Wandering the Woods with Matt

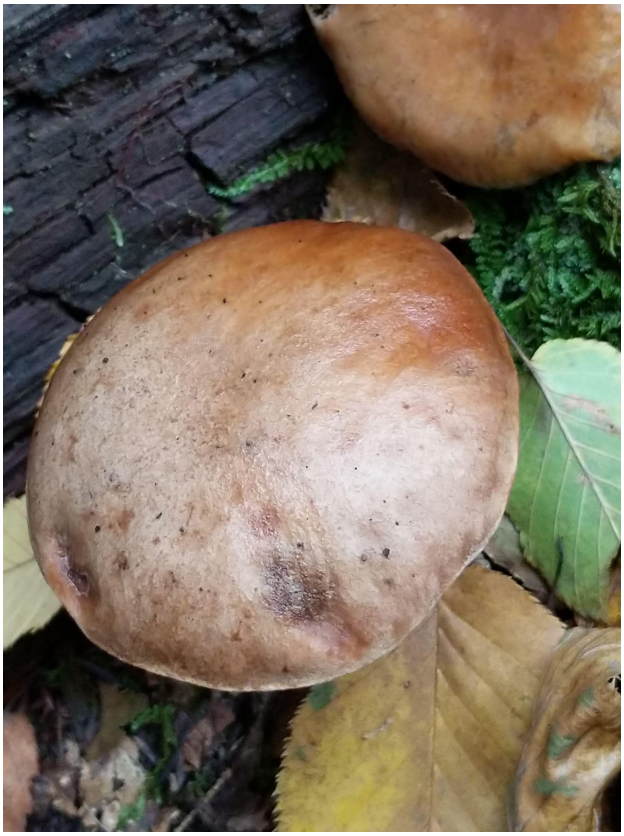
Nature has layers

"Observation of the Week" - October 26, 2021

Nature has layers.

In the classic film, Shrek proclaims that "Ogres have layers." While developing his relationship with Donkey, Shrek compares himself to an onion and disavows any connection to cake. But do you know what really has layers? Nature.

At the risk of becoming a broken record, I maintain that the closer and more carefully you take a breath and look, really *look*, at nature, the more you will find.



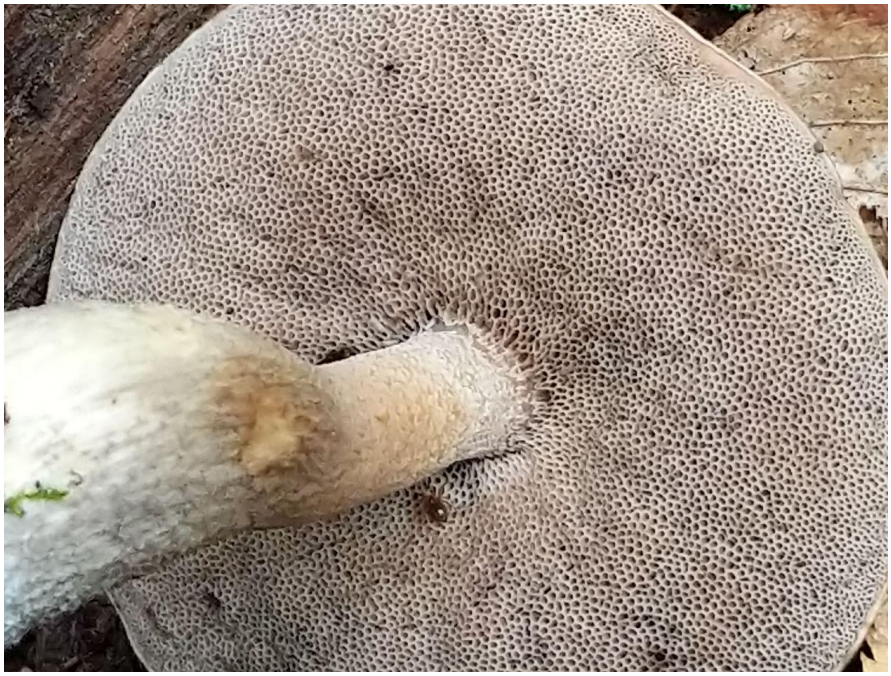
A recent case:

this mushroom I saw at Yankee Run Nature Preserve on October 12th.

I'm a novice mycologist. I'm not particularly interested in eating my collections (and perhaps that's what keeps me from becoming a fungus freak) and I haven't yet met a true mushroom expert from whom I've had a chance to absorb knowledge on a regular basis. So most of the time when I see a mushroom, I have little hope of identifying it myself. I photograph the cap, and then flip it over and photograph the gills, and note the substrate. Sometimes that's enough for ID. Usually it's not, and that particular fungus will remain a mystery to me.

[Did you know - ***mushrooms don't die when you pick them?*** I have learned enough fungal biology to know that the main body of a fungus consists of the mycelium, which encompasses all the threadlike hyphae. This part of the mushroom is underground, so we never see it. The part that pops out of the ground when it rains is just the reproductive organ of the fungus – very roughly analogous to the flower of a plant. So pulling a "mushroom" out of the ground to look at the gill structure does not cause grave damage to the fungus itself, especially if the mushroom has already released its spores.]

When I flipped this mushroom over, I saw that instead of gills, it had pores. This fact narrows my specimen to an order of fungi known as the Boletales.



[Mushroom taxonomy is ever-changing. Recent genetic analysis has shown that some members of Boletales do have gills.
Maybe humans are bad at mushroom ID because we mostly rely on visual similarity of just the reproductive organs, not taking into account the main body of the fungus.
For whatever reason, fungal taxonomy is, to an outsider, a hopelessly complicated endeavor]

This mushroom was IDed as a *Suillus* sp. - a genus associated with growing near conifers in the Pinaceae family, especially *Pinus* sp. (eastern white pine, red pine and other pines), tamaracks, and hemlocks. This mushroom was found near a stand of hemlock trees.

When I stooped to take a closer look at the pores of the mushroom, I noticed a shiny black spot near the mushroom's stalk.

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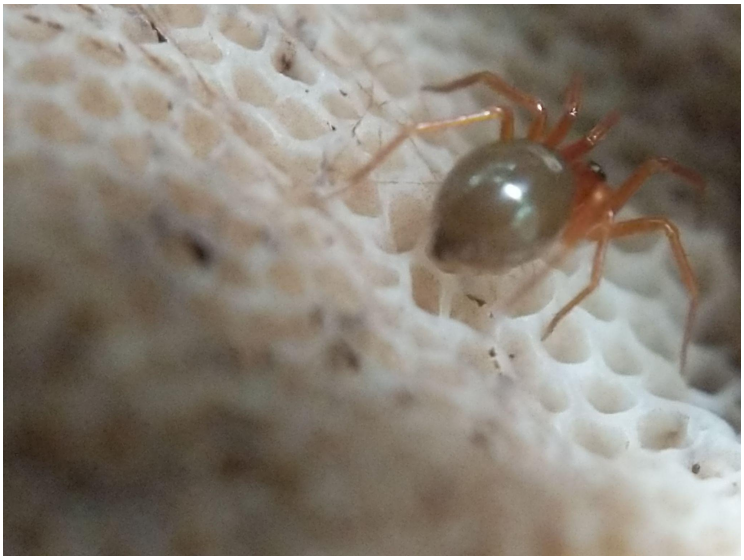
Upon an even closer look, it turned out to be a small spider…

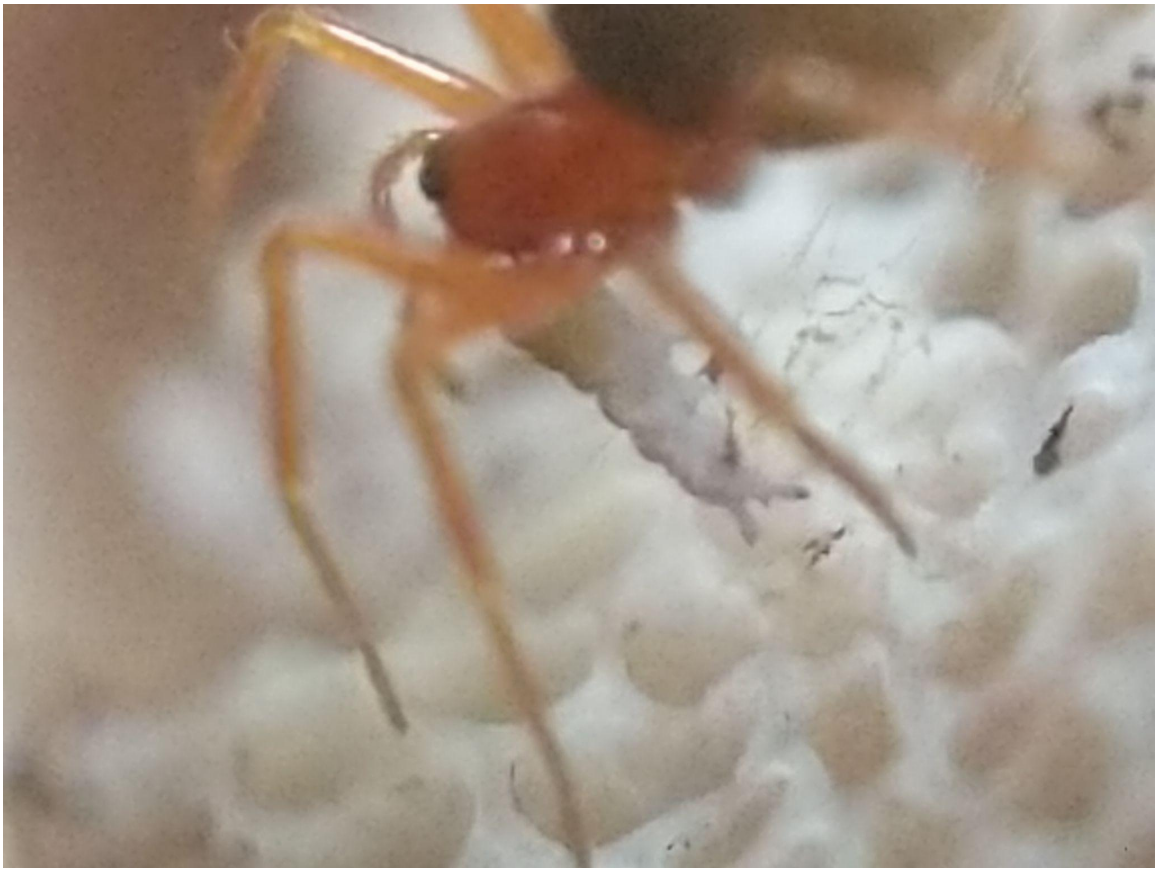


This is a spider that I have seen a few times, always associated with mushrooms.

It seems to be a sit-and-wait predator of small insects attracted to the decaying mushroom.

Unfortunately, I have no clue what it is. Spiders are pretty difficult to ID from photos alone, and small spiders in particular are tough. Because the spider was moving around as I tried to take photos of it, I ended up getting a few from different angles.

On my fourth photo, I realized that the spider had some prey.



This is no National Geographic photo but you can see something hanging from the spider's jaws. I suspected that it was a Collembolan. Collembola are related to insects and split off from the main class of Insecta a long time ago. Collembola have internal mouthparts and no wings, but do share the trait of having six legs.

Collembola are everywhere you look, especially under rocks and on rotting wood. But they are tiny and you definitely can't photograph them without a macro lens. I think the photo above is at 70x. There's not nearly enough resolution to ID the Collembolan, but it can be narrowed down to Poduromorpha (the "plump springtails.")

So there you have it. A fungus turns out to be concealing a spider, which in turn is concealing a collembolan. Maybe if you kept going, you'd find an ogre in there.

Like to learn new things? Explore more of Matt's observations on our website:
https://www.phlt.org/wandering-woods-series.html