Castilleja

The Newsletter of the Wyoming Native Plant Society

October 1997
Volume 16, No. 3

In this issue:

Naked-stemmed parrya (*Parrya nudicaulis)* is a glandular, perennial herb in the mustard family (Brassicaceae), recognized by its large, 4-petaled pink to lavender flowers, legume-like fruits, and coarsely-toothed leaves. It is primarily an arctic species, but disjunct populations occur in the Beartooth, Gros Ventre, and Wind River mountains of Wyoming and the Uinta Range in northeastern Utah. Populations from Utah have been described as a separate species, *P. rydbergii*, but are morphologically indistinguishable from Wyoming plants. Naked-stemmed parrya is restricted to limestone talus and scree slopes above timberline. The species is listed as Sensitive by the US Forest Service, but recent surveys have found it to be more abundant and less threatened than once suspected. Illustration by Kaye Thorne.

WNPS NEWS

1997 Annual Meeting: The WNPS annual meeting and field trip were held on Saturday, July 26, 1997. A group of 18 intrepid plant lovers braved near 100 degree temperatures to enjoy a sunny day of botanizing the banks of the Laramie River at Fort Laramie National Historic Site and the Torrington sand dunes near the Nebraska/Wyoming state line. The group was treated to nearly two dozen rare and unusual plains species until the hot weather forced even the hardiest (or foolhardiest) souls to retreat to the air-conditioned comfort of the Torrington "Hardees" for ice cream and cold drinks. (See page 3 for more details on the trip.)

In the morning, a brief business meeting was held in the scenic parking lot of the Fort Laramie historic site. New president Charmaine Refsdal Delmatier led a discussion of new business. Charmaine unveiled a draft brochure for prospective new members of WNPS and discussed a potential donation to the Society's scholarship fund by the Green River Garden Club. Char also put forth the idea that WNPS produce a wildflower poster similar to those put out by other plant societies. Andy Kratz discussed the possibilities of having joint summer meetings with other plant groups, such as garden clubs, the Great Plains Native Plant Society, and the North American Penstemon Society. Andy also spent the meeting handing out copies of the new "Colorado Rare Plant Field Guide" to all in attendance.

Results of the 1997 WNPS election were announced to a hushed crowd, each individual wondering if an electoral upset might be in the offing. Of course, the entire slate of candidates was elected, although there was a strong write-in campaign for John "Barney" Baxter and a dog named "Patchez". Officers for 1997/98 are: President – Charmaine Refsdal Delmatier, Vice-President – Dick Scott, Secretary-Treasurer – Walt Fertig, and 2-year Board member – Jennifer Whipple. Katy Duffy will continue as the second Board member. Thanks were extended to our out-going Board member, Jean Daly, for her 2 years of dedicated service to the Society.

Members at the meeting voted on a list of potential sites for next summer's meeting. Following a close vote, the group decided to have two field trips next year. A June trip is planned for the Ferris Mountains in central Wyoming and the annual meeting/field trip is scheduled for the Green River Lakes area of the northwestern Wind River Range in late July or early August. Look for more details on these trips early next year. WF

1998 Student Scholarships Available: The annual WNPS student scholarship is available to any junior college, undergraduate, or graduate student studying the native flora and fungi of Wyoming. Applicants are now being sought for the 1998 award. One to three scholarships will be awarded in the amounts of 200-300 dollars. Projects may deal with any aspect of botany, but research must be conducted in Wyoming. Applicants are asked to submit a 2-3 page summary of their proposed research project, including information on methods, goals, and a budget. Applications need to be submitted to the Secretary of the Society before 21 February 1998. Winners will be chosen by the Society's board in March 1998. WF

Brochure Update: A brochure for the WNPS is now being written. Included will be text and illustrations. It has been through the first round of changes and is in the process of being edited a second time. The brochure is due to be completed sometime this spring. It will be available for distribution to parks, schools, government agencies, private industries, etc. If you can help distribute the new brochure or know a good location we can place them, please call Charmaine at 875-6437. CRD

New Members: Please welcome the following new members of WNPS: Michelle Babcock (Moran), Phacelia Jane Cramer (Milford, MA), Edith and Bob Grinnell (Jackson and Horseshoe Bay, TX), Judy Johnson (Thayne and Cupertino, CA), Barbara Packer (Cheyenne), and Emily Sieger (Cheyenne).

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

Treasurer's Report: Balance as of 18 October 1997: General Fund $661.81; 1997-98 Student Scholarship Fund $550.00; Total funds: 1211.81 WF

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

President: Charmaine Refsdal Delmatier (Green River)
Vice President: Dick Scott (Riverton)
Secretary-Treasurer: Walt Fertig (Laramie)
Board Members: Katy Duffy (Moran)
Jennifer Whipple (Mammoth)
Newsletter Editor: Walt Fertig (307) 745-5026 (wk)
Contributors to this issue: John Baxter, Charmaine Refsdal Delmatier (CRD), Walter Fertig (WF), Stuart Markow, Arnold Thiem (AT), Kaye Thorne.

1997 Field Trip Report

by Charmaine Refsdal Delmatier

Greeting from the new President: I want to say how much I have enjoyed being a member of the WNPS. The camaraderie of good friends has made being part of the WNPS a valuable and meaningful experience. I consider this an opportune time to say hello to the new members and to repay my colleagues with sincere dedication and friendship.

Annual Field Trip (July 26, 1997)

Fort Laramie Field Trip: People arrived from all corners of the state (and one dedicated member even ventured up from Denver, CO) to meet in the parking lot of the Fort Laramie National Historic Site, northwest of Torrington. Our ambition for the weekend was to become acquainted with some of the plant species along the western margin of the Great Plains. For most, this was their first contact with the grasslands of eastern Wyoming, and we were eager to indulge in the local flora.

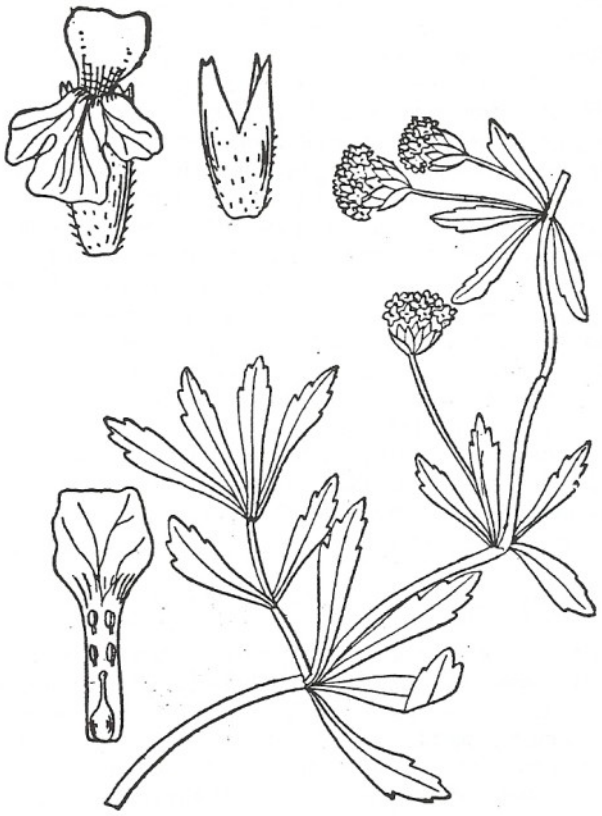
Upon leaving the parking lot, we immediately came across buffalo grass (*Buchloe dactyloides*), a low-growing, sod-forming, stoloniferous, dioecious plant. Once a major component of the shortgrass prairie , its distribution has been greatly reduced due to habitat degradation. Appropriately enough, we next encountered buffaloberry (*Shepherdia argentea*). Additional shrubs in the vicinity included golden currant (*Ribes aureum*) and snowberry (*Symphoricarpos* sp.).

Fogfruit (*Phyla cuneifolia*), a small, unobtrusive native of the bottomlands of eastern Wyoming, was the next to catch our eyes. This little plant is easily overlooked from an upright position, but when examined more closely (by those who chose to lay on their stomachs), has a lot to offer to the discriminating botanist.

Of special interest was the discovery of a member of the dogbane family, *Apocynum cannabinum*. Andy Kratz revealed that members of the Piute nation of southeast Oregon harvested the dried stems to make cordage. After breaking the stems and peeling away the stringy fibers they would then twist the fibers into long ropes that would eventually be woven into a long net, stretching at times a quarter of a mile. These nets were used to catch jackrabbits. It is also interesting to note that a cousin to this species, spreading dogbane (*Apocynum androsaemifolium*), has medicinal uses. The roots of this wide-ranging species are boiled in water and the resulting liquid can be used as a heart medication.

Next, we focused our attention on the Laramie River corridor. One of our most exciting discoveries was American germander (*Teucrium canadense var. occidentale*), a rare species in Wyoming (where it is at the edge of its global range). On slightly drier sites, prairie coneflower (*Ratibida columnifera*) was common, as was clammyweed (*Polanisia trachysperma*). Prairie coneflower is a small, attractive member of the sunflower family with a greatly elongated flowering receptacle. Clammyweed is very similar to bee-plant, except that it is extremely glandular. However, the real crowd pleaser was bush morning glory (*Ipomoea leptophylla*) with its spectacular, large, pink, trumpet-like flowers. While other wildflowers were also intriguing, this show-stopper had the cameras clicking.

Two plants we would rather have not seen were the noxious weeds, Canada thistle (*Cirsium arvense*) and Scotch thistle (*Onopordum acanthium*). Our reprieve was a sighting of arrowhead (*Sagittaria cuneata*) with its delicate white flowers in full bloom.



Above: Fogfruit (*Phyla cuneifolia*) was observed on the gravelly bottoms of the Laramie River at Fort Laramie National Historic Site. This member of the Verbena family can be recognized by its prostate growth form, whorl of toothed leaves, and condensed head of whitish-pink, 2-lipped flowers. In Wyoming, it is known only from Goshen and Platte counties. Ill. From Britton and Brown 1913.

Torrington Sand Dunes Trip: Moving right along, we made our way from Fort Laramie to the vegetated sand dunes on BLM lands east of Torrington, where we were greeted by an ambient temperature of 104 degrees! Interesting plants tolerating these harsh conditions (in contrast to botanists) included sand sage (*Artemisia filifolia*), prairie sand-reed (*Calamovilfa longifolia*), ringwing (*Cycloloma atriplicifolium*), and blowout grass (*Redfieldia flexuosa*). Many of these add stability to the dunes with rhizomes and/or extensive root systems. A number of uncommon species were observed, including sand milkweed (*Asclepias arenaria*), shining flatsedge (*Cyperus bipartitus*), palm-leaved scurfpea (*Pediomelum digitatum*), annual skeleton-weed (*Shinnersoseris rostrata*), and white pretty daisy (*Erigeron bellidiastrum*). We especially enjoyed discovering a small euphorb adapted to sandy areas in Goshen County: Geyer's spurge (*Euphorbia geyeri*).

Those also interested in the fauna might have spotted the Cassin's sparrow, which is usually found from northern Mexico to northeast Colorado. In Wyoming, this is the only site they are known to breed.

Saturday Night/Sunday Trips: Before nightfall at camp, east of Guernsey Reservoir, two adventurers went in search of New Mexico needlegrass (*Stipa neomexicana*). At the base of a rocky bluff, a substantial population was located. This species is uncommon in Wyoming, where it is widely isolated from the main part of its range in the southwestern US. And to their delight, they also discovered another unusual species; alpine feverfew (*Parthenium alpinum*), a mat-forming perennial in the sunflower family. It is a unique cushion plant having heads only of disk florets that are hidden in a basal rosette of leaves. It has been said by some that the flower head resembles a mixture composed of salt and pepper.

Those determined to find prairie-gentian (*Eustoma grandiflorum*) remained for a second day of exploration along the North Platte River. Although the effort proved unsuccessful, intensive searching revealed other plants of interest. The stark white petals of prickly poppy (*Argemone* sp.) and the pink pastels of bee-plant provided much needed relief from the monotony of crested wheatgrass.

Our final indulgence, a small and insignificant spurge (*Euphorbia missurica var. petaloidea*) was nearly overlooked. No matter how great or small, being a plant it met the minimum requirement of holding the attention of weary botanists at the end of their journey. It was then time to head for home, and another annual native plant society meeting had come to a close.

Below: Alpine feverfew (*Parthenium alpinum*). This misnamed member of the sunflower family does not occur in alpine habitats, but rather is found on calcareous ridgetops in grassland and cushion plant communities of SE Wyoming and NE Colorado. *P. alpinum* is closely related to guayule, a species that has been studied extensively as a source of natural rubber. The detective story leading to the rediscovery of this species (it was not seen for over a century after first being described by Nuttall in 1834) was described in the October 1989 and February 1990 issues of the WNPS newsletter. Ill. By W. Fertig from the Wyoming Rare Plant Field Guide"

Additions to the Flora of Wyoming

By Walter Fertig

Five new additions to the state's flora have come to light since the last installment of this column in the December 1996 issue, proving once again that the botanical exploration of Wyoming is still not complete. Four of these species are natives that may be of some conservation interest, while the fifth is an introduced weed.

Eyebane (*Euphorbia nutans*): This annual weed is one of three new species discovered between 1995-97 at Camp Guernsey by botanists with the Center for Ecological Management of Military Lands (CEMML) of Colorado State University. Eyebane was discovered growing in disturbed soils along a railroad track near Guernsey Reservoir in Platte County. It is closely related to another exotic species, spotted spurge (*Euphorbia maculata*), but differs in having glabrous ovaries and fruits.

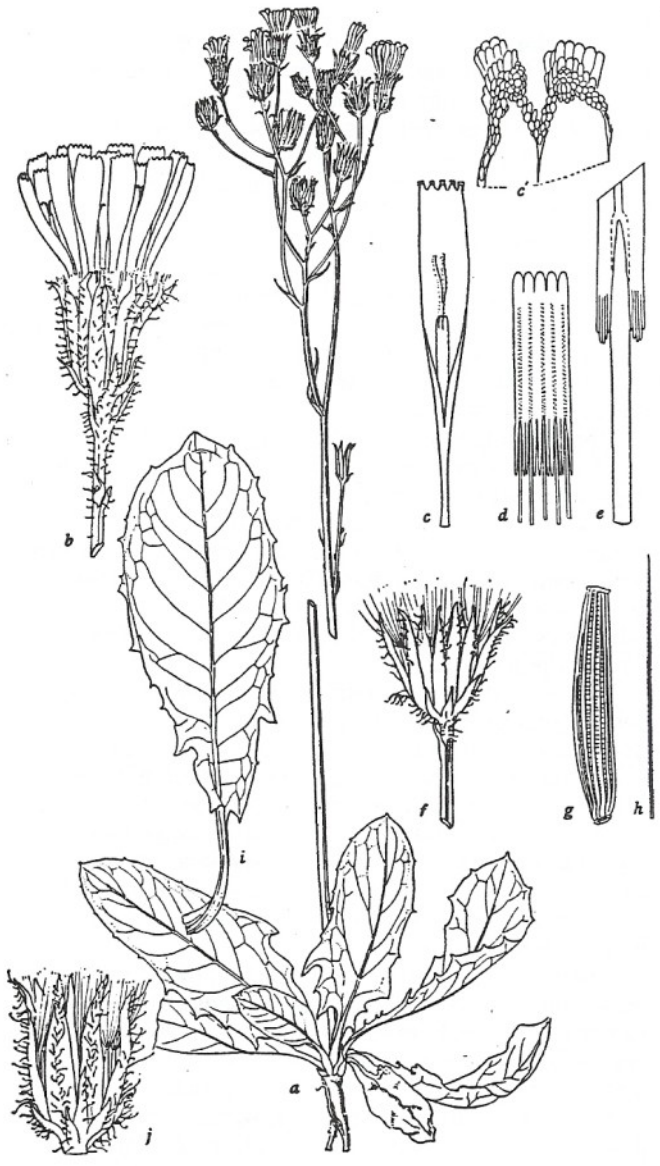
Bighead pygmycudweed (*Evax prolifera*): This low, woolly annual is a member of the sunflower family and superficially resembles small cudweeds (*Gnaphalium* sp.) or pussytoes (*Antennaria* sp.). *Evax* can be distinguished by its chaffy receptacles, tight clusters of white-woolly, rayless flower heads, and narrow leaves protruding from the heads. The species is widespread in the Great Plains where it occurs in grasslands, pastures and stream valleys. It is currently known from a single location just north of Guernsey State Park in Platte County.

Nebraska buckwheat (*Eriogonum pauciflorum var. nebraskense*): This regional endemic of western Nebraska and northeastern Colorado is now known from a single location south of the North Platte River near the town of Guernsey in Platte County, Wyoming. It differs from other varieties of *E. pauciflorum* by having an open-branched inflorescence of creamy white flowers. The Wyoming population is found on sandstone ridgetops associated with ponderosa pine communities. This taxon is extremely rare rangewide and may need special management attention in Wyoming.

Flat-leaved bladderwort (*Utricularia intermedia*): This member of the Lentibulariaceae was discovered in calcareous wetlands on the National Elk Refuge outside of Jackson by the author in the summer of 1997. It can be recognized by its large, long-spurred, yellow, two-lipped flowers, bright lime-green foliage, and flattened leaf blades divided into separate vegetative and bladder-bearing segments. The leaf bladders are used by the plants to capture small microscopic organisms in shallow or slow-moving streams, making this species one of the state's few carnivorous plants. The closely related *Utricularia ochroleuca* was reported from the refuge in 1994 by Colorado botanist David Cooper, but could not be relocated in 1997. The two species differ in technical details of the flower and leaf margins.

Broad-leaved meadow hawksbeard (*Crepis runcinata var. hispidulosa*): This variety is the second new taxon for the state to be discovered on the National Elk Refuge this past summer. Jennifer Whipple and the author encountered a large patch of this tall, wide-leaved, stiff-haired, yellow composite on dried, whitish alkali flats on the east bank of Flat Creek. Broad-leaved meadow hawksbeard is part of a complex of subspecies of *C. runcinata* and is found primarily in the Pacific northwest. Two other varieties of the species are found across Wyoming. Variety *hispidulosa* most closely resembles var. *runcinata*, but can be distinguished by its wider leaves and glandular hairs on the involucre and upper stems.

Below: Broad-leaved meadow hawksbeard. Illustration from Babcock and Stebbins, Univ. California Publ. Botany.



Fall Flowers of Teton County

By Stuart Markow

No question about it, summer is the time for wildflower walks in the Tetons and surrounding areas of western Wyoming and eastern Idaho. The intensity and variety of colors produced by the local flora are enough to attract the attention of even the most casual tourist, firmly committed to spending his/her vacation behind the windshield. Few natural phenomena can rival the visual treat provided by an assortment of wildflowers in full bloom!

Alas, the season is far too short! By late August things are fading fast. Gone are the balsamroot and mule's ears with their radiant, 4-5 inch heads. Scarlet gilia, blue flax, penstemons, and columbines are calling it a season, not to be seen again until spring. Even the ubiquitous and persistent geraniums, larkspurs, and lupines are in their death throes. Is there any reason to leave the asphalt any more this year?

Of course, even as we lament the closing of summer, the autumn flora is summoning its ranks. As if waiting for the opportunity to show off, a whole new contingency of brilliant wildflowers is emerging, just as the summer crowd is bidding its last farewell. Let's take a look at some of the major players.

The roster features a long grocery list of showy composites. Almost everywhere one glances are asters, groundsels, hawkweeds, thistles, cudweed, and rabbitbrush. Some of the more common species include Pacific and thick-stemmed asters, visible along roadsides and adjacent to parking lots. These blend nicely with the bright yellow of Canada goldenrod and rubber rabbitbrush. One need not even leave the front seat to admire them.

However, the real champion of roadside attractions is showy goldeneye. This bright yellow composite first appears in mid to late August, emerges to full glory by early September and persists almost to October. With few other colorful flowers screaming for attention, these plants are among the most conspicuous vegetation items on the landscape. Their large, showy heads smile and nod at motorists racing up the highway trying to catch every attraction that western North America has to offer in just a few short weeks.

Some of the roadside inhabitants that we could well do without are the noxious (in every sense of the word) Canada thistle and the equally noxious spotted knapweed and musk thistle. To the uninformed, these look like just the ticket for late-season ornamentation along highways and side roads. However, the showy flower heads belie their insidious nature. Despite efforts to stop them, these hideous weeds are relentlessly invading the Jackson Hole area, aggressively taking over whatever suitable habitat they can manage to invade.

Lurking in the shady forest understory are Engelmann's aster and elegant aster. Hawkweeds and a few die-hard arnicas brighten things up a bit, while here and there mountain hollyhocks left over from summer make one last showing. Orchid species, including rattlesnake plantain, Alaska rein orchid, and western twayblade, confer a sense of mystery with their small, oddly-shaped flowers. Finally, the delicate pastels of pipsissewa provide splashes of pink to decorate an otherwise drab forest floor.

Those who have a passion for sagebrush habitats will appreciate the abundance of rabbitbrush and curlycup gumweed. Hiding beneath the shrubbery are the short but intensely colorful spiny-asters, with their brilliant blue/violet ray flowers. More conspicuous contributors to the display are hairy golden-aster, sulfur buckwheat, Missouri goldenrod, and the obnoxious sticky cudweed.

Because of the continuous source of water, late-season streamsides can be a real grab bag of attractive wildflower items. Tall, stately butterweed groundsel and Columbian monkshood watch from the forest edge as the shorter, less obtrusive brook saxifrage and nodding beggars tick edge their way into the chilly water. Lewis' monkeyflower, arrowleaf groundsel, and grass of Parnassus cling tenaciously to the steep, spongy banks.

In the upper montane and subalpine, hound's tongue hawkweed, thick-leaved groundsel, and blueleaf aster steal the show by sheer force of numbers. Additionally,

Below: Blueleaf aster (*Aster glaucodes*). Illustration by W. Fertig.

many areas in the Tetons feature a bright display of leafy-bracted asters and subalpine daisies. Bog gentians creep down from the alpine in a glorious display of intense blue, rivaling every other fall wildflower in the county for brilliant color. These, however, can rarely be viewed from behind a steering wheel.

Obviously, autumn in Teton County is not the time to mourn the dearth of stimulating wildflower subjects. No need to head for California; the variety and color available in western Wyoming should be enough to satisfy all but the most fanatical of Native Plant Society members. But catch them quickly! Soon the colors of fall wildflowers will be replaced by the white of winter, and we must all take comfort in the knowledge that spring will produce a whole new bounty of floral treats to enjoy and to ponder.

Botanist's Bookshelf

Intermountain Flora: Vascular Plants of the Intermountain West, USA. Volume 3, Part A Subclass Rosidae (except Fabales). By Arthur Cronquist, Noel H. Holmgren, and Patricia K. Holmgren. 1997. The New York Botanical Garden, Bronx, NY. 446 pp. $75.00

The "Intermountain West" encompasses the vast basins and desert mountain ranges of Utah, Nevada, southeastern Oregon, southern Idaho, and small portions of California, Arizona, and southwestern Wyoming. This area is home to a rich diversity of interesting and often highly localized plant species. Botanists from the New York Botanical Garden, in collaboration with local experts, have been intensively studying the intermountain country for more than half a century with the goal of developing a comprehensive manual of the flora. This goal is one step closer with the publication of the sixth volume in the "Intermountain Flora" series in the summer of 1997.

Volume 3A (the volumes have not been issued in numerical order) covers 40 western families in the subclass Rosidae. Several major families from Wyoming are covered in the book, including the Grossulariaceae, Crassulaceae, Saxifragaceae, Rosaceae, Onagraceae, Euphorbiaceae, Linaceae, Aceraceae, Geraniaceae, and Apiaceae (to name just a few). Although a member of the Rosidae, the Fabaceae are not covered in this edition, as they have already been treated in Volume 3B (published in 1989).

The Intermountain Flora is patterned after the "Flora of the Pacific Northwest" and features handsome line drawings, detailed species descriptions, and user-friendly keys for each species in the Rosidae that is native or naturalized in the intermountain region. In addition, there is an extensive list of synonyms, and detailed information on the distribution and habitats of each species. Taxonomic notes at the end of many species accounts provide additional information that can be very useful when keying out unknown specimens.

This volume introduces some new taxonomic concepts in familiar genera which may upset some traditional taxonomists, but which reflect the latest thinking in systematics. "New" genera include *Chamaesyce* for the annual, prostrate members of *Euphorbia*, *Camissonia* and *Calylophus* for some former species of *Oenothera*, and *Chamerion* for the showy fireweeds formerly placed in *Epilobium*. Gone, too, are old friends *Zauschneria* and *Boisduvalia*, now included in *Epilobium*.

Volume 3A is a welcome addition to the series and will prove to be an invaluable reference for botanists in Wyoming. Although the book technically covers only southwest Wyoming, botanists throughout the state will find it useful for its descriptions and pictures. The masterful illustrations alone make the book worth the purchase price. It is fitting that this volume is dedicated to the three primary artists: Jeanne R. Janish, Bobbi Angell, and Robin A. Jess. WF

Hortus West. PO Box 2870, Wilsonville, OR 97070-2870. (800) 704-7927. Two issues/year $12.

I received Volume 8, issue 1, 1997 of *Hortus West* as a review copy. I am admittedly not horticulturally oriented and was at best apprehensive. When I saw "commercial sources for over 2,000 western native plants and seeds" on the cover my apprehensions increased. I thought – not another dry xeroxed list of available plants!! Then I read the rest of the cover: "David Douglas: the legendary Botanist's life of exploration and discovery; Wetland revegetation failures – who is to blame?; Characteristics of gypsum soils in arid areas; and Reviewing the family Ericaceae." Well those catchy titles certainly raised my curiosity and lowered my apprehensions. I found the above articles to be delightful, informative, and quite interesting. They were accompanied by clear photographs that added significantly to the text. Of extra note were the photos of the Ericaceae with such plants as snow plant, candy stick, and pine drops. The landscape photos on page 10-11 would have been enhanced if we were told where they were taken.

The above articles were followed by a page entitled "Test your knowledge." I couldn't resist a challenge like that. There were 16 questions and 22 multiple choice answers. Well I managed 12 right and if I hadn't had the answers to choose from it would have been 7. By now I had gotten to the "2,000 western native plants." I was delighted to see them arranged alphabetically by genus with vendors listed for plants and seeds. There is also a large list of vendors for quick reference as well as a listing of vendors by state.

Hortus West goes well beyond the plant and vendor lists and the feature articles. There is a professional services directory covering everything from bioengineering to wildlife habitat, and 44 other categories in between. Also such things as news and notes, what's on the web, publication reviews, and a common name cross reference. For anyone interested in seeds, plants, and professional services Hortus West provides quick references. AT (reprinted from the Newsletter of the Northern Nevada Native Plant Society, October 1997).

The Fungus Flora of Greenhill Cemetery

By John "Wallace" Baxter

A recent survey of Laramie's Greenhill Cemetery has yielded specimens of the following species of fungi:

Coprinus comatus
Coprinus micaceus
Coprinus atromentarius
Agaricus rodmani
Agaricus arvensis
Agaricus sp. (possibly *A. campestris*)
Psathyrella candolleana
Helvella crispa
Grifolia frondosa
Marasmius oreades
Stropharia coronilla

I would like to thank the cemetery saxton for allowing me to stroll around through Marblerow Country.

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