

## Arsenic Biomineralization in Microbial Mats

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In Masutomi mineral springs, the northwestern part of Yamanashi Prefecture, reddish brown and green biomats prosper widely. Major components of the green biomats are Ca with a little Fe. The reddish brown biomats consist of Fe, As, with a little Mn, Si, Ca. The observation indicates the existence of some diatoms, bacteria such as bacillus, colony of grains in the reddish brown biomats. Bacillus and the grains are mainly composed of Fe and As. TEM observation and ED analyses indicated the membranous materials covered up the bacillus have Arsenoclasite( $\text{Mn}_5(\text{AsO}_4)_2(\text{OH})_4$ ) and many amorphous materials. It is considered that bacteria in the reddish brown biomats crystallize Fe, As, Si, Mn, accumulated from mineral spring water, and form Arsenoclasite and amorphous materials.

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