



## An Ohio Woodland Stewards Program Publication

The Ohio Woodlands, Water, and Wildlife Newsletter is published in part with funding from the Renewable Resource Extension Act (RREA).

### The Many Face(t)s of Fungi

Jim Chatfield, Ohio State University Extension, Nursery Landscape and Turf Team, Why Trees Matter Signature Program

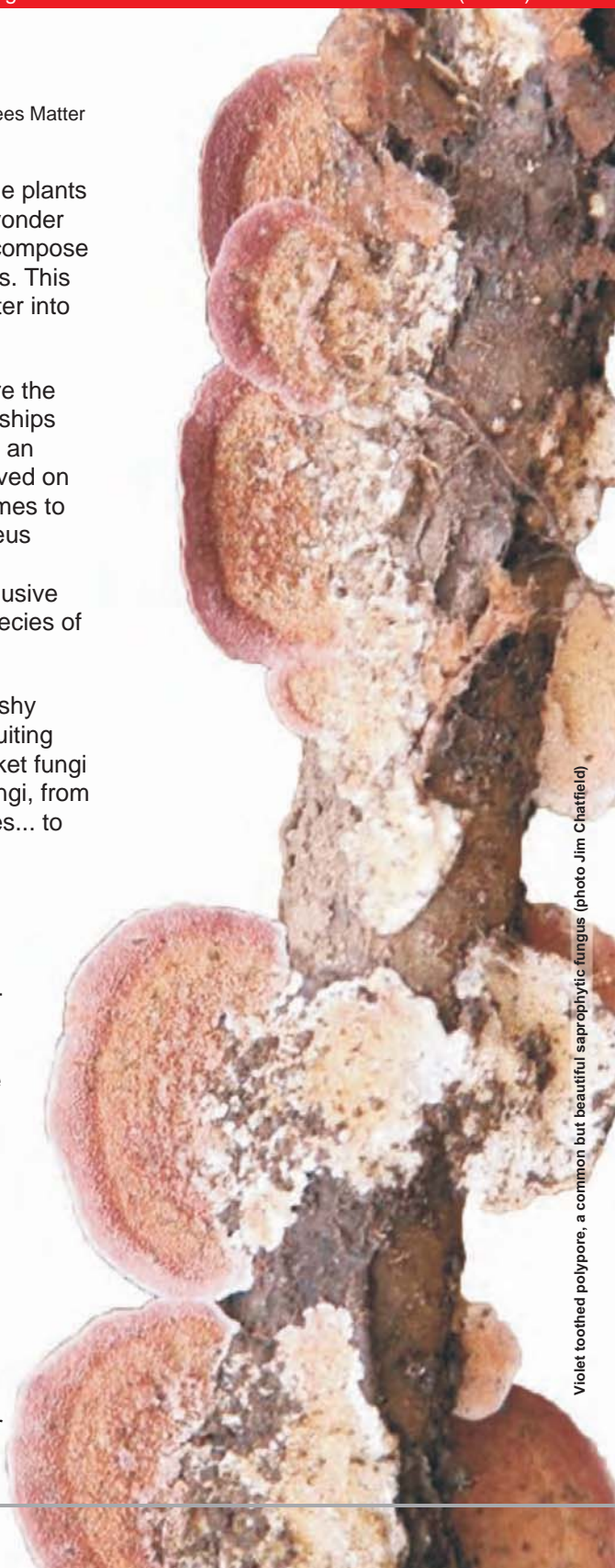
Fungi are many things. Some are plant pathogens that parasitically plague plants and pester plant lovers. Some fungi are even human pathogens...what yonder itch doth plague my toes? Most fungi are saprophytes that thankfully decompose organic matter, without which we would be quickly buried in organic debris. This decomposition is critical; nature's recyclers transforming this organic matter into nutrients for plant growth.

Some fungi ruin the longevity, safety and flavor of food. Yet some fungi are the essence of fine cuisine. Some fungi enter into mutually beneficial relationships with plant roots (mycorrhizae), other fungi with algae (lichens). Fungi are an incredibly diverse group of organisms (over 100,000 species) that have lived on Earth for over 600 million years. Fungi are so diverse, so difficult sometimes to even see in their microscopic forms, and so difficult to classify that Linnaeus himself, the Swedish botanist who gave us the Latin binomial system for classifying organisms in the 18th century, grew to loathe fungi and their illusive nature. Linnaeus threw up his hands and declared there was only one species of fungus – *Chaos fungorum*!

For the purpose of this article though, let's take an introductory look at fleshy woodland fungi, of which we can at least see with our naked eyes their fruiting bodies - basidiocarps and ascocarps which we call mushrooms and bracket fungi and such. We find these fungi in the woods, and identification of these fungi, from choice edibles to deadly poisonous pariahs is paramount. And their names... to paraphrase Dr. Seuss "all my life I've been searching for names such as these..."

Fleshy fungal names run the gamut: from "hated amanita" to the "admirable bolete", from angel's wings to dead man's fingers. Sometimes the fungus itself seems somewhat conflicted. Consider, for example the - elegant stinkhorn. One of my favorites is wolf's milk slime (*Lycogala epidendrum*), which is actually not a fungus, but rather a slime mold. However, it is in the woods, it is sort of fungal like, and it has a cool name and is a cool organism. When we teach *Fleshy Woodland Fungi* (Plant Pathology 300) at Ohio State University having learned something about identification, we finish the course, and not our lives, each year with a fungal feast, including dessert topped off by fungal ice cream! In fact it is - Ice Crimini, thanks to celebrated chef Amy Piel.

Many fungi do have food allusions in their very names, though not all of these are truly edible. There is apricot jelly, fried-chicken fungus, and even the black-and-blue pairing of beefsteak polypore and blue-cheese polypore. For breakfasts in Wonderland, scrambled-egg slime, and for dessert - chocolate tube slime. Good both for the fungi Slippery Jack (*Suillus luteus*) and equally so for Slippery Jill (*Suillus subluteus*) if not for characters in the real world. Rest assured, though, the mantra of: "There



Violet toothed polypore, a common but beautiful saprophytic fungus (photo Jim Chatfield)



are old mushroom hunters and bold mushroom hunters but no old bold mushroom hunters” is heeded in class. We will go to great lengths to insure that the final exam - will not truly be our last meal.

If you take this course you will never be known as the “dunce cap fungus” or even thought to be as ignorant as a “pig’s ear gomphus”. Truly, the place to be each autumn is Fleshy Woodland Fungi, (Plant Pathology 300), or risk being known as a stinky squid/green

Mushroomhead. Two giant puffballs (photo Cheryl Fischnich)



slime/earth tongue/poison pie/ pigskin poison puffball! So, enjoy the Kingdom Fungi. For example the delicate margins of the fruiting bodies of the violet-toothed polypore, a decay fungus bracketing fallen logs in the forest. Or, the dryad’s saddle, so-named to imagine the wood nymphs (dryads) of Greek mythology, sitting in their saddles and pools, looking out for the other denizens of the forest. Every October, in grasslands,

check out the giant puffball, as big as a soccer ball, sometimes even a bigger mushroomhead that may span over 20 inches in diameter and containing literally trillions of microscopic spores. Become a graduate student and count those spores!

Consider the strange case of the aborted entoloma (*Entoloma abortivum*). Other entolomas have gills and many are not edible and are at least mildly poisonous, but this one is not poisonous when it is parasitized (or vice-versa) by *Armillaria mellea*, the honey mushroom. Say what? The honey mushroom is well-known to horticulturists, as it is the fruiting body of the *Armillaria* or shoestring fungus that can be a serious tree root and crown rot fungus of not only woodland, but also landscape plants, especially if they are pre-disposed by environmental stresses. When *Entoloma abortivum* and *Armillaria mellea* meet, with one parasitizing the other, one result is this non-gilled entoloma, which is



Fungi are important partners in lichens, adhering in this case to the rock substrate in Colorado (photo Jim Chatfield)

transformed via the process into an edible fungus that is quite tasty, at least to my palate and many others. Ain’t nature grand?

One last story, that of the beech blight aphid poop eater, *Scolias spongiosa*. In late summer and early fall, when I walk the boardwalk of Johnson Woods Nature Preserve in Wayne County near Orrville, I see little patches of sooty growth on the boardwalk, or on the woodland carpet. Inevitably, when I look upwards, there is a snowy white mass of wriggling boogie-woogie beech blight aphids on a beech stem. The aphids of course are sucking insects. They suck sugary sap then they excrete sugary sap. And wherever this “honeydew” falls, *Scolias spongiosa* is not far behind. The fungus is not a plant pathogen. It simply grows on wherever the sugary processed sap alights: on beech leaves, on beech trunks, on poison ivy leaves on the ground, on understory maple seedlings and their leaves, on leaves on the ground, on the boardwalk. There are also attendant flies and other insects attracted to the sugary sap as it falls. It is quite a phantasmagoric scene of one of the many modes of fungus amongus. Halloween soon follows.

And one last quote, from the great poet John Updike, reflecting one of the key aspects of certain fungi, dear to my phytopathological perversities, and their role in rot:



Aborted entoloma with shoestring fungus (*Armillaria*) attached (photo Jim Chatfield)

Walnut mycelia, with the mushroom typically attached to a black walnut hull (photo Jim Chatfield)



What could be more beautiful than the plant pathogen cedar apple rust fungus that alternates between junipers and rosaceous plants (photo Jim Chatfield)

Let rot  
proclaim its revolution:  
the microscopic hyphae sink  
their fangs of enzyme into the rosy peach  
and turn its blush a yielding brown,  
a mud of melting glucose:  
once-staunch committees of chemicals now vote  
to join the invading union,  
the former monarch and constitution routed  
by the riot of rhizoids,  
the thalloid consensus.

John Updike

## Wood You Know- White Oak (*Quercus alba*)

Eric McConnell, Forest Products Specialist, OSU Extension

Often found growing on slopes and ridges overlooking a site, the white oaks are considered by many the king of the eastern American forest. There are many species in the white oak subgenus found in Ohio. Those considered true white oaks are white oak, bur oak (*Quercus macrocarpa*), and post oak (*Quercus stellata*). Other white oak groups include the chestnut oaks and live oaks. The lumber sawn from all of these species is marketed as "white oak" with the large majority being processed from *Quercus alba*. White oak prefers deep, moist soils with good internal drainage, but some species are well adapted to drier environments. Its acorns mature in one season whereas the red oaks require two.



White oak is historically one of the most popularly utilized species in America. Factory grade logs are sawn into lumber while construction and local use grades are processed into ties, timbers, and pallet stock. The best logs are shipped to veneer mills. Ohio white oak stumpage has ranged from \$200-550 per thousand

board feet (MBF) while sawlogs have recently sold for as much as \$1,000/MBF (both prices based on Doyle). One inch thick 4/4 green lumber prices per MBF have ranged from \$1,040 for FAS down to \$375 for #2 common. Kiln-dried lumber (4/4) prices per MBF have ranged from \$1,555 for FAS down to \$615 for #3 common.

The wood of white oak varies from white to dark brown across the sapwood to the heartwood. White oak is a ring-porous hardwood and is one of Ohio's denser hardwoods. It is easily noticeable by its large pores formed early in the growing season, which may be three



rows deep, and its wide, broad rays. White oak is coarse grained due to the openness of its large pores along the grain. When finished, the pores will appear darker than the surrounding wood. The rays are twice as long as those found in red oak and appear as wide flecks on the vertically-grained surface. There is no distinct odor or taste present.

White oak wood is impermeable to liquids because the pores in the heartwood are plugged by sac-like structures called tyloses. Tyloses are visible to the naked eye on both the end surface and along the grain. They appear as tiny pieces of "glitter" that will sparkle much like stars in the night sky. To test white oak's impermeability, take a small piece (1/2" square by 3-4 inches long is plenty) and dip one end in bubble blowing solution, and then blow hard on the other end. I challenge you to see if you can make bubbles appear! This quality makes white oak a prized species for barrel making and, in colonial times, shipbuilding.

White oak is an overall excellent wood for working. It cuts very clean due to its hard and dense nature. Green lumber takes several months to air dry. Summer conditions can cause the outer surface of freshly sawn boards to dry too quickly. This excessive drying will cause the





wood fibers to tear apart and “check.” A mild kiln schedule must be used to prevent internal checking in the dry kiln. Because of its impermeability white oak is very difficult to treat with wood preservatives. The wood does finish smoothly.

White oak has traditionally been the wood of choice for on-the-farm construction. It is excellent for applications involving ground contact and has a high fuel rating. Quartersawn white oak is particularly popular among Ohio furniture manufacturers. Its veneer is often overlaid on core stock by corporate furniture makers. Its hardness and resistance to scratching also make it a preferred species for flooring. White oak is one of the most popular industrial-use woods. More white oak is utilized for rail ties than any other species.

#### Structural Characteristics

**Pore distribution:** Ring-porous

**Grain:** Straight-grained, normally

**Heartwood:** Light to dark brown. Largely impermeable. Resistant to very resistant to decay.

**Sapwood:** White to light brown.

#### Physical Properties

**Density:** 42.4 lbs/ft<sup>3</sup> at 12% moisture content

**Flat grain shrinkage:** 10.5%

**Vertical grain shrinkage:** 5.6%

**Estimated air-drying time for 4/4 lumber:** 70-200 days

Mechanical Properties at 12% Moisture Content

**Bending Strength:** 15,200 psi

**Compression strength parallel to the grain:** 7,740 psi

**Shear strength parallel to the grain:** 2,000 psi

#### Machining and Finishing Properties

**Planing:** Very good

**Shaping:** Poor

**Turning:** Very good

**Boring:** Excellent

**Mortising:** Excellent

**Sanding:** Very good

**Steam bending:** Excellent

**Avoids Nail Splitting:** Fair

**Avoids Screw Splitting:** Good

**Holds paints:** Poorly, the large pores require wood filler for long-lasting painting

**Bondability:** Bonds satisfactorily, but requires controlled conditions and high-quality adhesives

## Ohio Bird Conservation Initiative: Working Toward Coordinated Bird Conservation in Ohio

Amanda Conover, Ohio Bird Conservation Initiative (OBCI)  
Paul Rodewald, Ohio State University and OBCI

OBCI is a diverse coalition of over 90 groups that seeks to more effectively conserve and manage birds in Ohio by fostering partnerships among state and federal agencies, conservation organizations, businesses, and the public. OBCI partners are voluntary, bringing their valuable time and energy to the table in support of the mission of integrated bird conservation. OBCI has

participated in public outreach projects such as a “Cats Indoors” campaign, publication of a brochure for landowners on creating migratory stopover habitat on their property, and design of signage for the Mohican



State Park Discovery Trail. In support of bird conservation, OBCI has written an All-Bird Conservation Plan for Ohio to be used to prioritize species and habitats for conservation.

OBCI was founded in 2004 through the efforts of the Ohio Working Group of Partners in Flight. In 2005 and 2006, individuals involved in OBCI established the organization, its bylaws, Coordinating Council and standing committees, and hired OBCI's first Program Coordinator, Suzanne Cardinal. After 2007, OBCI lacked funding to support a full-time coordinator, but members of the OBCI Executive Council continued to seek funding for the position. Recently, they secured funding from the USFWS and state wildlife grant funds from the Ohio Division of Wildlife to hire Amanda Conover as Ohio Bird Conservation Initiative Program Coordinator.

In the coming months, Amanda Conover will focus on increasing public awareness for OBCI and reconnecting with OBCI member organizations. With assistance from OBCI partners, she will identify possible collaborations and conservation projects across Ohio. OBCI's All-Bird Conservation Plan for Ohio (available at [www.obcinet.org](http://www.obcinet.org)) will be used to identify priority species and habitats on which to focus our efforts. Future projects are expected to include habitat restoration for a variety of target species, as well as assisting partners with acquisition of priority lands for both migratory and breeding bird habitat.

Amanda Conover hopes that, “By developing strong partnerships with a variety of organizations, OBCI can create the synergy needed to enhance and expand bird conservation efforts in Ohio.” For more information on OBCI projects and events, contact Amanda Conover at 614-432-8489 or [obcicoordinator@gmail.com](mailto:obcicoordinator@gmail.com), or visit our website at [www.obcinet.org](http://www.obcinet.org).

## New Forest Products Website!

With industrial output totaling \$22.4 billion, Ohio's forest products industry makes a significant impact on the state's economy. To reflect the importance of this sector and to better serve the needs of its production forestry clientele, Ohio State University Extension has launched a new website dedicated to the industry:

<http://ohiowood.osu.edu>.

"Our intention was to create a site to communicate research, information, news and events related to the forest products Extension program at Ohio State," said Eric McConnell, OSU Extension specialist in forest operations and products. "Our goal is to provide

forest landowners and homeowners," pointed out McConnell, who is also an assistant professor in the School of Environment & Natural Resources (SENR). "Policy makers will find the Forest Facts page useful, as we populate it with data on timber volumes and the economic impact of the forest products industry in Ohio and its counties as research results become available."

The forest products industry directly employs 47,000 people, with a total employment impact of 114,500 people. Ohio communities also benefit from the economic activity and local taxes generated by this industry.



materials in an easily accessible format to both producers and consumers of wood and wood products."

The website contains directories for Ohio's primary wood processors, including sawmills and logging firms; secondary forest products manufacturers; portable sawmill operators; and firewood dealers. Timber price reports, information on forest products topics and publications from OSU Extension related to wood utilization can also be accessed from the homepage.

"This website will be beneficial not only to foresters and wood processors, but also to architects, engineers,

## Asian Longhorned Beetle (ALB) in OHIO Update

Source – 04-13-12 Media Update from the OH ALB Cooperative Eradication Program

6,550 infested trees have been removed  
7,685 infested trees have been confirmed  
103,241 total number of trees surveyed  
56 square-miles under regulation -

[http://www.agri.ohio.gov/TopNews/asianbeetle/docs/ALB\\_quarantine\\_map.pdf](http://www.agri.ohio.gov/TopNews/asianbeetle/docs/ALB_quarantine_map.pdf)

WEBSITE – [www.BeetleBusters.info](http://www.BeetleBusters.info)

TELEPHONE – 513-381-7180

## UPCOMING CLASSES

June 15th	Name That Tree	Morrow County
July 6th	Name That Tree	Geauga County
July 13th	Bats: Not Just For Caves Anymore	Madison County
July 20th	Woods in Your Backyard	Delaware County

**facebook**

Ohio Woodland Stewards is now on Facebook.

**Come find us at:**

<http://www.facebook.com/pages/Ohio-Woodland-Stewards-Program/197418573782?ref=nf>

### Check Us Out On The Web!

Look for newsletter articles, links to fact sheets and other publications by browsing our site. Registration for upcoming Woodland Stewards classes may also be done electronically.

Go to:

<http://woodlandstewards.osu.edu>

Kathy L. Smith

Program Director - Forestry

Ohio Woodland Stewards Program Coordinator

### Contact Us!

For program information contact Mary Slyby at 614-688-3421 by email:

[ohiowoods@osu.edu](mailto:ohiowoods@osu.edu)

or by mail at:

Ohio Woodland Stewards Program

School of Environment & Natural Resources

210 Kottman Hall

2021 Coffey Road

Columbus, OH 43210

OSU Extension embraces human diversity and is committed to ensuring that all educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, age, gender identity or expression, disability, religion, sexual orientation, national origin, or veteran status.

Keith L. Smith, Associate Vice President for Agricultural Administration and Director, OSU Extension

TDD No. 800-589-8292 ( Ohio only) or 614-292-1868



Ohio Woodland Stewards Program  
The Ohio State University  
School of Environment & Natural Resources  
210 Kottman Hall  
2021 Coffey Road  
Columbus, OH 43210

Non-profit Org.  
U.S. Postage  
PAID  
Columbus, OH  
Permit # 711