Indian Pipe

Monotropa uniflora

Congratulations to Valerie Lindeman on her first place ribbon in the national Wild Ones Photo Contest last fall! It seems only fitting that we should learn about the plant in her beautiful photo…

Indian Pipe is an erect, 4-10 inch tall perennial, with a single, drooping, pipe-shaped flower on the tip of each stem. Tiny overlapping, scale-like leaves clasp the stems. The plant is descended from the same family as blueberry and rhododendron.

The most striking feature of Indian Pipe is that the entire plant is a translucent waxy white ….sometimes a pinkish-white… often with black flecks. This white plant blackens with age or bruising, and emits a clear jelly-like substance when injured. No wonder other common names for this plant are "Ghost Flower," "Ice Plant," and "Corpse Plant"!

The reason for the white color is that Indian Pipe is entirely devoid of chlorophyll. It cannot produce food through photosynthesis like most green plants. How does it survive?

It was once believed that Indian Pipe absorbed nutrients from decayed organic matter in the soil. However, recent studies have shown that the short, stubby roots of Indian Pipe contain fungi; and these fungi extend web-like through dead rotting leaves to connect to roots of trees. The fungi and the trees exchange nutrients in a mutually beneficial relationship. But Indian Pipe is more of a parasite, with the fungi acting as a bridge between it and the tree that provides sugar. This relationship might seem unusual, but Indian Pipe is one of about 3,000 species of non-photosynthetic (heterotrophic) flowering plants world-wide.

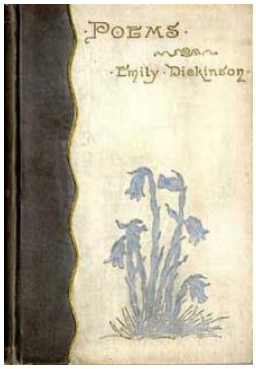
Indian pipe flowers can emerge from June through September. Once pollinated, the ½ inch long, five-parted flowers turn upright, darkening as they dry, and become papery capsules containing tiny seeds. Each seed has exactly 10 cells! When ripe, the seeds sift into the wind through slits that open in the capsule. Once dispersed, the seeds wait until they are contacted by fungi. The fungi enter the seeds as if infecting them. But then the fungi are "tricked" into providing all the nutrients that the seeds need; the seeds having almost no food of their own.

Indian pipe is widely distributed throughout North American, but is absent in the southwest and central Rocky mountains. Despite its wide distribution, it is not commonly found. It grows in deep, shady woods with rich humus soils, but where few other plants can find enough light to survive. Information about its pollinators is limited. Grizzly Bears in British Columbia have been observed digging up and eating Indian Pipe root masses.

Because of the complex fungal relationship that allow this plant to grow, cultivating Indian Pipe is very difficult. Plants transplanted from the wild are unlikely to survive.

For more information and photos:

http://www.curiousnature.info/A1-Indian%20Pipe.htm
http://botit.botany.wisc.edu/toms_fungi/oct2002.html
http://www.botany.org/Parasitic_Plants/Monotropa_uniflora.php



Emily Dickinson, called the Indian Pipe “the preferred flower of life” and used an illustration of it on the cover of her book *Poems.*
North Carolina mountain folklore tells us Cherokee Indians believed that plants appeared where the ashes from peace pipes had been scattered.