

# THE OSTRACON



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### IN THIS ISSUE

Page	
2	<i>Alfred Lucas: Egypt's Sherlock Holmes</i> by Dr. Mark Gilberg
7	<i>Scandal in the Embalming House</i> by Dr. W. Benson Harer
10	<i>Mereruka: Drawing on Life for the Dead</i> by Charles E. Cook
12	<i>The New Egyptian Mummies Exhibit at DMNH</i> by Graeme Davis
13	<i>Lecture Reports</i>
15	<i>House of Scrolls: Book Reviews</i>
16	<i>The Electric Papyrus: New Media Reviews</i>

# ALFRED LUCAS

## EGYPT'S SHERLOCK HOLMES

by Mark Gilberg



Alfred Lucas

### About the Author

Dr. Mark Gilberg has a BS and MSc from Stanford University, and earned his PhD at the University of London Institute of Archaeology. In 1983 he joined the Conservation Processes Research Division of the Canadian Conservation Institute. In 1987 he was appointed Scientific Officer in the Materials Conservation Division of the Australian Museum. Since 1994 he has been Research Coordinator for the National Center for Preservation Technology and Training in Natchitoches, Louisiana.

### Introduction

To date, most of what we know about early developments in archaeological conservation may be derived from the published works of only a handful of individuals. Alfred Lucas, chemist at the Cairo Museum, was one of these few who laid the groundwork for many of the most important developments in the field of archaeological conservation, and had a profound impact upon the establishment of materials conservation as a profession.

Alfred Lucas was the quintessential conservation scientist. An analytical chemist by training with a strong background in forensic science, Lucas was ideally suited to elucidate the technical achievements of the ancient Egyptians. Though probably best known for his work *Ancient Egyptian Materials and Industries* (republished in a revised edition as late as 1989), Lucas published numerous articles and books on the care and preservation of archaeological materials. Ironically, the bulk of his contributions to the field took place after his retirement at 55.

### The Laboratory of the Government Chemist

Surprisingly little is known of Lucas' personal life. Much of what we do know derives from a handful of obituaries published soon after his death by several of his colleagues and close friends. He was born on August 27, 1867 in Charlton-upon-Medlock, Lancashire, England. His father was a commercial traveler, or salesman. Lucas attended private schools in Manchester. In August, 1891, after passing the entrance examinations in chemistry, physics and mathematics, Lucas was appointed a "student" in the Inland Revenue Laboratory in London. At the time, all students were also required to attend a two year course at the Royal School of Science (now known as Imperial College). Lucas successfully completed the course, and in April of 1893 was appointed "temporary assistant".

The Inland Revenue Laboratory later became the Laboratory of the Government Chemist, which recently celebrated its 150th anniversary. The Laboratory was initially formed for the purpose of analyzing the alcohol content of beer and wine imported into Britain in order to establish the required custom duties. Over the years, the Laboratory's responsibilities were expanded to include the analysis of a wide variety of commercial products. The government chemists worked long hours, generally six days a week, performing tedious chemical analysis without the aid of modern analytical instrumentation. No doubt it was here that Lucas perfected the analytical skills which were to serve him so well years later in Egypt.

### Egypt and the Government Analytical Laboratory

In 1897 Lucas was placed on extended leave from the Civil Service after contracting tuberculosis. A year later he left for Egypt, where he made a complete recovery. Lucas probably chose Egypt for health reasons, though opportunities for advancement for a young, aspiring civil servant were certainly greater in the colonies than at home. Cairo at the turn of the century was an exciting, vibrant city, though the rise of Arab nationalism soon made British rule increasingly tenuous. Like many expatriates, Lucas took refuge at the Turf Club - which served as a "gentlemen's club" for the British in Egypt - though he soon secured a small flat in the suburb of Garden City.

In May 1898, not long after his arrival in Cairo, Lucas joined the Salt Department, which later became the Egyptian Salt and Soda Company. Less than a year later, he accepted another position as a chemist at the Geological Survey Department under the direction of Sir Henry Lyons. There he managed a small chemical laboratory in the gardens of the Public Works Ministry, for the analysis of Egyptian minerals. It was here that Lucas undoubtedly developed his passion for Egyptology, as his duties invariably brought him into contact with ancient monuments and sites. During this time he published a number of important studies on the soils and waters of the Nile, as well as the deterioration of building stones in Egypt.

In 1912, with the addition of the Assay Office and a small petroleum division, this laboratory became a separate department under Lucas's direction, referred to as the Government Analytical Laboratories and Assay Office. Lucas assisted the British military

authorities on a number of important chemical matters during the First World War. For his efforts he received the Order of the British Empire. Egypt subsequently awarded him the third order of the Nile and the fourth order of Osmania.

As head of this new department, Lucas became somewhat of a local celebrity as an expert witness on forensic matters. He acquired a reputation as a ballistics and hand-writing expert and testified at various criminal proceedings involving firearms and forgeries. One of his colleagues described him as "not an easy witness to bully or browbeat, and his evidence was often vital for either the condemnation or acquittal of the accused". The local English-language newspaper, *The Egyptian Gazette*, frequently reported Lucas' testimony at various criminal trials including the "Great Conspiracy Trial" of 1923, where he identified the poison applied to the tip of an arrow used in a murder.

In a more celebrated case, Lucas calculated the trajectory of a bullet which had been accidentally fired by a British soldier from a train, killing a passenger in an adjacent compartment. Apparently, the bullet deflected off some ironwork in the station before entering through the window and striking the victim. Lucas worked out mathematically where the bullet struck the ironwork, and located the actual mark.

His keen interest in forensic science led him to publish numerous papers on the application of chemistry to criminal investigations. In 1920 he published one of the first English texts on the subject, *Legal Chemistry and Scientific Criminal Investigation*. An expanded version of this work, *Forensic Chemistry*, was published the following year and became a standard textbook on the subject. Subsequent editions frequently drew upon his experience with archaeological materials, which he often used as examples. In his discussion of the decomposition of the human body after death, Lucas frequently referred to Egyptian mummification practices. He also used Egyptian antiquities as examples to illustrate how chemical analysis could be used to establish the authenticity of an antique.

His forensic work drew critical acclaim both at home and abroad. *Legal Chemistry* received high praise from the eminent medical-legal expert, C.A. Mitchell, editor of *The Analyst*. Excerpts from *Forensic Chemistry* even appeared in *The Egyptian Gazette*, which referred to him as "Egypt's Sherlock Holmes." He probably relished this reputation given his fondness for detective thrillers, particularly the works of Austin Freedman and John Rhode. Apparently, many of the authors were his personal friends.

### The Cairo Museum and the Tomb of Tutankhamun

In March 1923, Lucas retired from the Civil Service aged 55, to pursue his interest in Egyptian archaeology. For years he had maintained a small chemical laboratory at his flat at Gresham House in Garden City. It was here with the aid of a small electric furnace that he was able to reproduce ancient faience, the composition of which was a matter of great dispute. Within a month of his retirement, Lucas was appointed consulting chemist to the Egyptian Department of Antiquities in Cairo, where he served both officially and unofficially until his death in 1945. In 1932 his contract was not renewed, though he remained at the Museum working as a volunteer until December 1934 when, once again, he was given official status and a small salary.

Lucas was fascinated with the technical achievements of the ancient Egyptians. Over the years he published numerous studies describing the composition and method of manufacture of a range of ancient Egyptian materials. These studies culminated in the

publication in 1926 of the first comprehensive treatise on the subject: *Ancient Egyptian Materials*. Extensively revised in successive editions, it grew to become a standard textbook, laying the groundwork for many of the most important advances in Egyptology. At the time of its publication, few archaeometric studies of ancient Egyptian materials had been conducted with any degree of rigor, and inferences were often made based on incomplete or inconclusive evidence. Lucas brought a much-needed objectivity to the study of ancient Egyptian materials, and succeeded in dispelling a number of prevailing misconceptions particularly with regard to the true nature of faience, the materials used in mummification, and the use of antimony in ancient Egypt.

The purported use of antimony by the ancient Egyptians was particularly controversial. Antimony plating had been reported by Fink and Kopp (1933) who described several copper objects possessing scattered surface spots which they identified as metallic antimony. Lucas disputed their findings, and suggested that the presence of antimony was more likely the result of the electrolytic reduction process used to clean the objects. Antimony, he said, was not an uncommon impurity in ancient Egyptian copper objects, and electrolytic cleaning may have reduced antimony corrosion products in the objects to their metallic state, thus producing the appearance of plating.

His work, however, was not always welcomed by the archaeological community. Though most archaeologists respected his contributions, Lucas, neither an archaeologist nor historian by training, was considered an interloper by others. Some criticisms were justified. His published works frequently lacked adequate descriptions of the procedures he used to analyze Egyptian antiquities, and his reference citations were often incomplete.

It was not long after his arrival at the Cairo Museum that Lucas was approached by Howard Carter to assist in the scientific examination and preservation of the antiquities excavated from the tomb of Tutankhamun. Lucas proved to be one of Carter's most loyal and dedicated supporters, and served him well throughout many seasons of excavation. Though the motives and intentions of many of the individuals associated with the excavation of the tomb of Tutankhamun were often called into question, Lucas was always beyond reproach. Indeed, Lucas has been described as "probably the only truly honest person associated with the project" (Hoving 1978).

Lucas, along with the talented young archaeologist Arthur Mace, who had a reputation as a skilled excavator and restorer, established a makeshift laboratory in the empty tomb of Seti II, located directly opposite the opening of Tutankhamun's tomb. Antiquities were transferred there for preliminary treatment prior to the journey to the Cairo Museum. After treatment and packing, the artifacts were transported by camel or mule to the Nile some six miles away, and loaded onto a steamer for Cairo. Conditions in the tomb were difficult to say the least. Cramped and extremely hot, Lucas and Mace labored long hours trying to keep pace as the tomb was cleared of its contents.

Highly descriptive accounts of life in this conservation laboratory were published in many popular newspapers throughout 1923, including *The Egyptian Gazette*, *The New York Times*, and *The*



Cartouche of Tutankhamen

*Times*. A number of these newspapers published interviews with Lucas, who did much to popularize conservation by drawing the public's attention to many behind-the-scenes activities. In the following article published by *The Times*, Lucas described many of the difficulties he encountered when preserving the antiquities excavated from the tomb. Though he possessed little, if any, experience in the treatment of archaeological materials, Lucas displayed a remarkable sensitivity for their care and preservation.

*"Many of the objects are in such a condition that before they are photographed, recorded, packed, or transported to Cairo they must be cleaned, strengthened and repaired. Any error in treatment might ruin them, and would probably be irreparable. Thus, some of the articles are of wood covered with plaster (gesso), which in turn is gilt or painted, and also frequently ornamented with coloured inlay. How is such an object to be treated? Manifestly, the first thing to do is to remove superficial dust, which may usually be done by means of a small pair of bellows or by gentle brushing with an artist's small, soft, dry bristle. A duster cannot be used, as this might catch in any loose gold and cause damage. After removing the loose dust, although there is considerable improvement in the appearance, neither the gold (or paint) nor inlay is yet bright and clean. At this stage it frequently seems probable that treatment with water might be helpful, but before water is used it must be known whether it will cause any injury. What will be the effect of water on the dry wood, what on the gilt or paint, what on the gesso, what on the inlay, and what on the cementing material? Before these questions can be answered the nature and properties of all these materials must be analyzed. The nature of the materials must also be known before the object can be correctly described. What, for example, is the composition of the coloured inlay? Is it glass, faience, or stone?"*

*Very little chemical work has been done on many of the problems mentioned, and of that little a considerable proportion of the results are so scattered in scientific journals that they cannot easily be traced. Frequently, too, the chemist has not been in sufficiently intimate contact with the archaeological side of the question and, therefore, from the results of a single analysis of a small fragment of a specimen, about which he knows little or nothing, he refrains from giving a definite opinion.*

*At this point, too, other chemical problems present themselves. For instance, what are the nature and cause of the strongly adherent amorphous coating frequently found on faience inlay or the white coating on faience vessels? From the reply to these questions the nature of the chemical changes that have taken place may be deduced and so methods of cure may be devised. A chemical analysis, therefore, of all surface incrustations or deposits is essential.*

*Again, what is the composition of the various cementing materials originally used? How was the gesso made to adhere to wood or gold fastened to gesso? What cement was used for inlay on gesso and for inlay on jewelry, respectively? What is the best cementing material for refastening loose gold or*



*loose inlay, since a material employed by the Ancient Egyptians in the dry climate of Upper Egypt is not necessarily suitable for the damper climate of museums?"*

Lucas and Mace developed an impressive system for documenting the condition and treatment applied to the individual objects, using cross-referenced index cards which can still be found in the Griffith Archives at Oxford. Treatment was minimal. Objects were cleaned of dirt using soft bristle brushes and bellows, and, if necessary, strengthened by impregnation with paraffin or beeswax, or celluloid (cellulose nitrate) dissolved in acetone. They also undertook minor repairs on certain items. The use of cellulose nitrate as a consolidant for the treatment of archaeological materials had only recently been introduced. Lucas recognized its potential but at the same time was aware of its limitations, particularly its tendency to discolor with age:

*"Celluloid does of course turn slightly yellow in time, but the amount of discolouration shown by a 1% solution is very small and all other colourless fixative solutions I know also discolor."*

Altogether, Lucas worked nine full seasons at Luxor. The rest of his time was spent in Cairo performing chemical analysis and preparing objects for exhibition. During the summer, he would travel to England to visit family and consult with colleagues at the British Museum - where he was already known as "Tutankhamun's doctor." Throughout his life, Lucas remained intimately involved with the care and preservation of the antiquities excavated from Tutankhamun's tomb. He even assisted in packing and unpacking when the objects were moved from the museum during World War II as a safeguard against Italian bombing. Without a doubt, the survival of many of these antiquities can be attributed to his efforts.

One event, in particular, epitomizes this devotion. When the British Broadcasting Company wanted to record the sound of one of Tutankhamun's silver trumpets, a musician from the army unit in the Kasr el-Nil barracks was asked to come to the Cairo Museum to play it the night before the broadcast. When no one was looking, he slipped a mouthpiece into the instrument, ramming it into place with the palm of his hand and causing the ancient seam to open from end to end. Lucas spent the entire night in the laboratory re-soldering the metal. When the Museum was opened the following morning, the trumpet was back in its case.

In 1924, Lucas published his most definitive work on the preservation of archaeological artifacts. *Antiquities: Their Restoration and Preservation* drew heavily upon his experience with the treatment of Tutankhamun's tomb. Though it contained few technical advances, it was significant for its overall approach to the treatment of archaeological materials. Lucas' guiding philosophy was relatively simple. To preserve an object, its composition and method of manufacture must be thoroughly understood, as well as the exact nature of the change or deterioration which has occurred. Moreover, the long-term impact of the proposed treat-



ment method must be taken into consideration. Lucas foresaw the need for a scientific approach to the treatment of archaeological materials, and at the same time he recognized the need for highly-trained, skilled craftsmen capable of undertaking the actual treatment. He believed this blending of art and science in conservation could only be achieved through the combined efforts of dedicated scientists and conservators.

*"Although the principles on which the cleaning and preservation of antiquities are based demand a considerable amount of scientific and chemical knowledge, the application of these principles is largely a matter of skilled manipulation founded upon long training and improved constant practice. At one time all work of the nature of that under consideration was undertaken without scientific advice, but now the tendency is often in the other direction, and the chemist is expected, not only to advise methods, but also to carry them out. The most satisfactory arrangement, however, is to have a small staff of trained and skilled workmen with a consulting chemist, who has specialized in the subject, attached, and every large museum should possess such a staff."*

Though his most important work was associated with the tomb of Tutankhamun, Lucas provided invaluable assistance to American, British and French excavators active in Egypt during the early 1900's. His efforts on behalf of George Reisner, in particular, did much to secure the preservation of the antiquities excavated from the Tomb of Queen Heter-pheres, the mother of Khufu. The preservation of many of the antiquities excavated by Montet from the intact burial of King Shashanq at Tanis also owes much to



Lucas. His efforts on behalf of other archaeologists, however, remain poorly documented in the literature though references to his analytical work can be found throughout the published work of Engelbach (1946), Brunton (1930) and others.

### The War Years and the Theban Tombs

During World War II Lucas broadcasted regularly to troops stationed in Egypt, and frequently lectured at hospitals and military camps. He felt a deep affection for the soldiers, and delighted in entertaining them. His services were also much in demand by the military authorities, both American and British, who sought his forensic expertise in numerous courts martial.

In spite of the war and failing health, Lucas still remained active. In 1941 he was asked to serve on a commission to consider the restoration of the Theban tombs which for years had suffered from vandalism, flooding and general neglect. Lucas was an obvious choice given his knowledge of local hydrology and geology, as well as his experience with the preservation of large stone monuments and sites. Some years earlier, Lucas had conducted one of the first environmental surveys of the Theban tombs. The commission was primarily interested in the preservation of the extant wall paintings, which were in extremely poor condition and had undergone a limited amount of restoration. Lucas himself was particularly concerned with the restoration work undertaken by a paintings restorer who had succeeded in matching the colors on the tomb walls so well that it was impossible to distinguish what was original and what was new. Lucas believed that such indetectible restoration should not be allowed under any circumstances, and that the

tombs were in need of an architect to effect structural repairs, and not a paintings restorer to make the wall paintings simply look "pretty". He cautioned against any attempt at further treatment until a complete scientific investigation was conducted.

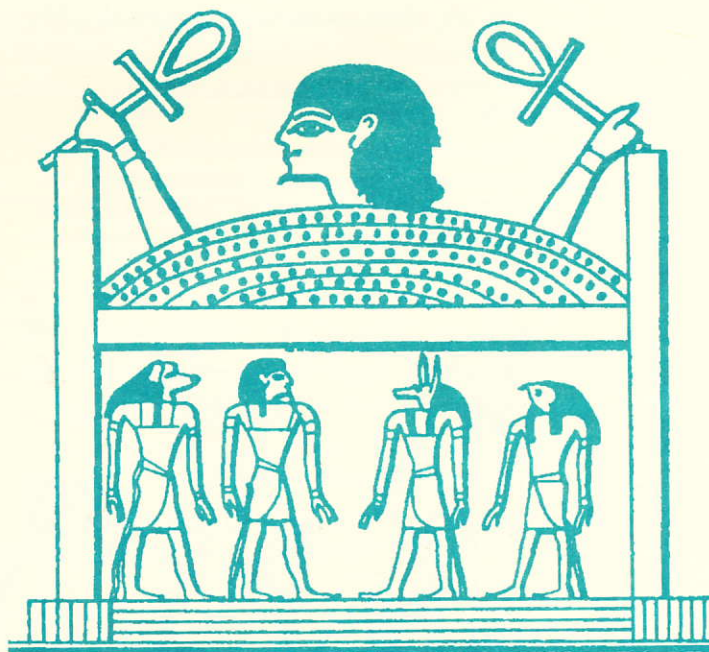
In one of his last official duties, Lucas' sense of justice was evident when he drew the Commission's attention to the salary paid to his Egyptian successor at the Cairo Museum:

*"Incidentally I should like to draw attention to the fact that Zaki Iskander Hanna Effendi is grossly underpaid and certainly he should be promoted to the next class at the least. At present he is paid £12 per month, the next class being double that. I am told that one or more of Stoppelaere's assistants, who are 'not in the same street' as regards qualifications with him, have been promoted to the higher class. This does not make for satisfaction and good work."*

Lucas died at the age of 78, while on his way to Luxor to attend a meeting of the Commission to inspect the tombs. Lucas's death might have been prevented had it not been for an unlikely sequence of events. For years he had suffered from heart problems. Guy Brunton, a fellow member of the commission who was traveling with Lucas on the train, carried Lucas' heart medicine so that he could administer the drug in the event of a heart attack. For some reason they were traveling on different *arabiyas* (cars) from the train station to the hotel in Luxor when Lucas fell ill. Brunton arrived too late to save him.

Lucas died on December 9, 1945, the lone survivor of Tutankhamun's curse. As a bachelor, the bulk of his estate was left to his brother, sister, and each of their children. Though his notes on the conservation of the tomb of Tutankhamun were transferred to the Griffith Archives at Cambridge, little else remains other than his published works. He left behind a body of work without parallel in any other branch of archaeology. In total he published over 100 books and papers, including two small booklets entitled *A Potted History of Egypt* and *A Potted History of Lybia* which he printed at his own expense. A deeply religious man with an ardent interest in Biblical archaeology, Lucas also published a little-known work entitled *The Route of the Exodus of the Israelites from Egypt* in 1938.

Lucas was clearly ahead of his time. Fortunately for Egyptology, he was the right man, in the right place, at the right moment in history.



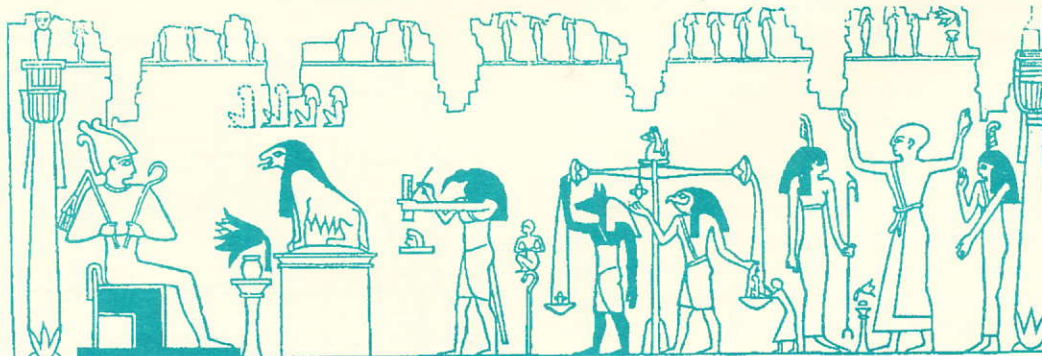
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# Scandal in the Embalming House

by W. Benson Harer

## About the Author

W. Benson Harer is a physician in San Bernardino, CA. He is interested in scientific methods for the study of mummification practices in ancient Egypt. Harer also serves on the Board of Governors for ARCE (American Research Center in Egypt), and is also a member of the ESS.

This article is here reprinted with special permission by Terry Walz, Executive Director of the American Research Center in Egypt, and Dr. Harer. It appeared in the October 1997 issue of the ARCE newsletter.

As a physician and a student of ancient Egypt, I am convinced that no significant evolution in either human body or human behavior has occurred since the dawn of civilization. Recent reassessment if the first scientific autopsy of an Egyptian mummy done in 1821 reinforces that belief. *The American Way of Death* by Jessica Mitford was a blockbuster muckraking sensation when published in 1963. She related tales of fraud, overcharging, and deceitful practices. Sensational journalists followed with tales of desecration and necrophilia. It appears that the Ancient Egyptian Way of Death was no better

It is common knowledge that the Egyptians believed in life after death which was similar to the life they enjoyed on the banks of the Nile. Furthermore in contrast to our modern beliefs, they believed you can take it with you. Finally they believed that preservation of the body was important for full enjoyment of their life after death. The result was a significant embalming industry which flourished for many centuries.

Then, as now, the majority of those in the business were honorable people who performed a necessary service at a fair price, giving appropriate value for the costs incurred by the deceased person's family or estate. Then as now there were those who failed that standard through avarice or sloth.

In the earliest dynasties mummification was reserved for the king. Gradually it was extended to other royalty, the nobility and ultimately to everyone who could afford it. The more elaborate process cost more, but beyond a certain point the increased cost and use of expensive supplements did not produce a higher quality mummy.

Mummification was carried out for about 3000 years. Over such a great span of time it is not surprising to find some modifications in the techniques. It is generally agreed that the quality of embalming was at its best about Dynasty 20-21. Gradually in later dynasties less attention was paid to the actual preservation of the body and more to the external appearance of the wrapped mummy. The art of the bandage ultimately outstripped the skill of the embalmer. Some late mummies looked splendid, but actually contained incomplete bodies, sometimes even body parts, and sometimes no body at all!

Since the final wrapped mummy was all the family might see, the opportunity was presented to skip aspects of the process which

would be unseen. It was only if some vandal desecrated it by unwrapping that such dereliction would be revealed. Non-destructive x-ray has been an option in this past century. In some cases medical endoscopes can be inserted through available orifices to permit limited internal inspection.

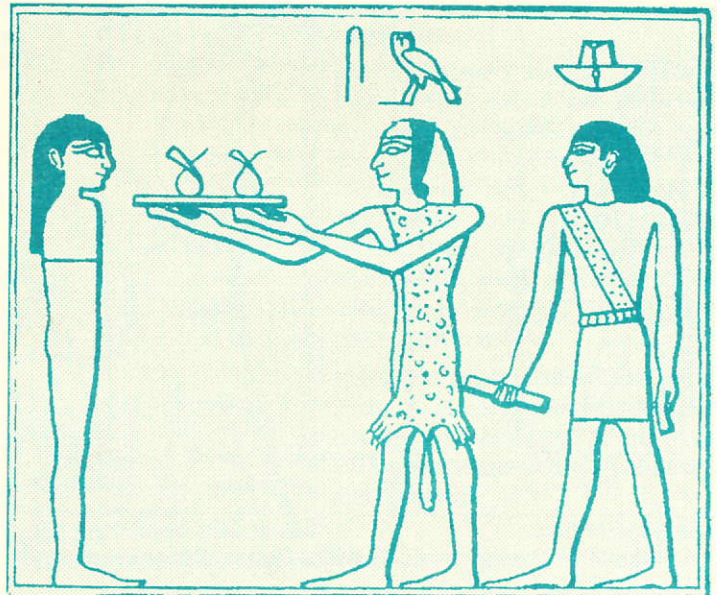
The key to mummification was to induce dehydration of the body before putrefaction occurred. The hot dry climate of the Nile Valley facilitated this. In fact predynastic burials in which the naked body was simply buried in the dry sand often yielded splendid mummies. In modern DNA analysis these often yield better results than from tissue from mummies prepared thousands of years later.

The disadvantage to this simple and effective technique was that the corpse was at risk of being unearthed and consumed by a jackal or other marauding animal. Protecting the body with a basket or wooden coffin ultimately resulted in only the skeleton remaining. Effective embalming therefore was a necessity.

Since dehydration is the key, the ancient Egyptians recognized the need to remove the organs with a high fluid content --brain, lungs, liver, spleen and organs of the gastrointestinal tract. The latter in particular were laden with putrefying bacteria. The kidneys are retroperitoneal and not inside the abdominal cavity. Therefore they were usually left in place.

The dehydration process was enhanced by stuffing the corpse with linen, clay or natron and then totally burying it under a mound of natron. Natron is a crude mixture of sodium chloride and sodium carbonate and sodium bicarbonate. The high salt concentration inhibited growth of bacteria and fungus and insects while the body dried.

The brain was accorded no particular significance by the Egyptians, so it was discarded. However, to avoid disrupting the appearance of the mummy it was removed by breaking through the sinuses at the back of the nose and extracting the brain through that orifice. In his experimental mummification, Bob Brier



found this to be the most tedious and difficult part of the process. No doubt some ancient embalmers would agree because modern investigation has revealed instances where holes were made in the external skull for easy access - a true shortcut. In at least one instance the entire top of the skull was sawed off so the brain could be removed. It was replaced afterward and held in place by bandages. Jessica Mitford would not have been surprised.

Proper protocol limited disruption of the body, so the standard procedure was to make an incision in the lateral lower left abdomen just large enough for the embalmer to insert his hand to extract the other organs. Use of a small knife would facilitate the process. The same opening would then be used to insert the linen wrapped packets of natron or natron pellets to fill the space and enhance dehydration. This would require about one month.

To extract the lungs, the operator might be required to insert his arm past his elbow. It would have been a simple matter to make a very large incision into the midline to facilitate this process, but I am unaware of any instance where this was done. This suggests a very strong taboo against such desecration. Because an artificial orifice had been created into the body, it was necessary to protect it. Accordingly a special amulet was usually placed over the incision. A plaque with the *udjat* eye was often used, but frequently the two fingers amulet (index and middle) was substituted. The latter often show markings of joints and nails and can clearly be identified as representing either the right or the left hand. If these fingers represent the hand of the embalmer, my informal census suggests that the number of left-handed embalmers exceeded that in the modern population.

As alternative to the incision, the embalmer could insert his hand through the anus to extract the internal organs. This usually resulted in laceration of the anus, but no amuletic protection was required. This process was used in both male and female mummies. I am unaware of any instance in which the vagina was entered to extract the viscera.

The heart was the most important internal organ. Its presence in the body was essential. A special large amulet to protect it was often the only amulet found. Sometimes it had the stylized anatomic shape of the hieroglyph for the heart or it could be a large inscribed scarab. This could protect or even substitute for the

deceased heart.

Proper attention to extracted organs (other than the inconsequential brain) was very important. They were grouped into four segments separately entrusted to four sons of Horus. They were probably washed and dehydrated in a similar fashion to the body and then consigned to special containers which (at the ancient Greek's suggestion) we call canopic jars. The lung was under the protection of Hapi with the head of a baboon. The liver was guarded by the human-headed Imsety. The stomach was the responsibility of Duamutef with a jackal's head. Finally the intestines fell to Qebhehsefnuf with the head of a hawk.

Canopic jars have not proved to be a useful source for modern analysis. Contents typically were discarded upon excavation for misguided aesthetic reasons. Residual tissue, when present, is usually so deteriorated that nature of the contents defies analysis.

An alternate in later mummification was the use of canopic packets. The previously described organs were desiccated and then wrapped in linen bundles which were inserted back into the embalmed body. A wax image of the appropriate son of Horus might be affixed or the corresponding faience amulet used. These packets may be seen on x-ray when they are present.

Dummy canopic jars might also be used as magical substitutes for full jars. The dummy has all the external appearance of a true jar, but it is solid and holds nothing! Since magic permitted pictures or models to be effective surrogates for the real thing, the fact that the dummy canopic had no contents was of no consequence.

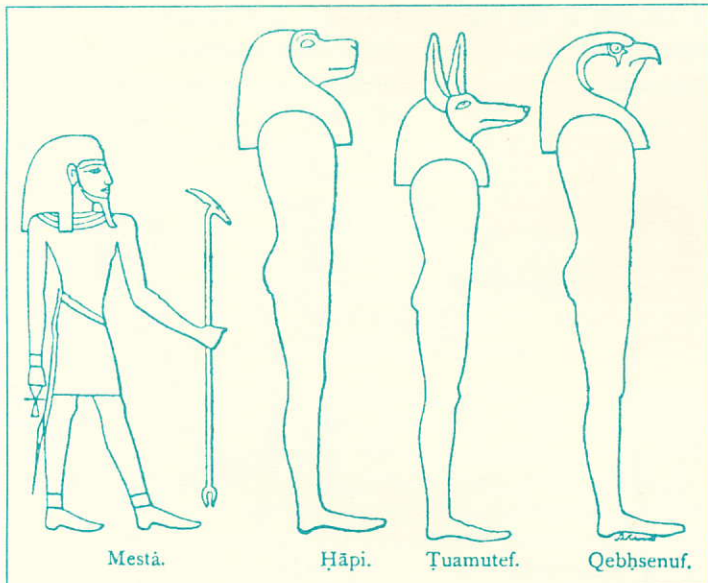
Another puzzle to me is the fate of organs other than lungs, liver, stomach and intestines which were extracted during mummification. In the course of blindly ripping out the viscera they must have routinely extracted the spleen and often a kidney or two. Uterus and ovaries also would have been extracted from many females. The ancient Egyptian medical papyri provide us with specific names for all these organs. It is unlikely such organs, which were specifically named, could be misidentified as part of the four segments destined for canopic jars. So what did the embalmer do when he looked at a freshly extracted spleen? He could include it with other canopic contents. Alternatively, he could return it to the body. He could simply discard it, which strikes me as an implausible reaction to something likely to occur with some frequency. Another possibility is to incorporate it into one of the most enigmatic of burial goods, the Tekenu.

The Tekenu is a compactly shrouded figure with a human head which is dragged on a sled to the tomb. Scholars debate its content and significance. One theory is that it is a bundle of reeds and mud to which may be added any portions of the deceased not in the mummy or in the canopics. This could be the answer to the above question.

However, other scholars believe the Tekenu was a human sacrifice - perhaps a criminal or prisoner of war - who served as a surrogate to be punished for any misdeeds of the deceased. Perhaps it was a model of such a prisoner which magically served as a substitute for the same purpose. Perhaps at various times it was any of the above.

Depending on the fashion of the period and expense, a hundred or more other amulets of various types might be incorporated into the wrappings to protect various body parts. This would also present an opportunity to cheat the client by omitting some or all. Since we have no contact to compare with work performed on any mummy, we cannot conclude that such fraud actually occurred.

However, malfeasance clearly did occur in the matter of extraction



*The Sons of Horus*  
from *The Mummy* by E. A. Wallis Budge, Dover Press 1989



of the viscera. By great good fortune the paradigm is the first scientific autopsy of an ancient Egyptian mummy performed in 1821 by the pioneer obstetrician-gynecologist, Augustus Bozzy Granville. We don't know whether or not Dr. Granville's mummy originally was accompanied by dummy canopic jars, but with the exception of some of the intestines, all of the normal contents for real canopics were left *in situ*.

Granville was presented a female mummy by Sir Albert Edmonstone. Granville spent 1-2 hours every afternoon for six weeks conducting a detailed autopsy of it in the drawing room of his home and published his findings in the Transactions of the Royal Society of London in 1825.

Granville believed he had the most perfect mummy yet recorded because it contained lungs, liver, spleen, gall bladder, kidneys, ureter, bladder, cecum and appendix, uterus, tubes and ovaries. Granville was not at all surprised by these findings. So little work had been done before him that he fully expected to find these organs. Today we realize that the family of his subject had been the victims of embalming-house abuse. The embalmers had failed to remove the viscera as the process required. Through great good fortune these organs survived with excellent preservation. Granville concluded his subject had an ovarian tumor and died of "ovarian dropsy" (cancer with ascites).

Perhaps the embalmer who was charged with removing the viscera was a different individual than the embalmer who extracted her brain. The latter process was carried out transnasally in the approved fashion even though it was more difficult and challenging. The extraction of the brain was complete and this observation astonished Granville. He observed that some sort of hot solution had been poured in to facilitate the process.

The long-forgotten remains of Granville's mummy lay in a store room at the British museum for many decades. An international consortium of experts has recently reautopsied the mummy using modern techniques. Tissues were studied by x-ray, both light and electron microscopy and cutting edge new analytic techniques based on molecular biology. This re-autopsy demonstrated for the first time the presence of a lethal parasite along the Nile whose presence had been long suspected but never proved, *falciparum malaria*. It also showed that this oldest known ovarian tumor was benign.

The British Museum Press threatens to publish a book detailing the current and past autopsies in the near future. It is co-edited by myself and Dr. John Taylor. The scandalous deficiency in extraction of the viscera probably would have outraged her family, but it provided a wonderful opportunity to expand science in Egyptology.

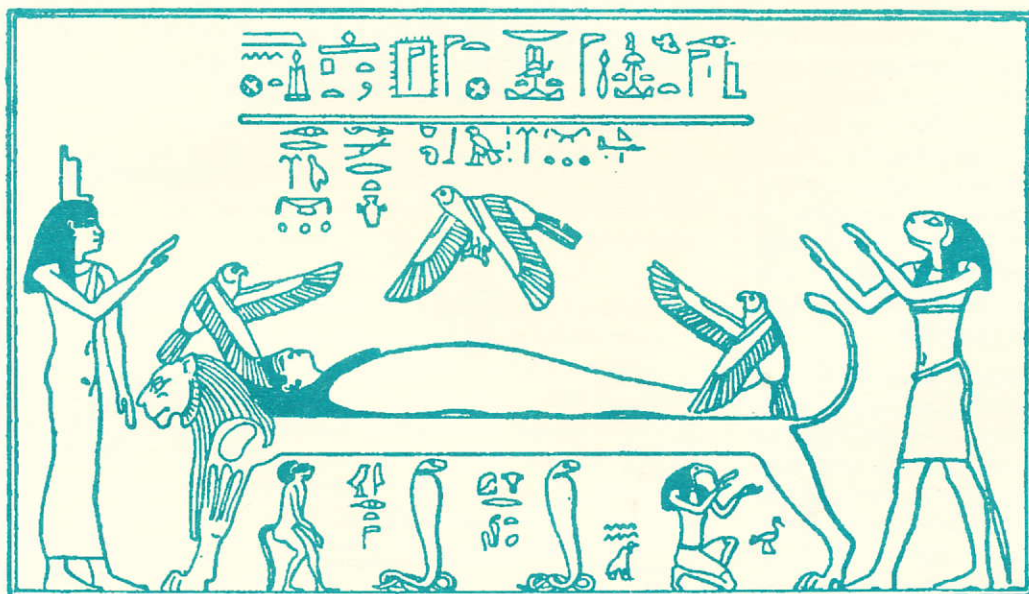
Herodotus, the Greek historian who visited Egypt in the 5th century BC, has given us the only detailed account of mummification. This is regurgitated in almost every book on the subject. Herodotus viewed Egypt with awe and with an open mind. Some of his reports seem to fit the cynical H.L. Mencken adage "If you keep your mind open, people will fill it with all sorts of garbage." There seems little doubt that many of the things that Herodotus was told do not stand the scrutiny of modern scholarship. Nevertheless, his account of mummification is essentially correct.

Herodotus was told that there was a delay of three days in the delivery of the corpse of a beautiful woman to the embalming house in order to discourage the embalmers from having coitus with the corpse. It appears that necrophilia is a generally repugnant perverse practice which also echoes to the ancient days - another scandal in the embalming house.

The excellent preservation of Dr. Granville's mummy indicates there was no such delay. The mummies do show a poor state of preservation compatible with delay in starting the process. However, this is uncommon and is not found in disproportionate number of females.

## Postscript

I used to worry about those unfortunate folks who failed to receive proper mummification because of poverty, mischance in the circumstances of their demise or even embalming-house malfeasance. Not to worry! The compassionate Egyptian religion provided an alternate though less pleasant route to the after life. As Erik Homung notes, the primeval ubiquitous water of Nun fills the underworld. Here the naked bodies of such individuals drifted through the underworld to their rebirth and thus escaped final annihilation - the worst of all fates. Nevertheless, they, too, preferred to travel first class - properly embalmed and accompanied by all their goods when that was possible.



See p. 12 for a sneak preview of the forthcoming mummies exhibit at Denver Museum of Natural History.

This article first appeared in the October 1997 issue of the ARCE Newsletter.

The American Research Center in Egypt offers various programs and resources for its members, in addition to the ARCE Newsletter. See *The Ostrakon*, Vol. 8 No. 1 (Summer 1997) for a report by Dick Harwood on the ARCE 1997 Annual Meeting, and *The Ostrakon*, Vol. 8 No. 2 (Fall 1997) for a review of ARCE's Web site on the Internet.

Frank Pettee has limited numbers of these back issues, as well as information and application forms for ESS members who are interested in joining ARCE.

# MERERUKA

## Drawing on life for the Dead

By Charles E. Cook

*About the Author: Charles E Cook, facilitator of the Egypt and the Ancient Records Study Group, in the ESS, He is a retired Pastor, with a Th.M. degree from Westminster Theological Seminary on Old Testament and Semitic languages.*

Mereruka was the son of Nedjetempet whose noble family moved in the royal circles of King Teti, 2345-2323 BC, first in line of the 6th Dynasty in Egypt. He was married to Seshseshet, daughter of King Teti, by whom he had a son, Meri-Teti. As one among the elite, and son-in-law to the King, he held high offices and titles, as Vizier, Chief Priest, Chief Justice and Inspector of the Pyramid Complex of Teti.

He arranged to have his mastaba close to the Pyramid of the King as his burial place. This mastaba is his claim to fame, being the most lavish complex of design and decoration yet to be found. His masterpiece entombed his wife and son as well as himself, embodied inspiration and patterns extending back to Khufu on the 4th Dynasty and drew upon the generosity of King Teti under whom he lived and served. His activities centered at Saqqara.

Mereruka was walking on the shaky ground surrounding King Teti who was in the throes of setting up a new dynasty. The failing rule of his predecessor Unas saw the wealth and power of the elite and nobility rising to the point of alienating the monarchy. To this was added the fact that Teti was not of the royal line. Teti rose to the occasion on both fronts.

To legitimize his right to the throne Teti married Iput, the daughter of Unas, by whom he had a son and successor, Pepi I. He then took steps to make certain the support of the elite and nobility.

King Teti gave his blessing to Mereruka by marrying him to his daughter Seshseshet, thus identifying with the elite and nobles of the land. He then took the royal titular Horus-name "Sehetep-tawy", the "Pacifier of the Two Lands" and made clear the extent of his rule by bringing into the picture the venerable Narmer who united the Two Lands under the 1st Dynasty. As a further bond with the elite and nobility he granted freedom from taxes and the guarantee of what was required to build their "funerary-homes" fit for residence and provision for the afterlife. With the ground now firm under his feet Mereruka went to work on his mastaba.

There were two avenues to Mereruka to provide for his Sepulchral Palace. As Funerary Overseer he had inspirational access to Khufu of the 4th Dynasty whose Pyramid Tomb was a this-world dwelling place designed to unite with and prepare for the next-world afterlife, even having himself depicted as alive and standing as he supervised ships being laden. Also, Mereruka had a kindred spirit with Ty, a Temple Overseer in the 5th Dynasty who was the first to have the Pyramid Texts on the surrounding walls to ensure

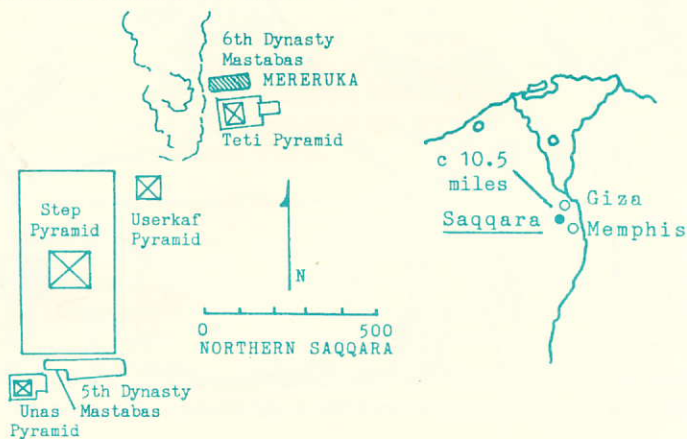
his well being in the life to come. And of course, these would be woven into the Complex of Teti's future.

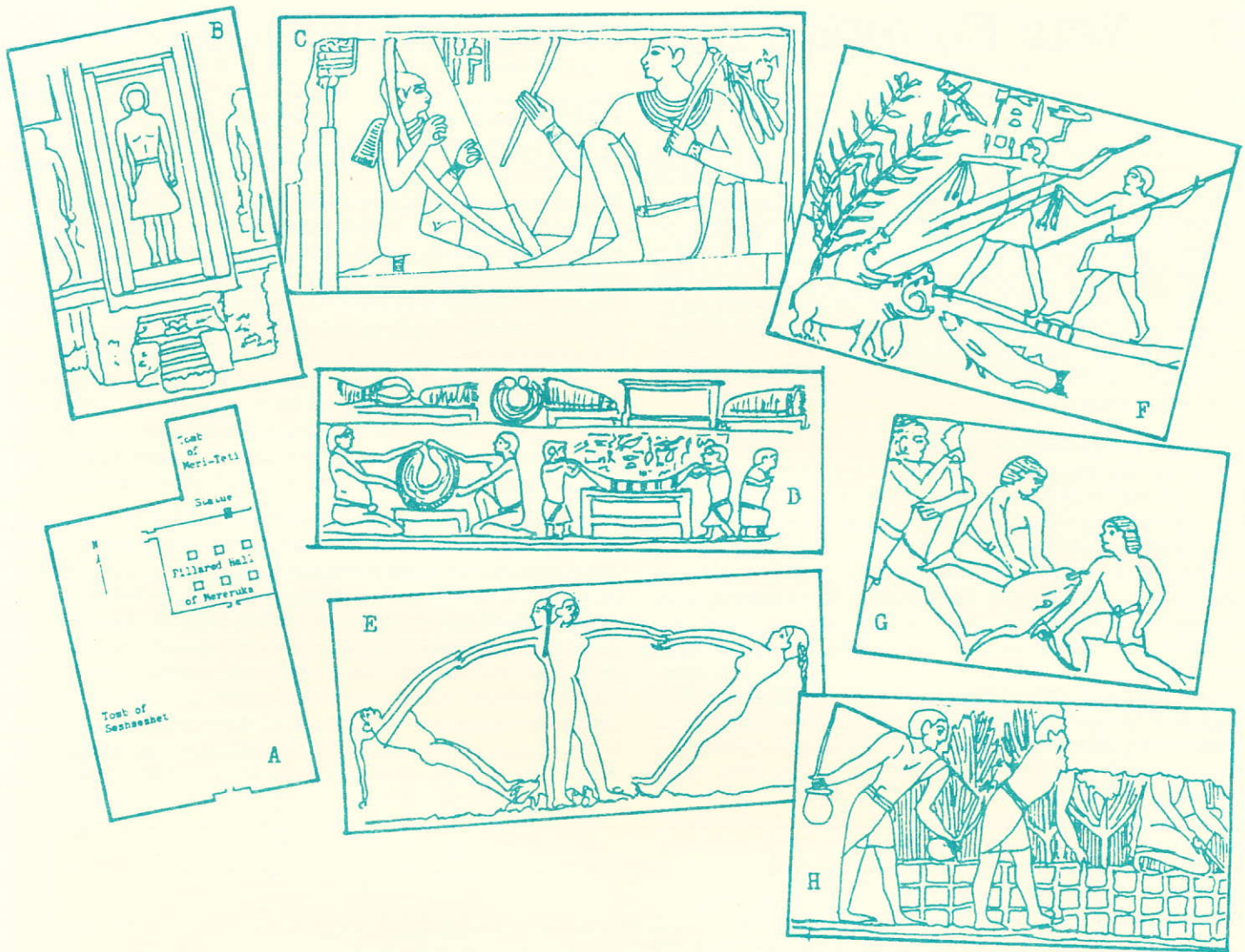
As Vizier he had access to the royal treasury to do for himself what he deemed appropriate for the thirty-two halls, rooms, chambers, niches and corridors lending their ceilings, walls and pillars to the chisel, brush and polisher of the craftsmen who brought to existence his dreams for his magnificent mastaba. And what do we find? we find insight and portrayal as to the everyday life of everybody. See the ground plan for his mastaba and sketches and data as follows.

On the inner walls of the tomb are frozen moments of time thinly sliced across a reality of life that encases the actor, the action, the scene and objects and creatures present in the happening. One can relive what was going on.

In the pillared hall of Mereruka we watch the farmers, on their knees, hoping the scribal record of their services will read well; a line of gardeners with a pair of jars on yokes across their shoulders water the beds of lettuce; metalworkers puffing their blow pipes melt the mass for the ingots; those girls are doing a lively dance as hand in hand they press the grapes with their feet; hippos roar as they are harpooned by men while frogs and locusts look on from rocks and branches; these men are in the desert hunting for the gazelle or oryx; those men are force-feeding the hyena in efforts at domestication. In the chapel-tomb of Seshseshet we watch herdsmen and cattle fording a canal; there are the scribes taking account of stock; another, spearing fish in the marshes; and yet another hunting birds with a throw-stick; those slaughtering oxen must be of the nobility for there is little meat for peasantry. Do you hear the harp? Seshseshet is plucking a tune for Mereruka as they sit upon the bed. There, underneath do you see the pots and chests of gold, clothing, oils and perfumes - the niceties for adornment and pleasure in their amorous encounters.

Following are some simple tracings to portray these slices of life as it was lived then.





**A:** Ground plan of Mereruka's mastaba at Saqqara. Although the 32 sections are not shown, the three burial areas are indicated and the scale of the statue recess points to the overall size (Waldering p. 77).  
**B:** Ka-statue of Mereruka in the niche in the chapel wall, a false door, with the offering altar (Malek p. 108).  
**C:** Mereruka's wife Seshseshet plays the harp for him as they are seated on a couch (Baines/Malek p. 205)  
**D:** A relief showing craftsmen at work in a precious metal shop. Dwarfs are finishing collars and pectorals.(Strouhal p. 81).

**E:** Girls playing a game called "living roundabout" in the inscription, as they are pressing grapes (Malek p. 26)  
**F:** The hippopotamus hunt was not so much a sport as dealing with the fiercest and most powerful animal on the Nile (Malek p. 42).  
**G:** Butchers felling an ox (Baines/Malek p. 147)  
**H:** Gardeners with jars watering lettuce-beds (Strouhal p. 100-1).  
*Author's note: the pictures above are simple line-tracings, reduced to fit the page. References in parentheses refer to sources as listed in the bibliography.*

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# The New Egyptian Mummies Exhibit at DMNH

## A Sneak Preview

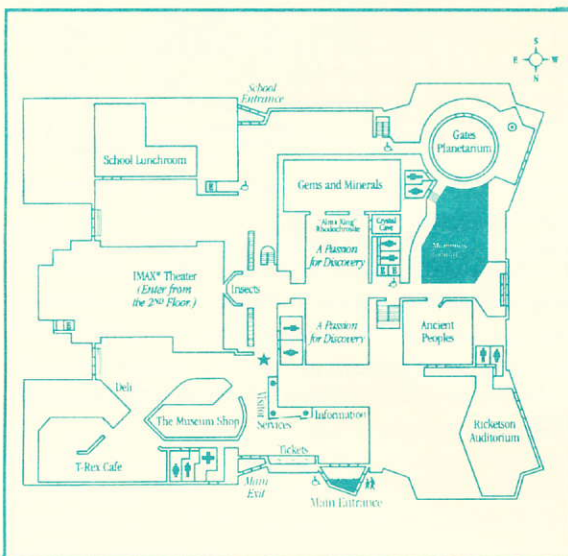
by Graeme Davis

As readers will probably know, the new, expanded Egyptian exhibit at DMNH is due to open in spring of this year. Its new home, on the Museum's first floor opposite the Hall of Ancient Peoples, offer a lot more space than the affectionately-named "closet" where the Museum's Egyptian exhibit has resided for the last several years. As well as allowing the objects to be displayed in a more accessible and informative way, the additional space will allow objects from storage to be displayed for the first time, along with donations from ESS members and loans from other museums.

According to current plans, the exhibit will consist of 25 panels and cases in a single room. The first panel, outside the entrance to the exhibit, will give an introduction to mummies and the afterlife. The centerpiece of the exhibit will be two mummies (those mentioned in Bob Pickering's October 1991 lecture, *The Ostrakon* Vol. 2 No. 2), along with a 5-minute video and some of the CT scans and computer reconstructions from Bob's project. After a panel of basic information on Ancient Egypt, the exhibit will focus on mummification, tombs and afterlife beliefs. The existing temple model is prominently displayed, and the ESS Mummy Study Group's reproduction sarcophagus (*The Ostrakon*, Vol. 8 No. 2) will be displayed alongside its ancient counterparts. Animal mummies will also be featured, along with funerary goods such as amulets, ushabtis, a miniature bakery, lids from canopic jars, and a Book of the Dead on papyrus.

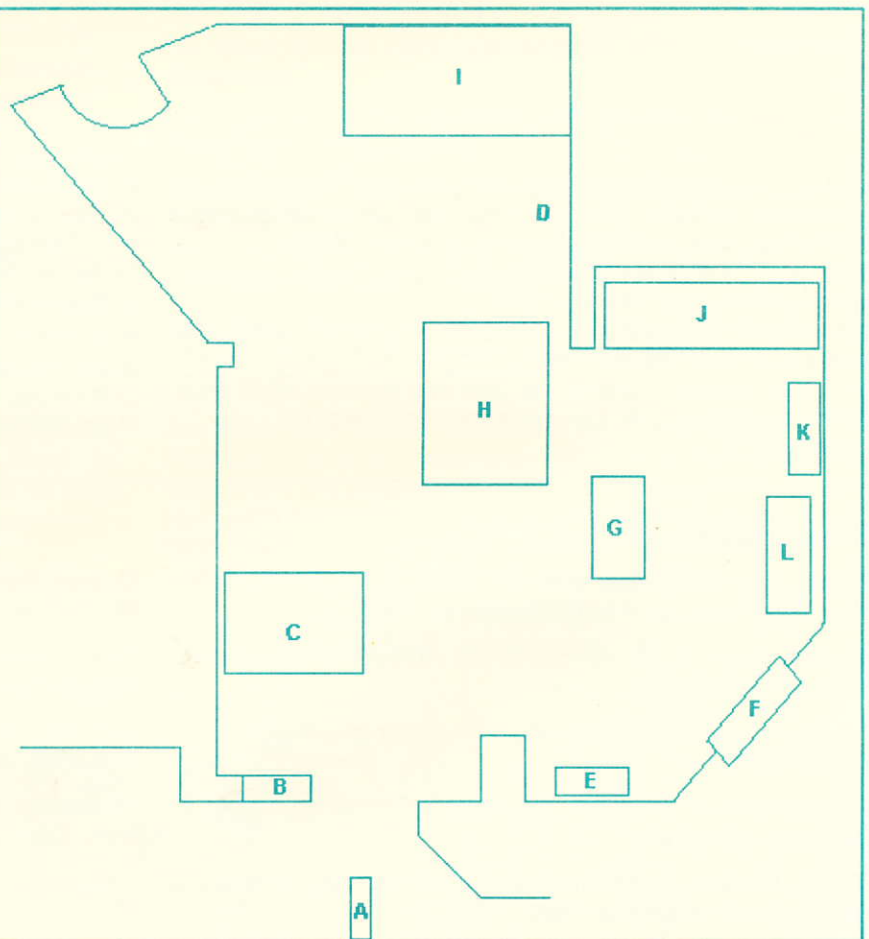
The bakery model and Book of the Dead are on loan from Denver Art Museum, and several other institutions have contributed to the exhibit. A number of objects, including various amulets, are on long-term loan from the University of Pennsylvania Museum, and one cat mummy comes from the University of Maine. The two mummies at the heart of the exhibit are on loan from the Rosemount Museum in Pueblo - a reminder that Egyptian objects are not only to be found in museums of art and anthropology, since there was indeed a time when no Victorian house was complete without some spoils from Egypt! One panel will outline the history of the Rosemount's McClelland collection, and explain just how a group of Egyptian mummies came to be in Pueblo, Colorado.

As well as those institutions that have loaned items for the exhibit, several other groups and individuals will be recognized in the panel of credits just inside the entrance. The ESS is recognized, of course, as is the Petty Foundation - sponsors of the Ostrakon, among other things - the University of Colorado Health Sciences Center and University Hospital, who played a key role in the CT-scanning of the two McClelland mummies, and the Scientific and Cultural Facilities District. This exhibit could never have happened without the help and co-operation of all these bodies (if that's not an unfortunate word to use in this context!), and I am sure that all ESS members will be pleased with the result of this collaboration.



### Key to the exhibit

- A: "The Osiris Legend"
- B: "Ancient Egypt" and "Pyramids and Tombs"
- C: Temple model
- D: "Look Inside the Mummies"
- E: Animal mummies
- F: Ushabtis, food offerings and personal items
- G: "Power of the Word" and "Sacred Writings"
- H: Mummy #1
- I: Mummy #2
- J: "A scribe's coffin lid"
- K: ESS tools
- L: ESS sarcophagus



# LECTURE REPORTS

## **THE DAMS AT ASWAN: THE SOCIAL AND ENVIRONMENTAL EFFECTS**

Presented by Dr. Don Hughes  
ESS Meeting, October 21st 1997

Don Hughes' lecture was a sobering look at the impacts from dams built at Aswan over the last 100 years. Don focused upon the far-reaching social, political, health, ecological, agrarian, even military effects of the Aswan High Dam.

The construction of the Aswan High Dam "represents a massive break with the past." For the first time in Egyptian history, the High Dam enabled the Nile, with its unpredictable floods and droughts, to be domesticated. The Dam was built to control water levels, increase the amount of arable land (enabling perennial agriculture and the growing of cash crops), generate electricity and thereby boost industry and stockpile water reserves in the event of political unrest amongst its upriver neighbors. There was a political agenda as well. With the Dam, Nasser created a monumental testament to his own power and also sent a message to the world that Egypt could accomplish huge engineering feats - without the help of the U.S. (which had recently withdrawn its aid to Egypt).

The anticipated benefits of the High Aswan Dam were far, far outweighed by the environmental havoc it wreaked. A long laundry list of environmental ills, stemming from the Dam, includes erosion of the Delta at a rate of 30 meters/year from lack of silt deposition, salinization, loss of 20% of the river's annual flow via evaporation, silting up of Lake Nasser, triggering earthquakes from the overburden on geologic fault, erosion of banks from the deep scouring of the river bed, decrease in the number and diversity of fishes, rising of the water table and waterlogging, depletion of soil fertility from lack of inundations, overgrowth of phytoplankton and hydrophytes and an increase in snail-borne diseases! Without the Nile inundations to replenish soil fertility, synthetic nitrogen and phosphate fertilizers, which pollute the river, began to be applied. Ironically, all of the electricity generated by the High Dam is consumed by a plant which manufactures fertilizer! And through salinization of the arable land (35%), urbanization and erosion, Egypt has lost a sizeable portion of its productive land. In fact, Egypt must import 70% of its food.

Many of these negative side effects were not unknown in the 1950s when the Dam was planned. There were precedents. At the turn of the century, under British rule, the first dam at Aswan was built. The old dam was heightened a few times in the early part of the 20th century in order to increase its holding capacity. Even as early as the 1890s, problems such as salinity, schistosomiasis, waterlogging and loss of soil nutrients appeared. The raising of the original dam brought such problems as downstream scouring and lowering of the river bed, along with their consequences. And after 1933 the retreat of the coastline from erosion was apparent. However, the High Dam was a *fait accompli*, as the Nasser administration turned a deaf ear on all dissenting voices regarding the Dam.

The Dam has brought a host of problems to modern Egypt. It is sad, too, that the High Dam has obliterated the ancient Egyptian rhythm of life, founded upon the Nile's rise and fall.

*Report by Judy Greenfield*



## **NEFERTITI'S SECRET: LATE BRONZE AGE PERFUME**

Presented by Dr. Cheryl Haldane Ward  
ESS Special Lecture, October 27th 1997

Dr. Cheryl Haldane Ward of the Institute of Nautical Archaeology - Egypt offered members of the Society a glimpse into ancient life. She lectured on finds from a shipwreck of the Late Bronze Age, ca. 1318-1316 B.C.E., discovered off the coast of southern Turkey at Ulu Burun. Contents of the cargo on the Ulu Burun ship were highly valued terebinth resin, coriander, and pomegranates which are sources of astringent for ancient perfume and incense manufacture. More than a hundred Canaanite amphoras carried up to a ton of terebinth resin which has a sharp, pungent, turpentine-like odor. The tree from which this resin was taken, *Pistacia terebinthus*, is said to have covered the hills of Syrian Damascus.

Perfumes and incense are depicted on ancient Egyptian wall paintings, in reliefs, and on Minoan wall art at Knossos. They are described in ancient poems and mentioned on both Mycenaean Linear B clay tablets and on cuneiform clay tablets found at El-Amarna. The cargo also included items such as cobalt-colored discoid glass ingots; unworked elephant and hippopotamus ivory; African blackwood; tin and copper ingots; Near Eastern, Cypriot, and Mycenaean pottery; ivory crafted items; and Syro-Canaanite jewelry, including a gold scarab bearing the hieroglyph of Queen Nefertiti. Large shipping jars were found on the ship's upper deck, one filled with Cypriot export pottery and the other with whole pomegranates. It is believed that the Ulu Burun ship with its cargo of luxury goods traveled a counter-clockwise route across the Eastern Mediterranean that took it from the Syro-Palestinian coast to Cyprus to Mycenaean Greece and then to Egypt before returning to the Levant. The ship supplied markets along the way that demanded large-scale availability of such luxury items.

*Report by Randall T. Nishiyama*

## THE TOMB AND TREASURES OF TUTANKHAMUN

Presented by Dennis McDonald  
ESS Meeting, November 18th 1997

Perhaps no name in ancient Egyptian history elicits more recognition - or misunderstanding - than that of Tutankhamun. This long-forgotten king captured the imagination of the world when his tomb, KV62, was discovered almost intact by Howard Carter in November, 1922.

Dennis McDonald covered the history of this "boy pharaoh" and the discovery of his tomb in a presentation rich in slides and complete in text. The probable son of Akhenaten and a lesser queen, Kia, Tutankhamun changed his name from Tutankhaten, "The Living Image of Aten" to "The Living Image of Amun" shortly after his ascension to the throne of Egypt and the return of the capital to Thebes. His reign recorded little of note. When he died at the age of about nineteen, he was buried hastily in a small tomb in the floor of the Valley of the Kings that had been started for someone else.

Shortly after the king's burial, the tomb was robbed at least twice. Each time the thefts were discovered and the tomb resealed by the necropolis guards. During the succeeding years, the site of the tomb was covered in several layers of flood debris, built upon by the workman preparing the tombs of Ramses V and VI, and was lost to both sight and memory.

Howard Carter was already a well-known figure in Egyptology when he obtained the financial backing of Lord Carnarvon to search for the lost tomb. When nothing was found after four years, Carter convinced Lord Carnarvon to fund one final season. Just days after work had begun, Carter discovered steps leading to the tomb thirteen feet below the floor of the Valley. Lord Carnarvon and his daughter, Lady Evelyn Herbert, were summoned from England, and the tomb was opened for the first time in 3,200 years.

Using a series of slides made from old photographs, Mr. McDonald discussed the history of the ten-year clearance of the tomb, portraits of the principal individuals involved, and the political intrigues that surrounded the discovery of the tomb from the beginning. Despite having been robbed twice in antiquity, the treasures found in the modest tomb were stunning, both in sheer number and in artistic and archaeological value. Slides of many of these artifacts were shown, including the such well-known items as the 22½ pound death mask and the 296 pound inner coffin, both made of solid gold.

Mr. McDonald finished his excellent presentation with an explosion of many of the "Mummy's Curse" legends that have revolved around the discovery of the Tomb of Tutankhamun for the past 75 years.

*Report by Dick Harwood*



### Volunteers Wanted!

*We need people to help with this section of the Ostrakon. The publications committee would love to hear from anyone who is interested in writing brief reports on ESS lectures and other activities. You don't have to commit yourself to covering every single lecture - once or twice a year would be fine. If you are interested, please contact any member of the publications committee.*

# House of Scrolls

## Book Reviews



### **People of the Nile: Everyday Life in Ancient Egypt**

by John Romer

Crown Publishers, Inc., New York, copyright 1982

ISBN 0-517-548569

224 pp

In *People of the Nile: Everyday Life in Ancient Egypt*, John Romer takes the reader not on a linear path through ancient Egyptian history, but rather on a meandering journey. *People of the Nile* does not take a fact-filled, encyclopedic approach, but instead focuses upon the broader trends and themes in ancient Egypt. Romer shows how art and architecture of the time reflect these trends. His angle on ancient Egyptian history is not surprising since he has taught both architecture and art history in England. Romer himself admits in the Preface that the intent of his book is to explore "the hows and whys of the ancient monuments and the people who made them (p. 6)". In his words, *People of the Nile*: "...does not adhere to a strict chronological order of events, nor have I given equal weight to all periods of ancient history (p.6)."

The book is certainly thought-provoking. For example, Romer points out that the more chaotic periods in ancient Egypt coincided with irregularities (high or low levels) of the Nile inundation. He also forced me to re-examine Ptolemaic architecture, often dismissed by scholars as a caricature of the classic style - nearly fraudulent. Romer describes Ptolemaic monuments as "Victorian" in that the "massive conglomerations of style and form... in their sum, have made a new aesthetic, a new art" (p. 202). And, in fact, he points out that the superb craftsmanship in this period surpasses that of earlier times. Another point he made was that when the court relocated from Upper Egypt to the Delta, the Egyptians became more cosmopolitan through their contacts via the Mediterranean. He also brings up the important point that interpre-

tation of ancient Egyptian life is dependent upon the biases of the scholars who study it.

*...the remains of ancient Egypt serves as mirrors of our modern thought - also, therefore, of our modern society - and, for better or worse, the specialists we have appointed to be guardians of our past are also subject to the myths, fads and pressures of our own time. (p. 51).*

The book should have been called something like "Ancient Egypt Through Its Monuments" as its title, *People of the Nile: Everyday Life in Ancient Egypt*, does not truly reflect its contents. In fact, there is scant reference to everyday life in these ancient times and almost all of the photographs are of monuments and depictions of royalty.

Incidentally, the color photographs interspersed in the text were taken by Romer between the late 1960s and early 80s and are consistently good quality. Sentences tend to be long, often punctuated with many commas, and I found myself having to reread sentences for content. Despite the sometimes awkward sentences, there were some lovely passages which demonstrate Romer's passion for the subject matter. About Deir el Bahari he writes,

*Deir el Bahari is one of those places on our planet where a link has been made between earth and heaven. Though ruined, the temple's platforms are still the stages for the gods, the original purposes of the place are still contained within its walls. It stands in a deep hot silence filled with ancient time (p. 149).*

*People of the Nile* would most interest someone who likes their history lessons painted in broad strokes as the book does not explore the "usual" topics in any depth.

*Review by Judy Greenfield*

### **New in at the DMNH Bookstore:**

#### **Watch it Grow: Egyptian Pyramid**

Text by Elizabeth Longley, illustration by John James

Nature Company/Time-Life Books 1997

ISBN 0-7835-4877-X

Aimed at younger readers, this book has a novel format in that the pages get bigger as you go along. The first spread, which is fairly narrow, shows the site of a pyramid being cleared, and subsequent pages expand in width as they follow the construction of the pyramid complex stage by stage, including all the associated buildings such as the causeway and valley temple, and even the workers' village and temporary harbor where stone is delivered.

While some ESS members make take exception to the fact that this book only considers the spiral ramp theory of pyramid construction, the standard of both art and text are extremely high, and indeed this book is as good an introduction for the adult non-specialist as it is for the average fifth-grader for whom it seems to have been written.

*Review by Graeme Davis*

#### **Egyptian Mummies - A Pop-Up Book**

Text by Hilary Polk, illustration by Roger Stewart

Dutton 1997

ISBN 0-525-45839-5

One would expect a pop-up book about ancient Egypt, by its very nature, to be aimed at an elementary-school level of readership, and to deal with only the broadest outlines of the subject. This book is a pleasant surprise on both counts.

The whole work is pitched more at the level of a Time-Life or National Geographic coffee-table book than a book for children. The pop-up scenes, showing the various stages in mummification and burial, are beautifully designed and illustrated. The exhaustively detailed artwork is accompanied by clear and fascinating text, and is not for the squeamish; the author and illustrator pull no punches, perhaps because they know that their target audience are hardened *Goosebumps* readers and will love the gory details! This book will educate and amuse young and old alike.

*Review by Graeme Davis*

\*\*\* Ostrakon back issues are still available at \$1.52 each ! See Frank Pettee or call 777-5494 \*\*\*

# The Electric Papyrus

*Egyptology in the New Media*



Image © Nigel Strudwick. Used with permission.

## The Egyptian Gazette

### THE EGYPTIAN GAZETTE ONLINE

<http://www.egy.com>

The *Egyptian Gazette* has provided news and commentary on Egyptology and things Egyptian for many years (as a glance at the bibliography for Mark Gilberg's article on Alfred Lucas in this issue will confirm), and its online edition now makes this historic publication accessible to Egyptophiles worldwide.

The site manages to be very graphically appealing, without using any of the animated bells and whistles that can make other sites slow to load and hard to use on slower Internet connections. It has clearly been designed for ease of use, and succeeds well in that respect. The front page carries a selection of recent headlines - currently including commentary on the Luxor massacre of November 17th, the opening of a new museum in Nubia and the discovery of the tomb of Maya, reported in January's *Scribes' Palette* - with an amusing and sometimes trenchant review of the history of Tutmania and the Pharaoh's Curse. Older stories, going back to the beginning of 1995, are archived by subject, under such headings as Landmarks, Historica, Problematica, Judaica, and so forth. The coverage of political goings-on surrounding Egypt's heritage is hard to beat.

ESS members visiting the site will probably long, as I did, for an exhaustive archive of stories from the entire history of the *Egyptian Gazette*, with a search engine to help find everything on, say, Tutankhamun - but this is first and foremost a journalistic site rather than a historical one. However, it is well worth bookmarking for its immediacy and its Egyptian viewpoint. Highly recommended.

*Review by Graeme Davis*



### THE ORIENTAL INSTITUTE HOMEPAGE

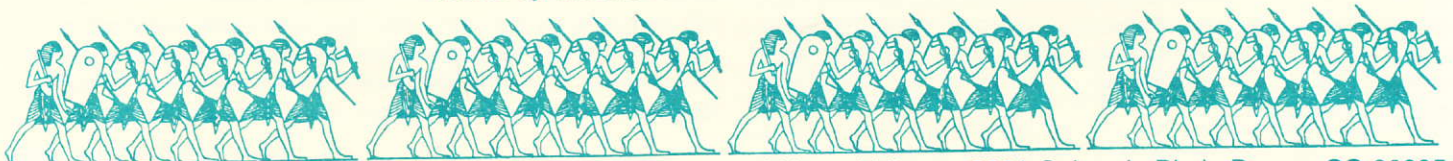
<http://www-oi.uchicago.edu/OI/default.html>

The Abzu Egypt Regional Index, reviewed in *The Ostrakon* Vol. 8 No. 1, is just one part of the extensive Web site maintained by the Oriental Institute of the University of Chicago. Like Abzu, the rest of the Oriental Institute's site is designed to be functional rather than beautiful, and while it is a little Spartan compared to some other sites, it is fast to load and easy to use.

In a review of this length it is difficult to do full justice to the wealth of information and resources that can be found on this site. As well as information on the Oriental Institute itself, there are reports on research by staff and students, highlights from the Institute's collections, samples from the photographic archives, papers and dissertations on all aspects and areas of the ancient Near East, and even a virtual museum which cyber-visitors can explore using Apple's QuickTime VR player. The Institute's educational programs are covered in detail, and the Museum Store has an online catalog, although there is no provision for online ordering, so goods must be purchased by "snail mail". The Institute's annual reports for the past few years are also online, as are the brochures from past exhibits, so that those who were there can recall the experience and those who weren't can see what they missed!

All in all, the Oriental Institute Web site is a must-see, with or without the Abzu Regional Index. Just be sure you're not paying for your online connect time by the hour, because you're bound to spend a long time just wandering around, marveling at what's available here!

*Review by Graeme Davis*



Denver Museum of Natural History, 2001 Colorado Blvd., Denver CO 80205