 1893 in her book **A Popular Flora of Denver**, where she said that it was known to be "along the Platte." Specimens were taken in Platte (Waterton) Canyon in 1920 and at Chatfield Arboretum in 1982. It was collected near Fort Collins in 1977, along Clear Creek in 1910, and at Roxborough State Park in 1921. The Roxborough population has been monitored since 1978. Craig Alseike of Aurora adopted the plant in 1989. Craig observed 200 plants at Roxborough on June 15, 1990. Peter Root saw the plant at the same site in July, and preserved a specimen at Denver Botanic Gardens herbarium. Craig revisited a site along the South Platte River near Littleton that had been noted by David Cooper and reported 12 plants there. Craig also found a new population of 75 plants along Slaughterhouse Gulch in Littleton.

Eustoma grandiflorum

A great deal of information on prairie gentian was generated in 1990 thanks

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Rare Plants,
continued from previous page

...rgely to Adopt-a-Rare-Plant volunteers Ed and Jean Dubois of Golden. Information on sites was also contributed by Dorothy and Bob Udall of Fort Collins, Elaine Smith of Boulder, Lee Barzee of Colorado Springs, and Dexter Hess of La Junta. The Duboises relocated five sites which were previously documented with specimens, relocated three sites for which sightings were reported but no specimens were taken, and substantially extended one population. In addition, they visited 15 sites where the plants had been found in the past, but no longer appear to be present. The Udalls relocated a site near Fort Collins and plan to photograph the plants in various stages of growth through the season. Elaine Smith continued monitoring the site on Boulder open space east of town. Lee Barzee located a large population near Florence. Dexter Hess found an undocumented site 10 miles east of Lamar. In 1990, eleven populations were observed in bloom. Largest populations are at River ...end Ponds, Fort Collins; Neesopah Reservoir, Kiowa County; and North Sterling Reservoir, Logan County. ♣

Plan Ahead: Fall Workshops

Selected Genera in the Apiaceae
Saturday, Sept. 28, 1991

Leader: Dr. Ronald Hartman

Dr. Hartman, of the University of Wyoming, has been studying the parsley family for the past twenty years. At this workshop, he will bring us up-to-date on the latest research in the Apiaceae in the West, covering the genera *Lomatium, Cymopterus* (including *Oreoxis, Pteryxia,* and *Pseudocymopterus*), *Aletes*, and *Neoparrya*. There are a number of rare species in these genera, and Colorado botanists should be aware of what is required for identification of the parsleys.

To be held at the Rocky Mountain Herbarium, University of Wyoming, Laramie.

Botanical Illustration II
Saturday, October 12, 1991

Leader: Carolyn Crawford

Our first workshop on Botanical Illustration proved so popular, Carolyn Crawford has agreed to present a more advanced workshop. Drawing and dissection of fall fruits will be the emphasis of this workshop. Fruits of *Vitus, Parthenocissus, Smilar, Crataegus, Malus*, etc. will be available to draw.

In addition to the techniques of colored pencil and pen & ink, Carolyn will demonstrate her main medium, pastel pencil. It is planned to have a guest instructor present watercolor techniques as well, but this is not confirmed.

To be held at Foothills Nature Center, Boulder. ♣

Look for more workshop information in the next issue . . .

Registration for Workshops

CONPS workshops are planned to keep us busy with plants during the winter. Since workshops were first offered in January 1985, 63 have been held. During the 1990-91 season, nineteen sessions were held, with about 250 persons attending!

Interest in workshops doubled in 1990-91 compared to previous years. As a result, Bill Jennings was on the phone constantly taking registration requests. Please mail in your registration this year. Jot down the workshops for which you wish to register, include your name, address and phone number, and send the note to: **Bill Jennings, PO Box 952, Louisville, CO 80027.** Be sure to include your mailing address and phone number if you mail in your registration. Registration order will be first come, first served, by the date on your letter, or postmark if no date is included.

Please register promptly, as workshops tend to fill up fast. If demand is sufficient, multiple sessions will be scheduled if the instructor is willing. Registrants will be notified by mail about two weeks before the workshop regarding session date, locaiton, lunch, supplies, suggested references, etc.

Unless otherwise noted, the fee for **each** full-day workshop is $8 for members and $16 for non-members ($8 for membership and $8 for the workshop). Please hold payments until the day of the workshop.

It takes considerable time and effort for the instructors to plan and develop workshops and field trips. We need your suggestions for other workshops and trips, as well as your feedback on whether you found them informative and exciting or dull and uninteresting. Bill Jennings has been coordinating CONPS workshops for six years, and he tends to plan workshops he is interested in taking. In the absence of suggestions from the members, he will continue to follow his own botanical preferences—so let him know what **you** would like to see scheduled! ♣

Calendar Overview

Field Trips

Aug. 10 **Golden Gate Inventory**

Aug. 10 **Unaweep Seep**

1991 Fall Workshops

Sept 28 **Selected Genera in the Apiaceae; Univ. Wyoming**

Oct 12 **Botanical Illustration**
Foothills N.C., Boulder

Special Events

Nov 2 **Annual Meeting**
Museum of Natural History, Denver



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