

Worcester Cyanobacteria Monitoring Collaborative

Monthly Report

August 2017

The summer is winding down. This month volunteers returned to their lakes to gather their third plankton net sample. Volunteers from Indian Lake, Patch Reservoir, Coes Reservoir, and Lake Quinsigamond brought water samples to Regatta Point to be examined for cyanobacteria.

Sampling Weather: Colder this week than last month; the air was about 59 degrees in the morning, warming up to around 69 degrees when the last sample was taken. The skies were clear, and over the past 24 hours, no rain had fallen. Samples were collected between 8:45 and 10:30 am.

General Findings: This month, in addition to the *Anabaena* and *Microcystis* that we have seen over the beginning portion of the summer, we discovered another genus of cyanobacteria in Lake Quinsigamond. This one is called *Woronichinia*, which can form clusters like *Microcystis*. It is known to shoot out the individual cells, making the inside look hollow under the microscope at times.

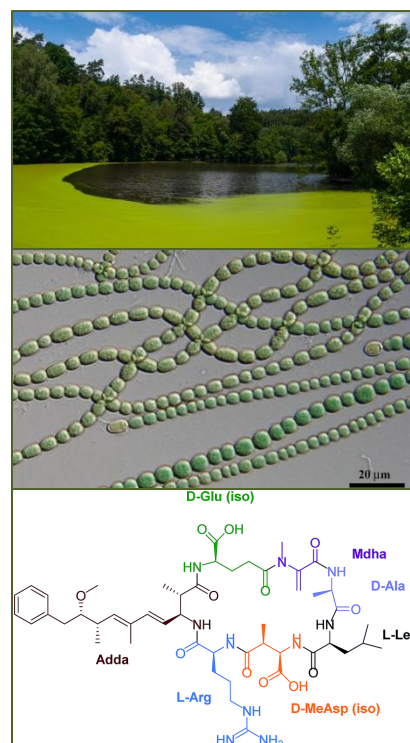
As the summer goes on and we upload our findings to inaturalist.org as a part of the EPA sponsored Cyanoscope Project, we can begin to track regional trends. Local findings are generally representative of the rest of the State of Massachusetts in terms of the kinds of critters that we are seeing. Go to the website to check them out!

What it means: The end of summer has been known to bring a greater abundance of cyanobacteria. Worcester Cyanobacteria Monitoring Collaborative (WCMC) volunteers can help track the diversity of these critters by identifying the different kinds found in water samples. However, these techniques are not sufficient to determine if there is an algal bloom that warrants a public health advisory. The Massachusetts Department of Public Health has released the following guidelines to determine if a waterbody needs to be closed for recreational use:

- (1) if a cyanobacteria scum or mat is present on top of the water,
- (2) if the number of cyanobacteria cells in the water exceeds 70,000 cells/ml, or
- (3) if the concentration of the cyanotoxin microcystin reaches 14 parts per million (ppm).

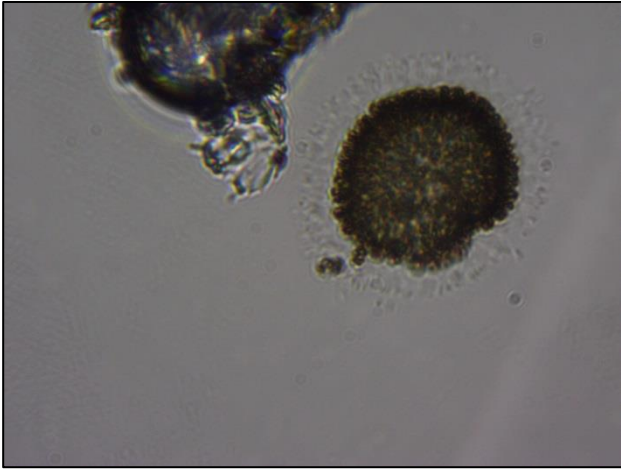
To see a list of lakes and ponds with an official advisory by the State of Massachusetts, see:

<http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/exposure-topics/beaches-algae/algae-information.html>



Thanks again to Regatta Point Sailing, DCR, Dr. Fucikova, Joy Trahan-Liptak, and the volunteers for their support!

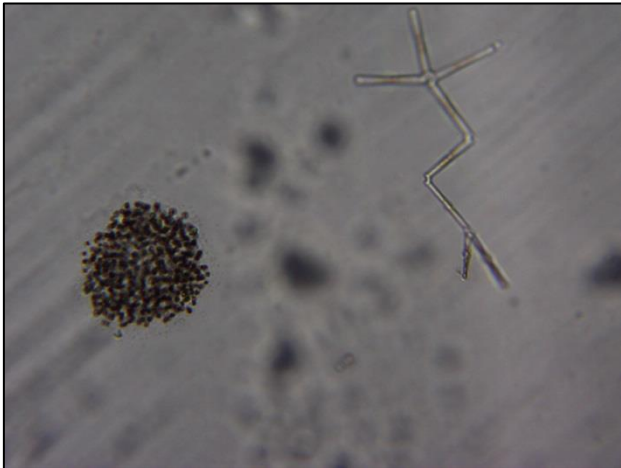
Highlights: Lake Quinsigamond



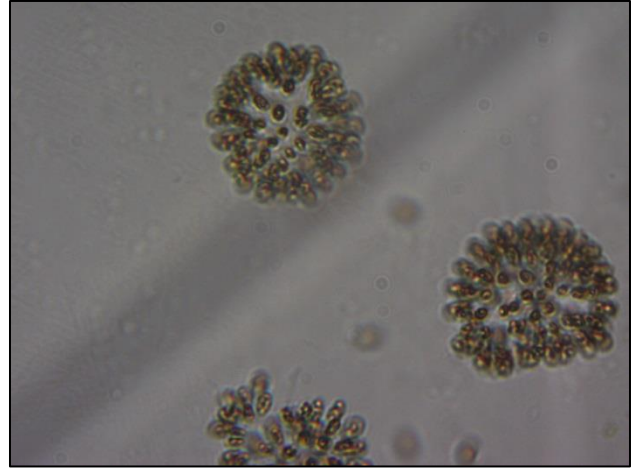
Woronichinia, a cyanobacterium that lives in colonies.



Tabellaria diatom- a unicellular alga with siliceous cell walls. 10x magnification.



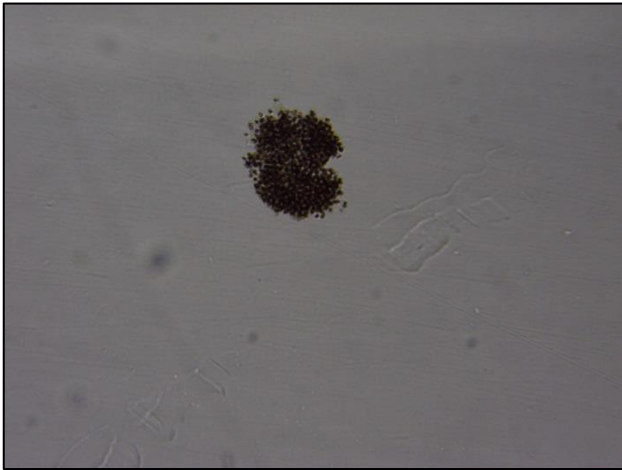
Microcystis a common cyanobacterium
10x magnification



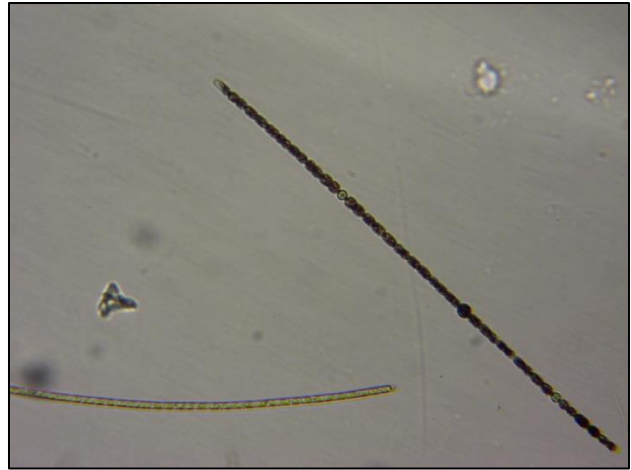
Woronichinia, a cyanobacterium that lives in colonies
40x magnification

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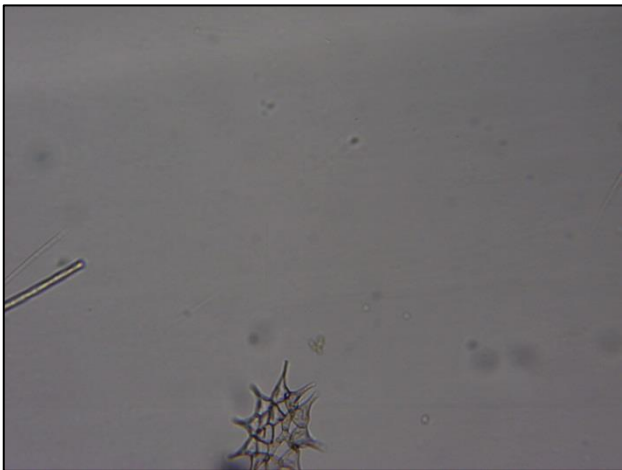
Indian Lake



Microcystis, a common cyanobacterium
10x magnification



Left to right: A heterokont (a kind of yellow-green alga) and *Anabaena* (a cyanobacterium)
10x magnification



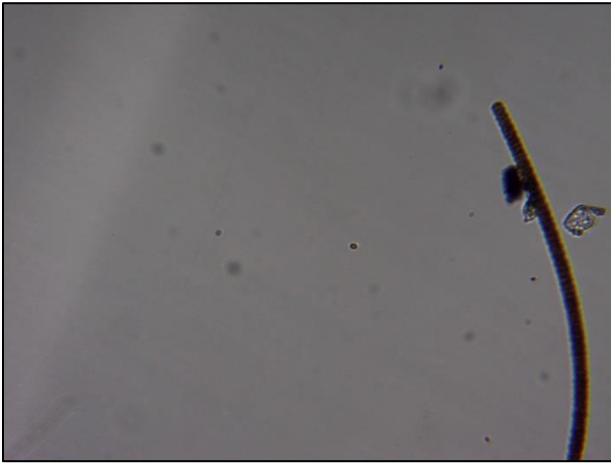
A dead *Pediastrum simplex*, a green alga.
10x magnification



Most likely a kind of heterokont, or yellow-green alga.

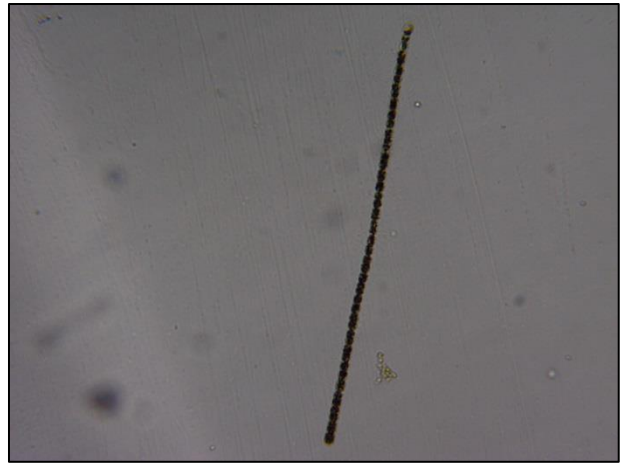
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Coes Reservoir

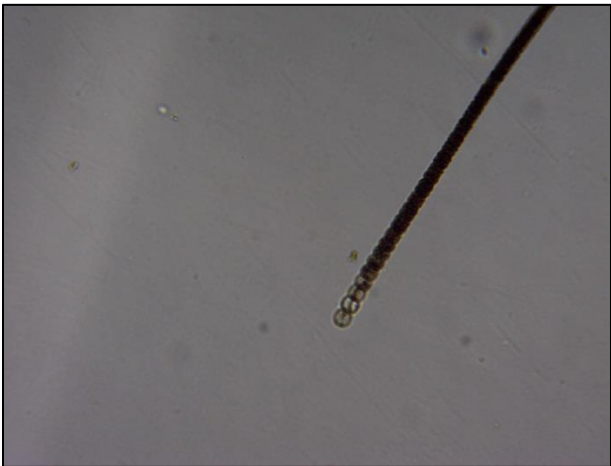


Anabaena or *anabaenopsis*
10x magnification

Patch Reservoir



Anabaena, a common cyanobacteria.
10x magnification



Anabaena or *anabaenopsis*
10x magnification



Anabaena, a common cyanobacteria
10x magnification

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