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Newsletter of the Utah Native Plant Society
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WASATCH FITWEED JOINS RARE PLANT GUIDE

Words and Photos by Tony Frates - Illustration (P2) April Jensen

This past summer when Wasatch Fitweed, *Corydalis caseana* subsp. brachycarpa, was found by Bruce Glisson for the first time in Summit County (it was previously known only from Utah, Salt Lake, Wasatch and Weber counties and nowhere else) and thanks to a query initiated by Ben Franklin (botanist/Utah Natural Heritage Program), it was realized that this beautiful plant should be considered for inclusion in the Utah Rare Plant Guide (www.utahrareplants.org) .

While the species itself is not in peril, the intraspecific taxonomic rank (subrank) of Wasatch Fitweed is T2 meaning that it is globally rare, with relatively few occurrences and total individuals and it is accordingly treated as a sensitive species by the Forest Service.

Taxa included in the Utah Rare Plant Guide contain certain basic information, drawings and photos.

Information was gathered and photos were provided by Wayne Padgett, Wasatch-Cache National Forest ecologist. But, no drawing of the Wasatch Fitweed had ever been published. Through funding and support provided by the Wasatch-Cache National Forest (with thanks to Teresa Prendusi and Wayne Padgett) and technical guidance by Dr. Duane Atwood (Stanley L. Welsh Herbarium), an excellent botanical illustration was prepared by April Jensen (see page 2). Inclusion in the Utah Rare Plant Guide as of November 2005 represents the first ever publication of an illustration for this unique subspecies.

Wasatch Fitweed is found in a very limited range on mainly the Wasatch-Cache National Forest but also the Uinta National Forest and on some private lands.

***Corydalis caseana* subsp brachycarpa in flower (above) and fruiting (below)**

It grows at relatively high elevations, usually in a relatively narrow band between about 7,000-9,000 feet and is usually only found growing in or along streams or nearby drainages. This erect perennial with typically numerous hollow stems was found growing as tall as 16 dm (64") in what may have been an exceptional water year in 2005; more typically it is half that size. While rare, it currently does not seem to face any known threats.

There are five subspecies of *Corydalis caseana* (Case's Fitweed) occurring in California, Colorado, New Mexico, Oregon, Idaho and Utah. Subspecies brachycarpa only occurs in Utah. The swollen capsules for which our subspecies may have been named appear to be caused by insect larvae.

The capsules are reflexed and have elastic walls which when mature eject the seeds when touched as if shot from a rubber band.

The usually white or pinkish petals are 17-25 mm long and barely more than 4 mm thick, the inner ones ones purplish-tipped, and flowers from June to August.

The species is known to be toxic to livestock.

Illustration by April Jensen

Jan/Feb 2006

The Common Pincushion Cactus – Coryphantha vivipara

Words & Photos by Jeff Mitchell

***Coryphantha vivipara* in Flower**

A rose by any other name may still be a rose, but a common pincushion cactus in Utah can be one of several different plants. The problem is really that of common names. They can represent several different species. If I say pincushion, a lot may depend on where I am. In Utah it could be *Pediocactus simpsonii*, *despainii*, or *winkleri*. It could be *Neolloydia johnsonii* or *Coryphantha missouriensis*. These are all considered pincushions because their spines resemble pins in a round cloth pincushion. Scientific names allow us to precisely identify which unique species we are dealing with.

According to my internet cactus forum, the genus *Coryphantha* has had part of it split off into *Escobaria*. But every time I use *Escobaria* in Utah, everybody goes huh? Taxonomists love to argue over names, but it is the same plant, and I will stick with *Coryphantha* since that name confuses no one. This short treatise is about *Coryphantha vivipera var arizonica*.

In Utah, we have three varieties, Variety *desertii* is found down in Washington County, and variety *vivipara* is found in the Uinta basin. Variety *arizonica* is the one most people will run into. My first exposure to this cactus was in the wash that leads up to Marjum Pass from the west in the House Range, west of Delta. It was on a wash bank about to collapse and get washed away, so I dug it up and took it home.

I planted it in a little corner where my garage meets the house facing southeast. It gets around 5 to 7 hours of sun a day during the summer and appears to do very well. It started with 12 stems which indicates an old plant, probably around 10-15 years old. I've had it for eight years now, and it has added a couple more stems. I have a bias in favor of this plant on the account that it was the cactus that got me started. And just because it is common does not make it any less beautiful.

The common pincushion is probably the second easiest cactus to grow in northern Utah after *Opuntia polycantha*, the plains prickly pear. There is some dispute about that, as I have found at least one website that claims it is very susceptible to root rot. I'm not sure what their problem is, but they grow great in Utah in mineral soil mix. It takes four years to mature enough to flower when watered once a week during the spring and summer.

The genus name *Coryphantha* is from the Greek for "top flowering". So much for Latin names eh? The flowers are pink magenta about an inch across, with some showing two tones a very light pink at the bottom of the flower changing to light magenta halfway to the top. Each stem will have two to six flowers opening over a period of two or three weeks beginning in May. This looks outstanding on a large cluster.

By August, pollinated flowers develop large pods which slowly turn from green to reddish. In cultivation, pods can be as much as five times larger than pods in the wild. The pods are on the fleshy side i.e. they don't dry out when the seeds are ripe like *Sclerocacti* (fishhook cacti) or several kinds of *Opuntias* (prickly pears and chollas). As long as they are on the plant they stay juicy for several months.

There is regional variation in spine color. The pincushions in Cedar City have dark brown spines, and the ones on the south side of the Aquarius Plateau and those in the west desert are whiter. There is one very similar looking species in *Pediocactus simpsonii*. The *Pediocactus simpsonii* has slightly curved central spines (the ones sticking out away from the plant) and the pincushion has straight spines and each aereole on a pincushion has a groove on the upper part which extends from the tip of the aereole all the way to the aereole base in very mature plants. In the spring, the flower comes out of this groove in the new season's aereoles.

As the plant gets older, and if it is getting enough water, it will start to cluster by putting out offshoots called pups. I have seen clusters with as many as 20 stems. The cultivation of this plant is rather simple. You can propagate by seed or by cuttings. The seeds germinate readily and grow well in normal top soil. I germinate mine indoors under cool white fluorescent lights that are on 24/7, and water once every three or four days. They mostly sprout in three to seven days, with a few laggards sprouting over the next month.

I've grown them from cuttings on two occasions. The first was when a young relative brought me an almost dead specimen which was hollow and had been completely eaten out on the inside. It had one tiny scraggly root coming down from one side of this hollow plant. I packed the inside with sand (to keep well drained), and planted it in a pot.

The growing point was damaged and had died, so when it started growing again, it put out lots of pups. The pups being too crowded, I thinned them out by cutting half of them off. I then set them out to dry for a couple days while the cut calloused over. The callous is important because it provides a seal against fungus when you place it in the soil to root. Then these pups were set barely into the soil, with the cut barely stuck into the soil. They then sent out roots and they grew rather well.

The second instance was from a crested pincushion I found in the Confusion Range of the west desert. A crest is when the plant grows from a line rather than the normal growing point. As it gets bigger and bigger, it grows into a 'U' shape, then starts trying to look like a little spiny brain. I cut the crested plant into nine pieces, allowed them to callous over, and planted them. Now I have around eight plants that look like the original. One rotted out and died. For some reason the crested plant has never bloomed, the growing line has never produced flowers buds.

***Coryphantha vivipara* growing vigorously alongside Indian rice grass**

Those grown from seed have a juvenile form. There are no centrals sticking straight out. All the spines lay flat on the plant and you can touch the plant without getting poked. When children ask if they can touch the cacti, we let them do so on the juvenile pincushions since those won't hurt them. Around the third year one or two centrals start sticking out and by year five all the centrals are in their maximum defensive posture.

The common pincushion is a great starter plant to get experience with cactus. It is pretty hard to kill unless you over water it, has great flowers and will last a long, long time. This is a great plant for any xeriscape and will offer many years of enjoyment.

Intermountain Flora, Vascular Plants of the Intermountain West, U.S.A. Volume Two, Part B, Subclass Dilleniidae.
By Noel H. Holmgren, Patricia K. Holmgren, and Arthur Cronquist. 2005.
The New York Botanical Garden, Bronx, NY. 488 pp. $100.00

Review by Walter Fertig

Over four decades in the making, the *Intermountain Flora* moved one step closer to completion with the publication of the seventh volume in the eight part series in June 2005. The newest edition (Volume 2 Part B) covers 17 families and 9 orders in the dicot subclass Dilleniidae of Arthur Cronquist's integrated system of vascular plant classification. Members of the Dilleniidae are united by a suite of somewhat arcane morphological traits (such as the presence of numerous stamens with those at the center of the flower maturing first and syncarpous ovules with parietal placentation), but were considered by Cronquist to represent a natural group that evolved independently of other major dicot subclasses (Rosidae, Caryophyllidae, and Hamamelidae) from the ancestral *Magnoliidae* (magnolia-buttercup group). The Dilleniidae include several of the more notoriously difficult vascular plant families in the western US, such as the mustards (*Brassicaceae* or *Cruciferae*), willows (*Salicaceae*), and blazing-stars/stickleafs (*Loasaceae*).

The Intermountain Flora project was originally conceived in the 1940s by Bassett Maguire, Arthur Holmgren, and Arthur Cronquist of Utah State University and The New York Botanical Garden. Their goal was to produce a multi-volume, illustrated treatment of the flora of the Great Basin and northern Colorado Plateau (covering all of Utah, most of Nevada, and portions of SE Oregon, S Idaho, E California, N Arizona, and SW Wyoming) comparable in scope to the 5 volume *Vascular Plants of the Pacific Northwest* and 3 volume *New Britton and Brown Illustrated Flora of the Northeastern United States*. Work on the flora began in earnest in the 1960s, leading to publication of the first volume (describing the physiography, plant geography, and botanical history of the region, as well as ferns and gymnosperms) in 1972. Subsequent volumes covering monocots, *Asteridae*, *Fabaceae*, *Asteraceae*, and *Rosidae* have appeared approximately every 3-7 years. Over much of the last three decades the work has been spearheaded by Noel and Patricia Holmgren of the New York Botanical Garden, along with their collaborators James Reveal and the now deceased Arthur Holmgren, Arthur Cronquist, and Rupert Barneby.

As with the previous 6 volumes in the series, Volume 2B contains detailed taxonomic keys, full species descriptions, and faithfully rendered black-and-white drawings that highlight the most significant diagnostic features of each species. Several talented botanical illustrators have contributed to the series, including Jeanne Janish (famous for her illustrations in *Vascular Plants of the Pacific Northwest* and numerous books on southwestern wildflowers), Bobbi Angell, Robin Jess, and Laura Vogel. The availability of quality technical illustrations is invaluable, particularly for workers in the field or without ready access to herbarium material.

The drawings in Volume 2B are especially helpful in differentiating tricky species pairs in *Mentzelia* and for a number of the mustard genera. In addition, the illustrations are often objects of great beauty, and the *Flora* could just as easily be marketed to aficionados of fine botanical art as to taxonomists. The latest volume of the *Intermountain Flora* is, in my opinion, the most handsome yet in terms of quality of illustrations, layout, and design.

Although loyal to Cronquist's vision of the Dilleniidae group, the authors of Volume 2B do a good job of discussing and referencing recent research in plant systematics that is reshaping long-held taxonomic concepts. Taxonomy is currently in a period of flux in which numerous (and often contradictory) alternative treatments of traditional groups are being proposed based on genetic and cladistic studies. While it may be decades before all the smoke clears and a new consensus is reached, the Holmgrens have made a number of changes at the genus and family level that may cause some consternation to those who prefer their taxonomy to remain static.

The most noteworthy changes have occurred in the mustard family, with the dismemberment of *Arabis* (with all species except *Arabis hirsuta* and *A. nuttallii* moving to *Boechera* and *Turritis*), the merger of *Lesquerella* and *Physaria*, and transfer of selected species to the new or resurrected genera *Cusickiella, Dimorphocarpa, Hornungia, Noccaea, Sinapis*, and *Transberingia.* At the family level, the Caper family (Capparaceae) has been split in two, with all the intermountain species moving to the newly elevated Cleomaceae. Many other minor changes have occurred at the species and variety levels, mostly involving reshuffling of taxa within *Boechera, Descurainia, Draba, Mentzelia, Populus, Primula, Salix, Stanleya,* and *Viola.*

Several new species have been reported for Utah in Volume 2B of the *Intermountain Flora*. Several represent new weed species for the state (*Alyssum murale* and *Hypericum perforatum*), while others are range extensions (*Draba paysonii* var. *treleasii, Lepidium ramosissimum, Mentzelia decapetala, Phoenicaulis cheiranthoides, Salix eastwoodiae, Salix melanopsis,* and *Subularia aquatica*). At least two taxa have been newly described or resurrected: *Boechera glareosa*, endemic to the Uinta Basin near Jensen, Utah and Dinosaur, Colorado and *Erysimum capitatum* var. *nivale* endemic to the Uinta, Wasatch, and La Sal mountains of Utah and adjacent Colorado. In all, this volume covers 315 Utah species, or about 11% of the entire state flora.

Volume 2B is a necessary addition to the library of all serious professional and amateur botanists in Utah. A large percentage of the species covered in this volume are not well illustrated or described in other regional floras (especially the *Brassicaceae* and *Loasaceae*). Likewise, the keys and species descriptions provide a nice complement to other floras that cover Utah, especially Welsh, Atwood, Goodrich, and Higgins' definitive state reference *A Utah Flora*, *third edition* (2003). Purchase of this volume will only whet ones appetite for the appearance of the final book in the series (Volume 2A covering the *Magnoliidae, Hamamelidae,* and *Caryophyllidae*), hopefully within a few short years.

Events and Chapter News

Manzanita

January 2006 Meeting: Monday, January 9: Adding Color to Garden Design.
The January speaker will be Allysia Angus, Landscape Architect/Planner at the Escalante office of the Grand Staircase-Escalante National Monument. The meeting will be held on a Monday instead of the normal Tuesday evening to accommodate those members who are participating in the Master Gardener's course this winter (see below). Allysia will discuss designing landscaping and gardens with an eye towards the color of flowers and foliage at different seasons of the year.

2006 Master Gardener's Class: A new session of the Master's Gardener's course will begin in January 2006, meeting on Tuesdays and Thursday nights.

For more information, contact Kathy Walls (jwalls@kanab.net) or Larry Baer (Baersden@kanab.net).

Salt Lake

The Salt Lake Chapter elected Kipp Lee as President at the November monthly meeting. Kipp is also a UNPS board member. Bill Gray will serve as activity chair and assist in getting the chapter active.

The December 6th meeting was cancelled due to icy conditions in Salt Lake City. Kipp was to have unveiled his goals and plans for the chapter in the upcoming year, which include social activities, conservation projects, field trips, workshops, fund-raising, and better member involvement. He will now do this at our **January 3rd** meeting. **Therese Meyer**, long-term UNPS board member, will also speak about her ongoing project with the Utah DWR to select varieties of native plant seeds, and produce them in bulk for rangelands restoration. Meetings are held at the Sweet Library (9th Ave and 'F' St, SLC) at 7:00 pm, first Tuesday of each month.

Sandra Bray's "**Mystery Plant**" website now has over 50 photos posted <http://www.rootcellar.us/unps>. Submit photos of UFOs (unidentified flowering objects) to glbray@comcast.net or browse the photos to test your plant i.d. skills. Sandra or Bill Gray will post comments, then the answer (if possible) after a few days.

Utah Valley

On Friday, November 18th the Utah County Chapter of the Utah Native Plant Society met for a potluck and lecture. The food was delicious. After eating, Robert Fitts of the Utah Natural Heritage Program gave a presentation on the Utah Natural Heritage Program (UNHP) for plants. Plants are given a local and global ranking based on their rareness. This rareness is determined from plant data obtained from herbarium records and site surveys. Maps are created from this data with differing buffers depending on the accuracy of the data. For example an historical record might be mapped to a section or canyon, but current occurrences are GPS points. Large scale maps of plant locations are available to the public on the Utah Division of Wildlife webpage at http://dwrcdc.nr.utah.gov/ucdc/ .

The next potluck and lecture will be on Friday, February 17th. The potluck begins at 6:00 pm, and the lecture is at 7:00 pm. No speaker has been chosen yet, so watch the website http://www.unps.org under Chapters, Utah Valley for more details.

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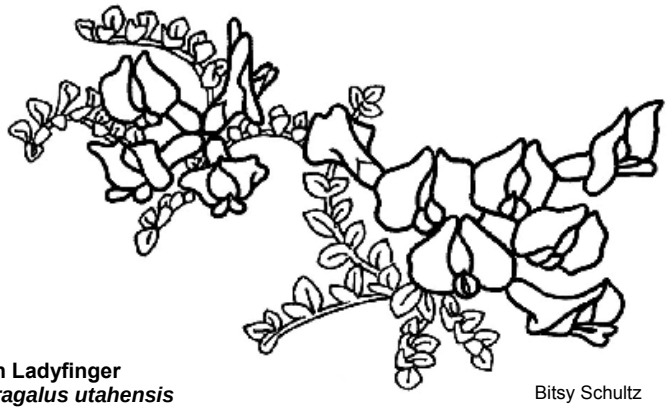

Utah Ladyfinger
Astragalus utahensis

Bitsy Schultz

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Many thanks to Xmission for sponsoring the Utah Native Plant Society website.

Please direct all suggestions, articles and events for the newsletter to Paula Longhurst at plonghur@xmission.com. **The deadline for next issue is 8th February 2006**

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