

THE ORIENTAL INSTITUTE NEWS & NOTES

NO. 175 FALL 2002 ©THE ORIENTAL INSTITUTE OF THE UNIVERSITY OF CHICAGO

CONSERVATION LABORATORY RESEARCH PROJECTS

VANESSA MUROS, ASSISTANT CONSERVATOR; VICKI PARRY, CONTRACT CONSERVATOR; AND ALISON WHYTE, POSTGRADUATE GETTY CONSERVATION INTERN WITH AN INTRODUCTION BY LAURA D'ALESSANDRO, HEAD, CONSERVATION LABORATORY

INTRODUCTION

Conservation at the Oriental Institute has a long and respected history, reaching back to the early 1970s when Professor John A. Brinkman brought Barbara Hall, the Institute's first conservator, from England to found the conservation laboratory. A small space in the basement was dedicated to this effort and a brick wall was built to separate the new conservation space from the Preparation Shop. Early photographs show Barbara sitting in a freshly painted, empty space. She was soon to fill the new laboratory with equipment and furniture generously funded by the Women's Board of the University of Chicago.

In 1998 the conservation laboratory was relocated to the second floor of the new wing and expanded both in size and capability as a result of the construction and renovation project. Again, the Women's Board of the University came to the rescue and provided funds to purchase much needed furniture and equipment, including an additional binocular microscope and a sensitive digital balance. Funding in the form of two consecutive grants was also obtained from the Getty Grant Program to support postgraduate conservation internships. The last two years of the internships have been generously co-supported by the Luther I. Replogle Foundation. The internships are intended to provide new graduates of masters level conservation programs with the opportunity to build on their education in a professional setting.

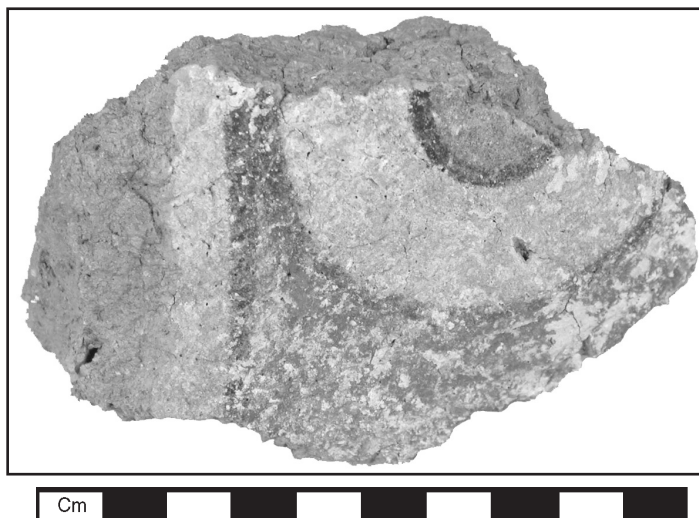


Figure 1. Wall painting fragment from Khorsabad (OIM A11798). Fragment is decorated with geometric pattern: white circle with blue center, white band and red background. Circle and band outlined in black

A combination of funds from the Getty Grant Program and the Women's Board grants has been used to help support the conservation laboratory's access to the University's Department of Geophysical Sciences scanning electron microscope (SEM). This single development has revolutionized the work in the conservation laboratory. Conservators receive training on a variety of scientific equipment as part of their education but are not always able to gain access to such equipment after graduation. Due to the user-friendly nature of the software for the Geophysical Science's SEM, the conservators were quickly trained and soon able to conduct their own research. Now, rather than depending on old or inaccurate analyses of the collection, the Oriental Institute conservators are able to identify accurately the material of the artifacts that they are treating. Access to the Geophysical Science's SEM not only translates into an almost un-

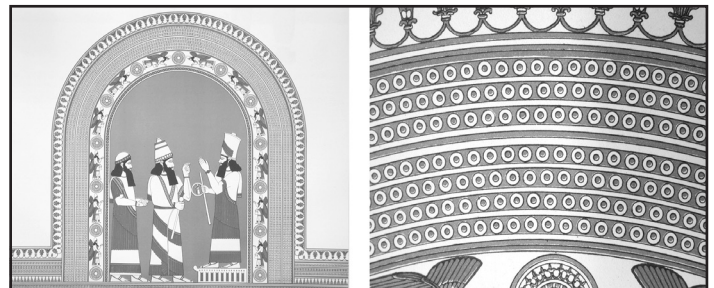


Figure 2. (left) Restoration of painted plaster walls in residence at Khorsabad. (right) Detail of circular geometric pattern of archway to which decoration on OIM A11798 may be similar

continued on page 2

Calendar of Events (Detachable)	9
Members Lectures	11
University Events	11
Sunday Films	12
Registration Form (Detachable)	12
Adult Education Courses	13
Family Programs	15
Special Events	16
Curriculum Guides	17
Annual Dinner	18
Suq Corner	Back Cover

limited potential for inorganic identifications but also means that the analytical work is in the hands of the researchers. Questions that come up or are raised by the analysis are able to be quickly answered and often lead to unlooked for results. We hope that as new sources of funding to support analytical work in the conservation laboratory are pursued, this integral component of our work continues and will eventually expand to include organic analyses.

Here are three examples of recent research projects carried out by the conservators at the Oriental Institute. Each one is of interest in its own right; together they reveal the new direction that conservation is taking here at the Oriental Institute.

REASSESSING PAST INTERPRETATIONS OF WALL PAINTINGS AT KHORSABAD

Prior to beginning a conservation treatment, information regarding the object is researched to determine the materials and technology comprising the artifact. Registration records, books published by the Oriental Institute, and excavation reports can often provide descriptions of the composition of the object that influence the treatment options. In some cases, these sources describe objects using visual identification based on color, texture, and deterioration products. In others, materials are identified with chemical tests or analytical techniques available at the time. In a few instances the objects have been misidentified, thus affecting later references to the object in the archaeological literature. Often the opportunity for reassessment of the initial identification in order to determine its accuracy has not arisen and the material remains misidentified. However, with the conservators' current access to analytical equipment, questions regarding past object identifications can be clarified.

These types of questions arose in the treatment of an object for the reinstallation of the new Mesopotamian Gallery. A fragment of a wall painting (OIM A11798) from Khorsabad was brought to the laboratory for condition assessment and possible treatment (fig. 1). Prior to treatment the object was examined and researched using the original published information regarding wall paintings at Khorsabad (Loud 1936; Loud and Altman 1938). The wall painting fragment was found in the throne room of the palace (Court VII), where sections of the wall were painted with geometric patterns (fig. 2). This fragment consisted of red, blue, white, and black pigments, in a circular design, painted on mudbrick. Because the fragment was in fragile condition and the mudbrick was crumbling, it required consolidation. A dilute resin would need to be applied to the object to strengthen it, and it was important to analyze and identify all the materials prior to this treatment.

A published description of an excavated wall from Residence K at the site stated its structure consisted of mudbrick, a layer of gray mud, whitewash (referred to as lime), and a pigment layer (Loud and Altman 1938). Samples of red and blue pigment were analyzed in the 1930s identifying the red pigment as mercuric sulfide and the blue as lapis lazuli (a sulfur contain-

ing sodium aluminum silicate). No reference to the techniques used to identify the pigments was given. The results of the examination and analysis of these particular samples were general and used to explain the construction of all the interior painted walls at the site.

More recent publications, discussing Mesopotamian wall paintings, rely on the original examination and analysis as the source for discussing wall painting technology at Khorsabad (Nunn 1988; Moorey 1994). No new analysis on any excavated wall painting fragments has been conducted since the initial 1930s examination. This lack of further investigation is significant because based on the initial interpretations, the techniques used at Khorsabad are not commonly found in Mesopotamia during this period (ca. 722–705 BC). This is particularly true for the pigments identified, since mercuric sulfide and lapis lazuli are not generally used in earlier periods. Moorey (1994, p. 328) states, for example, that there is no evidence that lapis lazuli was used as a pigment until the Sasanian period (ca. AD 226–637), much later than the construction of Sargon's palace (eighth century BC).

Due to the fact that recent analysis has not been conducted on Khorsabad wall paintings, and that the pigments identified were considered rare for the time period, samples were taken from our wall painting fragment for examination and analysis. Each of the pigments present (red, blue, white, black, and the layer of white over the red pigment) and the mudbrick were analyzed. A cross section from the red-pigmented area was examined to determine the structure of the wall painting.

Although pigments are generally analyzed using polarized light microscopy or x-ray diffraction (XRD) to determine specific minerals, the SEM with energy dispersive spectroscopy (EDS) could be used to exclude or identify possible pigments based on the elements present in the sample. Analysis of the red and blue pigment immediately produced interesting results. No mercury was present in the sample of red pigment, ruling out the possibility that it could be mercuric sulfide. Instead there seemed to be a large amount of iron present. It is likely that the red pigment is actually an iron oxide based material (or ochre), more commonly used for red (Mora, Mora, and Philippot 1984). Analysis of the blue pigment detected the presence of copper not found in lapis lazuli $[(\text{Na,Ca})_8 (\text{AlSiO}_4)_6 (\text{SO}_4, \text{S, Cl})_2]$. In addition sodium, a component of lapis, was not present in the sample (Plesters 1994). The blue pigment did contain large amounts of silica, calcium, and copper, the major elements found in "Egyptian blue" $(\text{CaCuSi}_4\text{O}_{10})$, a frit-like material more commonly used for blue pigments in antiquity (Mora, Mora, and Philippot 1984; Riederer 1997). The white pigment is more than likely calcium carbonate based. The black pigment contained mainly carbon and oxygen with a few impurities, suggesting it could be organic in nature, possibly made from burnt organic material (Mora, Mora, and Philippot 1984). The white layer overlying areas of the pigment is also calcium carbonate

based. Since it is not a cohesive layer and obscures the decoration, it is more than likely a burial accretion.

Microscopic examination of the cross section also revealed interesting information. No "whitewash" layer of lime was discernible in the sample taken. It seems as if the red pigment is painted directly onto the mudbrick. Examination of wall painting fragments from Nippur (OIM A31601) for comparison showed a distinct layer of white ground between the pigment and mudbrick. No such layer is visible in the Khorsabad fragment. Only three layers are visible: mudbrick, red pigment, and the overlying carbonate layer (fig. 3). From the microscopic examination it appears that the pigments on A11798 were painted directly onto a mud ground, a technique also used at other Mesopotamian sites (Moorey 1994).

If the pigments were painted directly onto the mudbrick, then a binder might have been added. Possible binders used in this period include albumin, casein, gums, and resins (Moorey 1994, pp. 328–29). Because of the lack of access to analytical equipment such as Fourier Transform Infrared Spectrometry (FTIR) or Gas Chromatography Mass Spectrometry (GC-MS), the presence of an organic binder could not be determined. Microchemical tests, using a protein indicator, were used on a sample of blue pigment, but the result was inconclusive. Without the use of analytical methods that can identify organic compounds, the presence and nature of the binding media cannot be completely identified.

Although the analysis discussed above is preliminary and further investigation should be undertaken, this examination has provided a great amount of information on this wall painting fragment. The analytical results and microscopic examination indicate that earlier interpretations of wall painting structure at Khorsabad may not be applicable to all painted walls found at the site. The results stress the need to keep in mind that information from past examinations and analytical results may not always be accurate, especially if the methodology is not explained. It is important to look over the analytical results presented in older archaeological literature with a critical eye, understanding the limitation of the techniques used in the

past to identify materials. The continued use of and access to current analytical techniques, such as the SEM-EDS, in the field of conservation can help to answer many questions regarding ancient technology and clarify misidentified material.

THE IDENTIFICATION OF AN UNUSUAL CORROSION PRODUCT ON COPPER ALLOY ARTIFACTS

Each year, the Getty Postgraduate Conservation Intern completes a research project during the internship year. The research project is an integral part of the internship and promotes conservation education and career development.

The 2000/2001 internship research project focused on the identification of an unusual light blue corrosion product found

on some of the copper alloy artifacts in the Oriental Institute's collection. The corrosion is a light blue mineral with needle-like (acicular) crystals that, when present, can be seen on the outer layers of corrosion on copper alloy artifacts. Because its identification was unknown it was also unknown whether or not it was unstable and therefore potentially damaging to the rest of the collection.

A brief survey of the metals collection revealed that the corrosion is present on at least fifty-seven copper alloy artifacts from five separate archaeological sites: Khafajah and Tell Asmar in Iraq, Tell Fakhariyah in Syria, Megiddo in Israel, and Abydos in Egypt. With the Oriental Institute Museum registration and field numbers for each artifact, it was then necessary to research

each artifact to find a common factor that would help explain the occurrence of the unusual corrosion. John Larson, Oriental Institute Museum Archivist, provided his time, expertise, and valuable access to field records and other archived records so that the context of each artifact with the unusual corrosion could be researched. It was soon determined that, although the artifacts came from different periods and regions, they have similar archaeological contexts: contained/localized contexts such as vessel burials, hoards, and foundation deposits. The context descriptions below focus on the artifacts with samples that were used through the entirety of the project.

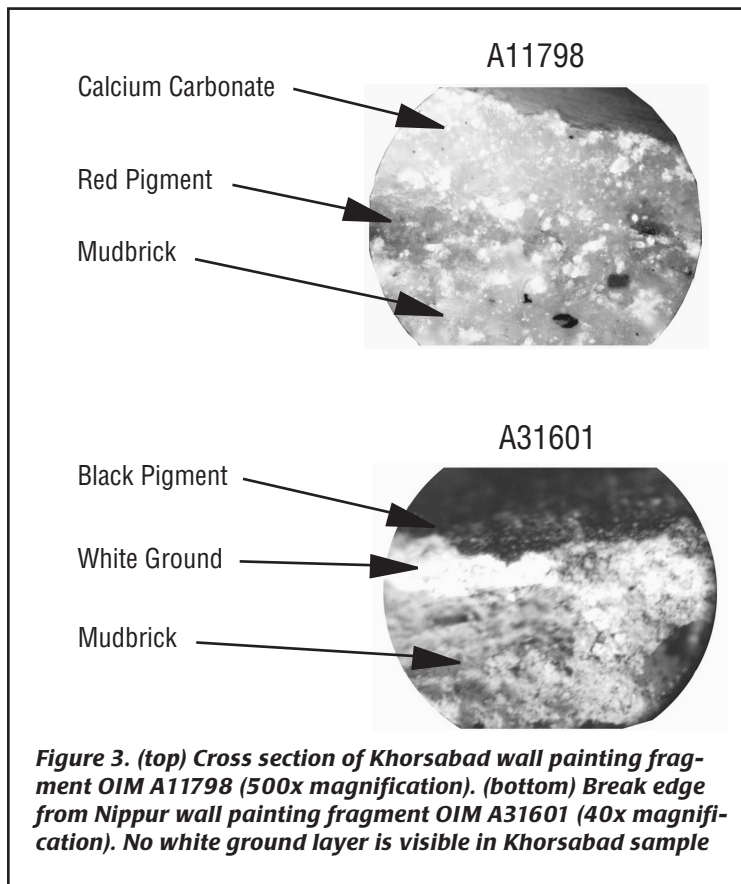


Figure 3. (top) Cross section of Khorsabad wall painting fragment OIM A11798 (500x magnification). (bottom) Break edge from Nippur wall painting fragment OIM A31601 (40x magnification). No white ground layer is visible in Khorsabad sample

A well-documented early Akkadian period hoard from Tell Asmar contributed the most artifacts (thirty-two) to the project. The hoard contained at least seventy copper alloy artifacts such as bowls, lamps, strainers, and a perforated drinking straw. The hoard, which had been sealed in the southeastern corner of a residence wall, was exposed by accident during the excavation. It is unknown why the hoard was sealed in the wall (Delougaz, Hill, and Lloyd 1967; Frankfort 1934). A strainer (OIM A11273) from the hoard was sampled for analysis (fig. 4).

The unusual corrosion was also found on three bracelets from an Early Iron Period I infant burial at Megiddo. One bracelet, OIM A14136, was sampled for the project (fig. 5). The bracelet, with remains of textile still attached, was excavated from a sealed ceramic vessel set into the rock floor of Tomb 37c. The infant burial also contained textile, beads, and other bracelets that have the unusual corrosion (Guy 1938).

The sampled artifacts from Abydos are model tools excavated from two foundation deposits. Oriental Institute Museum (OIM) registration records date one deposit to the Eighteenth Dynasty and the other to the Twentieth Dynasty. OIM 8250, one of the model tools, came from the Eighteenth Dynasty foundation deposit at the temple of Osiris (fig. 6). It was found with pottery and other copper alloy tools, some of which were inscribed with the name of Thutmose III (Petrie 1902).

A total of fifty-one samples of corrosion were taken for instrumental analysis. Of the total samples analyzed, thirty-one were of the unusual light blue corrosion and the remaining twenty samples were of other types of corrosion (azurite, malachite, etc.) associated with or similar to the unusual corrosion. During the initial survey of the collection, the unusual corrosion was found to occur primarily with malachite and not with azurite. This is an interesting observation since malachite and azurite, both copper carbonates, differ only in their numbers of carbonate groups: azurite has one more carbonate group (CO_3)



Figure 4. Copper alloy sieve OIM A11273 from Tell Asmar, Iraq, with most abundant occurrence of unusual corrosion, covering 25% of mineralized surface



Figure 5. Copper alloy bracelet OIM A14136 from Megiddo, Israel, with unusual corrosion primarily in cracks in corrosion layers

than malachite. Comparisons between the different corrosion samples were necessary to determine if the unusual corrosion varied in chemical makeup or crystal habit. Sample sizes varied from just a few crystals to small clusters of crystals. Each crystal averaged approximately thirty microns in length (1 micron = 0.1 mm or 0.01 cm).

The University of Chicago Department of Geophysical Sciences houses the JEOL SEM-EDS, XRD, and Electron Probe Microanalysis (EPMA) instruments used during the course of the research project. The SEM-EDS instrument is a valuable resource and it is used regularly for low vacuum imaging and qualitative analysis of samples obtained from artifacts undergoing condition assessments and conservation treatments. Dr. Ian Steele, Senior Research Associate and Director, Electron Probe Lab, Department of Geophysical Sciences, kindly provided his time and expertise for use of the XRD and EPMA instruments.

All corrosion samples were first analyzed using the SEM-EDS to form a general idea of the chemical makeup of the unusual corrosion. Once this phase of the project was complete, a group of three samples of the unusual corrosion were chosen for XRD analysis. From the XRD analysis group, one sample was chosen for EPMA.

An SEM image of a sample taken from a Tell Asmar sieve (OIM A11273) is shown in figure 7. EDS analysis of the sample revealed the presence of chlorine (Cl), which was cause for concern since its presence in active copper corrosion ("bronze disease") is well known (fig. 7). Because the corrosion identity was unknown, its stability was unknown and therefore the implications for the rest of the copper alloy artifacts in the metal collection were unknown. Identifying the corrosion would allow the conservation staff to assess accurately the condition of copper alloy artifacts with the corrosion so an appropriate treatment plan could be designed.

XRD analysis can provide a very accurate identification of crystalline materials and so it was used to analyze three samples: Abydos (OIM 8250), Tell Asmar (OIM A11273), and

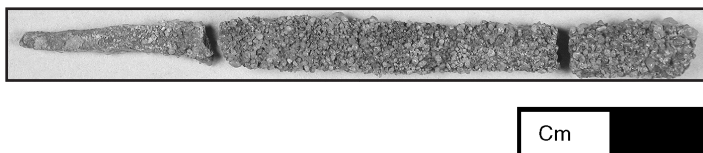


Figure 6. Copper alloy model tool OIM 8250 from Abydos, Egypt, with unusual corrosion formed around sand grains

Megiddo (OIM A14136). These samples were chosen for their well-documented archaeological contexts and diverse histories. Using samples previously analyzed with SEM-EDS reduced the need for additional sampling and insured that the XRD analysis was being done on the same corrosion.

Thousands of minerals and other crystalline materials each with a unique diffraction pattern have been analyzed with XRD. The XRD results for each sample were compared to these published data in X-Ray Diffraction Tables (Fang and Bloss 1966) and Powder Diffraction File (Joint Committee on Powder Diffraction Standards 1967). The combination of the visual appearance of the corrosion (light blue, acicular crystals), its chemical makeup from SEM-EDS, and the results of the XRD analysis led to the identification of the corrosion as connellite, a copper chloride sulfate hydroxide hydrate.

EPMA coupled with Wavelength Dispersive Spectroscopy (WDS) was done on one sample from Megiddo (OIM A14136). This sample was chosen primarily for its larger size compared to the other samples used in XRD analysis. The sample was comprised of two "clumps" of crystals approximately fifty microns in diameter. Since WDS is approximately ten times more sensitive than EDS the results provided a more accurate chemical identification of connellite. Impurities, such as silicon (Si) and iron (Fe), found in some of the EDS analyses, were shown to be located in areas between crystals rather than as part of the connellite crystal structure.

The occurrence of connellite in the Oriental Institute's collection is less than that of common copper corrosion products such as malachite and cuprite. As described previously, the pres-

ence of connellite on copper alloy artifacts seemed to coincide with archaeological contexts such as hoards, foundation deposits, and vessel burials. These contexts might have been slightly anaerobic and dry, which would have provided optimal conditions for the formation of connellite. Connellite forms in conditions similar to those required for the formation of malachite such as a partial pressure for CO_2 equal to that of the atmosphere and a neutral to slightly basic pH. Azurite formation requires a slightly higher partial pressure. Other requirements are the availability of the ions such as sulfate (SO_4^{2-}) and Cl^- . The availability of Cl^- must be low, otherwise the conditions favor the formation of other copper chlorides, such as atacamite, which are associated with active copper corrosion (Pollard, Thomas, and Williams 1990; Scott 2000). The information regarding connellite formation explains the observations of the artifacts in the Oriental Institute's collection. Connellite was found associated with malachite and various copper chlorides but not with azurite.

The presence of connellite on copper alloy artifacts in the Oriental Institute's collection or any museum collection should not cause concern. Its stability has been reported to be between malachite and paratacamite (Scott 2000). However, connellite stability, with respect to changes in relative humidity (%RH) in museum environments, has yet to be studied. Still, the occurrence of active corrosion minerals such as paratacamite and clinoatacamite is of a far greater concern for collections of copper alloy artifacts.

AN ANALYSIS OF GLAZED BRICKS FROM KHORSABAD

The SEM will play an important part in this year's Getty Intern research project: an analysis of the Oriental Institute's collection of glazed bricks excavated from the facade of the Sîn temple at Khorsabad. These artifacts constitute a valuable component of the extant collection of Mesopotamian, and specifically Neo-Assyrian, decorative architectural artifacts. As a portion of the bricks is to be displayed in the newly renovated Mesopotamian

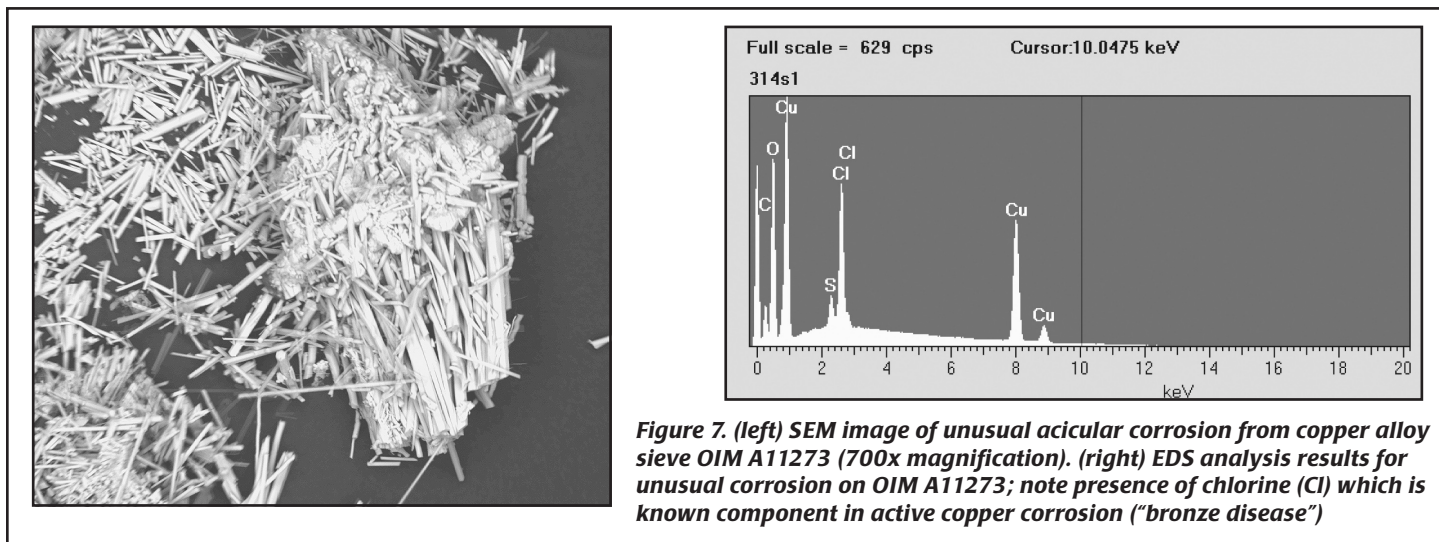


Figure 7. (left) SEM image of unusual acicular corrosion from copper alloy sieve OIM A11273 (700x magnification). (right) EDS analysis results for unusual corrosion on OIM A11273; note presence of chlorine (Cl) which is known component in active copper corrosion ("bronze disease")

Gallery, the attainment of information concerning both the composition and the technology involved in the manufacture of these objects has become a priority. With the knowledge gained from the SEM analysis of the glazed bricks, more informed choices concerning conservation treatment can be made possible. In addition, since no published analyses of the Khorsabad bricks exist at this point, this is an opportunity to make an important contribution to the current understanding of Mesopotamian glazed brick technology.

The glazed bricks, which date to the time of Sargon II (742–705 BC), were originally discovered by Victor Place during excavations at Khorsabad in the late nineteenth century (Matson 1986, p. 138). A mirror image of the same scene was visible on either side of the entrance to the Sîn temple of the ancient city (fig. 8). A processional frieze is depicted in which a lion, a bird, and a bull move toward the doorway. In addition, a fig tree, seeder/plough, and two human figures are seen on each tableau. The human figure at the head of the procession is identified as King Sargon while his vizier is depicted at the end of the procession (Moorey 1994, p. 317). Rosettes between narrow parallel lines border the scene. The polychrome design of the tableaux consisted of black, blue, yellow, green, and white colored glazes.

The tableaux were uncovered a second time by Gordon Loud during excavations at Khorsabad in the early 1930s. Though badly weathered, both tableaux were excavated and one was shipped to Chicago to become part of the Oriental Institute's collection (the other tableau was shipped to Baghdad). The museum received thirty-five crates, each of which contained approximately eight bricks. To this day, the majority of the bricks remain in the object storage area of the museum within their original crates; however, in 1990, one of the crates was opened by the Oriental Institute conservators. While the bricks were found to be in extremely fragile condition, it was noted that the glazed decoration was still visible in certain areas. Even today, the decoration is significantly more vibrant than is represented by the excavation photographs (fig. 9).



Figure 9. Crate #15 is packed with glazed bricks from Khorsabad, opened June 2002 by conservators; white and yellow glazed rosettes are visible

Ancient Near Eastern glazed bricks have been the subject of a number of scientific analyses in the past (see Hedges and Moorey 1975; Dayton 1978; Fitz 1982; Matson 1986; Freestone 1991). Several different techniques have been employed in these analyses depending on the research questions to be answered. Both the composition of the glaze material as well as the fabric of the bricks themselves have been the object of study. For example, analyses by Dayton revealed that the fabric of a glazed brick from Nimrud dating to the ninth century BC was composed of a vegetable-tempered clay that was fired to approximately 900° C. Similarly, glazed plaques dating to the same time period have been found to be made from calcareous clays tempered with chaff and fired at a temperature higher than 850° C (Moorey 1994, p. 319).

Later, in the Achaemenid period (539–331 BC), faience (or sintered quartz) began to replace clay as the brick fabric (Moorey 1994, p. 319). For instance, Dayton's analysis of a brick from Persepolis revealed that the composition of the fabric was made up of 90% silica oxide and 9% calcium oxide. This change to the use of faience was undoubtedly due to the fact that glazes are more likely to adhere to a brick fabric made from this material.

Several analyses have focused specifically on the chemical constituents of the glazes applied to decorative bricks. These analyses have revealed that the base glazes are characterized as high potash, high magnesia, soda-silica glazes with antimony-based opacifiers (Moorey 1994, p. 319). R. H. Brill (1970, p. 122) tabulated the results of several analyses to show both the

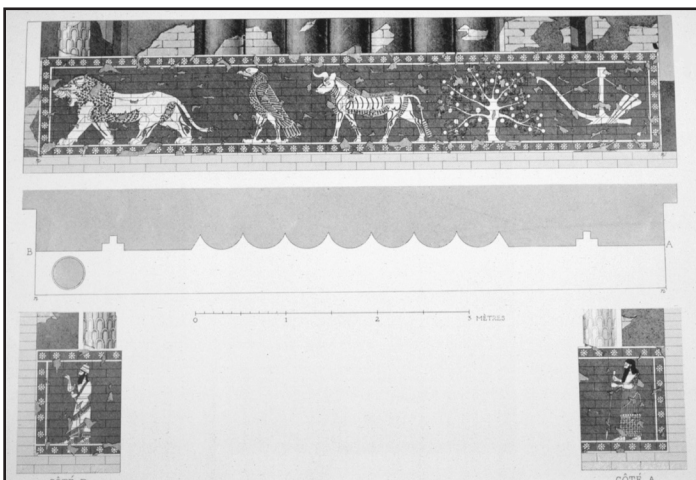


Figure 8. Victor Place's drawing of tableau of glazed bricks at right of entrance to Sîn temple, Khorsabad (from Loud 1936, fig. 104)

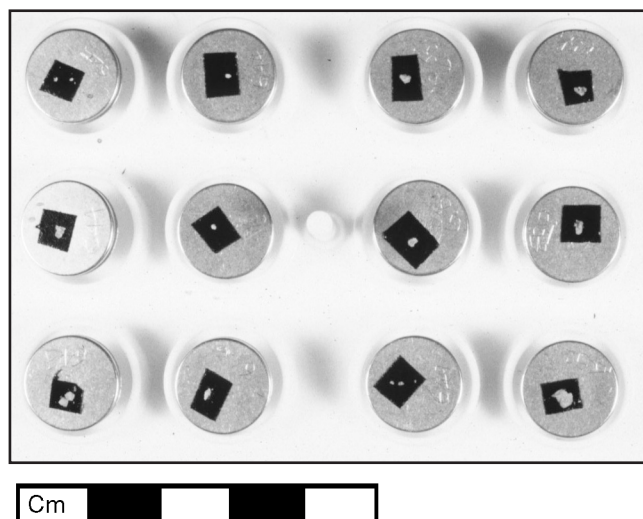


Figure 10. Brick fabric and glaze samples mounted on aluminum stubs with carbon tape in preparation for SEM analysis

standard composition of Mesopotamian glazes as well as the standard percentages of colorants and colorant opacifiers. Blue glazes were colored with oxides of copper and/or cobalt. Purple was created with manganese oxide. Amber and green glazes result from the presence of iron. Tin has also been found in green glazed bricks from the Neo-Assyrian period (Hedges and Moorey 1975, p. 31). Black glazes could have been made using a mixture of iron, manganese, cobalt, and/or copper oxides. Copper was used to create red colors. Calcium antimonate was used for opaque white. Opaque yellow was created with lead antimonate. Calcium antimonate and copper oxide or cobalt oxide created a turquoise glaze. Finally, lead antimonate and copper or cobalt oxide was used for opaque green colors.

While other types of analyses will also be employed, the SEM will play a pivotal role in the current research into the composition of both the fabric of the Khorsabad bricks and the

glazes used to decorate their surfaces. It is important to note that the fragmentary condition of the bricks provides an ideal opportunity for analysis since small fragments of glaze as well as brick fabric have already detached from the surfaces of the bricks. The loose fragments of both the brick fabric and the different colored glazes which form the basis of this study were documented and photographed in situ before removal. These samples were then mounted on aluminum stubs using carbon tape in preparation for SEM analysis (fig. 10). Cross-section samples showing the interface between the glaze and the brick fabric are also being prepared for analysis with the SEM.

With this instrument, it will be possible to view the different samples at significantly higher magnification than would be possible using other types of microscopy. The superior imaging made possible by the SEM will allow for further characterization of the physical appearance of these constituents of the bricks. In addition, EDS analysis will be performed on the samples in order to determine, both qualitatively and quantitatively, the chemical constituents of the fabric and the glazes. These results will then be compared with previous analyses of similar objects in order to determine how the composition of these objects corresponds with the current understanding of Mesopotamian glazed brick technology. In addition, knowledge of the exact composition of the different components of the artifacts will provide the conservators with the information required to choose the appropriate treatment materials to prepare these important objects for display.

ACKNOWLEDGMENT

Sincere thanks are extended to the staff of the University of Pennsylvania Museum for allowing access to their collection of archaeological artifacts and archival field records. The information obtained from their collection and archives was used during the 2000–2001 Getty Postgraduate Internship.

REFERENCES

- Brill, R. H.
1970 "The Chemical Interpretation of the Texts." In *Glass and Glassmaking in Ancient Mesopotamia: An Edition of the Cuneiform Texts Which Contain Instructions for Glassmakers with a Catalogue of Surviving Objects*, by A. Leo Oppenheim et al., Corning Museum of Glass Monographs 3. Corning: Corning Museum of Glass.
- Dayton, John
1978 *Minerals, Metals, Glazing and Man: Or, Who Was Sesostri I?* London: Harrap.
- Delougaz, Pinhas; H. D. Hill; and Seyton Lloyd
1967 *Private Houses and Graves in the Diyala Region*. Oriental Institute Publications 88. Chicago: University of Chicago Press.
- Fang, Jen Ho, and F. Donald Bloss
1966 *X-ray Diffraction Tables: Determination of d , $\sin^2\theta$, or Q for 0.01° Intervals of 2θ for the Wavelengths $K\alpha$, $K\alpha_1$, $K\alpha_2$, and $K\beta$ of Copper, Iron, Molybdenum, and Chromium Radiations and for $L\alpha_1$ of Tungsten*. Carbondale: Southern Illinois University Press.
- Fitz, S. C.
1982 "The Coloured Glazes of New-Babylonian Wall Facings." *Ceramic Forum International: Berichte der Deutschen Keramischen Gesellschaft* 59: 179–85.
- Frankfort, Henri
1934 *Iraq Excavations of the Oriental Institute, 1932/33: Third Preliminary Report of the Iraq Expedition*. Oriental Institute Communications 17. Chicago: University of Chicago Press.
- Freestone, I. C.
1991 "Technical Examination of Neo-Assyrian Glazed Wall Plaques." *Iraq* 53: 55–58.
- Guy, P. L. O.
1938 *Megiddo Tombs*. Oriental Institute Publications 33. Chicago: University of Chicago Press.
- Hedges, R. E., and P. R. S. Moorey
1975 "Pre-Islamic Ceramic Glazes at Kish and Nineveh in Iraq." *Archaeometry* 17: 25–43.
- Joint Committee on Powder Diffraction Standards
1967 *Powder Diffraction File: Sets 6–10* (Revised). Swarthmore: Joint Committee on Powder Diffraction Standards.

Loud, G.

1936 *Khorsabad, Part 1: Excavations in the Palace and at a City Gate*. Oriental Institute Publications 38. Chicago: University of Chicago Press.

Loud, G., and C. B. Altman

1938 *Khorsabad, Part 2: The Citadel and the Town*. Oriental Institute Publications 40. Chicago: University of Chicago Press.

Matson, F. R.

1986 "Glazed Brick from Babylon — Historical Setting and Microprobe Analyses." In *Technology and Style*, edited by W. D. Kingery, pp. 133–56. *Ceramics and Civilization 2*. Columbus: American Ceramic Society.

Moorey, P. R. S.

1994 *Ancient Mesopotamian Materials and Industries: The Archaeological Evidence*. Oxford: Clarendon Press.

Mora, P.; L. Mora; and P. Philippot

1984 *Conservation of Wall Paintings*. London: Butterworth-Heinemann.

Nunn, A.

1988 *Die Wandmalerei und der glasierte Wandschmuck im alten Orient*. Leiden: E. J. Brill.

Petrie, W. M. Flinders

1902 *Abydos, Part 1*. Egypt Exploration Fund Memoir 22. London: Egypt Exploration Fund.

Plesters, J.

1994 "Ultramarine Blue, Natural and Artificial." In *Artists' Pigments: A Handbook of Their History and Characteristics*, Volume 2, edited by A. Roy, pp. 37–54. Oxford: Oxford University Press.

Pollard, A.; R. Thomas; and P. Williams.

"Connellite Stability Relationships with Other Secondary Copper Minerals." *Mineralogical Magazine* 54. 425–30.

Riederer, J.

1997 "Egyptian Blue." In *Artists' Pigments: A Handbook of Their History and Characteristics, Volume 3*, edited by E. W. Fitzhugh, pp. 23–45. Washington, D.C.: National Gallery of Art.

Scott, D. A.

2000 "A Review of Copper Chlorides and Related Salts." In *Bronze Corrosion and As Painting Pigments*. *Studies in Conservation* 45: 39–53.

Vanessa Muros and Vicki Parry hold M.Sc. degrees in the conservation of archaeological materials from the Institute of Archaeology, University College London, London, England. Alison Whyte is a recent graduate of the M.A.C. program in art conservation from Queen's University, Ontario, Canada.

CAROL MEYER AWARDED

At the triennial meeting in Tucson 6 May, the Society of Woman Geographers (SWG) presented its Outstanding Achievement award to Carol Meyer for her work at Bir Umm Fawakhir. The SWG was founded in 1925 by a group of women travelers and researchers because the Explorers Club at that time did not accept women. Other past and present members of the SWG at the Oriental Institute include Janet Johnson, Lisa Heidorn, Georgie Maynard, and Emily Teeter.



Carol Meyer mapping at Bir Umm Fawakhir, Egypt (OIC 28, back cover)

OCTOBER 2002

6 Sunday

**The Dead Sea Scrolls: Secrets of the Caves**

1:30 PM, Breasted Hall

See page 12 for more information

9 Wednesday

**Historic Art/Contemporary Artists: An Open House for Educators**

3:30–6:00 PM,

Oriental Institute and Robie House

See page 16 for more information

12 Saturday

**Ancient Egypt and the Bible**

Frank Yurco

Continues through 7 December

10:00 AM–12:00 NOON, Oriental Institute

See page 13 for more information

13 Sunday

**Tales from Ancient Egypt**

1:00–4:00 PM, Oriental Institute

See page 15 for more information

13 Sunday

**Mummies Made in Egypt**

1:30 PM, Breasted Hall

See page 12 for more information

16 Wednesday

**Dig This! The Real Indiana Jones**

6:00–9:30 PM, Oriental Institute

See page 11 for more information

16 Wednesday

**Science and Archaeology: The Study of Ancient DNA**

Nitzan Mekel-Bobrov

Continues through 11 December

7:00–9:00 PM, Oriental Institute

See page 13 for more information

17 Thursday

**Before the Bible: The Archaeology of Prehistoric Israel and the Levant**

Aaron A. Burke

Continues through 19 December

7:00–9:00 PM, Oriental Institute

See page 14 for more information

19 Saturday

**Can You Dig It?**

10:00 AM–12:00 NOON, Oriental Institute

See page 16 for more information

19 Saturday

Ancient Egypt and the Bible (cont.)

See 12 October

20 Sunday

**Saving the Sphinx**

1:30 PM, Breasted Hall

See page 12 for more information

21 Monday



21 Monday



23 Wednesday

24 Thursday

26 Saturday



26 Saturday

27 Sunday



30 Wednesday



30 Wednesday

31 Thursday

Hieroglyphs by Mail

Emily Teeter

Continuing for 16 weeks

See page 14 for more information

Science and Archaeology Online

Nitzan Mekel-Bobrov

Continuing for 16 weeks

See page 15 for more information

Science and Archaeology (cont.)

See 16 October

Before the Bible (cont.)

See 17 October

University of Chicago Humanities Open House

10:00–11:00 AM: The Ancient Persians:

How They Built and Lost an Empire

1:30–2:30 PM: The Legacy of the Ancient Near East

3:00–4:00 PM: The Ancient Near East and the Bible

See page 11 for more information

Ancient Egypt and the Bible (cont.)

See 12 October

Cleopatra's Palace: In Search of a Legend

1:30 PM, Breasted Hall

See page 12 for more information

Sumerian Writing: Some Problems Relating to Origin, Nature, and Development

Chris Woods

8:00 PM, Breasted Hall

See page 11 for more information

Science and Archaeology (cont.)

See 16 October

Before the Bible (cont.)

See 17 October

NOVEMBER 2002

2 Saturday

Ancient Egypt and the Bible (cont.)

See 12 October

3 Sunday

**Alexander the Great and the Battle of Issus**

1:30 PM, Breasted Hall

See page 12 for more information

DECEMBER 2002

- 6 Wednesday Science and Archaeology (cont.)
See 16 October
- 7 Thursday Before the Bible (cont.)
See 17 October
- 9 Saturday Ancient Egypt and the Bible (cont.)
See 12 October
- 10 Sunday Family Day
1:00–4:00 PM, Smart Museum
See page 15 for more information
- 10 Sunday No film showing
- 13 Wednesday Two Phoenician Shipwrecks off Ashkelon in the Deep Sea
Lawrence E. Stager
8:00 PM, Breasted Hall
See page 11 for more information
- 13 Wednesday Science and Archaeology (cont.)
See 16 October
- 14 Thursday Before the Bible (cont.)
See 17 October
- 16 Saturday Under Wraps!
1:00–3:00 PM, Oriental Institute
See page 16 for more information
- 16 Saturday Ancient Egypt and the Bible (cont.)
See 12 October
- 17 Sunday Out of the Fiery Furnace: From Stone to Bronze
1:30 PM, Breasted Hall
See page 12 for more information
- 20 Wednesday Science and Archaeology (cont.)
See 16 October
- 23 Saturday Ancient Egypt and the Bible (cont.)
See 12 October
- 24 Sunday Out of the Fiery Furnace: From Swords to Ploughshares
1:30 PM, Breasted Hall
See page 12 for more information

- 1 Sunday No film showing
- 4 Wednesday Science and Archaeology (cont.)
See 16 October
- 5 Thursday Before the Bible (cont.)
See 17 October
- 7 Saturday Ancient Egypt and the Bible (ends)
See 12 October
- 8 Sunday Mount Nemrud: Throne of the Gods
1:30 PM, Breasted Hall
See page 12 for more information
- 11 Wednesday Science and Archaeology (ends)
See 16 October
- 12 Thursday Before the Bible (cont.)
See 17 October
- 15 Sunday Pyramid
1:30 PM, Breasted Hall
See page 12 for more information
- 19 Thursday Before the Bible (ends)
See 17 October
- 22 Sunday No film showing
- 29 Sunday No film showing
- All programs subject to change

KEY TO SYMBOLS



ADULT EDUCATION COURSES



CORRESPONDENCE / INTERNET COURSES



DINNERS/LUNCHEONS



FAMILY/CHILDREN'S PROGRAMS



MEMBERS LECTURES



SPECIAL EVENTS



FILMS



TRAVEL PROGRAMS

MEMBERS LECTURES**SUMERIAN WRITING: SOME PROBLEMS RELATING TO ORIGIN, NATURE, AND DEVELOPMENT****Chris Woods****Wednesday 30 October****8:00 PM, Breasted Hall (Reception Following)**

It is often said that speech is to being human as writing is to civilization. Thus, what we have to say about arguably the world's first writing system — and one among only four instances in which writing was invented *ab novo* — is of considerable importance, going far beyond the confines of the study of the ancient Near East. Yet Sumerian writing remains poorly understood, not only in its origins and evolution, but also in terms of the very nature of the mature script — a difficulty that bedevils our understanding of Sumerian grammar. In this talk Professor Woods will discuss some of these problems, touching upon the controversial theories of Schmandt-Besserat, the so-called precursors to writing, and proto-cuneiform, as well as pointing out some similarities shared between Sumerian writing and other early writing systems.

Christopher Woods earned his degree in Assyriology from Harvard in 2001. He has spent the last two years as a Junior Fellow in the Harvard Society of Fellows. His research interests include Sumerian writing and grammar, third-millennium history, and Sumerian literature. He is currently writing a book concerning Sumerian grammar, specifically the prefix system, a topic that derives in part from his dissertation; he is also working on a book devoted to the Sumerian writing system.

TWO PHOENICIAN SHIPWRECKS OFF ASHKELON IN THE DEEP SEA**Lawrence E. Stager****Wednesday 13 November****8:00 PM, Breasted Hall (Reception Following)**

Professor Stager will present the results of his archaeological investigation of two Iron Age Phoenician shipwrecks that were found in deep water in the eastern Mediterranean. These wrecks were discovered in the course of an ongoing collaboration with the deep-sea explorer Robert Ballard, in which archaeologists led by Professor Stager are working with engineers and scientists led by Dr. Ballard to develop techniques for studying and retrieving artifacts located on the sea bottom, far beyond the reach of divers.

Professor Lawrence E. Stager is an archaeologist at Harvard University whose area of specialty is the Mediterranean and the Levant. He has directed excavations in Cyprus, Tunisia, and Israel. Since 1985 he has been the director of the Leon Levy Expedition to Ashkelon. In 1999 he directed the archaeological team which was part of Robert Ballard's expedition to survey ancient shipwrecks in the deep sea west of Ashkelon. He holds B.A., M.A., and Ph.D. degrees from Harvard University. From 1973 to 1986 he taught archaeology and history in the Oriental Institute of the University of Chicago. Since 1986 he has been the Dorot Professor of the Archaeology of Israel in the Department of Near Eastern Languages and Civilizations and in Anthropology at Harvard.

UNIVERSITY EVENTS**FOR STUDENTS****DIG THIS! THE REAL INDIANA JONES****Wednesday 16 October****6:00–9:30 PM****FREE!**

Archaeologists — are they wimpy bookish scholars or romantic superheroes? Could they be a mix of both? Come to the Oriental Institute and decide for yourself! View *Raiders of the Lost Ark* and see Harrison Ford in his first role as Indiana Jones, who risks life and limb to protect an archaeological treasure from some of the nastiest villains ever. It's all to save the world, what else? (Directed by Steven Spielberg — 115 min.)

Then meet some archaeology graduate students, who'll tell you the truth (and there is some!) about Indy. They'll show you treasures in our museum, and you'll go behind locked doors to witness some discoveries before they hit the galleries. All this and free snacks, too! Don't miss it!

FOR PARENTS AND THE COMMUNITY**University of Chicago Humanities Open House****Saturday 26 October**

Oriental Institute Docents offer three special presentations highlighting the Egyptian and Persian Galleries

THE ANCIENT PERSIANS:**HOW THEY BUILT AND LOST AN EMPIRE****10:00–11:00 AM**

Join us for a slide presentation and gallery talk spotlighting the museum's monumental artifacts from Persepolis, administrative center of the ancient Persian Empire. This great empire stretched from Greece to Egypt to India until its conquest by Alexander the Great in 330 BC.

THE LEGACY OF THE ANCIENT NEAR EAST**1:30–2:30 PM**

Discover where Western civilization really began. A tour of the Egyptian and Persian Galleries provides a glimpse into the long and sometimes forgotten past.

THE ANCIENT NEAR EAST AND THE BIBLE**3:00–4:00 PM**

Explore exhibits in the Egyptian and Persian Galleries to discuss their relationship with biblical texts in the books of Exodus, Esther, Ezra, and Nehemiah.

SUNDAY FILMS

Each Sunday afternoon you can enjoy the best in documentary films on the ancient Near East at the Oriental Institute. Films begin at 1:30 PM. Running time ranges from 30 to 50 minutes unless otherwise noted. Admission is free, and docent-led guided tours follow each film showing.

6 October *The Dead Sea Scrolls: Secrets of the Caves* — This film tells the remarkable story of the discovery and acquisition of the thousands of fragments and manuscripts known as the Dead Sea Scrolls.

13 October *Mummies Made in Egypt* — A film for the entire family, this animated and live action movie stars LeVar Burton of "Star Trek: The Next Generation."

20 October *Saving the Sphinx* — A Learning Channel production, this film shows how pollution, wind erosion, tourist traffic, and misguided restoration attempts have threatened the very existence of the Sphinx, and how artists, engineers, and scientists have joined forces to save the world's oldest colossal statue.

27 October *Cleopatra's Palace: In Search of a Legend* — Narrated by Omar Sharif, this film tells the story of the underwater excavations that led to the discovery of the remains of Cleopatra's palace in the harbor at Alexandria in Egypt.

3 November *Alexander the Great and the Battle of Issus* — This film from the A&E series *The Great Commanders* highlights the

famed military encounter that took place in 334 BC between the forces of Alexander and the mighty Persian army.

10 November — Breasted Hall closed.

17 November *Out of the Fiery Furnace: From Stone to Bronze* — This first episode from a PBS series on the discovery and use of metal resources highlights bronze, the first high-tech metal of ancient times.

24 November *Out of the Fiery Furnace: From Swords to Ploughshares* — This episode traces the transition from bronze to iron, and the impact of this change on human history.

1 December — Breasted Hall closed for Thanksgiving weekend.

8 December *Mount Nemrud: Throne of the Gods* — Discover the eighth wonder of the ancient world in this film highlighting the massive ruins located on Mount Nemrud in eastern Turkey. A source of mystery and debate for more than 2,000 years, these ruins are the focus of a remarkable documentary film that presents never-before seen archival footage of excavations, on-site interviews with scholars, 3-D computer animations, and superb battle re-enactments.

15 December *Pyramid* — Bring the whole family to see this acclaimed animated and live-action film on ancient Egypt that captivates both children and adults. Recommended for ages 7 and up.

22–29 December — Breasted Hall closed for the holidays.

EDUCATION OFFICE REGISTRATION FORM

	Members	Non-members	Total
_____ Ancient Egypt and the Bible	_____ \$175	_____ \$195	_____
_____ Science and Archaeology: The Study of Ancient DNA	_____ \$175	_____ \$195	_____
_____ Before the Bible: Archaeology of Prehistoric Israel and Levant	_____ \$175	_____ \$195	_____
_____ Hieroglyphs by Mail	_____ \$205	_____ \$225	_____
_____ Science and Archaeology Online	_____ \$205	_____ \$225	_____
_____ What do Archaeologists <i>Really</i> Do?	_____ \$37	_____ \$40	_____
		TOTAL	_____

_____ I would like to become a member of the Oriental Institute. Enclosed is \$50 for an annual membership, \$40 for seniors, UC/UCH Faculty and Staff, and National Associates (persons living more than 100 miles from Chicago within the USA). Memberships may be in two names at the same address. **Please send a separate check for membership donation.**

I prefer to pay by _____ Check _____ Money order _____ MasterCard _____ Visa

Account number: _____ Expiration date: _____ Signature: _____

Name: _____ Address: _____

City/State/Zip: _____ Daytime phone: _____

Send to: The Oriental Institute Public and Museum Education Office, 1155 East 58th Street, Chicago, IL 60637

Call the Education Office at (773) 702-9507 with questions or for the adult education registration and refund policy.

The following three courses are co-sponsored by the University of Chicago's Graham School of General Studies. Each course offers Teacher Recertification CPDUs from the Illinois State Board of Education.

ANCIENT EGYPT AND THE BIBLE

Frank Yurco

Saturdays

12 October–7 December

10:00 AM–12:00 NOON

Oriental Institute

This course discusses ancient Egyptian history in terms of its possible relationship to the Old Testament. Can the *Hapiru* who built cities for Ramesses the Great (1290–1224 BC) be equated with the Hebrews described in the Bible? Was Ramesses the Great the unnamed pharaoh of the Exodus? Or could that pharaoh have been Merneptah, Ramesses' son and successor, who may also have created the earliest historical text to mention Israel? Do other Egyptian texts document the reigns of King David and King Solomon? Consider all these and other questions in this new course developed and presented by Frank Yurco.

Instructor Frank Yurco is an Egyptologist who has taught numerous courses on topics of ancient Near Eastern history, culture, and language, both at the Oriental Institute and The Field Museum.

This course meets at the Oriental Institute from 10:00 AM to 12:00 NOON on Saturday mornings beginning 12 October and continuing through 7 December 2002. There is no class on 30 November. Pre-registration is required.

CPDUs: 16

Required Texts

The Rescue of Jerusalem: The Alliance Between Hebrews and Africans in 701 B.C. Henry T. Aubin. New York: Soho Press, 2002.

The Jews of Egypt: From Rameses II to Emperor Hadrian. Joseph Mélèze Modrzejewski. Translated by Robert Cornman. Princeton: Princeton University Press, 1997.

Recommended Texts

The Exodus: The Egyptian Evidence. Ernest S. Fredricks and Leonard H. Lesko, editors. Winona Lake: Eisenbrauns, 1997.

Israel in Egypt. James K. Hoffmeier. New York: Oxford University Press, 1997.

See page 12 to register.

SCIENCE AND ARCHAEOLOGY: THE STUDY OF ANCIENT DNA

Nitzan Mekel-Bobrov

Wednesdays

16 October–11 December

7:00–9:00 PM

Oriental Institute

No scientific background is needed for this course.

Dramatic advances in science are now allowing archaeologists to explore the past in an entirely new way, looking at human history through DNA — the universal genetic code. Called biomolecular archaeology, these studies can shed light on the origins and migrations of ancient peoples, the plants and animals they used, and the diseases that plagued humankind in ancient times. This course introduces the latest developments in archaeological science, including new approaches to surmount the challenge of reconstructing the Dead Sea Scrolls, and the latest studies of ancient Egyptian mummies, which are providing new insights on health and life-style thousands of years ago.

Instructor Nitzan Mekel-Bobrov is a graduate student in the Department of Near Eastern Languages and Civilizations at the University of Chicago and the Laboratory for Molecular Evolution at The Field Museum. He is currently engaged in the study of the DNA from remains at the site of Ashkelon in Israel.

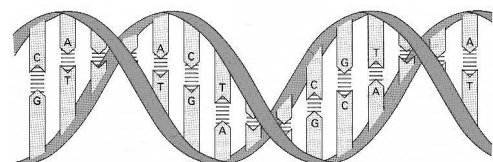
This course meets at the Oriental Institute from 7:00 to 9:00 PM on Wednesday evenings beginning 16 October and continuing through 11 December 2002. There is no class on 27 November. Pre-registration is required.

CPDUs: 16

Required Readings

The instructor will provide a packet of readings. A small materials fee for this packet will be collected at the first class session.

See page 12 to register.



BEFORE THE BIBLE: THE ARCHAEOLOGY OF PREHISTORIC ISRAEL AND THE LEVANT

Aaron A. Burke

Thursdays

17 October–19 December

7:00–9:00 PM

Oriental Institute

As the land at the center of biblical archaeology, Israel inspires awe and wonder in lay person and scholar alike. Far less well-known are the archaeological remains from earlier eras in Israel, Jordan, Lebanon, and Syria. Here, a fascinating record exists from the first presence of human populations, around one million BC, to the widespread development of cities marking the beginning of the Old Testament age, ca. 2000 BC. Discoveries from these periods vie with the grandeur of contemporary cultures elsewhere in the ancient world, presenting a rich arena for investigation and discussion.

Offered for the first time in Hyde Park, this course uses the archaeological record to explore the innovations and contributions of early peoples in ancient Israel and the Levant. Special attention is paid to cultural and settlement patterns that enhance our understanding of the historical context of the Bible, as well as the latest methods archaeologists use to study prehistoric times.

Instructor Aaron A. Burke is a Ph.D. candidate in Syro-Palestinian Archaeology in the Department of Near Eastern Languages and Civilizations at the University of Chicago. He has been a staff member of Harvard University's Ashkelon Excavations in Israel and the Oriental Institute's Early Bronze Age excavation at Yaquash, near the Sea of Galilee.

This course meets at the Oriental Institute from 7:00 to 9:00 PM on Thursday evenings beginning 17 October and continuing through 19 December 2002. There is no class on 21 November and 28 November. Pre-registration is required.

CPDUs: 16

Required Text

The Archaeology of Society in the Holy Land. 2nd edition. T. E. Levy, editor. New York: Facts on File, 1998.

Recommended Texts

The Archaeology of Ancient Israel. Ben-Tor Amnon, editor. New Haven: Yale University Press, 1992.

Archaeology of the Land of the Bible 10,000–586 BCE. Amihai Mazar. New York: Doubleday, 1990.

Archaeology: Theories, Methods, and Practice. C. Renfrew and P. Bahn. New York: Thames and Hudson, 2000.

See page 12 to register.

DISTANCE LEARNING COURSES

HIEROGLYPHS BY MAIL

Emily Teeter

Beginning 21 October and continuing for 16 weeks

Taught by correspondence, this course introduces students to Middle Egyptian, the "classical" language of ancient Egypt. Learn the fundamental structure and grammar of the language by completing the first ten lessons and exercises of J. P. Allen's *Middle Egyptian*. Mail completed lessons to the instructor, who will correct them, answer any questions, and return the lessons by mail or fax.

Instructor Emily Teeter holds a Ph.D. in Egyptology from the University of Chicago. She is Research Associate/Curator of Egyptian and Nubian Antiquities at the Oriental Institute.

Teeter will be assisted by Hratch Papazian, a Ph.D. candidate in the Department of Near Eastern Languages and Civilizations at the University of Chicago, and an experienced epigrapher and instructor of Egyptian language.

The course begins on Monday 21 October and continues for sixteen weeks. **Registration deadline is 14 October.** Pre-registration is required.

Required Text

Middle Egyptian. James P. Allen. Cambridge: Cambridge University Press, 2000.

See page 12 to register.



SCIENCE AND ARCHAEOLOGY ONLINE

Nitzan Mekel-Bobrov

Beginning 21 October and continuing for 16 weeks

Investigate the latest discoveries in archaeological science from your own home, office, or school in this special internet version of our on-campus course *Science and Archaeology: The Study of Ancient DNA* (see p. 13). Join instructor Nitzan Mekel-Bobrov in our "virtual classroom" where you have direct and exclusive access to the course through a restricted homepage on the Oriental Institute website. Conducted in eight lessons over sixteen weeks, the course includes a detailed syllabus, the instructor's lessons in the form of informative essays, supplemental readings and bibliographies, a multitude of color graphics, and links to related websites around the world. All students are automatically subscribed to a closed electronic discussion group where they can pose questions and discuss course content with each other and the instructor.

Hardware Requirements

To take this course, students need the following hardware as a minimum:

- Computer capable of accessing the world wide web
- VGA video monitor (best set at a screen resolution of 800 600 pixels or higher)
- Personal, pre-existing e-mail account that permits sending and receiving electronic mail
- Modem capable of receiving data ideally at a speed of 33,600 BPS [33.6 K] (NOT less than 28,800 bps [28.8 K])

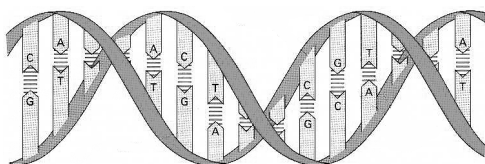
Software Requirements

The web pages for this course are optimized for Netscape v. 3.0 and higher. Other web browsers can be used that permit viewing graphics and tables (e.g., MS Internet Explorer v. 3.0 and higher). Browsers compatible with HTML version 2 or higher function best with these pages. Web browsers that do not support graphics are unsuitable.

Instructor Nitzan Mekel-Bobrov is a graduate student in the Department of Near Eastern Languages and Civilizations at the University of Chicago and the Laboratory for Molecular Evolution at The Field Museum. He is currently engaged in the study of the DNA from remains at the site of Ashkelon in Israel.

This course begins on Monday 21 October and continues for sixteen weeks. **Registration deadline is 14 October.** Pre-registration is required.

See page 12 to register.



FAMILY FESTIVALS

TALES FROM ANCIENT EGYPT

Sunday 13 October

1:00–4:00 PM

Explore the mystery and magic of ancient Egypt with master storyteller Judith Heineman and musician Daniel Marcotte. Then make an ancient Egyptian-style scroll, write your own stories in hieroglyphs, and visit "King Tut's Closet" to see yourself as a character from your favorite book about ancient Egypt. This free family festival celebrating books and reading is presented in conjunction with *The Chicago Book Festival: City of Big Readers*. Need more incentives to join us? Try our self-guided activities — treasure hunts, an interactive computer kiosk, and an up-close-and-personal visit with a famous pharaoh!

This program is supported in part by the Regents Park/University of Chicago Fine Arts Partnership. Admission is free and pre-registration is not required. Recommended for families with children ages 6 and up.



Celebrate books, authors, and reading during Chicago's third annual Chicago Book Festival: City of Big Readers, October 2002, presented by the Chicago Public Library, the Mayor's Office of Special Events, and Marshall Field's Project Imagine. For more information, visit chicagopubliclibrary.org or call (312) 747-4300.

FAMILY DAY

A joint Oriental Institute/Smart Museum/Hyde Park Art Center program

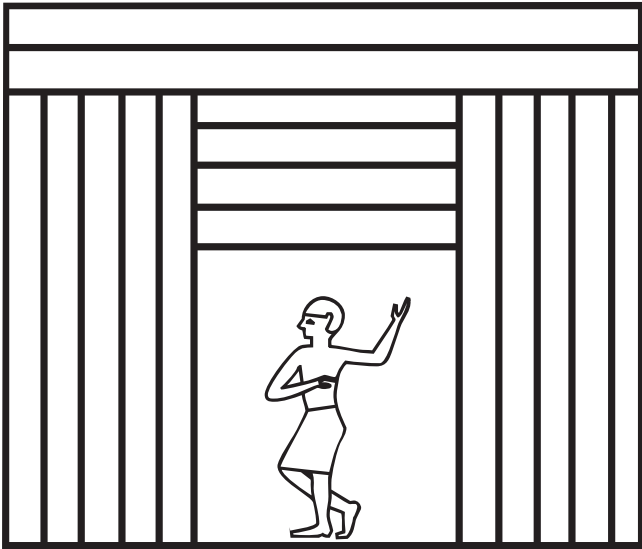
Sunday 10 November

1:00–4:00 PM

Smart Museum of Art

5550 South Greenwood Avenue

Join the Oriental Institute, the Smart Museum, and Hyde Park Art Center for a free afternoon of history and art! Make relief prints, create your own ceramics, and draw like the ancients. Learn about ancient myths and take part in family tours of the Smart Museum's fall exhibit, *Sacred Fragments: Magic, Mystery, and Religion in the Ancient World*. Recommended for families with children ages 5 and up. For more information, call the Oriental Institute Education Office at (773) 702-9507.



TEACHERS' EVENT

HISTORIC ART/CONTEMPORARY ARTISTS: AN OPEN HOUSE FOR EDUCATORS

Wednesday 9 October

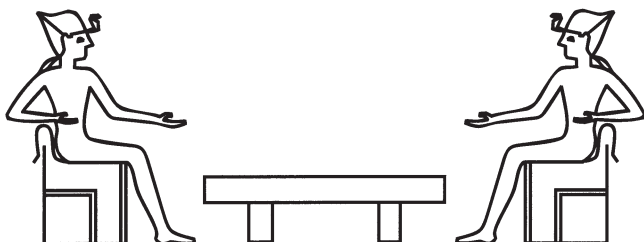
3:30–6:00 PM

**Co-sponsored by the Oriental Institute and the
Frank Lloyd Wright Preservation Trust**

*This program provides 3 Teacher Recertification CPDUs
from the Illinois State Board of Education.*

Explore the arts and culture of the ancient world and the magnificent designs of Frank Lloyd Wright at this special open house hosted by the Oriental Institute and Robie House. At the Institute, join Emily Teeter, Research Associate/Curator of Egyptian and Nubian Antiquities, for a richly illustrated slide lecture on ancient Egyptian art. Then see demonstrations featuring artists who visit classrooms to involve students in hands-on projects that recreate ancient arts processes. At Robie House, learn how preservation and restoration artists are restoring this Frank Lloyd Wright masterpiece. Curriculum materials, tours, and refreshments are all part of this free event offered in conjunction with Chicago Artists' Month.

Historic Art/Contemporary Artists is supported in part by the Regents Park/University of Chicago Fine Arts Partnership. Pre-registration required. Call the Education Office at (773) 702-9507.



FAMILY WORKSHOP

WHAT DO ARCHAEOLOGISTS REALLY DO?

Join the Oriental Institute and the Graham School of General Studies for a two-part family workshop program on archaeology.

CAN YOU DIG IT?

Saturday 19 October

10:00 AM–12:00 NOON

Is Indiana Jones a typical archaeologist? Come and find out! Meet an Oriental Institute archaeologist who will show you some of the treasures the Institute has discovered. Then learn some techniques archaeologists use to excavate ancient sites and try your hand at reconstructing an ancient-style artifact.

UNDER WRAPS!

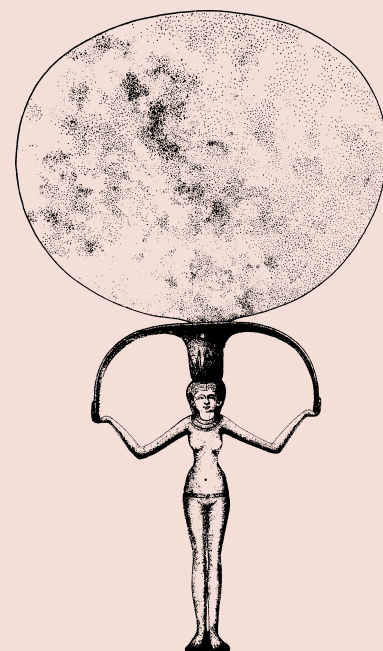
Saturday 16 November

1:00–3:00 PM

Unravel the magic of ancient Egypt by exploring the Joseph and Mary Grimshaw Egyptian Gallery to meet mummies thousands of years old. Discover who they were, how they lived, and how archaeologists learned their secrets. Find out what was buried with them in their tombs, and why. Then create your own ancient Egyptian-style tomb treasure.

Recommended for families with children ages 6 and up. All children must be accompanied by an adult.

See page 12 to register.



Feminiform mirror. OINE 6, pl. 41

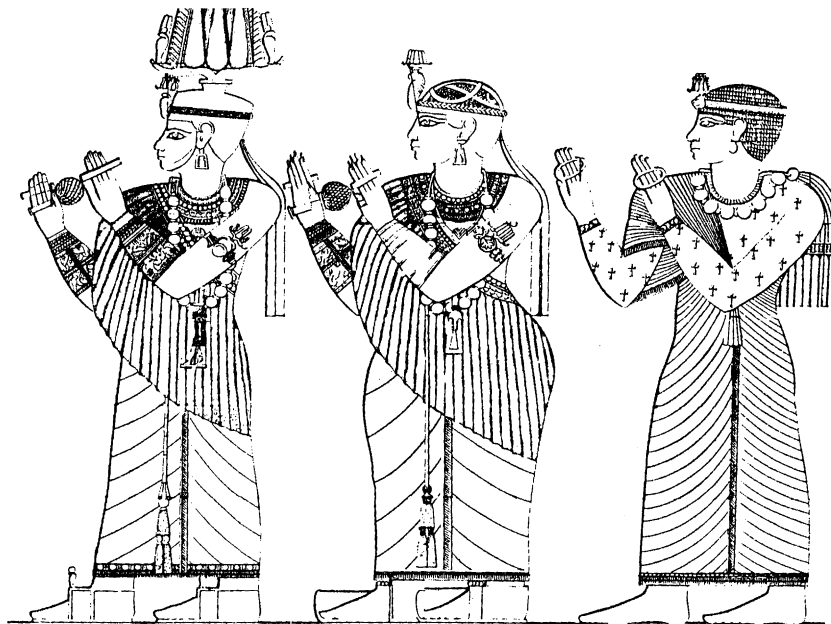
AWARD-WINNING CURRICULUM GUIDES NOW AVAILABLE FOR TEACHING ANCIENT NEAR EASTERN CIVILIZATIONS

Teachers! Bring the power, mystery, and magic of ancient civilizations into your classroom with curriculum guides from the Oriental Institute. Developed by the Education Office in partnership with a panel of educators and curriculum specialists, these three guides — *Life in Ancient Egypt*, *Life in Ancient Mesopotamia*, and *Life in Ancient Nubia* — include:

- Reference material and background information based on the most recent faculty research
- Teacher-developed, classroom-tested lesson plans
- Engaging and thought-provoking activities for students
- Primary source materials based upon ancient art and translations of ancient inscriptions
- Full-color map transparencies
- Guide to the latest books, audio-visual materials, and web resources

Adaptable for both elementary and high school use, these comprehensive guides meet national and local education standards in a variety of subject areas including social studies, language arts, science, mathematics, and fine arts. The guides, which were developed with the support of a major grant from the Polk Bros. Foundation, have all received Superior Achievement in Education Awards from the Illinois Association of Museums.

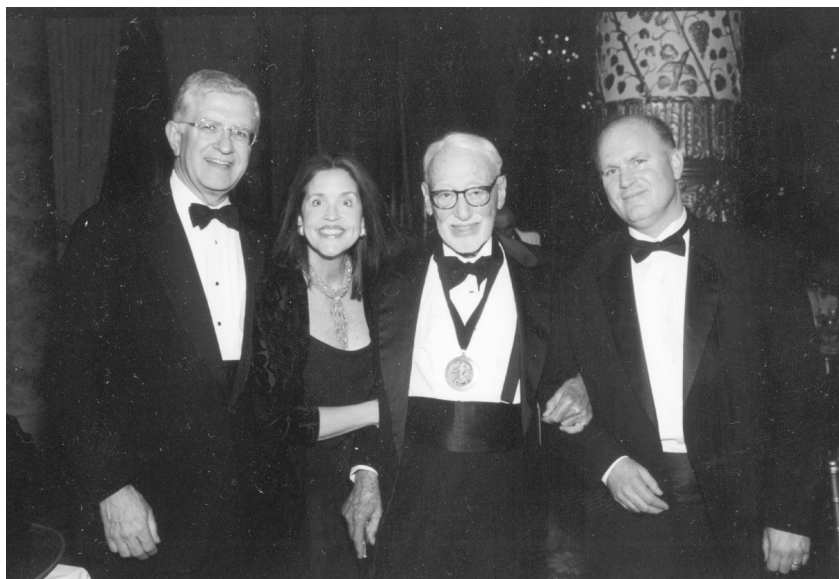
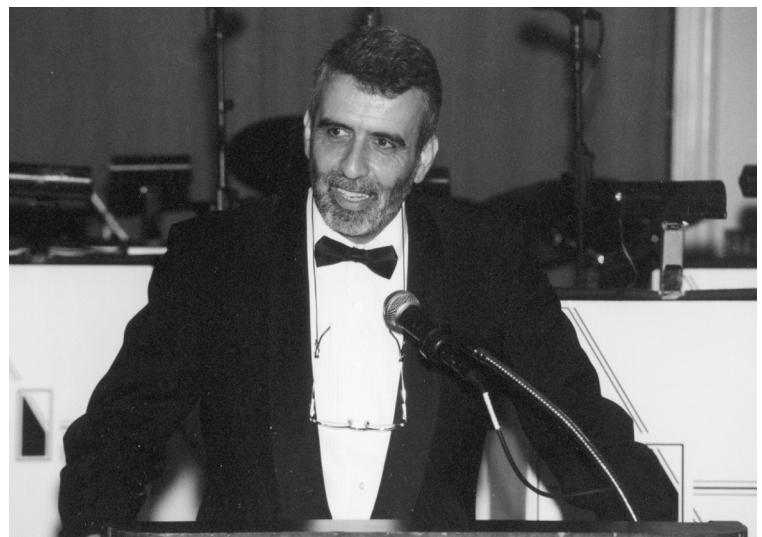
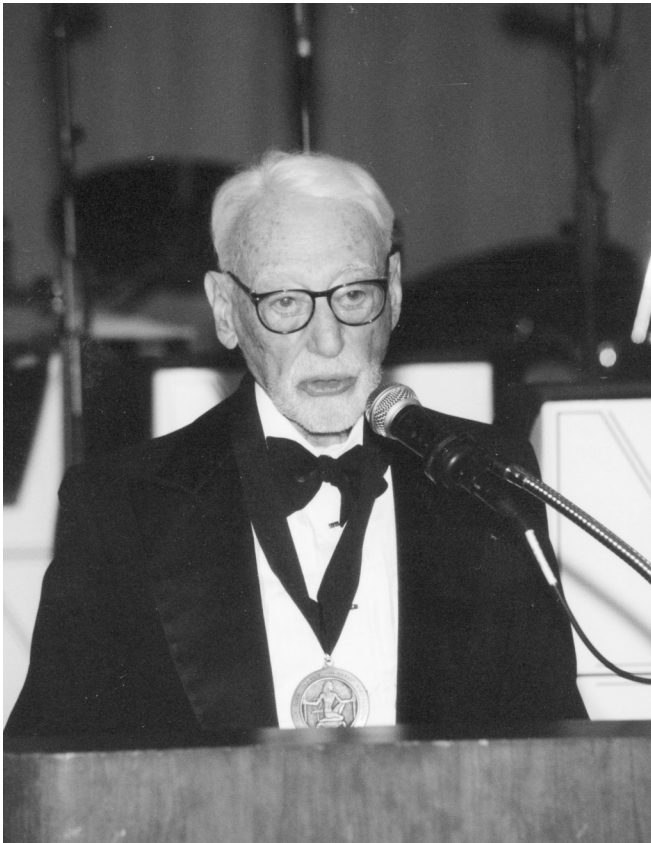
All three of the guides are available for purchase through the *Suq*, the Oriental Institute Book and Gift Shop. For additional information, contact the Education Office at (773) 702-9507 or by e-mail at oi-education@uchicago.edu.



Representation of Nubian royalty who appear on the wall of an ancient temple that still stands in what is now Sudan (from *Life in Ancient Nubia* curriculum guide)

ORIENTAL INSTITUTE ANNUAL DINNER

On 10 May 2002, over 150 members and friends gathered for *Romancing the Past 2002*, a black-tie gala at the Drake Hotel. The occasion honored Mr. Albert F. (Bud) Haas, a longtime member of The Visiting Committee to the Oriental Institute. Don M. Randel, President of the University of Chicago, presented Bud with the James Henry Breasted Medallion, the Institute's highest honor for volunteers. Professor Israel Finkelstein of Tel Aviv University discussed the impact of recent research on the chronology of ancient Israel. The occasion raised almost \$100,000 for reinstallation of the Institute's galleries.



Top left: Bud Haas speaks after receiving the Breasted Medallion

Top right: Israel Finkelstein, Professor at Tel Aviv University, delivers remarks before dinner

Left: Don M. Randel, Linda Heagy, Bud Haas, and new Oriental Institute Director Gil J. Stein

ROMANCING THE PAST 2002



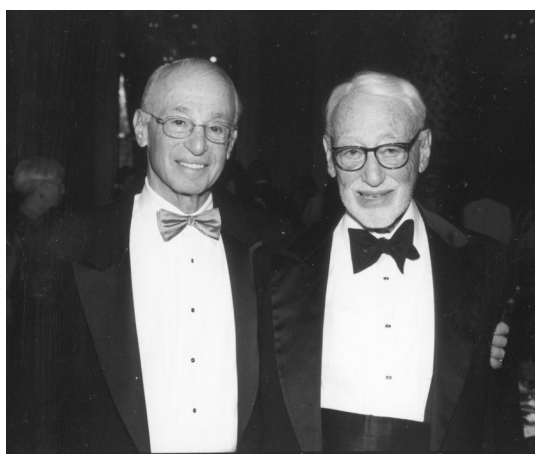
Top left: Dr. Arthur Herbst, member of the Visiting Committee to the Oriental Institute, is joined (from left to right) by his wife Lee, an Institute volunteer; Jill Carlotta Maher, longtime volunteer and the inaugural Breasted Medallion recipient; and Betty Baum, a member of the first class of volunteers at the Institute.

Top right: President Randel presents Bud Haas with the Breasted Medallion while Bud's grandson David Kucherlapati looks on

Right: The Drake Hotel's Gold Coast Ballroom during the remarks

Bottom left: Bud Haas with his brother Howard, also a member of the Visiting Committee to the Oriental Institute

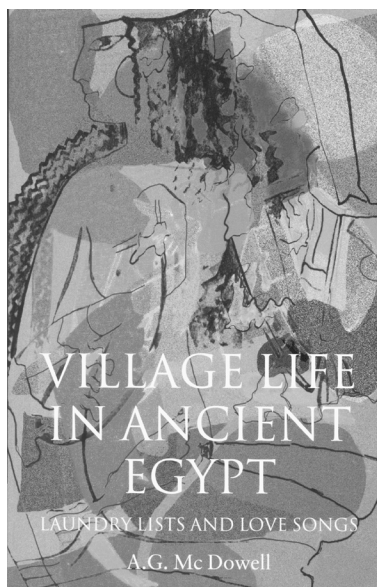
Bottom right: Gene Gragg, former Oriental Institute Director, and Don M. Randel, President of the University of Chicago



**THE
ORIENTAL INSTITUTE**

The University of Chicago
1155 East 58th Street • Chicago, Illinois • 60637
(773) 702-9514

Non-Profit Org.
U.S. Postage
PAID
Chicago, Ill.
Permit No. 6784



THE SUQ CORNER

Village Life in Ancient Egypt: Laundry Lists and Love Songs

A. G. McDowell

Oxford University Press, 1999. Paperback, xvii + 279 pages

Members' Cost: \$22.45 (Regularly \$24.95)

In this volume, Andrea McDowell presents a selection of original texts from the New Kingdom village of Deir el-Medina; her translations are accompanied by a general introduction to the village, the workmen's community there, and the history of occupation and excavation at the site. The texts themselves are divided thematically into six chapters: Family and Friends, Daily Life, Religion, Education, Learning, and Literacy, Law, and Work on the Royal Tomb; each text is preceded by explanatory notes. The translations are eminently readable and the commentaries detailed and informative; overall this is an excellent introduction to the documentary evidence of daily life rarely presented in anthologies of literary and religious texts. The volume includes bibliographic references, glossary, and index of texts cited.

To purchase: stop by the Suq, the Oriental Institute Museum gift shop, e-mail us at oi-suq@uchicago.edu, or call (773) 702-9509.

News & Notes

A Quarterly Publication of The Oriental Institute, printed exclusively as one of the privileges of membership

Editor: Emily Napolitano • Telephone: (773) 702-9513 • Facsimile: (773) 702-9853 • oi-membership@uchicago.edu

All inquiries, comments, and suggestions are welcome • World-Wide Website: <http://www-oi.uchicago.edu>