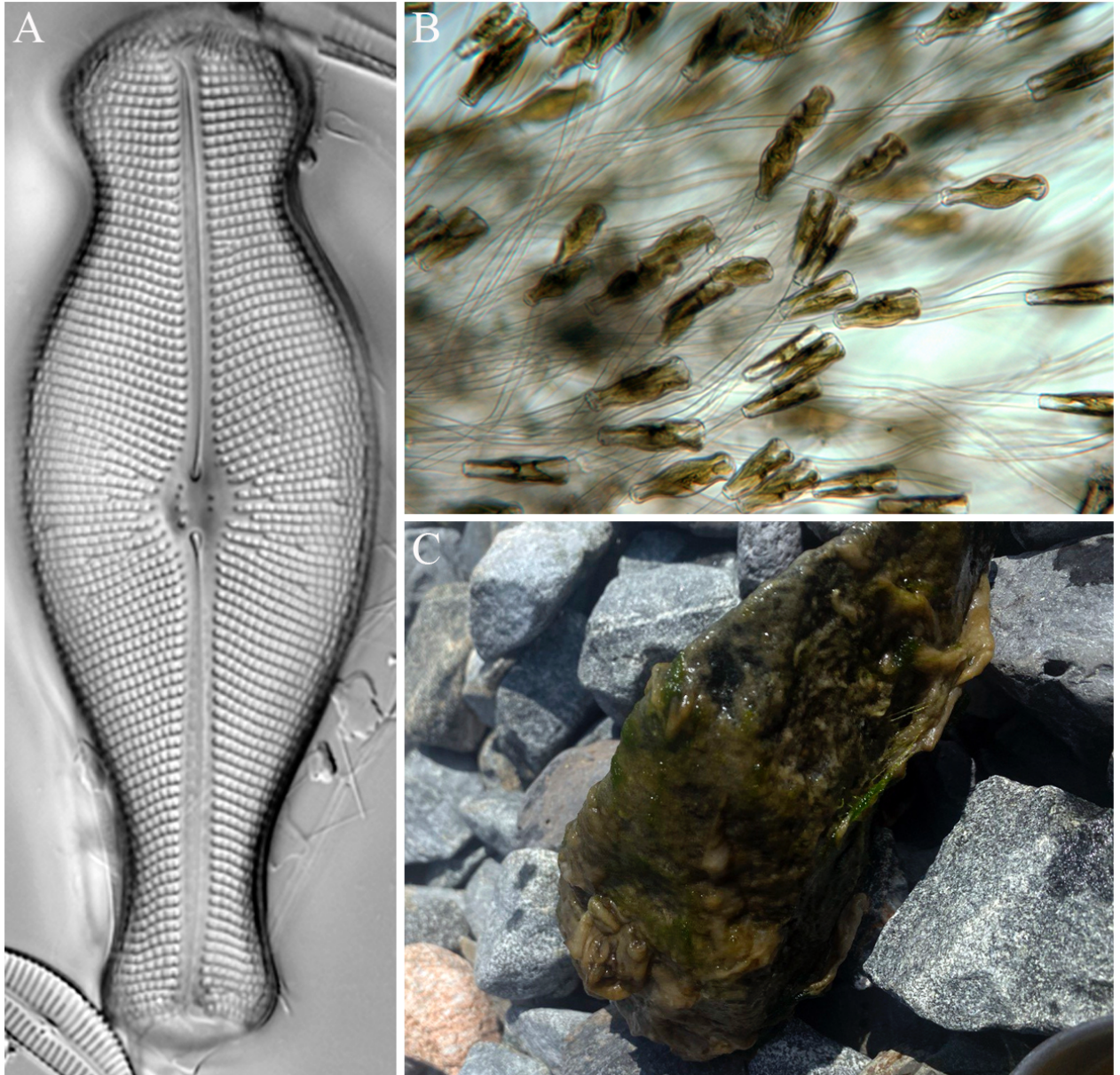


The MicroPrimaryProducerStars
Didymo (*Didymosphenia geminata*)
(Andrei Mironov)



A: a microphotograph of the frustule of *Didymosphenia geminata* (photo by D. Chudaev, Lake Baikal, Russia). The frustule has a very complex structure with pores and slits. B: branching colonies of *D. geminata* under microscope (photo by S. Spaulding, Colorado, US). C: an algal “mat” formed by *D. geminata* on a rock (photo by A. Mironov, Lake Baikal, Russia).

Claim to fame: The master of biomass accumulation – causes massive algal blooms in freshwater ecosystems worldwide.

Imagine a river with clear water flowing between rocks and tiny algae swaying at the bottom. And suddenly, one day, it's all covered with a brown, sticky mass that looks like matted hair. This is the work of Dydimos! It is called *Didymosphenia geminata* by scientists or “mermaid’s hair”.

A learner-centric microbiology education framework

What do we know about Didymo? It is a microscopic diatom alga, one of the many diatoms that live in water around us. Unlike others, it can invade a waterbody like a real comic book villain! Didymo has a beautiful silica frustule, which sparkles like a jewel under a microscope and protects Didymo from predatory crustaceans like an armor. But unlike his peaceful friends, Didymo knows how to build huge colonies. Moreover, these colonies are very sticky, easily attach to rocks, plants, and even to your shoes if you happen to be in the river.

Didymo can conquer waterbodies when the water is cold, clean and, at the same time, poor in nutrients, such as phosphorus. Under these conditions, the mighty Didymo can concentrate phosphorus from flowing waters and use it to multiply rapidly. This process is called the accumulation of biomass. Colonies grow massively, forming huge “mats” that suffocate all living things around! Because of that, other microalgae no longer receive sunlight, while fish and crustaceans find it difficult to breathe and move around. From then on, the Great and Terrible Didymo becomes a mighty king of the waterbody! As a result, the entire ecosystems in rivers, lakes and ponds may be seriously harmed.

You could ask: why is this happening? No one knows for sure, but many scientists think that Didymo is so powerful because of our help. It turns out that humans unwittingly help Didymo spread everywhere around. Tiny spores of this diatom can stick to our shoes and boats, and then travel with us to other waterbodies, where they begin to build their colonies.

Didymo is a tiny, but great and terrible alga, that can bring serious harm to rivers and lakes

So, what should we do to stop Didymo from seizing the power in fresh waters around us? The main thing is not to give Didymo the opportunity to spread so much! Always remember: even such a small and, at first glance, harmless algae can have a huge influence on the nature. Let's try to clean and disinfect everything that has come into contact with water before moving to another river or lake. Take care of waters, and they will repay you with clean water and beautiful landscapes!