



News & Notes

Issued confidentially to members and friends

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STUDYING THE MUMMY OF PETOSIRIS A PRELIMINARY REPORT

Dr. Louis T. Kircos and Emily Teeter, Ph.D.

On May 30th, at midnight, the mummy of Petosiris (OIM 269) travelled from the Egyptian gallery of The Oriental Institute to the University of Chicago Hospitals for a high-tech radiologic examination. This night time trip across Hyde Park marked the beginning of a new joint venture to examine and document the Egyptian mummies in the collection of The Oriental Institute.

Although the circumstances surrounding Petosiris's examination drew particular attention, the cooperation of the Department of Radiology in examining specimens from the OIM has been ongoing.¹ In 1989, physicians and scientists from the Department of Radiology at the University of Chicago Hospitals x-rayed four mummies in the collection of The Oriental Institute Museum. This examination, performed in the museum conservation lab with portable equipment, was undertaken in preparation for future studies including CT (computed tomography) and MRI (magnetic resonance imaging). The results of the plain radiographs were helpful in documenting certain characteristics of the mummies. However, they did not provide conclusive evidence about some basic questions, even to the gender of one

mummy. The macabre time for the transfer and work was not related to the mystique of mummies. It was purely practical: the CT scanners are used less at that time and we wanted to ensure that our work would not interfere with the use of the machines for hospital patients.

This year, museum conservator Laura D'Alessandro made arrangements with Dr. Louis Kircos, formerly Associate Professor of

Radiology and Surgery, to continue the research project using sophisticated CT and MRI methods. To date, three of the mummies have been examined with CT scans and one with MRI. The Oriental Institute wishes to extend its deepest thanks to Dr. Kircos, technicians Edward Jones and Dale Eggleston, the Department of Radiology, and the administration of the University Hospitals for their cooperation in this research project.



Figure 2. Digital radiograph of the legs of Petosiris.



Figure 1. Digital radiograph of the skull of Petosiris, showing resinous material which has solidified in the back of the skull.

Why study mummies?

Mummies are important documents which shed light upon many aspects of ancient Egyptian culture and history. They are primary records of the practical application of funerary beliefs, and poignant reminders of the ancient Egyptian quest for immortality. Artificial mummification was practiced from the 3rd Dynasty through the early Christian period.² During this long period, there were many variations and modifications in the actual procedure.³ Ideally, one might be able to date a particular mummy by the form of mummification alone. For example, according to the tradition paradigm, in the New Kingdom the four major organs (stomach, liver, lungs and intestines) were removed from the body and after mummification they were placed in separate canopic jars. This practice was modified in the 21st Dynasty (ca. 1069 B.C.) when the mummified and wrapped organs were replaced in the body cavity. The New Kingdom technique of depositing the organs in canopic jars was revived in

Continued on page two

PETOSIRIS *Continued from page one*

the 25th and 26th dynasties. After that period, the organs were most commonly placed alongside the wrapped legs of the mummy.

A difficulty with this standard outline of mummification practices for dating mummies is that there are many exceptions to this chronological outline. These variations may be due to local preferences, or perhaps to the whim of the individual embalmer. Therefore one must be cautious when assigning a date solely on the basis of the style of mummification.

Previous mummy studies

Until recent years, the most common technique of studying mummies was to unwrap them and conduct an autopsy. This destroyed the record of the wrappings, and the original appearance of the mummy (figure 3). From 1898, x-rays have been employed to study mummies without unwrapping them. However, this technique has limitations, for although x-rays produce images of bones and hard structures, they are not sensitive to the presence of soft tissue and hence they can provide only a partial record of the mummification procedure. In the mid 1960s, CT (also referred to as CAT) scans were employed. This process gives far superior results and allows researchers to view the anatomy from a perspective not available previously. This is because the anatomy is imaged perpendicular to the long axis of the body producing tomograms (thin sections) with no vestige of underlying or overlying structure to obfuscate the anatomy. The CT images demonstrate both soft tissues such as muscle and fat as well as bone. Contiguous images can be stacked together to produce three-dimensional reconstructions.

An important feature of CT imaging is that the density of each structure on an individual image is recorded.



Figure 3. Before radiologic examination of mummies was possible, mummies were physically unwrapped.

Petosiris

The first mummy which we examined was that identified on its coffin as a man named "Petosiris." This mummy was purchased by James Henry Breasted during his honeymoon trip in 1894-5. According to the travel memoirs of the newly-wed Mrs. Breasted, her husband spent an entire day negotiating the price of



Figure 4. Dr. Kircos and museum staff transfer Petosiris from The Oriental Institute to the University of Chicago Hospitals.

a group of four mummies. When the purchase was made, he hired camels to carry the mummies to their *dahabiyia* (sailboat) where the mummies were stored in the honeymoon bedroom. This information provides amusing information about the purchase of the mummy, but really very little about the object itself. The name Petosiris, which is now associated with the mummy, is given twice on the coffin, sadly without any other titles or genealogical information.

The Oriental Institute's goals in examining the mummy include the basic verification of the gender of the mummy (if female, the mummy obviously was not that of the man Petosiris named on the coffin), any indications of the age at death or cause of death and the correspondence of the scientific information to information gleaned from the coffin of the mummy.

From a radiologic standpoint, the purpose in examining Petosiris with high resolution CT was similar. We wanted to verify/identify the sex and age at death of the mummy. Furthermore, from a forensic standpoint, we wanted to determine, if possible, any indications of disease or cause of death. The high resolution techniques which we employed also enabled us to produce a three dimensional appearance of the facial skeleton. In the future we intend to produce the three dimensional appearance of the soft tissue mask of the face and compare the materials used during the mummification process using quantitative CT techniques.

The high resolution CT techniques we employed were quantitative in the respect that the images are dimensionally accurate and that they enable comparison between the radiologic density of structures within a CT image, between CT images of the same study, and between CT images of different studies. The radiologic CT density is measured in Hounsfield units, after the Nobel laureate who is credited with discovering CT. CT studies are normalized with the CT number of water being established at zero. Densities greater than water have values more than zero (bone ranges from 200 to 2000 hu) and densities less than water have values less than zero (fat is -100 to -400).

We employed quantitative CT techniques in imaging the mummies of The Oriental Institute. For instance, the resin used

ROBERT RITNER LEAVES THE ORIENTAL INSTITUTE

Robert K. Ritner, Senior Lecturer and Research Associate in The Department of Near Eastern Languages and Civilizations and Associate Editor of the Demotic Dictionary, has accepted the position of Assistant Professor of Egyptology at Yale University.

Ritner came to The Oriental Institute as a graduate student in 1975, and began working for the Demotic Dictionary Project in 1979. He received his Ph.D. with honors from the University of Chicago in 1987. His dissertation, *The Mechanics of Ancient Egyptian Magical Practice*, will be forthcoming as a monograph in the *Studies in Ancient Oriental Civilizations* series. He is familiar to Oriental Institute members as a popular lecturer on Egyptian languages, magic, and religion, and as a four-time guide of Oriental Institute tours to Egypt. Ritner has also served as Egyptology consultant for the Field Museum of Chicago and the Dallas Museum of Art. (The work he did for the latter is chronicled in *News & Notes*, May/June 1991).

We all congratulate Robert on his appointment at Yale and wish him every success.



Join us for a special members-only
Champagne Reception and Exhibit Preview
of

***Sifting the Sands of Time:
The Oriental Institute and
the Ancient Near East***

Sunday, October 6, 1991
11:00 a.m. - 1:00 p.m.

SUNDAY PROGRAMS FOR FAMILIES BEGIN AT THE ORIENTAL INSTITUTE

Beginning Sunday, September 15, The Oriental Institute will offer family-oriented Sunday afternoon programs.

A craft activity will take place or a gallery search activity guide will be handed out each Sunday from 1-4 p.m. in the Egyptian gallery. The crafts are geared toward children 6 years and older but are suitable for younger children with parental help. **Our 30 minute Sunday films will continue to be shown in Breasted Hall at 2 p.m.**, and are recommended for grade 4 through adult.

No reservations are needed, and the activities are free of charge. For additional information, please call the Museum Education office at 312/702-9507.

September 15

FILM: *Of Time, Tombs and Treasure*

CRAFT: Decorate Egyptian Face Mask

September 22

SLIDE TALK: "What An Archaeologist Does" by Rick Schoen

ACTIVITY: Pottery Search

September 29

FILM: *Iraq: Stairway to the Gods*

CRAFT: Make a Pazuzu puppet

October 6

CENTENNIAL ARTS DAY
Sifting the Sands of Time opens
FILM: *Preserving Egypt's Past*
ACTIVITY: Furnish King Tut's Tomb

October 13

FILM: *The Egyptologists*
CRAFT: Hanging mobile of Oriental Institute objects

October 20

FILM: *Iran: Landmarks in the Desert*
ACTIVITY: Find and Draw

October 27

FILM: *Egypt's Pyramids*
CRAFT: Wrap-a-mummy

November 3

FILM: *Alphabet: The Mark of Man*
ACTIVITY: Learning Hieroglyphs

November 10

FILM: *Kush: Forbidden Kingdom*

CRAFT: Make an Ancient Mirror

November 17

FILM: *The Big Dig*

ACTIVITY: You be the Archaeologist

November 24

FILM: *Champollion: Hieroglyphs Deciphered*
CRAFT: Make an Egyptian Cartouche

December 1

FILM: *Myth of the Pharaohs and Ancient Mesopotamia*
ACTIVITY: Oriental Institute Mystery

December 8

FILM: *Egypt: Gift of the Nile*
CRAFT: Make Ancient Amulets

December 15

FILM: *Preserving Egypt's Past*
ACTIVITY: Dressing for an Egyptian feast

December 22

FILM: *Rivers of Time*
ACTIVITY: Dressing for a Sumerian feast

December 29

FILM: *Explorers of the Holy Land*
ACTIVITY: Gods and Goddesses

The Oriental Institute is Pleased to Announce
THREE NEW TOURS IN ITS MEMBERS' TRAVEL PROGRAM:

EGYPT: A CLOSER LOOK

November 2 - 16, 1991 (15 days)

In response to the overwhelming demand from members for a fall trip to Egypt, The Oriental Institute has put together an exciting and original itinerary featuring special views of both new and ongoing excavations, epigraphic, and architectural projects from all periods of Egypt's history. Our leader will be **Peter Piccione, Ph.D.**, former Assistant to the Director of Chicago House in Luxor, and director of the Theban Tombs Publication Project. This unique tour offers many features exclusively for Oriental Institute members, with sessions designed to provide the most current information about American, and especially Oriental Institute, involvement in Egypt. This trip is ideal for those of our members who have travelled to Egypt with us before, and a fascinating introduction for others who have not yet had the opportunity to visit the Nile Valley.



Luxor Temple, looking toward the colonnade hall.

Cost: \$2690.00 per person, double occupancy
 Single supplement, \$510.00
 Round trip air fare, Chicago/Cairo/Chicago: \$1290.00
 Tax deductible contribution to
 The Oriental Institute: \$350.00



Yemeni highlands villager.

YEMEN: A JOURNEY TO ARABIA FELIX

January 18 - February 4, 1992 (18 days)

Known to the ancient world as "Arabia Felix", Yemen was the center of the incense trade on the Arabian Peninsula. Today this land with its terraced hillsides, soaring mountains, dramatic architecture and hospitable inhabitants is a traveller's paradise. The highlights of this fabulous trip include Sana'a, Taiz, Aden, the Wadi Hadhramawt, and Marib, the capital of Sheba. Your guide for this trip will be **Raymond**

D. Tindel, Ph.D., Registrar of The Oriental Institute Museum. A specialist in pre-Islamic South Arabia, Dr. Tindel is also Vice-President of the American Institute for Yemeni Studies.

Cost: \$2945.00 per person, double occupancy
 Single supplement, \$525.00
 Round trip air fare, Chicago/Sana'a/Chicago: \$1734.00
 Tax deductible contribution to The Oriental Institute: \$350.00



The Rock Palace (Dar el Hajjar) in Wadi Dhahr, near Sana'a.

ANCIENT KINGDOMS OF EASTERN TURKEY April 29 - May 14, 1992 (16 days)

Eastern Turkey is home to an amazing legacy of vanished civilizations, yet this area is still largely unknown to even the most adventurous traveller. This tour, specially designed for The Oriental Institute, will take you to Cappadocia, Bogözköy, Nemrut Dagi, Lake Van, and Istanbul in the expert care of **Emily Teeter, Ph.D.**, Assistant Curator of The Oriental Institute Museum. Throughout the program you will stay in comfortable and interesting hotels, such as restored Ottoman homes or converted caravansaries, and experience the finest in Turkish cuisine and hospitality.



The Armenian Church of the Holy Cross, on the island of Akdamar, near Van.

Cost: \$3380.00 per person, double occupancy
 Single supplement, \$470.00
 Round trip air fare, Chicago/Istanbul/Chicago: \$1508.00
 Tax deductible contribution to The Oriental Institute: \$350.00

For more information, please call the Membership Office at 312/702-1677. We will be happy to send you a detailed itinerary and answer any questions that you might have.

News & Notes

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All inquiries, comments, and suggestions are welcome.

THE ORIENTAL INSTITUTE CALENDAR

SPECIAL MEMBERS' EVENTS

Sunday, October 6

Champagne Reception and Members' Preview
Sifting the Sands of Time
11:00 a.m. - 1:00 p.m.

Saturday, November 9

Literacy and Scribal Traditions in the Ancient Near East
An Oriental Institute Symposium
8:30 a.m. - 4:00 p.m.

Wednesday, December 11

Members' Christmas Party and Suq Sale
6:00 - 8:30 p.m.



The Step Pyramid of Djoser, Sakkarah.



Western terrace of the tomb of King Antiochus at Nemrut Dagı.

EXHIBITIONS

October 6, 1991 - December 31, 1992

Sifting the Sands of Time: The Oriental Institute and the Ancient Near East

LECTURES

(All members' lectures will begin at 6:00 p.m.)

Wednesday, October 9

Opening lecture
Thorkild Jacobsen, Director of The Oriental Institute
1946-1948, Founder of the Nippur Expedition and Professor
Emeritus of Assyriology, Harvard University
Reception 5:15 p.m. in the Egyptian Gallery
Lecture 6:00 - 7:00 p.m. in Breasted Hall

Wednesday, November 13

Human Activity and the Mesopotamian Landscape
Tony Wilkinson, Assistant Director of the British
Archaeological Expedition to Iraq
Reception 5:15 p.m. in the Egyptian Gallery
Lecture 6:00 - 7:00 p.m. in Breasted Hall

Wednesday, December 4

Israelite Religion: A View from Jerusalem's Horizon
Gösta Ahlström, Professor Emeritus Old Testament and
Ancient Palastinian Studies, University of Chicago
Reception 5:15 p.m. in the Egyptian Gallery
Lecture 6:00 - 7:00 p.m. in Breasted Hall

GALLERY EVENTS

Join us for a series of informal gallery tours based on special themes and objects in the museum collection. Each tour will last approximately 45 minutes. Light refreshments will be served.

Wednesday, October 30

Halloween Tales from The Oriental Institute!
Mortuary Practices of the Egyptians
Gallery tour with Assistant Curator Emily Teeter
6:30 p.m.

Wednesday, November 20

Feasts in the Ancient World
Food and Ritual in Ancient Mesopotamia
Gallery tour with Curator Karen Wilson
6:30 p.m.

Friday, December 13

A Friday the Thirteenth Special!
Superstitions of the Ancient Near East
Gallery talk 6:30 p.m.

PETOSIRIS *Continued from page two*

in the mummification process has a CT number of -100 - -300. Although the cortex of many bones are intact with a CT number of about 1000 hu, the mummification process has eroded the mineralization, reducing the value to less than 100 hu. We also employed high resolution techniques (200 micron resolution) to the pubic synthesis, lumbar spine, and the facial skeleton, providing the foundation for further analysis and comparisons.

The style of mummification

The CT scan images provided much specific information about the style of mummification employed for Petosiris. The density readings of the images on the scans confirmed that the surface of Petosiris' skin was, as usual with ancient Egyptian mummies, smeared with resin before the first layer of wrappings was applied. It also appears that there are perhaps three intermediate layers of a resin-like substance between multiple layers of wrappings. The body of Petosiris is very shrunken, and the bulk of the mummy is copious layers of linen.

As was customary, the brain was removed during the mummification procedure. The lack of damage to the delicate sinus and orbital bones suggests that the brain was removed only after having been dissolved or cut into very small pieces. What appears to be a once liquid material, perhaps a resin, was poured into the skull where it solidified in the back of the skull (fig. 1). This is also well-attested by mummy autopsies. Attempts to restore a life-like appearance was achieved by packing the mouth with what may be linen impregnated with a resinous substance. Disks, which we assume on the basis of their density to be faience or stone, have been placed over each eyeball.

The major organs of the mummy were removed through a ragged embalming incision, roughly 6 inches long on the left side of the mummy, from the bottom edge of the rib cage down along the pelvic bone. A pad of linen (?) has been placed over the incision. Packets of material can be seen in the abdominal cavity. The convoluted twists of the material as well as the presence of hard inclusions (seen as bright white dots in the image), suggest that these structures are packets of linen wadding and other material, which have been placed in the body cavity to restore the fullness of the body's contour.

We have not yet been able to determine the absence or presence of the heart, although it was most commonly left in the body since it was related to the idea of revivification. As has been noted by radiologists who have previously worked with mummies, it is often so shrunken to be barely distinguishable.⁴ There are no amulets or other ornaments on or in the body cavity.

It is not uncommon for the genitalia of male mummies to be specially prepared to give them a lifelike or even exaggerated appearance.⁵ This practice is associated with the idea of rebirth in the afterlife and regeneration. According to ancient Egyptian mythology, Osiris, the god of the underworld, posthumously engendered his son Horus after his limbs were bound as a mummy by his faithful wife Isis. The most commonly attested method of emphasizing the continuing virility of male mummies was to wrap a reed or other support alongside the organ.⁶ With the mummy of Petosiris, we have encountered what appears to be a more elaborate process, the introduction of a resinous(?) substance into

his penis. This process is not otherwise mentioned in the Egyptological literature. The suggestion that the material was injected is confirmed by the continuity of the material up into the floor of the pelvic cavity.



Figure 5. The mummy is positioned on the CT bed as technician Dale Eggleston (left), Museum Conservator Laura D'Alessandro and Assistant Curator Emily Teeter look on.

Future Work

The study of Petosiris has only begun. Three dimensional reconstructions of the mummy will soon be produced. The Oriental Institute anticipates having the data examined by scholars of various disciplines who will be able to add observations from their own specialized fields. An Egyptological study of the coffins and cartonnage is underway, and those findings will be added to the medical conclusions in the effort to more precisely determine the period in which Petosiris lived.

A note on recent MRI examination of Egyptian Mummies

On June 21, 1991, the mummy of Meresamun (OIM 10707) was taken to the University of Chicago Hospitals for an examination using MRI (magnetic resonance imaging). Although various frequencies were employed, no images were produced due to the complete desiccation of the mummy's tissues.

Although there had been doubts about the effectiveness of MRI for mummy research, it was suggested that it be tried again with Meresamun, since the experiment would be conducted on a new state-of-the-art MRI machine. Unfortunately, no images were produced. MRI has been used for experimental mummy research (again with no results) in Minneapolis, Buffalo and other medical centers.

- ¹ See *News and Notes*, no. 123 (March-April 1990) for a summary of the arrangements leading up to the present work.
- ² For documentation of the earliest artificial mummification, see Zaki Iskander in J. Harris and E.F. Wente (editors), *An X-Ray Atlas of the Royal Mummies* (Chicago, 1980), 3-4.
- ³ For a summary of the procedure, see Z. Iskander in J. Harris and E.F. Wente (editors), *An X-Ray Atlas*, 19-26; Alfred Lucas, *Ancient Egyptian Materials and Industries* (4th edition, London, 1962), 270-326; Sue D'Auria et al. (editors) *Mummies and Magic* (Boston, 1988), 14-19.
- ⁴ Derek Notman et al., "Modern Imaging and Endoscopic Biopsy Techniques in Egyptian Mummies" *American Journal of Roentgenology* 150 (January, 1988):94.
- ⁵ Attested in the Old Kingdom by a mummy whose genitalia was modeled in linen, see Zaki Iskander in *X-Ray Atlas*, 11-12.
- ⁶ Attested in "several" of the mummies CT scanned by Myron Marx and Sue D'Auria for the Museum of Fine Arts, Boston. (personal communication from Dr. Marx); Sue D'Auria, Myron Marx "CT Examination of Eleven Egyptian Mummies" *Radiographics* vol. 6 no. 2, March, 1986, 324; D'Auria et al. (editors) *Mummies and Magic*, 221; Adian and Eva Cockburn (editors) *Mummies, Disease and Ancient Culture* (Cambridge, 1980), 55.

THE ORIENTAL INSTITUTE SUNDAY FILMS SEPTEMBER - OCTOBER, 1991

All films are shown at 2:00 p.m. in Breasted Hall and are free of charge. Each lasts approximately 30 minutes; a tour of the galleries will be offered immediately following the program.

- SEPTEMBER 1 Myth of the Pharaohs/Ancient Mesopotamia
8 Turkey: Crossroads of the Ancient World
15 Of Time, Tombs, and Treasure
22 Slide Talk: "What an Archaeologist Does" by Rick Schoen
29 Iraq: Stairway to the Gods
- OCTOBER 6 CENTENNIAL ARTS DAY
Sifting the Sands of Time exhibit opens
Preserving Egypt's Past
13 The Egyptologists
20 Iran: Landmarks in the Desert
27 Egypt's Pyramids

Egyptologist **Lanny Bell** will be giving a lecture on "Family Priorities and Social Status: Preliminary Remarks on the Ancient Egyptian Kinship System" at the International Congress of Egyptology in Turin, September 2-8, 1991. He will also speak on "Recent Discoveries in Luxor Temple" for the Arizona Chapter of ARCE at the University of Arizona-Tucson, November 24, 1991.

A REPORT ON THE STATE OF THE NIPPUR EXPEDITION

by McGuire Gibson, *Professor, The Oriental Institute and the Department of Near Eastern Languages and Civilizations*

Although there is still no mail service or phone links with Iraq, I have received letters from archaeological colleagues there reporting that all Iraq Museum staff and professors of ancient Mesopotamian studies at the University of Baghdad survived the war. This is good news, since the members of the Nippur Expedition and other Oriental Institute staff have worked with and been friends of many Iraqi academics. I was especially relieved to learn that Dr. Sabah Jasim Shukri, the Director of the Museum and a recent graduate of Chicago, is alive and well, as is his family.

The Iraq Museum received some damage during the war, but the objects themselves were only slightly harmed. Most of the objects had been put into underground storage before the bombing began. The same is not true of the dozen or so smaller regional museums, which were looted during the internal upheaval that followed the end of the war.

Most of the major archaeological sites apparently survived the war with little or no harm. There was some damage to the site of Ur, which received a number of hits at the edge of the mound. Minor unexcavated sites may have been affected during bombing in some areas, but we have no way of assessing any damage. Nippur, as far as anyone knows, was not touched. We do know that members of several families at Nippur, who have worked with the expedition for generations, have also survived the war, but are now facing famine and disease. The south of Iraq, where Nippur is, suffered more during the war than other areas because of its larger number of factories and super highways, as well as its proximity to Kuwait. The people of the south are feeling very sharply the loss of hundreds of thousands of jobs. In addition, the disruption of the road system and the loss of the telephone and electric grids will make the supply of aid to them much more difficult. The south is the main agricultural area of the country, so some of the people will be able to feed themselves and the small towns. Knowing the knack that Iraqis have for making do, I assume that the farmers and merchants are figuring out ways to supply the larger cities despite the loss of bridges and good roads.

Given the current conditions, it is unlikely that archaeological work will resume at Nippur in the near future. But I think we will be back eventually. In the meantime, we are hard at work on manuscripts of excavations done over the years. We have already completed one volume on the Kassite houses near the City Wall in Area WC and expect to turn over to the editor at least one other volume (if not two) by the end of the year. The preparation of material for publication will continue to keep us busy for several more years, but I hope to return for excavations before then.



Akkadian seal found in burial in Area WF, Nippur, 1990

FALL MEMBERS' COURSES

COPTIC EGYPT FROM THE MUSLIM CONQUEST TO THE PRESENT DAY

Christianity became well established in Egypt during the first three centuries A.D., where it existed as a minority religion alongside the earlier pagan religions of the Egyptians, Greeks and Romans. In the fourth century, Christianity became the official religion of Egypt and continued to flourish even after the Muslim conquest of 641. The Christians of Egypt were called "Copts" and this name has continued in use until the present day. Although many Egyptians converted to Islam after the conquest, a significant number remained Christian. Copts make up the largest religious minority in modern-day Egypt and are a significant branch of Eastern Christianity outside of Egypt as well.

In this course literary, historical, and documentary sources, as well as artistic and archaeological evidence, will be used to explore the history, literature, arts and culture of the Copts. After a brief introduction to the Coptic Christians of the pre-Islamic period, the course will examine the dramatic events of the Muslim conquest of Egypt and its lasting impact on the Christian population of Egypt. The often turbulent history of the Coptic church under Muslim rule and the resulting development of Coptic culture and society will form the focus of the remainder of the class.

There is no required textbook for this class. The instructor will furnish readings for class discussion, as well as bibliographies for further reading and other informational handouts.

Instructor: Terry Wilfong is a Ph.D. candidate in the Department of Near Eastern Languages and Civilizations. His dissertation research is in the field of Coptic studies and he recently served as guest curator for The Oriental Institute Museum exhibit "Another Egypt: Coptic Christians at Thebes."

Class will meet at The Oriental Institute from 10 a.m. until noon on Saturdays beginning October 5 and continuing through December 7, with no class meetings on November 9 and November 30. **PREREGISTRATION IS REQUIRED.** Tuition for the course is \$65 for Oriental Institute members, \$95 for nonmembers (includes \$30 annual membership in The Oriental Institute).

AN EGYPTIAN ODYSSEY: UP THE NILE ON A WING AND A CHAIR

This course is an armchair journey through the Nile River Valley to explore the physical remains of ancient Egyptian civilization. It is structured as a commercial tour, so that participants might enjoy it as a "travel" experience without leaving Chicago. Illustrated lectures will be drawn from the instructor's collection of over 5,000 color slides of Egyptian archaeological and cultural sites. These presentations will convey the group on a north-south journey from the ancient city of Tanis in the Egyptian delta to the temples of Abu Simbel in the far south. Major attractions will include: Cairo, the Pyramids, Beni Hasan, Amarna, Abydos, and Luxor. The group will also explore in depth many lesser known but still fascinating sites such as Meir, Antinopolis, Akoris, el-Hawawish, Akhmim, etc. In addition, the journey from Abydos to Aswan will be via cruise ship on the Nile River, with sumptuous images of modern Egyptian river and village life.

The first class meeting will be an illustrated travel-orientation session and Near Eastern dinner buffet, to be held off campus. To add to the travel experience, colorful brochures, guides, and other reading materials will be distributed periodically during the course, and "passports" will be stamped regularly.

Required Text: W. Murnane, *The Penguin Guide to Ancient Egypt*. Other materials will be handed out in class.

Instructor: Peter A. Piccione, Ph.D., has lived and traveled extensively through Egypt as a practicing Egyptologist and travel-tour leader. Dr. Piccione is also the director of the Theban Tombs Publication Project in Western Thebes and is best known publicly for his decipherment of the ancient Egyptian board game, *senet*.

Class will meet at The Oriental Institute Wednesday evenings from 7:00 pm - 9:00 p.m., beginning October 2 and continuing through November 20. **The first class will be held off campus.** Tuition for the course is \$80 for Oriental Institute members, \$110 for nonmembers (includes \$30 annual membership in The Oriental Institute). Cost of the course includes the price of the orientation buffet. Class size is limited. Registration ends September 25. Call the Museum Education office at 312/702-9507 for further information.

Please register me for the following course:

- An Egyptian Odyssey: Up The Nile on a Wing and a Chair - \$80**
- Coptic Egypt - \$65**

- I am a member and enclose a check for tuition.
- I am not a member, but also enclose a **separate** check for \$30 to cover a one year Oriental Institute membership.

Name _____

Address _____

City/State/Zipcode _____

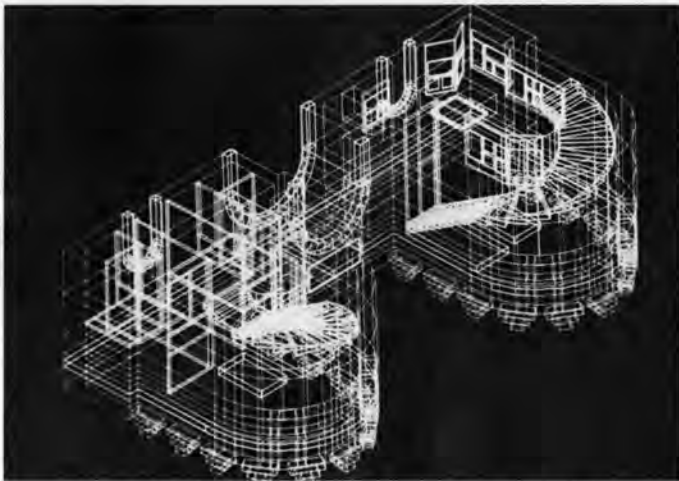
Daytime telephone _____

Please make checks payable to THE ORIENTAL INSTITUTE, and mail to the Education Office, The Oriental Institute, 1155 East 58th Street, Chicago, IL 60637. For information, call 312/702-9507.

THE ORIENTAL INSTITUTE COMPUTER LABORATORY

Since its inception The Oriental Institute has been at the forefront of modern knowledge of the ancient Near East, and as the end of the twentieth century draws near it will also be at the cutting edge of computer technology used to enhance our knowledge of the ancient world. This technology, not yet commonplace in archaeological institutions at major universities, is due largely to the work of The Oriental Institute Computer Laboratory, under the direction of John Sanders.

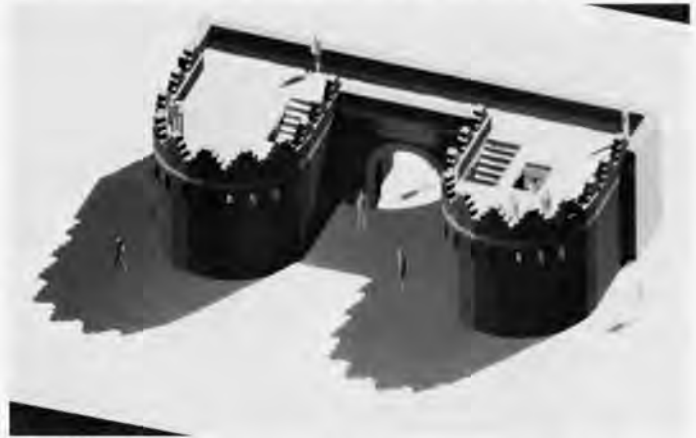
The Computer Laboratory, started in July of 1990, functions on several levels. At the most basic level, it provides faculty and staff with help for specific computer applications, including word processing, database management, and graphics. One of the most recent and important developments was the installation of both Apple LocalTalk and Ethernet computer networks in all Institute offices, which allow access to Electronic Mail, the On-Line Catalogue of the University's libraries, and international computer networks such as BITNET and INTERNET. Electronic Mail enables the faculty and staff to communicate with their colleagues world-wide in a very timely and cost-effective manner, facilitating the spread of ideas and information.



These photos of the Visitor's Center at Aqaba show the building as a "wireframe", the geometry used to construct the computer model.

The Computer Laboratory itself contains some very technologically advanced equipment: a color graphics workstation manufactured by SUN computers, high performance Apple and IBM computers, and an Apple computer that operates the Electronic Mail system. This equipment, in turn, allows Sanders to work closely with the directors of Oriental Institute excavations to produce sophisticated computer models and graphic images of their sites. During this past year Sanders has collaborated on projects with McGuire Gibson (Nippur), Doug Esse (Tell Yaquash), Donald Whitcomb (Aqaba), and Director William M. Sumner (Tal-e Malyan), and is currently working with Mark Lehner on computer imaging of the Giza Plateau.

In May of 1991, Lehner supplied the Computer Laboratory with a one-meter contour map showing the topography and monuments of the Giza Plateau. Sanders then made a computer copy of this map by placing the original on a sensitized board, called a digitizer, and tracing the contour lines with a mouse. From this basic contour map Sanders will be able to produce four



A rendering of the computer model showing surfaces with shadows.

separate computer models of the Giza Plateau in accordance with Lehner's reconstructions of different stages during its development: before any construction was undertaken, and after each of the Pyramids of Khufu, Chephron, and Mycerinus were built.

The next stage in the development of the Giza Plateau computer models involves one of the priorities of the Computer Laboratory in the next six months: the acquisition of a video still camera and a color scanner able to turn a video picture or a color photograph into a computer image. This technology is a major advance over regular color or black-and-white film photography because processing of the images is done on the computer, eliminating the need for a darkroom or third-party film processing. This technology also eliminates over-exposed or under-exposed photographs because the computer can manipulate part or all of the image until the desired exposure is reached.

Once this equipment is available in the Computer Laboratory video images from the Giza Plateau, such as sand, rock outcrops, and even the architectural monuments themselves will be transferred to the computer. The computer will then apply these video images to the computer model (in much the way a bandage is applied to skin) in a process known as "Texture Mapping". For example, the computer model of that portion of the Giza Plateau covered in sand will not be represented merely by a sand color, but will in effect be "painted" with an actual video photograph of sand.

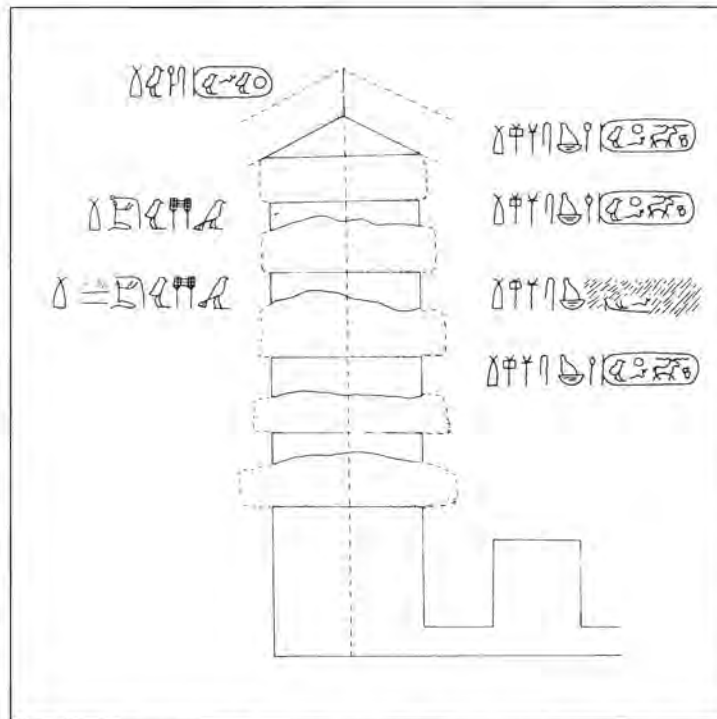
Another technology that the Computer Laboratory is investigating involves the ability to scan textual documents. This process, known as Optical Character Recognition (OCR), would dramatically cut down on the time spent typing existing papers and articles into a computer file, and might even reduce the amount of photocopying required by faculty and staff. The ability to have books, articles, and papers stored as computer files would allow scholars to search for particular words or phrases, create indexes and concordances, and to accomplish these tasks in much less time and with greater accuracy than similar manual procedures.

With this expansion of advanced facilities made available to faculty, staff, students, and researchers, The Oriental Institute will continue to investigate the role of computer technology in the pursuit of the past.

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