

News & Notes

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FROM THE DIRECTOR'S STUDY

The unifying theme in this issue of *News & Notes* is that of “understanding objects” — the ways in which different approaches to analyzing the artifacts in the Oriental Institute Museum can enrich our understanding of the ancient civilizations of the Near East. By examining the technology, style, circulation patterns, and historical contexts of the materials in our collections, we can gain fundamental insights into the workings of the societies that made them, and how those societies changed over time.

The lead article, “Money, Coinage, and the Ancient Egyptian Economy,” by Brian Muhs, provides fascinating insights into a fundamental economic transformation — the development and spread of the use of money in the form of coinage as a medium of exchange in Egypt between the late first millennium BC and the Roman conquest of Egypt, gradually replacing either staples (e.g., grain) or bulk precious metals (silver and gold ingots, bars, or chopped fragments). The story of this transformation, reconstructed from textual, numismatic, and archaeological data, gives us a new perspective on the broader social context in which the Egyptian economy became monetized and more closely integrated into the broader financial system of the Mediterranean world during the Hellenistic age.

The article “Objects on the Move: The Good, the Bad, and the Ugly,” by Morag Kersel and Fiona Greenland, reminds us that ancient objects also have modern value. Archaeological artifacts are circulated along very different pathways, depending on whether they were legally excavated with scientific techniques and preserved for research and public display, or looted from ancient sites to be smuggled and sold — often disappearing into private collections.

The article by Oriental Institute docent Laurence Lissak shows how we can understand the technology and ancient uses of artifacts by doing “experimental archaeology” — modern replication of the objects as a means to reconstruct their technology of manufacture and function. The photos in the article suggest that engaging in this intellectual endeavor must also be a tremendous amount of fun! The final article, by Emily Teeter and Alison Whyte, “Taking Another Look: Egyptian Mummy Shroud OIM E9385,” demonstrates how technology, style, and historical context all play key roles in the conservation of our objects so that we can display them to the public in our museum, while also making them available for study by the scholarly community. Taken together, this issue eloquently shows how careful research can make the mute objects speak.



Gil J. Stein, Director

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On the Cover: OIM E18874 is a gold pentadrachm depicting the head of Ptolemy I facing right wearing a diadem, with a tiny Greek delta behind his ear.

ARTIFACT HIGHLIGHT

Of Place and Purpose: A Molded Juglet from the City of Istakhr Near Persepolis

BY KIERSTEN NEUMANN

The Oriental Institute's sphere of archaeological work in Iran in the 1930s included the city mound of Istakhr (believed to mean "strong(hold)"), located in the Fars province of southern Iran five kilometers north of Persepolis. Following the decline of Persepolis at the end of the Achaemenid period (550–330 BC), settlement shifted to Istakhr, and the city rose in importance, acting as a provincial capital and mint town during the Sasanian and early Islamic periods. The city was later eclipsed by Shiraz — a growing metropolis founded in AD 684 and eventually the new provincial capital — and seems to have come to an end in the twelfth century AD.

Aerial photographs and exploration on the ground attest to both a Sasanian and an Islamic city at the site of Istakhr. The latter, located slightly to the east, included buildings and spaces characteristic of an Islamic city, all of which adhered to a clear grid pattern set within geometrically arranged fortification walls. The mosque, bazaar, and palace were located in the western quadrant, a public area bustling with activity and commerce. Muqaddasi, writing in the tenth century, describes Istakhr as having a central mosque with the bazaar on three sides, and, on account of material evidence found during excavations, we know that the side north of the mosque hosted a row of shops. Ceramic objects, of which hundreds were recovered from the Islamic stratum, were but one of the many goods that passed through these spaces.

One shop in particular sold molded white wares, a type known for its high quality and unique craftsmanship. Separate molds were used to fashion the upper and lower halves of such vessels, yet often both have the same pattern. To form the vessel, the two halves were joined, the neck and handle were added, and the piece was fired. This example from the Abbasid period on display at the Oriental Institute Museum shows an elaborate combination of floral and geometric designs. Comparable fine decoration is also known from metallic juglets and ewers of this period, suggesting a possible source of inspiration for the design on the molded wares.

Such extravagant vessels would have been used for equally valuable goods, one possibility being wine. In addition to wine recipes, such as those mentioned in Al-Warrāq'a tenth-century cookbook *Kitāb al-Tabīkh* (*Annals of the Caliphs' Kitchens*, Leiden: Brill, 2007), wine poetry (*khamriyyāt*) is attested for all periods of Arabic literature. Abū Nuwās, one of the most famous writers of classical Arabic literature, is well known for his contributions to this genre, his works evoking through his cunning verses the joys of wine and revelry. Of course, for the modern reader, the connection between this region of Iran and wine may have been self-evident after mention of the city of Shiraz, the grape of the same name inspiring some of the best wines around the world to the present day.



DESCRIPTION

Artifact: Molded Vessel

Material: Baked clay (with modern restoration)

Origin: Iran, Istakhr, G115, shops on the mosque plaza. Excavated under the direction of Erich Schmidt, 1935

Date: Abbasid period, AD 800–1000

Dimensions: H 27.0; D: 15.5 cm

OIM Registration: OIM A24733

Location: Robert and Deborah Aliber Persian Gallery

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MONEY, COINAGE, AND THE ANCIENT EGYPTIAN ECONOMY

BY BRIAN MUHS

The invention of coinage is often seen as a transformative event in economic history. A survey of ancient Egyptian economic history, however, suggests that long before the invention of coinage, gold and silver had begun to assume a role similar to that of early coinage. Furthermore, many features of coinage developed well after its initial invention, and some forms of pre-coinage money persisted in use.

EGYPTIAN MONEY BEFORE COINAGE

The ancient Egyptians used a wide variety of commodities for purchases, prior to the adoption of coinage. In the late third millennium BC, in the Old Kingdom, market scenes in private tombs and records on stelae and papyri show that almost anything could be exchanged for almost any other thing in low-value purchases, but for high-value purchases, grain, cloth, and copper were preferred. Copper was valued by weight, so payments took the form of tools or ingots or appropriately sized clippings. These preferred commodities were often used to measure the value of other objects, and cloth and metal were also accumulated and stored for future purchases, thereby fulfilling all the functions of money. Grain could only be stored for a year or two before it had to be eaten, so it was less effective as a long-term store of wealth.

In the second millennium BC, in the Middle and New Kingdoms, records on papyri and ostraca indicate that gold and silver began to be used for high-value purchases, as stocks of these metals grew in Egypt. Silver and gold were also valued by weight, like copper, and payments took the form of jewelry or ingots or pieces thereof. The Egyptians exploited gold mines in the deserts between the Nile and the Red Sea, particularly during the New Kingdom. Egypt lacked deposits of silver ore, so silver presumably arrived in Egypt through trade or as gifts or tribute from areas where it was more common and less valuable. Indeed, such trade may have taken advantage of price differences among markets in Egypt and Syria and Mesopotamia. In the Middle and New Kingdoms, a weight of gold was usually worth twice as much as the same weight of silver. In Syria and Mesopotamia, a weight of gold was worth at least twice and usually several times as much as the same weight of silver. Long-distance trade between markets in Anatolia and Assyria in the early second millennium BC demonstrably exploited regional price differences in commodities like silver, tin, and wool, so it is plausible that other traders tried to profit from similar price differences between Egypt and Syria and Mesopotamia.

Nonetheless, gold and silver did not displace grain, cloth, and copper as means of payment in the second millennium BC, especially in low-value purchases. The Egyptian state collected taxes almost exclusively in grain and labor, rather than cloth or metal; indeed, the state employed craftsmen to produce cloth and

sent expeditions to mine and smelt metal. The grain taxes were then given as salaries to officials, priests, and the staffs of royal palaces and temples. Craftsmen attached to palaces and temples also received salaries of grain, in return for producing finished commodities like linen or papyrus or furniture or metal goods, which could be redistributed or sold. Payment of salaries in grain helped prevent speculation and hoarding during food shortages.

In the early first millennium BC, in the Third Intermediate Period, silver began to play a more important role in the ancient Egyptian economy. Multiple dynasties of kings, together with autonomous princes and high priests, eroded trust in royal authority and in royal salaries. Officials and priests tried to accumulate real estate instead, and temples obligingly developed sales contracts to record purchases, and temple courts to resolve disputes arising from purchases and contracts. The resulting growth in high-value purchases of real estate in turn fueled increased demand for silver to pay for these purchases. Silver gradually edged out gold as a preferred means of payment, probably because the Egyptian gold mines were no longer exploited, and because silver continued to arrive in Egypt through trade. Payments in silver appear to have been made with cut silver fragments in linen bags, each containing the same weight of silver. It has been suggested that these standardized bags of silver may have been precursors to coins of standard weight.

GREEK COINAGE IN EGYPT

The Egyptian king Psammetichus I came to the throne in 664 BC and proceeded to unify Egypt after the chaos of the Third Intermediate Period. Shortly thereafter, the Lydians invented coinage in western Turkey at the end of the seventh century BC. Lumps of metal with standard weights were struck with a punch on a die, imprinting a design on the die in the obverse, and a simple punch mark in the reverse. The first Lydian coinage consisted of electrum, an alloy of gold and silver. Curiously, natural electrum occurs in Lydia with 70–90 percent gold, but Lydian electrum coins contained only 50–60 percent gold. Lydian coins were based on a standard stater of 14.1 grams, though most coins were fractions of staters, from one-half to a ninety-sixth of a stater. Soon after the Lydians, the Greeks also began minting electrum coins. In the sixth century BC, the Lydian king Croesus may have introduced



OIM E16899 is a linen cloth with one fringed edge, measuring 45 x 53 cm, and probably used for embalming. The multiple layers of cloth wrapped around mummies and other divine images represented a considerable store of wealth. It was purchased in 1932-1933 in Luxor, Egypt.

the practice of minting separate gold and silver coins. The Persians adopted this practice for their gold darics and silver sigloi coins after they conquered Lydia in 546 BC, and the Greeks also adopted bimetallic coinage, for both staters and their fractions, and for multiples or fractions of drachmas and obols, the latter worth one-sixth of a drachma. These gold and especially silver coins were soon traded to Egypt, where they were valued for their gold and silver content. Many coins were cut, to ensure that they were pure silver and not just plate, and many were melted down into silver ingots, which was another form of testing purity. Egyptian texts of this period never mention coins, only weights of silver. There is no unambiguous evidence that Psammetichus I and his successors minted any coins of their own, or taxed this flow of silver to Egypt. They continued to collect harvest taxes in grain, which they distributed as salaries to officials and priests. Judging from the hoards of silver coins and ingots found in Egypt from this period, however, much of this new wealth ended up in private hands, or in temples, which began to exact taxes in money on burials in cemeteries, or for drawing up sales contracts. One of these hoards, from Memphis, contained seventy-three kilograms

of silver ingots and fragments as well as five coins, while another hoard from Athribis in the Egyptian Delta contained fifty kilograms of silver ingots and fragments.

The Persian king Cambyses conquered Egypt in 525 BC, and it became a province of the Persian empire. Meanwhile, the Phoenicians also began to mint coins in the fifth century BC. In the Aegean, short texts began to appear alongside images on coins, and obverse and reverse dies began to be used to imprint designs on both sides of coins. The Athenian Greeks discovered rich deposits of silver ore in their city-state and began to mint large quantities of silver tetradrachmas known as "owls," for the symbol of Athena stamped on them. They were worth four drachmas and ideally weighed 17.2 grams. The Athenians used these coins for various purposes, including paying for the construction of triremes, and for the salaries of rowers, which were instrumental in repelling the Persian invasion of Greece in 480 BC, and in establishing the Athenian empire during the next fifty years. The coins were subsequently traded widely, however, and through their quantity formed a standard coinage in the ancient Eastern Mediterranean, including Egypt. Late fifth-century BC Egyptian

texts may refer to these coins when they mention “Ionian staters,” despite the misleading name, because the texts equate the coins to two kite or 18.2 grams of silver, very roughly equivalent to an Athenian tetradrachm. Consequently, when the Persian governors of Egypt eventually decided to mint their own coins, separate from the royal darics and sigloi, they produced imitations of Athenian “owls.” The Persians and their governors in Egypt maintained the traditional harvest taxes in grain, but they also tried to tap this new source of money wealth through customs duties in money and kind on products entering and leaving Egypt. Nonetheless, hoards of silver coins and ingots continued to accumulate, presumably representing the wealth of private individuals or temples, which continued to tax burials and sales contracts.

The Egyptians successfully revolted against the Persians in 404 BC and retained their independence until 343 BC. Under the threat of another Persian invasion, and at the advice of their Greek allies, the Egyptian kings began to institute taxes designed to extract coins and silver from private individuals and from temples, to pay for military preparations for a preemptive attack on the Persians. They also minted gold coins weighing 8.3 grams and depicting a galloping horse on the obverse, and the hieroglyphs for “good gold” on the reverse.

The Persians finally reconquered Egypt in 343 BC, but they only held it for eleven years before the Macedonian king Alexander the Great conquered Egypt in the autumn of 332 BC, and departed in the spring of the following year to continue his campaigns against the Persians. His governor, Cleomenes, minted coins depicting Alexander, based on the Athenian standard, including gold staters weighing 8.6 grams and worth twenty drachmas, silver tetradrachmas weighing 17.2 grams and worth four drachmas, and silver drachmas weighing 4.3 grams. Gold was thus valued at ten times the equivalent weight of silver, suggesting that centuries of silver imports to Egypt had decreased its scarcity and value relative to gold since the second millennium BC. Cleomenes also minted small bronze coins worth fractions of obols. The trend to use bronze instead of silver for lower-value coins in the fourth century BC was a significant step in the development of coinage, because the value of the bronze was probably much lower than the nominal or attributed value of the coins. This concept of fiduciary money is taken for granted now, thanks to the ubiquity of paper money, but bronze coins were mistrusted when they were first introduced, and savers preferred to hoard silver and gold coins.

PTOLEMAIC EGYPTIAN COINAGE

Alexander died in Babylon in 323 BC, and his generals seized various parts of his empire. A general named Ptolemy took Egypt and Cyrenaica in Libya, and nominally ruled them on behalf of Alexander’s heirs, Philip Arrhidaeus and Alexander IV, and he continued to mint silver coins depicting Alexander, on the Athenian standard. Ptolemy finally declared himself king in 305 BC and ruled until 285 BC. He began minting coins depicting himself, and he began to lower the weight of his silver tetradrachmas from 17.2 grams, first to 15.7 grams, then to 14.9 grams, and finally to 14.2 grams. This move toward lighter coins may

have been prompted by a shortage of silver, since it would have allowed Ptolemy I to mint more coins from the same amount of silver. Ptolemy I decreed that these “light” silver tetradrachmas were worth the same as “heavy” foreign tetradrachmas within his kingdom, and Egyptian scribes obligingly equated them to two kite or 18.2 grams of silver, though they were considerably lighter. Furthermore, Ptolemy I required imported “heavy” foreign tetradrachmas to be exchanged for his own, giving him a profit of three grams of silver for every tetradrachm entering Egypt. Finally, there was a strong disincentive to export his “light” tetradrachmas, because outside of Ptolemy I’s kingdom, where his decree did not apply, they were worth less than “heavy” foreign tetradrachmas. Ptolemy I also struck gold didrachmas or staters weighing 7.1 grams worth twenty-four drachmas, pentadrachmas weighing 17.8 grams worth sixty drachmas, and hemidrachmas weighing 1.8 grams worth six drachmas. This production of gold coins may also have been prompted by a shortage of silver, since a few gold coins could substitute for a large number of silver ones. Curiously, however, gold was valued at twelve times the equivalent weight of silver, implying that silver was more common than under Alexander the Great. Ptolemy I employed a master engraver, or, more likely, a workshop of master engravers, to cut the dies for his gold and silver coinage. The sharpness of their carvings, and the balanced proportions of their designs, were rarely equaled or surpassed in the ancient world. Perhaps the craftsman or men were justifiably proud of their work, because they signed their work with a tiny Greek letter delta. Finally, Ptolemy I minted medium and small bronze coins representing multiples and fractions of obols to serve as small change. This production allowed

Top: OIM E18874 is a gold pentadrachm of Ptolemy I, measuring 22–24 millimeters in diameter, weighing 17.85 grams, and worth 60 silver drachmas. The obverse depicts the head of Ptolemy I facing right wearing a diadem, with a tiny delta behind his ear. The reverse depicts a standing eagle facing left, gripping a thunderbolt, with the label Π Τ Ο Λ Ε Μ Α Ι Ο Υ Β Α Σ Ι Λ Ε Ω Σ “of Ptolemy the king.” It was donated in 1954 by Dr. Kraeling. Photo by Tasha Vorderstrasse.

Middle: OIM E13721 is a silver tetradrachm of Ptolemy II, measuring 26 millimeters in diameter. The obverse depicts the head of Ptolemy I facing right wearing a diadem. The reverse depicts a standing eagle facing left, gripping a thunderbolt, with the label Π Τ Ο Λ Ε Μ Α Ι Ο Υ Β Α Σ Ι Λ Ε Ω Σ “of Ptolemy the king.” It was purchased in 1929 from Dr. B. Moritz.

Bottom: OIM E13718 is a bronze coin of Ptolemy III Euergetes, possibly worth a drachma, measuring 34 millimeters in diameter. The obverse depicts the head of Zeus Ammon facing right wearing a diadem. The reverse depicts a standing eagle facing left, gripping a thunderbolt, with the cornucopia emblem of Ptolemy III, and the label Π Τ Ο Λ Ε Μ Α Ι Ο Υ Β Α Σ Ι Λ Ε Ω Σ “of Ptolemy the king.” It was purchased in 1929 from Dr. B. Moritz.

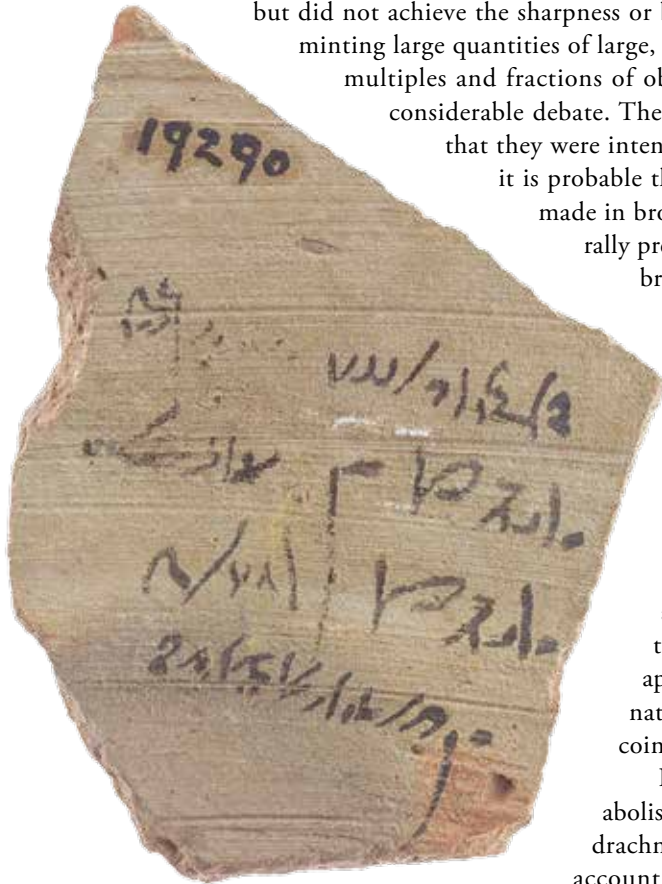


Ptolemy I to increase the total number of coins available, while conserving silver stocks that otherwise would have been required for small denomination coins.

Ptolemy II succeeded his father in 285 BC and ruled until 246 BC. He minted large quantities of gold and silver coins depicting his father's head, based on his father's "light" standard. These included gold octodrachmas, pentadrachmas, and tetradrachmas worth one hundred, sixty, and fifty drachmas, respectively; and silver decadrachmas, tetradrachmas, and drachmas worth ten, four, and one drachma, respectively. The engravers responsible for cutting the dies for these coins were competent, but did not achieve the sharpness or balanced proportions of Delta. Ptolemy II also began minting large quantities of large, medium, and small bronze coins representing various multiples and fractions of obols. The precise values of these coins is a matter of considerable debate. The size and number of these bronze coins again suggest that they were intended to make up for a shortage of silver for coins, and it is probable that many payments in the Egyptian countryside were made in bronze rather than silver coins. Private individuals naturally preferred to hoard trusty silver coins and pay in fiduciary bronze, exacerbating any shortage of silver, so Ptolemy II shrewdly imposed a surcharge of two obols on every four drachmas for tax payments made in bronze rather than silver.

Ptolemy III ruled from 246 to 222 BC. He continued to mint many of the same types and designs of coins as his father Ptolemy II, though he often added a small image of a cornucopia, which functioned as his personal emblem. Ptolemy III, however, issued far fewer silver coins than his father, and possibly even more bronze coins. Silver coins virtually disappear from hoards, and bronze coins begin to appear in them in larger numbers, despite their fiduciary nature, presumably because there were not enough silver coins available to hoard.

Ptolemy IV ruled from 222 to 205 BC. In 210 BC, he abolished the traditional accounting standard based on silver drachmas and obols, and replaced it with a so-called copper accounting standard based on copper accounting drachmas worth one-sixtieth of a silver drachma. During the remainder of the Ptolemaic period, from 210 BC to 30 BC, the value of these copper accounting drachmas gradually fell relative to silver drachmas. The reason for this copper inflation is unknown, as is the relationship between the copper accounting drachmas and the actual bronze coins circulating in Egypt. Silver supplies also seem to have remained a problem for the later Ptolemies. They minted relatively few silver coins compared to Ptolemy I and II, and in 136 BC Ptolemy VIII decreased the silver content in his coins from above 97 percent previously to about 90 percent. Then in 52 BC, Ptolemy XII, the father of Cleopatra VII, decreased the silver content in his coins even further to 33 percent, in order to pay off his debts to the Romans, who had placed him on the throne.



OIM E19290 is a pottery ostracon bearing a Demotic tax receipt, measuring 8.1 x 5.8 centimeters. The scribe Herieu son of Nesmin records that Amenhotep son of Paret paid one-half kite (= one drachma) of silver for the salt tax in Year 34 of Ptolemy II (= 251 BC). It was donated in 1955 by Dr. H. Nelson.

THE PTOLEMAIC ECONOMY

The Ptolemies injected unprecedented quantities of coinage into the Egyptian economy, primarily silver and gold under Ptolemy I and II, and then bronze from the reign of Ptolemy III, and they took steps to ensure that the population made use of it. For example, the Ptolemies greatly increased taxation in money, which they expected to be paid in coins. They still allowed the temples to collect money taxes on burials and on sales, and they still collected customs duties in money on products entering and leaving Egypt. They now also introduced a poll tax in money, however. Initially it was known as the yoke tax and was imposed on adult males, but in the reign of Ptolemy II, it was replaced by the salt tax imposed on all adults, except for privileged classes like Greek teachers and victorious athletes. The rates varied from a few drachmas annually for the yoke tax, to a few obols annually for the salt tax.

In addition to collecting more taxes in money, the Ptolemies also began spending more money. The Ptolemies began paying salaries in money as well as in grain rations and other commodities. This required officials and soldiers to purchase finished commodities like clothes, oil, wine, and beer in the market with their wages. Traditionally, palaces and temples produced finished commodities for redistribution and possible sale, but the Ptolemies did not want their officials' and soldiers' salaries all to flow to the temples, so they introduced so-called commodity monopolies, to produce finished commodities for sale in the market. Finally, the Ptolemies introduced a series of royal banks, which acted as branches of the royal treasury, collecting taxes and paying salaries to officials.

Nonetheless, the monetization of the economy remained incomplete. The Ptolemies still collected harvest taxes in grain and other agricultural commodities. Some of these agricultural commodities may have been sold in Alexandria or abroad for coin, but some continued to be redistributed as salaries, and sometimes the cash value of these distributions was even deducted from money salaries. Furthermore, people still stored wealth in commodities, such as gold and silver jewelry. Demotic marriage contracts frequently listed the jewelry that a woman brought to a marriage and their value, so that in case of divorce the woman would retain her jewelry or their value. People seeking loans could use real estate as security for large loans, but they also used jewelry and utensils as security for small loans from pawnbrokers. Finally, after the switch to the copper accounting standard, and the subsequent inflation, people increasingly lent and borrowed grain as well as money.

CONCLUSION

Ancient Egyptian economic history thus shows that the invention of coinage was a process, rather than an event. Gold and silver had to acquire a privileged role in high-value purchases and long-distance exchanges in the eastern Mediterranean, before gold and silver coins could take over that role. Nominal or fiduciary bronze coinage spread only after gold and silver coinage had become widely accepted. And finally, the perennial temptation to hoard and speculate on scarce commodities persistently discouraged the complete monetization of the ancient Egyptian economy.



OIM E19421 is a gold bracelet dating to the Graeco-Roman period, measuring 73 x 65 x 6 millimeters and weighing 16.99 grams. It appears to represent a snake with its tail coiled around its head. A separate second coil was wrapped around a break in antiquity (see detail). It was donated in 1921 by the estate of Miss Helen Gardner, and is said to come from Athribis, Egypt. Photos by Tasha Vorderstrasse.

OBJECTS ON THE MOVE

THE GOOD, THE BAD, AND THE UGLY

BY MORAG M. KERSEL AND FIONA GREENLAND

Archaeological artifacts are always moving — out of sites, across borders, into study collections and museum exhibits. In a quest to improve knowledge about our ancient ancestors, we unearth, analyze, publish, and display objects, necessitating some type of movement, bringing benefits as well as problems. Everyday archaeological artifacts are transferred through distant marketplaces, on the internet, and in high-end antiquities shops. As part of the Neubauer Collegium project (2014–2017) *The Past for Sale: New Approaches to the Study of Archaeological Looting and the Illicit Trafficking of Antiquities*, we (principal researchers Fiona Greenland and Lawrence Rothfield, and visiting fellow Morag Kersel) grapple with questions surrounding the movement of artifacts. Our research assesses the impact of such movement on archaeological landscapes and considers how to safeguard archaeological sites, museums, and monuments from demand-driven looting. How and why do institutions and individuals move artifacts? What are the competing claims on owning, studying, and interpreting them? *The Past Sold: Case Studies in the Movement of Archaeological Objects* is the capstone exhibit of *The Past for Sale* project. In it, we use objects and historical documents from select case studies to examine the movement of artifacts — the good, the bad, and the ugly. Free and open to the public, *The Past Sold* is hosted by the Neubauer Collegium, from April 3 through May 13, 2017.

TO MOVE OR NOT TO MOVE

Asking the question *whether* to move artifacts raises issues of who decides what moves and why, who owns artifacts, and how their trajectories should be regulated. There is a long-standing debate about these issues. *The Past Sold* fosters a new conversation by bringing together innovative case studies, each one highlighting advantages and challenges of artifact movement. Positive movement, in the form of pedagogical and research benefits, is illustrated by a distribution of Early Bronze Age (3600–2000 BC) tomb groups from Bab adh-Dhra', Jordan. Negative movement is shown by the systematic looting of archaeology sites in the context of the Syrian war, and commonplace, market-driven, unsightly looting at Fifa, an Early Bronze cemetery along the Dead Sea Plain in Jordan. We can think of these, in shorthand, as the good, the bad, and the ugly. Each of these cases is the subject of a focused research project: respectively, *Follow the Pots*, *Modeling the Antiquities Trade in Iraq and Syria (MANTIS)*, and *Landscapes of the Dead*. Artifacts and archival documents from *Follow the Pots* illustrate how buried objects make their way from a shaft grave in Jordan to the collection of the Oriental Institute and a coffee-table vitrine at the McCormick Theological Seminary. Maps and market records help the MANTIS project trace trajectories and monetary values within the illegal movement of archaeological artifacts from war-torn Syria. Finally, four seasons of drone flyovers at Fifa are providing data on an “ugly” landscape in *Landscapes of the Dead*, which is changing as a result of the demand for Early Bronze vessels. *The Past Sold* offers creative thinking about the positive and negative movement of antiquities, pushing the dialogue beyond the entrenched positions of “to move or not to move.”

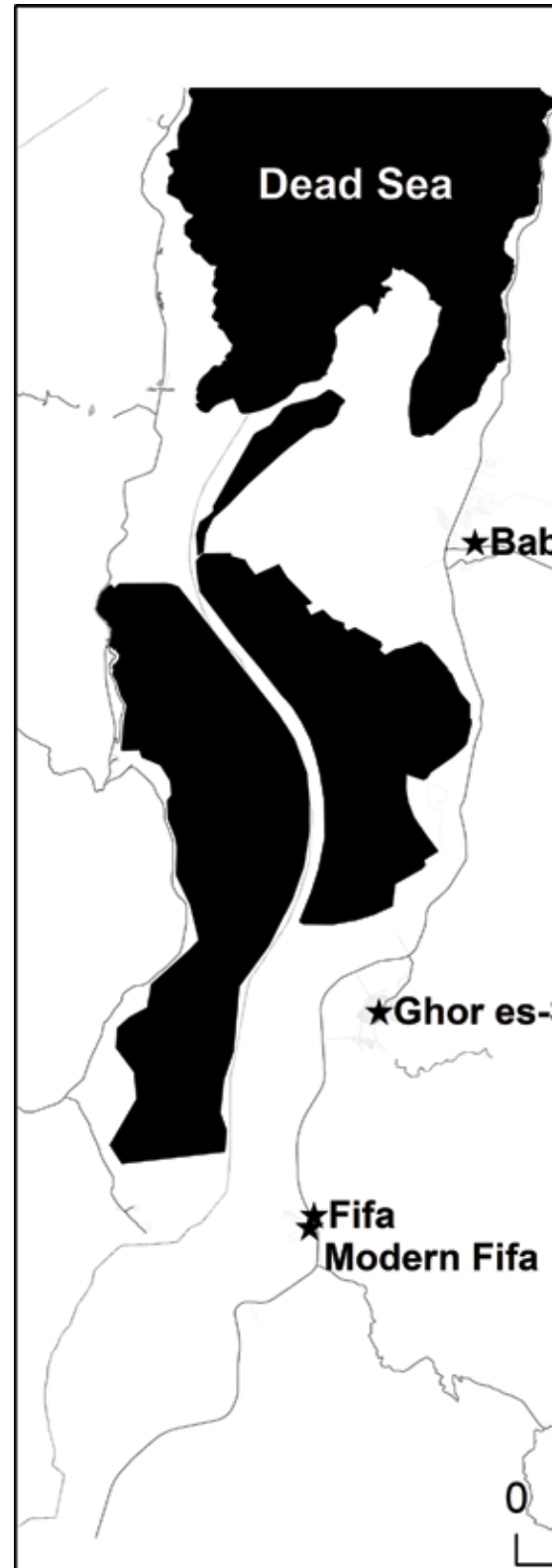


Figure 1. Map of Early Bronze Age sites along the Dead Sea Plain in Jordan, courtesy of the *Landscapes of the Dead* project.



THE GOOD

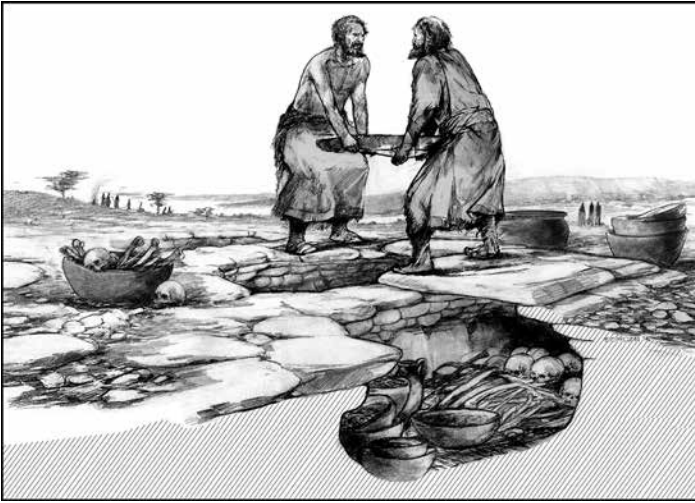
Along the Dead Sea Plain in Jordan (fig. 1) thousands of people are buried in cist graves, shaft tombs, and charnel houses (buildings where dead bodies or bones are placed) at the Early Bronze Age sites of Bab adh-Dhra' and Fifa (fig. 2). Since the early 1950s, Bab adh-Dhra' has been the target of looters seeking ceramic vessels, which are highly desired for purchase by pilgrims to the Holy Land. In response to ongoing looting at the site, Paul Lapp, director of the W. F. Albright Institute, mounted a salvage expedition to Bab adh-Dhra' (<http://expeditiondeadseaplain.org>). The Lapp excavations focused on the area most heavily looted — the cemetery. During the Early Bronze Age, individuals were buried with a distinct set of grave goods. Bowls made of basalt, carnelian beads, ceramic vessels, flint tools, lambis shell bracelets, limestone mace-heads, and the odd copper ring or bracelet accompanied the dead in their final resting places. Thousands of pots were recovered during the 1965 and 1967 field seasons, all of which required basic conservation, storage, and eventual analyses and publication. Lapp died in a tragic swimming accident off the coast of Cyprus in 1970, leaving his widow, Nancy, to undertake the publication of his earlier investigations and leaving the pots in storage uncertainty.

David McCreery, an archaeologist based in Amman, outlined in a letter to Edward Campbell, representative of the American Schools of Oriental Research (ASOR), an assessment of the stored pottery in Amman, suggesting that the existing documentation of the collection was inadequate, the artifacts were at risk, and some of the pots were “missing” (N. Lapp correspondence, September 2, 1977). The precarious storage situation of the Bab adh-Dhra' material was compounded when in 1975, archaeologists Walter Rast and R. Thomas Schaub applied for permission to renew excavations at the site. Thousands of additional pots were excavated, resulting in a storage quagmire: what to do with the uncurated and unexamined pots recovered from Bab adh-Dhra' in the 1960s? The Jordanian Department of Antiquities and ASOR, the excavation sponsors, came up with a pioneering solution.

In 1977, Nancy Lapp, the chairperson of the ASOR Ad Hoc Committee on the 1960s Bab adh-Dhra' project, and the Jordanian Department of Antiquities devised a plan whereby tomb groups from the original Lapp excavations would be sold to ASOR member institutions for the purposes of display and education (letter from N. Lapp to Adnan Hadidi, director of the Jordanian Department of Antiquities, August 1, 1977). This satisfied the demand for teaching materials and freed up scarce storage space. For the government of Jordan, the impetus for the plan was to increase interest in Jordanian archaeology and encourage cooperative archaeological efforts between the United States and Jordan. The artifacts became ambassadors.

For as little as \$100 USD, institutional members of ASOR could purchase tomb groups from shaft tombs and charnel houses at Bab adh-Dhra'. Twenty-four institutions were successful in their bid to receive a tomb group. Many of the successful institutions were small seminaries and liberal-arts colleges, ensuring access to the material from students across Australia, Canada, and the United States. A total of 1,186 pots and 10

Dead Sea Plain, Jordan. By Austin (Chad) Hill,



Reconstruction of the mortuary landscape at Fifa. By Eric Carlson, courtesy of the Expedition to the Dead Sea Plain project.



Figure 3. McCormick Theological Seminary Bab adh-Dhra' Tomb Group coffee table. Photograph by Morag M. Kersel, courtesy of Follow the Pots project.



Figure 4. The looted landscape at Fifa from a drone. Photo by Austin (Chad) Hill, courtesy of Landscapes of the Dead project.

basalt bowls were distributed, generating almost \$14,000 USD (\$51,824 adjusted for today's dollar value) in income, which was used for publications and further excavation at Bab adh-Dhra' and other ASOR initiatives. In 1978 the Oriental Institute paid \$2,343 (\$8,625 adjusted) for 202 artifacts from two tomb groups (A 72NW and A 44). The McCormick Theological Seminary, just up the street from the Oriental Institute, was also a recipient of a tomb group (A 65W) consisting of fifteen vessels at a cost of \$272 (\$993 adjusted).

The movement of tomb groups to educational institutions guaranteed that Jordanian archaeological material was readily available for study, curated and stored in safe facilities, and could be viewed publicly. Today, you can have coffee with the McCormick Theological Seminary tomb group in its current location in a glass-topped table in the student lounge (fig. 3). Or you can request to see and study the tomb groups at the Oriental Institute. The controlled distribution of tomb groups allowed Jordanian officials to decide how and where the country's cultural heritage was publicly curated rather than hidden away in individual homes (or in private collections?). Responsible pedagogical access to this material, with the participation of the Jordanian government, adds to the production of archaeological knowledge in a way that benefits everyone.

THE BAD

In Syria, looting at archaeological sites was not caused by the civil war, but the conflict helped to create conditions ripe for widespread, systematic exploitation of artifacts. International market interests, a general breakdown in border controls, and competition among insurgent groups for revenue streams all played their part. The loss to scientific knowledge is considerable. More tragic is the loss of human life and of community identity that have come with the war. Cultural destruction in the Syrian war has involved direct violence to children, men, and women; deliberate destruction of monuments, mosques, churches, and other culturally significant sites; and the liquidation of material culture for profit. Put simply, this is the terrain of harmful artifact movement. Many brave individuals and organizations are working to protect cultural heritage in the region. The MANTIS project tackles one aspect of this story. MANTIS is an interdisciplinary project under the direction of OI research associate Fiona Greenland, NELC PhD recipient Oya Topçuoğlu, and economics PhD student James Marrone, in collaboration with OI research associate Tasha Vorderstrasse. Using multiple forms of data, we are estimating market values of looted sites.

Mainstream media have focused on the money question: How much are insurgents earning from the looting and sale of artifacts? This is a difficult question to answer because it asks us to make guesses about what came out of the ground, when, and by whom, and what it might fetch in a complex transaction chain. MANTIS combines archaeological and economic data to build an inductive approach (fig. 5). First, the archaeological data include detailed observations of objects excavated at a representative sample of sites spanning the Early Bronze Age to the Islamic period. In tandem, we gather data from observable market

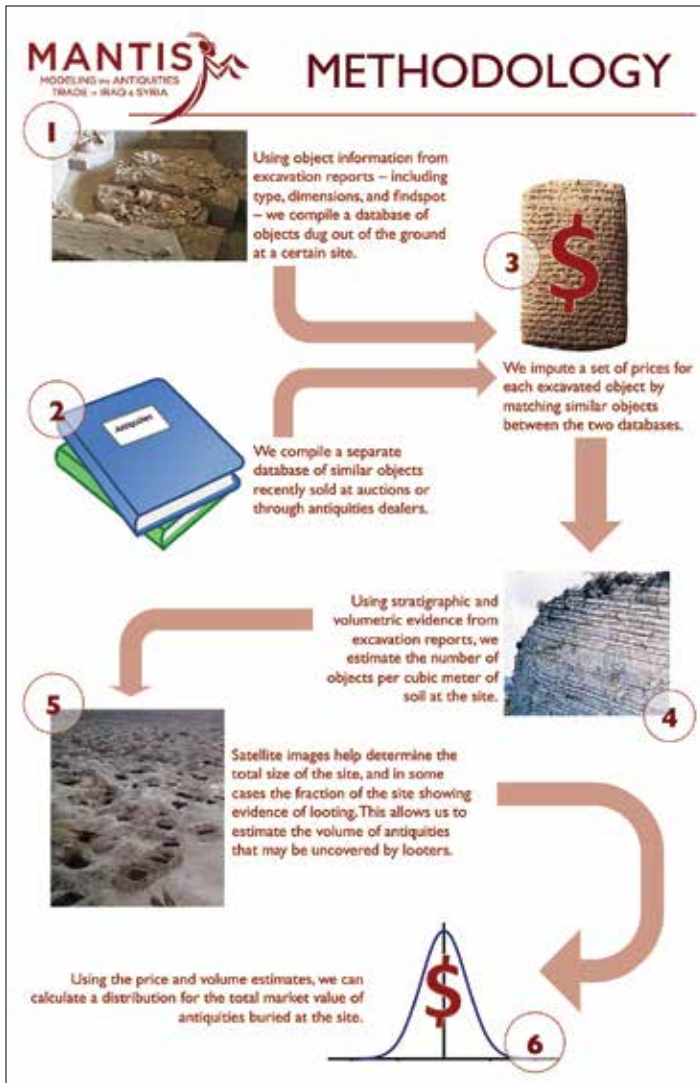


Figure 5. The MANTIS project methodology.

activity, separating categories of artifacts collected from auction catalogs and public gallery data. Combining these data sets, we match excavated objects with the same object categories sold on the market. Using a statistical technique called imputation, we then generate a range of reasonable prices for objects that may have come directly from the ground. The project is an important stepping stone toward rigorous interdisciplinary research on the movement of artifacts from the ground through the black box of traffickers' networks.

THE UGLY

At times the movement of archaeological objects is illegal, involving clandestine excavations, unauthorized border crossings, object laundering, and eventual acquisition by individuals and institutions, who may not be aware of the object's looted history. The result of this negative or "ugly" movement is not only an artifact divorced from its past, but also cratered landscapes of looters' holes across the globe. Antiquities are being mined from sites in order to supply the constant demand for artifacts from

the Holy Land. Tourists and pilgrims alike want a memento to take home, and what better reminder of a trip than a ceramic vessel from the time of the patriarchs? Sadly, demand for these items leads to ravaged landscapes at sites like Bab adh-Dhra' and Fifa. The Landscapes of the Dead research project is using Unpiloted Aerial Vehicles (UAVs) to study change over time due to archaeological site looting. In order to clarify our understanding of modern interactions at the Early Bronze Age mortuary site of Fifa, OI research associates Austin (Chad) Hill and Morag Kersel are flying a fixed-wing UAV and a multi-rotor copter (DJI Phantom) each year for five years in order to document looting at Fifa. By creating high-resolution digital elevation models, orthomosaics, and 3D images (fig. 6) from the thousands of images collected by the UAVs, we can identify new looting episodes and other changes to the site. At the same time, we are working with the Jordanian Department of Antiquities and the Petra National Trust to implement outreach and protection programs to save this landscape from further depredation. The combination of aerial survey, archival research, and ongoing ethnographic interviews with looters, dealers, collectors, and locals, as well as pedestrian surveys of the sites, enable us to consider future programs that might turn a situation of "ugly" movement into a story of good. While looting at Fifa has taken a very heavy toll on the site, ground-truthing and data from UAVs also show significant numbers of undamaged tombs that remain at risk and are worthy of protection and further study.

OBJECTS MOVE

Artifacts move, and this movement can be good, bad, or ugly. *The Past Sold: Case Studies in the Movement of Archaeological Objects* attends to the positive and negative aspects of movement. Ultimately we seek collaborative solutions aimed at accessibility and preservation — mutually beneficial partnerships aimed at ending the pillage of archaeological sites and the illegal sale of artifacts. We invite all of you to visit the show between April 3 and May 13, 2017 and to join our discussion about the movement of archaeological objects — good, bad, and ugly.



Figure 6. An oblique view of the drone-generated data displayed in 3D using ArcScene. By Austin (Chad) Hill, courtesy of Landscapes of the Dead project.

EXPERIMENTAL ARCHAEOLOGY

MAKING EGYPTIAN TOOLS BY LAURENCE LISSAK

Every workshop today, whether using wood, stone, or metal, has electrically and/or pneumatically powered carbide saws, cutters, shapers, routers, planers, lathes, benders, and much more. This was not so with the Egyptians, who only had stone, copper, and bronze tools powered by a good strong arm, which makes what they could accomplish even more admirable.

Last fall, Emily Teeter asked me to make tools for a course of Egyptian technology that is being offered in spring 2017. Under her direction, and on the basis of concepts derived from *Experiments in Egyptian Archaeology: Stoneworking Technology in Ancient Egypt* by Denys A. Stocks, in addition to artifacts and photos from the Oriental Institute and other museums, I began testing and constructing copies of ancient Egyptian tools. Museum preparator Erik Lindahl provided copper from his scrap collection, while other material came from my personal collection or from the great outdoors, or were purchased at the local Suq (Menards).

While some examples of ancient tools have survived, their function and use must be gleaned from tomb paintings, such as those in the Theban tomb of Rekhmire, vizier under Thutmose III, which contains paintings depicting various tools and their uses. The lathe was based on a painting in the tomb of Petosiris, while the smaller copper saw is a replica of the bronze saw in our Egyptian Gallery (OIM E16507).

TOOL CONSTRUCTION

For the course, we focused on two jigs (a device that holds an item for processing) and woodworking, stoneworking, and alignment tools made of copper, stone, wood, leather, and/or rope. The stones were granite, flint, or chert (poor-quality flint), and the woods were branches or new and recycled lumber. Metalworking was limited to forming copper for tool construction.

Copper can be forged or shaped at 1652° F and melted in a kiln at 1984° F. To soften copper, I heated then cooled the copper, which aligns the metal's molecules. To harden the copper, I hammered it, which misaligned the molecules.

Copper chisels and drills were forged from #4-gauge copper wire and mounted in wooden handles. Melted copper was poured into plaster molds to form a chisel and an ax head. The adzes have copper lashed by leather to branches.

Larry Lissak has a master's degree in physics from Washington University, St. Louis, and was a physics and math teacher at Benet Academy in Lisle, Illinois, and subsequently a medical-software developer at 3M. He is a long-time Oriental Institute member and became a volunteer and docent 2007.

DID THE TOOLS WORK?

If you like modern carbide tools, you will not be happy with copper ones. Copper is not as hard as modern tool steel, so sharpening and re-shaping the cutting edge is a constant process.

The adzes lived up to their ability to shape wood by hacking (the most fun tool). I used the copper chisel to successfully form a rectangular hole or mortise in wood. The wood drill with a spade point driven by a bow took longer to bore a hole in wood, even on a modern drill press.

In some cases, the ancient representations of tools do not match actual examples. For example, in tomb drawings, the saw teeth are exaggerated, but no such teeth were found on artifacts. The large teeth may indicate action, not a true representation of reality. Modern saw steel teeth can be large (e.g., tree saw), but copper is too soft of a metal for large teeth.

To form the saw teeth, I used flint, which is harder than copper, as a chisel to form half the teeth on the small saw replica. The flint indented the saw's edge and flared the copper forming a decent kerf. I used my grandfather's saw-sharpening file to make the remaining teeth. The flint teeth were less sharp, but they still cut wood. Egyptian saws cut on the pull.

Drawings from the tombs at Meir and Deshasheh show carpenters sawing a log lashed to a vertical post with the lashings held tight by a weighted lever acting as a tourniquet. The model I made worked and held the branch tight while using the copper saw.

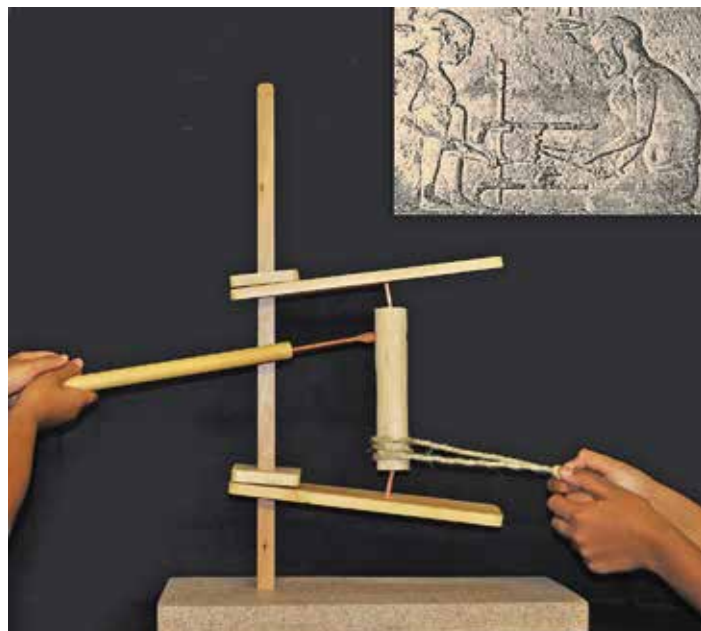
There are no tomb paintings for stone saws, but there are stone sarcophagi with traces of copper. A copper saw for stone may have been purposely soft and un-toothed to hold the abrasive grit, which did the actual cutting. The saw's ends were held down by hanging stones. I had to chisel an initial groove in the stone as a channel for the grit and a guide for the saw. Two sixth-grade students after a half minute of cutting deepened the groove slightly.

Another example was the lathe. In the tomb painting, everything looks square and the cutting seems effortless. The reconstructed lathe took considerable skill for a consistent rotation rate. Two other sixth graders used the lathe and gouge and, after a half minute, produced a trough. A modern lathe and gouge produces shavings, but the Egyptian lathe produced chips. I used the copper gouge on a modern lathe, and the gouge cut, but dulled, because of the heat generated.

Other tomb paintings show surfaces being smoothed by pounding or rubbing with harder stones. I constructed a stone mallet with granite lashed to a forked branch, but the Egyptians

mostly held the pounders in their hands. I tried granite, flint, and chert on sandstone with decent, but time-consuming, results.

We created two replicas: that of a TRTD (twist/reverse twist drill; see figure at bottom right), a tube drill with an offset hand and two stone weights, used to bore the initial hole in a stone jar; and that of a “wobbly,” an offset handle with an offset shaft and a forked end to hold a harder stone, which is used to widen the inside of a vessel. These tools are illustrated in several tomb paintings. I tried to use the TRTD to bore a hole into sandstone. The tube drill produced a core, which I removed and then continued boring. I did not try the wobbly because I could not make the hole large enough. I would like to try these tools with flint on softer stones such as gypsum, alabaster, and calcite.



Replica of a lathe, copied from the tomb of Petosiris (inset).



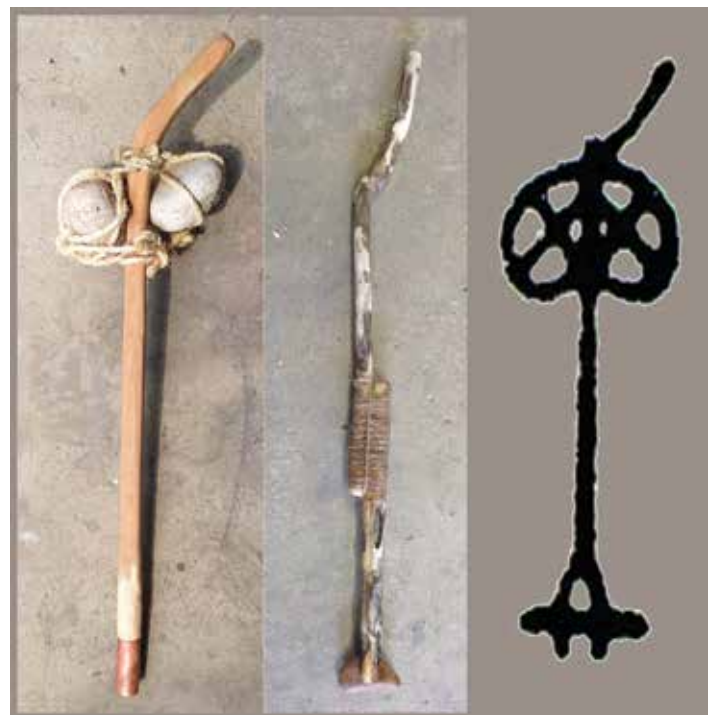
Copper poured into a plaster mold to make an ax head.

CONCLUSION

Whether a box is built with modern tools, or in eighteenth-century Williamsburg, Virginia, or even back in ancient Thebes, the only thing that is different is the quality of the tools; techniques and processes remain the same. Instead of copper and stone, you now have steel and carbide. The same laws of physics apply today as they did 5,000 years ago, which validates experimental archaeology. It's all academic, until you try it.



Larry Lissak smelting copper.



Left: twist/reverse twist drill (TRTD); center: “wobbly drill”; right: hieroglyph for wobbly drill.

TAKING ANOTHER LOOK

EGYPTIAN MUMMY SHROUD OIM E9385

BY EMILY TEETER AND ALISON WHYTE

Among the many benefits of the current Gallery Enhancement Project is the opportunity it affords to review the contents of each exhibit. This involves the entire Museum staff: registrars check their records of what should be in the case, preparation and exhibit design de-install objects and consider case layouts, conservators do a condition assessment of each piece, and curators review the information on the labels and text panels. In essence, this gives us a chance to take another look at our exhibits and see how they can be improved, both for our internal record-keeping and for the enjoyment and edification of our visitors.

A good example of this is OIM E9385, a fragment of an Egyptian mummy shroud that has been displayed in a case near the mummy of Meresamun. It consists of the molded plaster face of a woman attached to a painted piece of linen. The face is vividly painted in medium red, enhanced with “cosmetics” that give her bright rosy cheeks and a circle of red over her cleft chin. The folds of her lips are picked out in black pigment. Her large eyes are rimmed with heavy cosmetic lines and exaggerated eyelashes over heavy brows. Her hair is worn in deep waves back from her forehead, and traces of curly hair painted on the linen frame her face and just reach her shoulders. She is splendidly adorned. She wears a tunic upon which a gold necklace and another necklace of large colored stones have been painted, and earrings painted yellow and white to suggest large gold beads and three pearls. A garland in her hair is fashioned in plaster, representing large colored stones, some set in a gold bezel.

This striking piece came to the Oriental Institute in 1917 as part of a gift from the Art Institute of Chicago, where it had been registered as 1897.283. No documentation accompanied it. In recent years, it became apparent from its style that it was from Deir el-Bahri in Western Thebes and was to be dated to AD 220–250 — considerably earlier than the date “4-5th c. AD” in our own records or “Coptic” in the Art Institute’s notes.

Further inquiries of the curators at the Art Institute confirmed that the piece was excavated at Deir el-Bahri. As for the history of the object here at the Oriental Institute, according to our records, it was in storage until 1986, at which time it was added to a display of mummy trappings. When the new Joseph and Mary Grimshaw Egyptian Gallery opened in May 1999, it was moved to a new display of similar material.

The combination of heavy stiff painted plaster components and fragile flexible linen sets up an inherently fragile situation for this object. This was recognized at the time of its installation in 1999, when the textile component was sewn to an underlying support consisting of burlap wrapped around a piece of archival

board (fig. 1). A custom carved ethafoam support that would fit into the cavity behind the molded plaster head was also incorporated into the mount. These measures were all employed to support the object while it was displayed at a slight angle, which improved the museum patron’s view.

As part of the refreshment of this display, a new fabric for the case was chosen, and we decided that transferring the mummy shroud to a new mount lined with the same fabric would enhance its appearance. Before the object could be separated from its previous mount, a number of condition issues were addressed. Several losses and cracks in the painted decoration are apparent (fig. 2), and in addition, there were areas of loose paint that required stabilization. Also, after many years on display, fine particulate matter and several fine fibers had settled on the surface. These were carefully removed using gentle vacuum suction and a soft brush.

Once the painted decoration was stabilized and the surface cleaned, the work began on separating the shroud from its previous mount. Under the microscope, conservators severed and removed the visible modern threads attaching the ancient textile to the front of the modern burlap. It was then necessary to perform the same procedure on the back surface. After carefully protecting the object with custom supports, it was turned over. The remaining modern threads were removed from the back surface, and the old mount was lifted off. For the first time in many years, the underside of this object was visible (fig. 3), and it was possible to see that the shroud is actually composed of two different types of linen textile: one of a finer weave, on which the plaster and painted decoration was applied, and one of a coarser weave that was applied to the back of the finer weave linen, possibly as an added support. This layering of different types of textile has been noted on at least one other example of a comparable object.¹

After the conservation treatment, the object was transferred to its new mount. The new support, designed and manufactured by the Preparation Department, is made from archival materials that have been wrapped in new case fabric (fig. 4).

While the object was in the Conservation Laboratory, we took the opportunity to characterize the paint colors using the Oriental Institute’s Bruker Tracer III SD handheld xray fluorescence (XRF) spectrometer (fig. 5). This non-destructive technique allows for the identification of individual elements present on the surface of objects without the need of removing a sample. The results of our analyses to date show that the pigments used to decorate this object are consistent with those in regular use during the Roman period in Egypt. Calcium was found in the white pigment, copper is pres-



Figure 1. OIM E9385 on its burlap-wrapped support, which was created in 1999.



Figure 2. Losses and cracks in the painted decoration.



Figure 3. The back surface after removal from the old support.



Figure 4. OIM E9385 on its new mount.



Figure 5. OIM E9385 undergoing XRF analysis.

ent in the blue areas, and the red colors on the face contain iron. Lead and arsenic were found in the bright orange-red portions of the garland and the yellow of the earrings. The presence of arsenic is important from a conservation perspective because arsenic pigments, such as orpiment and realgar, are known to be particularly sensitive to light-induced degradation.² The discovery of these pigments in the painted surfaces of the object means that light levels in its display case will have to be kept as low as possible in order to preserve these fragile colors.

There is a series of these mummy shrouds in collections worldwide, and they are remarkable in their uniformity. Most were excavated at Deir el-Bahri, and they were recovered over the course of at least a century. By 1855–1857, two were in the collection of A. H. Rhind; they are now in Edinburgh (fig. 6). A group of at least nine others was excavated in front of the Anubis chapel at Deir el-Bahri by Édouard Naville for the Egypt Exploration Fund in 1893–1894. In 1923–1924, Herbert Winlock of the Metropolitan Museum, also working at Deir el-Bahri, recovered another four examples. The Oriental Institute excavated two more at the Temple of Aye and Horemheb in 1930 (field numbers MH 30.113–114) (fig. 7). Each mummy was in its original pottery coffin, and one was equipped with a (termite-ridden) mummy tag around its neck. Although they were photographed and studied, they were, according to the excavator's notes, reburied because of their "repulsive smell."

The Chicago shroud fragment is little known, and it does not appear in the inventory of these materials that was compiled and published by Gunter Grimm.³

At least ten examples of these shrouds are essentially intact,⁴ allowing us to reconstruct the original appearance of the Chicago



Figure 6. Edinburgh 1956.1187.

example. It consisted of the plaster mask that is mounted on the painted linen shroud that extends to below the waist of the mummy (see fig. 6). The faces are highly idealized, and most of the shrouds for females look very much like the Chicago one. All known examples represent adults. This type of shroud is divided into three registers. Uppermost is the molded face and painted torso. In all cases, the individual is shown wearing a white tunic, often with *clavis* strips. Several feature ornamental designs such as a swastika or flowers on the chest or sleeves of the tunic. The arms are flexed at the elbow, and the deceased is shown holding a cup in the right hand and a floral garland in the other. Below is a horizontal register decorated with fruit or floral designs. In the bottom register, the *henu* barque of the funerary god Sokar appears, flanked by either a pair of Anubis jackals or a jackal and a lotus. The iconography of the lowest register affirms that these mummy shrouds date to the pre-Christian days, as Naville commented, to the "last years of paganism." The label for the shroud reflects this further study, giving the revised date and provenience.

Certain types of objects ebb and flow in the interest and favor of curators and art historians. Material from the last years of the pharaonic period in particular have often been dismissed as "rubbish," and indeed Herbert Winlock described these mummy shrouds as "...atrocities of hideousness..." Yet, they have a special appeal, too. They are fascinating records of a very localized tradition that shows the transition between the last gasp of the pharaohs and Christianity. The deceased is shown in classically inspired clothing and jewelry, holding a Roman-style cup. Gone is the false beard of Osiris, but other aspects of the old traditions are preserved, such as the images of Anubis and the barque of Sokar. What remains is an appealing, innovative, and charming image of the deceased, facing eternity, resplendent in jewelry and elaborate clothes.

Notes

1. See M. C. C. Edgar, *Graeco-Egyptian Coffins, Masks and Portraits*. Catalogue Général des Antiquités Égyptiennes du Musée du Caire Nos 33101-33285 (Cairo, 1905) p. 119, No. 33276.
2. K. Keune et al. "Analytical Imaging of the Migration of Degraded Orpiment, Realgar and Emerald Green Pigments in Historic Paintings and Related Conservation Issues." *Heritage Science* 4 (2016):10.
3. Günter Grimm, *Die römischen Mumienmasken aus Ägypten* (Wiesbaden, 1974), p. 143, pls. 112–13.
4. Edinburgh 1956.1188, 1956.1187; Amherst MA 1942.84; Cairo 33276, 49099; Metropolitan Museum of Art 1925.3.219; Museum of Fine Arts Boston 1997.1100; British Museum EA 26273+26273A, EA 26272; Louvre E20356.



Figure 7. A mummy with shroud in a clay coffin, excavated by the Oriental Institute at Medinet Habu, 1930 (MH 30.113)

PROGRAMS & EVENTS SPRING 2017



ADULT PROGRAMS



GALLERY TALKS

Nubia — A Cultural Heartland in the Ancient and Medieval Worlds

Thu, Apr 6, 12:15–1pm

Free

Registration not required

Join Bruce Williams, research associate at the Oriental Institute, to explore Nubia as a cultural heartland in the ancient and medieval worlds.

Monumental Buildings and Statues from Tell Tayinat of Ancient Turkey

Thu, May 4, 12:15–1pm

Free

Registration not required

The archaeological site of Tell Tayinat, the Iron Age city of Kunulua, was excavated by the Oriental Institute in the 1930s. James Osborne, assistant professor of Anatolian archaeology, outlines the findings of that expedition, including monumental buildings and sculptures, plus those of the renewed excavations at the site, drawing on the objects on display in the Henrietta Herbolsheimer, MD Syro-Anatolian Gallery.

Egypt under the Ptolemies and Romans

Thu, Jun 1, 12:15–1pm

Free

Registration not required

Foy Scalf, PhD, head of Research Archives, will provide visitors with an overview of how ancient Egyptian culture adapted to, and in some ways flourished under, the foreign rule of the Greco-Roman era, highlighted by objects in the Oriental Institute Museum galleries.

TOURS/ACCESS PROGRAM

Multisensory Tour: Making Sense(s) of the Past in Mesopotamia

Fri, Apr 14, 2–3pm

Free

Registration required

Explore different building and craft materials in use in ancient Mesopotamia. Capture a little of the experience of Mesopotamian worship. Listen to a reconstruction of one of the most ancient pieces of music we have. Encounter the smells of the Mesopotamian kitchen.

ADULT PROGRAMS meet at the Oriental Institute unless otherwise noted.

Verbal Imaging Tour

Fri, May 12, 2–3pm

Free

Registration required

Experience the Oriental Institute Museum with a trained guide who will give detailed verbal descriptions of the artifacts in the permanent galleries. Designed for partially sighted and blind audiences. Object replicas will also be available for participants to touch and feel the rich material culture housed at the Oriental Institute.

Multisensory Tour: Written in Clay — The Origins of Writing in Mesopotamia

Fri, Jun 16, 2–3pm

Free

Registration required

Mesopotamia is the home of the earliest writing in the world. This tour will involve a hands-on look at the development of this revolutionary technology and practice with the tools and materials used to create the tablets that preserved records and knowledge for millennia.

COURSES

ON-SITE COURSES

The Khan and the Emperor: Genghis, Kublai, and the Mongol Empire (6 weeks)

Sat, Apr 15–May 20, 10am–12pm

General \$350, members \$295, UChicago Arts Pass \$90

Registration required

Register by Apr 9

In this six-week course, we will study the history of the Mongol empire through the biographies of the two most important Mongol khans. First, we will learn about the legendary conqueror who began it all: Temujin, later known as Genghis Khan. Then we will examine the interesting life of the last of the Great Khans and founder of the Yüan Dynasty in China, Kublai grandson of Genghis. Through these two khans — one a conqueror, the other an empire builder — we will come to understand the shape and history of the Mongol empire and trace the lasting impact left by the empire and its greatest personalities.

Instructor: Michael J. Bechtel, PhD candidate in Islamic history and civilization

REGISTER To register, visit oi.uchicago.edu/register

For assistance or more information, email

oi-education@uchicago.edu.

Register for these lectures at oimembersevents.eventbrite.com

ADULT PROGRAMS

Dura Europos: Life on the Roman Empire's Edge and Its Discovery (3 weeks)

Sat, Apr 22–May 6, 10–11:30am

General \$175, members \$150, UChicago Arts Pass \$45

Registration required

Register by Apr 16

This three-week seminar traces the rise of Dura Europos as a multi-ethnic and multi-religious community in the first centuries AD. We will explore its daily life, as well as its fall, including the possible use of chemical weapons by its Sasanian Persian conquerors. Students will learn about the afterlife of the city, including its discovery and the modern challenges of preserving its cultural heritage.

Instructor: Tasha Vorderstrasse, PhD, research associate, Oriental Institute

ONLINE COURSE

Before the Alphabet: Writing Systems in the Ancient World (8 weeks)

Mon, Apr 3–May 29

General \$395, members \$350, UChicago Arts Pass \$100

Registration required

Register by Mar 20

This course surveys the ways in which humans make language visible. Topics include the definition of writing, the typology of writing systems (including logographic, syllabic, and alphabetic systems), the invention and evolution of writing, and some of the cultural issues that are intertwined with scripts. The earliest, original writing systems (the so-called pristine writing systems from Sumer, Egypt, China, and Mesoamerica) and the social, cultural, and historical contexts of their inventions will be a major focus of this course, as well as their decipherment by modern scholars.

Instructor: Massimo Maiocchi, PhD, is a historian with expertise in early urbanization, the social and political history of Mesopotamia, and cuneiform texts from the third millennium BC.

WORKSHOPS

Cooking Class: Ancient Cooking with Assyrian Kitchen

Sat, Apr 1, 1–3 pm

General \$40, members \$35, UChicago Arts Pass \$15

Registration required

Register by Mar 28

Take a journey to discover the diverse and flavorful culinary heritage of the ancient Near East with Atorina Zomaya from Assyrian Kitchen, and Susanne Paulus,

assistant professor in Assyriology at the University of Chicago. Be inspired by the ancient origins of modern ingredients. At the end of the class, you will enjoy a delicious meal and socialize with other food enthusiasts. Class meets at Whole Foods Market cooking classroom (3640 N. Halsted St., 2nd Floor, Chicago, IL 60613).

3D Technology in Archaeology

Sat, Apr 8, 1–4pm

General \$25, members \$20, UChicago Arts Pass \$8

Registration required

Register by Apr 3

This workshop introduces attendees to the emerging world of 3D scanning, which is becoming increasingly useful for archaeological applications. We will discuss the science and current methods of 3D scanning and find out how it is being used at the Oriental Institute. 3D scanning equipment will be present for hands-on experience.

Instructor: Josh Cannon, PhD candidate in Near Eastern art and archaeology

LECTURE SERIES

Oriental Institute lectures are a unique opportunity to learn about the ancient Near East from world-renowned scholars. Lectures are free and open to the public, thanks to the generous support of Oriental Institute members.

Visit us online at oi.uchicago.edu/programs for full descriptions. *Registration recommended.*

Be My Baby in Babylonia: Girl Meets Boy and Vice Versa

Wed, Apr 5, 7–9pm

Free

Andrew George, Professor of Babylonian, University of London, SOAS

The David A. Kipper Ancient Israel Lecture Series: Armageddon and the Roman VIth Ferrata Legion: New Excavations at Legio, Israel

Wednesday, April 26, 7:00pm

Matthew J. Adams, Dorot Director, W. F. Albright Institute of Archaeological Research

The Epigraphic Survey at 93: Changing the Face of Archaeology with New Digital Technologies at Chicago House in Luxor, Egypt

Wed, Jun 7, 7–9pm

Free

W. Raymond Johnson, Director of the Epigraphic Survey, the Oriental Institute.

FAMILY & YOUTH PROGRAMS

DROP-IN | FOR AGES 5-ADULT

Families Day

Sat, Apr 8, 10-4pm

Free

Registration recommended

In the spirit of Autism Awareness Month, our inaugural Families Day provides a series of self-directed sensory activities to help you and your children explore and connect with the ancient Near East.

Ancient Game Day

Sat, Jun 3, 1-4pm

Free

Registration recommended

Join us for our annual celebration of ancient games! Try your hand at games from Mesopotamia, Egypt, Persia, and Nubia. Learn the principles of making board games and create your own.

Drawing Hour

Sat, Jun 17, 1-2pm

Free

Registration recommended

Practice looking closely at art and develop drawing skills. Choose ancient sculptures and pottery to sketch, or grab a drawing worksheet to loosen up and get inspired. All materials are provided and you are welcome to bring your own sketchbook (only pencil is allowed in the gallery). No drawing experience is necessary. Drop in at any time.

FEATURE

Ancient Earth Day | AGES 5-ADULT

Sat, Apr 22, 1-4pm

Free. Registration recommended.

Get crafty! We will be using recycled and natural materials to explore creative engineering and the innovative thinking you need to build with limited resources.

FAMILY PROGRAMS meet at the Oriental Institute unless otherwise noted. Children under 13 must be accompanied by an adult.

REGISTER To register, visit oi.uchicago.edu/register. For assistance or more information, email oi-education@uchicago.edu

TOURS & TOTS

LamaSeuss | AGES 0-8

Fri, May 19, 1:30-2pm

Free

Registration recommended

Join us for a pre-Stroller Tour story time! In keeping with the traditions of both our Dr. and the ancients, LamaSeuss pairs a classic story of Dr. Seuss with an activity inspired by our collection. Perfect for budding, baby archaeologists.

Stroller Tour | AGES 0-ADULT

Fri, May 19, 2-3pm

Free

Registration recommended

A light-hearted tour for caregivers and their pre-toddler-aged (18 months or younger) children. Experience different learning opportunities with a social component that allows for adult conversation where no one minds if a baby lends his or her opinion with a coo or a cry.

WORKSHOPS | FOR AGES 5-12

Junior Archaeologists

Sat, May 13, 1-3pm

General \$14, members \$10 (1 child + 1 adult); \$7/\$5 each additional registrant

Registration required. Adults must register and attend with child.

Let loose your inner Indiana Jones! Children and parents dig into our simulated excavation while learning about the real science of archaeology at the Oriental Institute's Kipper Family Archaeology Discovery Center. Includes an interactive guided tour of the galleries. Fun patches available on-site.

All Bones About It

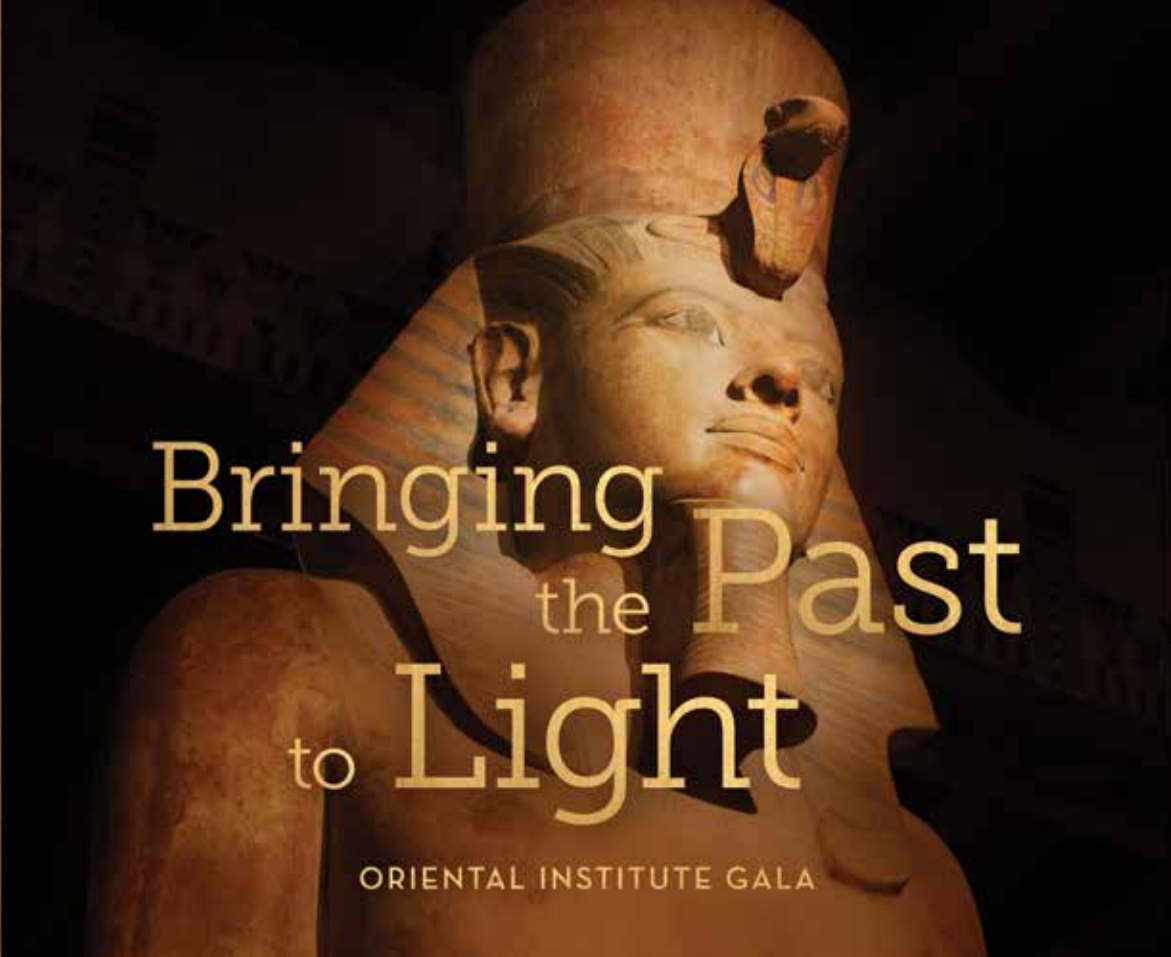
Sat, May 27, 1-3pm

General \$14, members \$10 (1 child + 1 adult); \$7/\$5 each additional registrant

Registration required. Adults must register and attend with child.

Think skeletons are just for Halloween? The bones inside you would disagree: you use your skeleton every day! What's more, written on your bones is the story of the physical activities you take part in and the food you eat. Explore how this knowledge helps archaeologists learn about the lives of ancient people. We'll give you a kids' crash course in bioarchaeology while you get hands-on with our own skeletal puzzles.

FREE!



Bringing the Past to Light

ORIENTAL INSTITUTE GALA

Save the Date

Join us as we honor
Misty and Lewis Gruber
with the James Henry Breasted Medallion

at the

2017 Oriental Institute Gala

Thursday, May 18, 2017

6:30 p.m.

The Four Seasons

120 East Delaware Place | Chicago, Illinois

For inquiries, contact Kiran Webster
at 773.834.9775 or kiranwebster@uchicago.edu.



VOLUNTEER SPOTLIGHT

BETTY BUSH

By SHIRLEE HOFFMAN

Shirlee, Oriental Institute volunteer, sits down to interview volunteer Betty Bush.

How did you become interested in volunteering at the Oriental Institute? How long have you been a volunteer?

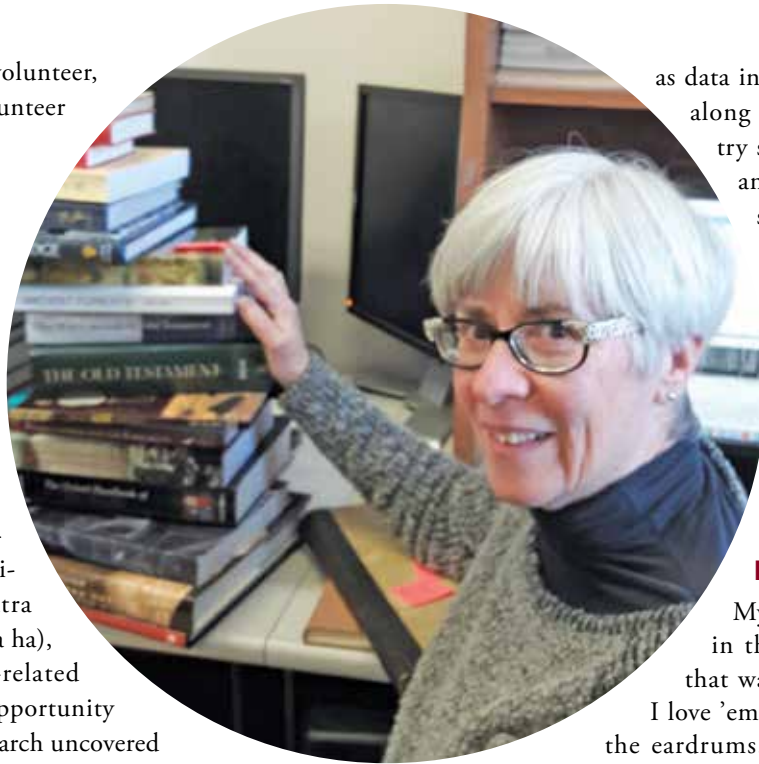
I'm a semi-retired librarian who worked in a K–8 school library; I'm still working as a reviewer and an adjunct lecturer at the University of Illinois School of Information Sciences iSchool. With some extra time in my weekly schedule (ha ha), I wanted to tackle a library-related project that I hadn't had an opportunity to try, and a good ol' Google search uncovered the Integrated Database (IDB) project (oi.uchicago.edu/research/oriental-institute-integrated-database-project-idb) at the Oriental Institute. I was already interested in the OI, having taken a number of adult continuing education classes. Long story short, I put in an application, met with Terry Friedman and Sue Geshwender, was shuffled along to Foy Scalf in the Research Archives, and settled in to what has become my new home away from home for the past three years.

Did you have any interests or training in the ancient Near East?

One of my favorite aspects of school librarianship was working on spicing up curriculum, and the 6th grade social studies focus on ancient history was of particular interest. That's what drew me into taking some adult education courses at the OI. I can't claim any expertise — surely the docents leave me in the dust when it comes to content knowledge. However, what better way to discover the really great “stories” than poking around in ancient history?

What have you done at the OI since you became a volunteer? What do you do now?

My first project was the Cuneiform Digital Library Initiative (CDLI) — cataloging images from the CDLI into the IDB. Then I scanned about 20 kazillion tablet room cards (okay, I hyperbolize here), that is, one of the sets of registration cards for cuneiform tablets in the collection, and then helped to load them



as data into the IDB as well. Somewhere along the line, Foy decided I should try some print material cataloging, and I feel like that's become the sweet spot. When I was in library school, back in the Dark Ages, I toyed with going into technical services, but instead took an eccentric veer into the school library. It's really fun to get a chance to do some cataloging after all.

What do you particularly like about being a volunteer?

My first reaction was just basking in the quiet and calm of a library that wasn't overrun with kid patrons. I love 'em to pieces, but they are hard on the eardrums. The real satisfaction though comes from knowing that, by putting in behind-the-scenes labor on the IDB, researchers around the world have expedited access to the materials they need. I see this as a stealth public service kind of job. And then, of course, it's just nice to hang around with such interesting people.

What has surprised you?

Some of my old high school/college German is coming back! How willing the faculty are to share their knowledge with volunteers through their many lectures; they are so very generous with their time. The capability of the IDB is truly amazing. Every time I learn a new feature, it makes me think of two other ways it could be used. It's also very exciting — in the nerdiest possible way — to watch the items I enter display on the public access catalog; so clunky looking in Electronic Museum (EMu), our collections management software system, and then so elegant on the public display. What an amazingly good teacher Foy Scalf is; his supply of patience is apparently limitless.

What would you say to someone who is thinking of volunteering at the OI?

There seems to be a volunteer activity available here for anyone with interest and commitment. And there's so much that needs to be done.

Become an Oriental Institute Docent. Training starts in June. Visit <http://oi.uchicago.edu/> for more information and an application.

IN STORE THE SUQ

ANNUAL INVENTORY SALE | MAY 26-JUNE 4

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RUG SALE | JUNE 1-4

30% OFF RUGS FOR MEMBERS

MEMBERS
SAVE 10%
EVERY DAY!



SUQ HOURS

MON: CLOSED
SUN-TUE, THU-SAT: 10am-5pm
WED: 10am-8pm

TRAVEL PROGRAMS

Dura Europos Discovery Tour Yale University Art Gallery

May 10–13, 2017



Scutum (shield), mid-third century AD (Yale University Art Gallery 1933.715. Yale–French Excavations at Dura Europos).

Wander through the ancient city of Dura Europos, a crossroads of cultures dating to the turn of the Common Era, located on the Euphrates in Syria. Join Oriental Institute research associate Tasha Vorderstrasse on a tour to the Yale University Art Gallery collections in New Haven, Connecticut, to explore this site, which was discovered by James Henry Breasted in 1920. Excavated by a joint French Academy–Yale University team in the 1920s and 1930s, Dura Europos revealed exceptional artifact preservation, including wall paintings, papyri, and other objects, primarily dating to the first centuries AD, which reflect the rich cultural life of the city.

This tour includes

A special guided visit to the museum exhibitions of the site, including viewing one of the wall paintings that Breasted discovered.

A talk by a museum curator and special, private viewing of select coins on display.

A behind-the-scenes visit to the Beinecke Library to look at a selection of the Dura Europos papyri, which are currently not on display.

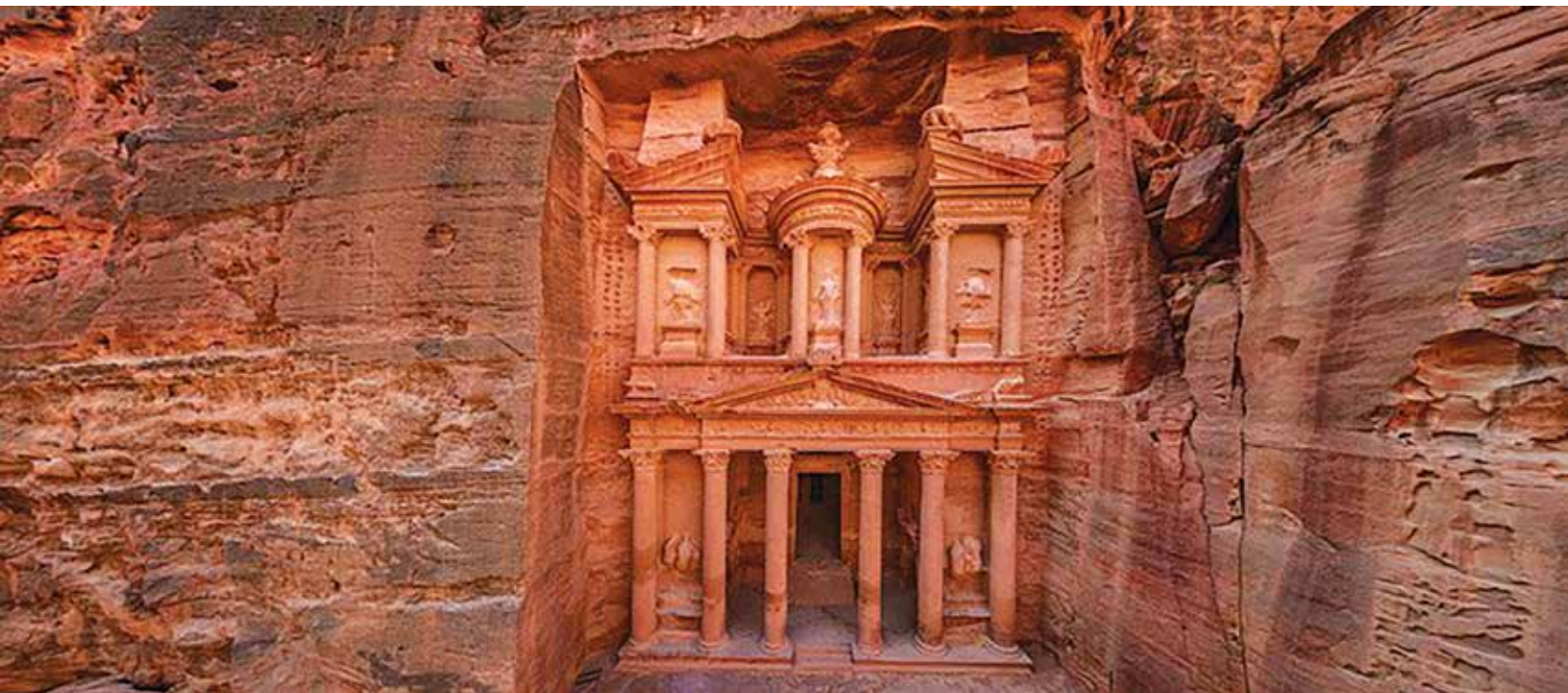
Offered in conjunction with the Adult Education course “Dura Europos: Life on the Roman Empire’s Edge and Its Discovery,” Saturdays, April 22–May 6, 2017. See page 21 for details.

Space is limited. To learn more visit oi.uchicago.edu/travel.

TRAVEL PROGRAMS

Journey to Jordan Archaeological Heritage of an Ancient Land

October 6–18, 2017



The Oriental Institute is pleased to present **Journey to Jordan — Archaeological Heritage of an Ancient Land**. Situated at the crossroads of cultures, Jordan is among the most historically rich areas in the world and is home to five UNESCO World Heritage Sites — including Petra, the desert castle of Um er-Rasas, and Wadi Rum, where T. E. Lawrence camped during the Arab Revolt of 1917–1918.

This tour includes

Led by Yorke Rowan, senior research associate at the Oriental Institute, this comprehensive tour of Jordan will include visits to the country's highlights as well as exclusive events with scholars and archaeologists and access to ongoing excavations that are otherwise inaccessible to the public.

The Travel Program is a series of (mainly) international travel tours designed exclusively for Oriental Institute members and patrons. For additional information about the tour, call Jennie Myers at 773.834.9777 or email jmyers1@uchicago.edu.

GO ONLINE to download the brochure at oi.uchicago.edu/travel. **TO BOOK**, contact Archaeological Tours at 866.740.5130 or email info@archaeologicaltr.com.

DONOR RECOGNITION

The Oriental Institute would like to recognize members who have contributed in the 2016 calendar year to the Oriental Institute at the James Henry Breasted Society level. The James Henry Breasted Society provides an annual source of unrestricted support for our most pressing research projects. Donors who direct their gift of \$1,000 or more to other areas of support at the Oriental Institute, however, receive complimentary membership to the James Henry Breasted Society.

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The annual support of our members and donors allows the Oriental Institute faculty and staff to continue to conduct world-class research and support archaeological excavations that add to our knowledge of ancient Near Eastern cultures and languages. If you would like more information on the James Henry Breasted Society or how you can support the Oriental Institute, please contact Kiran Webster at kiranwebster@uchicago.edu or 773.834.9775.

FROM THE FIELD

The Oriental Institute has sponsored archaeological and survey expeditions in nearly every country of the Middle East. There are projects currently active in Egypt, Turkey, Israel, and the West Bank. These completed and ongoing excavations have defined the basic chronologies for many ancient Near Eastern civilizations and made fundamental contributions to our understanding of basic questions in ancient human societies, ranging from the study of ancient urbanism to the origins of food production and sedentary village life in the Neolithic period. Follow the upcoming projects through their websites. If you're interested in supporting the Oriental Institute's archaeology field projects, please contact Brittany Mullins, associate director of development, at bfmullins@uchicago.edu or 773.702.5062.

KABUL, AFGHANISTAN

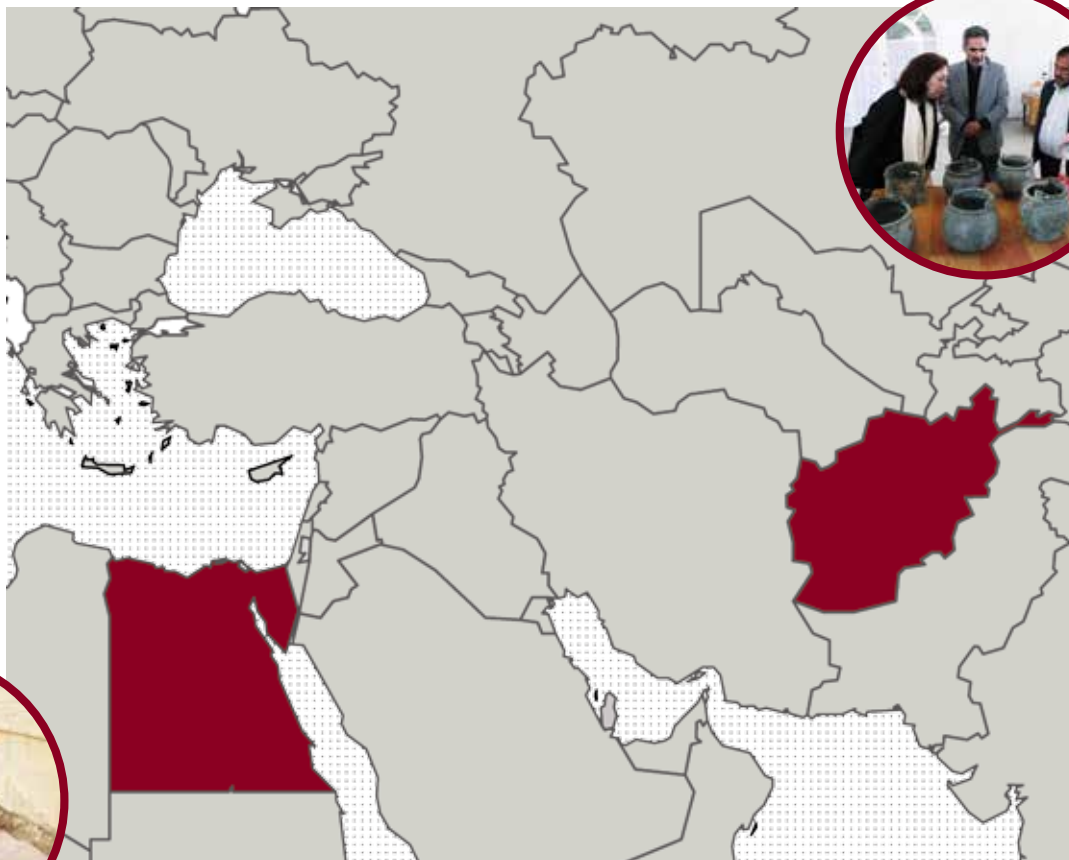
**Oriental Institute–National Museum
of Afghanistan Partnership and
Cultural Heritage Protection Work**

Dates: Ongoing

Director: Gil Stein

Onsite Director: Alejandro Gallego

[https://oi.uchicago.edu/research/
projects/oriental-institute-national-
museum-afghanistan-partnership-project](https://oi.uchicago.edu/research/projects/oriental-institute-national-museum-afghanistan-partnership-project)



LUXOR, EGYPT

Epigraphic Survey

Dates: October 15, 2016–April 15, 2017

Director: Ray Johnson

oi.uchicago.edu/research/projects/epi

EXHIBITION HIGHLIGHT



Chad Hill, flying the multi-rotor DJI Phantom 3 drone over the looted Early Bronze Age site of Fifa, Jordan. Photo: Morag Kersel, courtesy of the Follow the Pots project.

DRONES IN THE DESERT: ARCHAEOLOGY FROM ABOVE

Opens November 22, 2016

Lower Level of the Oriental Institute

This photo show explores how aerial perspectives allow archaeologists to detect patterns that may be invisible or unrecognizable from the ground. Kites, fishing poles, ladders, balloons, unpiloted aerial vehicles (UAVs), full-size helicopters and planes, and satellites are all used to produce images that aid in assessing and planning archaeological monuments, sites, and landscapes. The exhibit addresses how recent technological developments, coupled with sophisticated software, are creating new and vibrant opportunities for archaeologists to do more with images from the air. The photos illustrate the use of drones at sites in Jordan and Israel for broad-scale archaeological survey of sites, monitoring of landscape change (including looting), and mapping of excavations.

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visitmuseumcampussouth.com





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**ORIENTAL
INSTITUTE**

The University of Chicago
1155 East 58th Street
Chicago, Illinois 60637
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THE UNIVERSITY OF
CHICAGO Arts



INFORMATION

MEMBERSHIP

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The Oriental Institute depends upon members of all levels to support the learning and enrichment programs that make our Institute an important — and free — international resource.

As a member, you'll find many unique ways to get closer to the ancient Near East — including free admission to the Museum and Research Archives, invitations to special events, discounts on programs and tours, and discounts at the Institute gift shop.

\$50 ANNUAL / \$40 SENIOR (65+) INDIVIDUAL
\$75 ANNUAL / \$65 SENIOR (65+) FAMILY

HOW TO JOIN OR RENEW

ONLINE: oi.uchicago.edu/getinvolved

BY PHONE: 773.702.9513

ON SITE: at the Suq Gift Shop

GENERAL ADMISSION

FREE

ADULTS

\$10 suggested donation

CHILDREN 12 OR UNDER

\$5 suggested donation

MUSEUM & GIFT SHOP HOURS

Closed Monday

Sun-Tue, Thu-Sat: 10am-5pm

Wed: 10am-8pm

THE MUSEUM IS CLOSED

January 1

July 4

Thanksgiving Day

December 25

ACCESSIBILITY

The Museum is fully wheelchair and stroller accessible. The University Avenue west entrance is accessible by ramp and electronic doors.

PARKING

FREE parking half a block south of the Museum on University Avenue, after 4pm daily and all day on Saturday and Sunday.

GROUP VISITS

For information about group visits, please go to:

oi.uchicago.edu/museum/tours



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