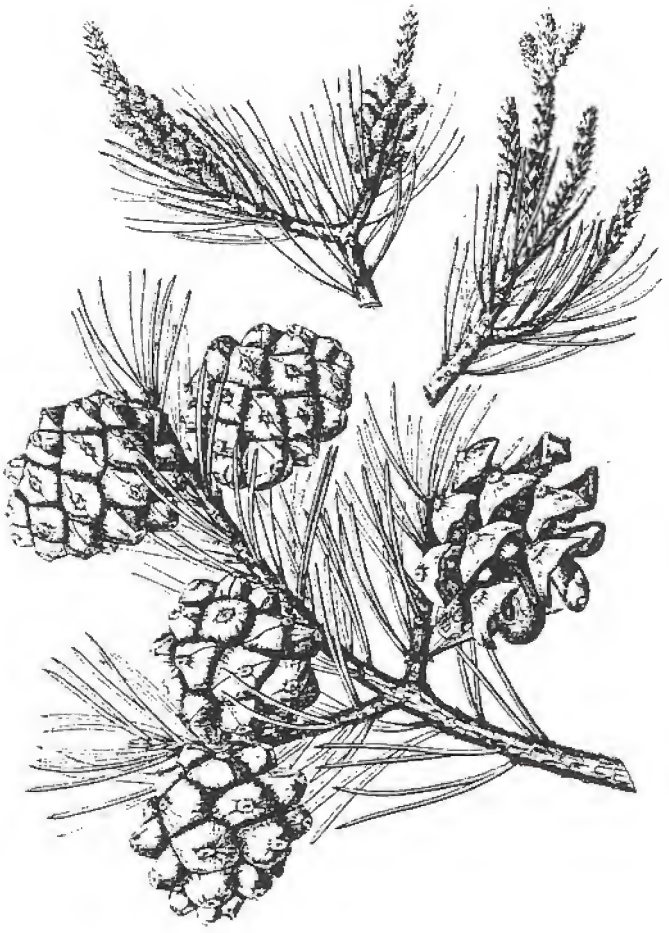
Castilleja

The Newsletter of the Wyoming Native Plant Society

May 1997
Volume 16, No. 2

In this issue:



Pinyon pine (*Pinus edulis*) is the rarest of the five species of pines native to Wyoming. Although widespread in the American southwest, pinyon pine barely makes it across the Utah border into extreme southern Sweetwater County, Wyoming, where it is largely restricted to sandstone uplifts dominated by Utah juniper woodlands. Like other "pinyons" of the southwest, *P. edulis* is characterized by having large nuts that are a valuable source of food for wildlife and humans. Pinyon pine can be recognized by its short, needle-like leaves arranged in clusters of 2 and its broad, somewhat flattened cones that lack sharp points on the cone scales. Ill. By C. E. Faxon from The Silva of North America, 1897. For more on the pinyon-juniper ecosystem in Wyoming, see page 7.

WNPS News

Membership Renewal/Elections: Renewal notices and ballots are enclosed with this issue. Members with a 95, 96, or 97 on their mailing label need to renew now to remain in good standing, while those with a 98 on the label are paid through this year. The following individuals have agreed to run for the WNPS Board: President – Charmaine Delmatier, Vice President – Dick Scott, Secretary-Treasurer – Walt Fertig, and 2-year board member – Jennifer Whipple. As always, write-in votes are welcome.

New Members: Please welcome the following new members of WNPS: Bruce Barnes (Pendleton, OR), Denver Botanic Garden (Denver, CO), Ellen Galligan (Thermopolis), Hortus West Publications (Wilsonville, OR), Susan Spackman (Loveland, CO), Jane Sullivan (Casper, WY), and Beth Ward (Laramie).

We're always looking for new members: Do you know someone who would be interested in joining WNPS? Send their name or encourage them to contact the Society for a complimentary newsletter.

Attention Readers: We are always looking for articles and illustrations for the newsletter. Items for the October issue are needed by 15 September 1997.

Treasurer's Report: Balance as of 19 May 1997: General Fund $469.11; 1996-97 Student Scholarship Fund $150.00; Total funds: 619.11 WF

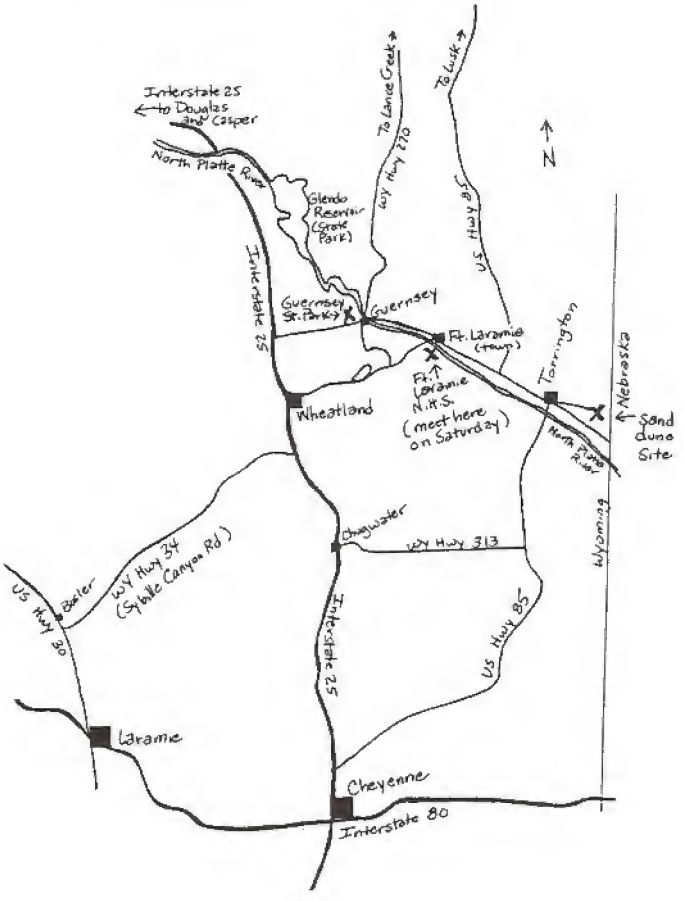
Wyoming Native Plant Society
1604 Grand Ave., Laramie, WY 82070

Summer Field Trips

Annual Meeting/Field Trip: The 1997 annual meeting and field trip is scheduled for Saturday, July 26 and Sunday July 27. We plan to meet in the parking lot of the Ft. Laramie National Historic Site (between the towns of Ft. Laramie and Wheatland) at 8:30 AM on Saturday. We anticipate receiving an educational group fee waiver, so be sure to mention that you are with the WNPS when you reach the Historic Site. After a brief business meeting, we will explore the botanical features of the historic fort, with an emphasis on the wildflowers of the river bottom. After exploring Ft. Laramie, we will proceed to the metropolis of Torrington to visit an interesting sand dune area on BLM lands east of town. These dunes support an unusual sand sagebrush community that contains a number of rare prairie plants that are not known from any other sites in the state. The area is also a significant birding area, so binoculars (as well as a hand lens) are recommended. On Sunday, remaining plant lovers can tour Guernsey State Park, where several rare species may be found.

Camping is available at state parks in the area. Motel accommodations are also available in the towns of Guernsey, Torrington, Wheatland, or Fort Laramie.

National Elk Refuge (Jackson Hole): On Saturday, June 14, Jim Ozenberger (ecologist for the Jackson Ranger District of the Bridger-Teton National Forest) will lead a field trip covering the eastern foothills of the Refuge and the adjacent Bridger-Teton Forest from 9:00 AM-noon. The trip will feature a number of unusual limestone-loving plants adapted to the foothill slopes and forests. Meet at the entrance to the Elk Refuge (at the bulletin board on the dirt road past Lame Duck) at 9:00 AM (participants will carpool from there). Be prepared for a 1-2 mile hike. For more information, contact Jim at (307) 739-5431.



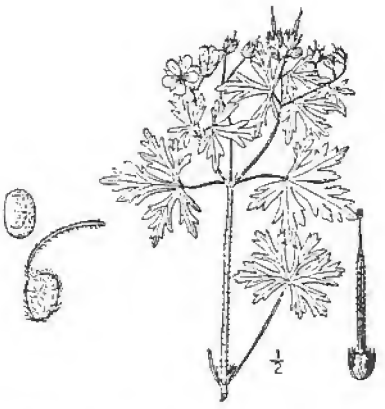
The Tall Forb Cover Type In Bridger-Teton National Forest

By Susan Marsh

In backcountry travels on the Bridger-Teton Forest, people are drawn to the upper slopes where the aspen stands thin out and clusters of subalpine fir point to the rocky skyline. Wildflowers are what we seek there, in what I used to call "subalpine meadows". A few years ago on a field trip with Alma Winward, the Intermountain Region's plant ecologist, I was corrected. These were not meadows, which are flat and characterized by grasses. They were parklands, dominated by a cover type that I had never named, though the plants were right under my nose and over my head – tall forb.

Since then, I have learned a little about this cover type. Not only is it beautiful, it represents an unusual and valuable part of the upper montane mosaic. And it is in some danger. Historically common throughout mountainous regions of western Wyoming, Utah, and western Colorado, about half the tall forb type is gone. Grazing practices at the turn of the century resulted in soil loss and replacement of the tall forb by grasses or forbs that tolerate drier, poorer-soil conditions. In the Gros Ventre, Wyoming, and Snake River ranges of the Bridger-Teton National Forest, some of the most intact tall forb sites remain. They are valuable to elk, raptors that hunt rodents, hummingbirds, and butterflies, as well as to people who run around the mountains with a camera. Tall forb is also valuable to the watershed, even after it has died back in the fall. It forms a mat of dead plant material that helps protect otherwise bare slopes from heavy rain and sheet erosion.

The variety of species is impressive. Tall forb parks may have over twenty or thirty species competing for dominance, along with a few grasses, sedges, and early-blooming ephemerals such as waterleaf (*Hydrophyllum*) and violet. The mix of co-dominant plants seems to change slightly from place to place, depending on specific soil and moisture conditions. In our area, the ones most often found in "old growth" tall forb sites include licorice root (*Ligusticum filicinium*), sticky geranium (*Geranium viscosissimum*), tall larkspur (*Delphinium occidentale*), sweet vetch (*Hedysarum occidentale*), sweet cicely (*Osmorhiza occidentalis*), horsemint (*Agastache urticifolia*), fleabane (*Erigeron speciosus* and several others), and bracted lousewort (*Pedicularis bracteosa*). Frequent additions are sulfur paintbrush (*Castilleja sulphurea*), several asters, including the tall *Aster engelmannii*, stickseed (*Hackelia floribunda*), little sunflower (*Helianthella uniflora*), goldeneye (*Viguiera multiflora*), meadow rue (*Thalictrum fendleri*), groundsel (*Senecio crassulus* and others), lupine (*Lupinus argenteus*), mountain coneflower (*Rudbeckia occientalis)*, Colorado columbine (*Aquilegia caerulea*), valerian (*Valeriana occidentalis*), and tobacco-root (*Valeriana edulis*). In moister settings, cow parsnip (*Heracleum sphondylium* var. *lanatum*) may be found. The mix of species forms a flower garden of colors – blue, violet, red, pink, bright yellow, and white. Tall forb sites generally peak in color from mid-July through mid-August.



Above: Bicknell's geranium (*Geranium bicknellii*) from Britton and Brown, 1913.

Characteristic grasses include onion grass (*Melica bulbosa*), bluegrass (*Poa reflexa*), and mountain timothy (*Phleum alpinum*). Slender wheatgrass (*Elymus trachycaulus*) may also be found. Characteristic sedges of the tall forb type are Raynold's and Hood's sedges (*Carex raynoldsii* and *C. hoodii*).

Tall forb types grade into slightly drier shrublands, especially on irregular mountain slopes where bedrock or colluvium is found near the surface. The change in species can be abrupt between the classic tall forb mix and those species which persist in drier conditions.

Differences in shade and moisture also influence the mix of species in a tall forb park. Near the edge of the forest shade-tolerant plants like Colorado columbine and Engelmann aster may become dominant. Some species are restricted by light and moisture needs; others are widely tolerant – mountain coneflower and sticky geranium seem to occur in rocky sites and moist swales alike. These species tend to be more abundant in grazed areas.

Tall forb types are found mostly in the subalpine and upper forest zones, 7000 to 10,000 feet in our area, where annual precipitation is 30-35 inches. Tall forb may be found on all aspects except north, where shrubs tend to dominate the openings (these are often avalanche chutes).

Tall forb soils are deep and loamy. At one site in the Gros Ventre mountains, Alma buried his core sampler to the handle (3 feet) and came up with homogeneous dark loam. Tall forb seems to be more common in mountains of limestone and shale; sandstone and granite forms coarse soils insead of the fine-textured loam the tall forb type requires.

One of the most intriguing things about the tall forb type is that we don't know much about it. What makes it so stable? How does such deep soil form on young, geologically active surfaces? What species indicate trends and why are some present in certain tall forb sites and not others? Is fire a factor in keeping shrubs from invading? Are pocket gophers and other burrowing animals necessary to perpetuate tall forb?

These questions will continue to provide puzzles as we look forward to another summer in the mountains. Knowing how important tall forb sites might be, in ways we may never understand, helps us appreciate their beauty even more.

Botany Briefs

Botanical News from Wyoming and the Rocky Mountain Region

Teton Science School Summer Botany Classes: The Teton Science School in Kelly Wyoming is offering the following summer seminar courses on wildflowers of the Teton and Jackson Hole areas:

Wildflower Photography: Instructor: Bruce Thompson. Date: June 15, 1997. Fee: $50. Enrich your botanical experience of the spectacular show of wildflowers in the valley while learning close-up techniques.

The Wonders of Wildflowers: Instructor: Kristi Dahl. Date: June 22, 1997. Fee: $50. Enjoy and identify the colorful wildflowers that blanket Jackson Hole during June.

Field Botany, Flora of the Tetons: Instructor: Dr. Leila Shultz. Date: June 24-27, 1997. Fee: $200 + $7 for tram. Learn to recognize plant families and variation in plant species and structure in native settings through four days of field exploration and work in a laboratory. Academic credit available.

Alpine Wildflowers: Instructor: Kim Springer. Date: July 18, 1997. Fee: $50. Explore the exquisite alpine environment.

Wildflower Walk: Instructor: Dr. William Edwards. Date: July 19, 1997. Fee: $50. Go sauntering and become acquainted with some of the most spectacular flowers on earth in Grand Teton National Park.

For further information on these, or other natural history courses, contact the Teton Science School at (307) 733-4765 (e-mail tss@wyoming.com), PO Box 68, Kelly, WY 83011.

Buyer Beware: Not all "Native Wildflower" Seed Mixes Contain Native Species: I was recently looking through the variety of seed packages for sale at the Laramie Wal-mart, when I ran across a package of Burpee seeds labeled "Native American Wildflower". Always curious about what species might be enclosed, I read the back of the package. In a highlighted box, the company extolled that the package contained "a mixture of American wildlflowers native to Western, Midwestern and Eastern states...". This was then followed by a list of 23 genera of wildflowers in the mix, 10 of which are not native to North America, and several of which contain species considered noxious weeds! The non-native genera include *Alyssum, Centaurea* (many of which are noxious weeds), *Chrysanthemum, Cosmos, Cynoglossum* (a noxious weed), *Dianthus, Dimorphotheca, Gypsophila, Iberis,* and *Lavatera.* Other genera are native to North America, but are either not native to Wyoming or are probably represented by cultivated species that are not native to the state. These genera include *Clarkia, Eshscholzia,* and *Papaver.*

With the exception of noxious weed species, all of these flowers may be appropriate species for the garden. Nonetheless, consumers wishing to plant "native American wildflowers" need to be cautious about what they are purchasing. Simply because the package says it is "native" does not mean that the species represented are truly indigenous to North America or Wyoming. WF

Botanist's Bookshelf

This month we are pleased to feature 2 recently published books by members of the Wyoming Native Plant Society.

A Field Guide to Wildflowers of the Rocky Mountains. By Carl Schreier. 1996. Homestead Publ., Moose, WY. 224 pp. $18.95.

I have always had a weakness for color picture guides to western wildflowers. In recent years, many new guides have come onto the market, nearly all of which feature wonderful color photography. Sometimes, however, I am a bit disappointed when the prose in these books does not live up to the quality of the illustrations. Fortunately, **A Field Guide to Wildflowers of the Rocky Mountains** satisfies both of these criteria admirably.

Of course, the benchmark of any good field guide is the quality of the illustrations. The book's photographs (most of which were taken by the author) are consistently outstanding, and are nicely complimented by line drawings which highlight features that may not be evident from the photos. Some photographs were particularly noteworthy from a scientific and artistic perspective. My favorites included the photos of *Nuphar polysepalum, Fritillaria pudica, Lesquerella paysonii,* and *Menziesii ferruginea,* (in which the leaf hairs literally leap off the page).

Each illustration is accompanied by a paragraph describing the species in simple, but complete prose. Personally, I much prefer this style of writing to the "snippets" of descriptive terms that often are used in other books. Schreier also includes interesting facts on the history and uses of each plant, as well as information on their distribution and habitat.

The species in the book are arranged in a phylogenetic sequence, rather than by color or other unnatural methods. I like this arrangement because closely related species are grouped together. Such an arrangement can be helpful to readers who would like to learn more about the taxonomic relationships of the species.

There are a few errors in the book, none of which are serious enough to detract from its overall high quality. Some of the species nomenclature is a little dated and does not reflect the most current concepts of the species. For example, *Saxifraga arguta* is more widely accepted today as *S. odontoloma,* and *Clematis columbiana* (as illustrated) is what is now called *C. occidentalis* var. *grosserrata.* A few photos also appear to be misidentified. *Draba oligosperma* is probably *Lesquerella alpina, Astragalus bisulcatus* is *A.*

purshii, *Haplopappus uniflorus* is *H. armerioides*, *Oxytropis sericea* is probably *O. campestris*, and *Castilleja linariefolia* is *C. chromosa* (an error that has been perpetuated in many other field guides!). WF

The Sunflower Family. By Cherie Winner. 1996. Carolrhoda Books, Inc., Minneapolis, MN. 48 pp.

As its title implies, **The Sunflower Family** is an ode to the Asteraceae, written for budding botanists in the 3-7th grade range. The book is copiously illustrated with color photographs and line drawings, and has been written to make the complicated world of these wildflowers understandable to younger minds. In reality, though, this book is equally useful to grown-up readers who are confused by the complexity of the Composites. Winner's descriptions of the composite flower and the evolutionary adaptations of the family are incredibly clear and much easier to follow than the average dusty taxonomy tome.

Wyoming readers will also enjoy the many references to species from our state. Two of our rarest composites are prominently featured and illustrated: the Laramie false sagebrush (*Sphaeromeria simplex*) is shown as an example of a rayless composite and Desert yellowhead (*Yermo xanthocephalus*) is featured in a discussion of specialized habitats of rare species.

This book is recommended for anyone with a child or grandchild interested in nature, or to any reader who wants a quick refresher course in the sunflower family. WF

Recent Research on Salt Grass Rust in Wyoming

By John Baxter

The following is new information. If you wonder why I haven't tried to publish this (plus a few other bits of data) in a mycological journal, or at least in *Plant Diseases*, look me up, and (if you have the patience) I'll provide a lengthy explanation.

Puccinia subnitens, the rust fungus that infects salt grass (*Distichlis spicata*), is known to have a large number of distantly related aecial hosts in several families (Bethel 1917). During the past 3 years, in controlled indoor inoculations, overwintered teliospores of *Puccinia subnitens* were used to inoculate 21 possible aecial hosts. Spermagonia and aecia developed on the following species:

Aizoaceae: New Zealand spinach (*Tetragonia expansa*), Livingstone daisy (*Dorothecanthus bellidiformis*), Trailing ice plant (*Delosperma cooperi*)

Brassicaceae: Cabbage (*Brassica oleracea*), Dyer's woad (*Isatis tinctoria*), Dame's rocket (*Hesperis matronalis*), Wallflower (*Cheiranthes cheiri*), Hoary cress (*Cardaria* sp.), and Prince's plume (*Stanleya pinnata*).

Below: Parry goldenrod (*Solidago parryi*), an unusual composite native to the Sierra Madre, Medicine Bow and Wyoming ranges. The affinity of this species has been the source of some controversy, with different authors treating it as a member of the genus *Aster* or *Haplopappus*. Ill. by W. Fertig.

Loasaceae: Wavy-leaf blazingstar (*Mentzelia sinuata*) and Ten-petaled blazingstar (*Mentzelia decapetala*).

Plantaginaceae: Lawn plantain (*Plantago major*) and Woolly plantain (*Plantago patagonica*).

Polygonaceae: Sand dock (*Rumex venosus*) and Curly dock (*Rumex crispus*).

No infection occurred on *Limonium sinuatum, Verbena bracteata, Hyoscyamus niger, Solanum triflorum, Lithops* sp., and *Anemopsis californica*. Specimens resulting from these inoculations have been deposited in the herbarium of the Botanical Research Institute of Texas.

Reference: Bethel, E. 1917. *Puccinia subnitens* and its aecial hosts. Phytopathology 7:92-94.

Has Anyone Seen the Hyattville Milkvetch?

By Walter Fertig

The Hyattville milkvetch (*Astragalus jejunus* var. *articulatus*) was first discovered by Dr. Ron Hartman in June 1979, near Hyattville, Wyoming. By coincidence, it was also "discovered" by Dr. Robert Dorn about 2 miles away on the very next day! After careful scrutiny of these specimens, Dorn recognized that the Hyattville plants represented a new taxon. He described the plants as a new variety in the first edition of his *Vascular Plants of Wyoming* in 1988.

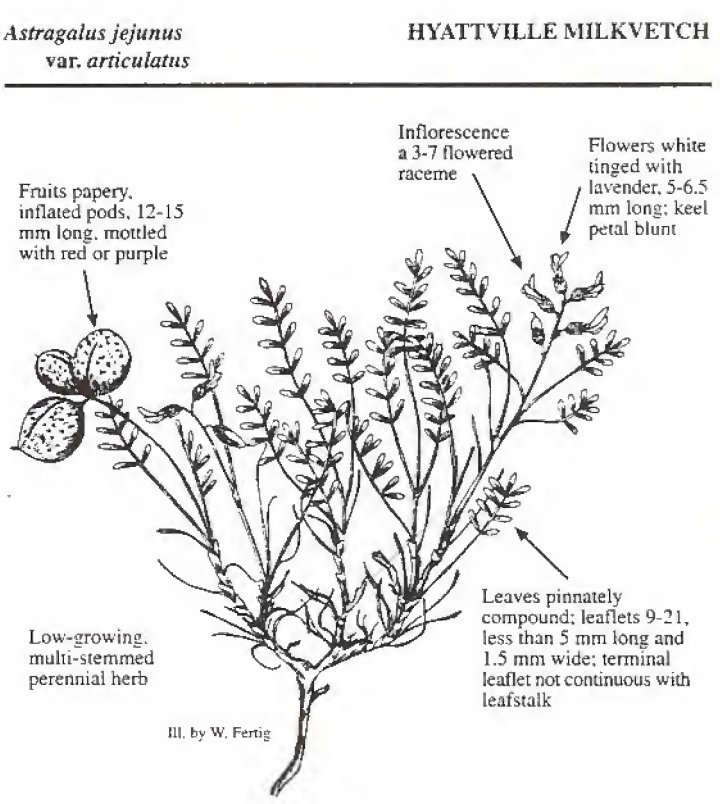
This member of the pea family (Fabaceae) has a distinctive "bushy" growth form (even though it only attains a height of about 5 inches!). The leaves are mostly ½ to 3 inches long and are pinnately divided into 9-21 narrow leaflets. The small flowers are mostly white with lavender tips and occur in open clusters of 3-7 and are in bloom from May to June. The most distinctive feature of the plant is its inflated, bladdery fruit pods that are papery in texture and mottled with red or purple spots.

Hyattville milkvetch closely resembles the Starveling milkvetch (*Astragalus jejunus* var. *jejunus*), a taxon of limited distribution in the dry basin country of southwestern Wyoming and adjacent Utah and Idaho. Variety *jejunus* can be distinguished by its purplish flowers and shorter stems (often with numerous, persistent dead branches). This variety is relatively common in Wyoming, but extremely rare elsewhere in its range and is treated as Sensitive by the Forest Service in Utah and Idaho.

Astragalus jejunus var. *articulatus* grows on sparsely vegetated, barren clay hills with red soils. It is usually found on substrates derived from the Goose Egg and Chugwater Formations. Populations are generally widely scattered. Some of the species associated with Hyattville milkvetch include yucca (*Yucca glauca*), larchleaf beardtongue (*Penstemon laricifolius*), Bessey's locoweed (*Oxytropis besseyi*), miner's candle (*Cryptantha* spp.), groundsel (*Senecio* spp.), and Hood's phlox (*Phlox hoodii*).

Despite recent surveys by Dorn and others, *A. jejunus* var. *articulatus* is still known only from the vicinity of Hyattville in eastern Big Horn County, Wyoming, in the transition zone between the eastern Bighorn Basin and the foothills of the Bighorn Range. Dorn located 3 subpopulations during a survey for the US Fish and Wildlife Service in 1989. He estimated that the population contained 6750 plants in an area totaling 35 acres. The population appears to be secure at present, although disturbance from off-road vehicles or potential mining could jeopardize the species in the future.

Due to its extremely restricted range and small population size, Hyattville milkvetch was a candidate for listing under the Endangered Species Act until 1996. In that year, most existing candidate species were dropped from consideration by the US Fish and Wildlife Service as part of a revision of the Service's candidate policy (see the October 1995 issue of *Castilleja*). The Bureau of Land Management Wyoming State Office is currently reviewing this taxon for possible inclusion on its list of state sensitive species.



Above: Hyattville milkvetch (*Astragalus jejunus* var. *articulatus*). Ill. By W. Fertig from "Wyoming Rare Plant Field Guide".

Additional information is needed on this, and many other rare species that might warrant protection under the Endangered Species Act. Such information can be useful in guiding management decisions and in determining what land use activities may be compatible or incompatible with the plants' survival. Better data on locations and abundance can also influence whether a species even needs management attention at all (additional surveys sometimes result in the discovery of many new populations of a rare species). If you find yourself wandering through the Hyattville area this spring, keep a keen eye peeled for the milkvetch and let botanists in the Plant Society, the University, the BLM, or the Nature Conservancy Heritage program know of your discoveries.

Wyoming's Pinyon-Juniper Woodlands

By Walter Fertig

Mention conifer forests to a Wyoming naturalist, and most will conjure up images of cool, mountainous slopes clothed by tall and dense stands of subalpine fir, Engelmann spruce, Douglas-fir, or lodgepole pine. What many people may not realize is that Wyoming is also home to a very different conifer forest type, one in which trees reach an average height of 12 feet and occur on dusty, low, desert mountains. This "pygmy forest" is the pinyon-juniper woodland of southwest Wyoming.

The two chief components of this forest type are the pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*). Together, these two species cover most of the low mountain ranges of the Great Basin and Colorado Plateau. In Wyoming, however, Utah juniper and pinyon pine only occur together in a small area of southern Sweetwater County on the east side of Flaming Gorge Reservoir. Pinyon pine is at the northern limit of its range in this area, and apparently has been unable to spread farther north due to harsh winter conditions. Utah juniper is more cold and drought tolerant, and has been able to continue northward into the basins of central and western Wyoming.

The pinyon-juniper woodland in Wyoming is found primarily on dry, red or whitish, sandstone ridges of the Rock Springs Uplift. Of the two species, the Utah juniper is typically the more abundant and contributes the greater amount of total cover. In many areas, pinyon may be completely absent or secondary in importance to true mountain mahogany (*Cercocarpus montanus*), curlleaf mountain mahogany (*C. ledifolius* var. *ledifolius*), or other shrubs. Regardless of the species composition, these forests are typically comprised of relatively short trees that are spaced far enough apart to form a discontinuous canopy. The forest understory is often fairly sparse, with scattered shrubs, bunchgrasses, and low forbs, and large expanses of bare ground or gravel.

Pinyon-juniper forests in southwest Wyoming appear to be spreading from ridgetop habitats into adjacent valley communities dominated by sagebrush grasslands. Studies of other juniper-dominated communities in Wyoming have found that the spread of juniper may be related to the advent of livestock grazing and fire suppression. Grazing has been found to contribute to fire suppression through the removal of fine vegetation that could serve as fuel for wildfires. The spread of juniper can result in changes in the species composition of plant communities due to toxic effects from chemicals released from the junipers foliage and roots.

A number of uncommon shrub species are largely restricted to pinyon-juniper woodlands in Wyoming. Among these are the little-leaf mock-orange (*Philadelphus microphyllus*), a white-flowered, shreddy-barked relative of the *Hydrangea*, dwarf ninebark (*Physocarpus alternans*), known only from one location in the state just north of the Utah state line, and dwarf mountain mahogany (*Cercocarpus ledifolius* var. *intricatus*), a species with narrow, leathery leaves that are almost completely folded to obscure the white-woolly undersides.

Perhaps the most unusual of these shrub species, however, is the green Mormon tea (*Ephedra viridis*). This essentially leafless, yellowish-stemmed shrub is the only member of its family (Ephedraceae) in Wyoming. The Ephedraceae is an evolutionarily isolated group that combines morphological characters of the gymnosperms with some advanced reproductive features of the flowering plants (angiosperms). Early pioneers in the west used the dried stems of this and related species to concoct a tonic beverage called Mormon or Brigham tea. A related species from China is the source of the drug ephedrine (which may account for the popularity of the pioneer's brew). In Wyoming, green Mormon tea is known from only 3 extant populations, all within the pinyon-juniper country near Minnies Gap and Richards Mountain. Individual plants are often found growing below larger "nurse" shrubs which appear to offer some protection from herbivory.

The Uinta draba (*Draba juniperina*) is one of the "rarest" plants to occur in the pinyon-juniper community, even though it may be numerically one of the most common forb species present. This yellow-flowered mustard is a regional endemic, with a total global range that is limited to the pinyon-juniper country of soutwestern Wyoming and extreme northeastern Utah and northwestern Colorado. Recent surveys have found that this plant may number in the millions within this small area. Uinta draba is one of the few forb species that appears to be tolerant of the inhibitory chemicals released by junipers and thrives in the needle duff and cryptogam-rich sandstone soils beneath these trees.

In addition to plants, the pinyon-juniper forest is also significant as habitat for a number of rare animal species. Birders have long recognized the importance of this community as nesting and foraging habitat for a suite of "juniper obligate" songbirds that includes the gray flycatcher, ash-throated flycatcher, western scrub-jay, plain titmouse, bushtit, Bewick's wren, gray vireo, and Scott's oriole. Pinyon-juniper also provides important habitat for the cliff chipmunk, Great Basin pocket mouse, canyon mouse, northern tree lizard, and midget faded rattlesnake, all of which are considered rare in the state.

Most of the pinyon-juniper woodlands in Wyoming are on public lands managed by the Bureau of Land Management or Flaming Gorge National Receation Area (Ashley National Forest). Currently, these lands are utilized primarily for grazing or recreation. Although current impacts from these activities do not appear to be significantly damaging this community, increased use could have negative impacts in the future. Adequate representative areas need to be managed to ensure that the biological values of this community can persist.

The Botany Songbook

Purshia

By John "Barney" Baxter

One morning a lovesick young antelope
Told his sweetheart "my dear we just can't elope"
Please excuse my inertia
I ate too much *Purshia*,
Which to me tastes much better than cantaloupe.

The Study of Botany

An early botanical limerick, attributed to Theophrastus (371-285 BC), a student of Aristotle and widely regarded as the "father of botany" (according to a US Forest Service DG message making the rounds a few years ago)

There should be no monotony
To studying your botany
It helps to train
And spur the brain
Unless you haven't gotany

The Wyoming Native Plant Society, established in 1981, is a non-profit organization dedicated to encouraging the appreciation and conservation of the native flora and plant communities of Wyoming. The Society promotes education and research on native plants of the state through its newsletter, field trips, and annual student scholarship award. Membership is open to individuals, families, or organizations with an interest in Wyoming's flora. Members receive *Castilleja*, the Society's quarterly newsletter, and may take part in all of the Society's programs and projects, including the annual meeting/field trip held each summer. Dues are $5 annually.

To join the Wyoming Native Plant Society, return the membership form below to:

Wyoming Native Plant Society
1604 Grand Ave.
Laramie, WY 82070

Wyoming Native Plant Society

Name: _____

Address: _____

_____

___ $5.00 Regular Membership

___ $15.00 Scholarship Supporting Member
($10.00 goes to the annual scholarship fund)

Wyoming Native Plant Society

WYOMING NATIVE
PLANT SOCIETY
1604 Grand Avenue
Laramie, WY 82070