

Topic Page: [Cyanobacteria](#)

Definition: **cyanobacteria** from *Philip's Encyclopedia*

(formerly blue-green algae) One of the major bacteria phyla, distinguished by the presence of the green pigment chlorophyll and the blue pigment phycocyanin. They perform photosynthesis with the production of oxygen. Analysis of the genetic material of chloroplasts shows that they evolved from cyanobacteria, by endosymbiosis. Many cyanobacteria perform nitrogen fixation. They occur in soil, mud, and deserts; they are most abundant in lakes, rivers, and oceans. Some produce toxic blooms.



Image from:

[Cyanobacterial filament cf.... in Encyclopedia of Paleontology](#)

Summary Article: **cyanobacteria**

From *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

Single-celled organisms that belong to the domain of the bacteria and resemble other bacteria in their internal cell organization, although they are sometimes joined together in colonies or filaments. Cyanobacteria are among the oldest known living groups of organisms; putative remains have been found in rocks up to 3.5 billion years old. They developed the two-step, oxygen-producing kind of photosynthesis now used by plants, and are thus responsible for the origin of our oxygen-containing atmosphere. Today, they are widely distributed in aquatic habitats, on the damp surfaces of rocks and trees, and in the soil.

Cyanobacteria are prokaryotic organisms, that is they do not have a nucleus. Some can fix nitrogen and thus are necessary to the nitrogen cycle, while others follow a symbiotic existence – for example, living in association with fungi to form lichens. Some species of cyanobacteria have circadian clocks (see circadian rhythm) allowing them to coordinate their metabolic activities (including photosynthesis and nitrogen fixation according to the time of day.

Fresh water can become polluted by nitrates and phosphates from fertilizers and detergents. This eutrophication, or overenrichment, of the water causes multiplication of the cyanobacteria in the form of cyanobacterial blooms. The cyanobacteria multiply and cover the water's surface, remaining harmless until they give off toxins as they decay. These toxins kill fish and other wildlife and can be harmful to domestic animals, cattle, and people.

In 1996 Japanese researchers sequenced the genome of the cyanobacterium *Synechosystis*. It has 3.57 million bases and was the first photosynthetic organism to have its genome sequenced. German researchers revealed in 1998 how cyanobacteria move around. They shoot minuscule threads of slime from pores and use these to push themselves through fluid.

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cyanobacteria. (2018). In Helicon (Ed.), *The Hutchinson unabridged encyclopedia with atlas and weather guide*. Abington, UK: Helicon. Retrieved from <https://search.credoreference.com/content/topic/cyanobacteria>



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