

# Weird and Wonderful Plants

**These strange species  
have their own ways  
of doing things.**

By **Mary Hoff**

WHEN WE think of plants, we tend to think of grass and trees and dandelions and other familiar green things with leaves and roots and stems. But Minnesota has its share of plants that look odd and do some pretty strange things. If you think plants are boring and predictable, these five Minnesota natives might make you think again!

*Opposite page, clockwise from top left: With its yellow-orange blossoms, jewelweed is pretty—but its explosive seedpods are the reason it's also called spotted touch-me-not. Indian pipe relies on other plants for food. Three species of cactus are found in Minnesota. The pitcher plant grows in bogs and digests insects for nutrients. When dwarf mistletoe (right) feeds on coniferous trees, it causes branches to grow in a cluster.*

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CLOCKWISE FROM TOP: SPARKY STENSAAS, ALAN OLANDER, SPARKY STENSAAS, RICHARD HAMILTON SMITH, SPARKY STENSAAS





## Fun Fact:

**Indian pipes are relatives of blueberries.**

## Ghost of the Forest

Indian Pipe (*Monotropa uniflora*)

The reason most plants are green is because they contain *chlorophyll*, a green substance that helps them make their own food from sunlight, carbon dioxide from the air, and water from the soil.

Not all plants contain chlorophyll, though. One such plant is the Indian pipe, also known as the ghost pipe. Most often found in wooded areas, Indian pipes are flowering plants with a pale white color. The stems pop out from rich, moist soil in summer and grow to be about 6 inches tall, each with a tiny white flower at the tip. When you turn them upside down, the plants look a little bit like the long tobacco pipes some American Indians use in ceremonies.

Indian pipe flowers in bloom attract bees, which then carry pollen from one plant to another so the plants can make seeds. When the seeds ripen, they blow away in the breeze. If a seed finds a favorable spot, it may become a new Indian pipe plant the following year.

How do Indian pipes get food without chlorophyll? They borrow from their neighbors. Threads of fungi connect Indian pipes' roots to the roots of other plants around them. When the other plants use their chlorophyll to make food, they share some of the food with the Indian pipe plants.

CLOCKWISE FROM TOP LEFT: BENJAMIN OLSON, SPARKY STENSAAS, ALAN OLANDER





## Seed Surprise

Jewelweed (*Impatiens capensis*)

Jewelweed is a wildflower that grows in damp, shady places, often along streams or wetlands. It gets its name from the way it sparkles in the sunlight when dew gathers on its small yellow-orange blossoms.

Jewelweed's other name is spotted touch-me-not—for a good reason. In midsummer, after the flowers bloom and have been pollinated by bees, butterflies, or hummingbirds, the plant forms long, skinny seedpods

that have a neat trick: They are spring loaded. The moisture inside them creates tension similar to the tension you create when you stretch a rubber band. When something brushes against the seedpod, its five banana-peel-like segments separate and rapidly curl outward, blasting the seeds inside into the air.

The lightweight seeds don't travel very far—just far enough to fall or be carried to a new place to grow.

SPARKY STENSAS



## Cactus Here?

Brittle Prickly Pear (*Opuntia fragilis*)

When you think of a cactus, you may imagine a desert scene in the American Southwest. But you don't have to travel that far to see these prickly plants. Cacti are found right here in Minnesota.

One of the most common is the brittle prickly pear. This scrubby plant grows in sandy, gravelly, or rocky places, often in dry prairies. It is found mainly in southern Minnesota, but has also been spied along the St. Croix River, at Sherburne National Wildlife Refuge, and even along Rainy Lake on the Canadian border. One expert estimates that wherever you are in Minnesota, you are likely less than 100 miles from a brittle prickly pear cactus.

RICHARD HAMILTON SMITH

A cactus has adapted to thrive under hot, dry conditions. The flat, thick, leaf-like part of a prickly pear cactus, which is actually its stem, has a waxy coat that helps keep it from losing too much moisture. Its spines, which are actually leaves, help shade the stem, break up breezes blowing by, and keep moisture in the air near the plant.

One of the coolest ways in which cacti avoid drying out in the heat is by closing small holes in their leaves, called *stomata*, during the daytime. This saves water that's inside the plant from evaporating in the hot sun. At night, when it's cooler and more humid, they open their stomata and take in gases from the air that keep them alive.

**Fun Fact:** Juice from the stems of jewelweed can help ease pain from nettles or poison ivy.

**Fun Fact:** Minnesota has the most brittle prickly pear populations of any state in the Upper Midwest.

## Tree Freeloader

Eastern Spruce Dwarf Mistletoe  
(*Arceuthobium pusillum*)

Roots in the ground, leaves in the sky—that seems like a pretty normal thing to expect from forest plants. But not eastern spruce dwarf mistletoe! This tiny plant is a parasite: It grows in and on another plant, instead of in the soil.

Dwarf mistletoe starts its life as a tiny seed stuck to the branch of a coniferous tree, most often a black spruce or white spruce but sometimes a tamarack. When the seed *germinates*, or begins to grow, it works its way inside the branch. There it grows for several years, gathering energy and nutrients from its host like a freeloading guest who moves into your house, takes over your bedroom, and raids your refrigerator every day.

After two to four years of growing inside the host, the mistletoe sends tiny shoots out into the open air in between the tree's needles. The orangish or yellowish shoots grow to be about as tall as a spruce needle is long, with leaves about the size of a sesame seed. By April or May each shoot has formed four or five tiny flowers that are pollinated by insects such as flies, beetles, or wasps. Over a period of about five months, the flowers mature into fruits containing liquid and seeds. The fruits swell until they burst, shooting sticky seeds up to 20 feet away. Any seeds that land on and stick to another conifer may start the cycle again.

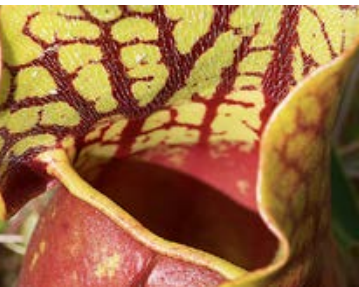
The mistletoe's relationship with its coniferous host is a one-way street: The tiny plant benefits but the tree does not. In fact, the mistletoe changes the way the tree grows, causing it to form a gnarly cluster of branches called a witch's broom. The mistletoe steals food and nutrients the tree needs to grow. If the infestation is bad enough, it can reduce the tree's ability to grow and make its own seeds and can even kill it.

### Fun Fact:

**Porcupines, birds, squirrels, and other animals eat mistletoe.**



SPARKY STENSAAS



## Fun Fact:

**American Indians make medicine from pitcher plants to treat fevers and back pain.**

## Insect Eater

Pitcher Plant (*Sarracenia purpurea*)

Frogs eat insects. Birds eat insects. But did you know that some Minnesota plants eat insects, too?

The pitcher plant is a tulip-sized plant that grows in soggy wetlands known as bogs. The soil in bogs is not very rich in nutrients plants need to thrive. Pitcher plants obtain their nutrients from insects instead.

True to its name, a pitcher plant has a structure made from leaves that forms a pitcher-like tube about as long as a banana. At the top of the tube are short, downward pointing hairs, and at the bottom is a miniature pool of rainwater that contains insect-dissolving chemicals made by the plant. Ants, flies, and other insects visit the pitcher plant, attracted by sweet nectar. When a visiting insect reaches the rim of the pitcher, it slips and falls into the liquid at the bottom. The hairs and a waxy substance coating the inside of the pitcher make it hard for the insect to escape. Trapped inside, it dies. The digestive chemicals dissolve it and turn it into food for the pitcher plant.

Not every insect succumbs to the pitcher plant's deadly forces, however. The larvae of some mosquitoes and midges are able to survive in the liquid, where they also get nutrients from the dead insects. 🌱

### TEACHERS RESOURCES

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