



المؤتمر الدولي

جامعة القاهرة

كلية الآثار

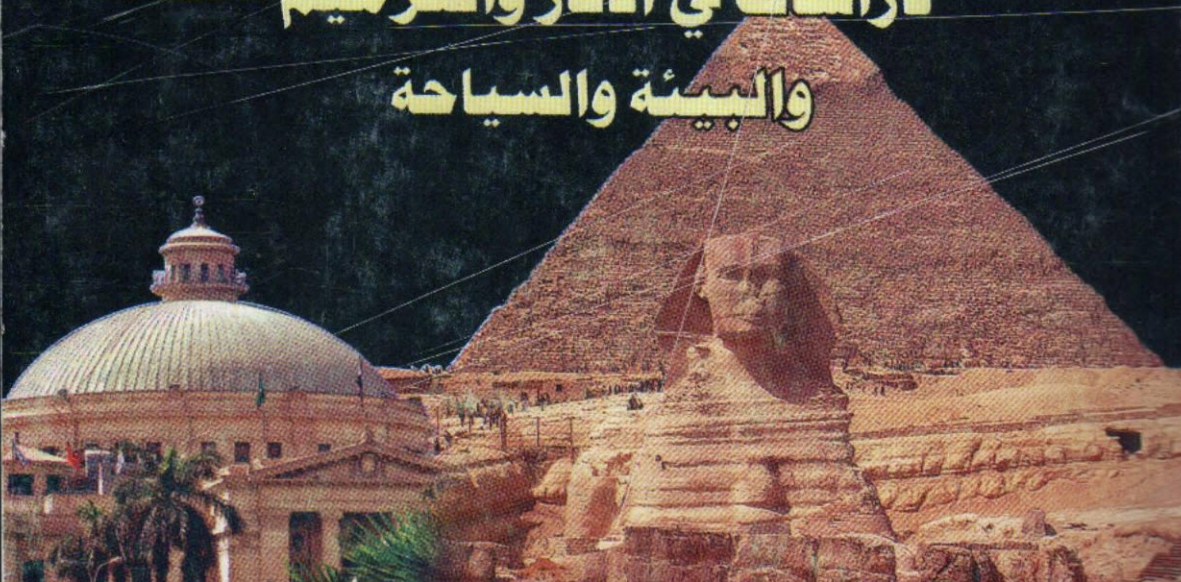
ملخصات الأبحاث

عن

الجيزة عبر العصور

دراسات في الآثار والترميم

والبيئة والسياحة



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بقاعة الاحتفالات الكبرى بجامعة القاهرة

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**Degradation Phenomena and Conservation Procedures of the Sphinx
at the Giza Plateau, Egypt
Abdel-Fattah E. El-BANNA***

In February 2007, the Giza branch of S.C.A observed the raising of water-table in front of the valley temple of Khefren. Although, in the last twenty years, there are several attempts to overcome the sub-surface water in this site. The Sphinx statue as one of the most important world heritages is being seriously subjected to the breakdown and degradation phenomena. The capillary systems, transport of salt in bedrock and its crystallization pressure and osmotic pressure are the main reasons of Sphinx bedrock disintegration. Due to the location of statue to east direction, the bedrock lack to systematic distribution of heat and as known the water moisture moves from the hot region to cold one. Therefore, the problems are related to the moisture retained in the northern side of the statue, which is being subjected to shade at sunlight time. This situation has resulted the leaching out of salts in efflorescence that can be noted at many instances, sometimes developed into salt crystals which pushed out the veneer blocks.

Aiming at contributing to the restoration work for Sphinx statue, the author is collecting the specific data from the site investigation in order to clarify water sources and their effects on the statue bedrock where the deterioration is taking parts. The petrography, chemical analysis, physical and mechanical characteristics for the bedrock and veneer stones were carried out. In this paper, a suggestion of the isolation cores to prevent water suction was illustrated. As a result of the distribution of thermal and the daily cyclic changes in temperature, author proposed the mirrors system to regulate the distribution of sunlight on the four sides of the statue equally.

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The Modification of Consolidants to Overcome the Shale Swelling in Saqqara tombs, Egypt **Abdel Fatthah E. El-Banna***

The loss of the surfaces of building materials are largely attributable to processes which involve either the dissolution or replacement of the binding cement or the disruption of intergranular bonds by increased internal tensile stresses. In several cases the treatment of natural stones with traditional consolidating materials do not prevent the shale swelling phenomenon due to changes in humidity, so that the stone is still affected by stress-strain processes. Changes of volume can take place in the stone under optimal conditions i.e. increasing in volume due to presence of expandable clay minerals. The most problematic cases are those which exhibit buckling, in some places, cracked and nearly destroyed were the walls covered and painted with hieroglyphic texts and pictures. In such condition it is hopeless to overcome these problems by using the traditional synthetic resins. The expansive rock specimens, collected from the Serapeum tomb at Saqqara site, were treated with silicon-organic hydrophobing and a combined treatment with water-repelling polysiloxanes and Al-I3 pillaring agents, and then subjected to experiments. The analytical results and geotechnical data stated that the silicon-organic hydrophobing does not fully prevent the swelling expansions while, the combined treatment with water-repelling polysiloxanes and pillaring agents shows a good results.

The expedition battle of Esarhaddon against Memphis

And the role of Beni Israel

The first half of the 7th century B.C.

Ali Ahmed Elsherif^{*}

There was a strong desire in Assyria since the beginning of the reign of 2nd Assyrian emperor to invade Memphis and occupy Egypt. Assyria realized this approximately in the first half of the 7th century B.C. Here, the researcher tackles the rout of the first successful Assyrian battle; the 10th battle in the reign of Esarhaddon dynasty "Assyr-Akha-Adeen" (681-669 B.C.) to occupy Memphis the fortified Egyptian Capital; according to a strategic political and military plan, put down as planned by Assyrian kings. During the invasion, the researcher reveals the position of Syrian city-states in general, and the city-states of Jehovah and Beni Israel in particular, this in the Egyptian Assyrian relations.

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Analytical study of a Coptic wall painting from kom Oshiem excavation, (El- Fayoum- Egypt).

Amany A. Bakr and Atef A. Brania*

One of the Coptic wall painting (dating back to the 3rd. Century A.D.) Discovered at kom Oshiem excavation El Fayoum was studied to identify their main components. The study of the samples involved the identification of the pigments, plaster layers and binding media. The study was performed using various analytical methods such as polarizing microscopy (PLM), Scanning electron microscopy equipped with energy dispersive X-ray analyzer, X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (FTIR). The obtained information will used to evaluate the wall painting deterioration state and define the suitable method of treatment.

Keywords: *Coptic wall painting, pigments, plaster, binding media, XRD, SEM-EDS, FTIR.*

EXPERIMENTAL STUDY OF THE EFFECT OF FROST, RAIN AND CHANGES OF TEMPERATURE ON THE ARCHAEOLOGICAL BUILDINGS OF KAZIMIERZ DOLNY, POLAND

Elmitwalli Hemdan* & Pininska Joanna†

Kazimierz Dolny lies 140 km south of Warsaw, on the right bank of the river Vistula. The history of Kazimierz Dolny goes back to the beginnings of Poland as a state.

Macroscopic observation has shown that the archaeological buildings of Kazimierz Dolny {Castle (1340), Tower (13th century), Parish Church (mid-15 century), Przybylo family houses (1615) and Celej House (17th century)} were built of limestone and the deterioration process depends mostly on the frost, rain and temperature changes.

As the most important the deterioration process was defined by the laboratory simulation of deteriorating cycles applied to the building limestones of Kazimierz Dolny in the following ways: the frost, rain and temperature changes.

The ultrasonic testing of limestone samples shown that the longitudinal wave's velocity perpendicular and parallel to the sedimentation layers decreased after further exposition of the samples to the deterioration factors.

Also the volume density, compressive strength (R_c), tensile strength (R_t), Young modulus (E), Poisson ratio (ν), friction angle (ϕ), cohesion (C) of the limestones samples decreased, whenever the porosity and the susceptibility of limestones samples to the water absorption increased after the laboratory simulation of deteriorating cycles.

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Strategy of Conservation of the Architectural Ceramic Tiles in the Islamic Buildings in Cairo

Fatma S. Madkour *

The ceramic tiles were favorite means of decorating architectural buildings throughout the Islamic periods in Egypt. They were used to coat the internal and external façades especially during Mamluk and Ottoman periods from fourteenth to eighteenth century. By the time these tiles were subjected to different deterioration factors include rising damp in the supported walls result of high groundwater level, air pollution in addition to human negligence.

Laboratory investigation and analysis with different methods such as Scanning Electron Microscope (SEM/EDX), X-ray diffraction (XRD) and Polarized Microscope (PM) were carried out to study the deterioration phenomena. The integrated plan of restoration and conservation of these ceramic tiles was suggested.

An Evaluation of Some Pastes Used for Filling Gaps of Parchment Manuscripts and Leather Artifacts

Gomaa Abdel-Maksoud*

Many parchment manuscripts and leather artifacts in Egyptian museums are in weak conditions that are caused by chemical, biological and mechanical degradation. Many gaps and holes are resulted from different sources of deterioration. This paper aims to evaluate some new pastes that can repair these gaps or holes. Some evaluation techniques are used such as mechanical properties and etc. The results proved that good mixing and preparation of the materials used in the pastes used gave good resistance against ageing technique.

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**Identification of some ancient Egyptian pigments in painted limestone block from Cairo
University excavations at Saqqara area
H. Mareya, I. A. Stratisa,^{*} M. F. Alib,[†] N. Kantiranisc[‡]**

During the excavation of Cairo University mission at Saqqara area in 1988 and later on in 2005 a number of tombs dating back to Ramsis period were discovered. The upper part of these tombs were built from limestone blocks which are carved with bass and raised relief and painted with different colors (blue -green - red - white - black).

This work deals with the identification of the coloring materials from some of painted limestone block by means of micro X-ray Fluorescence Spectrometry (IXRF), Scanning Electron Microscopy (SEM) and X-ray diffraction analysis (XRD).

The analysis of the examined samples indicates that the blue pigment is Egyptian blue (Cuprorivaite $\text{CaCuSi}_4\text{O}_{10}$); the green pigment is Egyptian green (Cu-wollastonite); the red pigment is hematite ($\alpha\text{Fe}_2\text{O}_3$), and the yellow pigment is goethite $\text{FeO}(\text{OH})$ mixed with other layer of Orpiment (As_2S_3)

Keywords: Saqqara excavations, painted block, II-XRF, XRD, SEM.

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**Catching either with bird, fish-net traps or lasso and the
Gods related in religious texts
Magda Gad***

The punishments or dangers of the realm of the dead are represented as a being caught like a bird, fish or an animal in netting, fowling, or hunting. So there certain spells those help the dead to pass these dangers, by evoking gods. The dead fears to be caught in traps or lasso by demons and to be consumed afterwards as their victim; Seth is punished on account of his enmity with Osiris, he is fettered and placed under Osiris as being conquered and a fish-trap is put over him.

So in this article, I'll try to highlight the role of nets and lassos in blocking the dead in his journey through the netherworld or punishing the enemies, and so the gods in responsible as *xnti-imntjw*; *Xnm*; *imj-xnt wr*, *Šw* as well as the *xntjw tA*.

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New Demotic Documents from Saqqara
Mahmoud Ebid*

During the survey of S C A in the area of the magazine museum at saqqara carried out by Mr. Nur el - Din Abd el- Samad, a lot of demotic Ostraca were found, a selected group of this Ostraca is the subject of this paper.

Double Ptolemaic statue from Atfeh

Mohamed El-Tunsi*

Statue was found in 1994 at Atfeh by the Excavation of S.C.A
In Atfeh it was made of fine Pzellt and Comprises six Column of hieroglyphic text.

Detachment of the 3th Century A.D. Mosaic Floor from Tell El-Farama, North Sinai, Egypt

Mohamed M. Megahed * Fatma S. Madkour †

The mosaic floor panel was discovered at Tell El-Farama excavation, north Sinai. It belongs to Roman period 3th Century A.D. The mosaic panel was decorated with geometric and animal patterns which is composed by black, white, red brown and red tesserae. Mechanical and chemical cleaning were carried out in the site for the panel to remove the contaminates and soil residues.

After cleaning the mosaic panel was suffered from serious of problems, among which: some parts of the panel had already been destroyed, some tesserae were disaggregated and exfoliated in addition to dirt and spots, which were, covered the surface. The mosaic panel was studied by many analytical methods included XRD, Scanning Electron Microscope (SEM / EDX) and Atomic Absorption Spectroscopy (AAS). The obtained results showed that the white tesserae consist of a limestone and the red and black tesserae are fired clays.

The mosaic panel has been detached and laid over a new bedding layer which was consisting in a honeycomb and mortar. The restoration works were completed to the panel after detachment processes to exhibit it in the archaeological museum.

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The alternatives supports: experimental and applied study on oil and wall paintings.

Mostafa A. Mohie and Atef A. Brania*

The traditional supports, which were used in the field of conservation and restoration of oil and wall paintings, are exposed to different deterioration factors, which reveal in different aspects. The main aim of this study is to make an experimental study on a new suggested alternative support (whereas the traditional supports suffering from some defects) for its use as a new support for the detached oil and wall painting. To achieve the previous aim we put a plan of work, which includes these steps:

- Gathering adequate data relevant to the new suggested support.
- Making testes, investigation and analyses to the new support properties.
- Making an experimental study on models of oil and wall paintings to evaluate the suggested support.
- An applied work on detached oil painting.

The results and the recommendation of the study are presented.

Keywords: oil and wall paintings, alternatives support

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Restoration and Conservation of Mereit Amon Statue, Tell Basta, Egypt.

Ragab A. Mohamed and Atef A. Brania*

Granite rocks are one of the materials more used in the building of historical monuments, which characterized by variation in their composition and its behavior during the alteration process. The main objective of this study is the restoration and conservation of the Mereit Amon granite statue, which discovered in 2003 at Tell Basta. The statue was suffering from severe damage because of different deterioration factors. The very huge statue of Mereit Amon was in a very bad need of intervention for its protection, which is the main objective of this paper. To achieve the previous objective we used different methods of investigation and analyses (X.R.D, L.O.M, Polarized microscope and Atomic absorption). To determine the mineralogical composition and its alteration, after that the intervention process we started, which includes the pre- treatment and the final treatment (architectural and fine restoration). A plan of conservation presented.

Keywords: *Mereit Amon, Tell Basta, Granite*

The Statue of an Important Official in Memphis Said Gohary *

A broken statue can still provide useful information, as can be seen from this example. The texts on the surviving part throw light on the career of a member of the royal palace administration, and the gods of Memphis during the Ramesside period.

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SIMILARITIES AND DIFFERENCES BETWEEN THE PYRAMIDAL COMPLEX IN GIZA AND BOSNIAN VALEY OF THE PYRAMIDS

Sam Semir Osmanagich

The Geometrical properties of the Bosnian Pyramid of the Sun, as well as the topographical and astronomical features could be compared to the Great Pyramid of Egypt (Khufu). Cement layer over the top of the stone blocks installed over the nucleus of the Bosnian pyramid of the Sun are somewhat similar in method to the Kephren's pyramid (limestone blocks over the stone blocks). Perfect orientation of the Bosnian stone structures (Bosnian Pyramids of the Sun, Moon and Dragon) match the orientation toward the cardinal points like the Egyptian pyramids. All Bosnian pyramids are truncated. Main Bosnian river (Bosna) flow near the complex. Soil analysis show that the structures have been covered over 5000 years.

Existence of monumental pyramidal complex in Central Bosnia had shook the global scientific community because it will require a part of the world history to be rewritten. Hypothesis, confirmed by some of the leading Egyptian, Russian, British, Croatian and Bosnian experts, is that at least five pyramidal objects, made through the process of the human intervention, exist in middle Bosnia. Those structures are connected through the underground tunnel network. Similar network exists under the Step Pyramid in Saqqara and Giza.

Discovery of the Bosnian Pyramids required combination of classic geo-archaeological methods with modern geophysical and remote sensing technologies. The efforts include satellite imagery and topography, thermal inertia analysis, geological-sedimentary analysis, geodetic topographic countour analysis, lineament detection, satellite radar and geo-radar analysis, archaeological field campagne in 2005-2007, paleontology, pedology and underground geo-mining engineering methods.