

Recent progress in the studies of *Braarudosphaera bigelowii*

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Braarudosphaera bigelowii (Gran & Braarud, 1935) Deflandre has long been considered a coastal–neritic dweller because pentoliths of *B. bigelowii* are usually found only from coastal–neritic marine sediments deposited on continental shelves. However, the discovery of a symbiotic relationship between an unidentified species, which is closely related to *B. bigelowii* in 18S rDNA sequence, and cosmopolitan nitrogen-fixing cyanobacterium UCYN-A (Thompson et al., 2012) suggests that extant *Braarudosphaera* specimens are widely distributed from coastal seas to open oceans, and *Braarudosphaera* plays an important role in the ocean nitrogen cycle. Moreover, a recent study on the established culture strain of *B. bigelowii* s.s. (18S rDNA genotype III) revealed that UCYN-A2 (one of the *nifH* genotypes of UCYN-A) has evolved beyond endosymbiosis and is in the early stages of developing into a N₂-fixing organelle (nitroplast) (Coale et al., 2024). This talk will review the progress in the studies of *B. bigelowii* and nitroplasts (UCYN-A) over a decade, discuss taxonomic issues of *Braarudosphaera*, and present the remaining challenges to be solved in *Braarudosphaera* research.

References:

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