

Structure of hot spring microbial mats studied by field measurement with a portable spectrometer

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Stromatolites should provide environmental information in Precambrian era. Modern hot spring microbial mats can be considered as a model of microbial mats which formed stromatolites.

Absorption spectrum measurement and fluorescent microscopy were done to identify types of microorganisms by field measurement and to quantify their ratios. Relation between temperature and distribution of microorganisms were also investigated.

Cyanobacteria and chloroflexus were major components of the surface of Nakanoyu and Nakafusa (Nagano Pref.) hot spring microbial mats. Fraction of chloroflexus increased with water temperature. Furthermore, laminated structure produced by three different microorganisms was developed at Nakafusa hot spring.