

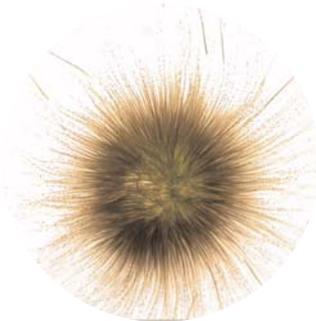
# GLEOTRICHIA

By Roy Bouchard



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*Have you wondered about the tiny off-white dots that appear in your lake during mid to late summer? They are often described as looking like "tapioca", but each dot is actually a colony (see magnified photo below) of Gleotrichia, a blue green alga that volunteers may be able to help monitor in the future. Let us know if you think you have seen "G" in your lake. This is one algae that is relatively easy to identify with low-level magnification. S.W.*



Magnified Gleotrichia Colony

**T**hey're called gleotrichia (glee-oh-trick-ee-ah). The minute floating dots that appeared and stayed in many lakes last summer, are not a new phenomenon. They often appear mid-summer for a short time, then disappear. Over the last 4-5 years however, there have been more frequent complaints about the density and duration of these growths in a few ponds. This year, they arrived early, proliferated, and stayed throughout most of July and August in two lakes in the Belgrade chain.

Here in Maine, gleotrichia is known to be present in lakes of the Androscoggin watershed, Togus Pond, and many others. It is likely present in several other lakes in the Belgrade chain, including Messalonskee, but we have not yet had the high densities reported upstream. Gleotrichia is a blue-green alga (really a bacteria) but it is not the type that usually makes a lake "go green" as in East Pond or China Lake.

Puzzlingly, it seems to be present only in lakes with good water clarity. Clear water normally means that there is low phosphorus fertility so most algae do not grow prolifically. One reason for the high growth of Gleotrichia is that it over winters as resting cells on the lake's bottom, then grows its summer colonies (groups of similar cells bound together) on the sediment surface where light can reach it. These colonies absorb lots of phosphorus in the process, which is in short supply in the surface water of the lake. When they are well developed, these algae release from the sediment and float to the surface, where they multiply their colonies in the light environment.

One of the problems with Gleotrichia is that it tends to float in the top few feet of water. Wind driven currents can concentrate the tapioca-like orbs in one part of the lake or another, and high densities result, especially in coves. As quickly as they appear in an area, they can diminish, though usually they don't go away completely until late in the season.

The phenomenon is not generally a health concern. There are reports in the literature that it may cause a skin irritation that could be mistaken for Swimmers' Itch when it is thick in the water and ingesting a lot of it can cause stomach upset. While most of us would not drink lake water anyway, children should be always be cautioned not to swallow water while swimming (and not just because of algae).

What is the significance of these recent reports of high densities? Is this a permanent state of affairs or will it change for the better or worse? Most research on Gleotrichia has been conducted in the mid-West and Washington state. There is not a lot of information on how persistent this will be or whether it will naturally decline over time, like many biological populations of plants and other wildlife. What is known is that Gleotrichia can move a lot of phosphorus from the sediment into the lake water that normally would not get there, but there is no indication that it will lead to worse conditions down the road. It is also known that there are few direct ways to control this condition - - these lakes are just too large and complex for conventional tools to work. Hopefully studies contemplated with Colby College over the next year will help us answer several questions about how our lakes operate, and Gleotrichia may be one of the topics researched.

This condition certainly does indicate that our lake bottoms have enough nutrients to sustain repeated growths of Gleotrichia. That should prompt us to do everything we can to prevent phosphorus loading from runoff sites in the watershed. While such preventative actions may not affect Gleotrichia blooms in the short term, they could help over time and are absolutely needed to avoid more obnoxious, lake-wide algae blooms in all Maine lakes. 🐸