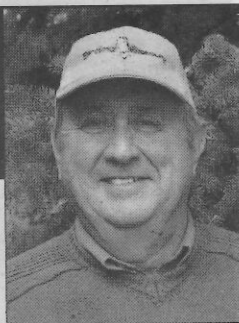


Walk Softly

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Mushrooms and Allies



There are estimated to be 140,000 species of mushrooms worldwide, but only about 10% have been described by science and, of those, 10% are edible. Mushrooms have fascinated humans throughout history. Medicinal attributes, psychedelic affects and the use as a food source have shaped how we see and use these incredible plants.

Wait a minute, are mushrooms plants? Well no, they are not; they are actually fungi. Plants have chlorophyll while fungi don't. Mushrooms and their allies, however, rely on plants to help garner food. Here's a little something you might not know, mushrooms are more closely related to animals than plants!

Based on how they react with plants, fungi are categorized as saprophytes, parasites or mycorrhizae.

Saprophytic fungi are one of the most visible categories of fungi, as we see the mushroom growing on fallen logs, leaf litter, and the forest floor, where they extract CO₂ and minerals from this substrate.

Parasitic fungi grow on living trees and shrubs. We see these in the form of bracket fungi, for example.

Finally, mycorrhizae form a complex symbiotic relationship with tree roots in

the soil. One of the challenges faced, when natural forests are replaced with cultivated ones, is the soil and the new mycorrhizae are not in sync. The complex interaction's nature are over-ridden, and the health of the soil and ecosystem are negatively impacted.

In healthy systems, sugars and nutrients are taken from the trees via the roots, and minerals and essential elements are injected back to the tree, benefiting both. Chanterelles fall into his group.

Mushrooms begin as mycelia, fluffy threads in the soil that develop into a complex fungal organism over time. Hyphae, which are the building blocks for the mycelia, are prolific, and can add up to 0.8 kilometers to the mycelium every day! The mushroom we see is actually only a tiny part of the entire organism, where the bulk of the fungus is hidden below ground. The mushroom, when mature, will send out millions of spores, like seeds, thus starting the process over again.

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Their health and medicating benefits are well-known, but did you know that dried mushrooms contain as much protein as veal, and are great sources of B vitamins? Feeding is essentially like composting, as fungi have no mouth-parts or digestive systems, so acids and enzymes are secreted into the surrounding organic matter and the nutrients subsequently absorbed. They need water to survive, but are surrounded by a porous chitinous 'skin', so they lose water readily. Submerging mushrooms in water will be fatal as they 'drown'. They need to 'breathe', but don't have lungs, so mushroom cells exchange gases directly with the atmosphere.

We have all learned to be wary of poisonous mushrooms, and so we should! Some are moderately poisonous and can cause minor inconvenience with cramping and vomiting, while others can be fatal. Even the well-known and good to eat morel can be fatal if eaten raw. A number of fungi (e.g. Psilocybe), can cause various types of hallucinations. They are known as magic mushrooms and can be quite dangerous if used carelessly. Finally, medical uses for mushrooms include immune enhancing

abilities, cholesterol reduction and cancer control techniques.

Now for some fun, here are a few little known fungi facts. Chaga mushrooms are ugly, but are very high in antioxidants that help ward off diseases, strengthen bone marrow and make your skin healthier! There are over 200 kinds of hallucinogenic mushrooms. They're so yummy that even some animals seek them out before they take a 'trip'. An added bonus is that their use seems to make people less sensitive to rejection. Throw away your bananas because Portobello mushrooms have more potassium than bananas. There are over 75 species of mushroom that actually glow in the dark, using a process called bioluminescence. One mushroom, Chicken of the Woods, actually tastes like chicken! Most mushrooms have a natural insect repellent in their spores, and finally, some mushrooms create their own wind so that their spores can be spread at just the right moment!

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