

8-15-14 Micro Origins; Mega Consequences

I was walking with two of my grandchildren the other day when they spotted a beautiful blue jay feather. I explained that their mother, an experienced microbiologist, would not want them to pick it up to bring back from our little journey. (They know I love birds.) I told them that, although we cannot see them, birds often have tiny bugs called mites and the mites can cause all kinds of allergic reactions on people. With that said, they also knew that Grammy had a feather collection. So, that knowledge led to the explanation of how and why I use permethrin to kill any mites that might exist on the feather. Sometimes I also just use soap and water and sunshine and heat to “sanitize” or make safe the feather for decorative or craft purposes. One time, I even accepted white feathers from a neighbor raising their own turkeys, placed them in a pillow case and washed and dried them. When I opened up the dryer, I was greeted with the sight of fluffy feathers bursting through the pillow case like a down blanket gone rogue. Those fluffy, white, clean and sanitized feathers made their way into feather brooches and wedding accessories. They were beautiful and I knew they were safe.

Mites are not technically microorganisms; they can be seen by the naked eye; well, if your eyes are capable of seeing very tiny things. Heck, I could not even see the splinter in my finger and had to ask my granddaughter, who was watching the extraction with great interest, if it was still there. At first she announced, “Yes, it is still there.” Then, with a little more work on my part with a needle, she announced, “You’ve got it! It’s gone!”

Seeing microorganisms in our environment and protecting ourselves from them is not as easy as removing a splinter or preventing contact with mites. Of course, there are a myriad of tiny organisms not visible to the naked eye, such as viruses and bacteria, confronting us on a daily basis. We protect ourselves from many of them with good hygiene and good habits. Even the Ebola outbreak is considered to be easily controlled, once the method of spreading is understood. Prevent contact with bodily fluids to prevent contracting the disease. Isolating the ill and quarantining the exposed are extra measures to halt the spread.

As headline-catching the current outbreak of Ebola is, there lurks among us, right in our midst, microorganisms that have the potential for surpassing that. One such tiny creature is in the form of a virus. Eastern Equine Encephalitis (EEE) and West Nile virus (WNV) are rare but deadly viruses spread by mosquito bites. Unless we are in an area and year of high or critical risk, it is very challenging to successfully communicate the messages of risk and the precautions to prevent transmission of these viruses. Why take the risk, though? Let’s avoid the mosquitoes: repair screens, dress to protect, drain standing water, avoid dusk to dawn outdoor activities, or use repellents! It is do-able. We are able to do the right things.

Lyme disease, and other tick borne diseases such as babesiosis, are at least getting attention by the sheer volume of cases out there. Whenever I am at a perc test, we all tell our tick stories! It is challenging, though, to avoid the ticks. When you are simply walking/hiking, you can pre-spray your clothing with permethrin, to kill ticks. Yard work is another story, though. While ticks don’t jump, they do crawl and they patiently wait, with forelegs

outstretched, for you to brush against those plants, or to bend over and rake up all those leaves they were hiding under. Conduct a tick check, religiously!

Personally, I think the microorganism of cyanobacteria is taking a greater toll environmentally and economically and with the greatest potential for a public health threat. It is clogging our waterways, sending our fire departments out on potential gas leak calls for the oxygen depleted sulfur smell, closing our beaches, bringing down property values, causing illness and...has the constant threat of shutting down water supplies.

Our “situation” in Halifax is eerily similar to Lake Erie, where 400,000 recently were without the use of their water because the long standing (or shall we say floating) blue green algae, aka cyanobacteria, produced toxins. The presence of the toxins meant the water was not usable; not even with boiling.

Can you imagine the City of Brockton without water because of toxins from cyanobacteria? These ever growing bacteria can create odors, sickness and rashes but do not always have toxins. However, the potential is always there. Scientists are still trying to figure out the conditions triggering the production of toxins.

The list of reasons for the algal growth and blooms in Lake Erie were the same as we face here: some failed septic systems, unfiltered run-off from roads, agricultural fertilizers and phosphorous in the soils from decades of agriculture and....dams. Dams impede the flow, causing stagnation. The cyanobacteria love still waters! And, as we know: still waters run deep.

Tune in next week for more on our local waters; seen and unseen. It is not a pretty sight but there is hope.

Cathleen Drinan is the health agent for Halifax and Plympton. You can contact her at 781 293 6768 or cdrinan@town.halifax.ma.us

Send pictures of algae, join her summer weekly pond updates, and please, please join the Monponsett Watershed Association