



Stephani Gordon/Oregon Public Broadcasting

Slime molds are decomposers of the forest, often found on rotting logs. They may look like fungus, but they can move.

Seattle amateur scientist helps unlock secrets of slime molds

By IAN McCLUSKEY
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Anyone who has hiked in the Northwest has seen a slime mold, but likely didn't know it. Some appear like tiny balls of fungus on rotting logs, or strange patches of gooey orange globs. Some look like fuzzy white mold, and some are a slimy, bright yellow blob, descriptively nicknamed "dog vomit."

"Slime molds have a PR problem," said Kelly Brenner, a Seattle author and naturalist. "For one, they're called slime molds and that's not appealing and it's not representative of how beautiful they really are."

Despite their name, slime molds are not actually molds. Often found on rotting logs, they're commonly mistaken for fungus. They appear in a variety of bright colors, but aren't plants. They can move but are not animals. They are single-cell organisms, unique unto themselves — quite possibly one of the strangest things to be encountered in the woods.

"There's iridescent, there's the cotton-candy pink ones, there's some that look like champagne flutes with fireworks in them, and you look closer and closer and the closer you get, the more it reveals and the more spectacular they are," Brenner said.

Brenner is one of a long line of amateur naturalists to champion these overlooked and underappreciated organisms. After centuries of obscurity, slime molds may be finally getting their overdue attention.

A date for one

"Locally, I don't know anybody who goes out looking for slime mold," Brenner said. "So it's not like I have a friend that I can call up, 'Hey, let's go on a slime mold date.'" So she goes alone.

She packs a camera, a flashlight and pocket knife, and sets off to one of her favorite parks.

She combs the woods, peeking into dark crevasses of stumps and scanning under fallen trees. While kneeling down for a closer look, she hears a jogger coming toward her on the trail. Brenner glances up with a slight nod of hello, but the jogger passes without noticing her. She goes back to scanning the rotting wood with her flashlight.

"What are you looking for?" asks a woman walking her dog.

"Slime molds," answers Brenner. "OK," the woman says, as she continues on.

Brenner chuckles to herself. "No one ever asks, 'what's a slime mold?'"

What is a slime mold? Good question. Scientists have been trying to figure out slime molds since the mid-1800s.

As single-cell organisms, they would seem relatively easy to categorize and understand. But slime molds seem to defy standard biology.

Individual "cellular" slime molds can come together and form blobs, seemingly communicating between cells to coordinate synchronized pulsing to propel them toward food.

"Plasmodial" slime molds can also grow into a blob, but take another tact. They literally merge together, dissolving their individual cell walls into a larger single cell of many nuclei. These are the gooey globs that put the "slime" in slime molds.

As if straight from sci-fi, slime molds can be cut into many pieces, then fuse themselves back together. They can dry out and go dormant for years, then be rehydrated and ready to slime again.

If anything, they are survivors. They are one of the planet's oldest living organisms, dating back 600

million years, and possibly as far back as a billion years.

More than 900 species of slime molds have been discovered. They can be found all over the earth, including deserts and in the Arctic.

Until recently, slime molds have been left to amateur naturalists like Brenner to collect, and taxonomists to figure out how to classify.

A curio of slime molds

Brenner first learned of slime molds when researching for her book "Nature Obscura," about the hidden nature that can be discovered in urban areas. Wanting to learn more, she searched for a collection at an herbarium. The closest that she could find was in Canada. So she started a collection of her own.

She has converted a room in her home into a classic Victorian-style curio collection. Floor-to-ceiling cabinets with glass doors hold an arranged assortment of specimens that she's gathered from her explorations in nature. Among the many biology books are tiny wondrous items like bones, seashells, and fossils.

Brenner pulls open a drawer of one of the curio cabinets. It is filled with small kraft paper boxes. Each one is neatly labeled in ballpoint pen with the Latin name of the slime mold specimen inside.

After Brenner filled the top drawer with her tiny boxes of slime molds, she filled the one below it. "I had to get another cabinet in my closet and start new drawers," Brenner said.

When asked how many slime mold specimens she has amassed, she pauses. She's been so focused on the searching, she hasn't actually tallied all of her findings. "Roughly in the 200, 500 range, thereabouts," she estimates, then adds: "and counting."

Slime mold champions

Finding slime molds takes timing, Brenner has learned. Like mushrooms, they seem to pop up on decaying logs on warm, humid days following rain. They seem to vanish just as quickly.

Brenner pries a piece of mulchy bark off with her pocket knife and holds it up to look at through a magnifying lens. A single strand of her hair falls in front of the lens. She chuckles, noting that the slime mold is thinner than the strand of hair. "The top of these skinny stocks, a lot of them nod, like they're tired," Brenner said.

Brenner is not conducting research as an accredited scientist or on behalf of an academic institution. Rather, she's exploring the woods as a naturalist in the classic sense: her curiosity of the natural world inspires her to explore, observe, record, and share her findings.

Brenner is following the footsteps of one of the first champions of slime molds, Gulielma Lister. Lister was a British naturalist, who, with her father, identified hundreds of slime mold species in the late 1800s, and published the first comprehensive book, which she illustrated herself.

Lister would correspond with anyone interested in slime molds, regardless of their academic background. One unexpected connection was Emperor Hirohito of Japan whose own curiosity had been piqued by slime molds. Finding species around his summer palace inspired the emperor to write a book like Lister. The ensuing 296 pages, published in the 1930s, became the first book in Japanese on slime molds.

Sixty-five years later, Japanese researchers surprised the world when they published results of their slime mold experiments.

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