Colorado Native Plant Society



NEWSLETTER

Volume 9, No. 3
May-June 1985

"DEDICATED TO THE APPRECIATION AND CONSERVATION OF THE COLORADO FLORA"

CALENDAR OF COMING EVENTS

25-26 MAY. Mancos Canyon CONPS Field Trip
If you haven't registered it's to late.

1 JUN. Pawnee Buttes CONPS Field Trip

7 JUN. "MILE HIGH AND DRY" xeriscape symposium. Details inside.

8 JUN. USAF Academy Reservation Field Trip

29-30 JUN. Pinon Canyon CONPS Field Trip
See additional information inside.

13 JUL. Mount Bross CONPS Field Trip

20 JUL. Florissant Fossil Beds National Monument CONPS Field Trip

27 JUL. Spanish Peaks CONPS Field Trip

3 or 10 AUG. Echo Lake CONPS FIeld Trip

? AUG. Rocky Mountain Biological Laboratory at Gothic CONPS Field Trip
C--A--N--C--E--L--L--E--D see inside.

19 OCT. ANNUAL MEETING!!!!!
See inside for more information.

RECENT ACTIONS OF THE BOARD OF DIRECTORS

The board approved a donation of $100 to the Natural Resources Defense Council to help secure the reauthorization of the Endangered Species Act.

Approval was given for a donation of $300 to help support an intern program for the purpose of working on conservation projects for rare plants planned by the Nature Conservancy.

A protest response will be sent in regard to the final Piceance Basin Resource Management Plan.

The writing of a letter of support for the recommendation of eleven sites for protection in the Little Snake Resource Area was approved.

A letter will be sent to the San Juan Forest supervisor requesting that adequate plant clearances be done in the HD Mountains east of Bayfield, Colorado, where 75,000 acres have been leased for oil and gas development.

A letter will be written requesting that consideration be given for plants in the Uncompahgre Basin Resource Area Resource Management Plan.

Approval was given for the printing of more CoNPS brochures.

Approval was given for the CoNPS to participate in the Mile High and Dry Symposium to be held on June 7, 1985, at the Denver Botanic Gardens with a display, a representative, and as co-sponsor with no financial obligation.

WATER, WETLANDS AND NATIVE PLANTS

19 October 1985 --- 9 a.m. to 5 p.m.

A full day of activities has been planned around the wetland theme. Field trips in the morning will include a xeriscape landscape tour and a visit to a cottonwood riparian site. A catered buffet style lunch and a business meeting will precede afternoon presentations on the politics and natural history of the Holy Cross Wilderness, Arkansas River, and Platte River. There will be an exhibit of photographs taken by CoNPS members so carry you camera while botanizing this summer! There will be exhibits from several chapter and committees of CoNPS.

LIST OF NATIVE PLANT SOCIETIES AVAILABLE

Mary M. Walker, Librarian for the New England Wild Flower Society, has compiled a list of Botanical Clubs and Native Plant Societies for the entire U. S. If you would like a copy, send $1 and a SASE (#10) with 2 stamps (44 cents) to:

Mary M. Walker
New England Wild Flower Society
Garden in the Woods
Hemenway Road
Framingham MA 01701

MILE HIGH AND DRY

A xeriscape symposium on low water demand plants and methods, "Mile High and Dry," will be held June 7, 1985, 8:30 a.m. to 4:15 p.m., at John Mitchell Hall, Denver Botanic Gardens, 1010 York Street, Denver. CoNPS is among several co-sponsors of this conference. Pre-registration at $18 per person will be accepted through May 24. An optional box lunch (cost $6) is available to participants ordering it in advance. Request further information from or mail registrations to: Denver Audubon Society, 1720 Race St., Denver CO 80206 (or call 399-3219).

FOUND???

I recently read the note by Dr. Weber in the CoNPS Newsletter (Vol. 9, No. 1) about *Cryptantha mensana* and *C. aperta* (*Oreocarya mensana* and *O. aperta* to some). I was reading the article while on a sabbatical leave at California State University, Northridge, studying quantitative systematics of *Cryptantha* subgenus *Oreocarya*. I have now seen 7,800 herbarium sheets of this taxon including a photograph of the Eastwood type of *C. aperta*. Bill Weber is correct in his comment concerning the Eastwood description of this species and its actual appearance. While looking at these specimens I had the opportunity to see many Eastwood collections and can conclude that while Alice was a great collector, her labels left much to be desired (I am sure Dieter Wilken would have made her do them over!).

Many of the *Cryptantha* specimens I examined had been annotated by Edwin Payson when he did his monograph of this genus (Ann. Mo. Bot. Gard. 14:211-358, 1927). With one exception, perhaps, I never saw an error in a Payson annotation. In this monograph Payson drew nutlets from the type specimens of *C. mensana* (Plate 30; Figs. 119-121) and *C. aperta* (Plate 28, Figs. 62-64). The nutlets in these two plates are distinctly different. Nutlet morphology is of major importance in identification of most *Cryptantha* species. The nutlets of the plants I collected in Mesa County are identical to those drawn for *C. mensana* and show no similarity to those of *C. aperta*. Based on the work of Payson and the striking differences in nutlet morphology I must differ with Bill and hold that *C. aperta* and *C. mensana* are not one and the same. I believe *C. aperta* remains lost, perhaps forever, but obviously not forgotten by Colorado botanists. I shall continue to search for *C. aperta*. If Dr. Weber is correct and I search for a species already found there is no real problem as this is a great excuse to hike the hills and enjoy the flora of western Colorado. COME JOIN THE SEARCH!

---Walt Kelley

ENDANGERED SPECIES ACT . . . AGAIN

Once again Congress is considering reauthorization of the Endangered Species Act (the current Act expires in October).

CONPS will be working on your behalf to seek improvements and increases in funding for endangered species programs. The Society has made a contribution to the Natural Resources Defense Council's Plant Conservation Project, and will be writing letters and submitting testimony to congressional hearings as work on the Act proceeds.

The Natural Resources Defense Council (NRDC), a public interest environmental group, is leading the fight to strengthen the Endangered Species Act's provisions protecting federally-listed (Endangered or Threatened) plant species. First, NRDC seeks a ban on all "taking" of listed plants on federal land. This would prevent all forms of damage to the plants, not just digging or collecting them. NRDC also hopes to outlaw collecting and damage to listed plants on non-federal land without the written consent of the landowner. Again, this would represent a significant legal gain toward protection of listed plants.

Our representatives to Congress should be told that their constituents support a strengthened Endangered Species Act. Write your Senators (U. S. Senate, Washington DC 20510) and your Representatives (U. S. House of Representatives, Washington DC 20515).

Watch future Newsletters for the latest information about the ESA reauthorization effort and what individuals can do to help.

SEED PROPAGATION OF COLORADO NATIVES ISN'T SO TOUGH, BUT IT ISN'T EASY EITHER

Any group of people brought together by a common bond for a special cause often believes this uniqueness dictates special (different) treatment in everything they do. Likewise, the propagation of our own native plants is often thought to be different or more difficult than all others merely because they are natives, or dry-land or western United States in origin.

The truth is that the seed propagation of Colorado native plants in general is very similar to the propagation of temperate zone plants anywhere in the world. This includes plants from areas of high or low rainfall, high or low elevation, high or low pH and sunny or shady habitats.

Sharing latitudinal affinities with only a section of the globe might be construed as a benefit to seed propagation since we have to deal with only those germination characteristics inherent to those plant species. However, temperate zone plants are subjected to more vagaries of weather and fill many more ecological niches than either the tropic or colder artic zones. Germination strategies are therefore more varied for temperate zone produced seed than for seed from higher or lower latitudes.

Unlike those of us who are satisfied with any germination of a particular seed lot, growers, seed handlers and others whose livelihood depends in some way on temperate zone seed must be able to predict practically all factors affecting germination. Yet research tells us that factors affecting germination of a particular lot of seeds this week may not be the same as those affecting it next week.

Clearly, before blindly attempting to determine the germination factors involved with a particular species, it would be helpful to know what some of the general strategies are.

Crucial to this understanding is the realization that the seed is a physiologically living, breathing and adaptable organism. Like all living things, it is the product of its past history, present environment and genetic makeup.

For example, it is not unusual for seed to have developed a thicker or tougher seedcoat in response to an unusually dry growing season. Conversely, domesticating a plant and paying particular attention to its water and nutritional needs will often result in the production of easily germinated seed, sometimes with the elimination, or at least amelioration, of dormancy factors.

As if anticipating future problems with a conducive germination environment, several species are capable of producing simultaneously, or over a season, two or more distinctly different seed types which require different environmental conditions for germination.

An inherent quality of seed is that its viability and thus germinability generally decline with storage time as the seed physiologically ages. Yet, seed of several *Atriplex* species seem to defy this maxim by increasing in germinability with several months of dry storage or afterripening. This period of afterripening is necessary to allow the immature embryo to become physiologically mature and able to perceive the subsequent cool and moist period then necessary for germination.

Baileya multiradiata displays an interesting germination pattern where seeds collected and sown immediately upon ripening or stored at room temperatures over winter and then spring sown exhibit less dormancy that those collected from the plants in spring. Differences in germinability have even been noted between ray and disk flower seeds.

Although we occasionally collect immature seed when it is realized that "we won't be back this way again," we anticipate that it may not germinate and are not disappointed when it does not. However, "green" *Aquilegia caerulea* seed will generally germinate

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quicker without any pretreatment than will seed gathered from ripe capsules.

As any commercial seed seller will tell you, seed storage conditions will vastly affect ultimate germinability. High temperature storage is to be avoided at all costs. Chemical reactions, which are the driving force of all biology, accelerate with temperature, thus hastening the physiological aging process. Conversely, short exposures to high temperatures has promoted germination in seed of some desert plants. Equally important is seed moisture content. Combinations of high temperature and high seed moisture content during storage seriously hasten seed death. Because seeds have the ability to lose or gain moisture from the air, properly dried seed in improperly sealed seed containers can either gain moisture in older moisture laden refrigerators or lose additional moisture in frost-free models.

Although seed moisture content of less than 10% is generally acceptable for most agricultural seed stored at below freezing temperatures, oily seed (e.g. *Quercus*) and seed of moisture loving or swamp plants (e.g. *Nuphar*) should never dry out or all viability will be lost.

Experience has shown that factors necessary for germination of species collected at a northern latitude may differ markedly from those necessary to germinate seed from the same species collected from more southerly latitudes. Seed from more southerly latitudes may exhibit a lesser degree of cold dormancy that that of its northern brethren.

Many species produce seed with immature embryos which are ripened only be subjecting them to moisture and temperatures between 34-41 degrees F. Although it is not known exactly why additional development occurs only under these conditions, one plausible theory advanced by some involves the greater amount of oxygen which can be absorbed by water at lower temperatures. This "extra" oxygen may be necessary for certain pre-germination reactions.

"Stratification" is the term most often used to explain the process of subjecting seeds to these moist and cool conditions. The term originally was used to describe the process of alternating layers of seed between layers of a moisture holding material such as peat-moss or sand. The container holding the moistened and layered, or stratified, seed was then moved to an enclosure where the temperature was maintained at 34-41 degrees F for the prescribed period for that species.

A common misconception regarding stratification is thinking that only cold temperatures are necessary for conditioning the seed for germination. The seed also must be moist.

Not all seed from cold climates requires stratification. Most plants from the summer-then-winter alpine climate produce easily germinable seed. At high altitudes there simply is not enough time available when conditions are suitable for stratification. Subjecting seeds not requiring stratification to cool, moist conditions can depress germinability.

Another important germination factor is temperature. Most seed from a single lot will germinate well over a narrow range of temperature, with germination decreasing at temperature above or below the optimum.

It might be expected that since plants are by necessity in tune with their environment that they would produce "in tune" seed which germinates better with a diurnal fluctuation of temperatures. Confirmation of this expectation has been repeatedly demonstrated by research. It is now common practice to mimic nature by subjecting wild collected seed to 16 hours of one temperature and then 8 hours of 20 degrees F higher temperatures. This usually results in quicker and better overall germination than does using a constant temperature.

The correct application of visible electromagnetic radiation (light) is often necessary for successful germination. Many seeds have an absolute requirement for either the presence or absence of visible light. With some, a short exposure to dim light is sufficient while others require periodic exposures during the entire germination process. With others, light may prove inhibitory, promotive or have no effect whatsoever on germination.

Replicating germination tests precisely is difficult without full control over the test environment. When seed lot, seed age, storage environment and germination test procedures are not fully reported then expectations for similar results with your own seed can often be only wishful.

Reported germinations instructions, then, are best used as guides to the methods and procedures necessary to germinate your own seeds. The germination of Colorado native seed is no more difficult than that from Pennsylvania, Missouri or Maine. It isn't any easier either.

Remember, the seed you sow represents only a portion of the specie's adaptability to its site. If ability to change is the name of the game, then, it should not surprise us that next year's crop of seed may differ in its germination requirements.

---Jim Borland
Propagator at Denver Botanic Gardens

HAVE YOU SENT IN YOUR 1985 CONTRIBUTION YET?

Keep your membership intact, help CoNPS remain strong and help protect the Colorado flora. Send your renewal today to P.O. Box 200, Fort Collins CO 80522.

FOUR CORNERS CHAPTER

May 25 (Friday) 7:00 p.m. Chapter Meeting at Scott Hetzler's house, 301 West Montezuma, Cortez. (See note in last newsletter.)

June 29 (Saturday) Learn about using native plants in landscaping! Mike and Karen Leak of Western Gardens Nursery will tell us about the plants available for our area. A barbeque will follow---bring a side dish and whatever you wish to put on the grill. 6:00 p.m. at Western Gardens Nursery, 507 S. Chestnut, Cortez.

July 21 A Sunday field trip to Haycamp Mesa to see plants of the ponderosa pine forest. Meet at the parking lot at the County Annex building in Cortez at 8:30 a.m., or at the library in Dolores at 9:00 a.m.

August 11 (Sunday) Ken Peterson will be telling us about his pollen core analysis work at alpine lakes in La Plata Mountains. Meet at the parking lot of the County Annex building in Cortez at 8:00 a.m., or at Transfer Campground at 9:00 a.m.

** For information on any Four Corners Chapter trip or meeting, contact Scott Hetzler at (303) 565-2175.

FORT COLLINS CHAPTER

June 22 (Saturday, 7:30 a.m.!!) Lloyd Hayes and Anna Thurston will co-lead a chapter field trip to the Red Feather Lakes area. Carpool from the parking lot NORTH of the CSU Student Center. We will travel a Forest Service road going south from the Pot Belly restaurant on the Red Feather Lakes road. Expect a diversity of flora, marsh meadows to subalpine, and ponderosa pine and aspen forests. This is an all day trip, so bring lunch, beverage, and extra water. Wear clothing you can adjust for changes in weather. For information call Anna Thurston, 493-2369.

BOULDER CHAPTER

June 5 Wild flowers of Boulder County - Sue Gatatowitsch will present a campfire program at the Flagstaff amphitheatre, beginning at 9.00 p.m.

July 2 The Cactus family will be the subject of an evening trip to the American Legion Park on Arapahoe. This field trip will be led by Bill Jennings. Meet at Legion Park (that's east on Arapahoe until the top of the hill after Vo-Tech, then a left turn into the park which overlooks Valmont Reservoir). Time 6.30 p.m

August We hope to have an evening of wildflower drawing, with an artist along to help develop our botanical illustrating skills! Details will be announced in the Daily Camera when they become available.

DENVER CHAPTER

Sat. June 15 10 am Field trip to Denver Botanic Garden

Many of our favorite native plants can be found in the DBG collections. So if you don't have time for a mountain trip this weekend, come to the gardens for a morning with the natives. Meet at the main entrance at 10 am. Bring DBG card or $3.00 admission. Call Nevin Bebee at 733-1038 for further details.

Wed. June 26 7:30 pm DBG House June meeting

Come learn about the FOKLORE OF COLORADO WILD PLANTS. Edible, medicinal, poisonous and North American Indian uses of native plants will be discussed. Tina teaches for the University of Colorado and the Denver Museum of Natural History on big game, raptors, and uses of plants. She helped prepare the museum's diorama on Plains Indian's uses of plants. Tina will also lead a DBG field trip in late July or early August. Watch your Green Thumb for details.

Sat. July 27 9 am Field trip to Devil's Head

Ron Abbott will lead this trip. The trail to the top of Devil's Head spans the ecotone between the upper Montane and Subalpine life zones. This change of elevation in combination with complex variation of slope, and aspect leads us to expect a variety of woody species common to these life zones; as well — who knows? As an added treat, the top of Devil's Head offers one of the most spectacular views found in the Front Range near Denver.

We will meet at the Waffle House restaurant, 5097 S. Sante Fe, at 9 am and car pool from there. Be sure to wear sturdy shoes and bring plenty of water and a sack lunch. For directions and signing up, please call Ron Abbott at 333-6151.

Sat. August 10 9 am Annual Picnic Marjorie Shepherd's Cabin

Come one, come all to the Denver Chapter's Annual Picnic. Marjorie Shepherd has graciously offered the use of her mountain property for our enjoyment. Her cabin borders the Lost Park Wilderness near Bailey. We will mail you a map later. Bring a main dish, salad or desert to share, and a beverage. Enjoy a day of "botanizing" and good companionship. Come at 9 am and wander the wilderness until 12 pm, or come before 12 pm for food and soicalizing. For more information call Marjorie at 733-8229, Nevin Bebee at 733-1038, or Mary Edwards 233-8133.

Sat. Sept. 14 7:30 am Chatfield Fieldtrip

Joint fieldtrip to Chatfield Reservoir with The Denver Field Ornithologists. Late season birds and botany will highlight the trip. Meet at 7:30 am in the parking lot to the west of May D&F in the Bear Valley Shopping Center. For further details phone Jan Justice at 936-4547.

1985 FIELD TRIPS

MANCOS CANYON FIELD TRIP FULL

The Mancos Canyon field trip if filled and a waiting list has been established. If you signed up for the trip before April 26, and have not been notified to the contrary, then a place on the trip is reserved for you. Should you find that you cannot make the trip, please let field trip leader Carol Brandt (484-9251) know so that your place can be taken by someone on the waiting list.

Trip participants are invited to meet Friday night at 7:30 p.m. at the home of Scott Hetzler, 301 W. Montezuma, Cortez, for a Cortez Chapter meeting and preview of the field trip.

LOCATION: Florissant Fossil Beds National Monument
DATES: Saturday, 20 July
LEADERS: Mary Edwards, 233-8133; Velma Richards, 794-5432; and Miriam Denham, 442-1020
MEETING PLACE: Visitors Center, 9:00 a.m.

Florissant Fossil Beds National Monument is 35 miles west of Colorado Springs on U.S. Highway 24 to the town of Florissant and then 1 mile south to the Vistors Center at the headquarters of the Monument.

This will be a working, but fun, trip to add any uncollected species to the CONPS collection of plants for the FFBNM herbarium project. This is a great chance for amateurs to learn to identify plants and to collect and press them properly. Bring lunch, water, rain gear, and a small digging tool. You may wish to camp and collect on Sunday as well.

For more information call any of the leaders at the numbers given above or to register send a postcard to CoNPS, P.O. Box 200, Fort Collins CO 80522

LOCATION: Pinon Canyon
DATES: 29-30 JUN, Saturday and Sunday.

LEADER: Margaret "Meg" Van Ness, phone 279-2569

Pinon Canyon maneuver area between Trinidad and La Junta has a varied terrain ranging from grasslands to deep canyons with aspens and lush undergrowth. Meg has obtained official permission from the Army to visit this otherwise closed reservation. So, join her for what is, probably, your last chance to view this area before it becomes an active and environmentally damaged military reservation. A considerable variety of woody species will be evident, as will numerous penstemons, eriogonums and paintbrushes.

Margaret Van Ness, who works with the University of Denver Archaeological Research Institute, is performing surface vegetation analysis and ethnobotany at the site. Many other wildlife biologists and archeologists are working with Meg and may join the field trip.

To register or to obtain a more complete plant list please contact Meg Van Ness, at number above, or Nevin BeBee, 733-1038.

LOCATION: Rocky Mountain Biological Laboratory at Gothic
DATES: C A N C E L L E D
LEADERS: Dr. Dieter Wilken

Because of unforeseen circumstances, this field trip has been cancelled.

CoNPS members may be interested in the newly instituted field trip program administered by the Rocky Mountain Biological Laboratory in Gothic, Colorado. The Lab is a private research and teaching facility and is noted for its subalpine setting in the Elk Mountains and a significant contribution to research in the area of animal and plant population biology.

The tentative field trip program is scheduled for all weekends from June 29 to September 2 and includes tours of the laboratory facilities, general natural history and montane flora. Special field trips can be arranged to include particular interests, including bird watching, mushroom collecting, butterfly identification and nature photography. There will be a small fee for these field trips. A complete schedule and further information can be obtained by writing to:

RMBL Field Trips
Box 519
Crested Butte CO 81224.

NEWLY DESCRIBED SPECIES OF INTEREST TO COLORADO BOTANISTS (1981—continued)

A large number of new plant species and varieties have been described from the Rocky Mountain West in the past few years. In a series of three articles, a tabulation of plants in interest to Colorado botanists and wildflower lovers is presented. For each species or variety the type locality and range are given in addition to the publication reference. This article lists those species and varieties described Rafael Swell, Emery Co.,
and article will cover 1982 and 1983; the third 1984. This tabulation was prepared largely from a list compiled by B. E. Nelson of the Rocky Mountain herbarium.

-1981 (Continued from the last NEWSLETTER)-

Rollins, R. C., Studies in the Genus *Physaria* (Cruciferae): Brittonia 33:332-341 (1981)

Physaria eburniflora Rollins
type loc: Devils Gate, Natrona Co., WY
range: Carbon and Natrona Counties, WY

Physaria alpina Rollins
type loc: north of Gothic, Gunnison Co., CO
range: Gunnison Co., CO

This is an alpine plant. Rollins describes several more *Physarias* from areas somewhat more distant from Colorado (southwestern Utah).

Rollins, R. C., Studies on *Arabis* (Cruciferae) of Western North America: Systematic Botany, 6:55:64 (1981).

Arabis pulchra M. E. Jones var. *duchesnensis* Rollins
type loc: 3.8 miles east of Duchesne, Duchesne Co., UT
range: no other specimens cited

Arabis williamsii Rollins
type loc: along highway 28, Fremont Co., UT
range: no other specimens cited

Wagner, W. L., *Oenothera acutissima* (Onagraceae), a new species from northwestern Colorado and adjacent Utah: Systematic Botany, 6:153-158 (1981)

Oenothera acutissima Wagner
type loc: Greendale Campground, Daggett Co., UT
range: Daggett Co., UT and Moffat Co., CO

An article and drawing appeared in CONPS Newsletter v7, no.3 (May-June 1983)

Other references of interest:

Wagner, W. H., American Fern Journal 71:29-30 (1981), *Botryichium montanum* (range: Montana)

Henderson, D., Brittonia, 33:52-56 (1981) *Douglasia idahoensis* (range: Idaho)

Barneby, R.C., Brittonia, 33:156-158 (1981) *Astragalus schultziorum*, (range: northwest Wyoming)

Dorn, R. D., and Lichvar, R. W., Madrono 28:159-162 (1981) *Cryptantha subcapitata* (range: north-central Wyoming)

Schultz, L.M., and Shultz, J. S., Brittonia 33:159-161 (1981) *Hackelia ibapensis* (range: west-central Utah)

NEWLY DESCRIBED SPECIES OF INTEREST TO COLORADO BOTANISTS (1982 — 1983)

This is the second article of three, here listing those species and varieties described in 1982 and 1983. This tabulation was prepared largely from a list compiled by B. E. Nelson of the Rocky Mountain herbarium.

1982

Dorn, R. D., 1982. A new species of *Penstemon* (Scrophulariaceae) from Wyoming: Brittonia 34(3):334-335.

Penstemon gibbensii Dorn
Type loc: T12N R94W Sec 10, about 17 miles west of Baggs, Sweetwater Co., WY.
Range: Sweetwater Co., WY.

The type locality is about one mile north of Colorado/Wyoming state line. Certain to be in Moffat County, Colorado

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Rollins, R. C., 1982. Studies on *Arabis* (Cruciferae) of Western North America II: Contrib. Gray Herb. 212:103-114.

Arabis pusilla Rollins
Type loc: 39 miles SW Lander along Highway 28, Fremont Co., WY.
Range: no other specimens cited..

Rollins describes other new species and varieties from Nevada, California, and Utah.

1983

Wilken, D. H. and DeMott, K., 1983. A new species of *Thalictrum* (Ranunculaceae) from Western Colorado: Brittonia 35(2):156-158.

Thalictrum heliophilum Wilken & DeMott
Type loc: T3S R100W Sec 24, Rio Blanco Co., CO.
Range: Rio Blanco Co., CO.

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Lesquerella parviflora Rollins
Type loc: T3S R100W Sec 13, Rio Blanco Co., CO.
Range: Rio Blanco Co., CO.

These species were mentioned in the CoNPS Newsletter 7(5) (Oct-Dec 1983). Rollins describes several more species from areas somewhat more distant from Colorado (N. Wyoming, Idaho, Utah, Nevada).

Isely, D., 1983. New Combinations and two new varieties in *Astragalus*, *Orophaca*, and *Oxytropis* (Leguminosae): Systematic Botany 8(4):420-426.

Astragalus missouriensis Nutt.
var. *humistratus* Isely
Type loc: road to Chromo from Pagosa Springs, Archuleta Co., CO.
Range: Archuleta Co., CO.

Dorn, R. D., 1983. A new species of *Thelesperma* (Asteraceae) from Wyoming: Great Basin Naturalist 43:749-750.

Thelesperma pubescens Dorn
Type loc: Hickey Mt., T13N R114W Sec 13 Archuleta Co., CO.
Range: Archuleta Co., CO.

Wagner, W. H. and Wagner, F. S., 1983. Two moonworts of the Rocky Mountains: *Botrychium hesperium* and a new species formerly confused with it: American Fern Journal 73:57-59.

Botrychium echo W. H. Wagner
Type loc: Glacier Lake, Boulder Co., CO.
Range: Arizona (Apache and Coconino Co.) Colorado (Boulder, Clear Creek, El Paso, Gunnison, Lake, and Summit Co.), Utah (Summit Co.).

Wagner cites one location as "Warren Mt. P. O., 2.8 mi E of Colo 515" but he means Warrior Mt., P. O., 2.8 mi E of Colo 5. Also collected near Echo Lake.

Wagner, W. L., 1983. New species and combinations in the genus *Oenothera* (Onagraceae): Annals of the Missouri Botanic Garden, 70:194-196.

Oenothera harringtonii Wagner, Stockhouse, & Klein
Type loc: Colorado Springs, El Paso Co., CO.
Range: El Paso, Fremont, Otero and Las Animas Co., CO.

Named for the late Dr. H. D. Harrington of Colorado State University.

Other references of interest:

Evert, E. and Constance, 1982. Systematic Botany, 7:471-475.

Lichvar, R. W., et al, 1983. Great Basin Naturalist 43:739, *Shoshonea pulvinata* (range: NY(sic) Wyoming).

Holmgren, N. N., and Shultz, L. M., 1982. Brittonia 34(4):381-383, *Penstemon axsophilus* (range: SW Utah)

Lichvar, R. W., 1983. Brittonia 35(2):150-155, *Physaria dornii* (range: W Wyoming)

Barneby, R. C., 1983. Brittonia 35(2):109-110, *Astragalus knightii* (range: central NM)

Nesom and Weber, W. A., 1983. Madrono 30: 345-349, *Erigeron lackschewitzii* (range: Montana).

Evert, E., 1983. Madrono 30:143-146, *Lomatium attenuatum* (range: NW Wyoming).

T-Shirt Order Form

ORDER YOUR NEW CONPS T-SHIRT!! The Shirt is navy blue, with a light blue shading to white design of columbines and the Society's name. Shirts are available in 100% cotton or in 50% cotton/50% polyester. Use this form to order by mail, or buy through your chapter (or on some Society field trips.) Please enclose $6.50 for each shirt, plus $1.00 postage and handling cost for each shirt ordered. Allow 4-6 weeks for delivery. Send orders to:
CONPS T-Shirt, P.O. Box 200, Ft. Collins CO 80522.

SHIP TO:	ADULT SIZE	------Number------ 100%	50%/50%
Name_____	Small (34-36)	_____	_____
Address_____	Medium (36-38)	_____	_____
Address_____	Large (40-42)	_____	_____
City/State/ZIP_____	X-Large (44-46)	NOT AVAILABLE	_____

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Eleanor Von Bargen (85) Denver	756-1400

-Chapter Presidents who are members of BOD-

Boulder, Sue Galatowitsch	440-4133
Colorado Springs, Doug Ripley	-
Denver Metro, Nevin BeBee	733-1038
Fort Collins, Les Shader	484-0107
Four Corners	-

REPRESENTATIVES TO ORGANIZATIONS

COSC: Ann Cooper

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

COMMITTEES

CONSERVATION:	Sue Martin	226-3371
EDITORIAL:	Les Shader	484-0107
EDUCATION:	Miriam Denham	442-1020
FIELD TRIPS:	Nevin BeBee	733-1038
HORTICULTURE & REHABILITATION:	Anna Thurston	493-2369
MEMBERSHIP:	Myrna P. Steinkamp	226-3371
PUBLICITY:	(HELP)	-
FLORISSANT:	Mary Edwards	233-8133

NEWSLETTER CONTRIBUTIONS

Please direct all contributions to the EDITOR in care of the Society's mailing address. There is a special need for small filler items such as some unusual information about a plant, a little known botanical term, etc. All contributions should include the author's name and address, but items will be printed anonymously if it is requested.

Deadlines for Newsletter material are the first of the months of January, March, May, August, and November. The Newsletter will be mailed about the 15th of the same month.

MEMBERSHIP RENEWALS AND 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.

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