



Castilleja

A Publication of the Wyoming Native Plant Society

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Update on a State Endemic: Teton wirelettuce

*In the March, 2000 issue of Castilleja, Walt Fertig briefly summarized what was known about the newly-described species from northwestern Wyoming, Teton wirelettuce (*Stephanomeria fluminea*). In it, he pointed out the distinguishing morphological features, the unique habitat preference, and known distribution of the new plant. Since then, much new information has been acquired, paving the way for an updated report.*

Stephanomeria fluminea was described in 1999 by Leslie Gottlieb (UC Davis). Examination of specimens on loan from the University of Wyoming and other institutions disclosed individuals that differed markedly in features of vegetative morphology and habitat from all known members of the genus. These individuals most closely resembled *S. tenuifolia*, (narrow-leaved wirelettuce), but had notably broader leaves and occurred in a very different kind of environment. *S. tenuifolia* typically grows on cliffs, ledges, and rocky outcrops, whereas, the specimens in question were all from stream beds of large creeks and rivers. Based on this morphological character and the unique habitat preference, Gottlieb described the entity as a new species.



Above: Teton wirelettuce (*Stephanomeria fluminea*)

Although there were several collections of this species in existence, they were all from a relatively small area within Grand Teton National Park (GTNP), the Bridger-Teton National Forest, and the Shoshone National Forest. In fact, all but one of the populations known to Gottlieb were located in creeks and rivers that flow westerly into the Snake River in the general region of Jackson Hole. A single collection was from the South Fork of the Shoshone River, well to the east (*cont. on p. 3*).

2003 Student Scholarship: The Society's annual scholarship is available for qualified undergraduate or graduate students studying any aspect of the botany of native plants found in Wyoming. One to two scholarships will be awarded in the amount of \$250-500, each. Interested students are encouraged to contact Jennifer Whipple (Jennifer_Whipple@nps.gov), the current Society President or visit the WNPS web site for an application and additional information. Applications are due by 12 February 2002. Awardees will be determined by the Board in March.

Call for Nominees: President, Vice-president, secretary-treasurer, and one Board position are up for nomination. If you are interested or know of others who may be interested in these one-year positions, please contact an officer or write to the WYNPS address below. A ballot will appear in the May issue.

Wyoming Native Plant Society
PO Box 3452, Laramie, WY 82071

President: Jennifer Whipple (Mammoth) - 344-7988
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Teton Chapter: PO Box 82, Wilson, WY 83014 (Joan Lucas, Treasurer)
Bighorn Native Plant Society: PO Box 21, Big Horn, WY 82833 (Jean Daly, Treasurer)

Treasurer's Report: Balance as of 15 Oct 2002: General Fund \$709.26; Student Scholarship Fund \$550.00; Total funds: \$1259.26.

New Member: Please welcome the following new WNPS members: Roberta Hoy (Cheyenne), John Proctor (Walden, CO), Dan Tinker (Laramie), Thea Unzner (Schöneiche, Germany).

Contributors to this issue: Erwin Evert, Bonnie Heidel (BH), Stuart Markow (SM), Hollis Marriott, Jennifer Whipple, and Katherine Zacharkevics. The next deadline for newsletter submissions is: 22 February, 2003.

Society for Range Management – National meeting
Theme: **RANGELANDS – DIVERSITY THROUGH TIME**

Dates: **February 2-6, 2003**
Parkway Plaza Hotel in Casper, Wyoming
Includes technical sessions on:

Plant/Animal Interactions, Invasive Species, and Riparian Ecology

Includes symposia on:

Seed Source Selection, Shortgrass Prairie Ecosystems, and Post-Fire Ecology

Registration for a single symposium is \$20, or for one day is \$70. Complete program and registration information is at: www.rangelands.org or contact Ann Harris at amharris@rangelands.org or (303) 986-3309.



Bromus tectorum, illustration from Hitchcock 1950

Wyoming Cheatgrass Conference

Hosted by Wyoming Bureau of Land Management
Dates: **February 24-25, 2003**
Parkway Plaza Hotel in Casper, Wyoming
Includes presentations and exhibits to increase public awareness of the cheatgrass threat and build long-term partnerships that will help prevent the spread of cheatgrass in Wyoming. If you are interested in participating or attending, please contact Vicki Herren at 307.775.6120.



Left: Terrace and streambed habitat of *Stephanomeria fluminea* on Pilgrim Creek, Grand Teton NP

The species quickly came under scrutiny as a taxon of special concern. It was tentatively ranked as a G2/S2 by the Wyoming Natural Diversity Database, with the disclaimer that further surveys were needed in order to assess the status and conservation priority.

In 2001, such surveys were undertaken, the objective being to better understand the ecology, distribution, and abundance of this plant in GTNP. The project focused on documenting population location and size, recording ecological parameters, and noting potential threats to each population.

The results of this survey are eye-opening. First of all, while new populations were discovered within the established distributional limits, not a single new population extended the known range of the species. Drainages examined to the north and west failed to disclose a single new plant.

Gottlieb reported the habitat of *S. fluminea* to be “impermanent, slightly raised cobble benches in the flat, gravelly beds of creeks that flood and churn after spring melt.” This description turned out to be generally accurate, but there were many additional features correlated with occurrence that emerged from the survey.

Perhaps the most striking observation is the consistency with which the plant occurs with certain other species. Without exception, the plant is accompanied by Teton goldenaster (*Heterotheca depressa*), one of those NYCs that appears in appropriate habitats throughout Jackson Hole. It also seems to be closely tied to mature narrowleaf cottonwood (*Populus angustifolia*). Although these

trees are very common along the margins of the watercourses, there seems to be relatively few that actually make it to adulthood within the stream beds. In those drainages where the cottonwoods grow to maturity, *S. fluminea* grows in profusion.

Even the physical components of the habitat extend well beyond the original description. Gottlieb implied that these plants are limited to creek beds that are turned over by flood water each year. This may be largely true, but many plants are found well above high water mark, on benches that have not flooded for decades.

For a “rare plant”, the species seems to be doing well, as over twelve thousand individuals were counted in six drainages. This unit just doesn’t seem to be vulnerable to the stresses and strains that pressure other plant populations. Very little grazing damage seems to occur, presumably due to the strong, objectionable odor the plants emit. Additionally, little insect feeding was noted, perhaps for the same reason.

More importantly, the habitat appears to be secure. Most of the known populations exist within GTNP, the Teton Wilderness, or the Washakie Wilderness where disruptive events are unlikely to occur. The future of this new species looks bright.

However, there are still many uncertainties. One of the biggest mysteries is the source of the common name, Teton wirelettuce, given that the plant does not occur in the Tetons. Perhaps it was so named because of its close association with Teton goldenaster, which also doesn’t grow in the Tetons.

While we now have a good understanding of populations occurring in GTNP, distribution and abundance outside are largely unknown. Moreover, very little is known about the basic biology (pollination, germination requirements, longevity, etc.) of the plant. It also appears that many individuals are morphologically intermediate between *S. fluminea* and *S. tenuifolia*, suggesting that these species are hybridizing. If so, actual abundance becomes difficult to assess.

Clearly, work remains to be done. Additional surveys (tentatively slated for 2003) are needed to better understand the full range and ecological requirements of the species. Only then will we be in a position to manage for and protect this plant that is found nowhere else in the world. SM

Additions to the Flora of Wyoming

The following four species were discovered or reported too late to be included in the *Vascular Plants of Wyoming* (Dorn 2001). Readers of *Castilleja* are encouraged to submit information on newly-documented state flora additions. They include two native species from national forests at eastern and western ends of Wyoming, and two non-native species from Yellowstone National Park.

Lyall's wood anemone (*Anemone lyallii*; syn. *Anemone quinquefolia* var. *lyallii*). TETON COUNTY: This species was first collected in Wyoming by Hollis Marriott on June 4, 1990 in the Winegar Hole Wilderness at 6,480 ft on the Targhee National Forest. The specimen was processed last year, with verification by Dr. Ron Hartman (RM). The species can be recognized by its cauline whorl of 3 trifoliate leaves with slender petioles 1-4 cm long, basal leaves single or absent, horizontal rhizomes, and short styles about 0.5 mm long. The styles are shorter than those of other species in the state. It would key out as *A. parviflora* in Dorn (2001). This species occurs from British Columbia to California, disjunct as an inland species in Utah (Welsh et al. 1993) and in Wyoming.

Hooker's fairy bell (*Prosartes hookeri* var. *oregana*; syn. *Disporum hookeri* var. *oreganum*). CROOK COUNTY: Surprise Gulch in Black Hills National Forest held botanical surprises for Katherine Zacharkevics and Susan Corey who documented the first report of this species in Wyoming. It was found between 5,840-6,200 ft, and collected on 3 September

2002. It was verified by Dr. Ron Hartman (RM) who also checked RM specimens of *Disporum trachycaulum*, previously the only known species in the genus for Wyoming. He annotated a 1984 collection of *D. trachycaulum* as *D. hookeri*, a collection he made nearby on Mineral Hill in the Black Hills National Forest. Both collections are from Crook County, WY. *Disporum hookeri* is distinguished in the field from the widespread *D. trachycaulum* in that the fruits are pointed and ellipsoid-ovoid rather than globose, and the leaves are usually hairy on the upper surface, and strongly ciliate at the margins with forward-pointing hairs. It has its center of distribution in the Pacific Northwest, where it occupies "wooded areas, usually where moist, often in deep shade" (Hitchcock et al. 1969). It is disjunct in northeastern Wyoming, and closest known populations are in northwestern Montana.

Sweet vernal grass (*Anthoxanthum odoratum*)

TETON COUNTY: The first collection of this exotic species was made by Erwin Evert in Yellowstone National Park on 10 August 2002. It occurs on the west side of the Fire Hole River on moist soil in open, scattered lodgepole pine at 7,360 ft. It is introduced from Eurasian and is sometimes used in commercial sweetgrass braids. It has become established sporadically across the country except the Great Plains.

Suckling clover (*Trifolium dubium*). PARK COUNTY:

The first collection of this exotic species was made by Jennifer Whipple in Yellowstone National Park on June 21, 2001. It occurs on thermally-influenced ground near Norris Geyser Basin at 7,500 ft. It is introduced from Eurasia and has become widely established in most states except the southern Rocky Mountains.

References cited

- Dorn, R. 2001. *Vascular Plants of Wyoming*, third edition. Mountain West Press, Cheyenne, WY.
- Hitchcock, C.L., A. Cronquist, and M. Owenbey. 1969. Pt. 1. *Vascular Cryptograms, Gymnosperms, and Monocotyledons*, IN: Hitchcock, C.L., A. Cronquist, M. Owenbey, and J.W. Thompson (eds). *Vascular Plants of the Pacific Northwest*. University of Washington 17(1): 1-914.
- Welsh, S.L., N.D. Atwood, S. Goodrich, and L.C. Higgins, (eds). 1993. *A Utah Flora*, second edition, revised. Brigham Young University Print Services, Provo, UT.

POSITION AVAILABLE -

Graduate Study in Floristics, Rocky Mountain Herbarium

The Rocky Mountain Herbarium (RM) seeks students interested in pursuing a M.S. degree in broad-scale floristics. The successful applicants are expected to be highly motivated individuals capable of working with limited supervision. A member of the staff will spend 2 to 4 weeks each summer assisting with collecting. Beginning Spring 2003, **Rio Grande and San Juan National Forests** (3,000 m²; parts of Archuleta, Conejos, Hinsdale, La Plata, Mineral, Rio Grande, Saguache, and San Juan cos.; Weminuche and La Garita Wilderness; s.-cent. CO) will fund two summers of fieldwork, provide housing, and provide space for the processing of specimens. Likewise, funding is available for inventory on **Buffalo Gap/ Oglala National Grasslands and vicinity** (1,500 m²; parts of Custer, Fall River, Jackson, and Pennington cos., SD and Dawes and Sioux cos., NE, respectively) and **Arapaho National Forest** (3,000 m²; parts of Clear Creek, Gilpin, Grand, Park, and Summit cos.; Byers Peak, Indian Peaks, Mount Evans, Never Summer, Ptarmigan Peak, and Vasquez Peak Wilderness). The recipients must compete successfully for a teaching assistantship in the Botany Department.

Other inventories planned include BLM lands—Montrose District, CO; grasslands of e. Colorado; Caribou NF, ID; n. Grand Teton NP, s. Yellowstone NP, and Teton Wilderness, WY, and e. slope, Wind River Range, WY.

The Rocky Mountain Herbarium has completed 37 intensive inventories in Colorado, Idaho, New Mexico, Oregon, South Dakota, Utah, Washington, and Wyoming over the past two decades with the goal of producing a critical flora of the Rocky Mountain region. The areas studied range from 1,300 m² (extremely mountainous) to 7,000 m² (plains and basins); numbered vouchers collected vary from 9,000 to 12,000 (record: 20,585, s.-cent. CO). Emphasis has been on documenting species of conservation concern, invasives, and the vascular flora in general. Associated data are stored in a Microsoft Access database (450,000+ records) for use with GIS in predictive modeling, ground truthing of remotely sensed areas, managing species of conservation concern, documenting invasives and noxious weeds, etc.

Relevant documents describing the floristics program, the flora of the Rocky Mountains project, checklists for Wyoming and for Colorado, and the Atlas of the Vascular Plants of Wyoming are at

<http://www.rmh.uwyo.edu> and <http://uwadmnweb.uwyo.edu/botany/>. For details, contact Ronald L. Hartman, Rocky Mountain Herbarium, Department of Botany, University of Wyoming, Laramie, Wyoming 82071-3165; rhartman@uwyo.edu; 307/766-2236.

Deadline for Graduate Applications is 1 February 2003.

21 Years of Wyoming Botany News

Hebard Collection To House WNPS Newsletters

New collaboration between Wyoming Native Plant Society (WNPS) and University of Wyoming Libraries makes 21 years of WNPS newsletter information available.

A complete 21-year set of Wyoming Native Plant Society newsletters will be housed in the Hebard Collection of Wyoming publications. It is located in the Owen Wister Western Writers Reading Room on the 4th floor of the American Heritage Center. This research collection of Wyoming books, maps, journals, videos, and select state agency publications is named in honor of Grace Raymond Hebard, former head of the University Political Economy Department and University of Wyoming Librarian, who launched the Library's collections on Wyoming and Western history.

Issues will be referenced in the UW Ferret Catalog, and circulating copies of all future issues will be available at the Science Library. The WNPS newsletter set and the entire Hebard Collection are available for public use in the Owen Wister Western Writers Reading Room, open 8 a.m. to 5 p.m., Monday through Friday (7:30 a.m. to 4:30 p.m. during the summer). Hebard items are listed in the UW Ferret Catalog with "Hebard" as the location.

Wyoming Native Plant Society has published a quarterly newsletter since its beginning in 1981 (see 20th Anniversary Issue, *Castilleja* 20(2) of May 2001). *Castilleja* became the WNPS Newsletter name and mascot in 1994.

Watch for a subject-matter index that addresses plant species, names of places featured in detailed botanical descriptions, and early botany explorers, so that you can "ferret out" this botanical information. For further information on the Hebard Collection and library collections development, contact Tamsen Hert (766-6245).

Seeds of Change

A Source Guide for Native Plants, Third edition, is now available, published by the Montana Native Plant Society. It includes all growers who propagate native plant species in Montana (and most in Wyoming!). The cost is \$6 (includes postage) and you can send a check made out to MNPS Publications, 1270 Lower Sweet Grass Road, Big Timber, MT 59011. The guide lists 55 sources for over 500 species of grass, trees, shrubs, forbs and grasses. This edition has email and web site addresses for many sources and a handy common name index. This guide is a great resource for home landscapers, native plant gardeners and those involved in restoration projects.

Thanks to all who renewed. Any expired memberships are highlighted on the mailing label below. *Please renew.*

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 \$7.50 annually.

To join or renew, return this form to:

Wyoming Native Plant Society
PO Box 3452
Laramie, WY 82071

Name: _____

Address: _____

- \$7.50 Regular Membership
- \$15.00 Scholarship Supporting Member
(*\$7.50 goes to the annual scholarship fund*)



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