

Seeing the Sourlands
Indian Pipe
by Jim Amon

We usually think that propagation in the forest is a straight forward affair. A plant produces a flower, the flower is pollinated and a seed develops. The seed falls to the ground and a new plant may or may not grow. One problem with this way of looking at it is that it totally ignores what is going on beneath the surface. Virtually every tree and shrub in the forest is supported by a system of a soil fungus called mycorrhizal. Part of the structure of mycorrhizal fungi is a network of thread-like extensions (mycelium) that attach to the roots of the plants and draw some of the nutrients from those plants. In exchange, the fungi supply moisture and minerals to the plant roots. That happy symbiosis is ignored by parasites like Indian Pipe. Indian Pipe does not directly parasitize trees and shrubs in the forest, instead it parasitizes the fungi, from which it draws the moisture and nourishment it needs to survive. In the process it draws some of the nutrients that the fungi have gotten from the trees and shrubs. No one has been able to find anything that the Indian Pipe does for the fungi, nor does the Indian Pipe do anything for the plants that the mycorrhizal fungi are parasitizing.

Indian Pipe--because it is waxy and white it is also known as Ghost Flower or Corpse Flower--is very widespread but

not common. It occurs in Asia, Europe and northern South America as well as in all but the arctic portion of North America. I find some in the forest every two or three years, growing in a dark, moist, rich habitat. It can survive in dark parts of the forest because it does not need light--it does not use photosynthesis to produce nutrients since it gets all that it needs from the fungi. It generally appears in the forest in late August or September. Each plant has a three to ten inch-long stem a single nodding flower, with no leaves. (Leaves would be superfluous to a plant that does not photosynthesize.)

I was surprised to learn that this weird-looking plant is actually a perennial flowering plant that is pollinated by small bees. Further, that it is in the same family as blueberry. (I guess, if you look hard enough, nearly every family has a weird member.) Once it is pollinated, its flower turns upward and the seeds become mature. There are only about ten seeds in each plant and they are microscopic in size and are dispersed by the wind. (That passive propagation technique must explain why they are uncommon.) Once the seeds are gone the plant blackens and disappears.

An otherwise reliable acquaintance once told me that he saw a mountain lion in his back yard on the edge of the Sourlands. I don't believe him. Nor do I believe in Sasquatch or the Loch Ness Monster. Don't even talk to me about vampires and ghosts--but, wait, I do believe in the Ghost Flower. I believe in it and I celebrate it. This little, insignificant, rarely-seen plant, a plant that takes

from fungi and indirectly from the trees that support the fungi reminds us again of the wonderful complexity of the web of life.