



Microbial degradation of stone in monuments – its impact on conservation practice

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Micro-organisms – including bacteria, fungi, algae and lichens – have a significant impact on the weathering of natural stone. The most important biogenic alteration phenomena are color changes, the formation of dark crusts on rock surfaces, chemical alterations and dissolution due to organic acids as well as decohesion of material due to rock internal growth. The knowledge about the biogenic processes leading to stone weathering taken together with the knowledge about the ecophysiological properties and requirements of stone inhabiting micro-organisms towards the environment has certain consequences for the practice of conserving and restoring monuments built of natural stone. Several case studies from Vienna and surroundings will be presented in order to demonstrate that influencing the micro-climatic conditions and nutrient influx and selecting appropriate conservation materials and biocidal measures can help to reduce the biogenic deterioration of monuments to a minimum.