Lichens in cultural heritage: evaluating threats and conservation measures

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Lichens have long been associated with the biodeterioration of both natural and built cultural heritage. Over the past century, the diversity of lichens and their interactions with colonized substrates in cultural assets have been extensively studied. However, recent advances in omics technologies have revolutionized the study of biodeterioration processes, unveiling the intricate complexity of these interactions. These techniques enable a comprehensive assessment of the diversity, dynamics, and treatment responses of all components of lithobiontic communities, including lichens. This session will highlight recent research advances on lichen diversity in cultural heritage sites, their impact on colonized materials, and their responses to conservation treatments aimed at mitigating biodeterioration. Particular attention will be given to the threats posed by lichen colonization to the preservation of cultural assets. Topics will include the role of lichens in the biodeterioration of stone materials, both natural and artificial. The session will also address studies on the bioreceptivity of heritage substrates and their function as reservoirs of lichen diversity. In addition, the session will cover the development of physical, chemical, and biological strategies for the removal and control of lichens, along with measures to prevent recolonization following restoration interventions. The session aims to foster valuable knowledge exchange between researchers in applied lichenology, which is characterized by its multidisciplinary nature, and those working in other areas of lichen systematics, ecology and ecophysiology who regularly participate in IAL meetings.