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Exploring Our Little Corner of the World with the Galiano Naturalists

by Pam Freir

If That's Dog Vomit Why Is It Moving?

"What fiction can only imagine, nature has produced."

The Encyclopedia Britannica sets the tone for this month's foray into the big wide world of natural wonders around us. Something stranger than fiction lurks out there. It's called slime mould. You may not have met a slime mould, at least not knowingly. But it's everywhere around us. It likes dark, damp places— like rainforests— and it is particularly partial to rotten wood where it can feast, *al fresco*, on its favourite bacteria.

The nice thing about being a slime mould is that life is one long progressive dinner party: when it has had its fill at one seating it can ooze its way along to the next. Like a slug. Or a giant amoeba. It can actually move – imperceptibly but surely— because it is simply a mucus-like mass of protoplasm that can propel itself, in rhythmic waves, back and forth. But it's at the adult, feeding-frenzy stage of its life cycle – the stage known as the *plasmodium*— when a slime mould is mobile. They don't exactly race around mind you. One millimetre per hour would be a good workout from a slime's perspective. But the really speedy ones, the ones with their sights set on a particularly tasty spread of rotting organic matter, can cover 2 centimeters in 60 seconds, gobbling up whatever it fancies en route.

Slime moulds come in all sorts of sizes and colours which is why it's hard to know

one when you see one. Their appearance depends on the species (there are many) and the stage of development it's in. It can be a few millimeters in diameter, as big as a pizza, or cover an area as large as 2 square metres. It can be brightly coloured— yellow, pink, orange— or dingy brown, grey or white.

Then there's the biliously-hued slime mould, *Fuligo septica*, which is also fondly referred to as "dog vomit slime". At the plasmodium (creep-and-eat) stage it is a sickly yellowish colour. Like bile. (In Mexico this mess is actually eaten, according to a botanist named Tom Volk.) From the plasmodium phase it can morph to the next stage, the *aethalium*, (its pink period) in the course of one day. Now it's ready to reproduce which it does somewhat in the manner of a mushroom: as it dries up, the aethalium releases millions of spores which are borne away in the air to beget a whole new generation of little slime moulds. Progeny only a mother could love.

Slime moulds may be slow on the ground but they lead action-packed lives on other fronts. They are now included in the Dungeons & Dragons Monster Manual. The graphic novel, *Nausicaä of the Valley of the Wind*, features a highly dangerous mutated slime mould that engulfs entire cities! And they're being enlisted in scientific circles as well.

Is there intelligent life in that lump of slippery protoplasm, you ask? A team of Japanese scientists in Nagoya addressed this unlikely proposal. They set up a maze, baited it with well putrefied snacks, and introduced a slime mould to the challenge. It took that plucky little puddle of slime a mere eight hours to find the shortest distance between the entry point and the exit where the food was. It had to change course, back track, reconsider and re-configure itself countless times in the process, but it

demonstrated what a motivated, underrated slime mould is capable of.

Slime moulds have made their mark in other areas of science as well. Researchers in Japan and the U.K. built a six-legged robot whose movements were remotely controlled by a technical assistant from the damp-lands: one carefully cultivated slime mould. The mould was grown on top of a circuit that was connected to a computer that was hooked up to the robot. A controlled light source could highlight any of six specific points on the circuit-mounted mould, each of which corresponded to a leg of the robot. Slime moulds, as a rule, shy away from light. Which, true to form, this one did. When the slime mould retreated, sensors in the circuit signaled the robot and sent him scuttling into the shadows as well.

If a slime mould can boss a robot around, if it can navigate its way through a maze, disguise itself as dog vomit, swarm its food and reproduce itself a million-fold maybe we should pay attention. I suggest you keep your eyes peeled and be prepared to treat any slime mould in your path with the respect it deserves.

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Natural Mysteries

Last month's mystery was: Are the turtles on the island, like those at Laughlin Lake, introduced or native? Without a picture of one of these neat creatures (and if you have a good photo, we'd love to see it), it's hard to answer that question. The Laughlin turtles are either the introduced Red-Eared Slider or, more likely, the native Western Painted Turtle. As you might guess from the name, the Red-Eared Slider has a prominent red splotch on its cheek, extending back towards the ear. The Western Painted has a plain cheek (but a lot of color on its *plastron*, or belly shell). Red-Eared Sliders are the familiar pet turtles sold

in pet stores. They are native to southeastern parts of the US, Mexico, Central and South America, and their presence in the wild in BC is certainly the result of the release of pet turtles. They are long-lived and can grow to almost a foot in size. Western Painted Turtles are native to BC, but they're mainly an interior species. Some coastal populations are thought to be derived from interior stock that were captured there as pets and brought to the coast, perhaps in some kid's bucket. Like the Red-Eared, Painted Turtles are also very long-lived and can grow to a foot in size. This species is on the provincial blue list.

This month's Natural Mystery: What makes those little round holes that we see in clam shells on the beach?

Have an answer? Send your thoughts to galianonaturalists@gulfislands.com. Have a Natural Mystery of your own? Let us know, and we'll try to answer it.

THE GALIANO NATURALISTS are a group of curious explorers who enjoy observing, marveling, and sharing information about the natural world around us. Come join us. (galianonaturalists@gulfislands.com)