ANTHRONOTES™
MUSEUM OF NATURAL HISTORY PUBLICATION FOR EDUCATORS
VOLUME 33 NO. 1 SPRING 2012

CREATURES OF THE GODS: ANIMAL MUMMIES FROM ANCIENT EGYPT

by Salima Ikram

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If you're a pet lover, you might want to take a time machine back to Ancient Egypt where you could arrange to keep your pet with you – forever! Although mummies are synonymous with ancient Egypt, few people realize that the ancient Egyptians also mummified animals, including their pets.

Pet mummies are the kind of mummy that resonates most closely with us now. From the Old Kingdom (c. 2663-2195 BC) onward, Egyptians are pictured in their tombs with their beloved pets, thus ensuring their continued joint existence in the Afterlife. Occasionally the pets would even have their names carved above their image, providing further insurance for their eternal life. This was particularly true of hunting dogs that were immortalized with their names such as "Swifter than the Gazelle" or "Slayer of Oryx".

Devoted pet-lovers buried their animals with them. If the animal died during its owner's lifetime, it was mummified and kept safely until the owner's death, perhaps even in the tomb that was begun quite early in a person's life. If the animal died after its owner's demise, it could be mummified and placed in the tomb with its master, or in the courtyard just outside, as was the case with a pet monkey excavated outside a tomb in Thebes or a horse associated with the family of Senenmut, the architect of the magnificent funerary temple of Queen Hatshepsut built at Deir el-Bahari. Some pets, like humans, enjoyed splendid burials, complete with elaborate coffins and food offerings.

Pets were only one of several kinds of animal mummies, which actually far outnumber human mummies. Mummification was carried out in order to preserve the body for eternity so that the soul (*ka* and *ba*) could inhabit it in the Afterlife. A large range of animal species were mummified, including cattle, baboons, rams, lions, cats, dogs, hyenas, fish, bats, owls, gazelles, goats, crocodiles, shrews, scarab beetles, ibises, falcons, snakes, lizards, and many different types of birds. Even crocodile eggs and dung balls were wrapped up and presented as offerings.

Animals were mummified throughout Egyptian history; however, the majority of animal mummies date to the Late and Graeco-Roman Periods. These periods saw an upsurge in animal cults perhaps because this was a time when Egypt was being invaded by other world powers. Such invasions caused the Egyptians to seek a variety of ways in which to express their own sense of identity, individualism, and nationalism. Animal cults might also have been a call to local divinities to provide succour during times that were difficult for the Egyptians. [For a discussion of chronology and a list of Egyptian dynasties and dates, go to page 23.]

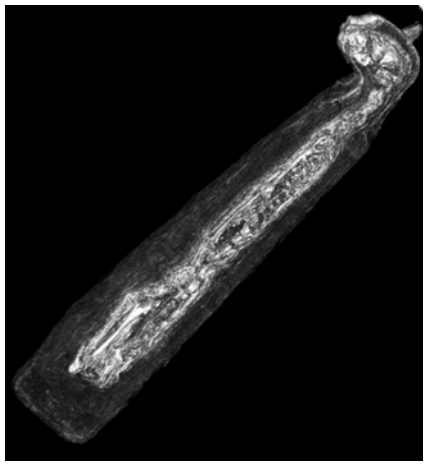
SPECIAL ISSUE CELEBRATING *ETERNAL LIFE IN ANCIENT EGYPT*
AT THE NATIONAL MUSEUM OF NATURAL HISTORY

Animal Mummies: Five Categories

Pets occupy one clear category of animal mummies; food, sacred, votive, and 'other' make up the four other basic animal mummy categories. Food mummies are very peculiarly Egyptian. These consist of mummified foods or victuals, such as beef ribs, steaks, ducks, and geese, which were placed in tombs so the tomb owners would never go hungry. The meat and poultry were prepared as if all ready to be cooked: meat was skinned, poultry was plucked and eviscerated, wing tips and feet removed. After desiccation the liver and giblets were returned to the body cavity. Some of the mummies are colored brown; it is possible that a roasted appearance (browning) was given to such mummies by the application of very hot resin on the bird that slightly cooked/seared the mummy's exterior surface. Tests show they were preserved using salt and natron similar to the way in which beef jerky is prepared. Most of these bandaged meats were placed in individual sycamore-wood 'coffinets' shaped to the meat's form and dimensions — all ready to be consumed by the deceased. Tutankhamun had more than 25 such meat mummy coffinets buried with him.

Some animals were worshipped during their lifetimes as sacred animals, the third mummy category. It was believed that certain gods would send their 'essence' into the body of a chosen animal that was distinguished by being patterned or colored in a specific way. After the animal's death, the god's spirit would enter the body of another similarly marked animal. This idea is similar to the idea of the eternal soul of the Dalai (and other) Lama whose soul is eternal, but remains on earth in a series of different bodies. During the animal's lifetime it was worshipped and treated as a god, and after its death, it was mummified and buried with great pomp. The most famous sacred animals are Apis Bulls and the Rams of Elephantine. The Smithsonian's collection includes two sacred bull mummies — the only such in all of the Americas. However, these bulls are probably not Apis Bulls that were dedicated to the god Ptah, but rather, were sacred to the sun god, Re.

The fourth category, votive animal mummies, are the most plentiful of all mummies. These consist of mummified animals that were dedicated to specific deities. Each god had a specific animal that was his or her totem or symbol: cats were sacred to the goddess Bastet, goddess of self-indulgence and pleasure; ibises and baboons to the god Thoth, god of writing and knowledge; raptors and shrews were given to the diurnal and nocturnal manifestations of the sun god Re. These mummified animals were purchased and offered by pilgrims at shrines dedicated to these gods, a custom that was particularly popular during the first millennium BC. The mummified animals would present the pilgrim's prayers to the god throughout eternity, much in the way that votive candles are purchased and burned in churches. Once consecrated, during a special festival, the mummified animals would be taken in procession, and buried en masse in vast catacombs that housed millions of such creatures. Many of these animals were deliberately killed due to high demand and because they were considered sacrifices to the god — i.e. they were going to a better, eternal life, united with their deity. The majority of animal mummies in museum collections today belong to this category of animal mummy. Some of these were also placed in his/her own coffin. For example, the Smithsonian has a hawk mummy housed in a wooden image of a hawk. Among this group



The cat is beautifully wrapped in a complex coffered diamond pattern with its facial features modelled in linen and enhanced by paint. Radiographs show that this relatively young cat might have been killed by strangulation. NMNH Department of Anthropology, A381569.

one might also place the 'false' mummies. These were mummy bundles that appeared to contain a bird or cat or dog, but when examined have proven to be formed around a bit of mud or a bone from some other creature, or even to be filled with feathers or bits of fur. The priestly embalmers might have made them to deceive pilgrims intentionally; to be less cynical, these mummies could have been made when there was a scarcity of the appropriate animals. In the latter case, the priests may have used the idea that a part symbolized the whole, and with the correct spells and incantations, the fragments of an animal would become complete offerings for the gods. Alternatively, these bundles might actually contain the detritus of mummification, and as that too was sacred, it had to be interred in a holy place.

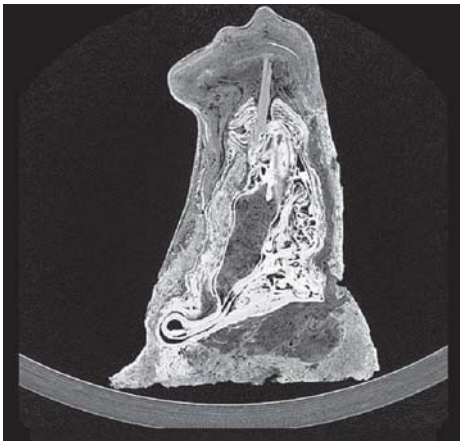
The fifth and final category of animal mummy, 'other,' covers those animal mummies that do not fit comfortably into any of the other four categories. A group of five ducks and geese, which were mummified and placed as a foundation offering at the funerary temple of King Thutmoses III (1479-1424 BC) in Thebes, represents an example of such mummies, as does another group of animals (ibis, dog, and monkey) found in a tomb surrounding the body of the deceased. It is hoped that future work will allow us to better understand and decode this group of mummies.

Methods Used for Mummification

Mummification methods varied, but perhaps the most colorful was saved for large mammals. In the case of a cow, for example, its internal organs might have been dissolved by a cedar oil enema that was introduced into the body via the anus and the hole then plugged up. The cow would then be buried in natron for at least 40 days and, once dry, flushed of the cedar oil by pressing the dissolved internal organs out of the anus, which were then wrapped in the usual manner. But this was only one of a large number of different approaches.

The variety in the methods used might be due to the different requirements for various creatures (differences engendered by fur, feathers, or fins), economic constraints, the preferences of specific embalming houses, preferences of different towns/cities/villages, or changes in technology over time. Insufficient research has been carried out to explain fully and satisfactorily the reasons for these variations in mummification.

When this bundle that is wrapped in the distinctive form of a baboon was CT-scanned (see below), it was found to be an ancient fake (filled with linen rags and a stick). By the Late Period baboons and other primates had to be imported into Egypt from sub-Saharan Africa. Thus monkey mummies were expensive and prone to being falsified. NMNH Department of Anthropology, (A542222).



The main purpose of mummification was to preserve the body so that it could act as a vehicle for the soul. Thus, the central focus of the preparation was to dehydrate and de-fat the body, particularly relevant for mammals. Natron, a naturally occurring mixture of sodium carbonate and sodium bicarbonate, was the key ingredient in both animal and human mummification. The body was eviscerated through a cut (generally) in the ventral surface; the body cavity was then packed with packets of natron wrapped up in linen; and the body was buried in the powdered natron. For humans this lasted for 40 days; for animals this probably varied with the type of animal. It is also possible that mass immersions of creatures took place in order to fulfil the demand for votive mummies. Once desiccated, the animals were removed from the natron, dusted off, and rubbed with sacred oils

in order to provide some flexibility to their limbs prior to being wrapped. In some instances hot resin mixed with oil was applied to the animals. This mixture sometimes burned through the fur/feathers/scales and fixed itself to the bones. After the anointing with oils and resins, the animal was wrapped in linen. During the Graeco-Roman era the outermost wrappings could be very elaborate, taking the form of varied shapes or different color stripes. Some raptors and cats even had masks made of cartonnage (a sort of papier maché) placed over their heads. Sacred animals were adorned with amulets prior to being wrapped, with more amulets spread throughout the wrappings.

Some of the bird mummies might have been produced in a simpler way: the bird was eviscerated, dipped into a mixture of oil and resin, or resin and bitumen, and then wrapped up. A few bird mummies that have obviously been treated with resin and oil mixtures were gilded, either entirely, or on the heads. No doubt this stressed the association of these birds with the sun god, Re. Other birds show no sign of any application of oils — they simply were desiccated and then wrapped.

Mummification as a Business

The production of animal mummies — from obtaining the animals to mummifying them — was a major part of the Egyptian economy, particularly during the first millennium BC. Masses of animals had to be bred and cared for, engendering ibis, puppy, and kitten farms. Specific priests were assigned to care for the votive animals, and a higher rank of priests cared for the Sacred Creatures; all these priests had to be supported by temple income. The embalmers enjoyed a booming business, and skilled workers, such as those who mixed the resins and oils or created the elaborately patterned bandaging, had to be paid

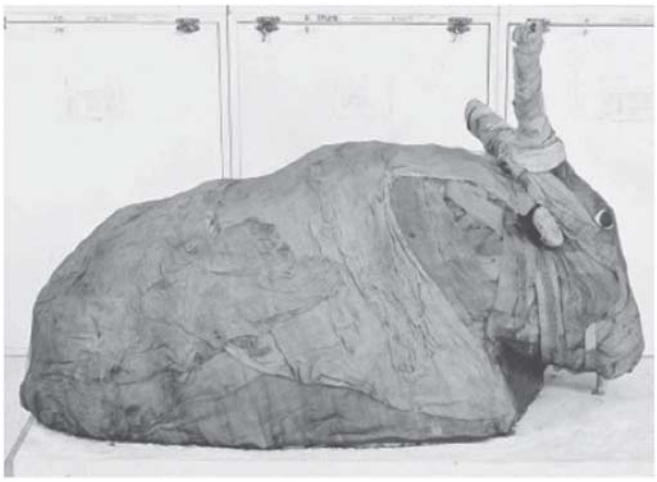
This wooden case carved in the shape of a raptor contains a mummified falcon. NMNH Department of Anthropology, A423000.

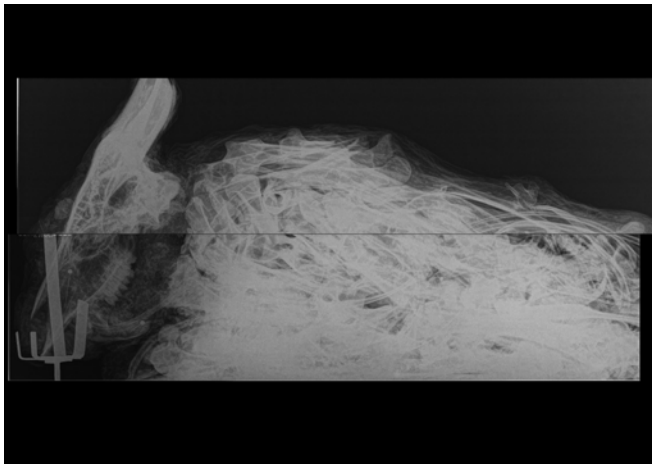
This ceramic vessel is roughly made in the shape of an egg and contains a mummified ibis that is handsomely wrapped. In this way, the ibis can hatch from its 'egg' and then be reborn and live forever. NMNH Department of Anthropology, A279283.

especially highly. Resins, including frankincense and myrrh, were imported from distant places, such as Syria, Ethiopia, Somalia, and Arabia, which contributed to international trade, while the trade in the tons of natron needed to mummify large numbers of animals fostered the local economy. Certainly animal mummification contributed to the wealth of the temples, the embalmers, and all those involved in animal cults.

Despite the vast number of animal mummies found in Egypt, they have only been studied in a holistic way at the end of the 20th century. For much of Egyptology's history, most scholars viewed animal mummies as mere curiosities and collected them more as conversation pieces or as manifestations of strange religious rituals than for any more scientific purpose. However, there were some exceptions to this.

Naturalists were very interested in animal mummies and from the very end of the 18th through the 19th and early 20th centuries, they collected mummies in order to analyze their bones and identify the species that were found. The late 20th century saw a resurgence of interest in animal mummies when scholars realized just how much information they could glean from these artifacts if they were studied holistically. By identifying species, mode of death, method of mummification, and signs of disease,





The Radiograph of the bull, below, shows that it contains a somewhat jumbled skeleton of a bovid. The animal was relatively young when it died.NMNH Department of Anthropology, A413942.

one can obtain a wealth of information on ancient Egyptian environment, religion, veterinary practices, mummification technology, trade, and culture. Scholars started to use sophisticated imaging technologies on animal mummies, including x-rays and CT-scans, hitherto reserved for human mummies. These scans are used to identify and examine the animals within the wrappings without disturbing the contents, while embalming materials can be identified using high temperature gas chromatography (HTGC) and gas chromatography-mass spectrometry (GC-MS) GCS. Large-scale DNA studies are being undertaken to find and trace changes in the genome of certain animals, such as ibises; or to trace the geographic dispersal of animals, such as cats; or to document multiple sites for the domestication of cattle.

These and other studies emphasize the importance of animal mummies, not just to the ancient Egyptians, but also to us today. Such studies provide not only sources of information about animals, the ancient environment, and Egyptian technology and culture, but also serve as a window into the complex and close relationship between humans and animals in ancient Egypt.

A lizard coffin that was probably suspended in the temple or in catacombs. The lizard was sacred to the god Atum, one of the creator gods. NMNH Department of Anthropology, A129627.

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The recently opened exhibit, *Eternal Life in Ancient Egypt,* at the National Museum of Natural History, was developed under the leadership of Melinda Zeder, senior scientist and curator of Old World Archaeology in the Smithsonian's Department of Anthropology. Physical anthropologist David Hunt co-curated the exhibit with assistance from Bruno Frohlich and guest curators Salima Ikram (American University, Cairo) and Lana Troy (Uppsala University, Sweden). Visit the exhibition website at http://www.mnh.si.edu/exhibits/eternal-life/.

A CHILD'S MUMMY

by David Hunt

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The new National Museum of Natural History's exhibition *Eternal Life in Ancient Egypt* includes a physical anthropological research study of a child's mummy. To recreate a biological profile of the child, Smithsonian scientists applied modern CT scanning techniques to learn about the child's sex, age, health, and possible ancestral origins. They also employed facial reconstruction techniques to gain a fuller visual understanding of the child.

The museum's collections records indicate that this child's mummy was collected from Thebes by John Hamilton Slack in 1856. Sometime after 1860, the mummy was transferred to the Wistar Institute in Philadelphia, where it was curated until 1958, when the mummy was transferred to the National Museum of Natural History.

An initial visual assessment of the mummy identified various features that could be used for evaluating the remains. For example, the child's body is dehydrated, the tissues treated with a drying agent evidenced by differential coloration and the remnants of crystalline and resinous material. In the embalming procedure, the body would have been dried by placing it in a mound of natron (a type of salt) for 20-30 days. After that time, the natron would have been removed and the body would have been cleansed with unguents (ointments). A bitumen mixture would have been applied as a sealing layer to the tissue.

The child's chest and abdominal region are collapsed, indicating that no apparent packing of this area was done to fill out the body. The body is not wrapped in linen strips; the lack of evidence of any strip-type wrappings adhering to the body suggests that they had been removed in the past. The body — lying on layers of linen sheets with the head tilted downward and with the chin resting on the upper chest — is typical of burials for common (or lower) social class Egyptians from the very late dynastic and Greco-Roman period. The bodies of even common Egyptians were preserved since mummification was an integral part of the Egyptian religion; there had to be a place for the "ba" spirit to reside.

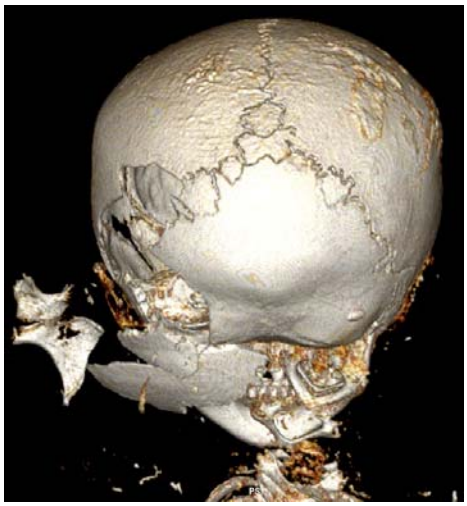
In the early 20th century, necropsy was regularly performed to study a mummified body, but in the process the dissection severely damaged the mummy. With the advancements in radiographic methods, the internal features of the mummy now can be well illustrated without damage, using plain film radiography and Computer Assisted Tomography (CT) to produce a 3-dimensional image. CT was developed in the 1970s, and, like the x-ray machine,

Egyptian child mummy. Photographs by Don Hurlbert. NMNH Department of Anthropology, P381235.

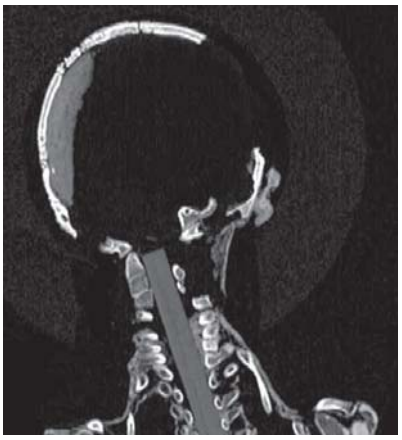
The child mummy being CT scanned.

was used on Egyptian mummies almost from its inception (Petrie, 1898; Lewin 1978).

In Ancient Egypt there were no coolers, so bodies might begin decomposing before the embalmers began their work on them. In this particular mummy, the back of the head had been fractured, perhaps as part of the method of removal of the brain. But it is more likely that the cranial bones had been fractured when the body was being moved and stored before embalming. This fracture and the probable slight decomposition of the body required that the embalmers install a small wooden peg (or



Displaced bone from a skull fracture can be seen on left side of the cranium.



Wood peg or dowl was placed in neural canal of the neck vertebrae.

dowel) in the neural canal of the neck vertebrae to re-position the neck and the head for the mummification. One interesting artifact from the use of x-rays is the imaging of the old catalog numbers placed on the mummy's head. The numbers are written on the mummy with lead-based paint.

Despite the significant drying of the soft tissues by the mummification procedure, there is evidence of external genitalia in the groin area that identifies the body as male, and the length of the mummified body indicates this is a child. Without this soft tissue evidence, it would be impossible to identify the sex of the mummy by the skeletal remains alone.

But how old was this young boy? The two most diagnostic ways to determine age from the skeleton are by dental development and long bone growth. CT scans of

Child mummy face showing the catalog number written on the head.

dentition reveal the developmental stages of the deciduous and permanent teeth in the child's mouth.

From the CT image it is evident that all the deciduous teeth are fully erupted (in occlusion), from the central incisors to the last deciduous molar. Above and below the deciduous dentition are the crowns and roots of the permanent teeth forming. As is illustrated in the image, the permanent maxillary (upper) incisors have their crowns completely formed. The mandibular (lower) canines have the crown about two thirds formed, and the first permanent maxillary (upper) molar has the crown completely formed. The root has just begun to form. Comparing these stages of dental growth to a standardized chart of dental growth, it can be seen that the tooth development is at about three and one half years old +/- 12 months (Bass 2005: 303-4).

CT images of the dentition of the child mummy.

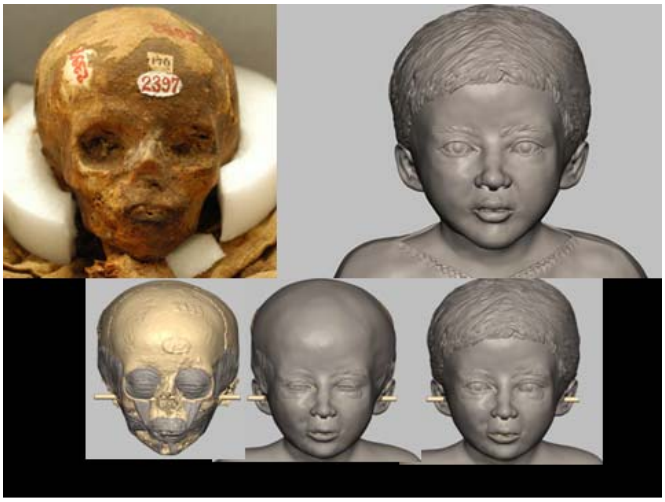
Radiographs of the boy's lower legs also helped scientists conclude that the child died at approximately 3-4 years of age based on long bone development standards (Sheuer and Black, 2000:416). However, teeth provide the best estimate of a child's age since tooth eruption is more strongly controlled by genetics, whereas the long bones and overall body growth are affected by environment or nutritional fluctuations. Since the age estimation of the child's dentition and long bones are equivalent, and there is no other evidence of pathological conditions in the skeleton, it can be concluded that this three- to four-year-old child was not suffering from excessive nutritional or chronic illness. Most likely the child died of some acute illness such as pneumonia or another illness that killed the individual quickly.

Stages of tibial diaphysis and epiphysis growth and related ages. The mummy's tibia length is approx. 3 ¼ to 3 ¾ years old. Tibial growth image from Ubelaker (1999).

To what population might the child have belonged? Ancient Egypt was a very cosmopolitan society, especially in the latter parts of the dynastic periods and in the Greco-Roman occupation. A broad range of population groups were living and interacting during this time and the co-mingling of different population groups would have of-

Comparison of European, African, and West Asian skulls.

Skull of the child mummy compared to anterior and lateral views of European, African and Asian ancestry skulls (previous page).



The application of forensic anthropology and new x-ray technologies has enabled forensic artist and sculptor Joe Mullins to reconstruct the boy's head based on the assessed ancestry and age. Using the 3D CT image, he virtually built layers of muscle and skin onto the skull, ultimately building facial features using FreeForm Virtual 3D modeling software.

ten occurred. Examining the cranial features of the Egyptian child — the shape and height of the nose, shape of the eye orbits, amount of forwardness of the face (prognathism), and length and breadth of the cranial vault—his ancestry appears to be intermediate between the West Asian and African. This is not surprising since the Egyptian populations of that time would have been an amalgam of African populations from the previous Nubian rule and the influx of Middle Eastern groups occurring at the same time that the Greeks and Romans had political control.

Though no longer living, this young boy still speaks to us across thousands of years, thanks to the new analyses of his mummified remains made possible by recent scientific advances. The case study thus provides us with one of the strongest arguments for the retention of museum collections — one simply never knows when scientific breakthroughs will bring us new knowledge and insight about our world, past and present.

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David Hunt is a physical anthropologist in the Smithsonian's Department of Anthropology and co-curator of the exhibition, "Eternal Life in Ancient Egypt."

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THE EGYPTIAN AFTERLIFE: WHAT TO TAKE WITH YOU AND WHY

by Betsy M. Bryan

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Three thousand two hundred years ago a man composed a letter to his wife, named Ankhiry, complaining that she was causing trouble for him and announcing a legal suit. "What have I done against you wrongfully for you to change into this bad temper in which you are? ... I shall dispute at law with you …." Following a brief summary of what a good husband he had been to her over many years of his military career and an assertion of his fidelity, he mentioned her death, after which

> "I spent a number of months not eating or drinking like a [normal] person…. I cried greatly together with my family in the presence of my neighborhood. I gave fine quality linen for your wrapping, and I had many clothes made. I did not omit a good thing or prevent one being done for you." [Noting that he had not married in the three years since her passing, he then again accused his deceased wife of not being equally caring, but at the end of the letter indicates that he may believe Ankhiry held a sexual grudge:] "…Now look! You do not know good from ill, and one will judge you and me. Look! The sisters in my house — I have not entered [sexually] one of them!"

This "letter to the dead" — written more than one thousand years after the great pyramids of Giza — tells us much about Egyptian beliefs. For the Egyptians, the afterlife was real; it had a place, a time, and a corporeality. Despite the sadness of losing one's loved ones on earth, most Egyptians believed that proper tomb preparations and burial rituals could keep families intact over timeless eras. Death did not break social and private relationships that were usually thought to remain harmonious, but as this letter indicates, a relationship that existed on earth could develop estrangements beyond the tomb.

Funerary Artworks

The objects made for and placed in a burial were a significant part of a proper entombment, and some had a nearly indispensable function. Although they might not be intended to be seen or admired by the living after their deposit, Egyptian funerary artworks embodied both aesthetic sense and religious function. Such artworks were intended to be seen, because they were produced for the tomb owners during their lifetimes, paid for with their assets and constructed to their own specifications. Scenes of burial processions shown on tomb walls illustrate the objects (or types of them) deposited, and these include not only purely funerary artifacts but also personal items such as mirrors, cosmetics and scribal equipment, along with jewelry and clothing. During the travel to the tomb and over their lifetimes, Egyptians acquired and displayed their wealth for eternity. The arts, funerary and other, flourished in Egypt within a highly status-conscious elite society focused on winning the favor of those in superior

Theban Tomb of Ramose, no. 55, ca. 1350 BC. Painted limestone. Friends and family carry the vizier's (highest official to the king or pharaoh) personal furniture acquired during his lifetime to his tomb on the west side of the Nile.

position, whether in this life or the next. As we survey a handful of the types of art that were placed in Egyptian burials through time, we will consider their function in ritual and art. [For a discussion of chronology and a list of Egyptian dynasties and dates, go to page 23.]

The Mummy as Art Object

Although the husband of Ankhiry does not mention the array of funerary objects that may have been deposited with her, her burial having been three years in the past, he does mention linens used for wrapping. The fundamental preparation for burial was that of the body itself. As early as the Neolithic period, elements of mummification were practiced to preserve the corpse as a spiritual container. During the Old Kingdom (2686-2181 BC), skulls and bodies were sometimes plastered to maintain their shape and to provide an image of the physical person. The physical identity was important not only as a container but as a form of the person that was recognizable to his or her mobile spirit (ba) and to others – living and deceased. Mummification was therefore intended to preserve the entire body and create it as a new image of the deceased. The linen wrapping used in that part of the procedure was called the *wt* and came later to designate coffins in anthropoid form.

The coffin had a function similar to that of mummification itself and particularly of bandaging – the collection and union of the body parts to ensure all functions in the next life and the representation of the deceased. Already in the Pyramid Texts spells were provided to guarantee the body's integrity: "O flesh of this Teti (king's name), do not decay, do not rot, do not let your odor stink. Your step shall not be passed (by another); your stride shall not be strode past (by another); you shall not tread upon the bodily fluids of Osiris." (PT 412) Once wrapped the mummy had this first order of protection, and the coffin, whether of box or anthropoid shape, was additional physical protection. Because burials were vulnerable to violation, the security of the body in its coffin might still be a concern for those who wished to ensure the afterlife.

Plastered skull from a Fourth Dynasty burial at Giza, ca. 2500 BC. Plastering bodies created an image of the deceased and helped preserve the corpse as a vessel for the spirit.

Tomb Statues

The creation of images of the deceased began early in Egyptian history. By the first dynasty (ca. 3000 BC), tomb statues were clearly part of elite burials. A statue of the deceased, the *twt* in Egyptian, could act as an alternate container for the person, and already in the Old Kingdom, a statue was an important part of the burial ritual, being frequently represented on tomb walls in scenes of art production and transport. Statues were placed in special rooms of Old Kingdom mastabas [platforms with multiple chambers for burials] and received purification rites such as libation and incensing in parallel with the mummy itself. The enlivening of statues was accomplished through the "opening of the mouth" ritual from the Old Kingdom on, the text of which is known from the New Kingdom (1550-1069 BC). Even entire tombs or temples might be enlivened by this ritual, ensuring that the scenes on walls and the statues erected within could magically act as real spiritual containers.

Statues normally did not portray a realistic image of the deceased; rather they supplied a healthy and strong

Tomb statue of Mesehty from Assiut. Eton College 2167. Twelfth Dynasty.

body type and a face that was believed to be readily identifiable in the divine afterlife. In practice, with the exception of a brief period in the Fourth Dynasty (2613-2494 BC) when important royal family members left personalized images of themselves, most elite statues were equipped with faces similar to the official portrait of the ruling king. This practice continued off and on for more than two thousand years. It may have originated with the Old Kingdom funerary beliefs in the exceptional divinity of the deceased king with whom others hoped to reside after death. Those recognizable as the king's followers might better hope to be provided for by him in the next world. This practice persisted in periods when the kingship itself was strong – in parts of the Old, Middle, and New Kingdoms, and portions of the first millennium (1000 to 1 BC) as well.

Tomb statues combined the chosen physical shapes with poses, clothing, hairstyles, and attributes that conveyed the tomb owner's status and elements of his lifestyle. Statues of men seated cross-legged could also show a hand fisted to hold a scribal reed pen, while panther skin clothing could identify the wearer as a priest. In many eras of Egyptian history, even elites did not build large tombs that could house stone carved images, and the need for tomb statues became almost nil during the Third Intermediate Period (1069-656 BC) and the later Ptolemaic (310-30 BC) and Roman eras (30 BC - AD 395). Figures of Osiris and later Ptah-Sokar-Osiris, inscribed for the deceased, may have served in part as vessels for the spirit, and together with the numerous images on coffins, supplied the ritually required alternative to the mummy.

Coffins, Mummy Masks, Canopic Jars and Shabtis

The faces shown on coffins and mummy masks were often less specific than those on statues that recalled the kings. It has been suggested that this was due to the fact that all blessed deceased persons were gods in the afterlife. Thus a more generic idealizing facial type might be desirable. Yet there are elite faces in the Middle Kingdom (ca. 2000-1773 BC), and even more later, that bear datable features. While stone statues were affordable only for the wealthy, coffins were a necessary expense and were produced for a wide range of consumers. To provide for the variety of coffins very likely required an equally broad range of artisans, including those outside the "royal workshop" environment. Materials could sometimes be used to elevate a rapidly produced commodity into a more elite category. For example, in the Ptolemaic (Greek) era the gilded faces on coffins and masks that represented the incorruptible flesh of gods were more common than ever for a large number of people. In that period the royal portrait was so removed from the public that the masks may well have been intended to portray the deceased in a beatific state.

Canopic jars (containing the body's organs) were also commonly placed in tombs at the time of the Old Kingdom onward. Preservation of the abdominal organs separate from the body was part of the means of protecting the human vessel. With the knowledge that the organs would rot and further damage the body while it was being dried with salts, the Egyptian embalmers from the Middle Kingdom on generally removed these parts and separately preserved them. These represented the precious "fluids of Osiris" referred to in the Pyramid Texts and later, and the canopic jars that held the organs themselves recalled libations offered to the deceased. Jars

Mummy mask from the Ptolemaic era, ca. 200-100 BC. Cartonnage (plastered linen, gilded and painted) shaped to cover the wrapped mummy's head. Body may have also been placed in a coffin or covered with bead netting.

of ointments, perfumes, and oils were often represented beneath depictions of coffins and items of mummification. These were important additions to the overall aim to maintain the body, as were incense burners and pellets of precious resin for fumigation. Like the sarcophagi in which coffins were placed and dragged to the tomb, the canopic jars were often set into boxes with pitched shrine-shaped lids. The similarity of these parts of the burial outfit reflected that they were two parts (the mummy and the jars) of the same central element – the body of the deceased.

Beyond this central aspect of burial preparation, the tomb owner considered his or her destination, where life was expected to be similar to that on earth, but perhaps more extreme. Wheat grew larger, fish were more plentiful, and everything was increasingly both enormous and accessible. Yet the need to work was a constant, and since people were called to work as conscripts, from the First Intermediate Period (2181-2000 BC) onward, people might take along small magical figures, easily held in the hand, that could be enlivened by spells and set to work as a substitute. These shawabti or shabti or ushabti (all actual spellings) mummiform figures were made of a number of materials, including wood, stone, ceramic, and faience and continued to be produced throughout the pharaonic eras. In the New Kingdom specific figures dressed in kilts were created to represent overseers for the growing number of workers, and eventually boxes full of some 401 of these were placed in tombs to include 365 annual workers and 36 overseers. Although there was no requirement as to numbers of shabti figures, from the late Middle Kingdom through the Ptolemaic era, shabtis frequently bore the spell that became Chapter 6 of the Book of the Dead, which invokes the figure to do manual labor on behalf of the named deceased.

Funerary Books and Coffin Texts

Funerary books were another important category of art fashioned for and placed in the burial. Spells to preserve the body, to provide sustenance for the deceased, and to empower him or her as a divinity in the after life made up these books. Beginning with the Pyramid Texts written on the walls of royal tombs in the Old Kingdom (including queens), those entombed might have some portion of the spells prescribed for afternlife with them.

The Coffin Texts were painted and carved into wooden coffins in the First Intermediate Period and through the Middle Kingdom but were accessible to the broad category of Egyptians who prepared for the afterlife. From the late Second Intermediate Period (1650-1550 BC) through the Ptolemaic era, the *Book of the Dead* could be part of one's tomb equipment, but probably it was always a very expensive element of it. Papyrus was an expensive commodity, and some were embellished with polychrome painted vignettes to accompany each chapter of the Book. Additional compositions were available to people in the Ptolemaic and Roman eras, such as the Book of Breathings or Traversing Eternity, and these might be alternatives to full Books of the Dead.

It will hardly surprise anyone that tombs were provided with actual food and drink for the afterlife. Yet these also were supplied with the recitation of offering texts carved or painted on walls, on statues, on stone reliefs, or small boxes and other tomb gifts. Visitors might speak the words seen on these tomb items, and magically the deceased received "a thousand of bread, beer, ox, fowl, linen, etc." Although scenes of estate life appeared as early as the Fourth Dynasty (2613-2494 BC) on tomb walls, by the late Fifth Dynasty (2494-2345 BC), tomb owners were

dependent upon visitors to their tombs to recite spells for them. Entrance ways were embellished and decorated to encourage visitors. Artisans were employed to carve and paint elaborate processional scenes of offerers that were intended perhaps to inspire whoever entered. Funerary wall scenes that depicted musicians, dancers, and singers were among those designed to entertain and involve the friends and family who came into the tomb. The best crafted and well-proportioned figures would certainly have gained the attention of visitors more easily than cruder artworks. Thus the dependency of the deceased tomb owners upon the prayers of the living was another encouragement for high quality artistic production.

Personal Tomb Objects

Among the more varied objects placed in tombs were personal items used during the tomb owner's lifetime. Furniture — chairs, stools, beds, and clothing chests — was stored in the burial shaft, together with linen sheets, lamps, equipment for personal adornment, writing implements, and even amusements such as board games. For those whose lives had been affluent, the addition of such objects might be impressive in type and amount, but for those with lesser means such highly personal tomb deposits would have been far fewer. Occasionally the inclusion of "heirlooms" that could have been in the family for generations were added to the tomb goods, but in practice such valued pieces were probably retained for continued use or status. By the late New Kingdom (ca. 1100 BC), burial practices were changing to reflect more dire economic realities; large burial outfits, as well as decorated family tombs, became more rare. Tomb and cemetery violation was on an upswing, and the impetus to place a large proportion of one's personal wealth below ground — where it was no longer thought to be secure — was lessened.

Those funerary art works that were essential to effective afterlife remained part of burials through the end of pharaonic Egyptian culture. A wrapped mummy peppered with protective amulets, coffins, canopic jars (even when the viscera themselves might be placed within the mummy), and shabtis were a staple of internments until the Ptolemaic era. Some form of the required offerings of "bread, beer, oxen, fowl, linen, and every good and pure thing," whether by inscription on the coffin or on a painted wood figure of Ptah-Sokar-Osiris — intended to identify with and ensure the resurrection of the blessed deceased — was also an important addition.

In the final centuries of ancient Egyptian burial practices, mummification and some sort of coffin or cartonnage remained of primary importance, but other ritual objects did not. Families often participated in associations that sponsored funerals and proper rituals for the deceased and supported a group tomb location, perhaps influencing the decrease in burial items. However, it is interesting that in Roman era Egypt, the deposit of personal objects — mirrors, combs, and small jewel boxes — became more common again, perhaps reflecting a meditation on the loss of life. Although the Egyptian tradition of "taking it with you" had greatly changed since the earlier days of the pyramid builders and the great elites of the New Kingdom, it was still true that through the carefully written and illustrated funerary books and the rituals recited and left with the mummy, the afterlife, always available, was magical still.

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ANCIENT EGYPT IN OUR MIDST

by Lana Troy

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The Smithsonian's National Museum of Natural Hstory (NMNH) recently opened a new exhibition, *Eternal Life in Ancient Egypt*. Here, as in museums all over the world, visitors crowd around not only images and objects but the long dead Egyptians themselves. Now equipped with catalogue numbers, these were people who left behind monuments and tomb equipment. They also gifted us with their concerns, reflections, and imaginations inscribed in stone and set down on papyrus. No other ancient culture is preserved in such multi-perspective detail, spanning a period close to 5,000 years.

Beyond the final demise of all forms of hieroglyphic writing in the 4th century AD, ancient Egypt lived on, first in tradition, then in collective memory, and finally in the imagination that transformed it to meet the needs of different ages in, for example, the works of Shakespeare and Verdi. With Champollion's decipherment of hieroglyphs in 1822, a new reality was revealed peopled by real men and women. For the larger public, a meeting point was found in the emergence of the museum as a preserver and narrator of the human experience embedded in the objects they left behind.

Collecting Ancient Egypt

From fragments of stone walls to the smallest of amulets, ancient Egyptian artifacts have always held a cherished place with collectors. Beginning in the 1600s, the 'curiosity cabinet,' the precursor of the modern museum, inevitably included the funerary figures we call *shabtis*, a 'fragment of the Great Pyramid,' and most likely a mummified limb or two. These objects also made their way into the earliest American collections.

The acquisition of these objects quickly became part of the politics of the day. The Rosetta Stone, discovered in 1799 by the French army but displayed today in London, is a footnote in the history of the Napoleonic wars. A number of the Egyptian objects in the NMNH collection relate to, in a less dramatic way, the political and cultural climate and events of the 19th century.

The British-born George Robins Gliddon (1809-1857) is sometimes referred to as the first 'American' Egyptologist. After serving as the US consul in Alexandria, Gliddon arrived in the US in the 1830s and embarked upon a career as lecturer and author. Fourteen collection numbers are attributed to a Gliddon donation (or perhaps purchase), including the Neshor cartonnage coffin lid fragment, now on display. Gliddon did not limit his efforts to Egyptology, however, but also authored a book on cotton production in Egypt and more notably, co-authored *Types of Mankind*. This book advocated the 'polygenesis' or multitude origins for mankind and fed into the idea of the hierarchy of the 'races' that offered an excuse for slavery. The presence of a 'high civilization' in Africa became a point of contention in this discussion.

The Union General Charles Pomeroy Stone (1824-1887) was among the Civil War veterans to sign up for a stint in the Egyptian Army. Functioning as chief of staff, he stayed on until the revolt of the Egyptian officer corps that led to the deposal of the Khedive Ishmail in 1879. During his stay, he acquired a collection of 'squeezes' (accession 3289) — impressions of stone monuments made with thick moistened paper that he donated to the National Museum in 1874. The 89 numbers represent a mixture ranging from Old Kingdom tomb reliefs to Latin inscriptions.

Samuel Sullivan 'Sunset' Cox (1824-1889) had a successful career as diplomat and congressman. In 1886 President Cleveland appointed him 'Envoy Extraordinary and

Fragment of a cartonnage coffin lid belonging to Neshor. Dynasty 26, 664-525 BC. NMNH Department of Anthropology, (A1415). Photo courtesy Lana Troy.

Minister Penipotentiary to Turkey'. Serving only 17 months, the first winter was spent in Greece and Egypt, where he acquired two mummies and an unknown number of other antiquities. One of the mummies was immediately donated to the National Museum; it was dubbed Minister Cox and is currently on exhibit.

The 1880s and 90s was a pivotal period for Egyptian archaeology and the storage space available in Cairo's Bulaq Museum was quickly filled with new discoveries. Bab el-Gasus, a large collective tomb excavated at Deir el Bahri in 1892, with its 153 coffin sets and other grave goods, proved too much for the remaining space in the flood-damaged museum. The solution was to use a portion of the wonderfully decorated coffins as diplomatic gifts. Feverish communiqués put the diplomatic community in Cairo and Alexandria on alert as 17 countries applied for consideration. The coffins, along with a large number of shabtis and some boxes, were divided into numbered lots and a drawing was held. Lot 10, consisting of six coffins, three mummy boards, two boxes, and some 80 shabtis (accession nos 27543 and 123711) arrived at the National Museum in Washington some months later. Today, these coffins and the objects that accompanied them, unique in North America, are central to the NMNH's Egyptian collection.

'Minister Cox,' mummy in coffin with a cartonnage body covering, 150 BC-AD 50. Photo by Chip Clark, NMNH, A126790.

The inner coffin of Amenhotep, from the Bab el-Gasus tomb, Deir el-Bahri, Dynasty 21, 1064-940 BC. NMNH Department of Anthropology, A154959.

While it is easy to see the significance of the large and more opulent donations with easily identifiable donors, many of the smaller objects have more muted but still compelling backgrounds. Olive Risley Seward (1844-1908) was the adopted daughter and companion of William Henry Seward, Lincoln's Secretary of State. After Seward's retirement in 1870, the two spent fourteen months travelling the world, returning just before his death in 1872. In 1892, Olive Seward donated three shabti figures of Imhotep (A154538), apparently acquired on this trip, that were displayed from 1976 until 2010.

Tombs: Ancient Egypt Showcased

Egyptian artifacts, familiar from many collections, can come from villages, workplaces, and temples but most often it is the tomb that has been their point of origin. The physical preservation of the body was the tomb's primary purpose for more than 4,000 years until Christianity finally edged out native practices in the 4th century AD. The corpse, it was believed, was a source of power for the different components of the potentially eternal 'persona' of the dead. The body, confined to the tomb, provided energy for the birdlike "ba" who was free to leave the tomb, partake of the offerings, fly to heaven, and return to the tomb and its owner. The head, in particular, was essential, so much so that during a short period around 2300 BC

an extra replacement head sculpted in stone was placed in the tomb. The face functioned as a key element of identity. The eye with which to see, the mouth with which to eat and speak, and the ears with which to hear were all important in order for the deceased to maintain a physicality, interact with the living, and participate in the rituals that sustained existence in the tomb.

The peak of mummification techniques was not reached until the 21st dynasty, around 1000 BC. As described by Herodotus back in the fifth century BC, mummification required, in essence, the removal of all liquid from the body. The internal organs, liver, lungs, stomach, and intestines — all recognized as having a function in the living person — were specially preserved in four characteristic 'canopic' jars, associated with four deities called the sons of Horus. By about 2000 BC, these jars became personifications of these deities, who were represented by the heads sculpted on the jar lids. These were first given the face of the tomb owner with the custom gradually shifting to identify these gods as a man (Imsety), a baboon (Hapy), a jackal (Duamutef) and a falcon (Kehebsenuef). These gods also protected the body in the form of amulets on the body and images on the coffin. As an affirmation of the mummy as a living being, the moisture, taken away in death, was returned by a water offering, equated with the annual flooding that returned life to the fields.

The wrapping of the mummy, accompanied by ritual prayer, included placing protective amulets between the layers of linen. There was found a heart scarab referring to the heart that would testify to the innocence of the dead at his trial before Osiris and hieroglyphs such as the *wadj-pillar* that confirmed the body's ability to "green" (wadj) or regenerate itself. The djed-pillar reinforced the identity of the dead as Osiris**,** the first to ever experience death and, by defeating it, introduced an immortality no longer confined to the gods. Every amulet contributed to the protective shield of the wrappings.

The mummy's continued life in the tomb was dependent upon the successful transformation of the deceased into a spirit of light called an 'Akh,' achieved by following the path of the sun. Called before a court of the gods to account for his or her life on earth, the dead was interrogated: "Have you ever denied food to the hungry, drink to the thirsty, clothing to the naked." A denial of wrongdoing was followed by the heart being weighed against "truth" in the form of a feather or goddess. A lie meant a second death, an absolute annihilation. Only those judged 'true of voice' could continue on a journey that emulated the sun traveling through the dangers of the night to reach the sunrise that ended the darkness of death.

Portrait lid from a canopic jar. 18th dynasty, 1550-1398 BC. NMNH Department of Anthropology, A439853.

The deceased was assisted on this journey by many of the objects in the tomb. A text, Chapter 30 of the *Book of the Dead*, inscribed on a large scarab that was placed on the breast, called upon the heart to tell the truth: "Do not witness against me in the tribunal!"; "Do not tell lies about me!"; "How good are the good things that you say!" By the 3rd century BC, chapters from the *Book of the Dead* were being inscribed on narrow strips of linen that made up the final wrappings of the mummy.

The coffin was also conceptualized as an aid in the rebirth of the dead. It was not merely a container for the body, but also the mother of the newborn soul. The Egyptians saw theological truths in analogies. The coffin, associ-

Carnelian heart amulet. NMNH Department of Anthropology, A454209.

Osiris as Djed pillar, from the interior of the outer coffin of Tentkhonsu, Bab el-Gasus, Deir el-Bahri, Dynasty 21, 1064-940 BC. NMNH Department of Anthropology, A154953.

ated with the sky goddess Nut (mother of both Osiris and the sun god Re) contained the body just as the womb contained the child, and the night sky Nut, the sun before its reappearance at dawn. The primary wood used for the coffin was the native sycamore, a tree often depicted as Nut nourishing the dead. Changing form through the ages, by c. 1000, the coffin had also become a canvas, inside and out, that charted the successful transformation of the dead, often expressed using the winged scarab, a multilayered image combining the scarab's hieroglyphic meaning "to become" with its role as the manifestation of the morning sun.

The happy ending of this journey is found in the simultaneous experience of new life of the many components of the dead: the light-spirit, the Akh, joins the gods; and the bird-soul, the ba, travels back and forth between the body in the tomb, the offerings, and the stars in heaven. Yet another part of the persona arrives at the Green Fields, an idealized agricultural life, where all labor is carried out by the funerary figures known as the shabtis, also identified by yet another chapter from the *Book of the Dead*. A bill of sale tells us that these came (ideally) in a set of 365 workers plus 36 overseers, so the new owner of this fine estate could count on leisure time.

The body, however, continued a life in the tomb, that in its ideal form, contained the necessities of life and a little more. There was access to perfumed oils, jars of kohl eye-paint, tweezers, razors, combs, and mirrors. Boxes, and sometimes baskets of linen sheets and sometimes finished clothing, were often the targets of plunderers, as they, among the tomb objects, had the highest resale value. Meat could itself be mummified and placed in appropriately shaped containers for the next life.

Repeated images of the owner, in the form of the coffin and additional statues, made sure that the wandering ba-soul could recognize its home. The survival of the 'persona' was further ensured by the repeated writing of his or her name and titles. Furniture such as beds, chairs, and storage containers furnished the tomb as a home. The leisure of family life was replicated with musical instruments and board games. The earthly existence of the owner might be preserved in an idealized narrative inscribed in columns of hieroglyphs. The funerary procession itself, ending with the restoration of the senses in the ritual of the Opening of the Mouth, is repeatedly enacted in eternity with its inclusion. And the heavens to which the successful spirit would ascend could be found on the tomb's ceiling.

Two essential texts connected the worlds of the dead and the living. Inserted in the walls of an outer room in the tomb could be a slab, formed either as a rectangular 'door,' a so-called 'falsedoor,' or with a rounded top, a 'stela.' Written on the slab was a formula intended to transfer offerings given by the king to a god, to the tomb owner.

Shabti of Ameneminet from Deir el-Medina. Dynasty 19, 1292-1190 BC. NMNH Department of Anthropology, A553172.

> A gift that the king gives to Osiris, Foremost of the Westerners, that he may give a going forth of the voice consisting of bread and beer, beef and fowl, alabaster and linen, and all good and pure thing upon which a god lives to the ka-spirit of *(tomb owner's name)*.

These words, as time goes by, were inscribed on many of the tomb's objects, their existence was enough to perpetuate the provisioning listed in the text.

However, it was better if the words and the tomb owner's name were pronounced. On an outside wall, the passer-by could be asked to stop and 'listen to the words' of the dead and pronounce his or her name. This, they could read, was an act beneficial for both. Furthermore, the failure to do so, or worse, desecrating the tomb, would result in punishment. Some examples of this text genre are especially poignant, bringing the idealized world of the hope for eternal life into the reality of human loss. Outside the Middle Egyptian tomb of Petosiris (c. 300 BC), his young son Thothrekht, now interred, speaks to the living.

> "O living who are on earth, who will come to this desert tomb to make an offering, may you pronounce my name. It is a good thing to act for one who cannot. The one who hears my words will grieve. I was a child seized by force, a little one seized quickly as if by sleep. I was only a few years old when I was taken to the city of eternity. I was rich in friends but no one could protect me. All of the townspeople, men and women, lamented greatly when they saw what had happened to me. Father and Mother pleaded with Death and my brothers and sisters despaired. But since I have reached this land of loss, where people are held accountable before the Lord of the Gods, no fault has been found with me and I have been given bread in the Hall of Justice and water from the sycamore, like one of the ba-souls of the necropolis."

The grief of loss is followed by an affirmation of a successful journey to an eternal life.

The ancient Egyptians have left behind a myriad of archeological sites, artifacts, and texts and not least their own physical remains. Although far away and long ago, they remain familiar in their humanity and are, indeed, still in our midst.

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Lana Troy is professor of Egyptology at the University of Uppsala, Sweden and Guest Curator for the exhibition "Eternal Life in Ancient Egypt" at the National Museum of Natural History in Washington, DC.

Visit the exhibition website at http://www.mnh.si.edu/exhibits/eternal-life/.

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THE FUTURE OF EGYPT'S PAST

by Alison S. Brooks

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In January 2011, as the revolutionary fires raged in Cairo's Tahrir square, Egypt's long-serving head of the Supreme Council of Antiquities, Dr. Zahi Hawass, became concerned about the fate of Egypt's antiquities. Familiar to US television audiences through his appearances on the Discovery and National Geographic channels, Dr. Hawass is an archaeologist in his own right who recognized that saving Egypt's rich patrimony from looters was central to the nation's future as a major tourist destination, as well as to the world. In late January and early February, he determined that several items had already been stolen during the looting of the National Museum, thefts that were widely reported in the news media to hinder their sale on the black market. The revolutionaries were equally concerned – and a cordon of protestors risked their lives surrounding the museum to try to prevent further looting and destruction.

Less well-known and more dire, perhaps, has been the looting of sites that followed the breakdown in government control. The following interview with Professor Eric Cline, director, and Deborah Lehr, chairman, of the newly-formed Capitol Archaeological Institute (CAI) at George Washington University, (which Hawass had helped to inaugurate in October 2010) documents some of the Institute's efforts to bring the looting to the world's attention and search for a solution.

How and when did you realize that this looting was going on?

Eric: We started hearing reports of looting right after the Revolution started. Professor Selima Ikram at the American University in Cairo reported the story that site looting was going on, and the Archaeological Institute of America had issued a press release deploring the looting.

Deborah: After seeing the Egyptian people stand up to protect the Cairo Museum against the looters, we believed our Institute, whose mission is to view archaeology as a tool of diplomacy, needed to take action. Our first step was to review what actions the US Government could take to help stop the looting and, at least, to prevent illicit antiquities from being sold in the US market.

In March we issued a Call To Action. We recruited colleagues and interested parties from all over the world to join an "International Coalition to Support Protection of Egyptian Antiquities." The call to action requested the President and Congress to take certain steps to protect against the import of illicit antiquities from Egypt. We issued the Statement on a Friday night and by Monday morning we had 77 signatures.

Eric: Actually the first signature was less than one minute after we posted the initial request. Eventually we got 400 more signatures, but forwarded the proposal to the White House and State Department with the original 77, as well as to the Congress; we followed up with visits to multiple officials in the Administration. But we needed more than just actions by the US government; we needed to help Egypt develop a plan. By this time, there was a new government and Dr. Zahi Hawass was out. We needed to make our case that we were here to help.

Deborah: Signatories represented professional societies from the academic, museum, and tourist worlds; tourism organizations; museums; literary figures such as Elizabeth Peters; and professors from universities across the globe including Salima Ikram, American University in Cairo, and Betsy Bryan, Johns Hopkins University, (both are authors in this issue of *AnthroNotse*). Some prominent signatories included heads, presidents, and section heads from, for example, the National Geographic Society, Archaeological Institute of America (AIA), American Schools of Oriental Research (ASOR), the Oriental Institute at the University of Chicago, the Society for Archaeological Science, The Metropolitan Museum, the Brooklyn Museum, the Boston Museum of Fine Arts, the Australian Archaeological Association, the Society for American Archaeology, the World Archaeological Congress, the German Archaeological Institute, the American Society of Travel Agents, and more than 25 universities.

What happened next?

Deborah: We realized that this was not enough. With several of our core group having served in government, we decided to develop a "white paper" that would outline steps that could be taken to better protect the antiquities in Egypt. We created an " International Coalition to Support

Protection of Egyptian Antiquities." The AIA, ASOR and National Geographic were early supporters.

Eric: The white paper outlined a series of steps, including documenting the problem, requesting emergency import restriction on imports of Egyptian antiquities, providing training and funding to increase the policing of Egypt's archaeological sites, and providing training and technological support to increase inspection of archaeological sites and regions. In the longer term, the coalition proposed creating and maintaining a database, in English and Arabic, of Egypt's archaeological sites. The paper also proposed launching an international educational campaign to protect the region's antiquities, fostering the creation of small businesses tied to cultural tourism, a training program for state antiquities inspectors, and even an effort to promote "green" tourism in conjunction with Egyptian sites.

Deborah: To obtain proof that the looting was indeed occurring, we obtained satellite imagery of the key tourist sites in Egypt, from before the revolution, right after the revolution, and in May 2011. The company GeoEye very generously worked with us to provide the imagery.

Eric: We invited Professor Sarah Parcak, an Egyptologist at the University of Alabama, Birmingham, to analyze the imagery for us. She is known as the "Space Archaeologist" for her use of satellite photography to find and study sites. She possessed some analysis from before the revolution and was able to compare it to the latest imagery. Her analysis showed significant looting at Abusir and Saqqara. We shared this analysis, along with the white paper, with the Egyptian Embassy here in Washington.

How did the Egyptian Government react?

Deborah: As a result of our presentation and the white paper, the Egyptian Government invited us to Cairo to discuss how our Coalition might support their efforts during this difficult time. They realized, as we did, that this issue of looting was not just harming their cultural heritage but hitting at their most important industry – Tourism. So there is a key economic component to our recommendations as well as to their interest in our assistance.

Eric: In May 2011, we headed to Cairo for negotiations with the Egyptian Government. Our delegation included Deborah and myself; Peter Herdrich, the CEO of the Archaeological Institute of America; Claire Buchan, former Deputy Press Secretary for the White House and Chief of Staff at the Commerce Department (who handled public relations and congressional outreach for the Initiative); and

Looting pit at Saqqara. L-R: Peter Herdrich, Chief Executive Officer AIA; State Antiquities Official; Sarah Parcak Founding Director, Laboratory for Global Observation; State Antiquities Official; Deborah Lehr, Chairman, CAI; Theodore S. Greenberg, Senior Advisor, CAI; Claire Buchan, and Senior Advisor, CAI. Photo courtesy Eric Cline, Director, Capitol Archaeological Institute (CAI).

Ted Greenberg, a former senior official at the US Department of Justice, who was a leading expert on money laundering.

Deborah: It was a fascinating time to be there. The trip was not easy: There were still protesters in Tahrir Square, and the key government meetings were surrounded by tanks and anti-personnel carriers.

The Egyptian Foreign Ministry hosted an interagency meeting with all the key government ministries involved in any aspect of protecting cultural heritage sites. As a result of these negotiations, we agreed upon a public-private partnership with the Egyptian Government covering immediate, long-term, and short-term goals.

Eric: In addition to presenting the satellite imagery to the key government ministers, some of whom were incredibly moved by the imagery of the destruction, we also did some ground-truthing – matching the satellite photos to actual pictures of looting pits.

So what now?

Deborah: We are waiting for the new President of Egypt to be elected before taking the next step. All indications are that the government wishes to proceed with implementing this agreement to help protect these important sites.

Eric: In the meantime, we stand ready to help. We contine to work closely with the Egyptian Embassy, which has been supportive of our Coalition's efforts. We have also continued to work to raise the profile within the United States of the issues of continued looting around the world. The template that we developed for Egypt is also applicable to any country in crisis. Our concern is that with government transitions occurring across the Middle East, looting has increased in many countries. It is our goal to work with many of these governments to protect these precious antiquities as well as preserve their economic well being.

Dr. Zahi Hawass, reinstated in May, wrote the following account of the May meeting but was out of government again by June.

I am very happy to see how much the rest of the world cares about Egyptian heritage. It means a great deal to the people of Egypt as well as to me personally that other nations are willing to offer their support. What those brave people who protected the Egyptian Museum in Tahrir Square on January 28 did caught the attention of the world's media. It brought renewed respect to our country, and we all take our hats off to them for the pride they brought to us. It is a tribute to them that the international community now recognizes how deeply the Egyptian people wish to safeguard their antiquities, so thank you to everyone who is trying to help. Excitingly, many of the Coalition's proposals will mean that lots of young Egyptians will have new employment opportunities at the Ministry of State for Antiquities.

Mr. Yasser Elnaggar, Deputy Chief of Mission, Embassy of the Arab Republic of Egypt, Washington, DC, issued the following statement:

The Egyptian embassy worked very closely with the CAI at George Washington to address the looting activities of Egyptian Antiquities that were taking place. Reports of such activities were very alarming indeed. Deborah and Eric shared with us samples from the satellite imagery that were taken of the looting. The embassy promptly alerted the authorities in Cairo and we arranged a visit by a delegation from the Coalition to meet with the relevant authorities there. We understand that looting activities still occur. It is important for the international community to continue to address this problem in all its aspects. We don't want the common human heritage of the Antiquities to be smuggled out of Egypt. We appreciate the assistance from CAI and the Coalition in raising the profile of the issue of looting. We need a coordinated effort from all concerned, including international organizations, governments and civil and educational societies, to combat the crime of looting from all its aspects. We need to preserve the heritage of humanity for the coming generations.

WEBSITES ON ANCIENT EGYPT

National Museum of Natural History. *Eternal Life in Ancient Egypt.* http://www.mnh.si.edu/exhibits/eternal-life/

The British Museum. *Ancient Egypt.* http://www.ancientegypt.co.uk/menu.html

Egyptian Museum in Cairo. *Rigby's World of Egypt.* http://homepage.powerup.com.au/~ancient/museum.htm

Museum of Fine Arts, Boston. *The Giza Archives.* http://www.gizapyramids.org/code/emuseum.asp

National Geographic Classics. *At the Tomb of Tutankhamen.* http://www.nationalgeographic.com/features/98/egypt/ Search NG website for other videos on Ancient Egypt.

The Petrie Museum of Egyptian Archaeology. *Digital Egypt for Universities.* http://www.digitalegypt.ucl.ac.uk/

University of Pennsylvania Museum of Archaeology and Anthropology. Egyptian Section. http://www.penn.museum/about-our-collections/224-egyptian-section.html

Oriental Institute Research Archives, University of Chicago. Sites for students and teachers. http://oi.uchicago.edu/OI/MUS/ED/TRC/EGYPT/egypthome.html

Egyptology News (blog). http://egyptology.blogspot.com/

Theban mapping project. www.animalmummies.com

The Rosicrucian Egyptian Museum and Planetarium. http://www.egyptianmuseum.org/discoveregypt#timeline

Metropolitan Museum of Art. http://www.metmuseum.org/toah/hi/te_index.asp?i=14

Brooklyn Museum of Art. http://www.brooklynmuseum.org/kiosk/egyptian/ancient-egypt/
Seattle Art Museum (curriculum guide). http://www.seattleartmuseum.org/Learn/SchoolTeacher/pdf/teacherlessonpdf/Egyptlessons.pdf

National Museums Liverpool. http://www.liverpoolmuseums.org.uk/kids/make-and-colour/egyptian-draw.aspx?theme=jungle

DATING ANCIENT EGYPT

by Lana Troy

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Ancient Egyptian events, sites, and artifacts are dated in two basic ways: historical period and absolute year date according to the modern calendar.

The Historical Periods

The division of ancient Egyptian history into periods has its own background. The Egyptian record of the names of kings, the order in which they ruled, and the number of years of each reign goes back to the beginning of the Egyptian history. Examples of this record are known from different periods, such as the Palermo Stone, covering up to mid-Dynasty 5 (c. 3050-2442 BC) and the Turin Papyrus, up to Ramses II of Dynasty 19 (reigned c. 1279-1212 BC).

In the early years of the Ptolemaic rule, the king, Ptolemy II (reigned 285-246 BC), commissioned a history to be written by the Egyptian, but bilingual, priest Manetho. With obvious access to ancient records, Manetho's history of ancient Egypt, written in Greek, grouped the various reigns into 'dynasties'. This provided the basis for the earliest reconstructions of the list of reigning kings. In the 19th century, with the establishment of Egyptology has a discipline, the dynasties were grouped into larger historical periods, setting up a structure that has been periodically revised as evidence has become available.

For the modern Egyptologist, the outline of Egyptian history begins with the Predynastic period, consisting of regional Neolithic 'cultures', identified by specific archaeological components. The development of writing and gradual accumulation of power by the southern Naqada culture leads to the beginning of the central state, divine kingship, and the 'historical' period. The division into historical periods makes an overview of each segment's characteristics possible. The period of initial establishment is termed the Archaic or Early Dynastic Period (Dyn. 1-2). This is followed by three historical phases referred to as 'Kingdoms', (Old, Dyn. 3-6; Middle, Dyn. 12-13 and New, Dyn. 18-20) representing periods of centralized rule. These are interspaced with three 'Intermediate' periods, when more than one dynasty rules at the same time. These are also times when foreign rulers can be found: the Levantine Hyksos during Dynasty 15 and possibly 16, the descendents of Libyan settlers during Dynasties 22-24, and the Nubian chieftains from the fourth cataract during Dynasty 25. The Third Intermediate (Dyn., 21-25) is followed by the distinctive Saite Period (Dyn. 26, 664 BC), once again a centralized rule, with its political center in the Delta city of Sais. By this time, the Libyan rulers no longer had distinctively foreign names, and the remaining 'Egyptian' dynasties (Dyn. 29-30) are comprised of Egyptianized Delta Libyans. The Persian conquest (525 BC) introduces the Late Period (Dyn. 27 to 30), ending the 'Pharaonic Period' of Egyptian history.

The second incursion into Egypt by the Persians, sometimes referred to as Dynasty 31 (342-332 BC), was short-lived and followed by the conquest of Egypt by Alexander the Great in 332 BC. This marks the beginning of the Greco-Roman Period, which includes the 'Macedonian Interlude' (332-305 BC), comprised of Alexander and his relatives, the Ptolemaic Period (305-30 BC) that ends with the death of Cleopatra VII, and the following Roman Rule. The end date of ancient Egypt can be debated, with various events, such as the introduction of Christianity as the state religion (380 AD), the last hieroglyphic inscription (August 24, 394 AD), and the closure of the last Egyptian temples (535 AD) cited as significant.

Year Dates

The use of modern methods, such as C-14, provide an important framework for dating the Predynastic period. Attaching absolute dates (in terms of years, BC and AD) to the historical periods and the reigning kings, and thus to the archaeological sites and objects, is not entirely straight forward. Conclusions are drawn from a combination of Egyptian traditions and the written dates on individual monuments and documents. This is then overlaid and

ameliorated with a range of astronomical dates and other factors.

An example of the way the ancient Egyptians wrote out the date would be 'Regnal year 2, third month of Peret, day 5'. The Egyptian year consisted of three seasons: Akhet ('flooding'), Peret ('going forth'= planting) and Shemsu ('summer' = harvest). Each season had four months of 30 days each. To these 360 days were added five additional days, that, being outside the calendar, were dangerous transitional days. Ideally the New Year would coincide with the beginning of the yearly flooding and the appearance of 'Sothis', the star Sirius, at dawn, sometime around the end of June, beginning of July. The lack of the addition of an extra day every fourth year as we do, to keep the calendar in sync with the solar year, meant that the calendar seasons did not usually line up with the actual occurrence of flooding, planting and harvest. Scholars have speculated how this problem was resolved, without coming up with a satisfactory solution. It has been noted however that the Egyptians had two names, and perhaps two celebrations, of the New Year.

The few records of the 'heliacal (same time as the sun) rising' of Sirius, called 'the going forth of Sothis', do however provide a range of absolute year dates. A papyrus from the Middle Egyptian Fayum oasis cites the heliacal rising occurring on Year 7, 4th month of Peret, day 16 of the reign of Sesostris III (Middle Kingdom, Dynasty 12), which is 1870 BC (+/- 6 years), with Memphis, near Cairo, as the observation point. During the reign of Amenhotep I (New Kingdom, Dynasty 18) another observation gives the date 1544-1537 BC, if observed from Memphis, or 1525-1517 BC if from Thebes. A record from the reign of Tuthmosis III (New Kingdom, Dynasty 18) provides 1469 BC (+/- 4 years) from Memphis or 1451 BC (+/- 4 years) from Thebes. The so-called Sothic cycle, which is the time it took for the solar year to align with the 365 day calendar, is 1460 years. The beginning of new cycles are estimated to 2781-2773 and 1321-1317 BC. This is calculated using the one known record of the heliacal rising falling on the calendar New Year in 139 AD.

These few astronomically fixed dates are combined with a number of other factors in order to insert approximate year dates into the system of kings, dynasties and historical periods. Dated contemporary documents, that include things as mundane as wine-jar labels, can be important when determining the length of specific reigns. With the approximation of the length of each reign, it is possible to link the kings together in a chronological chain. There are however variables that allow the construction of alternative chronologies. The Sothic dates, when the observation point is known, allow a range of four years. When the possibility of observation from Elephantine in the south to Memphis in the north is taken into account, the difference can be as much as c. 40 years. In addition, scholars have different opinions with regards to co-regencies and their length. Individual pieces of evidence for the length of a reign can reopen discussions and suggest revisions. Over the years, different standard chronologies have emerged, with the focus point being the beginning of the 18th dynasty, dated to as early as 1560 BC and as late as 1505 BC. Although differing in detail, all of these chronologies provide a good orientation with regard to an overview of Egyptian history. With the beginning of the 26th dynasty however (664 BC), Egypt enters a phase of interaction with its Mediterranean neighbors and absolute dates are established by combining Egyptian with foreign, primarily Greek, evidence, so that dates after this point are no longer treated as approximate.

[See the next page for a reference chronology of dates and dynasties for Ancient Egypt provided by Professor Troy. The chronology has been adapted from the book *The Mummy in Ancient Egypt: Equipping the Dead for Eternity* by Salima Ikram and Aidan Dodson (Thames & Hudson 1998, pp. 8-12).]

Predynastic Period
Badarian c. 5000–4000 BC
Nagada I c. 4000–3500 BC
Nagada II c. 3500–3150 BC
Nagada III c. 3150–3050 BC

Early Dynastic period
Dynasties 1–2 c. 3050–2663 BC

Old Kingdom
Dynasties 3–6 c. 2663–2195 BC
Subdivided into
Early Old Kingdom
Dynasties 3–4 c. 2663–2471 BC
Late Old Kingdom
Dynasties 5–6 c. 2471–2195 BC

First Intermediate
Dynasties 7–8 (Memphis) c. 2195–2160 BC
Dynasties 9–10 (Herakleopolis) c. 2160–2040 BC
Dynasty 11 (Thebes) c. 2160– 2066 BC

Middle Kingdom
Dynasties 11–13 c. 2066–1650 BC
Dyn. 11 c. 2066–1994 BC
Dyn. 12 c. 1994–1781 BC
Dyn. 13 c. 1781–1650 BC

Second Intermediate Period
Dynasties 14–17 c. 1650–1550

New Kingdom
Dynasties 18-20 c. 1550–1064 BC
Dyn 18 c. 1550–1298 BC
Dyn 19 c. 1298–1187 BC
Dyn 20 c. 1187–1064 BC

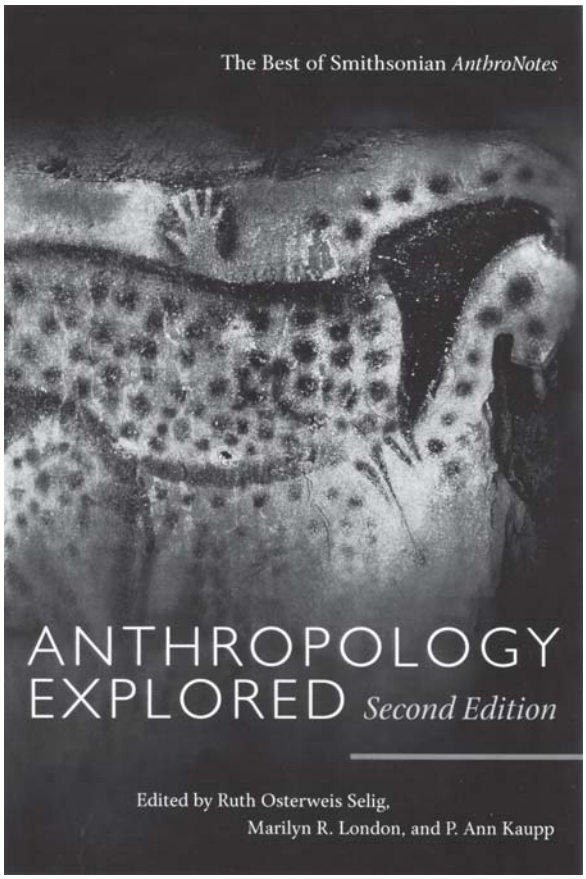
Third Intermediate Period
Dynasty 21 (Thebes – Tanis) c. 1064–940 BC
Dynasties 22–24 (Bubastis, Leontoplis, Sais) c. 940–717 BC
Dynasty 25 (Napata, Nubia) c. 752–656 BC

Saite Period
Dynasty 26 664–525 BC

Late Period
Dynasties 27–31 525–332 BC

Hellenistic Period
The Macedonian Dynasty 332–310 BC
The Ptolemaic Dynasty 310–30 BC

The Roman period 30 BC–AD 395



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