

CROC OF AGES

The Egyptian tradition of embalming animals lasted until the Roman period, as attested by this magnificent crocodile from the first century A.D. The tiny mummified dog's head (below right) was either a pet, or an offering to the god Anubis, often depicted as a dog.

S. VANNINI/GETTY IMAGES. BELOW: SPL/AGE FOTOSTOCK



Egypt's Eternal Animals

MUMMY MENAGERIE



In ancient Egypt mummification wasn't just for people: Cats, dogs, birds, cows, and even crocodiles were also wrapped in linen for the afterlife, a complex practice that has yielded revealing insights into Egyptian culture.

SALIMA IKRAM





PRINCE'S PET

The regal cat depicted on this coffin (above) was the pet of the eldest son of Amenhotep III. Its mummified remains were placed inside in the 14th century B.C. Egyptian Museum, Cairo

BRIDGEMAN/ACI



Although human mummies have fascinated people for centuries, it is only relatively recently that mummified animals have begun to catch the attention of the public. There is certainly no lack of specimens: Millions of artificially preserved bodies of animals survive from antiquity. Found in museum collections all over the world, they include a broad range of creatures, ranging from beetles to bulls. Animal mummies typically fall into four major categories: pets, victual (or food) animals, animals worshipped as gods, and animals intended as divine offerings.

Mummification of people—including the bodies of pharaohs—in Egypt had become an established custom by the time of the Old Kingdom in the third millennium B.C. Technology was always evolving and often varied among embalming houses, but the same basic principles underpinned the practice. The process transformed the recipient into a divine being, able to live for eternity, whose preserved body provided a physical refuge for the soul.

The process for mummifying animals was similar to the one for humans. In its most standard form, embalmers

would eviscerate the body, wash it, dry it, and cover it with natron (a naturally occurring mixture of several sodium compounds) to desiccate it. In the case of animals, drying out the body could take 15 to 50 days, depending on the size of the creature.

Next, it would be cleaned and anointed with sacred oils and resins to inhibit bacteria growth. At the end of this lengthy process, the body would be wrapped in linen bandages and then either placed in a coffin or buried. Different techniques were developed over time, depending on an animal's size and whether it had fur, feathers, or scales. Birds, for example, were sometimes eviscerated and then immersed in a mixture of resin and oil, and some creatures, such as crocodiles, were not eviscerated at all.

Beloved Companions

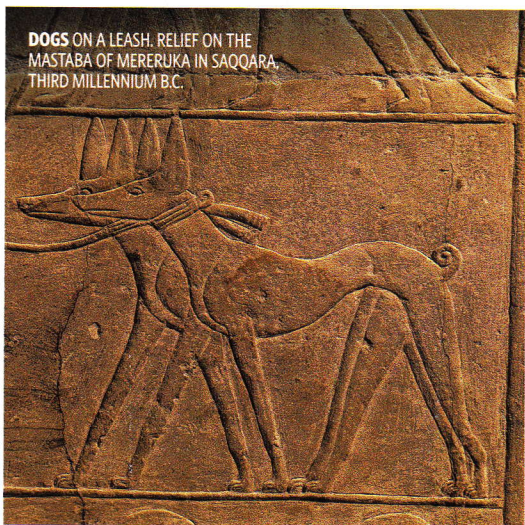
Recent finds have revealed yet more proof of just how much ancient Egyptians loved their pets. In 2017 archaeologists working at Berenice, on the far south of modern Egypt's Red Sea coast, found a burial ground entirely given over to cats, dogs, monkeys, and other domestic animals. Some of the buried animals at the site, which was in use in the first century A.D., were found with iron collars around their necks.



NEWLY HATCHED

The author carefully cleans an ibis mummy buried inside an earthenware vessel found in Abydos. Along with the baboon, the ibis symbolized Thoth, god of writing and learning.

RICHARD BARNES



DOGS ON A LEASH. RELIEF ON THE MASTABA OF MERERUKA IN SAQQARA, THIRD MILLENNIUM B.C.

BRIDGEMAN/ACI

A graveyard exclusively reserved for cherished domestic animals—whose remains were un-mummified—appears to have been a late development in Egypt’s long history of death rites for pets. For centuries before, pet dogs, cats, monkeys, and gazelles had been mummified and often entombed in their own coffins.

Sometimes, such pets were buried with their owners, a practice recorded throughout ancient Egyptian history. A man called Hapi-men, for example, who lived around 300 B.C., was found in his coffin with his pet dog embalmed at his feet. Going back much further, a couple buried at Saqqara in the 14th century B.C. shared their tomb with many companion animals including dogs, cats, baboons, and vervet monkeys.

Pharaohs typically had their pets buried close to them. A baboon and a hunting dog were discovered in what is now known as Tomb 50 in the Valley of the Kings. They were probably royal pets, belonging either to the 18th-dynasty pharaoh Amenhotep II, who died around 1400 B.C., or to the last king of that dynasty, Horemheb. One of the most famous, and touching, examples of an owner’s love for their pet is the case of Queen Isetemkheb D, from the 10th century B.C. On or around her death, her pet gazelle, was embalmed and placed in her tomb in a gazelle-shaped casket.

Soul Food

Victual, or food, mummies reveal a more pragmatic side. This type of mummy emphasizes the belief that, in fact, one *could* take everything

PETS FOR LIFE—AND THE AFTERLIFE

PETS were prized across ancient Egyptian society, and those belonging to royalty were especially venerated. A beautifully preserved **royal hunting dog (right)** was discovered in 1906 in a tomb of the Valley of the Kings. The animal, whose wrappings had fallen away, was found facing a baboon in a kind of standoff—perhaps a joke set up by grave robbers centuries ago. Another well-preserved royal pet is the **gazelle (below)** that belonged to Queen Isetemkheb D in the 10th century B.C. Discovered at Deir el Bahri in 1881, it lay in a sycamore casket, wrapped in strips of linen and adorned with necklaces. Both mummies are on display at the Egyptian Museum, Cairo.

RICHARD BARNES





BOWL FROM THEBES, EGYPT, CONTAINING REMAINS OF DRIED FISH AND LINEN STRIPS, SECOND MILLENNIUM B.C. BRITISH MUSEUM, LONDON
SCALA, FLORENCE

with them, and that the afterlife is very similar to an ideal earthly existence, which meant that the deceased would need food.

Poultry and meat were preserved to be human sustenance in the afterlife. Ducks, geese, and pigeons were common (chickens were not until about the second or third century B.C.). Beef ribs and shoulders, legs of veal, and even liver have been found as provisions for the mummies.

This form of offering was most common in elite burials in the New Kingdom period (1539–1075 B.C.), although un-mummified food offerings have been discovered from earlier. By the New Kingdom poultry was being plucked, joints of meat skinned and prepared for consumption, each desiccated and anointed with resins and oils, then wrapped—presumably without the same prayers that were used for pets and other animal mummies—before being placed in caskets often mimicking the shape of the food. King Tutankhamun, who died when he was a teenager in the 14th century B.C., had over 40 victual mummies in his tomb, some in egg-shaped containers—clearly, he would not go hungry!

Gods on Earth

In addition to companionship and sustenance, another type of animal mummy performed an important spiritual function. The Egyptians believed that a particular god could send his or her “essence” into the body of an animal. Priests often identified the “chosen ones” by their distinctive markings or coloration. During its lifetime, this animal would be worshipped and





DUCK DINNERS IN THE AFTERLIFE

WHEN HOWARD CARTER discovered Tutankhamun's tomb in the Valley of the Kings in November 1922, he found not only the boy king's magnificent grave goods but also "a pile of oviform [egg-shaped] wooden cases, containing trussed ducks and a variety of other food offerings." These distinctive white containers, stashed with sustenance for the young king's sojourn into the afterlife, can be seen carefully stacked beneath one of the pharaoh's funeral beds in the photo. The image in this photo was taken by the Carter expedition photographer, Harry Burton, and digitally colorized by Dynamichrome on behalf of the Griffith Institute at the University of Oxford, in 2015.



STELA FROM THE SERAPEUM OF SAQQARA (13TH CENTURY B.C.) DEPICTING WORSHIP OF AN APIS BULL. LOUVRE MUSEUM, PARIS
DEA/ALBUM

treated as if it were a god. After its death, it was mummified and buried with great pomp, and the spirit of the god would transfer to a new animal.

The oldest such cult was that of the Apis bull, who was sacred to the creator god Ptah of Memphis and was buried at the Serapeum at Saqqara; other bull deities are known from Heliopolis near Memphis and Armant near Luxor. Rams sacred to Khnum, god of potency, creation, and inundation, were buried at Elephantine, while the site of Bubastis housed a cat dedicated to the goddess Bastet.

Many such animals lived to an unusually old age due to the care that they received. The Khnum rams, for example, lived well beyond the average age of normal rams, dying when they were over 20 years old, often hand-fed with mash when their teeth had worn down entirely. Unfortunately, given that so many of these catacombs have been looted since ancient times, only a few sacred-animal mummies have been found.

Divine Offerings

The fourth animal mummy type, on the other hand, abounds. It can be found in museums all over the world: This is the votive offering, a mummified animal sacrificed to the gods. Each deity had a specific animal that was its symbol: Cats, as mentioned above, were sacred to the goddess Bastet, goddess of pleasure, love, and beauty, all of which are attributes of a cat; ibises were consecrated to the god Thoth, god of writing and learning, partly because their beaks took the shape of a pen.



SACRED COWS

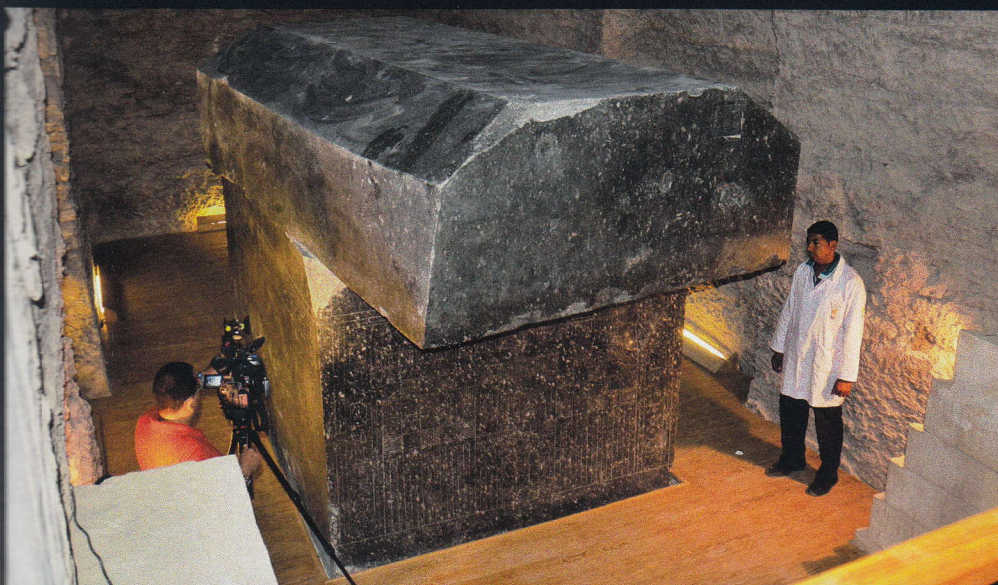
ONE OF THE MOST IMPORTANT SACRED ANIMALS in Egypt was the Apis bull, worshipped at Memphis. The incarnation of the god Ptah, a god of the underworld, the Apis bull lived in stables near the deity's temple in Memphis, where it received every comfort. After death, people began a lengthy mourning period sometimes lasting as long as 70 days. The animal's body was carefully embalmed, a process described in detail in the Apis Papyrus, written in the second or first century B.C. The viscera were usually not extracted but instead removed by injecting solvents through the anus. After completion, the mummy was carried to a special catacomb at nearby Saqqara reserved for all Apis bulls, known as the Serapeum, constructed in the 13th century B.C. Here, it was buried near its predecessors in a granite sarcophagus.



BULL'S EYE

A technician (above) examines an Apis bull by x-ray. Thanks to careful preparation of the body centuries ago, its wrappings and false eyes are still in good condition.

SMITHSONIAN INSTITUTION



ENTOMBED

All Apis bulls were buried in colossal sarcophagi such as the one shown to the left, located in the Serapeum of Saqqara near the ancient Egyptian city of Memphis.

KYODO NEWS/GETTY IMAGES



ANIMAL SARCOPHAGUS BEARING A FIGURE WITH A CROCODILE BODY AND A FALCON HEAD FROM THE PTOLEMAIC PERIOD. LOUVRE MUSEUM, PARIS
RMN-GRAND PALAIS

These mummified animals were purchased from the priests and offered by pilgrims at shrines dedicated to the respective gods. The mummified animals would, it was believed, present the prayers of the pilgrim to the god throughout eternity, equivalent to votive candles that are burned in churches today. Once offered, the mummies would remain in the temple precincts until an annual or biannual celebration, possibly attended by thousands of pilgrims, when they would be interred in tombs associated with the temple.

To meet demand, animals were probably bred for the purpose. The creation of these mummies represented a substantial part of the temple economy. The overhead costs were considerable: The animals had to be acquired, housed, fed, and then sacrificed and mummified with materials traded from different parts of Egypt as well as from abroad. Their sale to pilgrims, however, would have raised significant funds for the temple.

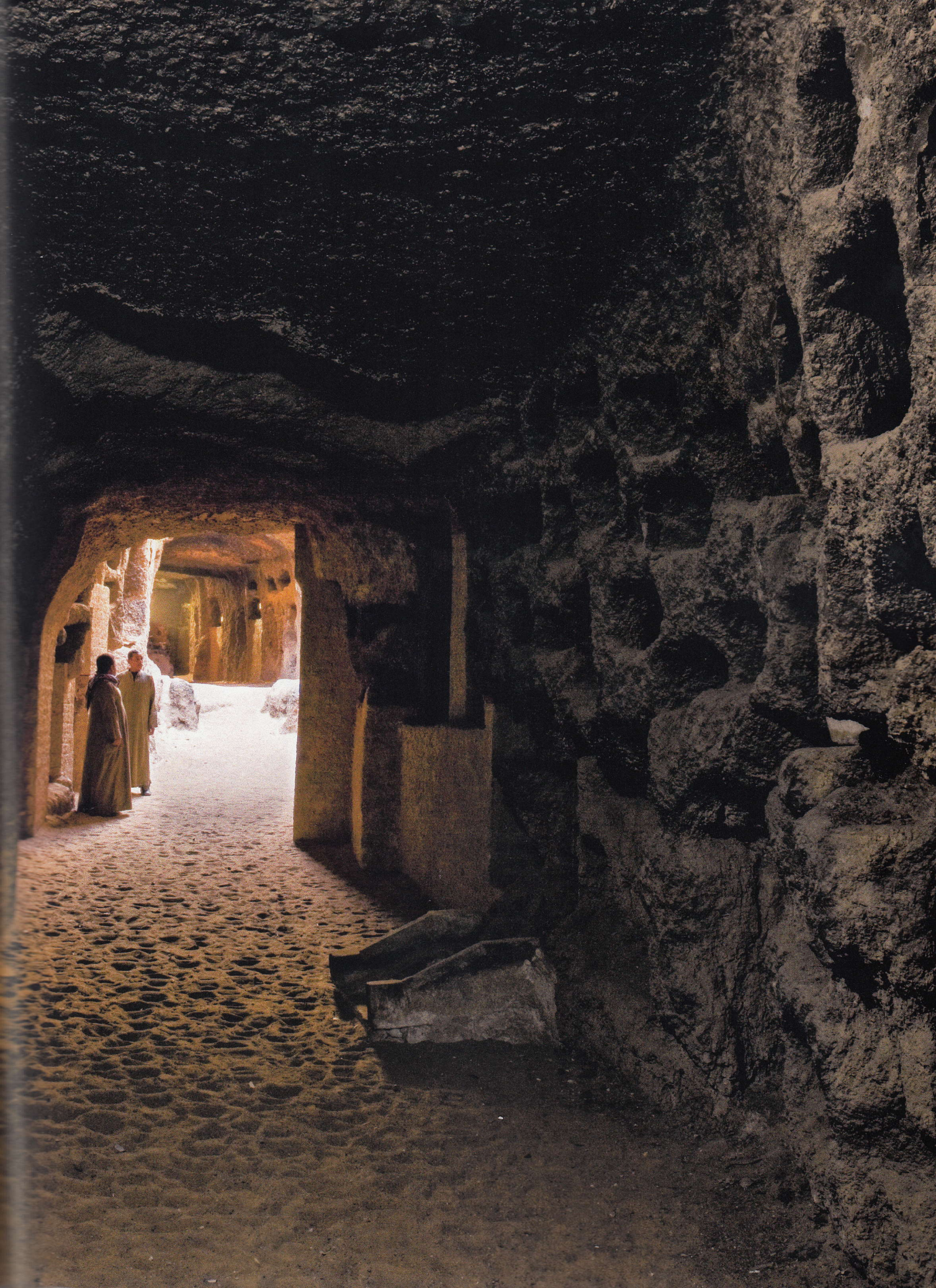
A vast range of creatures were offered: cats, dogs, crocodiles, gazelles, fish of different types—including catfish and Nile perch—baboons, raptors, ibises, baboons, shrews, and scarab beetles. By 200 B.C. catacombs could be found all over Egypt filled with millions of mummified offerings to the gods.

The largest of these found so far is a colossal mass grave at Saqqara, discovered in 1897. An excavation in 2009, followed by a second in 2012, uncovered astonishing findings: Built around 2,500 years ago, the catacomb holds the

THE ANIMAL CATACOMBS OF HERMOPOLIS

LOCATED near the modern settlement of Tunah al Jabal in central Egypt, the city of Hermopolis was sacred from early in Egyptian history to Thoth, god of writing and learning, later associated with the Greek god Hermes. Among its many monuments are the remarkable catacombs along its northern boundary, containing huge quantities of votive mummies of ibises and baboons sacrificed and embalmed in honor of Thoth. Most of these offerings were made in the Greco-Roman period, but at least one item—a baboon sarcophagus—is dated to the time of the Persian king Darius I, who ruled Egypt in the fifth and sixth century B.C. The rock-cut chambers in the foreground of this image were for baboon mummies. Farther down, ibis mummies were placed.

RICHARD BARNES



SCANNING A CROCODILE MUMMY AT THE DUTCH NATIONAL MUSEUM OF ANTIQUITIES, LEIDEN, IN 2015



MIKE BINK/NATIONAL MUSEUM OF ANTIQUITIES, LEIDEN

THE INSIDE STORY

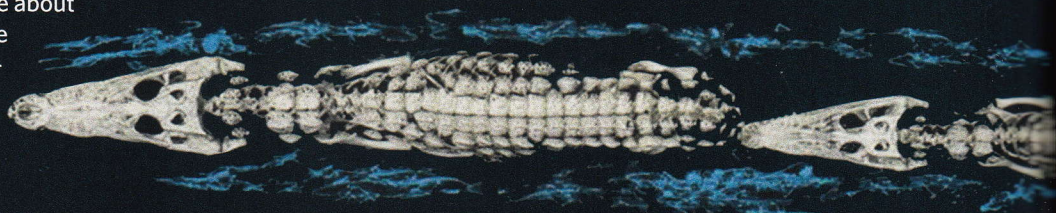
THE INVESTIGATION of Egypt's animal mummies has entered a new age as changes in technology allow researchers to examine intact mummies without unwrapping them, so sparing them damage. Radiography—x-rays and CT scans—can provide clear initial images. Imaging technology can even make 3-D prints of the skeleton within the wrappings. Scholars are also using chemical analysis of embalming agents to identify the materials used in mummification. These chemical “signatures” can reveal more about where and how mummies were made. DNA analysis is increasingly used to understand the genetic development of the different species that were preserved, providing insight into how these creatures have evolved over time. Another new technique is experimental mummification, in which researchers actually make mummies for themselves. This highly practical form of research sheds valuable light on how mummies were made, the technologies and materials that create specific results, and the most effective ways to mummify different animals. As technological sophistication increases, future studies will yield yet more fascinating information on the complex role of these objects in the economic, religious, and emotional lives of the ancient Egyptians.



BIRD BONES ▶

3-D image of the interior of a kestrel mummy from the Ptolemaic period. South African Mummy Project

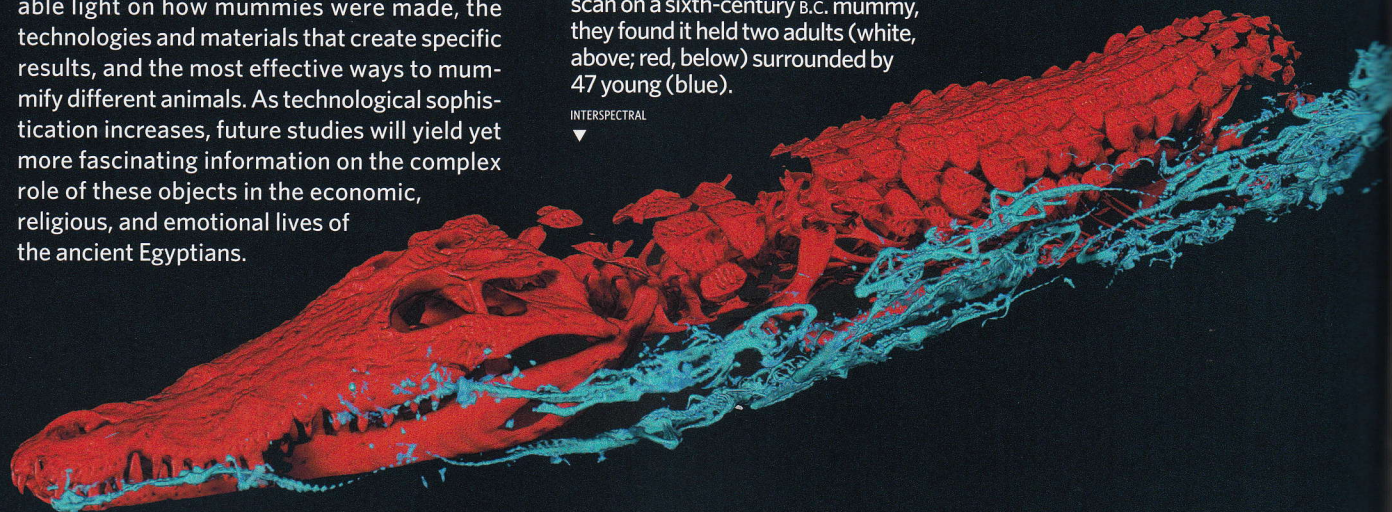
SOUTH AFRICAN MUMMY PROJECT AND VISION GRAPHICS



COUNT THE CROCS

When the National Museum of Antiquities of the Netherlands ran a 3-D scan on a sixth-century B.C. mummy, they found it held two adults (white, above; red, below) surrounded by 47 young (blue).

INTERSPECTRAL



CAT SCAN ▶

The University of Manchester is undertaking a major project to study more than 800 votive-animal mummies from 57 museums around the world. The feline-shaped casket containing a cat mummy is from the Ptolemaic period. Manchester Museum, England

MANCHESTER MUSEUM, THE UNIVERSITY OF MANCHESTER



remains of eight million creatures. Located near the Temple of Anubis—the dog-like deity of death and the afterlife—the corpses are mainly those of dogs and puppies.

Among votive offerings found in other parts of Egypt are “false” mummies. Although wrapped to resemble a specific animal, they might enclose the bones of a different species, remnants of one or several animals, or even feathers. Were the pilgrims being swindled by the priests? A more charitable theory is that the Egyptians believed that a part could signify the whole, and that if one said or wrote that something was a particular item, then it magically became so through the supporting prayers.

Although sacred-animal cults, such as that of the Apis bull, are known from around 3000 B.C., the practice of votive mummies started much later in Egyptian history, around 600 B.C. Although weakened by Christianity, the practice possibly survived as late as the fourth century A.D. The enduring popularity of animal offerings might partly be due to national sentiment: In later history, foreign invaders overran Egypt, and the animal cults allowed Egyptians to define themselves, religiously and culturally.

Unwrapping Egypt

In addition to what they reveal of ancient beliefs and cultural practices, animal mummies also provide scholars with a great deal of information about different aspects of ancient Egypt’s society and economy. Votive mummies not only reveal cultural insights, such as what foods were highly valued, but also yield practical clues as to how animals were butchered. The study of the different species used sheds light on the climate and environment of those times and how it has changed since.

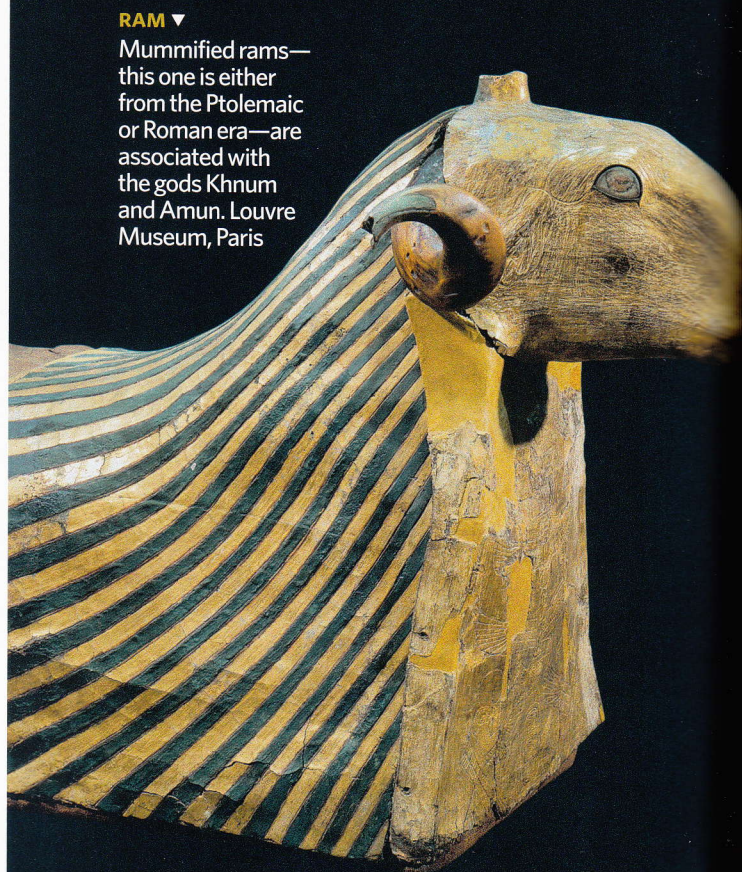
Signs of disease in, or trauma to, animal bones, and their treatment, reveal much about veterinary methods. Mummification technology informs us about the ancient Egyptians’ knowledge of chemistry, and the materials used to make millions of mummies provide an insight into the trade networks and economy of this millennial culture. ■

SALIMA IKRAM IS DISTINGUISHED PROFESSOR OF EGYPTOLOGY AT THE AMERICAN UNIVERSITY IN CAIRO AND A FOUNDER OF THE ANIMAL MUMMY PROJECT AT CAIRO’S EGYPTIAN MUSEUM.



◀ BABOON

Along with ibises, baboons were associated with the god Thoth. This seated mummy (period unknown) was found in the Tunah al Jabal burial complex in central Egypt and is now in the British Museum, London.



RAM ▼

Mummified rams—this one is either from the Ptolemaic or Roman era—are associated with the gods Khnum and Amun. Louvre Museum, Paris



JACKAL ▼

Many jackal mummies have been found at Abydos, such as this example from the Roman era. The jackal is associated with Anubis, one of the gods of the underworld. British Museum

CROCODILE ▲

Associated with the fertility god Sobek, crocodile mummies—such as this one from the Roman era—and even mummies of crocodile eggs, have been found across Egypt. British Museum

GIFTS FOR THE GODS

DURING EGYPT'S LATER PERIOD—from the beginning of the Ptolemaic period in the fourth century B.C. to the Roman occupation in A.D. 30—the mummy-production industry flourished. Pilgrims offered them to the gods in places of worship all over the country. One such center was the cult of the cat goddess, Bastet, in Bubastis in Lower Egypt, where a vast number of votive cat mummies were produced to meet demand. As European interest in Egypt boomed in the 19th century, children sold them to tourists. Today, these mummies are carefully conserved by museums for their cultural, historical, and scientific value. Examples of votive mummies are shown on this page.

PHOTOS: BRITISH MUSEUM/SCALA, FLORENCE. RAM: DEA/AGE FOTOSTOCK



CATS ►

X-ray analysis conducted at the British Museum on Roman-era mummies such as these has revealed the method used to kill them: Their necks were broken. British Museum

