

# INDIAN PIPE

Due to the presence of the chlorophyll pigment, most of our plants have green leaves. However, some of our plants will lack chlorophyll and will have no green. One of those plants is the Indian Pipe (*Monotropa uniflora* L.).

Indian Pipes are white, bluish, or pinkish, translucent, succulent, and waxy. They are cool and clammy to the touch.

If touched, they will decompose and turn dark brown or black. If rubbed, they will seep a clear, gelatinous sap.

Indian Pipes are members of the Order *Ericales* and of the Indian Pipe Family (*Monotropaceae*). They were formerly within the Heath Family (*Ericaceae*) and within the Pyrola, the Shinleaf, or the Wintergreen Family (*Pyrolaceae*).

The generic name, *Monotropa*, is Greek for “one turn”. *Mono* is “one” and *tropos* is “turning”. The specific epithet, *uniflora*, is Latin for “one flower”. *Unus* is “one” and *flora* is “flower”.

A previous scientific synonym for this plant was *Monotropa brittonii* Small. At different times and places, other common names for this plant have been American Iceplant, Bird’s Nest, Broomrape, Convulsion Root, Convulsion Weed, Corpse Plant, Death Plant, Dutchman’s Pipe, Eyebright, Fairy Smoke, Fitroot, Fitroot Plant, Fitsroot, Ghost Flower, Ghost Plant, Ice Plant, Nestplant, One-flowered Waxplant, Ova-Ova, Pipe Plant, Tobacco Pipe, and Waxplant.

## DESCRIPTION OF THE INDIAN PIPE

Perennial

**Height:** Their height is about 2-12 inches.

**Stem:** Their stems are upright, fragile, thick, fleshy, unbranched, and are covered with scaly bracts. Before fertilization, these stems are white and brittle. After fertilization, these stems are black and tough. There may be as few as 1 stem or as many as 20+ stems.

**Leaves:** Their leaves are nearly absent but are small, scaly bracts. These bracts are about 1/8 inch long and are both simple and alternate.

**Flowers:** The young flowers are white or pinkish, odorless, radially symmetrical, solitary, tubular, bell- or urn-shaped, nodding, and terminal. Each flower is about 1/3-1 inch long; has 4-6 broadly oblong, petals that are united at their bases and are flared at their tips; 2-6 separate, scaly, bract-like sepals; 8-12 brown-yellow stamens; and 1 pistil with a sticky, 5-parted stigma. Flowering season is usually June to October.

These flowers are insect-pollinated. They are visited some species of small Bumblebees (*Bombus* sp.) and possibly by some Fly (Order *Diptera*) species. These flowers may have scents and colors that are only detected by insects.

The sticky mucous upon the stigma often gets stuck upon the insects. The smooth dry pollen will attach to the sticky mucous and will be transported to other stigmas. This method helps ensure cross-pollination.

After fertilizations, the flower heads are upright. These flowers turn purple then black.

**Fruit:** Their fruit is an ovoid or oval, tan or brown capsule or pod. As the seeds mature, the capsule becomes enlarged, erect, and rests upon the dry petals and sepals. The capsule

splits open down its sides into 4-5 sections to release its seeds. These capsules often persist throughout the winter.

**Seeds:** The seeds are small, brown, and thread-like. These seeds are dispersed by the wind from the late summer to the following spring.

**Roots:** The root is thick, brittle, clustered, and fibrous. It is often a massive, tangled, and hardened ball of small brown segments.

During the late summer and fall, they produce the buds for next year's stems. These roots can produce large plant colonies.

Mycorrhizae (Greek: "fungus root". *Mykos* is "fungus" and *rhizon* is "root") surround these roots. The roots get their nutrients from the fungi. Via their filaments, the fungi get their nutrients from dead plant nutrients or from tree roots. However, the fungi do not harm the host trees. The fungi makes this plant both epiparasitic and saprophytic.

Because these roots and their fungi are interconnected with the humus or with other roots, they are very difficult to transplant. Even transplanting much of the organic soil won't guarantee success.

**Habitat:** Indian Pipes inhabit deep rich shaded woodlands, ravines, and hillsides, which have dense leafy mulch, woodland humus, or tree roots. They prefer Pines (*Pinus* sp.), Oaks (*Quercus* sp.), and American Beeches (*Fagus grandifolia* Ehrhart). They do not inhabit sunny areas. They are easiest to find after summer rains. Their numbers may fluctuate annually.

**Range:** Indian Pipes' range is transcontinental. It ranges from Alaska and Newfoundland to Florida and Mexico. They have also been sighted in some parts of Central America, northern South America, China, Japan, and India. This plant may have evolved during the Jurassic Period of the Mesozoic Era, before the super-continent of Laurasia had separated.

### Uses:

Indian Pipes had some medicinal uses. Both the Native Americans and the European settlers used this plant for medicine. The sap from this plant was used as an ophthalmic lotion for treating inflamed eyes or for sharpening vision. It also used externally for treating bunions and warts. This plant was used as a poultice for treating sores. The stems and leaves were used fresh or dried as a tea for treating aches, pains, and fevers of common colds. The roots were used dried and powdered as a tea for treating convulsions, fainting spells, fits, epilepsy, insomnia, muscular spasms, nervous irritability, and various female troubles. Water extracts were used as an antibacterial.

Indian Pipes also had some edible uses. It could be eaten raw, roasted, or boiled. Although it often tasted like Asparagus (*Asparagus officinalis* L.), it was considered to be bland and tasteless.

However, this plant contains toxic glycosides, such as andromedotoxin. This plant's safe use is questionable. This plant is also too scarce to harvest.

### Cultural History:

Indian Pipes played a role in our cultural history. The Native Americans had a story that this plant first appeared where an Indian had dumped some white ashes from his pipe. The Cherokee Tribe has this story:

### ***The Origin of the Indian Pipe Plant***

As told by John Rattling-Gourd

*Before selfishness crept into the world- that was a long time ago- the Cherokee people were happy and peaceable. They used the same hunting grounds and fishing grounds as their neighbors. They fished in the same streams and hunted in the same stands of forest. There were no arguments about boundaries and there were no arguments about fishing rights. But this was before Men became greedy. All this changed when Men learned to quarrel.*

*The first quarrel that arose was between Cherokee and a neighboring tribe. It was a long and bitter quarrel, so bitter that the chiefs of the two tribes decided to meet in council to try and settle their trouble. And so they met, one day, and they smoked the peace pipe in solemn council, but they did not stop quarreling. A puff on the peace pipe and a bitter was the way it went. Days passed and still the council sat and smoked and quarreled.*

*Now the Great Spirit was much displeased that the Indians should quarrel while smoking the pipe of peace. An the Great Spirit said, "I shall have to do something to you men that will show you that People should live together in peace, and that when Indians smoke the pipe, it must be done in peace."*

*The Great Spirit looked down at the old Men sitting in all that smoke. And he saw how gray they looked and how their heads hung down in weariness because it had been many nights since they had slept. And so he turned the old Men who smoked there in the council into small silvery gray flowers, their heads bent over and their petals hoary.*

*If you should find one in the woods and turn it so that the head is down and the stem up, you will see that it looks like an Indian pipe, and so it is called to this day. But in the woods where they are often seen clustered together, they appear to be little gray People sitting in long council.*

*Now after the Great Spirit had changed the quarreling Indians into flowers and set them out in the forest, he noticed that the smoke from their pipes still hung heavy in the air above the place where the council had been. So he gathered up the smoke and draped it over the mountains as a reminder. And he left it there until such time as all Men shall learn to live in peace together.*

A few American poets wrote about the Indian Pipe. Emily Dickinson wrote a poem that was titled *'Tis whiter than an Indian Pipe*. Mary Potter Thacher Higginson, had written this poem about the Indian Pipe:

#### ***Ghost-Flowers***

*IN shining groups, each stem a pearly ray,  
Weird flecks of light within the shadowed wood,  
They dwell aloof, a spotless sisterhood.  
No Angelus, except the wild bird's lay,  
Awakes these forest nuns; yet night and day  
Their heads are bent, as if in prayerful mood.  
A touch will mar their snow, and tempests rude  
Defile; but in the mist fresh blossoms stray  
From spirit-gardens just beyond our ken.*

*Each year we seek their virgin haunts, to look  
Upon new loveliness, and watch again  
Their shy devotions near the singing brook;  
Then, mingling in the dizzy stir of men,  
Forget the vows made in the cloistered nook.*

Another poem, *Summer Song*, by Sarah Foster Davis contains these lines about Indian Pipes:

*Where the long, slant rays are beaming,  
Where the shadows cool lie dreaming,  
Pale the Indian pipes are gleaming—*

Catharine Esther Beecher, the sister of Harriet Beecher Stowe, wrote *To the Monotropa, or Ghost Flower*:

*Pale, mournful flower, that hidest in shade  
Mild dewy damps and murky glade,  
With moss and mould,  
Why dost thou hand thy ghastly head,  
So sad and cold?*

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