

Mistletoe

By Greg Sykes (greg@grsykes.com)

'Tis the season for mistletoe! Folks often associate mistletoe with any of many myths and variations of the tales, such as protecting the home, Norse lore, imparting fertility, and a Christmas kiss for good luck. Let's look beyond the legends and find out the cool facts behind these plants!

Traditionally, mistletoe refers to *Viscum album*, the species native to northwestern Europe. The name "mistletoe" expanded to hundreds of flora—some related and some not—around the world. Most of these plants share a "hemiparasitic" biology, meaning that they both photosynthesize a portion of food from their leaves while sponging nutrients off of another plant.

The rest of this article pertains to the mistletoe species native to Northern Virginia: the American mistletoe (*Phoradendron leucarpum*). This plant's U.S. range stretches diagonally from New Mexico (actually dipping into Mexico) to New York and fills in all of the lower states down to Florida. To the casual observer, this species looks like the European variety except with shorter, rounder leaves. Also called "oak mistletoe" as it latches onto oaks, it develops on dozens of other hardwood species and grows primarily on red maples (*Acer rubrum*) around Royal Lake. Whereas American mistletoe is an evergreen, it appears as conspicuous, loosely packed green balls on tree branches after the host loses its leaves for the winter. Mistletoe sprouts near tree tips thanks to birds, which earlier ingested the pearly fruits, and then passed the seeds onto the twigs and boughs. These berries are toxic to humans despite purported medicinal properties. Encompassed in a glue-like coating, the seeds stick to the limbs where they germinate. The roots penetrate the bark and connect with the host. The root remains invisible from the exterior but the tree branch swells at this connection point.

Although mistletoe uptakes some nutrients from the host, the mild parasitism does not appear to affect the overall tree's health. At worst, the mistletoe could make that branch slightly more prone to storm damage. The only way to remove mistletoe is by cutting the limb, which could cause more injury to the tree than to simply leave it.



Figure 1. Mistletoe forms green, airy clumps on trees (A). This specimen, loaded with berries (inset displays close-up of the fruits) was photographed in December. Winter's defoliated trees reveal squirrel nests called "dreys" (B), too. Dried leaves give the drey a brown hue and more of a solid mass than mistletoe. Mistletoe tends to grow along single limbs whereas squirrels tuck dreys into bough junctions.

People might wonder if this parasitic plant has any ecological value. In fact, it does! First, birds derive nourishment from eating the fruits, but they also eat other berries. A more specifically dependent example finds members of *Phoradendron* being the host plants to caterpillars of the great purple hairstreak (*Atides halesus*). Without mistletoe, these larvae would starve and never mature into stunning butterflies. In a balanced ecosystem, a species that parasitizes one life form provides life to another organism.

In the spirit of giving, share these fun-filled facts the next time someone brings up “mistletoe” at a holiday gathering!

Merry Christmas, Happy Holidays, and Happy New Year!

For more information on mistletoe:

<http://www.hiltonpond.org/ThisWeek051208.html>
<http://www.carolinanature.com/trees/phle.html>
https://www.wildflower.org/plants/result.php?id_plant=PHLE14



Figure 2. The mistletoe’s sprigs emerge straight out of the branch bulge, seen here in this young specimen. The swollen section conceals *Phoradendron*’s roots. All of the photographs in this article show the mistletoe parasitizing red maples at Lakeside Park, Fairfax, VA.

* * * * *