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Fall Mushrooms

In much the same way as wildflowers epitomize a spring woodland, the sudden appearance of a wide variety of mushrooms typifies fall. When the weather becomes cooler and we receive sufficient rainfall, mushrooms - the fruiting bodies of fungi - burst forth and dazzle us with an incredible variety of shapes and colours. Their displays of orange, white, red, yellow, green and even purple will continue to decorate the forest floor throughout the fall, even after the leaves have fallen. Now is a great time to get out and enjoy this somewhat neglected part of our natural heritage. Be sure to bring your camera along, as well.

What we call mushrooms are simply the part of the fungus organism that appears above the surface. Their purpose is to produces the millions of microscopic spores necessary for reproduction. The mushroom itself is only a tiny part of the much larger organism which is concealed below ground or in the wood of a dead or dying tree. The hidden portion is an extensive network of filaments collectively known as mycelium, sometimes visible when you tear open a decaying log. Each individual string-like thread is called a hypha. Hyphae have the unique ability to actually physically penetrate the hardest of woods. They secrete enzymes which slowly break the wood down so that its constituents such as cellulose and lignin can be absorbed. In this manner, fungi play a pivotal role as decomposers and recyclers in the forest ecosystem. In fact, 90 percent of the living material in forest soil is fungal. This means that fungi outweigh all other groups of organisms combined - earthworms, insects, nematodes, bacteria, etc. - by a factor of 10 to 1.

Not all fungi are primarily decomposers and recyclers; some play a completely different role. These are the mycorrhizal fungi, and they are essential to the survival of forest trees. Surprisingly, it is not just the tree's root hairs that take up water and nutrients from the soil. In many cases, it is primarily mycorrhizal fungi that supply the tree with these vital provisions. In return, the tree provides the fungi with a source of food, namely the sugars that the it produces by photosynthesis in the leaves. Mycorrhizal fungi form a massive web of hyphae that permeates the soil around the tree's roots. It is estimated that up to 95% of the earth's plant species depend to some degree on mycorrhizal fungi.

Fungi, which like the animals, the plants and the protists, have been awarded their own separate kingdom in the natural world, can be divided into at least nine groups. Some of the better known divisions include the gilled fungi or "true mushrooms", which have the typical flat or rounded cap; the coral fungi, which are quite small and highly branched; the polypores, which look like wooden shelves or brackets protruding from a tree trunk; the jelly fungi, which are rubbery to the touch, extremely colourful and grow on wood; and the puffballs, which often quite literally look like a ball with a small opening in the top. When they are mature, a gentle touch will cause the spores inside to puff out in a plume of "smoke". Some species of giant puffballs can be as big as footballs and look like errant loaves of white bread.

Another group, with the lovely name of slime molds, only partially qualify as fungi. They actually move and feed like animals! However, in the manner of fungi, they do produce spores which are dispersed by the wind. Although slime molds spend most of their life cycle hidden in rotten logs and stumps, they appear in the open when they need to reproduce. Look for net-like structures of yellow, pink, white and orange protoplasm. They move in veins, absorbing bacteria and other tiny organisms as they go. Slime molds can actually travel several metres along a substrate such as log,

looking for an open, breezing site to produce their spore-bearing fruit bodies. These are only a millimetre or so in size and almost look like tiny mushrooms. You can find these strange organisms in early fall, usually a few days after a good rain.

People often wonder how mushrooms can seemingly pop up overnight. In reality, the fungus has probably been growing in the same location for years but only when the conditions are right does it send up a fruiting body. Because most mushrooms are 90% water, they can grow extremely fast. The fungus simply pumps water into the preformed cells and away it goes.

Many mushrooms do not adhere to a strict seasonal calendar. They simply appear any time that the temperature and moisture conditions are right. However, others are closely tied to a specific season. The morels, for example, appear only in the spring. Others, like Coprinus comatus - the shaggy mane - is strictly a fall species and a telltale sign of autumn's arrival. In fact, the fruiting bodies do not appear until after the first frost in late September. The shaggy mane is a lawn mushroom that grows in clumps, often where trees have been cut down. The cap of this mushroom is egg-shaped to almost cylindrical. It can be brown or white and usually has shaggy scales. The shaggy mane is in a group called inky cap mushrooms. All members of this group self-digest the gills under the cap in order to expose the spores to the wind. The whole cap is soon reduced to a black inky mass. According to the literature, the shaggy mane is an edible species, although I've never tried it myself.

Other fall mushrooms to watch for include Agaricus arvensis, the so-called horse mushroom, whose large, white fruiting bodies appear on lawns and have an odour of anise. A common mushroom around Thanksgiving is the smooth parasol, Leucoagaricus naucina. It looks a lot like the cultivated mushrooms of pizza fame. Although this species is edible, extreme caution must be used. It is very similar to Amanita virosa, the deadly poisonous destroying angel. The smooth parasol is mycorrhizal with the roots of trees. When walking in the woods, keep an eye open, too, for pholiota mushrooms growing at the base of stumps and logs. Their beautiful tan-coloured caps average about 8 cm across. Both the stalk and cap are densely scaled.

The Kawarthas have hundreds of species of fungi and identification is often difficult. However, just learning the most common species and when and where they appear is very satisfying and yet another way to develop a greater sense of place and season. You might want to start your exploration by purchasing George Barron's "Mushrooms of Ontario and Eastern Canada" (Lone Pine Publishing).

What to Watch for This Week

Migrating white-throated and white-crowned sparrows, along with dark-eyed juncos, are common backyard birds throughout October. Be sure to scatter sunflower seed on the grass since these birds are almost strictly ground feeders. On sunny mornings, several of the white-throats will often break into a fuzzy, half-hearted rendition of their well-known "oh sweet Canada" song.

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