

September EcoQuest – Pinedrops, alien or plant?

Every fall, photographs of one plant are always sent to researchers at Denver Botanic Gardens for identification – pinedrops or *Pterospora andromedea*. These alien-like plants are so weird-looking and eye-catching on the forest floor, people can't help but wonder what they are. Pinedrops have no green coloration in any part of the plant, and thus do not make any of their own food through chlorophyll and photosynthesis. How do these plants obtain the nutrients for survival then? Well, they parasitize the mycorrhizal fungi that are attached to the roots of pine trees.

Many species of trees are associated with mycorrhizal fungi, and the two have a mutually beneficial relationship. The fungi receive carbohydrates and other nutrients from the pine tree, while the pine trees receive an increase in their root surface area and are thus able to secure more water and minerals. Pinedrops tap into these fungal mycorrhizae and obtain all

the nutrients, carbohydrates and water they need to survive, offering nothing to the fungi in return for this supply of food. Pinedrop seeds are tiny and dust-like, also requiring a mycorrhizal association for germination to occur. As the seeds of pinedrop germinate, its roots become encased in the hyphae of the mycorrhizal fungus.

Pinedrops are a member of the *Ericaceae*, or heath family. They exhibit the characteristic urn-shaped corollas present in many members of the heath family, including blueberries (*Vaccinium*). Pinedrops also have a sticky, glandular, reddish stem. The scientific name for pinedrops comes from the Greek "Pterospora" meaning winged seed and "andromedea", a reference to the nodding flowers that are similar to the flowers of *Andromeda polifolia*.

See if you can locate some *Pterospora andromedea* and help Denver Botanic Gardens by photographing as many

plants as possible in the month of September. Post your findings on [iNaturalist](#) so they will automatically be added to the [Denver EcoFlora Project](#).



(TOP) *Pterospora andromedea*, [phyllisohlst](#), some rights reserved, CC BY-NC; (BOTTOM) *Pterospora andromedea*, [monotropa-unicorna](#), some rights reserved, CC BY-NC

August EcoQuest Results – Magical Mentzelias

All four large-flowered species of *Mentzelia* were located – 23 *M. nuda*, 4 *M. multiflora*, 3 *M. decapetala*, and 1 *M. speciosa*. Great job everyone!

What is an EcoQuest?

EcoQuests are part of the Denver EcoFlora Project. These monthly quests challenge citizens to become citizen scientists and observe, study and conserve the native plants of the Denver – Boulder metro area via iNaturalist, an easy-to-use mobile app.

How Do I Get Started?

1. Download the iNaturalist app or register online at [iNaturalist.org](#).
2. Take photos of the plants in bloom that you find on your daily neighborhood walk. It is okay if they are weeds! Avoid taking photos of cultivated plants in gardens or in your home.

3. If you are concerned about revealing the location of sensitive plants or observations at your own house, you can hide the exact location from the public by changing the "geoprivacy" of the observation to "obscured."
4. Post your findings on iNaturalist via the app.
5. Your observations will automatically be added to the Denver EcoFlora Project.
6. Sign up to be a member of the [Denver EcoFlora Project](#) on iNaturalist to receive updates and additional information.

What is the Goal?

The Denver EcoFlora Project is designed to meaningfully connect citizens with biodiversity and to assemble novel observations and data on the metro area's flora to better inform policy decisions and conservation strategies.



Photo by Scott Dressel-Martin