Plant Lover's Almanac

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Last weekend there was a lively event about decomposition at the Secrest Arboretum of the Ohio Agricultural Research and Development Center in Wooster. It was the Fall Foray of the Ohio Mushroom Society; very laid-back (OMS). We ate meals, including fungi, at some great Wooster restaurants and had potlucks. We forayed out into the constant rains Saturday at Secrest and at Wooster Memorial Park. We talked both macrofungi (such as mushrooms) and microfungi (such as microscopic plant pathogenic fungi, including *Penicillium* fungi both of medicinal and edible forms = think *Penicillium roquefortii*) and overall reveled in the Tales of the Kingdom Fungi. Here are a few highlights:

Walt Sturgeon is a mushroom expert, fresh off a presentation on Appalachian Macrofungi and here to lead this Ohio event, overseeing the Fungal Lineup, which involves discussion for participants of all the fungi they brought in from their outdoor forays during the day Saturday. There were deadly poisonous destroying angels (*Amanita bisporigera*) and then there were choice edibles (for some) such as the honey mushrooms (*Armillaria mellea).* Edible for some, Walt pointed out, because one of the first lessons for those who want to eat the mushrooms they collect is that even for the mushrooms that books and friends list as edible, the reality of mushrooms is that each of us is a little different relative to what is digestible and non-toxic. Even if a mushroom is listed as edible, always start with small amounts to see how it agrees with you and your unique biological digestive system.

Identification of mushrooms is ever tricky, with one stage of the mushroom looking different from another stage, such as before and after the cap expands to its full width. And the colors - fly agaric (*Amanita muscaria*) may be orange-red, or sulfur-yellow, or snow-white. In addition, as mushrooms decay they look different. Yes, mushrooms which often live on decayed organic matter as saprophytes, do themselves decay, as bacteria and other fungi speed along their own decomposition, along with insects that chew on mushroom flesh. We had a specimen at the foray of a giant puffball (*Claviceps purpurea*) that looked like an old decayed skull. This giant mushroom starts out small, grows to giant misshapen soccer-ball size that is okay eating early on, with slabs of white flesh sautéed with garlic and butter, but then eventually becomes a mass of literally trillions of puffy grayish-black spores and then slime, edibility at that point being nil. We collected a past-its-prime specimen that looked like a very old pock-marked human skull.

Fly agaric (*Amanita muscaria*) was probably the most collected specimen of the day, and was extremely common in colonies of a dozen or so under fir and birch trees at Secrest Arboretum. You may also find it in your lawn this time of year, starting out as little egg-like structures, but emerging into their prototypical mushroom shape. This mushroom has quite an interesting profile: it was used mixed with milk as a fly insecticide in medieval times, it is a mild but unreliable hallucinogen - probably the mushroom referenced in *Alice in Wonderland,* and it is poisonous, but rarely causing deaths. It is mycorrhizal, developing" fungus roots" on pines and other conifers, helping the plant roots gather soil minerals. The warts on the mushroom cap are remnants of the universal veil present in mushroom development; they are easily rubbed off the cap, helping with its identification as an *Amanita* species.

Honey mushrooms (certain *Armillaria* species) were also quite commonly collected and their profile is fascinating as well. The *Armillarea mellea* honey fungus produces hardened mycelial structures called sclerotia which give this fungus the name of shoestring fungus. It is pathogenic on many trees and shrubs, especially if they are stressed. You have almost certainly seen these "shoestrings" on fallen trees and hardened from whitish mycelial mats under tree bark on decaying trees. This fungus is also parastized by the *Entoloma abortivum* fungus, resulting in this *Entoloma* species becoming misshapen (the aborted entoloma or the hunter's heart mushroom) and oddly, in the process becoming more palatable. It is also for many a choice edible. It can be distinguished from *Amanita* species, many of which are deadly poisonous, in that *Armillaria* does not have the cup-shaped structure (volva) at the base of the mushroom stalk, and *Amanita* does have this cup.

Always beware, though, some *Armillaria* species other than the honey mushrooms are poisonous, and some are poisonous just for you and certain other individuals. To add to the variability and to the story, one related species, *Armillaria solidipes*, may be the largest organism in the world! Not the mushroom, but its underground mycelial network, on Oregon example of which is estimated to cover 3.4 square miles and with an estimated age of over 2400 years.

There was much more, from my favorite, the very common decomposer, the violet-toothed polypore, to the Artist's conk, the pored undersides of which are smooth and take up ink very well, leading to its use in folk art in Appalachian curio shops. There was the two-toned orange and yellow chicken-in-the woods (*Laetiporus sulphureus*) and the dirty brown and gray, but quite tasty hen-of-the woods (*Grifola frondosa*) that often form large colonies under trees in northeast Ohio woodlands.

I say colonies, but almost certainly all of these "colonies" are originating from single fungal individuals which are represented by the asexual strand-like mycelial forms of the fungus, the undergrown or within-wood much larger mass of the fungus which occasionally fruits sexually when two strains of the mycelia come together. That is why picking mushrooms never really makes them go away; the mycelium endures to reproduce another day. There is ever a fungus amongus.

Final Note: In my last Almanac edition, I asked *Beacon* readers how old I would be the next day, using this clue: *Doing the garden, digging the weeds, who could ask for more?*

The answer was, of course – 64. The next line being, *Will you still need me, will you still feed me, When I'm Sixty-Four?* So, a Beatles song, and yes, I am "losing my hair" though at the same time I am growing it ever more, up and out, my sole connection to Albert Einstein. Come to think of it, my middle name is Albert! I got an apple bushel worth of replies by Saturday morning and am still figuring out how many will receive prizes for guessing the riddle; the first three were Diane Barton, Willie Faber (a great friend of my wife and I from 40 years ago at OSU), and Judy Finkel. Good hobbits.