

neighborhood naturalist

Nature you can find in town and the nearby countryside

Corvallis, Oregon

Winter 2005–06

Mistletoe

by Lisa Millbank

Mistletoe is, to many people, another winter holiday cliché. Forlorn, withered clumps tied with red ribbons, often dyed a lurid green, are sold as Christmas party ornaments. After the festivities, the mistletoe is thrown away and forgotten again.

But mistletoe has such a peculiar lifestyle, and so many extraordinary customs and beliefs have been associated with this plant, that it is interesting to observe the year round.

Hemiparasite

Mistletoe is a hemiparasite, meaning it is capable of producing some of its own energy through photosynthesis, but it also requires a host to parasitize for water, minerals, and carbohydrates. It is incapable of growing on its own from soil. With modified branches called *haustoria* it penetrates the vascular tissue of a host tree. Although a heavy infestation of mistletoe certainly places some burden on its host tree, it usually does not seriously harm it. If it did so, it would be to the detriment of the mistletoe. When the tree dies, so does the mistletoe.

In the mid-Willamette Valley, there are two genera of mistletoe: *Arceuthobium*, parasites of conifers, and *Phoradendron*, generally parasites of oaks in our area. *Phoradendron* means “tree thief”, and you can easily observe our species, *Phoradendron villosum*, living off oaks nearby. Most often this species, the Oak (or Pacific) Mistletoe parasitizes our native Oregon White Oak, but other oaks planted as landscaping are not immune. In winter the spherical green clumps are clearly visible in the oaks’ bare branches.

Toxic Berries

Oak Mistletoe produces inconspicuous, petal-less, yellowish-green flowers borne on short spikes from the leaf axils. Female flowers are on separate plants from male flowers. The small, fleshy, whitish fruit contains sticky, slimy *viscin*, a substance that surrounds a green membrane encasing the seed. The berry, and the whole plant, is poisonous to humans. The amines beta-phenylethylamine and tyramine appear to be the most toxic compounds. But some species are unaffected by these compounds and like to eat mistletoe

Clusters of Oak Mistletoe in a Chestnut Oak (not native to Oregon) on the OSU campus.

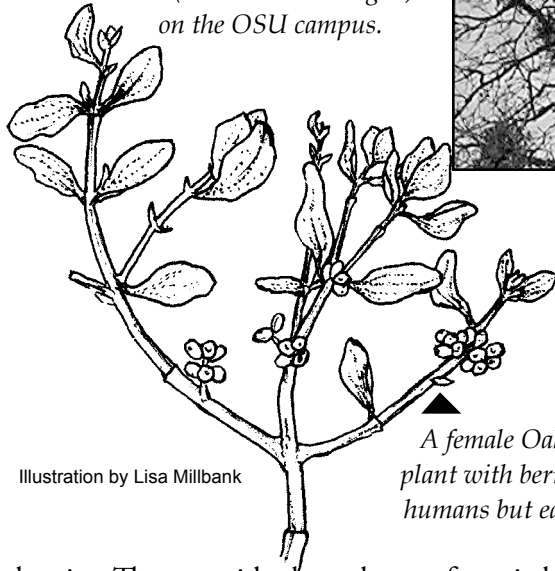


Illustration by Lisa Millbank

A female Oak Mistletoe plant with berries. Toxic to humans but eaten by birds

berries. They provide the only way for mistletoe to spread from tree to tree.

Mistletoe and Bird Poop

In the late fall and winter, when food gets more scarce for fruit-loving birds, the female Oak Mistletoe plant has an ample supply of berries. Cedar Waxwings, Western Bluebirds, and American Robins are among the local birds who enjoy the fruit, although they can only digest the outer skin and some of the viscin inside the berry. Then, in the best of circumstances, the bird defecates the seed on a suitable oak branch. Some of the viscin remains to help the seed adhere to the bark, and the bird’s digestive tract does not break the tough membrane around the seed. The odds are slim that a given seed will be deposited in a suitable location, but those lucky few arrive with their own supply of fertilizer. When walking in an oak woodland or savanna, such as those at W. L. Finley NWR, it is interesting to find a well-used bird perch. It may be a rock, a fencepost, a branch, or the top of a birdhouse. There is often a cluster of little white specks solidly stuck to the perch. They are mistletoe seeds, with the bird dropping washed away by rain. The seeds’ adhesive properties are remarkable, and a successful reproductive strategy. When you see mistletoe growing in the oaks, you can read

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Mistletoe: *continued from front page*
a history of bird activity written into the trees.

A spectacularly iridescent butterfly, the Great Purple Hairstreak (*Atlides halesus*) depends on *Phoradendron* mistletoe species. Its caterpillars feed exclusively on the mistletoe as its host plant. In our area this is an uncommon butterfly, but it is most likely to be seen near hilltops with mistletoe-infested oaks.

Humans and Mistletoe

Our own species has long been interested in mistletoe. Many cultures have held the mistletoe as a sacred, healing plant, including the Celtic Druids and Scandinavians of northern Europe, the Ainu of the northernmost islands of Japan, some African peoples, the Chinese, and the ancient Greeks and Romans. For many Native American groups, mistletoe was an important medicine. The custom of kissing under the mistletoe is thought to have arisen from either the Celts' use of the plant to increase female fertility, and to symbolize peace, harmony, and hospitality, or the Scandinavians, for whom mistletoe belonged to Frigga (Freya), the goddess of love. The Romans' winter festivals of Saturnalia and Natalis Solis Invicti were extravagant feasts during which people draped garlands of mistletoe around their homes. Not surprisingly, in the fourth century, the Church forbade the use of mistletoe because of its pagan history and established a new tradition—holly. Holly was seen as an appropriate symbol for Christ, with the pointed leaves representing the crown of thorns and the red berries as drops of blood. The mistletoe taboo lasted throughout the Middle Ages.

But some of the legendary powers attributed to mistletoe are now under scientific scrutiny. Many species from throughout the world, all chemically complex, may show promise in treating disease. Some are proving to be potent stimulators of the human immune system, even helping to inhibit HIV-1 virus replication. Others are cytotoxic against some forms of cancer. Mistletoe increases human natural killer cell activity and may increase survival time for cancer patients. Scientists have just begun to study the effects of mistletoe extracts on pain and convulsive disorders. In one study, mistletoe extract decreased pain in women with endometriosis. But any mistletoe preparation must be taken with knowledge and caution, as its medicinal properties are in large part due to potentially lethal toxins.

In the winter solstice season, observe our remarkable Oak Mistletoe, evergreen in the barren trees. Listen for the soft calls of Western Bluebirds in the oak savanna, as they savor the mistletoe's fruit on a cloudy, cold day. Or bring a sprig into your home, as people have done for millennia, and appreciate its rich history and fascinating ecology.

Rabbit Thoughts

by Susan Leach

Anyone who has read *Watership Down* knows that rabbits can think. They have memories and can plan. Some are not quite as bright as others. Early yesterday morning I was walking and noticing the rabbits grazing alongside the road. They fled into the grass and brush as I approached. Then suddenly I spied this dainty little being behind a clump of grass right in the middle of the road. I immediately stood stock still. As you know, standing still makes you invisible. I waited until she reached for a bit and ever so slowly and silently I moved forward. I repeated this a few times more. And there she was! Only about fifteen feet away. Very close for a wild rabbit. I could see her nose twitching as she tasted the air. There was no wind and she didn't sense danger. I stood perfectly still measuring my breathing and wondering why her silky, petal shaped ears didn't hear my heart beating. She browsed and shuffled and scratched and took another bite. I watched her little jaw move sideways, chewing the tough grass. Small she was. An adolescent. Rabbits are not one shade of gray! She had shadings of gray, ivory, russet, sienna, and the pink of the innermost part of her beautiful ears.



Photo by Lisa Millbank

Then she took a few hops and began her dance. Leaping high into the air she landed facing the other direction. She pranced and plied and took a bow. Her slender legs were a soft rosy color and her paws were smaller than my thumb. She leapt again and wildly ran and darted, all around me. Hesitated not five feet from me as if waiting for applause.

"All good things come to those who wait." I had always thought that was for those who didn't want to work for what they wanted or take any initiative. This little joyful rabbit was teaching me about being still. Letting joy happen around me. She celebrated the morning with leaps and bounds all within a small radius of me. She paused behind me, and I felt huge as I slowly turned, trying to see her sideways from my forward-looking eyes. Rabbits have eyes on the sides of their heads so they can see sideways. There she was, silhouetted sideways. Looking at me as I was looking at her. She sat and I stood. I knew the dance was over.

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STARLINGS

by Don Boucher

I have an uncommon bias: I like starlings. Although I will not expect to convince you of the same sentiment, I would like to at least convince you that their biology is intriguing. I would also like to point out to the birder trying to learn bird sounds that knowing the starling is imperative. I have to admit that it would not break my heart if the North American starling population were to substantially decrease. The starling is native to Eurasia, and in Britain it's called the Common Starling because there are other, less common starling species. Its scientific name *Sturnus vulgaris* translates to "Common Starling." On Vancouver Island, B.C., there is small population of another starling species called the Crested Myna. Otherwise, our "European Starling" is our only starling. We like to curse the reckless Eugene Schieffelin. He released starlings in New York in the late 19th century only because the starling was mentioned in a Shakespeare play. It should be noted that starlings have followed the wake of human development and hardly a starling can be found in pristine wilderness. That being stated, it is not the aim of this newsletter to dwell on starling population control methods, we're here to appreciate and learn.

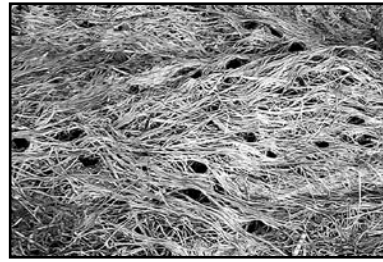
The Song of the Starling

Starlings are clever, gregarious and creatively vociferous birds. While most bird species' songs are executed with melody, clarity and distinctive patterns, the starling chooses, quantity, complexity and length. A starling may sing for hours. Europeans have historically cherished this bird for its ability to mimic. Birders are puzzled, frustrated, delighted, or all of the above by the starling's endless repertoire. I've heard them imitate many species, too many to list here. Commonly they imitate the Western Meadowlark, Killdeer, Golden-crowned Sparrow, Red-tailed Hawk and California Quail. Sometimes it's a challenge to distinguish actual mimicry or accidental sounds which seem familiar. Nevertheless, the starling always gives itself away with its unique clicks, trills and wolf whistle.

Starling flocks always have vigilant sentinels, on prominent perches, to watch out for predators. Starlings are often the first to give the alarm call when a Sharp-shinned Hawk, Merlin or other predator arrives on the scene. Pay attention to starlings; they can warn you of any predator activity.

The Glossy Starry Sky

In summer or in winter, take a good look at an adult star-



Holes made by starlings gaping in a farmer's field



A male starling in winter plumage

Illustration and photo by Don Boucher

ling. In summer, they are glossy and iridescent with a few tiny white spots. In winter, they are charcoal-colored with many amber and white feather tips. Juveniles are dull gray without any spots. The adult starling's summer plumage looks fresh, clean and bright, but that's deceptive. In reality, what you're seeing is a tattered, worn-out winter coat. When the starling molts in the fall, the ends of these new feathers cover up the glossy, iridescent bases. By spring, the tips have worn off, exposing the colors beneath. This type of molting is common among native songbirds too. By the time breeding season starts, the starling's bill changes to bright yellow. Starling males and females are virtually identical except that the female has a faint ring around the iris, but you might need to have the bird in hand to see this.

Gapers

Starlings are very successful at gleaning insects and other tiny critters from lawns and fields. Starlings have jaws unique among vertebrates. Most mammals, reptiles or birds can shut their jaws with much more force than they can open them. A starling is different because it has extra power to open its bill. The advantage a starling has over a robin or a crow is that it can punch its bill into the sod, spread it open with its bill, rotate its eyes forward to peek into the hole, and find food that other birds miss. This ability is known as gaping. Even though starlings steal crops from farmers, they also help farmers from insect outbreaks by eating up pests which would otherwise stay hidden in the soil. The unrelated native blackbirds have this gaping capability in varying degrees. Willamette Valley blackbirds include the Red-winged Blackbird, Brewer's Blackbird, Brown-headed Cowbird and two other species which aren't black, the Western Meadowlark and Bullock's Oriole.

Starlings are fun to watch, waddling in pastures, poking around fastidiously. Just sit and listen to a starling sing someday; you'll be impressed!



neighborhood naturalist

Neighborhood Naturalist promotes interest about nature in backyards, parks and neighborhoods.

Submissions:

This is a newsletter which caters to nature enthusiasts. Any article, story, poem or artwork which celebrates nature in the mid-Willamette Valley is much welcome. The newsletter publishes 4 times a year around the Solstices and Equinoxes. Send your submissions two weeks in advance. Contact info below:

Subscribe

4 issues per year, from \$3 to \$12 per year, sliding scale (based on income—honor system) or HOUR notes

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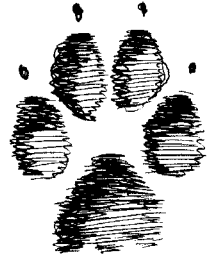
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Events.

Tracking Club in Corvallis Area

Meet at Willamette River Greenway Park in Linn County off Riverside Drive. Find tracks and other signs of animals & birds. Led by Don Boucher (contact info at left) and Mike Albrecht.

Jan. 15 Sunday: 9 am–Noon
Feb. 19 Sunday: 9 am–Noon
Mar. 19 Sunday: 9 am–Noon



Tracking Outside Corvallis Area

Portland area or Oregon Coast Dunes. Please RSVP for carpooling. Don Boucher contact info at left.

Avery House Nature Center Outings:

For children and/or adults. For schedule, stop by the Corvallis Environmental Center at 214 SW Monroe in downtown Corvallis, or go to www.peak.org/center.

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