Most plants are autotrophs, making food for themselves using water, carbon dioxide, and the sun's energy. But others don't play by these rules. About 1% of all flowering plants steal food. This is a trait that has evolved multiple times in the evolutionary tree of angiosperms, found in over 4,000 species within 20 different plant families. Some of these are hemiparasites, taking only some of their required resources from other plants. These include Elephant's head (Pedicularis groenlandica) and Paintbrush (Castilleja spp) found in Centennial Valley. Since they have green leaves and are able to photosynthesize, they don't completely depend on host plants.

Other parasitic plants have lost their ability to photosynthesize, fully relying on other species for nutrients. These obligate parasitic plants are usually entirely red or white, lacking the green chlorophyll that is needed for photosynthesis. Pineworts are a great example of this in Centennial Valley. These otherworldly plants have long red stems, little yellow vase-shaped flowers, and small vestigial leaves that are effectively useless since they can't photosynthesize.

Spotted Coralroots (Corallorhiza maculata) are another parasitic plant species found here. Like pineworts, they have reddish stems and nearly non-existent leaves. These orchids have characteristically beautiful flowers with white petals covered in purple spots that attract unusual pollinators like mosquitoes and gnats. Pineworts and coralroots are found in montane forests, but they don't feed off of the trees themselves. These species are mycoheterotrophs, feeding by tapping into the mycorrhizal system. This mycorrhizal fungi that grows in association with these trees. Mycorrhizal fungi provide nutrients and water to plants, who in turn provide food to the fungi in the form of sugar, and mycoheterotrophs essentially cheat the mycorrhizal system.

Because parasitic species take without giving back, and often harm host species, it’s easy to turn them into botanical villains. But these fascinating plants are a part of the xerothermic ecosystem, in Centennial Valley and elsewhere. They help shape the plant communities around them, even if we don’t see that directly. They can be a reminder of the true drama that exists in the food web, and the balance that can sometimes tip. They present an interesting challenge to put things into strict categories by defying our ideas of what a plant is.