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Exploring Our Little Corner of the World with the Galiano Naturalists

by Pam Frier

You probably wouldn't know one if you saw one. And you couldn't see one without a microscope. But because we live where we do, surrounded by water, you should know what's out there: a drifting, shifting flotilla of single-cell plants that can multiply a million-fold in a matter of weeks, amass in deadly numbers, and produce the most potent poison known to the natural world. They're called phytoplankton, or microalgae. When certain algae reproduce and coalesce, the resulting "bloom" that appears in ocean waters is called Red Tide.

Red Tide is caused by a group of algae called *Gonyaulax*. But there are many, many kinds of microalgae and, depending on the species, they can produce blooms in a varied rainbow of colours: orange, pink, violet, blue and brown. They're found in all the world's waters, cold and warm, fresh and marine. This is a good thing because free-floating algae are a vital component of the food chain and all aquatic animals are sustained by the nutrients they provide. Yet, in any given summer, and under the right conditions— warmth, sunlight, propitious convection patterns and currents— this snack-food-of-the-sea can turn lethal. The Red Tide algae is particularly deadly to warm blooded animals like you and me.

Shellfish such as clams, oysters and mussels can gorge in an algal bloom with no ill effects whatsoever. But the toxins they ingest accumulate, undetected, in the tissue of these shellfish and if eaten— by marine animals or 2-legged, shellfish-loving foragers in search of a meal— even one or two contaminated mussels can cause

Paralytic Shellfish Poisoning (PSP) for which there is no antidote. Paralysis sets in almost instantaneously. Asphyxiation follows. Then you die.

Here, in part, is how one observer described the aftermath of a meal of poisoned mussels gathered unwittingly by a few members of a ship's crew along BC's rocky coast. This is the first ever recorded report of deaths from PSP in Canada:

"Those who had ate of them . . . were seized with sickness, numbness about the mouth, face and arms, which soon spread over the whole body accompanied with giddiness and general lassitude . . . one of them puked a great deal . . . another became very ill . . . his pulse becoming weaker and weaker, his mouth and lips appearing black and his face and neck becoming much swelled together with faintness, general numbness and tremors. . . he gradually sank without much struggle and expired . . ."

This is an excerpt from the diary of a "Mr. Menzies", the naturalist and surgeon from Captain George Vancouver's expedition to the Pacific northeast. It is dated June 17, 1793.

Red Tides have occurred throughout history and around the world. One theory holds that the Red Sea was so named for an algae bloom in biblical times. In the late 1980's, 700 bottleneck dolphins washed up, poisoned, on BC's Northwest coast; between the years of 1997 and 1999 there were 45 Red Tides in China. They wiped out 75% of the entire stock of Hong Kong's fish farms.

Red Tides are on the increase and no one is absolutely sure why. We can make some educated guesses though. As our waters become ever more polluted the

nutrients necessary for algal growth are in greater and greater supply. Algae love sewage. They welcome the leftovers— and excretions— that flow from fish farms. And of course as the world’s waters warm and currents fluctuate so too will the concentrations and dispersal of microalgae.

On the other hand— and on a cheerier note— there are many varieties of algae whose poisons won’t actually do you in. PSP will get you every time, have no doubt about that. But DSP will cause only minor and temporary inconvenience. The “D”, you see, stands for diarrhea. Then there’s Amnesic Shellfish Poisoning (ASP). This brings on dizziness, disorientation, and temporary short-term memory loss. I can live with that. Have for years.

However, if you would like to avoid being felled by a killer clam you should respect the notices posted by Fisheries and Oceans advising of shellfish harvesting closures along our coastline. The rigorous, regular monitoring of our coastal waters is considered one of the most thorough and effective anywhere in the world. For specific closures go to the DFO website:

www.pac.dfo-mpo.gc.ca/ops/fm/Areas/areamap_e.htm

Just so you know, and in the interest of prolonging the lives of my fellow islanders, local closures went into effect on June 8th.

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Natural Mysteries

Last month’s mystery was: Why do newts cross the road (Vineyard Way) in the fall? The Rough-Skinned Newt (*Taricha granulosa*) is the most common kind of salamander seen on Galiano. These brown-backed, orange-bellied amphibians (up to 17 cm long) lay their eggs in water in the spring but spend the late summer and early fall in nearby moist forests located hundreds of

meters away. The heavy rains of late fall trigger the newts’ migration back to their natal ponds, which is when they are seen crossing Vineyard Way to reach Laughlin Lake.

When the new Vancouver Island multi-lane highway was built in the 1990s, short “newt fences” and special culverts were installed where the road ran alongside wetlands in an attempt to guide the migrating newts under the roadway. This effort proved only partially successful, and many newts continue to be killed crossing roads and highways.

This month’s Natural Mystery: With all that singing in the spring and early summer, do birds ever get laryngitis?

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)