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TUTANKH-

TUTANKH-AMUN: 100 YEARS OF FORENSIC INVESTI-GATION

Sofia Aziz

Tutankhamun's body was first studied in November 1925. For the first time, **Sofia Aziz** examines in detail what that first autopsy tells us about the famous "boy king".



HERODOTUS' WINGED SNAKES

Robert Frost

Around 450 B.C., the Greek historian Herodotus described seeing skeletons of "flying snakes" in Egypt. **Robert Frost** investigates what these creatures may have really been.



THE GLASS ROAD

Sharon Janet Hague

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THE QURNA QUEEN

Peter Lacovara

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NEW

DISCOVERIES

Jeff Burzacott

From a military commander in

charge of foreign

mummy Portraits

discovered in over

first Faiyum

a century.

mercenaries, to the

NILE



COVER STORY



TUTANKHAMUN: EXCAVATING THE ARCHIVE

Jeff Burzacott

In the centenary year of the discovery of Tutankhamun's tomb, get closer to the action with incredible photographs, drawings and plans from Howard Carter's archive.

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FROM YOUR EDITOR

"There is only one topic of conversation, only one subject animating all men's minds," wrote a New York Times correspondent from Luxor in February 1923. "One cannot escape the name of Tut-ankh-Amen anywhere. It is shouted in the streets, whispered in the hotels, while the local shops advertise Tut-ankh-Amen art, Tut-ankh-Amen hats, Tut-ankh-Amen curios, Tut-ankh-Amen photographs, and tomorrow probably genuine Tut-ankh-Amen antiquities. Every hotel in Luxor today had something a la Tut-ankh-Amen.... There is a Tut-Ankh-Amen dance tonight at which the piece is to be a Tut-Ankh-Amen rag."

LMOST 100 YEARS ON, NOT MUCH SEEMS to have changed. Tutankhamun is everywhere once again —although there are slightly fewer Tutankhamun dances these days!

Welcome to issue #33. Naturally, we have some fascinating Tutankhamun-focussed articles to help mark the centenary of his tomb's discovery. But to paraphrase a famous line, "one shall not live on Tutankhamun alone," and so I hope you thoroughly enjoy the wide range of



So, what's the connection between lemons and young King Tutankhamun? Absolutely nothing! However, that didn't stop the Johnston Fruit Co. from tapping into the rich vein of Tutmania that erupted after the discovery of his tomb.

topics on offer, including the Egyptian burial containing clues to the origins of an anonymous royal woman (see page 54). As always, I hope you enjoy your NILE time!

Jeff Burzacott = editor@nilemagazine.com.au



These canopic jars were discovered in a shaft containing Wahibre-mery-Neith's embalming materials, and provided the excavators with the commander's name for the first time. On the eastern side of his sarcophagi, Wahibremery-Neith was also provided with 402 faience (glazed ceramic) shabti figurines (tasked with working for the deceased in the afterlife).

PHOTO: PETR KOŠÁREK; ARCHIVES OF THE CZECH INSTITUTE OF EGYPTOLOGY, CHARLES UNIVERSITY, PRAGUE

Wahibre-mery-Neith's double sarcophagus was placed directly on a filling of sand at the bottom of the burial shaft. Grave robbers had stolen his mummy, damaging the two sarcophagi to do so. The commander was provided with a modest selection of funerary goods, which were found undisturbed around the sarcophagi, including uninscribed alabaster canopic jars, a model of an offering table, and a limestone ostracon on which was written brief excerpts of spells from the Book of the Dead . All of this suggests that Wahibre-mery-Neith may have died rather suddenly.

PHOTO: PETR KOŠÁREK; ARCHIVES OF THE CZECH INSTITUTE OF EGYPTOLOGY, CHARLES UNIVERSITY, PRAGUE

(OPPOSITE)

The space inside the inner basalt sarcophagus was found almost completely empty. Only a finely carved heart scarab and an amulet in a shape of a headrest were found in the otherwise empty sarcophagus. Wahibre-mery-Neith's mummy had been carted off by thieves and rifled for valuables in a more convenient location.



© EGYPTIAN MINISTRY OF TOURISM AND ANTIQUITIES. PHOTO: MOHAMED SAMAH

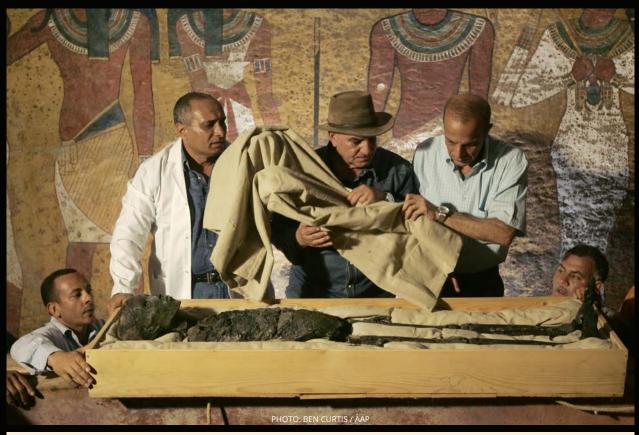
This portrait of a young woman was found in three pieces, which fortunately can be assembled into a complete image. It is one of a small number of portraits which can be matched definitely with a mummy. The burial found beneath the portrait belonged to a young woman between 17 and 22 years of age.

The young woman's hair is pulled back tightly from her forehead and separated into three segments by two side parts, all held in place by a central ornament made of semiprecious stones. She is adorned with drop earrings, two necklaces of gold chain and leather, with a gold amulet case suspended from the bottom necklace.

Her hairstyle, jewellery, and the style in which her portrait was painted, suggest that this young woman lived during the reign of the Roman emperor Caracalla, around A.D. 175.

Within her proper right hand is a floral wreath. In her left hand, the young woman holds a miniature flask, most probably a bottle of scented oils, although it may also be wine, as the liquid inside is purple in colour.

SOFIA AZIZ TUTANKHAMUN 100 100 YEARS OF FORENSIC INVESTIGATION



Tutankhamun's body hasn't always been treated with the same care shown to the artefacts he was buried with, although it was with reverence that on Sunday November 4, 2007, his mummy was lifted from his stone sarcophagus and moved into a climate-controlled display case in his tomb's Antechamber. While some scholars suggested moving Tutankhamun to the Egyptian Museum in Cairo or to the Mummification Museum in Luxor, the Supreme Council for Antiquities decided that it was most fitting for the king to remain inside his tomb.

November 2022 marked the centenary of the discovery of Tutankhamun's tomb in Egypt's Valley of the Kings. Within the harsh, arid landscape of sedimentary rock cliffs and glaring heat, Howard Carter and his team unearthed a hidden treasure trove—the likes of which the world had never seen.

Due to the sheer magnitude of artefacts cramped into this rather small, and less than elaborately decorated tomb, and the precision with which Howard Carter attempted to document everything, it was not until 1925 that the autopsy of Tutankhamun was eventually carried out.

Over the years, Tutankhamun's mummy would be examined on three further occasions: by Dr. Ronald Harrison (Professor of Anatomy at the University of Liverpool) in 1968, James E. Harris from the University of Michigan's School of Dentistry, in 1978, and finally by a team led by Dr. Zahi Hawass in 2005.

In this article, we'll see what the various investigations into the young pharaoh's mortal remains particularly his autopsy—can tell us about Tutankhamun's brief, sunlit life.



means available: by cutting through the king's bandages, as he lay within the coffin, still wearing the mask.

In his journal, one can detect Carter's sense of foreboding about the condition of Tutankhamun's mummy when, a month earlier, he lifted the lid of the king's outer coffin:

"The only ominous feature is that parts of the second coffin visible through the linen covering, show distinct efflorescence incrusted upon the inlay and surface goldwork and tendency of swelling here and there. This is certainly disconcerting, as it suggests at some time the existence of humidity, possibly from the mummy of the king, wrapped and placed in the coffin before being perfectly dry. If this is the case its preservation will, I fear, not be so good as might have been hoped for."

Derry and Hamdi's autopsy report was not published until almost half a century later, in 1972, and provided the following forensic information: The bandages in which the mummy had been wrapped were exceedingly fragile and crumbled to the touch. The bones were brittle and cracked, brought about by spontaneous combustion—a result of humidity combined with heat.

Derry used paraffin wax to strengthen the upper layers, followed by an incision of a few millimetres thickness down the midline of the wrappings. Many objects (amulets and jewellery) within the wrappings slowly started revealing themselves. Wads of linen were found between layers of bandages, most likely to fill up the spaces in between the objects within the coverings of the mummy. The wrappings closest to the skin were found to be of the finest quality.

Working from the bottom up, the lower limbs/extremities were first to be exposed, and Derry noted that the limbs were wrapped separately before the body was wrapped as a whole. The feet had been provided with gold sandals and each toe had been separately wrapped and fitted with gold stalls over the wrappings (see page 18).

The king's legs appeared shrunken, greyish-white in colour, brittle and cracked. The skin and tissues were no more than two to three millimetres in thickness. The abdominal wall was also frail and fractured. The penis was in the erect position (50 mm in length) rather than lying flaccid, which Egyptologist Salima Ikram notes was more typical of New Kingdom mummification procedures. Derry et al. were unsure if Tutankhamun had been circumcised. The scrotum had flattened against the perineum and there was no visible pubic hair.

An incision measuring 86 mm in length was visible on the left side of the abdomen which had been packed with linen and resin, resulting in bulging of the right side of the abdominal wall. An oval plate of gold was found in the

This is the appearance of Tutankhamun's mummy as Douglas Derry et al. approached the autopsy, with its blackened linen wrappings and mask still in place. This linen wrapping was the topmost of numerous layers, in between which were positioned over a hundred objects jewellery and amulets. Much of the linen, however, had been reduced to soot, and the details of the binding was only recognisable here and there.



"As works of art those statues reach a plane of excellence probably higher than has been reached in any subsequent period of the world." —The New York Times, 22 Dec 1922.

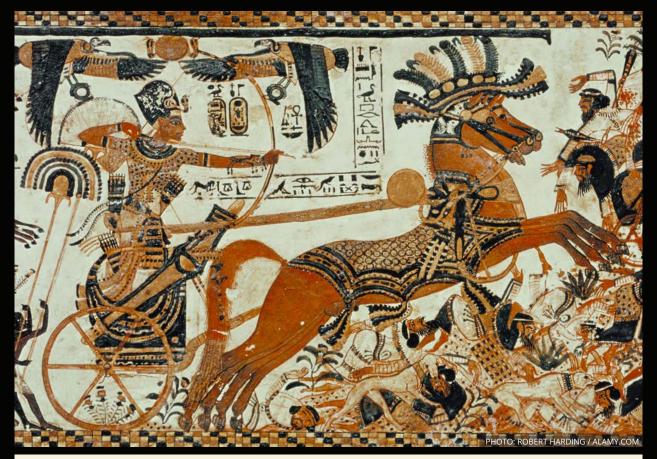
The two "Guardian" statues positioned at the entrance to Tutankhamun's Burial Chamber captured the world's press when they were first encountered in 1922. Their height and proportions proved to be almost identical to the royal mummy—"As good an indication as any, one might think, that these figures had been intended to reproduce accurately the king's appearance in life." (Nicholas Reeves, The Complete Tutankhamun, 2022.)

If this is indeed the case, do the facial features of these statues tell us what the king actually looked like?

subject. It's hard to imagine that both would have failed to imagine a clubfoot, which would have impacted the king's ability to walk. This makes it difficult to rule out postmortem modifications which can mimic a clubfoot. An example of this can be found in the 12th-Dynasty mummy of Khnum-Nakht (now in the Manchester Museum) which was initially thought to have a clubfoot. However, a detailed reassessment concluded the deformity to the foot was simply due to tight bandaging.

The 1925 autopsy failed to detect a fracture of the left femur, which was later revealed in CT scans carried out in 2005. Derry and Hamdi, it should be noted, relied solely on visual examination. The copious amounts of solidified resin may well have obscured detection of the leg fracture which otherwise may have been evident. Furthermore, the cause of death was difficult to determine since diseases that do not specifically show on the bone would have been challenging to detect.

Regarding the king's stature and age at death estimations, they do appear to be accurate based on the 2005 study. The huge publicity surrounding the discovery of the tomb, combined with the scale of the task of clearing the tomb, photographing, cataloguing, setting up a makeshift lab, and conducting an autopsy in situ should be considered



While CT scans of Tutankhamun's mummy, performed in 2005, suggest that he may have been a frail pharaoh, impaired with a cleft palate and club foot, lusty battlefield scenes like this tell us otherwise. Here, Tutankhamun ploughs his chariot into a group of Syrians who scatter below the hooves of his horses.

Portrayals like this could be symbolic of the king's dominion over his enemies, although it appears that Tutankhamun may well have participated in military campaigns as he grew older. He was buried with a leather suit of armour that shows indications of wear. Additionally, an ostrich feather fan found in the tomb

"an Aleppo boil, a plague spot, an inflamed mosquito bite, or a mummification artifact." Tutankhamun's DNA later tested positive for malaria, and one suggestion is that the pharaoh may have been in a weakened state when the infection from the leg fracture finished him off.

Many traumatic areas were visible, some as a result of the mummification process, such as destruction of the nasal region during removal of the brain. Tutankhamun's stature was estimated to be 167cm based on measurement of the tibia (lower leg bones). His age at death was estimated to be 19 by examining the fusion of the bones and cranial sutures. Hawass et al. concurred with Derry and Hamdi on the unusual shape of Tutankhamun's head and concluded he had an elongated skull. The teeth were in good condition. The front incisors were large, and an overbite was apparent, which could have caused Tutankhamun to talk with a lisp.

Moving on to the torso, a slight bend in the spine was discovered but was not deemed to be scoliosis as no rotation or associated deformation of the vertebra was evident. The penis, which was intact during Derry's examination, was initially thought to be missing but was eventually

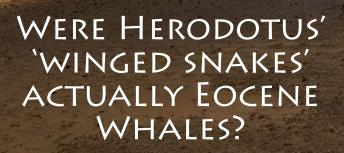
when hunting in the desert east of Heliopolis." More and more, it looks like rather than a sickly, inbred child, Tutankhamun was an active young man. This image comes the from "Painted Chest" (JE 61467), discovered in the Antechamber of the king's tomb.

found within the sand in the wooden box.

On examination of the lower limbs, Hawass et al. made a surprise discovery, previously unnoticed (or unreported): a fracture of the left lower femur, within which embalming resin had seeped. Selim told National Geographic that "the resin flowed through the wound and got into direct contact with the fracture and became solidified.... We could not find any signs of healing of the bone." The team concluded that the traumatic fracture would have happened days before death, leading to speculation that the open wound had become lethally infected.

FINAL THOUGHTS

In 1925, Douglas Derry faced the extremely difficult task of conducting an autopsy of a mummy that was glued to a coffin and in a poor state of preservation. Without access to modern forensic technology such as CT scanning, his options were limited. Despite this, it is apparent from the decision not to publish the autopsy report, and the detrimental way in which Tutankhamun's remains were handled, that the king's artefacts took precedence over the forensic



ROBERT FROST

PHOTO: MOHAMED HARBY / SHUTTERSTOCK.COM

Wadi Al-Hitan in Egypt's Western Desert once thrived with life and acts as a giant open-air museum. Fossilised marine life litters the ground, including the bones of early species of whales, giving the area its modern name, "Valley of the Whales". Could Herodotus have confused the skeletons of these early whales for those of flying snakes?

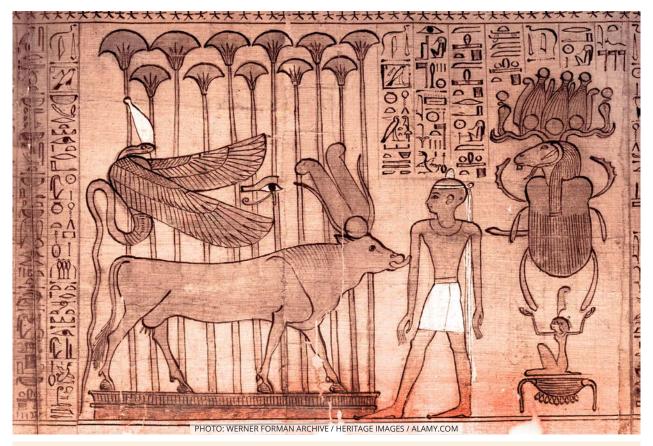
n the middle of the 5th-century B.C., the Greek historian and traveller Herodotus visited Egypt and encountered many of the renowned pharaonic monuments to be seen today. One of the less well-known scenes in his documentation of his travels, *The Histories*, is an observation of a very different, sensational kind.

In his own words, Herodotus recalled travelling to "a place in Arabia more or less opposite the city of Buto... to get information about the flying snakes". On arriving, he reported seeing "their skeletons in incalculable numbers; they were piled in heaps, some of which were big, others smaller, others smaller still, and there were many piles of them".

Precisely what Herodotus saw has puzzled scholars, and the other information he provides does little to make an easy identification. He describes the locality in question as "a narrow mountain pass leading to a broad plain which joins on to the plain of Egypt". Strictly speaking, this was only where the animals ended up: the winged snakes were reputed to fly from "Arabia" to Egypt every spring, where they were intercepted and eaten by ibises. He concludes the passage with a more detailed note on the appearance of the skeletons: "the winged snakes resemble watersnakes; their wings are not feathered, but are like a bat's". The winged snake, presumably the same sort, makes a cameo appearance in Book 3 of *The Histories*, in which Herodotus gives

(OPPOSITE)

Herodotus achieved fame in his lifetime for his Histories, which chronicled the conflict between his own people, the Greeks, and the Persian Empire in the 5th century B.c. In his travels around the Mediterranean he recorded the local geography, traditions and man-made marvels. This marble bust is one of a number of Roman copies that stem from a Greek bronze statue of Herodotus, dated to around a century after his death. It was discovered in Tell Atrib (ancient Athribis) in the Nile Delta, around 40 km north of Cairo.



Were Herodotus' winged snakes inspired by Egyptian depictions of the the goddess Wadjet? This papyrus vignette from a 21st Dynasty Book of the Dead (P. Cairo CG 40014 / JE 33997) belonged to a Theban priest named Tjanefer, and shows Wadjet extending her wings protectively towards the deceased.

Wadjet's wings signify her connection with the sun god

an account of its violent reproductive behaviour, which, alongside the predatory ibis, acted as a check on the size of the species' population.

Over the years, scholars have greeted Herodotus' observations with reactions ranging from incredulity to suggestions that he misidentified more mundane animals, such as locusts or gliding lizards, or Egyptian artistic motifs. In this article, I likewise seek a rational explanation and propose that Herodotus could have misinterpreted prehistoric whale skeletons (*Basilosaurus isis* and *Dorudon atrox*) in Wadi Al-Hitan in Egypt's Western Desert, as winged snakes, based on similarities between their morphology and the description in *The Histories*.

AN ANIMAL IDENTITY FOR THE WINGED SNAKES?

Given the failure of zoologists to identify anything resembling a flying snake in North Africa or the Near East, it is unsurprising that the passage in question has been regarded with outright disdain by some. Detlev Fehling, in *Herodotus and his 'sources': citation, invention and narrative art*, concluded that "the whole thing is an invention". Fehling, however, is less interested in the story for its own sake, than he is for using it to bring into question the veracity of *The Histories* as a whole—a debate which raged over the course of the 1970s and 1980s and which Re, and she was often shown (without wings) coiled around the sun god in order to act as his protection. On the papyrus we also see Hathor in her sacred cow

form licking the arm of Tjaner to bestow her blessing. On the right is the sun god Re in two forms: the scarab Khepri, representing the emerging sun at dawn, and ram-headed Khnum, the setting sun of the west.

has been resolved in Herodotus' favour.

Not every scholar has been as dismissive toward Herodotus as Fehling. In 1958, R.W. Hutchinson, in a short article, *The Flying Snakes of Arabia*, put the ibis at the centre of his explanation, and suggested that the flying snakes were in fact locusts. In times gone by, swarms of the animals were known to have come from the east—the direction of Arabia —and menaced Egyptian agriculture. One 19th-Dynasty papyrus details the many threats to a bumper harvest, including the loss of the crop to voracious grasshoppers:

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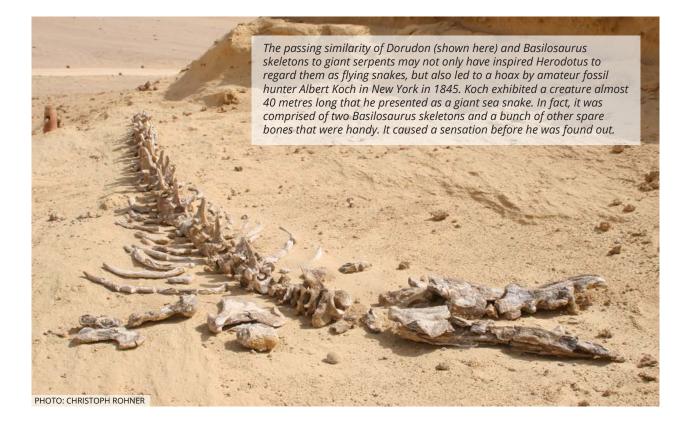
and the grasshoppers (do also)." (Papyrus Anastasi V. 19th Dynasty, ca. 1200 в.с. British Museum, EA 10244.)

Vast locust swarms preyed upon by ibises, as described by Herodotus, would have been a welcome reprieve, and might have inspired the tale. Hutchinson also brought in morphological evidence: Herodotus could have seen collections of "the exuviae of the last pupal stage of the locust" and mistaken these for "the sloughed-off skins of snakes". This solution is attractive in some ways, although one



It was a whale-eat-whale world. At 18 metres long, the size of the ancient Basilosaurus whale (A) overwhelmed that of Dorudon (B), which grew to around five metres and was a source of food for its larger cousin. Both creatures descended from terrestrial mammals, with bony vestiges of their hind legs remaining. The long, serpent-like spines of both creatures may have contributed to Herodotus' fanciful interpretation of their exposed skeletons as flying snakes.

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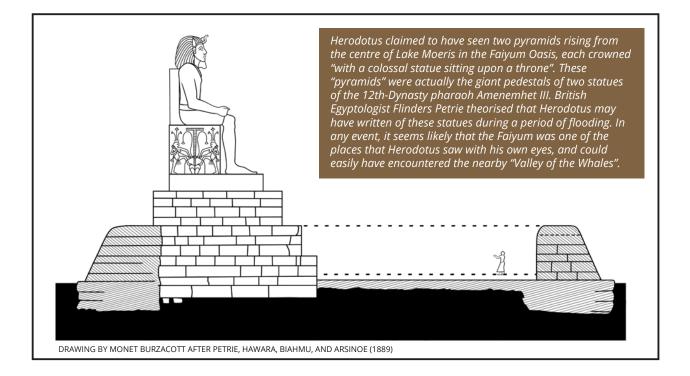


both the palaeontological literature and geographical location at the same time.

At Wadi Al-Hitan, two prehistoric whale species once flourished during the late Eocene epoch (38–34 million years ago). *Basilosaurus isis* was a giant carnivorous animal with a long, serpentine spine, and grew up to 18 metres in length. Once a land based creature, Basilosaurus had transitioned to a seafaring existence and was now the largest marine animal of its time. By the late Eocene, Basilosaurus was in the final stages of losing its hind limbs—all that was left were virtually imperceptible vestiges, detached from the spine. At the same time, a smaller, stouter species, *Dorudon atrox*, grew up to five metres in length and also sported tiny hind limbs.

While Dorudon was a fearsome marine predator with jaws packed with sharp teeth, it seems that they could also be prey for the larger Basilosaurus. Some of the young Dorudons specimens found at Wadi Al-Hitan have Basilosaurus bite marks across their skulls, and they have even been found as contents in Basilosaurus stomachs. These two whale species are the most prominent of those found in Wadi Al-Hitan.

To add whales to the debate is not to cast doubt on the intelligence of Herodotus, or of ancient Greeks or Egyptians in general. Contrary to Fehling's contention that "it is hard to confuse snake-bones with anything else", there is in fact an embarrassingly rich history of mistaken identifications in palaeontology. In 1663, a collection of bones from several Ice Age animals was unearthed in northern Germany, including the remains of an ancient horse species and the 'tusk' of an extinct straight-tusked elephant. A local mayor declared that these were the remains of a unicorn, and the creature was reconstructed with the elephant tusk fixed to the animal's forehead. In another example, almost 150 years later, in 1811, the French anatomist Georges Cuvier revealed that "man a witness of the deluge", a skeleton presumed



which feature in the third book of The Histories was also inspired by the Wadi Al-Hitan site, a palaeontological perspective can bring further insights. To paraphrase Herodotus, the reproductive behaviour of the winged snakes is startling: it involves the female killing the male after mating by biting it in half; the birthing process consists of the offspring killing the female by biting their way out. Continuing the premise that Herodotus' hosts ascertained this story by trying to make sense of fossils rather than observing the lifecycle of extant animals, it is possible that fossils of Basilosaurus and Dorudon found in association with one another, might have been misinterpreted. A study of the Wadi Al-Hitan area led by Geologist John Dolson noted that damaged Dorudon skeletons may have been the result of predation by Basilosaurus; indeed, Dorudon remnants have been found within the stomach of fossil Basilosaurus. It is conceivable that the cannibalistic behaviour described by Herodotus may therefore have originated from a close examination of such specimens. Incomplete skeletons, next to complete ones, such as that on page 28, may also have inspired ideas about lethal mating behaviour to an imaginative observer, with the latter blamed for the condition of the former.

To account for the strange birthing process itself, a similar dramatic fossil assemblage could have been misinterpreted, such as one showing a small Basilosaurus/ Dorudon in the process of being born. Though the possibility of such an event being recorded in the fossil record—and subsequently found—may seem remote, there exists an example of this very moment in the Natural History Museum, albeit featuring an Ichthyosaur. It is possible that a Basilosaurus/ Dorudon found in the same state—both animals gave birth to live young—might have conveyed the impression of the dramatic birthing process described by Herodotus. Damage sustained to the Basilosaurus/ Dorudon during it being engulfed by sediment could have been mistaken for damage during the birthing process described by Herodotus. The possibility of finding such an assemblage is favoured by another factor: Dolson et al. (2002) have noted that the proportion of young Dorudon at Wadi Al-Hitan is unusually high, possibly signifying that it was a calving area.

GEOGRAPHY AND TOPOGRAPHY

Wadi Al-Hitan also fits the geographical description given by Herodotus. Located about 100 km to the southwest of Cairo, in the desert west of the Faiyum, it can certainly be described as "more or less opposite the city of Buto", so long as the ancient city of that name located in the northwest of the Nile Delta (modern Tell el-Fara'in) is preferred over its namesake in the extreme east of the Delta region. This western Buto is Radner's preference: she points out that the immediate context of the passage on winged snakes is an account of animals found throughout Egypt. Therefore, the geographical description "makes sense only when thinking in grand dimension". Although the historical problem that she has in mind is Herodotus locating Buto in or near "Arabia"-Buto/Tell el-Fara'in is indeed near to Arabia when compared to Thebes-the observation is also applicable to the relationship between Buto and Wadi Al-Hitan. The two are relatively close to one another, as both are in the western half of Lower Egypt.

The other piece of locational data supplied by Herodotus, that the site in question was in "a narrow mountain pass leading to a broad plain which joins on to the plain of Egypt", is finer-grained, but indeterminate: there is no hint of the scale of these particular features. Wadi Al-Hitan would definitely fit this description, however, as it is surrounded by hilly country, and leads to the Faiyum—the largest discrete area of agricultural land in Egypt after the Delta would answer to the description of the "broad plain" —which itself joins onto the Nile valley. As such, there is a good match between the description given by Herodotus and the Wadi Al-Hitan/Faiyum landscape.

There is good reason to believe that Herodotus had personal experience of Egypt's Faiyum region. One long-



(ABOVE)

Howard Carter called the smallest room in Tutankhamun's tomb "The Annexe". Burton's photographs present the chamber as Carter first saw it: a chaotic mess. Howard Carter describes the scene:

"The state of this inner room (afterwards called the Annexe) simply defies description. In the Antechamber there had been some sort of an attempt to tidy up after the plunderers' visit, but here everything was in confusion, just as they had left it."

Thanks to the frantic plunder of ancient thieves, the Annexe was a hopeless tangle of furniture, boxes, baskets, pottery jars, and stone vessels. More than 2,000 individual objects were found in the chamber, and it took some six weeks to empty the room of its contents. To achieve this took some ingenuity on Carter's part:

"To save an object of heavy nature, so situated that the slightest disturbance would cause it to fall, we were obliged to lean over and reach far out, supported by a rope-sling under our arm-pits which was held by three or four men standing in the Antechamber."

During the tomb's clearance, Burton first photographed each area as it was first encountered, and then again when numbered cards had been placed beside each object, assigning each an inventory number, as above. Burton's photographs thus preserved the arrangement of items in each room, which was necessarily lost in the course of excavation.

(OPPOSITE)

Is this the boy who discovered Tutankhamun's tomb? Many of the Egyptians hired to remove earth from

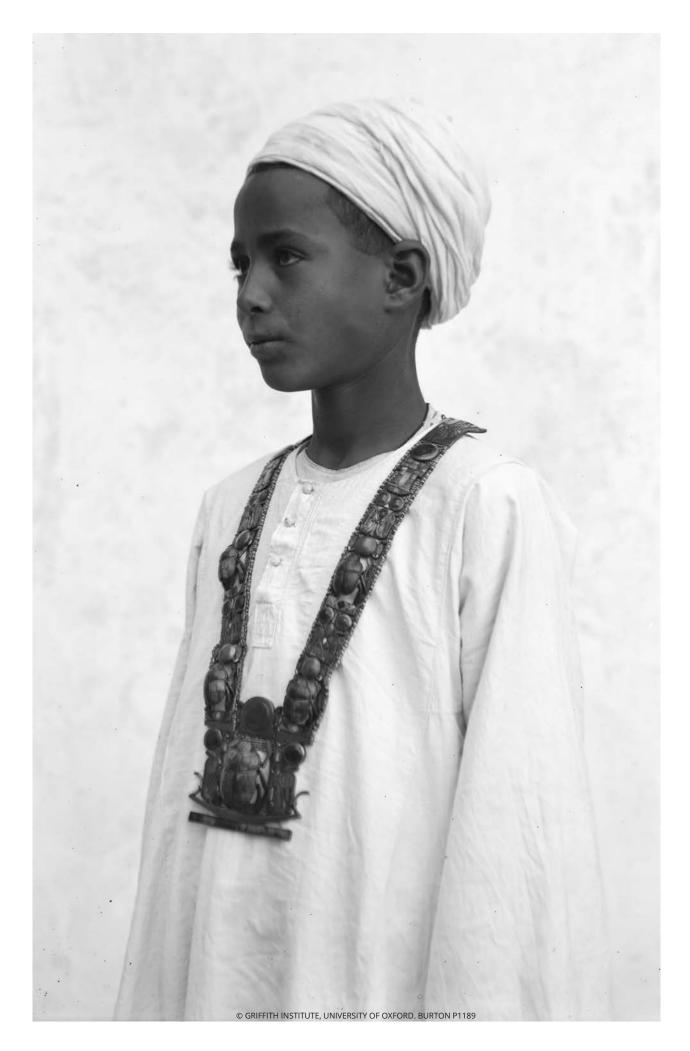
the excavation site in late 1922 were children. In November or December 1926, Harry Burton photographed this Egyptian boy wearing one of Tutankhamun's heavy gold pectorals to demonstrate how it hung over the shoulders. Decades later, a local man from a leading Luxor family, "Sheikh" Hussein Abd el-Rassul, identified himself as the boy in the photograph. He claimed that it was he, in fact, who had discovered the famous tomb.

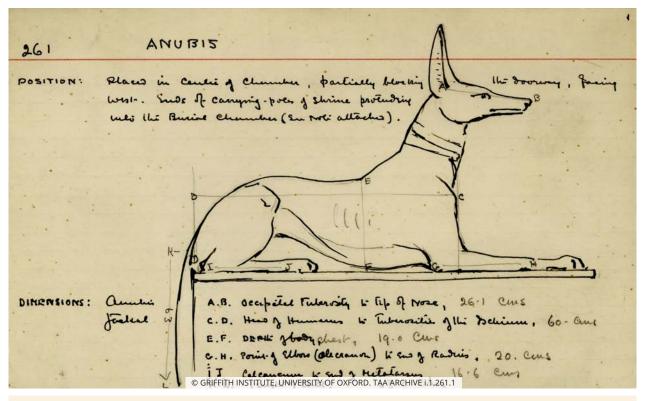
According to his story, young Hussein was a 12-yearold waterboy for the dig. On the morning of November 4, 1922, when making a hole in the dirt to support a water jar, he hit a hard surface. This turned out to be the first step leading down to Tutankhamun's tomb.

It's a good tale, for sure. And you will probably see it repeated in many publications. But it is highly unlikely. The entrance to Tutankhamun's tomb lay buried beneath several metres of limestone chippings created by the cutting of the nearby tomb of King Ramesses VI, some 150 years after the burial of Tutankhamun. A waterboy scratching in the sand was unlikely to have been the one to uncover that crucial first step.

Howard Carter never claimed to have been the one to discover the tomb. Indeed, he acknowledges that he wasn't even there when it happened. However, it almost certainly wasn't this young lad who came across the greatest archaeological discovery of the 20th century.

That being said, we don't know the boy's name or why he, in particular, was chosen to wear the priceless pectoral. And who was the local workman who really found that first step? No one bothered to record it.





Each of the objects in Tutankhamun's tomb was documented in detail by Howard Carter on index cards like this one. They recorded each object's dimensions, drawings, and descriptions.

This card describes the figure of Anubis, Lord of the West, mounted on a shrine in the "Treasury" room of Tutankhamun's tomb. Carter's notes describe its position:

(From page 35.) The discovery of Tutankhamun's tomb came as Egypt was becoming an independent nation and the pharaoh became a figure of national identity. Egyptian poet Ahmad Shawqi was a friend of the medical doctor Saleh Bey Hamdi, who later took part in the autopsy of the royal mummy in 1925 (see article from page 13). Linking the glory of Egypt's pharaonic past with its newfound

(OPPOSITE)

Taken in October 1926, this Harry Burton photograph features the Anubis figure described above on Howard Carter's object card. Anubis rests on the shrine on the threshold of the Treasury, seemingly guarding the room, just as he watched over the dead.

Carter also carefully recorded the hieroglyphic inscriptions on the objects found in the tomb. On the western side of the shrine (facing us), hieroglyphic texts describe Anubis as follows:

信 4 6 1 1

"Inpu (Anubis), who is in (his) wrappings."

It was Anubis who wrapped the body of Osiris in bandages, creating the first mummy, and so became the patron of embalmers. Tutankhamun's Anubis was draped in a linen shawl bearing the name of Akhenaten, the maverick, Aten-centric pharaoh, thought to be Tutankhamun's father. "Placed in centre of chamber, partially blocking the doorway, facing west. Ends of carryingpoles of shrine protruding into the Burial Chamber."

A wide array of original plans and record cards, featuring Carter's own notes and illustrations of the artefacts are included in the exhibition.

freedom, Shawqi wrote several patriotic poems about Tutankhamun and spoke to the fate of the tomb's treasures:

"Our forefathers, and their greatest [Tutankhamen], are an inheritance that we should be careful not to let pass into the hands of others."

Today, that inheritance includes the voices that get to tell the story of the discovery. The contributions of Carter's Egyptian team members have long been downplayed, and of the over one hundred workers who helped excavate the site and then clear the tomb, only the names of the four reises (foremen) were recorded. Exhibition co-curator Dr. Daniela Rosenow says that the event allows us to "get a sense of the diversity of the team members involved." As Ahmad Shawqi proudly wrote:

"Tutankhamen has returned his authority to our sons."

TUTANKHAMUN Excavating the Archives

Weston Library, University of Oxford Showing until 5 February 2023 Open Monday–Saturday, 11–5pm, Sunday 11am–5pm www.visit.bodleian.ox.ac.uk/event/ tutankhamun-excavating-the-archive

This tiny sculpture of turquoise-blue glass, just three cm high, is a miniature masterpiece of ancient Egyptian craftsmanship, and once formed part of a statue of a sphinx.

It is the only known example of a glass sphinx.

The identifying inscription, likely incised on the front of the body, is now lost, although its details are fine enough to suggest that it is a portrait of the 18th-Dynasty pharaoh Amenhotep II, who ruled around 60 years before Tutankhamun.

Glassmaking began in Mesopotamia shortly before 2,000 в.с., although it took around 700 years to appear in Egypt, likely during the reign of Amenhotep II's father, Thutmose III. This would make this piece one of the earliest examples of glass sculpture known to exist.

Egyptian artisans had been making faience, a substance related to glass, for more than a thousand years and this piece demonstrates how quickly, once introduced, they mastered the art of glassmaking as well.

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This is a detail from the funerary mask of Merit, the wife of the 18th-Dynasty overseer of works, Kha, who supervised the construction of three royal tombs in the Valley of the Kings: those of Amenhotep II, Thutmose IV and Amenhotep III. Merit died before Kha and he ensured that his wife's mummy was adorned with a beautiful gilded mask. Her eyes, make-up lines and eyebrows are composed of coloured glass inlay.

Kha was clearly a court favourite. Not only was he retained for his fine work as the throne passed from one

We can reveal more about the source of glassware today than in the past thanks to high-tech scanning tools which isolate and analyse the various chemical elements within glass to discover their origins.

Major exporters of glass in the ancient world during the Late Bronze Age (*ca.* 1200 B.C.) were New Kingdom Egypt, Mesopotamia and Mycenaean Greece. While they all traded glass, it can be difficult to confirm the origins of glass that is uncovered by today's archaeologists. This is due to several factors. Often the product's appearance appears the same, regardless of the country of origin. Weathering of glass due to age and exposure can also alter the colour of glass over time. Chemical analysis is, therefore, a useful tool for identifying the origins of the glassware which in turn, assists with mapping trade routes. COURTESY OF MUSEO EGIZIO, TURIN. INV. NO. S. 8473

pharaoh to the next, but he received the benefits of the royal workshops which controlled the manufacture of glass. The technology had only been introduced into Egypt a few decades earlier, during the reign of Thutmose III, Amenhotep II's father.

Kha and Merit's tomb (TT 8) was discovered intact in 1906 by Ernesto Schiaparelli, working on behalf of the Italian Archaeological Mission. Almost the entire contents of Kha and Merit's tomb was shipped off to the Museo Egizio in Turin, where you can see them today.

GLASS IN EGYPT

It is unfortunate the provenance of much Egyptian glassware is unknown due to the habits of past collectors. Interested only in the aesthetics of the objects they purchased, little attention was paid to the details of provenance or date. Despite this, evidence of glass in Egypt—albeit rare—can be dated to the Middle Kingdom. Two blue glass scarabs, now in the British Museum (EA66735 and EA28241), can be firmly dated to Egypt's 12th Dynasty, based on the hieroglyphic inscriptions on their bases. Were these pieces the result of early glass manufacturing in Egypt? Egyptologist John D. Cooney instead suggested that "the scattered examples of glass claimed for Egypt prior to Dynasty 18... are invariably compositions intended as faience but ones which turned completely vitreous when they were overfired."





These two glass beads, the largest being just over 2 cm across, were discovered at Deir el-Bahari, the memorial temple of the female pharaoh Hatshepsut, and are inscribed with her name, along with that of her chief architect, Senenmut.

While the glass may not necessarily have been made in Egypt, its use in this royal context demonstrates the high status this relatively new material enjoyed.

The hieroglyphic inscription around each bead reads:

"The good god Maat-ka-re (Hatshepsut), beloved of Hathor, who resides in Thebes, who presides over Djeser-Djeseru,

 $\fbox{ and] the noble and steward Senenmut."}$

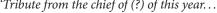
© THE TRUSTEES OF THE BRITISH MUSEUM. ACC. NO. EA26289 (LEFT) AND EA26290 (RIGHT)

assessment. Further to this, Hatshepsut's predecessors, including her father, Thutmose II, owned glass objects. There could have been a greater presence of glass in Egypt, including its manufacture, which has yet to be discovered.

THUTMOSE III

Although it is impossible to prove that glass arrived in Egypt during the reign of Thutmose III, the presence of glassware found in both textual records and the archaeology of this period increases rapidly. Two of the most important Egyptian records of imported glass appear on the walls of Karnak Temple (opposite) and the private tomb of Thutmose III's vizier (chief minister), Rekhmire.

Karnak Temple's Annals of Thutmose III describe the battlefield exploits from the king's many foreign campaigns. Thutmose had commanded that his victories should be recorded on the walls of Karnak Temple. In return for Amun's blessing and protection, the king lavished on the god an exotic array of booty he had brought home, as well as tribute that arrived at the palace from foreign powers. Some of the inscriptions in the annals suggest that glass was regarded by the Egyptians as a type of stone ("stones to melt") that could be fashioned in imitation of precious materials such as lapis lazuli. Sadly, part of the inscription has been damaged, so we'll likely never know which particular chief gave Thutmose III the precious raw glass:

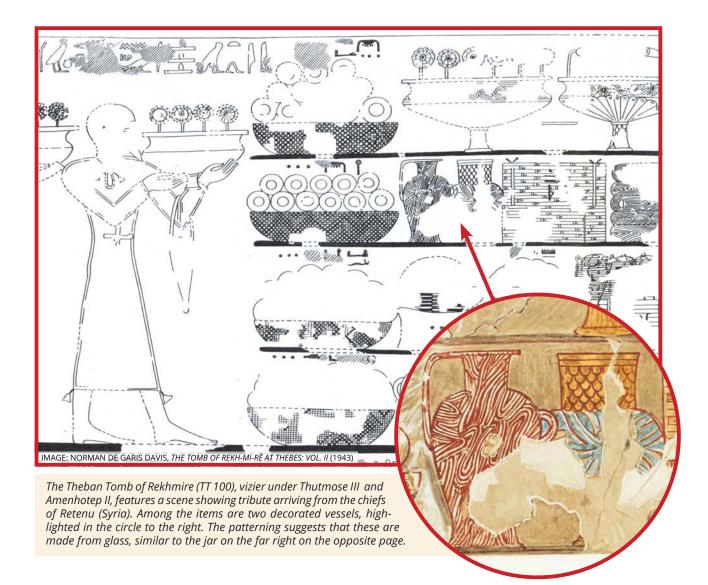


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and beautiful stones of all kinds of this land."

From the Annals, we can deduce that Thutmose III's army marched on the city of Sunadiri, on the bank of the Euphrates River, to liberate it from Babylonian occupation. As thanks, the chief of Sunadiri paid a tribute to the Egyptian king that included 24 deben (just over 2 kg) of "manufactured" lapis lazuli, which likely refers to blue glass, as opposed to the "real" lapis lazuli that the chief also offered:

The Theban tomb of Rekhmire (TT 100) is decorated with a colourful spectacle showing emissaries of friendly



beads. A glass workshop even existed in the centre of the residential quarters within the palace itself.

Studies on the glassy materials found at Malkata and Amarna, have found remarkable similarity—both chemically and stylistically. This suggests that when Akhenaten founded his gleaming new city halfway between Memphis and Thebes, the artisans taken to Amarna were drawn from the workshops at Malkata.

GLASS AT AMARNA

Akhenaten swung his religious allegiance towards the worship of one god par excellence, the Aten, the light of the sun disk, and created a new, purpose-built city for its worship: Akhet-Aten, today known as Amarna. It was here that Akhenaten turned glass into a large-scale industry, which involved both the importation of the raw product as well as local manufacture and its export. Glass products from Amarna have been found around the Mediterranean, and even as far afield as Scandinavia (see page 51).

High-tech scanning tools have provided information on the origins of the raw materials used to produce glass, allowing us to determine the chemical fingerprint of glass objects. This solved the long-running debate over whether glass was manufactured at Amarna, or simply worked from imported raw materials, with the answer being that both processes occurred.

TRADE ROUTES

It is time to turn to the discoveries of the Uluburun shipwreck and the Bronze Age graves in Denmark and north Germany. Chemical analysis has provided important information on the glass and trade routes of this time.

While it was long thought Amarna produced glassware for trade, much of the evidence was circumstantial. Glass from Italy, Cyprus and the Levant indicated there was a brisk trade in which Amarna seemed to be involved, although this could not be proved beyond doubt. In 1982, however, scholars changed their perspective when Mehmed Çakir, a young sponge diver, reported seeing copper ingots on a dive off the southern coast of Turkey, just off Cape Uluburun. What Çakir had discovered was the oldest known shipwreck in the world.

This was a 15-metre wooden merchant vessel, built of Lebanon cedar and oak, that had sunk in the late 14th century B.C., around the time that Akhenaten ruled Egypt from Amarna. This was the Late Bronze Age, which succeeded the Stone Age and was the predecessor to the Iron Age. It lasted from around 2200 to 800 B.C., but did not occur everywhere at once, because different cultures experienced different stages of development.

The ship had gone down with its full cargo, which reflected precisely the namesake of this period. Bronze is a



THE METROPOLITAN MUSEUM OF ART. (LEFT) FLETCHER FUND, 1920. ACC. NO. 26.8.34a,b. (CENTRE) BEQUEST OF THE EARL OF CARNARVON, 1923. ACC. NO. 23.9. (RIGHT) PURCHASE, EDWARD S. HARKNESS GIFT, 1926. ACC. NO. 26.7.1175

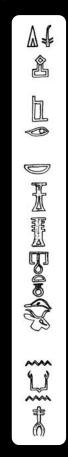
These three vessels were discovered in the Theban tomb of Princesses Menhet, Merti and Menwi, three Syrian-born wives who were members of Thutmose III's royal harem. The leftmost cup—a typical shape for 18th-Dynasty cosmetic vessels—is made of a glassy material that has been difficult to identify. The middle cup, in the form of a partially open lotus flower is made of blue glass. At this time, the art of glass manufacture was new to Egypt, but the shape of the cup is typically Egyptian, suggesting that it was made in Egypt and not imported. The cup on the right, of foreign design, may have been brought to Egypt by one of the three wives as part of her dowry.



This spectacular fish-shaped bottle was discovered at Amarna, the royal city founded by the pharaoh Akhenaten in Middle Egypt. The fish is a tilapia, regarded as a symbol of rebirth and fertility, presumably because the female hatches and shelters her young in her mouth. Pieces like this represent a high water mark of the ancient glassmaker's skill. Blue glass was modelled around a central core of (probably) clay, with white and yellow glass threads then applied to form the ripply scales. The bottle probably held perfume.

PHOTO: WERNER FORMAN ARCHIVE / HERITAGE IMAGES / ALAMY.COM

THE TEXT ON THE QURNA COFFIN



"An offering which the king gives to Osiris, Lord of Djedu. A voice offering of bread and beer, fowl and beef, for the ka of...."

The inscription down the coffin's front panel was damaged when the child's casket was placed over it. The hieroglyphic text that would have provided us with the woman's titles and name is now completely missing, and so her identity may always remain a mystery.The only remaining clue (aside from the sumptuousness of her burial) is the remaining sign { (nefer). This has been suggested to belong to the queenly title "United with the White Crown", which was used for royal consorts from the Middle to the early New Kingdoms.

The gilded rishi coffin measures over two metres in length. Beneath the striped nemes headdress is an abstracted collar ending in two falcon head terminals. Below this is a gilded vulture pectoral surrounded by long feathers in Egyptian blue which give this type of coffin its name. Grateful thanks to Dr. William Manley for

supplying the detail of the hieroglyphic text.

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The Kerma black-topped red beakers were found in pairs in carry nets beside the coffin, and the remains of some of the deteriorated nets still can be seen on the surface of some of the beakers. These elegant, eggshell-thin vessels were handmade and fired upside down with their rims

buried in the fuel at the bottom of the kiln. The iron in the clay was oxidized red where the lower part was exposed to air and the silver band was created by the heat above the fuel layer turned the silica in the clay into glass.



The three stools found in the burial are made from cedar imported from Lebanon, which would have made them particularly costly and therefore a great indicator of wealth and status. This bull-legged stool still retained its original woven seat. The beautifully-carved bull feet on this stool depict the front and hind legs of the animal, standing on oval pads.At the time of the burial, this design had gone out of fashion in Egypt, but was popular in Kerma, particularly for the legs of beds.



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This exquisite headrest, made of local acacia wood with inlaid decoration in ebony and ivory, was found inside the woman's coffin. It is made of three parts fastened together with tenons. The upper half of the pillar is decorated with a geometric pattern of alternating inlaid triangles of ebony and hippopotamus ivory forming a square. There are three rows of these squares, above which is a thin band of ebony. The elongated base is oblong in shape with rounded ends and is similar to a number of examples from Kerma.

a cow's horn and fitted with an ivory carving of a bird's head topped with a spoon and a small hole to allow the contents to flow into it.

The burial also had a number of pieces of wooden furniture, including a box that contained what appeared to be a piece of fat wrapped in linen, three stools, and a headrest. Alongside the coffin was a wooden carrying pole from which were hung ten net-bags made from linen string that held a number of pottery vessels, including a stack of black topped beakers that were a hallmark of the Nubian Kerma culture.

THE KERMA CONNECTION

The kingdom of Nubia was Egypt's nearest neighbour to the south, in the area of northern Sudan and southernmost Egypt today. Just south of the Nile River's Third Cataract was the Nubian city of Kerma. The presence of the Nubian pots has suggested to some that the burial belonged to a Nubian princess who had married into the Theban royal family, while more recently it has been argued that the coffin indicated that it belonged to an Egyptian with an eclectic assemblage common in this cosmopolitan era.

However, a closer look at the objects in the burial ties the assemblage to the Nubian Kingdom of Kerma. While

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pot nets are also found in Egypt, the greatest surviving number come from Kerma, including examples such as those with knots painted blue to simulate faience beads which so far have only been found at Kerma and in the Qurna burial. Also, the nets seem to have been custommade to hold the vessels snugly. Importantly, these stacks of beakers have been shown by Professor Elizabeth Minor (Wellesley College, Massachusetts) to have been an important part of Kerma burial custom.

Moreover, it is not just the beakers that have a Kerma association. The stools also indicate not just Nubian style, but technique. One of the stools has bovine legs (see page 59) just like the beds from the burials of the Classic Kerma Period. It is not just the shape of the legs that exhibit Nubian craftsmanship, but also their supports, the bentwood angle braces that secure the legs are also a feature of the Kerma beds. One of the other two stools, while they are similar to examples known from Egypt, has an even closer parallel from Kerma. In addition, the headrest with an exaggeratedly long base (see above) is of a type found commonly at Kerma, but not in Egypt.

The wealth included with the burials is remarkable considering that Egypt was politically divided, and the kings at Thebes had no direct access to the wealthy trade routes of the Mediterranean, nor to the gold-rich mines of Nubia.

(OPPOSITE)

This ointment container was made from a hollowed-out bovine horn with elaborate fittings of ivory.

The ivory tip was carved into a spout in the shape of a bird's head topped with a spoon. A small hole allowed the contents to flow into the spoon as the horn tipped.

The round opening at the bottom of the horn was sealed with a circular ivory disk mounted on wood to plug it. It is decorated with an incised and inlaid rosette pattern; the inlays are wood, possibly ebony.

The horn was found in a basket with a seemingly random ensemble of things: an anhydrite bowl, a bronze cutting tool or razor, a whetstone, two flints, and a ball of thread.



Although the Thebans were at war with the Hyksosallied Kingdom of Kerma, we have evidence of Kerma soldiers serving the Egyptians at this period, and given Egyptian colonial policy, it would not have been out of the question to seal an alliance with a rival Nubian dynasty with a diplomatic marriage into the Theban royal family.

The location of the burial, between the hillside cemeteries of Dra Abu el-Naga and Qurna (north and south respectively of the bay of cliffs of Deir el-Bahari), is near where the internments of the 17th Dynasty's Queen Ahhotep and her son King Kamose had been found. They were also placed in shallow graves with no evident superstructures, but equipped with precious metal jewellery. This suggests they were all re-burials of the Theban royal family at the end of the 17th Dynasty. The fact that the Qurna Queen's burial was covered with large rocks tells that this internment was regarded as final—there was no intention to open the grave for new tenants.

Recently, an analysis of the diet of the Qurna Queen, through the carbon and nitrogen isotypes in her bones, indicated the consumption of sorghum and millet, which are Sudanese staples, rather than the wheat and barley that were the base of the Egyptian diet, further tying her to a Nubian background.

ENGLAND BOUND

After his excavation, the coffin and whole assemblage that had been awarded by division from the Egyptian Antiquities Service were offered by Flinders Petrie to the Royal Scottish Museum (now the National Museum of Scotland) in Edinburgh, in return for their support of his excavations.

(ABOVE)

This bowl decorated with baboons is carved of anhydrite, a soft stone similar to gypsum. It ranges in colour from white to grey to a periwinkle and is sometimes referred to as "blue marble." The material was used for elaborate cosmetic vessels from the Middle Kingdom through the Second Intermediate Period for small cosmetic vessels. The animals squat, facing right, with their arms raised and their tails forming a ring base on which the bowl balances.

The group has been a highlight of the collection since 1909 and has been carefully conserved and studied and beautifully displayed.

Acknowledgement: The author would like to thank Dr. Margaret Maitland, Curator of the Ancient Mediterranean at National Museums Scotland for her help and insight.



PETER LACOVARA is director of The Ancient Egyptian Archaeology and Heritage Fund. He was previously senior curator of Ancient Egyptian, Nubian, and Near Eastern Art at the Michael C. Carlos Museum, and served as assistant curator at the Museum of Fine Arts, Boston. His fieldwork has included excavations at the Valley of the Kings and at Malgata in Western Thebes. Currently he is also Consulting Curator for the Egyptian Collection at the Albany Institute of History and Art and directing the survey and restoration of the site of Deir el-Ballas.

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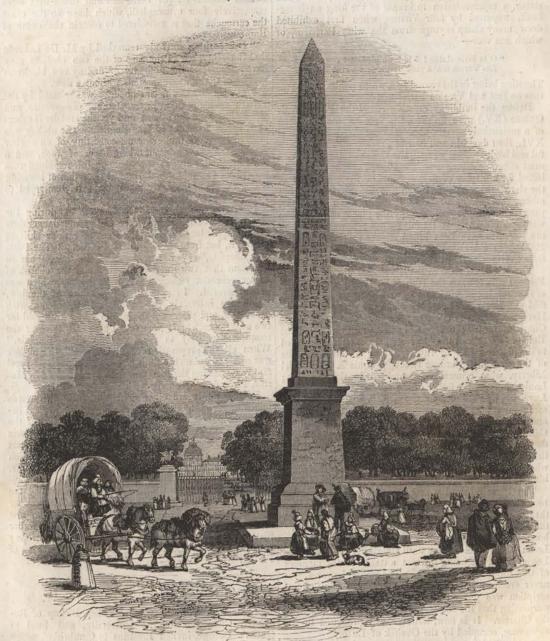
Society for the Diffusion of Useful Knowledge.

380.]

PUBLISHED EVERY SATURDAY.

[MARCH 3, 1838.

THE LUXOR OBELISK, IN THE PLACE LOUIS XVI., PARIS.



[Obelisk of Luxor, Place Louis XVI., Paris.]

THE smaller of the two obelisks of Luxor, of which a view and description are given in 'The Penny Magazine,' vol. i., p. 113, is now erected on one of the most remarkable sites of Paris—the scene of many of those tragedies which marked that most extraordinary period of modern history—the first French Revolution. Vol. VII.

The space now called the Place Louis XVI. lies between the gardens of the Tuileries and the avenue or road, thickly planted on each side with tall shady trees, which is called the Champs Elysées, or Elysian Fields a rather high-sounding appellation, for the walks under these trees are far inferior to the walks in the gardens of M

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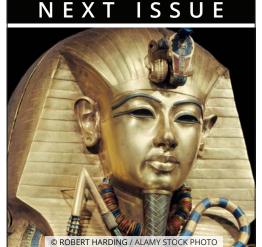


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