Investigating a cloudy issue...

One of the reason I love microscopes is because they can help me satisfy my insatiable curiosity. I was kayaking in late august on a lake north of Montreal when I spotted what looked like large greenish white clouds floating in mid water. Using a polarizing filter, I was able to get a few decent shots from above. Some of those formations can be several meters long. Hoping to get a different angle on the subject I

held a waterproof camera over the side of my kayak in an attempt to get some good shots; a few of them did turn out acceptable. But I was curious: what were those clouds made of? Reaching over the side, I picked up some of it and pulled it out of the water. It did feel somewhat slimy, with a texture reminiscent of the common algae spirogyra that makes up green mats in slow moving brooks and ponds.









Back on shore, I picked up a container and returned for some samples. I wanted to see this thing in more details. Actually, it was just one more excuse to go back on the water... Black home, some of those filaments where mounted on a slide and examined with the microscope.

As I suspected, my clouds turned out to be made of intertwined algae, a great many of them. The first observations were made with plain bright field. With my first pictures I went on to identify the algae. From my research, it seems to be Zygnema, a species identified mainly by the twin lumps of chlorophyll in the center of its cells. Just like Spirogyra, Zygnema arranges its cells in long ribbons, one after another.



100x, bright field



I popped the slide on my Wild M20 phase contrast microscope. The result was very interesting, but I don't see the star-like clump of chlorophyll with as much contrast or clarity.

100x, phase contrast



200x, phase contrast



200x, phase contrast

Two days later I tried to mount some of it in a permanent slide. However, it seemed to have started its decomposition in the small container. The stands appear shriveled, whether or not they were fixed prior to mounting. It could be the choice of fixer or the mounting medium, but a direct examination of unmounted strands also showed them to be deteriorated.

I guess another visit is in order but it will have to wait until next year. The lakes are getting colder a subsequent trip showed that the plants are going dormant. Next year I will bring everything needed to mount fresh specimen right by the lake.



200x phase contrast



The related and well known algae Spirogyra is characterized by its spiral of chlorophyll. 100x bright field

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