Dave Wood Wildflower and Plant Info

Underlined text = info added by Leigh from another website

Here's a list of flowers that were blooming, with a few that were past blooming and had seeds

- Lupine
- Snakeweed
- Golden aster
- Sandwort
- Yarrow
- Wild rose
- Yellow sweet clover
- Houndstongue (in seed)
- Sulfur buckwheat
- Indian paintbrush
- Sego lily
- Oregon holly grape (green berries)
- Wormwood (not blooming)
- Rocky Mountain Penstemon https://plants.usda.gov/plantguide/pdf/pg_pest2.pdf
- Showy Daisy, *Erigeron speciosus* Purple, aster-looking flower http://www.swcoloradowildflowers.com/Blue%20Purple%20Enlarged%20Photo%20Pages/erigeron%20speciosus.htm
- Red root buckwheat http://plants.usda.gov/java/largeImage?imageID=erra3_008_avp.tif http://www.swcoloradowildflowers.com/Blue%20Purple%20Enlarged%20Photo%20Pages/erigeron%20speciosus.htm
- American licorice http://plants.usda.gov/core/profile?symbol=GLLE3 The plant grows in moist soils; although it will grow in heavy soil it prefers sandy soil. It grows to 40–100 cm (15.5–39.5 in) tall, and has long tough brown roots which are said to be sweet and were used as food and for medicinal purposes by Native Americans. After eating a roasted root in 1806, Meriwether Lewis described an "agreeable flavour not unlike the sweet pittaitoe."[5]

Burr (seeds) of the wild licorice growing along theSouth Saskatchewan Riverbank near Saskatoon, SK

American licorice is not sweet from sugar but fromglycyrrhizin. Glycyrrhizin may increase blood pressure(aka hypertension) by interfering with cortisol conversion.

- Pinedrops: from USFS website

Pterospora andromedea – Pinedrops

Pinedrops is an herbaceous perennial wildflower with a broad geographic distribution in the western and northeastern United States. It is most commonly encountered in the western United States. Pinedrops occurs above ground as a cluster of flowering stalks.

Pterospora andromedea. Photo by Charles Peirce.

Pterospora andromedea range map. USDA PLANTS Database.

Pterospora andromedea (*Pterospora* – winged seed; *andromedea* -from the nodding reddish to white flowers that are similar to the flowers of *Andromeda polifolia*) ranges in height from 30 to 100 centimeters, although it can occasionally attain a height of 2 meters. It is the tallest species of the mycotrophic wildflowers in the Heath family (Ericaceae). The plant is densely glandular pubescent. The leaves are scale-like. The inflorescence is a raceme of densely arranged flowers. The flowers are pendant. The fruit is a capsule. Once ripened, seed is released through a slit occurring from the base to the tip.

Pterospora andromedea. Photo by Al Schneider.

Pterospora andromedea. Photo by Al Schneider.

Pterospora andomedea flowers from early to mid summer. It is found in mature, moist, shaded, coniferous or mixed forests from 60 to 3,700 meters.

Conservation Concern

Pterospora andromedea is listed as threatened in Michigan and endangered in New York, Vermont and Wisconsin.

- Plant of the Week: Woodland Pinedrops (*Pterospora andromedea*)

Pterospora andromedea. Photo by Charles Peirce.

It is a **mycotrophic** ("fungus feeding") plant. These plants obtain their organic carbon from a host green plant (e.g., a pine tree) by tapping into an intermediary mycorrhizal fungus attached to the roots of the host plant.

In addition to specialized habitat requirements, recent scientific studies have revealed an under-appreciated feature of mycotrophic plants in the heath family; that is, the extreme level of fungal specificity in many species. Pinedrops (*Pterospora andromedea*) is associated with *Rhizopogon* (a species of fungus).

- False Earthstar fungus https://en.wikipedia.org/wiki/Astraeus_hygrometricus
- Sagebrush "communication"

Not Only Can Plants Talk to Each Other, They Listen More Closely to Their Relatives

Plants speak with chemical cues, and they listen more carefully to their close relatives

By Colin Schultz
smithsonian.com
February 13, 2013

Read more: http://www.smithsonianmag.com/smart-news/not-only-can-plants-talk-to-each-other-they-listen-more-closely-to-their-relatives-17096984/#6b7olfhwbqZiOejF.99

In a new study by University of California, Davis entomologist Richard Karban and colleagues, says *New Scientist*, the scientists found that plants—in this case, big sagebrush—don't just listen in on each others' conversations, they pay more attention to the plants most closely related to them.

> *At the start of three growing seasons, Karban's team exposed different branches of the same plants to volatile chemicals. The substances came from relatives of the same species whose leaves had been clipped to trigger chemical release.*
>
> *By the end of the seasons, herbivores had done less damage to the branches exposed to chemicals from close relatives than to those receiving signals from more distant relatives – the warning probably prompting the plants to release herbivore-deterring chemicals, says Karban.*

Different individual sagebrush plants emit slightly different warning chemicals, says *New Scientist*, and the listeners heed the warning cries of their relatives more than those of unrelated plants.

Read more: http://www.smithsonianmag.com/smart-news/not-only-can-plants-talk-to-each-other-they-listen-more-closely-to-their-relatives-17096984/#6b7olfhwbqZiOejF.99

Learning to Speak Shrub

Using molecular codes, plants cry for help, ward off bugs, and save each other.

BY ELIZABETH PRESTON

Plants speak in chemical codes—carbon-containing molecules called volatile organic compounds (VOCs). Characterized by the ease with which they enter the air, VOCs are a diverse group: plants alone make more than 30,000 varieties. Some VOCs produce familiar herbal or flower smells. Others are released only in response to a specific cue. Within seconds of being damaged, plants send out green leaf volatiles (GLVs), which we can detect too—for example, as the smell of a newly mown lawn.

Plants send out VOCs in response to physical damage or to chemicals in insects' saliva, vomit, or egg-laying fluids. Insect bites can activate hormones within the plant, like jasmonic acid, ethylene, or salicylic acid, which increase the activity of the plant's defense genes. These hormones can also be released as VOCs to alert the plant's other leaves and branches as well as its neighboring vegetation community. In particular, Karban says, methyl jasmonate—a volatile form of jasmonic acid—seems to be "pretty potent."

KAT MCGOWAN SCIENCE

DATE OF PUBLICATION: 12.20.13.12.20.13

TIME OF PUBLICATION: 9:30 AM.9:30 AM

HOW PLANTS SECRETLY TALK TO EACH OTHER

UP IN THE northern Sierra Nevada, the ecologist Richard Karban is trying to learn an alien language. The sagebrush plants that dot these slopes speak to one another, using words no human knows. Karban, who teaches at the University of California, Davis, is listening in, and he's beginning to understand what they say…

Farmer and Ryan worked with local sagebrush, which produce copious amounts of methyl jasmonate, an airborne organic chemical that Ryan thought plants were using to ward off insect herbivores. In their experiment, when damaged sagebrush leaves were put into airtight jars with potted tomato plants, the tomatoes began producing proteinase inhibitors — compounds that harm insects by disrupting their digestion.

Karban had just started work at a field station in a part of northern California that was thick with sagebrush and wild tobacco, a tomato cousin. He repeated Farmer's experiment in the wild. When he clipped sagebrush plants, imitating the injuries caused by the sharp teeth of insects and inducing the plants to produce methyl jasmonate and other airborne chemicals, the wild tobacco nearby started pumping out the defensive enzyme polyphenol oxidase. This seemed to have real consequences. At the end of the season, these tobacco plants had much less leaf damage than others from grasshoppers and cutworms. Karban cautioned that it's difficult to say definitely whether the airborne chemicals were directly responsible for the decrease in damage, but the results are nonetheless intriguing.

For both Karban and Heil, the outstanding question is evolutionary: Why should one plant waste energy clueing in its competitors about a danger? They argue that plant communication is a misnomer; it really might just be plant eavesdropping. Rather than using the vascular system to send messages across meters-long distances, maybe plants release volatile chemicals as a faster, smarter way to communicate with themselves — Heil calls it a soliloquy. Other plants can then monitor these puffs of airborne data. Bolstering this theory, most of these chemical signals seem to travel no more than 50 to 100 centimeters, at which range a plant would mostly be signaling itself.