



Christmas Botany



or How Reindeer Learned to Fly

by Daniel F. Austin

As I absent-mindedly listen to a popular Christmas song on the radio, it strikes me anew how curious customs are at this time of year.

The name *Christmas* did not appear in English until eleven centuries after Christ and is a contracted version of "Christ's mass." Although the word appeared late, the holy day that became the holiday seems to have begun in 354 A.D., when bishop Liberius of Rome emphasized celebration not only of Christ's death (the only thing considered important until then), but also his birth.

No one knows the month or day Christ was born. The Christian celebration has been on December 7 (St. Nicholas Day), January 1, January 6 (Epiphany, or Christian feast day), March 25, and May 20. Back in the fourth century, church leaders felt they needed to standardize the date to compete with rival religions.

Two other religions were popular in Rome and both were associated with the winter solstice (December 21-22). One of them, Mithraism, was celebrated on December 25, the birthday of the Persian deity, Mithra, whom followers called the "invincible sun god." Saturnalia, a Roman festival honoring Saturn, god of agriculture, was celebrated on December 17-18. Immediately following, on December 19, was another holiday to a god of wealth, Ops. This popular time of drinking and revelry also became synonymous with our English word, *orgy*. Christian leaders found these pagan events offensive and wanted to suppress them. To compete with the pagan worshipers, the church decided that they needed a festival in the same season. So, we got Christmas on December 25.



Etymologically and historically, Christmas is a Christian ceremony, but the plants associated with it reflect older influences. Indeed, plants of pre-Christian importance dominate the festival. This is the result of the ancient belief that plants represent the worldly manifestation of deities – each god was thought to have a plant representing him or her on earth. Church leaders diverted and disguised these old ideas by simply changing the deity and keeping the plants in the Christmas festival.

CHRISTMAS TREES

Most cultures of the world have a high regard for trees. Because some trees seem to be immortal by living so long, they have been revered, even worshipped. The "Tree of Life" concept (*arbor vitae* in Latin) is associated with this ancient and widespread view.

Christmas trees are now popular, but this has not always been the case. The custom of bringing a tree into the home during the Christmas season is thought to have begun in Germany as a purely animistic pagan custom. Yet there was a long, tangled history



of interactions between oaks and conifers before gymnosperms were settled on for Christmas. According to a Christian story, the British monk Saint Boniface was preaching a sermon to Celtic people in the first half of the 700s AD. To convince these pagans that the oak tree (*Quercus*) was not sacred, he felled one. To further convince them that he was correct, he selected an unscathed fir sapling (*Abies*) that had escaped the fall and declared it the tree of the Christ Child. Supposedly, this began the replacement of the oak as the holy tree.

While this version is credible and may have happened, the history associating oaks and firs is more ancient. Celtic people believed that spirits lived in trees, and that they could be influenced by actions or ceremonies. The expression "knock on wood" (originally "knock-oak") is one of many remnants in English of this Celtic belief. One variant of the Celtic word for oak, *dair*, was the fourth letter in their alphabet. An ancient Celtic holy site devoted to oaks is the modern city of Kildare (church in the oaks), in Ireland. Hebrews regarded oaks (*elon*, based on *el* or God) as the Tree of Abraham. The Greeks believed that the oak, *dryas*, was preferred by Zeus; therefore that was where his devotees gathered. Devotees believed that, when their prayers were heard, the leaves rustled and birds began singing in the branches. This was how Zeus let them know they were heard.

Greeks also associated firs, *elate*, with Pan, the god of shepherds. Both Pan and Boreas, the stormy north wind, wooed the nymph, Pitys. She preferred Pan because of his gentleness, and the outraged Boreas blew her over a cliff. When Pan found her body, he changed it into the fir tree (*Abies cephalonica*).

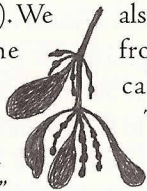
Hebrews called the fir *berash*, while Germans said *Tanne* (whence our Christmas song “O Tannenbaum”).

Cultures as diverse as the Canadian Athabascans, Diné (or Navajo), British, Greeks, Laplanders, and Russians regard conifers highly. Firs (*Abies*) are prominent in higher latitudes. The association between firs and oaks is much older than St. Boniface. According to my Webster U.S. dictionary, *fir* comes to us from Middle English, which came from Old English *fyrh*; akin to Old High German *forha* and Latin *quercus*. Related etymologically, *fir* and *quercus* are thus related historically and mythologically. It is curious to a botanist that the word *Quercus* is allied with the *fir*, of course, as they are not related botanically. We now call them by different names (*fir* and *oak*), but that was not the case historically.

Pines also have been important to people for centuries. Our English word *pine* comes from the Latin *pinus*, which is the classical name that led to Spanish and Italian *pino*, French *pin* and Portuguese *pinhero*. Greek *peuke* is closely related, although the German *Kiefer* is from a different etymology. Latin *pinus* also is related to *opinus*, which means “fat,” as in pine resin.

MISTLETOE

Another plant from this season is mistletoe. This name is based on *mistle* + *tan* (*mistletoe* + *twig*). We also got a variant of that name from Scandinavians who called it *mistilteinn*. Their name is said to be based on *mista*, meaning “dung,” because they believed that the evergreen was propagated by seeds in bird excrement. The Mistle Thrush (*Turdus viscivorus*) does spread seeds, but not in dung. Instead, the seeds stick to the bird’s bill and are scraped off against branches. The year-round range of this thrush closely parallels that of mistletoe. *Viscum*, the generic name of mistletoe, is based on Latin *viscidus* for sticky. Most famous is the European mistletoe (*Viscum album*); also used is the American mistletoe (*Phoradendron serotinum*). Both are parasitic on hardwoods. Plants may be common on oaks, and the European species was highly regarded by many people in the region.



Celts considered the mistletoe sacred and had complex beliefs associated with its ability to remain green and alive when the tree it parasitizes sheds its leaves in winter. By 200 B.C., the Celts, from the British Isles and Spain to Asia Minor, celebrated their new year (winter solstice) by gathering and carrying mistletoe, and then burning it as a sacrifice to their gods. Celtic priests, called *Dru-*

MORE ABOUT MISTLETOE

THE PAYNES PRAIRIE CHAPTER newsletter, *Rhexia*, recently featured an excellent article about mistletoe, written by a true nature elf and FNPS Communications Chair, Maria Minno. Maria noted that the pale green or white berries of the mistletoe are favored by birds, including cedar waxwings and bluebirds, and that in South America, Australia, and South Africa, there are actually some kinds of birds that subsist mainly on mistletoe berries. Perhaps most surprising and delightful was Maria’s note that mistletoe leaves are the sole source of food for caterpillars of the great purple hairstreak, one of our very beautiful butterflies.

ids (from *dereu-wid* or “knowing the oak”), chanted “Hey, derry, derry down” as they cut oak branches (*derry*) with golden knives. Sprigs of mistletoe with white to yellow berries also were hung in homes to ensure a new year’s good fortune and familial harmony. Guests to a house embraced under the sprig. Germans thought that mistletoe gave them power to see ghosts. Thus, a house bearing mistletoe was assured good luck and freedom from evil spirits.

The Scandinavian deity Baldur, god of peace, was slain by an arrow of mistletoe, the only thing that could harm him. Odin, his father, and Fragga, his mother, brought him back to life. Since Fragga was the goddess of love, the plant became her special symbol, and she decreed that anyone passing under mistletoe should receive a kiss.

Roman feasts in December also involved mistletoe. Sprigs were hung in houses to repel evil spirits and bad luck. A Greek deity,

Persephone, queen of the underworld for half of the year, used a magic wand of mistletoe to open the gates of the underworld when she left or returned. Persephone was the daughter of Demeter, who was the deity in charge of ripening fields and crops. Persephone, therefore, became a symbol of fertility because of her mother, and symbol of the springtime when she returned to the world. Thus, our modern custom of kissing below a mistletoe branch at Christmas reflects fertility beliefs from several cultures.

A much more recent belief is that the mistletoe was a non-parasitic, free-standing tree and that Jesus’ cross was made of its wood. God is thought to have punished the plant for its role in the crucifixion by turning it into a parasite. This story gave mistletoe a name in Latin, *lignum crucis* (wood of the cross), and a French translation *herbe de la croix*.

HOLLY AND IVY

When Christmas was placed on 25 December in the fourth century, the Church declared that mistletoe should no longer be used in any way. The people were admonished to abandon the plant in and out of religious settings. European *Ilex aquifolium* (holly, from Old High German *hulis*, and related to Gaelic *cuillonn*) was offered as a substitute for mistletoe. According to the Church, the sharp pointed leaves of the holly were to symbolize the thorns in Christ’s crown and the red berries to symbolize drops of his blood. Norse people began calling it the crown of thorns or “Christdorn.” Holly is associated with the repelling of evil spirits, as is mistletoe, but, somehow, this relationship did not bother Church leaders.



The song “Deck the Halls with Boughs of Holly” uses a melody from an old Welsh air. Eighteenth century words were combined with the ancient tune to produce the song as a celebration of Charles Dickens’ “A Christmas Carol.”

Hedera helix also figured prominently in a traditional English carol “The Holly and the Ivy,” but the original verses on the ivy have been lost. Ivy comes from Old English *ifig*, akin to Old High German *ebah* and to *gort*, seventh letter in the Gaelic alphabet. Not

only did people believe that ivy under the pillow allowed one to see the face of their true love in their dreams, but Elizabethan buildings with a plant or a painting of ivy indicated that the site was a tavern. Greeks called the plant *kissos* and it was the symbol of joy. Dionysus of the Greeks (Bacchus of the Romans) was sometimes called *kissoi* — he had been wreathed in ivy by the forest nymphs. He invented the crown of ivy which later was applied to sacrificial animals, then priests, and finally to the faithful.

POINSETTIA

The most recent addition to Christmas botany is the Christmas poinsettia (*Poinsettia pulcherrima* or *Euphorbia pulcherrima*). This member of the spurge family was found by the first United States ambassador to Mexico in 1828, Dr. Joel Roberts Poinsett. He found the plant “Flor de la Nochebuena” (flower of the blessed night). Of course, Mexicans also called it by a variety of other names, including “Flor de Pascua” (Easter flower), and “Náhuatl Cuitlaxochitl” (resplendent flower). Both these names indicate that the Mexicans had been using the plant for a long time. There is a mythical pagan connotation in the name *Flor de Pascua*, even though it seems to be a reference to Christian Easter. Mexicans use this name for plants with ancient religious significance to hide non-Christian origins from priests.



Poinsett brought the plants to the United States, where the genus was named scientifically by Robert Graham in 1836. By the time of Poinsett’s death in 1851, the Poinsettia was firmly established as a Christmas tradition.

SANTA CLAUS AND FLYING REINDEER

There is one more plant that has become symbolized in an almost unrecognizable form in modern Christmas garb. This is not surprising since its identity and association with Indo-European religions was obscured for 2500 years. Not until the 1960s — a time of alternative enlightenment methods — was the identity of this plant rediscovered. By then, a plethora of other explanations for icons of Christmas had become established.

There are two parts to this story. Both parts are interwoven in the origin of Santa Claus and how reindeer learned to fly.

The individual we know now as Santa Claus was born in the fourth century in the small Turkish town of Lycia. Born Nicholas, he entered a Christian seminary when he was young. While still young, he was appointed bishop of Myra, in Asia Minor. His success offended Roman emperor Gaius Diocletianus, and Nicholas was imprisoned. When this emperor unexpectedly abdicated the throne, Constantine became ruler. The new leader freed the bishop who then became a prominent member of Constantine’s first Christian church council in 325.



On a boat trip to Palestine, Nicholas is said to have stilled a violent storm by extending his arms; he promptly became the patron saint of sailors. After dying in 342, the bishop became Saint Nicholas, and was further adopted as the patron saint of Russia, Greece, and Sicily. Saint Nicholas’ generosity to youngsters eventually led to his also becoming the patron saint of children. This individual was very different from the modern image of Santa Claus into whom his legend evolved. Saint Nicholas was described as an elegant, tall, slender man who made his rounds on the Christian feast day (6 December) in his bishop robes and twin-peaked miter and carrying his crozier. He was not pulled by reindeer, but by a single indolent donkey. The gifts he left were fruits, nuts, hard candies, and wood and clay figurines.

During the 16th century, Nicholas as a saint was banished from several European countries during a split between the Catholics and Protestants. He was replaced by more secular images such as Father Christmas (Britain) and Papa Noël (France). The Dutch kept the Saint Nicholas tradition alive as the protector of sailors. Dutch people called him “Saint Nikolass” and this became “Sinterkass” in America. When the Dutch lost New Amsterdam to the English in the 17th century, “Sinterkass” was anglicized to “Santa Claus.”

Most of the modern Santa Claus lore originated in America with a poem written

by Dr. Clement Clarke Moore, a New York theology professor. “The Night Before Christmas” was read privately to Moore’s children in 1822. The poem probably would have remained private had not one of Moore’s friends mailed a copy to a newspaper. Soon after it appeared, other papers in the country picked it up, and then it was published in magazines. By 1838, when Dr. Moore finally admitted authorship, virtually every child in the United States could recite the poem by heart.

Over the decades from 1863 to 1886, cartoonist Thomas Nast created a series of Christmas drawings for *Harper’s Weekly*. In these drawings, the short elf of Moore’s poem evolved into the bearded, pot-bellied bell-ringer in red and white clothes of today’s American streets.

Still, none of these versions of Santa Claus’ evolution has explained the reindeer or why Santa’s clothes are red and white. Were flying reindeer and colored clothes simply devices used by Dr. Moore to amuse his children, or was there something else that this classical scholar knew and put to paper?

Many think that the red and white mushroom, called the fly-agaric (*Amanita muscaria*), is responsible for Santa Claus’ clothes and his flying reindeer. Superimposed on the reality of Saint Nicholas may be the recollection of an older knowledge based on the usage of that mushroom.

For thousands of years, the fly-agaric was a preferred organism for groups of people ranging from the Siberian Arctic and the Indian peninsula to Europe and Canada. These people used the mushroom in worship rituals. They learned that, if ingested in the proper quantities, fly-agaric mushrooms produce an array of visions and dreams. The effects often include a sense of flying.

These visions, impressions, and images from the fly-agaric were considered contacts with deities. One concept was that the mushroom allowed people to move from the universe of human reality into a parallel universe where the deities reside. Another belief was that the spirit of the mushroom talked to the person who ingested its flesh. The Church considered such usage devil worship and suppressed it.

Could this be how Santa Claus obtained

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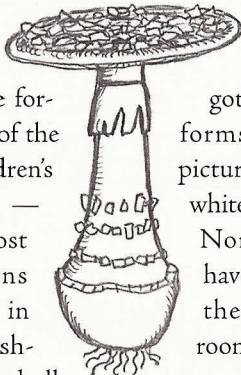
his red and white clothes and flying reindeer? Was it as simple as nibbling a mushroom? Santa's white-trimmed red clothes and his white hair and beard are thought by some to be symbolic references to the mushroom's red and white colors. In the cold Arctic, where Santa is supposed to live, people used reindeer to pull sleighs. What could be more reasonable than this mode of transport? All the reindeer had to do to fly was ingest fly-agaric.

Not surprisingly, this aspect of mushrooms used around the holy day of Christ's mass has received less publicity than the old beliefs associated with trees and mistletoes. Still, when we put up a Christmas tree, kiss beneath the mistletoe, and expect a visit from Santa Claus, we are celebrating an amalgam of ideas and beliefs well established over 3000 years ago. The most surprising thing to me is that these old cross-cultural beliefs can still be recognized in our traditions. ✱

ABOUT THE AUTHOR: Dan Austin is a botanist, professor, frequent and longtime contributor to The Palmetto and other FNPS activities, and, clearly, a man with a sense of humor.

FLY-AGARIC – FLYING REINDEER FIX?

ONCE SEEN, will not soon be forgotten to illustrate one of the *muscaria* in children's books of the colors — red. Indeed, most and Europeans less mushroom in books. The mushrooms, legends, and all literature.



THE FLY-AGARIC gotten. Artists love forms of *Amanita* picture books because white contrasting with North Americans have met this name—their childhood room appears in fairy sorts of children's literature.

When I was preparing for a lecture on fungi in a general biology course, I needed a gimmick to keep the students from sleeping through the "boring botany." It occurred to me that the one thing that will liven up a college class is to talk about anything that alters perception.

I made a trip to the local book store, and the first children's book I pulled off the shelf displayed prominently on the cover a wonderful color drawing of the fly-agaric (Wood, J. N. and M. Sliver. 1993. *Nature Hide & Seek. Woods & Forests*. New York: Alfred A. Knopf). The book worked — no one slept that day! Probably the publishers, artists, and authors of such books do not know of the alter-ego of this colorful organism. – Dan Austin