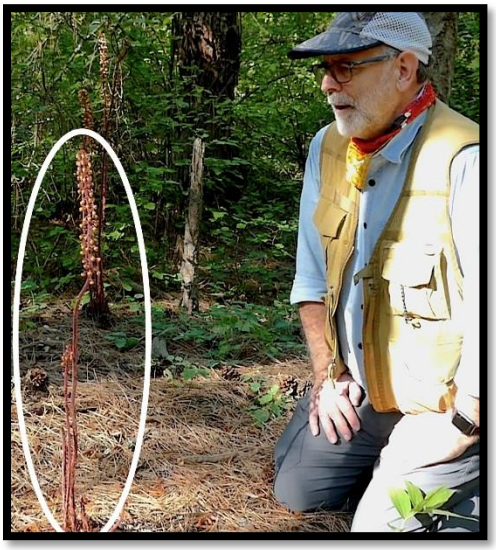
Nature At Home

We hope to inspire kids of all ages to learn about the natural world and discover new connections to nature.

With support from the Morning Star FOUNDATION

Discovering Pinedrops

View the video at DishmanHills.org/Nature-at-Home



The first time I saw this, I wondered what it was? I'd never seen anything like it before. It seemed like a lot of energy had been put into growing high into the air. The top reminded me of a group of bells, or rattles on a handle.

After looking in one of my native plant guides, I found it is actually a plant. *Allotropa virgata* belongs to a special group of plants called *saprohytes*. *Saprohytes* don't have enough *chlorophyll* to produce their own food. This means that they don't have a way to use the energy in sunlight to combine water (H2O) and carbon dioxide (CO2) into the materials they need to survive like "green" plants do during *photosynthesis*. One common name for this *saprophyte* is pinedrops. It was also known as coyote's arrow by some Okanagan peoples. It is a tall, reddish-purple plant with a sticky, unbranched stem, tiny pointed leaves and has small jack o'lantern shaped flowers.

How do they survive? This plant breaks all the rules!

The answer is found in what is going on under the ground around big ponderosa pine trees. The pinedrops didn't 'drop' out of the pine trees, but usually appear around them in the thick beds of decaying pine needles.

A pinedrops plant gets what it needs to survive by attaching itself to the "wood wide web." This web is made up of thousands of miles of fungal filaments call *hyphae*. They are so small that a teaspoon of forest soil can contain many miles these tiny filaments.

Fungi are *decomposers.* They help break down and transport nutrients from the decaying needles. These filaments also connect to the tiny root hairs of the ponderosa pine trees. They exchange nutrients and water for materials that the pine tree created through photosynthesis. All this happens out of sight throughout the forest sub-floor under our feet.

Pinedrops is a flower without the means of creating its own food. It survived because it evolved to get what it needs to survive from other organisms.

The top of the rapidly grown stem almost looks like the tip of an arrow.

In the picture to the left Pinedrops seems to erupt from the forest floor. It seems to push the humus and surface needles up and away from its base. Look at the color of the ground around the base. Compare it with other parts of the forest floor in the picture.

In the picture to the right, look carefully at the top of the stalk. Do you see the round light colored areas at the tip of the plant? Do you see the short thin leaves?

Look at the picture to the left. See how the tip has expanded in length and width. Those light areas have grown into the lantern shaped flowers to the mature plant.

Once the plant flowers in mid to late summer, the stems become quite woody and stiff. Be on the lookout for it as you travel wherever big ponderosa pines, and sometime Douglas firs, are found.

I think you will agree that pinedrops are one amazing plant!

If you have any questions, or an amazing plant that you would like to share with us, email us at Education@DishmanHills.org