Newsletter for Wild Mushrooms PNW ❖ www.wildmushroomspnw.com

Mushrooms & Health

The use of mushrooms, mushroom extracts, and their combination in human health care has been around for thousands of years. It is important to know that the preparation of the mushroom product is also important. The use of alcohol extracts may impede the medicinal effect of the mushrooms. It would be best to use a water extract, especially a hot water extract. The following are some of the health benefits found.

In Crohn's disease the use of *Agaricus blazei* in patients with mild to moderate symptoms exhibited an immune modulatory effect for this inflammatory bowel disease. For Malnutrition and weight loss (mostly seen in cancer patients) *Pleurotus ostreatus* or Oyster mushroom enhanced their recovery in a study done with mice. It would certainly be worth trying in humans. This mushroom has recently had a species name change to *populinus/pulmonarius. Ganoderma lucidum* (Reishi) has been found helpful as part of the treatment in patients with cancer. It appears that Reishi has a cellular and molecular mechanism that fights cancer cells. The water extracts allow these natural killer cell benefits and alcohol extracts block the effect. Photo of Oyster mushroom left by C. Audrey, Reishi on the right by A. Moore

The Fungus Formerly Known As….

A few years ago *Cordyceps sinsensis* was reclassified and called *Ophiocordyceps sinensis* because of the DNA findings. The diverse health benefits of this unique fungus are impressive. It has traditionally been used by healers in Asia for a variety of conditions including: increase energy, appetite, stamina, libido, endurance, and sleep disturbances, as well as a general tonic. There are numerous studies that illustrate the benefits of cordyceps on the immune system and its use in cancer of the breast, prostate, and liver. Other medicinal mushrooms used for fatigue are Reishi, Turkeytail, and Maitake.

Was it a Mushroom Miracle? One evening in 1898 a thunder storm hit Yellowstone while a family was walking on a trail. They found shelter in an old sheep shed. Then lightning struck and started a blaze which the pouring rain quickly extinguished. Within 15 minutes every damp spot in and around the edges of the shed started to grow mushrooms. The next morning the family gathered over 5 bushels of the most beautiful meadow mushrooms they had ever seen. They were 3-4 inches wide with veils unbroken, and not a worm inside. Told in *Eighty Years of Memories on the Banks of the Yellowstone*, 1978. This story sounds more like some of the dreams I've had.

Amanita phalloides is Spreading and Causing More Poisonings

Amanita phalloides, commonly known as the Death Cap, made headlines last summer when it poisoned Syrian refugees fleeing through Eastern Europe. Even before this event, immigrants in California were dying as the Death Cap expanded its range along the West Coast. There is severe intestinal distress and diarrhea. Then you begin to feel better during a "honeymoon" phase that lasts several hours or more, but then death comes through liver and kidney failure. This mushroom causes an unpleasant way to die.

In some areas of California *Amanita phalloides* is very abundant, appearing by the hundreds and people are eating them. There are currently 8-9 people in hospitals in the Bay area. Two received liver transplants; a third person

lost a liver and is on a transplant list, and the milder cases are being treated with an IV protocol. *Amanita phalloides* is continuing to spread in places never seen before. Dogs and children are also at great risk.

Last October a three-year old Victoria, Canada, boy died after ingesting what is believed to be *Amanita phalloides* while foraging for wild mushrooms with his family at a downtown location in Victoria. The boy wasn't hospitalized until four days after ingestion, so liver damage was already extensive.

Death Caps are not native to British Columbia. It is believed that they were introduced with imported hardwoods planted around 1906-1925. It can live in the roots of trees for 50 years before emerging. There are now over 75 locations there, up from just six in 2013.

The Death Cap is a very beautiful mushroom. It can grow fairly large and emerges from a thick, egg-like volva which can look somewhat like an edible puffball mushroom. Cutting the "eggs" in half should reveal a soft, smooth, marshmallow-like interior if it is a puffball mushroom. If you instead see the form of a young mushroom, then you probably have an *Amanita*.

Poisonings in Oregon Caused By *Amanita Smithiana*

In the current NAMA newsletter (North American Mycological Association), *Mycophile*, Michael Beug, Chair, NAMA Toxicology Committee wrote the following: A recent rash of mushroom poisonings involving liver failure in Oregon were caused by *Amanita smithiana* where people thought they were eating either the edible Matsutake or the edible *Catathelasma*.

One way to tell the difference between the choice edible Matsutake (*Tricholoma magnivelare*) from the highly poisonous *Amanita smithiana* is best done by laying the stalk of the mushroom in the palm of your hand and then squeezing down on the stalk with your thumb, applying as much pressure as you can. The *Amanita* is very firm but if you squeeze hard, the stalk will shatter. The stalk of Matsutake is much denser and will not shatter unless riddled with insect larvae and is no longer in good condition. The flesh of Matsutake peels or shreds like string cheese and the stalk is widest near the gills and tapers gradually to a point while the stalk of this *Amanita* tends to be bulbous and is usually widest right at ground level. The partial veil and ring of a Matsutake is membranous while the partial veil and ring of the *Amanita* is powdery-fluffy hyphae and may be in small pieces or disappears entirely.

Then there is the difference in odor. *Amanita smithiana* has a bleach-like odor while the Matsutake has a distinctive smell of old gym socks and cinnamon redhots. Both mushrooms taste great, but the *Amanita* causes delayed kidney failure and is seriously toxic. Photo above on the right is *Tricholoma magnivelare* (Matsutake) by K. Scates; photo to the left is *Amanita Smithiana* by F. Rowe

Catethelasma species are as dense and solid as a Matsutake. They will not rupture when the stalk is place in the palm of your hand and then squeezed as hard as possible with your thumb. Like the Matsutake they also have a membranous ring versus the powdery-fluffy ring of *Amanita smithiana*. *Catathelasma* species have a double ring that may be hard to see; they don't have much odor. This is also an edible mushroom but usually not as commonly found. Photo below on the left *Catathelasma ventricosum* (Swollen-stalked Cat) by F. Rowe; Photo on the right *Catathelasma imperial* (Imperial Cat) by K. Scates

It is important to learn how to ID the poisonous mushrooms. There are flash cards on this website so that you can learn the poisonous ones commonly seen in the PNW. You should also read about poisonings on this website, and how to prevent them.

The Truffles are Coming (For more information about truffles see Natruffling.org)

On January 29, which is a Sunday, the Hilton in Eugene at 66 East 6th Ave. is having the Truffle Marketplace event from 11-4. If you haven't been there before, it is worthy of attending. The admission is $15 or it is $20 if you want to do wine tasting.

It is a unique tasting and demonstration experience that brings together fresh ripe Oregon truffles, regional wines, artisan foods, and craft products and services related to the regional truffle industry, as well as local farm and forest to table bounty. They offer fresh native truffles for sale, wine tasting, food sampling and sales, truffle cooking demonstrations with tasting and recipes, a truffle dog demonstration, and an all-day lecture series related to truffles. Photos of the truffles are by M. Trappe

Oregon truffles, both the black and white varieties, taste as good as European truffles. The key to truffle flavor is the aroma, and the taste is the rich, savory flavor of umami. The experience of truffles has been described as intoxicating, provocative, rapturous, erotic, and addictive.

A truffle can reach its full-size months before it is ready for harvest, and its aroma indicates readiness. Truffle dogs will only hunt ripe truffles, whereas people who rake for truffles can dig up unripened ones which lead to the harvest of unflavorful truffles, as well as damaging the area around the trees where the truffles grow.

Truffles ripen throughout the year, with some white truffles ripening in December through February and others in May and June. The fragrance of an Oregon black truffle, *Leucangium carthusianum*, is fruitier, while the white truffle, *Tuber oregonense* and *Tuber gibbosum*, is more savory, garlicky and cheesy, yet not tasting garlicky or cheesy at all.

Oregon truffles are usually found in the wild in old farmlands with young 15-35 year old Douglas fir trees. This is often private land. Since 2013 the Oregon Board of Forestry has required a permit for truffle hunting on state and private land. Be sure you know if it is private land since you would need permission from the owner to hunt there, otherwise the fine could be rather hefty, plus you would be trespassing. Often mushroom pickers do not know that they need permission to hunt for mushrooms in privately owned woodland. Complaining that there are no signs is no excuse in court.

Fungus Causes Sloe Gin Drought

Supplies of sloe gin is at risk because of the fungus, *Taphrina pruni*. Sloe gin is a sweet alcohol made with sugar, gin, and sloe berries. This fungus causes the fruit of sloe, damson, and plum plants to distort, and rather than growing into a round berry or fruit, they become a shallow cup shape. Sloe harvests in Scotland, in particular, are down more than 80 percent. Cold and damp conditions when the trees are in blossom allow this fungus to enter the tree and take hold. One maker of sloe gin said the crisis is so bad they were considering importing sloe berries from Europe. (From Amy Willis, Metro.co.uk, 11-15-2016)

Planning on Mushrooming in France Anytime Soon?

Mushroom hunting is a popular pastime in France, especially in places like Dordogne, but it has a unique danger called radioactivity. A recent study revealed that mushrooms in the Rhone-Alpes region in southwest France are still contaminated by radiation due to the Chernobyl nuclear disaster 30 years ago. Traces of Cesium 137 was found in 35 out of 38 samples. Contamination was also blamed on the nuclear tests of the 1950s and 1960s. The levels in some mushrooms tested were so high that if they had been exported from Japan, which experienced the Fukushima disaster in 2011, they would not have been allowed out of the country. Extracted from www.thelocal.fr/,11-14-2016)