



Newsletter for Wild Mushrooms PNW ❖ www.wildmushroomspnw.com

Collecting Mushrooms from the Wild

Here are some important clues as to how to find mushrooms. Be sure to walk over the exact same ground from different angles; walk up the hill and see the stalks first; walk downhill and see their camouflaged caps; walk east or west during mid-day sunshine and the mushrooms and their shadows stand out; walk north or south on the same slope and you may not be able to see them at all. Your timing, as well as temperature and humidity are key. Get acquainted with forest maps that let you know where there have been previous forest fires, what the elevations are, etc. Also, be aware of the limits and conditions posed by your free mushroom permit.

Free-Use Mushroom Permits

You need a forest product permit from the US Forest Service to pick mushrooms in many areas. The permit is free, but if you get stopped without one the fine can be expensive. Go to www.fs.usda.gov. Then put in the enter search words "Personal Mushroom Permit." You should be able to find information and the US Forest Service office nearest you to acquire your permit.

How to Preserve Morels

Clean morels well, cutting them in half length-wise to check for forest debris and bugs. Drying is the easiest technique for preserving morels, but morels also freeze well. Dry in a dehydrator or simply string them on a line. After drying, seal in a container marked with the name and date. Then freeze for a week to ensure that any insects that escaped the cleaning and drying process have been killed.

Finally, store the container in a cool, dry place for as long as you can resist the temptation to cook with them. Reconstitute the morels before using in a recipe that requires cooking. Remember, morels are poisonous raw and can still cause toxic symptoms if undercooked. They are excellent dipped in batter and deep-fried. They pair well with meat dishes, poultry, and in sauces.

If you decide to cook morels fresh it is important to rid them of any bugs. After cutting in half length-wise put your mushrooms in cold water right before you are ready to cook them. Let them soak for about 10 minutes. This method doesn't seem to alter the texture of the morels.

Pictured below: Left K. Scates; Right M. Trappe



Follow These Trees to Morels

Cottonwoods along river banks in the valley and true Firs (Grand and White) at higher elevations will point the way. Mushroom gathering is best in areas that have been burned or where the ground is disturbed within 2-3 years, as soon as the snow melts. The first year is usually the best.

Want to Read a Good Article about Morels?

For those of you who want to know the new names of previous nameless Morels, you can find an article in the *Omphalina* Newsletter. Go to nfmushrooms.ca and click on the button *Omphalina*; then *Omphalina*_Current Issue and ISSUU Archive; then Archived Back Issues, ISSUU, which is further down the page; then scroll down the page until you find Vol. V, No. 2, February 2014. You can read, download, or print out "Our Morels Are Named." *Omphalina* has many past newsletters available in their archives. Actually these beautiful newsletters are more like a magazine. A word of warning if you decide to print out a copy. The pictures are often very large and many of the pages are colored taking a lot of printer's ink, but it's still worth it. Even though the newsletter is published for the Newfoundland and Labrador area of Canada, there are plenty of mushrooms that also exist out here in the PNW. From the May 2016 NAMA Newsletter.

Morel Recipes

Thegreatmorel.com/recipes.html is where you will find lots of recipes for all of those morels you are going to find this spring.

Mushrooms Cause the Death of Thousands of Worms

Some edible and tasty mushrooms are responsible for the deaths of many worms every year. These fungi use several methods to capture their prey including glue-like traps constricting rings, and poisons. Once captured, hyphae penetrate the doomed worm and digest it from the inside. The fungi gain vital nutrients this way. So what mushrooms can do this? *Coprinus comatus* (Shaggy Mane), *Stropharia rugosoannulata* (Wine-red Cap), and *Pleurotus populinus/pulmonarius* (Oyster Mushroom). From the May 2016 NAMA Newsletter.

Pictured below: Shaggy Mane - M. Trappe, Wine-red Cap - H. Barnhart, Oyster Mushroom - C. Ardrey



Fungi can Reprogram Ants to do their Bidding

Some fungi including many Cordyceps, one being *Ophiocordyceps unilateralis*, commonly called the Zombie Fungus, are known for reprogramming their ant host to seek out a well-positioned plant above an ant trail, climb up the plant, and bite a vein on the underside of a leaf. Then the fungus takes over the muscles that allow the ant's jaws to open while growing hyphae out the ant's mouth and into the plant, locking it in place. It then digests the rest of the ant and produces a fruiting body that rains spores upon the unsuspecting ants below. Sounds like something out of a horror movie.

What's In Your Gut?

The majority of microbes colonizing the human host reside inside the GI tract, making it one of the densest microbial communities on Earth. There are about 100 trillion microorganisms there and represented primarily by fungi. Other human sites are also colonized by fungi including the oral cavity, skin, vaginal tract, and lungs. At least 267 distinct fungal taxa have been reported from the human gut alone. Many are opportunistic pathogens. This means that they might cause health problems when the immune defenses are compromised. From *Fungi* the magazine.

Underground Fungi Detected from Space

Discovering that the association between trees and underground mycorrhizal fungi can be detected from space is a huge leap forward in the ability to understand how forests change on a large scale. Every tree species has a distinct spectral signal, sort of like a measurable aura. Now they can tell who their underground friends are.

Trees form beneficial relationships with soil fungi. The thread-like hyphae of the fungi spread out like a huge net through the soil, helping trees gather water and nutrients in exchange for sugars made by the trees' photosynthesis. Now NASA's Jet Propulsion Lab and UCLA, among others, have developed a way to detect and map the associations between forests and fungi.

Plants Talk to Each Other Using Fungus: There is an information superhighway that speeds up interactions between a large, diverse population of plants. While mushrooms might be the most familiar part of a fungus most of their bodies are made up of a mass of thin threads, known as mycelium. This is what acts as a kind of underground internet, linking the roots of different plants. That tree in your garden is probably "talking" to a bush several feet away because of mycelia. It is thought that around 90% of land plants are in mutually-beneficial relationships with fungi. For more information go to www.bbc.com/earth/story/20141111-plants-have-a-hidden-internet.

Mushroom of the Month – Spring King Bolete

This Spring King Bolete is edible and delicious with a mild to slightly nutty taste as well as being firm and meaty. They are best eaten when still in the button stage while the pore surface is still white. Cook until slightly crisp. Mature mushrooms are best dried. For information about drying mushrooms see "Collecting and Preserving Mushrooms from the Wild" on this website.

You can find them growing solitary, in small groups, or growing in dense clusters which is a rare feature of the *Boletus* genus. They can get quite large, with a cap up to 18 cm wide, and a very large and swollen stalk. They favor higher elevations of mountainous conifer forests, especially spruce and fir, but they can also be found in mixed forests that include pines. The Spring King Boletes are known to be found from Mt. Hood in Oregon to Mt. Shasta in northern California. It's range also includes Washington, Idaho, and BC. Look for them in the same place each year on acid or sandy soil. They are a late spring fruiter just as the morel season is ending and a few weeks after snow melt.

Pictured below: Left M. Beug, Right S. Weintraub



Most boletes are full of insect larvae so check your mushrooms in the field and cut out any parts that are infested. If you wait until you get home you will have little left to eat. Don't freeze them after they are fresh-picked or they turn to gooey mush. Even if they are first sautéed and then frozen, they do not turn out very desirable.

If you plan on preserving them the best way is to slice them less than ¼ inch thick, and dry them until they are crispy. Drying actually improves their flavor. If you don't want to store them, but plan on eating them soon, sauté in some butter, with a dash of salt and pepper. They are good in soups, sauces, and casseroles and pair well with meat dishes. Older mushrooms usually need their sponge layer removed from under the cap before cooking. After drying and cooling your mushrooms store in a glass jar with a good tight lid. For more information about preserving mushrooms see "Collecting and Preserving Mushrooms from the Wild" on this website.

Plants Negotiate the Best Deal with Cooperating Fungi

When faced with different fungi, one cooperating more and the others less, plants will offer more resources to the most cooperative fungus until the others start sharing more nutrients. In exchange for phosphates, the plant trades carbohydrates. Sometimes, a frugal fungus will offer a stingier rate of exchange, especially if a plant does not have any other trading partners. From *Spore Prints* – the May 2016 bulletin of PSMS.