

KIDS
DISCOVER

Mummies



DATING
A MUMMY



SUN-DRIED
ANCESTORS

LOST AND
FOUND:
300,000
CAT
MUMMIES



Mum's
the Word!

ANCIENT
BODY
WRAPS

MAMMOTH
MUMMY
FROZEN
IN TIME

THE NATURAL WAY



▲ **AROUND 5,000** years ago in the hot desert country of Egypt, the dead were placed in shallow graves in the sand. Most were buried in a crouched position on their sides.

The hot, dry sands drew the water out of the body, so it was mummified naturally. This mummy is nicknamed Ginger because of his red hair.



▲ **THIS MUMMY**, known as the Ice-man, lived around 5,300 years ago in Europe's Alps mountains. Found by climbers in 1991, he was wearing patched leather clothes and shoes stuffed with grass, for

warmth. Alongside him lay an ax, a bow and arrows, and a flint scraper. He had several tattoos on his body. Bodies found in very cold climates are so completely frozen that decay can't take place.

Hollywood horror films have helped make mummies famous—and feared. "Fear Will Freeze You When You Face...The Mummy!" announced a poster for the 1959 movie *The Mummy*. "The Mummy...It Comes to Life!" declared another. Viewers of mummy movies quiver on the edge of their seats as wrapped-up monsters, angry from having their sleep disturbed, spring to life. But mummies shouldn't be feared—really.

A mummy is a dead body that has dried out and hasn't decomposed

(decayed, or rotted). Without some kind of preservation, dead bodies decay quickly. Bacteria, molds, and other small forms of life are the cause. They feed on the once living tissues. To do their work, they need water, which is often in great supply. Approximately 70 percent of a person's body is water.

Dead bodies can dry out naturally in certain extreme climates, or they can dry out with the help of human beings. Let's get up close and personal with some very old... dead bodies!



▲ **THE PAZYRYK** were Iron Age horsemen and warriors who lived in Eastern Europe and Western Asia from the sixth through the second centuries B.C. In 1993, the 2,500-year-old mummy of a

woman, known as the Ice Princess, was found, along with six decorated horses, which had been sacrificed. Her body was covered with tattoos of mythical animals, as well as those of deer, which the Pazyryk hunted.



◀ **MUMMIES FOUND** in the driest, saltiest part of Central Asia, in the Taklimakan desert, date back 3,000 years. They are known for their colorful clothing. Because of their fair hair and light skin, these mummies raise some questions: How did they get to Mongolia? Were they nomads, raiders, or simply adventurers?

➤ **Lindow Man** was discovered in 1984 by peat cutters in a bog at Lindow Moss in England. (Peat is decomposed plant matter. It has been burned as fuel for centuries.) Lack of

oxygen in a bog prevents a body from decomposing because



microorganisms cannot live without air. Scientists discovered that the mummy had been a 25-year-old man 2,300 years ago. His last meal included cereal, bran, and burnt bread.



▲ **FOR 2,100** years, Tollund Man lay undisturbed nine feet below ground in Denmark. But his peaceful pose hid an awful truth.

What secret did Tollund Man reveal? (answer on back cover)

CHECK IT OUT!

MUMMIES AT THE MOVIES



IN 1972, EIGHT INUIT (ESKIMO) MUMMIES DATING FROM AROUND 1475 WERE FOUND FREEZE-DRIED UNDER PILES OF SNOW IN GREENLAND. ACCORDING TO INUIT TRADITION, DEAD BODIES WERE DRESSED IN WARM FURS AND HIDES FOR PROTECTION IN THE NEXT WORLD.

Mummies prepared by human beings can be found all over the world. Some of the most famous come from Egypt.

Ancient Egyptians believed that a new life began after death. To guarantee everlasting life, the dead body had to remain whole.

IT'S A WRAP

Over the centuries, Egyptians tried various ways to preserve dead bodies. Around 2,600 years ago, they hit upon a perfect solution.

Special priests, called embalmers, spent 70 days carefully preparing the body to remove all the moisture. Wearing a jackal mask, the chief embalmer chanted magical spells as he did his job. The mask represented Anubis, the god of embalming.

Initially, mummification was so expensive that only pharaohs (ancient Egyptian rulers) could afford it. But by 1550 B.C., many ordinary Egyptians were able to afford mummification, too.

Although mummification techniques in ancient Egypt changed over the years, most embalmers followed the ten steps below.

STEP-BY-STEP EMBALMING

1 THE DEAD BODY is cleaned with sweet-smelling oils.

2 THE LARGE internal organs are removed. (They contain

soft, wet tissue that can decompose quickly.) The brain is taken out through the nose with special hooks. The intestines, liver, lungs, and stomach are

removed through a large cut on the left side of the body. The heart is left in place because the mummy needs it when judged in the next world.

3 THE ORGANS are embalmed separately in a drying salt called natron. Each organ is placed in its own container, called a canopic jar. Each jar has a lid in the shape of a specific god

associated with guarding that organ. The brain, which is not considered important, is thrown away.

4 ALL MOISTURE is removed by covering the body with natron and

by placing small natron packs inside. The body is put on a slanted embalming table. Fluids drip into a small container.

CANOPIC JARS



FALCON-HEADED
GOD QEBHSENUEF
PROTECTED THE
INTESTINES



BABOON-HEADED
GOD HAPY
PROTECTED
THE LUNGS



JACKAL-HEADED
GOD DUAMUTEF
PROTECTED
THE STOMACH

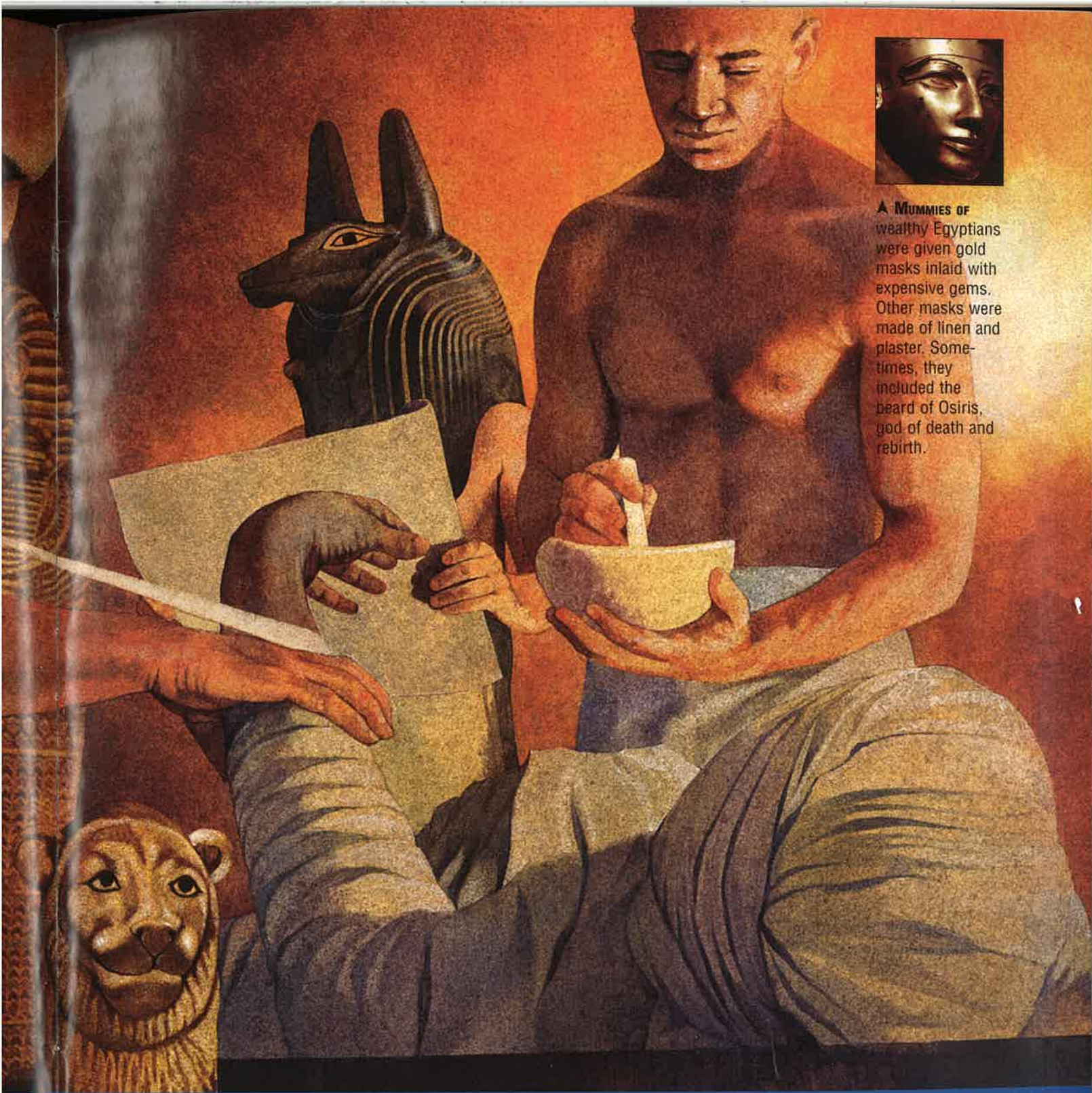


HUMAN-HEADED
GOD IMSETY
PROTECTED
THE LIVER

WHAT DO THESE
AMULETS REPRESENT?
CHECK IT OUT!



(answer on back cover)



A MUMMIES OF wealthy Egyptians were given gold masks inlaid with expensive gems. Other masks were made of linen and plaster. Sometimes, they included the beard of Osiris, god of death and rebirth.

5 AFTER 40 days, when the body has dried out, the natron bundles are thrown away. The dark, shrunken body is washed with spices and oils to make the skin soft and the

body sweet smelling.

6 TO MAKE THE body look lifelike, sunken areas, such as the eyes, are filled with linen. Beeswax is used to fill the nostrils. Linen,

sand, or sawdust is stuffed inside the body to give it shape.

7 THE ARMS ARE crossed.

8 THE BODY IS wrapped tightly in hundreds of yards

of long, narrow, resin-soaked strips of linen. This serves as a glue, binding the bandages together and slowly hardening them. Dark linen robes, called shrouds, are placed

between the layers, as are lucky charms, known as amulets. As many as 20 layers of bandages have been counted on a single mummy. This process can take 15 days.

9 A LIFELIKE mask of the person is fitted over the mummy's head.

10 THE BODY IS wrapped in a final shroud, and a last coat of resin is applied.

THE CASE FOR CASES

While a mummy was being wrapped, artists and carpenters worked on coffins, or mummy cases. Egyptians believed that the case served as a house for the *Ka*, the vital energy of life.



▲ **EGYPTIANS OF** around 5,000 years ago placed their embalmed

mummies in a reed or woven basket to protect them from



◀ **AROUND 4,600** years ago, some wealthy Egyptians were placed inside coffins for added protection. The earliest ones were plain rectangular boxes.

► **BY AROUND** 2000 B.C., some of the dead were placed inside two mummy cases. Vulture eyes, to allow the mummy to look out, and feathers, believed to be protective, might be painted on the sides of the cases. Some mummies were placed inside mummy-shaped cases, called mummiforms.



animals or thieves. The basket was put directly into the hot sand. However, the body soon decayed because the basket prevented the sand from preserving the body.



▲ **SOME MUMMIES** were placed in a series of coffins, or nests. These were covered with elaborate pictures and magic spells in hieroglyphs, the picture writing of the ancient Egyptians. The pictures and spells were intended to keep the mummy safe in the afterlife.



▲ **ON BURIAL DAY**, the mummy was placed on a sled that was pulled to the tomb by a team of oxen. A separate sled held the canopic jars. Mourners, paid to cry, wept loudly, ripped their clothing, and threw dust over their heads in grief. They followed the procession, which was led by a priest.



BREAD CARRIED BY SERVANT



BOARD GAME

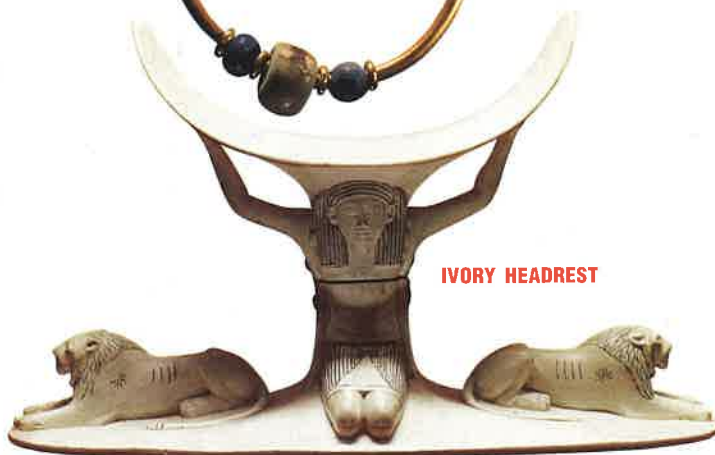
MIRROR WITH PAPYRUS DECORATION



GOLD BRACELET WITH SEMIPRECIOUS STONES



IVORY HEADREST



MAKEUP BOX



▲ **ANCIENT EGYPTIANS** believed a jury of gods made the decision as to whether or not a person deserved eternal life. In the weighing of the heart ceremony, the heart was weighed against a feather, the symbol of truth. If the

heart was too heavy, it meant the dead person had committed too many sins on Earth, and the heart was thrown to a monster, who ate it. If the heart balanced with the feather of truth, the mummy would have eternal life.

▲ **AT THE TOMB,** THE mummy was held upright by a priest wearing a mask of Anubis. In the opening of the mouth ritual, the mummy case was touched with tools to magically restore the senses so the mummy could enjoy the afterlife using all five senses.

OSTRICH-FEATHER FAN WITH IVORY HOLDER



HARP



▲ **AFTER THE BURIAL,** the tomb's entrance was

sealed with stone slabs. Mourners then enjoyed an

elaborate banquet. The family of the deceased would visit the tomb for years after the burial to leave food and drink for the mummy's *Ka*. Some wealthy families paid priests to do this.

PENDANT WITH SCARAB



COARSE BREAD



SANDALS



NECKLACE WITH VULTURE PENDANT

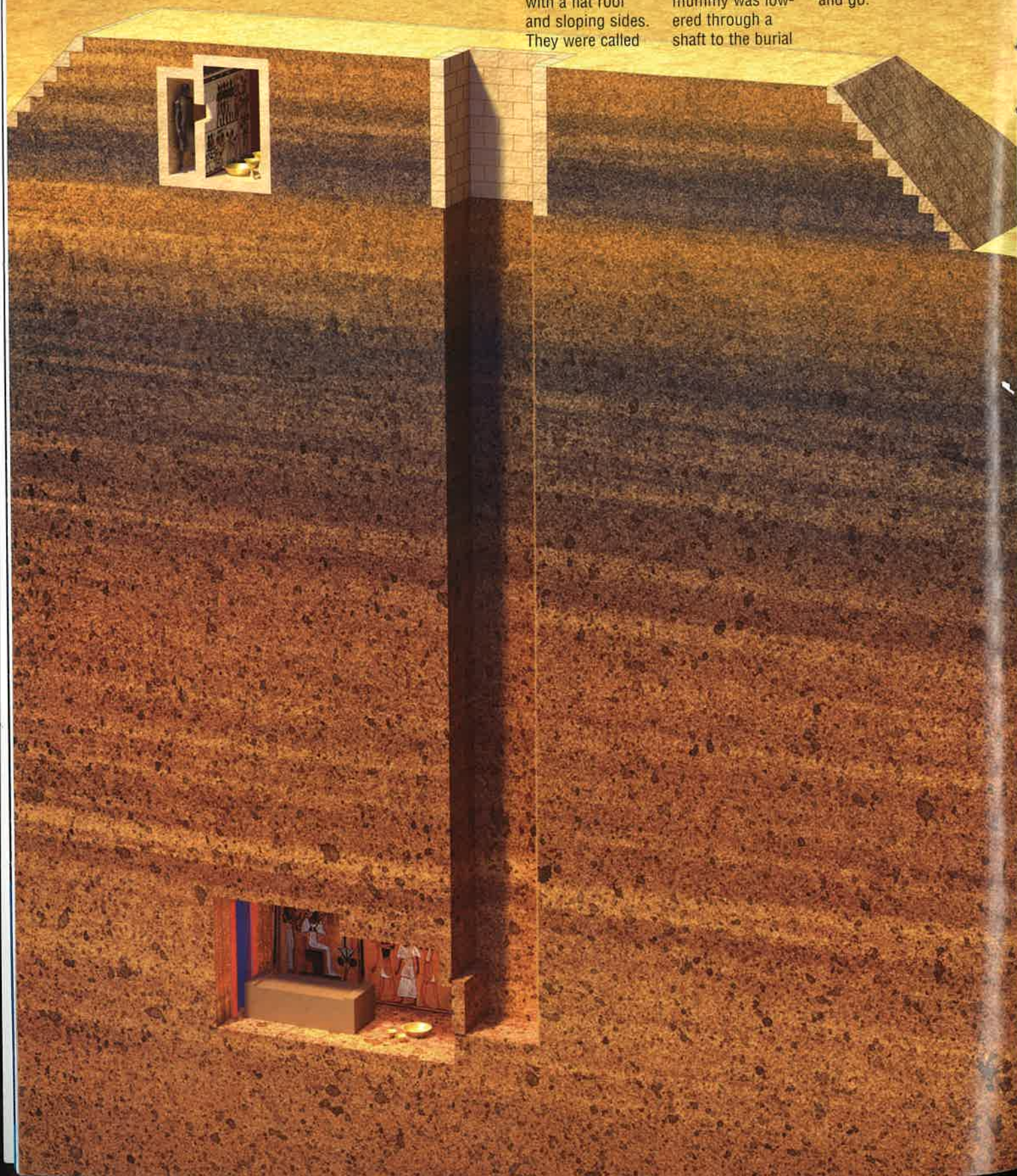


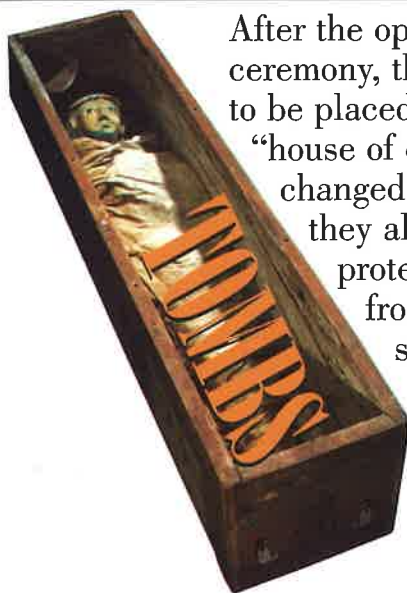
FLABELLUM, A FAN-SHAPED HEADPIECE

THE FIRST TOMBS,
built around
5,000 years ago,
were made of
brick and stone,
with a flat roof
and sloping sides.
They were called

mastabas. Royal
mastabas were
elaborate, with
beautiful carvings
and paintings. A
mummy was low-
ered through a
shaft to the burial

chamber, between
40 and 80 feet
below ground. A
false door allowed
the *Ka* to come
and go.





After the opening of the mouth ceremony, the mummy was ready to be placed into a tomb, or a "house of eternity." Tombs changed over the years, but they all were intended to protect the dead person from robbers, sandstorms, and other natural disasters.



◀ **THE WALLS OF** royal tombs were painted with scenes showing the person in the next world. Gods and goddesses happily welcomed the dead person. Musicians and dancers provided entertainment. Servants brought food. Near the great pyramids at Giza were temples, mastabas, and storage chambers. Servants might have been buried there.



▲ **AROUND 4,500** years ago, royal tombs became bigger and more elaborate. Known as step pyramids because of their shape, they were made entirely of

stone and could be 200 feet high. Burial chambers might be 100 feet underground. King Zoser's step pyramid (above) still stands today.



▲ **AS TIME PASSED,** pharaohs' pyramids became even grander. The most famous ones were built at Giza, on the western bank of the Nile. The largest, the Great Pyramid, was built for King Khufu. Over two million blocks of stone that averaged two and a half tons were used. The pyramid was around 50 stories tall. Thousands of men worked on it for 20 years. The mummies of the kings who were buried in the pyramids at Giza have not survived.



▲ **A MUMMY WAS** placed inside a heavy stone coffin, called a sarcophagus. Because they

were expensive, sarcophagi were only for pharaohs, nobles, and important officials.



▲ **RAMSES II** reigned from 1279 to 1213 B.C. In 1881, archaeologists uncovered him and 55 other mummies, in two separate hiding places. Ramses II now rests in the Cairo Museum. X-rays show worn teeth. He was tall for his day, nearly six feet. Inside his temple, known as Abu Simbel, is a statue of Ramses. The inner sanctum is dark most of the year, but a stream of sunlight shines on the king twice a year: on his birthday, February 22, and on the date of his coronation, October 22.

► **AROUND 3,500** years ago, pharaohs' tombs were carved deep in the rock of stone cliffs. They were hidden from sight, so robbers couldn't loot them. But over time, most tombs were robbed of their contents.

Many tombs were located in a remote area near Thebes, now known as the Valley of the Kings. The tombs were sealed and guarded and included tunnel passages and several chambers.





OUTER COFFIN



INSIDE THE OUTER COFFIN

NESPERENNUB ~



BODY WRAP



BODY WITHIN

WHAT HE
LOOKED
LIKE...



Hieroglyphs on the mummiform at far left identify the occupant as Nesperennub, a priest who lived in ancient Egypt around 800 B.C.

Until recently, scientists who wanted to learn about mummies unwrapped them, ruining them in the process. Today, X-rays and CAT scans make it possible to unwrap mummies, virtually, without disturbing them at all.

A CAT scan of Nesperennub revealed amulets and layers of wrapping.

X-rays showed that the skeleton was in good condition. The bony plates of his skull suggested that he was around 40 when he died. Lines on his leg bones indicated interrupted growth, so he had probably been ill or had had a poor diet.

CAT scans and modeling clay helped create a reasonable likeness of the man.

THE INSIDE STORY



QUITE SOME MUMMY



▲ **TUTANKHAMEN** reigned between 1336 and 1327 B.C. He came to the throne when he was just nine years old. Most historians believe

Tut didn't hold much power. He might not have even been remembered if Carter hadn't found his nearly intact tomb.

► **EGYPTIAN** workers, under Carter's supervision, helped remove sand by the basketful in an attempt to find tombs buried in the Valley of the Kings.



Howard Carter was a British archaeologist. An archaeologist is a person who digs up and studies the remains and ruins of the dead. Carter's passion was Egyptian kings. On November 26, 1922, after five years of digging in the Valley of the Kings, Carter found an entrance to a hidden tomb. His discovery turned out to be one of the most important finds in the history of archaeology. It was the sealed 3,200-year-old tomb of King Tutankhamen (also called King Tut).

First, the workers found 16 steps buried under the sand. At the bottom, they uncovered a doorway.

Behind that was a passage, and at the end of it, a door marked with the seal of Tutankhamen. As he worked his way into the tomb, Carter could see life-size statues, golden couches, glittering chests, animals, and "everywhere the glint of gold."

Carter had to work slowly. Every object had to be photographed. The area had to be mapped, cleaned, and documented. It would take three more years before he could open the coffins and almost ten years to examine all the statues, furniture, and shrines of the tomb of the man now known as the Golden Pharaoh.

Dishes, honey, lentils, candlesticks, boats, oars, sandals, blankets, mirrors, shaving equipment, and a lock of his grandmother's hair are some of the items found in the tomb. Here are some others.



▼ **SHABTI, FIGURE OF A WORKER**



▲ **BOARD GAME**



▲ **ANUBIS, THE JACKAL GOD OF EMBALMING, GUARDED ONE ROOM OF THE TOMB**

▼ **TUTANKHAMEN'S MIDDLE MUMMY CASE**



➤ **THE WORKERS** found a stairway, its entrance covered with a plaster door.



◀ **IN A SEPARATE** chamber, Carter found the pharaoh. Tutankhamen had been placed in a nest of three gold cases that were within a heavy stone sarcophagus. The two outer cases were made of wood covered in thick gold and colorful stone. The innermost case was solid gold. An ornate mummy mask of solid gold lay over the mummy's face.

➤ **THE MUMMY** WAS wrapped in 13 layers, inset with 150 pieces of jewelry and amulets. But it was in poor condition. The coffin had been closed before the resin used in the mummification had completely dried. The bandages covering the mummy were dark and brittle, and the dry resin was embedded in the body. Scientists determined that he was a small, thin man, between 16 and 22 years old when he died. He was probably around five feet, five inches tall. Scientists are unsure about the exact cause of death.



▼ **IN EARLY 2005**, researchers removed Tut's mummy from its tomb for a CAT scan that could solve the mystery of whether Tut was murdered or died of natural causes. The CAT scan provided a detailed, three-dimensional view of the mummy's bones. After reviewing the scan, Zahi Hawass (below), head of Egypt's Supreme Council of Antiquities, stated that there was no physical evidence that Tut was murdered. It had previously been thought that he had died from a blow to the head.



▲ **STATUE OF**
TUTANKHAMEN



▲ **TUTANKHAMEN'S**
GOLDEN THRONE



▼ **FLAIL AND CROOK,**
SYMBOLS OF
KINGSHIP



▼ **THIEVES HAD GOT-**
TEN TO THE tomb
before Carter.

Items in the first
of the four rooms
were in a heap.





ANIMAL MUMMIES

Like humans, animals can be preserved accidentally by nature, or on purpose by human hands.

ANCIENT EGYPTIANS went to great lengths to mummify their favorite pets so they could accompany their owners to the afterlife. There were other reasons to mummify

animals. Some were considered representatives of gods, so they were embalmed with special care. Others were offerings to gods associated with the animal. And

some were embalmed because they were considered sacred. Queen Isetemkheb, who lived 4,000 years ago, was buried with her pet gazelle.

THESE ANIMALS WERE BURIED WITH THE DEAD. EACH WAS ASSOCIATED WITH A SPECIFIC GOD.



IBIS

ASSOCIATED WITH THOTH, GOD OF WISDOM, SCRIBES, AND WRITING



JACKAL

ASSOCIATED WITH ANUBIS, GOD OF EMBALMING



BABOON

ASSOCIATED WITH THOTH, GOD OF WISDOM, SCRIBES, AND WRITING



BEETLE

ASSOCIATED WITH KHEPRI, GOD OF CREATION



FALCON

ASSOCIATED WITH HORUS, GOD OF THE SKY