International Course on Stone Conservation SC13

SESSION: Vegetation control

INSTRUCTOR: Giulia Caneva

TIME: Tuesday, 28th May/ 14:30 – 16:00 (1.5 hours)

SESSION OUTLINE

ABSTRACT

The damages arising from the growth of plants on stone monuments is due to chemical, mechanical and physical mechanisms. The colonization of stone by vascular plants usually occurs after the substrate has been attacked by pioneer organisms (cyanobacteria, algae, lichens, mosses), and then proceeds through phases, which are structurally more complex and evolved. Time of abandonment and climatic conditions are two factors which influence type, degree and pattern of colonization. Root damages of ruderal plants can be very severe, such as in the case of trees in tropical countries or growing on hypogeans. It is also important to consider how well managed plant growth in archeological areas can occasionally provide positive effects, (microclimate modification, the reduction of wind erosion, the lowering of the water-table, and the reduction of pollutants). Vegetation control measures such as biocides and mechanical methods will be discussed.

OBJECTIVES

By the end of this session, participants will be able to:

- Describe the chemical, mechanical and physical mechanisms of weathering produced by the colonization of vascular plants upon stone,
- evaluate the negative and positive effects of plants in archaeological areas and
- suggest guidelines for planning and managing archaeological areas in relation to vegetation growth.

CONTENT OUTLINE

- The role of higher plants in archeological and monumental areas.
- Risks and advantages of their presence. Methods of control of ruderal vegetation.

READINGS

🕮 = Essential reading material
💻 = Available online

🕮 Caneva, Giulia, Maria Pia Nugari, and Ornella Salvadori, ed. 2008. *Plant Biology for Cultural Heritage: Biodeterioration and Conservation*. Los Angeles: Getty Conservation Institute. 59-170.

Caneva, Giulia. 1999. A botanical approach to the planning of archaeological parks in Italy. *Conservation and Management of Archaeological Sites* 3 (3): 127-34.

Caneva, Giulia, Maurizio Cutini, Alessandra Pacini, and Maria Vinci. 2002. Analysis of the Colosseum's floristic changes during the last four centuries. *Plant Biosystems: An International Journal Dealing with all Aspects of Plant Biology: Official Journal of the Societa Botanica Italiana* 136 (3): 291-311.

Caneva, Giulia, Simona Ceschin, and Giovanni De Marco. 2006. Mapping the risk of damage from tree roots for the conservation of archaeological sites: The case of the Domus Aurea, Rome. *Conservation and Management of Archaeological Sites* 7 (3): 163-70.