STUDIES ON MICROBIAL DETERIORATION OF ARCHAEOLOGICAL MARBLE AND METHODS OF TREATMENT

By

FATMA MAHROUS FAHEIM EL-WEKEEL

B. Sc (Biochemistry and Nutrition), Ain Shams University, 2000.

A thesis submitted in partial fulfillments
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Approval Sheet

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ABSTRACT

Fatma Mahrous Faheim El-Wekeel: Studies on Microbial Deterioration of Archaeological Marble and Methods of treatment. Unpublished M.Sc. Thesis, Department of Agricultural Microbiology , Faculty of Agriculture, Ain Shams University, 2012.

Microbial deterioration of archeological marble was studied on various samples of ancient marble of Egyptian history and methods for treatment were suggested. Sample were taken by swabs from three locations in Cairo; Mohamed Ali palace, El-Ghory Mosque and El-Kady Abdel-Baset Mosque. Sampling resulted in 110 microbial isolates containing fungi, bacteria and algae. These isolates were identified as 18 fungal genera, 3 bacterial and one actinomycetes genus. Growth kinetics was determined for bacterial and fungal isolates. All microbial isolates were allowed to grow on different media containing marble as a carbon source. The growth and development of these microbial isolates was controlled by determination of inhibitory concentration of five antimicrobial agents. Colored spots, caused by microbial growth, were treated by different synthetic and natural chemical substances. Chemical and physical properties of marble samples were determined as a function of microbial infection.

Key words: Archeological marble, Microbial deterioration of marble, physicochemical properties of marble, deteriorating factors.

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Dedication

To everybody who helped me in this work.
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