enrichment factors (that means the ratios between concentrations of chemical compounds in falling and occult precipitation). The compounds NH_4^+, SO_4^{2-} and NO_3^- are the dominant species both in fog water and in precipitation. In order to collect cloud water samples, the active and passive sample-taking devices were constructed. Besides the collectors, as described in literature, both passive and active fog water collectors of the new design were developed and installed at the selected localities.

Characterization of natural dimension stones used in Hungarian historic constructions; a case study of the Ruin Garden in Székesfehérvár

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The example of the Ruin Garden of Székesfehérvár in Hungary was selected as a case study for this current research. That assemblage of monuments in Székesfehérvár is of a great historic importance since it served as the coronation and burial church for most of the Hungarian kings in the Middle Ages. Moreover, its several reconstructions and expansions throughout history and the presence of several lithotypes found among the remained building and decorative stones makes the research related to the materials crucial not only for the conservation of that specific monument but also for a series of other historic structures in the Hungarian territory.

A total of 65 samples were collected both from left over pieces and the existing walls and went under investigation. In order to help the study, a series of maps was created based on in-situ investigations. Several wall selections were selected and three different kinds of maps were designed for each one. The first series of maps depicts the different construction periods of the selected section of the walls. The second series of maps shows the distribution of the different lithotypes over the wall which helps both to better evaluate the use of different stone types over the different construction periods and to correlate the different stone types to the various identified weathering forms. The last series of maps represent the visible weathering forms on the building materials. As it is well represented by the selected wall sections, several types of limestones such as oolitic, travertine, bioclastic and red biomicritic ones are the most widely used lithotypes in the different construction periods of the monument. Rhyolite and granite were also widely used in some construction periods.

Several weathering forms were observed on the various lithotypes with the oolitic limestone presenting the most severe ones such as individual fissures visible by naked eye, detachment of grains, multiple scaling, black and white crusts and detachment of black crust. The red limestone appears to be the most durable one among the different types of limestones. Only minor alterations were observed on these blocks such as decolourization of the surface and a few cracks.

The new maps have proven to be very useful also for the further identification of the site such as the documentation of the in-situ measured results (e.g. moisture content, rebound values measured by Schmidt hammer, drilling resistance) and their ensuing interpretation in relation with the existing climatic conditions.

As a further step for understanding the behaviour of the three most relevant materials, additional samples were taken from local quarries with similar physical and mineralogical characteristics: a medium-grained and a coarse-grained oolitc limestone from Sóskút and a red compact limestone from Tardos, Hungary. Both historic and freshly quarried stones were submitted to a series of physical and mechanical tests in order to identify the materials properties and behaviour such as their pores volume and structure, ultrasonic velocity, uniaxial compressive strength, dynamic modulus of elasticity and resistance to frost damage.

The interdisciplinary study of the results confirms that stones in the monument show deterioration in terms of mineralogy, fabric and physical properties in comparison with quarried stones. Moreover stone-testing proves compatibility between quarried and historic stones. Good correlation is observed between the non-destructive-techniques and laboratory tests results which allow us to minimize sampling and assessing the condition of the materials. Concluding, this research can contribute to the diagnostic knowledge for further studies that are needed in order to evaluate the effect of recent and future protective measures.

Mammalian remains from a new site near the classical locality of Pikermi (Attica, Greece)

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We present the first results on the fossil mammalian fauna recovered during the first excavation season at the new site Pikermi Valley-1 (PV1). The fauna comprises two hipparionine species *(C. cf. mediterraneum, H. cf. brachypus),* a giraffid *(Bohlinia cf. attica),* five bovids *(Palaeoreas lindermayeri, Protragelaphus skouzesi, Tragoportax cf. amalthea, Gazella* sp., Bovidae indet.) and two carnivores *(? Adcrocuta eximia,* Felidae indet.). The composition of the fauna suggests a Turolian age.

Thermal behavior of freshwater cultured pearls

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The 95% of the pearls present in the gem market are freshwater cultured pearls in Hyriopsis ssp. Heating is frequently applied to off-colored pearls for their color enhancement. The understanding of the thermal behavior of pearls, would be useful to separate the natural colored from the treat-colored (after heating) pearls. This study presents analysis of the mineral structure and the organic matrix as well as the thermal behavior of Hyriopsis ssp. cultured pearls.

The studied samples were white freshwater cultured pearls in Hyriopsis ssp. which were analyzed with the X-ray powder diffraction (XRPD) and the Fourier transform infrared spectroscopy (FTIR) methods. In the XRPD patterns of all samples only calcium carbonate was identified with the structure of aragonite. The FTIR transmittance spectra of the powdered samples, using the KBr technique, show the characteristic absorption peaks of aragonite. However, some additional shoulders, at about 1662, 1270 and 1172 cm^{-1}, were observed probably due to the organic matter of the pearls. Furthermore, the broad bands in the region between 3600 and 3200 cm^{-1} are probably attributed to the water content of the pearls. After heating at "low" temperatures (up to 250 ^{o}C), changes were observed only in the FTIR peaks related to the organic matter and the water. No changes on XRPD patterns were observed.

This preliminary study indicates that heat-treatment of the pearls up to 250 ^{o}C, changes only the bands of organic matter and water in the FTIR spectra. With a followed heat treatment, especially of the whole pearls, the critical temperature of their color changes can be