

Colorado Native Plant Society



NEWSLETTER

Volume 6 Number 3
July-September 1982

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

COMING EVENTS

18 SEPTEMBER. Fall Annual Meeting. Tour the Denver Botanic Gardens before lunch. After lunch you can listen to exciting and interesting speakers, help elect several new members to the Board of Directors, enjoy meeting old friends, make new friends and look at exhibits showing what our committees have been, are and perhaps will be doing.

**ANNUAL MEETING:
SEPTEMBER 18, 1982**

A Colorado Native Plant Festival celebrating the Botanical History of Colorado: its native (or adopted) plant hunting sons and its magnificent flora.

Your committee has put together an informative, exciting annual meeting. Plan to join your friends on September 18th in the John C. Mitchell Hall at Denver Botanic Gardens, 1005 York St. Come early at 10:30 A.M. and identify yourself at the gate as a Colorado Native Plant Society (CONPS) member and your will be admitted free. Free tours led by professionals will guide you thru the gardens which will be at the peak of fall color. Pay special attention to the Alpine Rock Garden and the Plains Garden that is now under construction.

Each CONPS standing committee will have a booth or a table illustrating its activities. Several local nurserymen will have displays of native plants for observation and sale. Lunch is planned at 12:00 noon (bring your own), CONPS will provide coffee and soft drinks. After lunch we will have a short business meeting. At that time you will receive ballots for the election of members to the Board of Directors.

At 1:15 P.M., our own Panayoti Callas, curator of the Alpine Rock Garden at the Denver Botanic Gardens, will speak on "Native Rockscaping - The Last Resort of Gardening." His illustrated presentation should hone your desires for natives in your yard. Next, Dr. Richard G. Beidleman, Professor of Biology at Colorado College, will present our keynote address. Dr. Beidleman brings an impressive set of credentials to our meeting, but perhaps of the most interest to us: he has done research in England on relationships between the American Frontier Naturalists and the British Scientists; has authored a series on the American Botanist for Horticulture Magazine; and is currently preparing a publication of Frederick Creutzfeldt, botanist with the 1853 Gunnison Expedition.

After Dr. Beidleman's exciting talk, we will see 4 different simultaneous presentations of Colorado Wildflowers by 4 extraordinary photographers, while enjoying each other's company and visiting the displays during the "hospitality time." Then too, the ballots will be collected and the newly elected directors will be announced and introduced.

Once again, Bob Heapes will donate one of his beautiful, fully framed, wildflower photographs as a door prize, and it will be drawn for at the party time. Any other donated door prizes would certainly be appreciated. (Call Lloyd Hayes, see back page for number, if you have one or many.)

All this, plus an opportunity to further the work of the Colorado Native Plant Society, will be enhanced by your presence at our annual meeting.

---Robert Heapes

O B I T U A R Y

C. William T. Penland

Professor Emeritus Charles William Theodore Penland, 4106 Lupine St., Colorado Springs, died Tuesday, March 30, 1982, at a nursing home.

Professor Penland was born December 5, 1899, in Baggs, Wyoming. He was 82 and had been a resident of Colorado Springs since 1922.

He married the former Nyla McNatt in New Mexico.

He received his bachelor's degree in botany from the University of Wyoming in 1920 and received a master's degree and doctorate from Harvard University in 1925.

Professor Penland taught botany and biology at Colorado College from 1922 until he retired from teaching in 1968. When he retired, he had been on the faculty longer than any other member in the college's history.

He served as the Colorado College tennis coach for 15 years.

Professor Penland was credited with the discovery of two new species of flowers in Colorado which were named after him. One of these species was *Eutrema penlandii* Rollins. (Your editor has been unable to discover the other species.)

He served in the Army for 3 years during World War II with 165th General Hospital in the European Theater.

Professor Penland collected a substantial number of plant specimens from around the world and donated many of them to various colleges and universities, including a collection of 200 varieties of fungi that he donated to the Colorado College Herbarium.

He served as faculty representative to the Interfraternity Council, chairman of the Division of Natural Sciences and secretary to the faculty during his tenure at Colorado College.

He was a member for 60 years of the Colorado Mountain Club and the Round Table. He was also a member of the AdAmAn Club since 1928.

Professor Penland was a member of the American Society for the Advancement of Science and an honorary member of the Colorado Native Plant Society.

He is survived by his wife and a sister.

**ENDANGERED SPECIES ACT:
GOOD NEWS!**

Both the House and Senate have passed bills reauthorizing the Endangered Species Act (ESA) for three years, through Fiscal Year 1985. Happily, both bills provide continued strong protection of both plants and animals, although they represent compromises in that some administrative procedures have been simplified in ways sought by industry. Once the bills are reconciled in committee and the final version approved by House and Senate and signed by Pres-

ident Reagan, the ESA, as strong as or stronger than the present version, will be continued. Thanks to all those who sent telegrams, wrote letters, or otherwise helped in the passage of the ESA. Senator Gary Hart of Colorado was a co-sponsor of the Senate bill; it certainly would not hurt to send him a note of appreciation for his role in support of the Act. His address is: The Honorable Gary Hart, 254 Russell Building, Washington, D.C. 20510.

The new ESA will continue to provide protection for endangered and threatened species, and there should be a renewed focus on listing appropriate species. The next hurdle, it appears, is that while the House and Senate ESA bills authorize certain monetary appropriations, these are in fact ceiling amounts; the effectiveness of the ESA will depend largely on the money actually made available to the agencies responsible for implementing it. The Reagan Administration's proposed budget provides considerably less for the endangered species program than current levels, and less than amounts authorized by the recent congressional bills. Putting the situation in perspective, the Endangered Species Act Reauthorization Committee recently pointed out that the present administration proposes to spend no more on endangered species in FY 1983 than it would cost to buy 12 bulldozers for the army. We must all continue to do what we can to encourage our legislators to provide sufficient funds to protect our endangered species.

--Sue Martin

NOTES FROM THE 1982 FIELD SEASON

Salix Candida

Salix candida has been found twice in Colorado, once in South Park west of Antero Reservoir and once in a willow-birch bog along the Upper Laramie River near Cameron Pass. I have worn out my eyes looking for it in many places, but finally found it in the Laramie River bog. If the books would only give us a better idea of what a plant looks like in the field and how it grows we might not have such problems! *Salix candida* is easy enough to spot once you know what you're looking for. It has chalk-white lanate leaf undersides and loosely lanate upper surface, and the leaves are narrowly oblong or oblanceolate and characteristically somewhat wavy-wrinkled along the edges. The surprise is its growth habit. *S. candida* has a very supple, simple unbranched stem about a quarter of an inch thick, and stands less than 2 meters tall. It is unbranched until the very tip, where it gives rise to a cluster of short branches that stand more or less erect. *Salix brachycarpa*, with which it grows, always is well-branched, and while it too is whitish, the leaves are shorter and broader, and it is more of a bush. *Salix candida* never seems to stand alone, as if it were too weak, and tends to be held up between the branches of *Betula glandulosa*, on tall moss hummocks. It's the easiest of willows to recognize, and I'm sure that others can find it once its growth habit is understood.

---Dr. William A. Weber

FLORISSANT FIELD TRIP

Named for a french word meaning "flowering" or "blooming", Florissant Fossil Beds National Monument more than lived up to its name for those participating in the field and collecting trip on July 10-11. We were treated to an incredible wildflower display, the best in nine years, according to the Monument staff. Heavy rains in late June brought flowering to a peak the first week in July. Magenta-flowered Colorado Loco and hybrids in various shades of pink together with Indian Paintbrush, bright yellow Senecio and many others carpeted great patches of meadow and forest openings.

Fourteen people met at the Monument Headquarters armed with digging tools, plastic bags, presses and books. The day began with a short introduction to the ancient history of the Fossil Beds, given by Susan Davis of the Monument Staff in the outdoor amphitheater. This was of special interest to those not present on last years' field trip.

The group proceeded to Twin Rock valley on the eastern edge of the monument, an area not collected before. This is a narrow valley in which a small stream meanders through a boggy meadow. The valley is flanked by low forested hills on the south, and on the north by a dry, rocky slope capped with huge boulders of Pikes Peak granite. This made for three generally different types of ecosystems from which to collect, with little over-lapping of species.

Three teams were set up of 3-4 members each, with one member recording plants collected on special forms for field use, while the rest of the team collected and returned specimens to a central area for immediate pressing. Three plants of each species were gathered, two for the Florissant Herbarium and one to be deposited with Dr. Weber at the Colorado University Museum Herbarium. About 95 different species of plants were collected during the weekend, adding about 60 species to the overall list which now numbers about 165.

This was no leisurely field trip and picnic; everyone worked extremely hard until late in the afternoon on Saturday, and a few were able to stay over at the Monument to collect on Sunday morning. The Florissant committee is most appreciative of the efforts of all who came and wishes to thank them, and we especially thank Superintendent Bob Reyes and his staff at the Monument for their cooperation and help.

The only sad note to an otherwise happy and successful occasion was the fact that our friend and sponsor, Dr. F. Martin Brown, "Brownie," geologist and naturalist from Colorado Springs, and who has been associated with the Monument for many years, was hospitalized pending serious surgery, and thus was unable to be with us. Latest word comes that "Brownie" is progressing nicely.

---Mary Edwards

TENTATIVE LIST BY FAMILY OF PLANTS
COLLECTED AT FLORISSANT FOSSIL BEDS
NATIONAL MONUMENT 10-11 JULY 1982.

- Alliaceae
Allium cernuum Roth in Roem.
- Apiaceae
Pseudocymopterus montanus (A. Gray) Coult. & Rose
- Asteraceae
Achillea lanulosa Nutt.
Antennaria parvifolia Nutt.
Antennaria rosea (D. C. Eat.) Greene
Erigeron divergens T. & G.
Erigeron flagellaris A. Gray
Picradenia richardsonii Hooker
Rudbeckia hirta L.
Senecio fendleri A. Gray
Senecio integerrimus Nutt.
Senecio tridenticulatus Rydb.
- Boraginaceae
Cryptantha thrysiflora (Greene) Payson
Cryptantha virgata (Porter) Payson
Hackelia floribunda (Lehm.) Johnston
Lappula redonskii (Hornem.) Greene
Lithospermum multiflorum Torr. ex A. Gray
Mertensia ciliata (James) G. Don.
Mertensia lanceolata (Pursh) A. DC.
- Brassicaceae
Arabis divericarpa A. Nels.
Descurainia richardsonii (Sweet) D. E. Schulz
Draba aurea M. Vahl(?) in Hornem.
Draba streptocarpa Gray
Erysimum asperum (Nutt.) D.C.
- Campanulaceae
Campanula parryi A. Gray
Campanula rotundifolia L.
- Caprifoliaceae
Lonicera involucreta (Richards.) Banks ex Spreng.
- Caryophyllaceae
Arenaria fendleri A. Gray
Cerastium arvense L.
Stellaria laeta Rich.
Stellaria longipes Goldie
- Crawulaceae
Sedum lanceolatum Torr.
- Cyperaceae
Carex sp.
- Euphorbiaceae
Euphorbia robusta (Engelm.) Small in Britt. & Brown
- Fabaceae
Astragalus agrestis Dougl. ex G. Don
Astragalus alpinus L.
Astragalus crassicaarpus Nutt. in Fraser
Oxytropis lambertii Pursh
Oxytropis splendens Dougl. in Hook.
Vicia americana Muhl. ex Willd.
- Fumariaceae
Corydalis aurea Willd.
- Geraniaceae
Geranium caespitosum James apud Gray
Geranium richardsonii Fisch. & Trautv.
- Grossulariaceae
Ribes inerme Rydb.
- Hydrangeaceae
Jasessia americana T. & G.
- Hydrophyllaceae
Phacelia heterophylla Pursh
- Iridaceae
Sisyrinchium montanum Greene
- Liliaceae
Saillacina stellata (L.) Desf.
- Linaceae
Linum lewisii Pursh
- Onagraceae
Oenothera coronopifolia T. & G.
- Orchidaceae
Platanthera hyperborea
- Drobanchaceae
Drobanche fasciculata Nutt.

Poaceae
Danthonia parryi Scribn.
Phleum pratense L.

Polemoniaceae
Collomia linearis Nutt.
Silva pinnatifida Nutt. var. *calcareae* Brand
Ipsopsis aggregata (Pursh) V. Grant

Polygonaceae
Bistorta bistortoides (Pursh) Small
Bistorta vivipara (L.) S. Gray

Portulacaceae
Crunocallis chabissoi (Ledeb.) Rydb.

Primulaceae
Androsace septentrionalis L.
Dodecatheon pulchellum (Raf.) Merrill

Ranunculaceae
Aquilegia caerulea James
Ranunculus cardiophyllus Hook.
Ranunculus macounii Britt.
Thalictrum sparsiflorum Turcz. ex Fisch.

Rosaceae
Argentina anserina (L.) Rydb.
Chamaerhodos erecta (L.) Bunge ssp. *nuttallii* (Pickering ex T. & G.) Hulten
Dryocallis fissa (Nutt.) Rydb.
Erythrocoa triflora (Pursh) Greene
Fragaria americana (Porter) Britton
Fragaria ovalis (Lehm.) Rydb.
Geum macrophyllum Willdenow
Pentaphylloides floribunda (Pursh) A. Love
Potentilla hippiana Lehm.
Potentilla pennsylvanica L.
Rosa woodsii Lindl.
Rubus deliciosus ? James or Torr.?
Rubus idaeus L. ssp. *melanolasius* (Dieck) Focke

Rubiaceae
Galium boreale L. ssp. *septentrionale* (R. & S.) Hara

Salicaceae
Salix sp.

Saxifragaceae
Heuchera parvifolia Nutt. ex T. & G.
Saxifrage bronchialis L. ssp. *austrosontana* (Wieg.) Piper

Scrophulariaceae
Besseyia plantaginea (James) Rydb.
Castilleja integra Gray in Torr.
Pedicularis canadensis L. ssp. *fluviatilis* (Heller) W. A. Weber
Penstemon crandallii A. Nels.
Penstemon secundiflorus Benth. in DC.
Penstemon virgatus Gray ssp. *asa-grayi* Crosswhite

Valerianaceae
Valeriana capitata Pallas ex Link ssp. *acutiloba* (Rydb.) F. G. Meyer

NOTES FROM
 THE 1982 FIELD SEASON

New *Braya* Localities!

Phil Dixon, conducting vegetation analysis in Gunnison County, out of Cornell University, discovered a fine new population of *Braya humilis* ssp. *ventosa* far from the original and only known site on Hoosier Ridge, near the summit of Cumberland Pass. I went there to see it in the flesh, and on the way I picked up Louise Roloff at Dillon and made a short tour of the lower alpine slopes of Mount Cross, in Park County. Imagine our surprise to come across a beautiful colony of *Braya* in upper Dolly Varden Gulch! The secret seems to be that *Braya* likes to be either on or very close to rubble of the Leadville Limestone. I think that once we know this, *Braya* will begin to turn up in other areas of the vast tundra between Cumberland and Hoosier passes.

---Dr. William A. Weber

THE BLUE SPRUCE A Colorado Tree

PART TWO. PART ONE APPEARED IN THE LAST ISSUE.

By Dr. Gilbert H. Fechner, Forest and Wood Sciences, Colorado State University.

(This article is a reprint of an article that appeared in the November-December, 1973 issue of Colorado Outdoors. It is being reprinted with the permission of both Dr. Fechner and the Colorado Division of Wildlife that publishes the Colorado Outdoors.)

Ecology--In nature, blue spruce occupies a relatively small ecological niche in the montane and subalpine forests of southern Rocky Mountains from about 6,000 to 10,000 feet (mostly between 7,000 and 8,500). It is usually restricted to moist stream bottom and drainage sites, where it grows singly or in small groups near willows and alders. In northern Colorado blue spruce rarely is more than about 30 or 40 feet above the level of the drainage bottom, though in the southwestern part of the state it grows well up the mountainside.

That blue spruce in nature grows mostly along stream courses is no accident. It is adapted to this small niche that it occupies. First of all, moisture is required in spring, when the seed that ripened the previous autumn will sprout. And the soil moisture conditions required by blue spruce are most frequently met in the low ground near streams. And even in these low areas, the exact location of new seedlings can often be traced to locations where the snow stayed just a little longer in spring and thus kept the soil just a little moister than nearby. Then, too, blue spruce has a very shallow root system. In soils that are very dry, the roots do not reach deep enough to obtain the water necessary for the trees to exist; as a result, they do not grow on very dry sites. But in a moist location, the shallow roots are deep enough to allow the trees to become established.

Blue spruce is also adapted to heavy snows that occasionally occur in its native range. Its branches are short and stiff and as such support great accumulations without breaking. Most of the broadleaved trees sustain injury from the very early autumn snowstorms that occasionally occur before their leaves have fallen or very late spring storms after the leaves have unfolded; they are less well adapted to snow than the blue spruce is.

Finally, blue spruce is adapted to bright sunlight and high evaporation that often occur during the summer when soil moisture is low. After a tree is established in the soil, it is still vulnerable to desiccation through the leaves. But blue spruce is protected against drying because its leaves are thick and because they are variously covered with waxy coating; both of these adaptations help to conserve moisture.

The ecological niche to which blue spruce is adapted, occurs in much of the southern Rocky Mountains. The natural range extends from Colorado northwestward through Wyoming to southeastern Idaho and south through Utah to northern and eastern Arizona and northern New Mexico (Little, 1953). About one-half of the blue spruce distribution lies in Colorado, however, and blue spruce attains its best development there. The largest tree, in records of the Colorado State Forest Service, is over 5 feet in diameter, located near Gunnison, Colorado. Blue spruce grows to 150 feet in height and may live to 600 years.

Identification--Blue spruce is not always easy to distinguish from Engelmann spruce (also first distinguished by Parry in Colorado and named by him in honor of his colleague), the only other spruce native to Colorado. Furthermore, sometimes some of the features are common to both, leading to the not impossible supposition of some people that the two species hybridize naturally where they grow together (about a 500- to 1,000-foot altitudinal overlap). We have not been very successful with artificial crossing, however. The chart shows some ways that are usually helpful in separating the two Colorado spruces:

Not all blue spruce trees have bluish leaves, however. Those trees that do, have a white waxy substance on the surface of their leaves which covers the green giving them the bluish, or sometimes silvery cast. Recent studies have shown that different patterns of surface waxes impart different color impressions to the foliage (Hanover and Reicosky, 1971). This waxy material can be rubbed off with the fingers, and the color of the leaves seems to change. Weathering for a year or more also removes this substance, and the older leaves, those nearer the trunk, usually are darker than the young leaves on the ends of the branches.

Although most people recognize the beauty of the blue spruce leaves, the flowers, or conelets, are often overlooked. The male, or pollen-bearing conelets usually are in the upper one-half of the crown. The female conelets are usually just in the uppermost 25 percent of the crown. Both kinds of conelets may be yellow-green in color; but more commonly, they are a bright pink. The flowers appear about the middle of June in natural stands at 7,500 to 8,000 feet; but in Colorado they can be seen nearly one month earlier at 5,000 feet.

The state tree of Colorado is a beautiful tree in foliage and flower. It was discovered in Colorado; it attains its best development there; indeed much of its range lies in Colorado, where it is adapted to its niche. Small wonder, then, that it has become one of the most popular trees for garden planting in the state, and elsewhere, as well.

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MAILING ADDRESS

COLORADO NATIVE PLANT SOCIETY
P. O. BOX 200
FORT COLLINS CO 80522

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NEWSLETTER ARTICLES

Please direct all contributions and articles to the EDITOR in care of the Society's mailing address.

Deadlines for the quarterly NEWSLETTER are the first day of February, May, August and November with publication the last day of the 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.

Colorado Native Plant Society
P. O. Box 2164
Fort Collins Co 80522

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DR. DEXTER W. HESS
2202 SANTA FE AVE.
LA JUNTA CO 81050