



Assessment of Microbial Diversity and their Role in Deterioration of Jantar-Mantar, Jaipur, India

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Abstract: The Jantar Mantar is one of the great UNESCO World Heritage site built in the 1720's which collection of nineteen architectural astronomical instruments and also houses the world's largest sundial. In this article, we discussed the microbial diversity and deterioration of the Jantar-Mantar. Microorganism colonizing on monuments produced various organic, inorganic acids, chelating compounds extracellular polymers and pigments due to the metabolic activities. These excreted products further alter, damage, discoloration and dissolution of the material of the monument. In this study, a total of 92 bacterial and 82 fungal colonies was identified among them *Pseudomonas aeruginosa* and, *Aspergillus niger* most abundant one. Further, the isolated bacteria and fungi with the help of FE-SEM analysed the degenerative potential also. This study helps to find the culturable biodeteriogens mainly bacteria and fungi which excreted most of enzymes, acids and pigments to deteriorate the site and appearance. This study also helps to plan a strategy to maintain this heritage site and for providing a healthy environment for people who come to visit and admire the beauty of Jantar-Mantar and other monuments.

Keywords: Biodeterioration, Bacteria, Fungi, FE-SEM, Jantar-Mantar
