



Indian pipe (*Monotropa uniflora*), also called ghost plant or corpse plant, often grows in a cluster.

Indian Pipe

With Halloween on the way, it's time to talk about the ghosts on the forest floor.

By J. Morton Galetto, CU Maurice River

With Halloween on the way it's time to talk about the ghosts on the forest floor.

Many woodland plants deal with decreased sunlight by blooming early in spring when leaf cover is sparse or nonexistent. But our subject species, Indian pipe, adapts to the darkened woods of autumn by getting its nutrients from the forest floor, versus sunlight. It is one of the few true plants that does not have chlorophyll, meaning it is not dependent on photosynthesis. So it can live in the darkest of forests. Spooky right? Come on, work with me here. This adaptation is made possible because it relies on a mutualism with a certain type of root fungus. Normally found in a moist humus, it may be spotted from June - November but I normally notice it September - October.

Indian pipe's dependence on the fungus makes it the parasite of a parasite. The fungus it relies on parasitizes trees, often beech, and it is a fungus, referred to as *mycorrhiza*, that grows in association with the roots of a plant in a symbiotic relationship. Furthermore, growing in relationship with dead or decaying organic matter and lacking chlorophyll, Indian pipe is considered *saprophytic*. Because of these

connections it can't be transplanted, and it only exists in certain habitats. But it is not considered rare because these habitats are abundant. In fact it exists in nearly all of lower 48 states, Alaska, and Canada.

It is absent from the southwest and intermountain west and central Rockies. Worldwide there are 12 genera and 30 different species.

Indian pipe has other common names like ghost plant and corpse plant, "ghost" because of its translucent white stems. The plant can also be a light shade of pink. The scaly look of its stem is caused by its alternate leaves. When inverted you can see inside the cup made by its 4-5 petals. The flower head is ½ - 1" long and nods downward. The stems are 3-9 inches in length. Its proper name is *monotropa uniflora*, *mono* meaning one and *tropos* meaning turn together, denoting that all the flower heads face in the same direction, in this instance downward. The pendulous flowers turn nearly upright after pollination. When it fully matures it becomes black, thus the common name "corpse." Each stalk has one flower, therefore *uniflora*.



When inverted, the stigma and anthers are visible cupped by the petals.

The ghostly appearance and lack of chlorophyll led me to erroneously believe, like many people, that it was a fungus. But it is vascular plant, bearing seeds, with a flower, and it belongs the monotropeceae family.

Evidently it is edible and tastes somewhat like asparagus when cooked. However it has a mild toxicity and is not a recommended food item. Picking

it is without merit in that it quickly turns black. Leave it alone to provide its mutually beneficial forest services!



The common name Indian pipe derives from the resemblance of the plant to a smoking pipe when inverted. Its transparent stem and pale appearance also give it the name ghost plant.

Many articles mentioned that Native Americans utilized the plant for eye ailments. *Plants for a Future* cites infusion of the root as "Antispasmodic, hypnotic, nervine, sedative tonic." It goes on to suggest, "It is a good

remedy for spasms, fainting spells and various nervous conditions. It has been given to children who suffer from fits, epilepsy and convulsions." I don't know about you but I think I will pass on ingesting it.

Decaying matter - fungus - corpse plant
- ghost plant - the darkest of woods -
the white stands out from the shadows
- parasite of a parasite - toxic, I don't
know about you but I'm really spooked
out and ready for Halloween. Boo!

Other sources:

USDA Plant Database

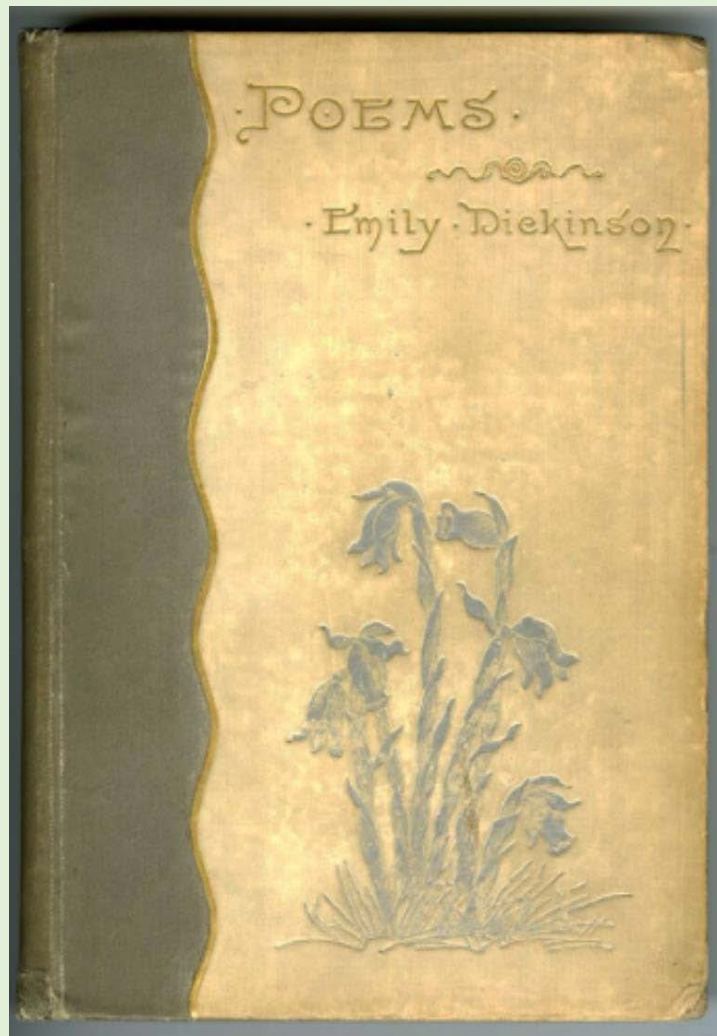
Wildflower of Eastern America, Klimas
and Cunningham

Wild Flowers of America, Reynolds

North American Wildflowers, National
Audubon

Wildflowers of Pennsylvania, Haywood
and Monk

(Please scroll down for sidebar)



Emily Dickinson, America's eminent poet, claimed Indian pipe to be her favorite flower. In a letter to Mabel Todd she wrote, "I still cherish the clutch with which I bore it from the round when a wondering child, and unearthly booty. And maturity only enhances the mystery, nere decreases it." Its image adorned her book *Poems* (USDA, Forestry Service fact sheet).

(to read poem please scroll down)

This poem was scrolled by Dickinson in 1879 on ruled stationery.

'Tis whiter than an Indian Pipe –
'Tis dimmer than a Lace –
No stature has it, like a Fog
When you approach the place –
Not any voice imply it here –
Or intimate it there –
A spirit – how doth it accost –
What function hath the Air?
This limitless Hyperbole
Each one of us shall be –
'Tis Drama – if Hypothesis
It be not Tragedy –

'Tis whiter than an Indian Pipe –
Poem, ca. 1879

Amherst College Archives & Special
Collections (found on the Morgan
Library & Museum website)