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AGATHA AND ARCHAEOLOGY
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MAY/JUNE 2017

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Tomb of the Red Queen:
Maya Mystery at Palenque

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Bearing witness, a term often used by psychologists, happens when one person listens as another shares an experience. The act of being heard often gives support to the teller, validating their story and giving meaning to the event. Objects can also bear witness, and historians rely on their testimony to learn about the past. The Gothic masterpiece Notre-Dame de Paris bore witness to the turbulent history of Paris as architecture soared higher, a revolution overthrew a king, and Victor Hugo wrote about a hunchback.

Smaller objects—such as the exquisite ivories found in Nimrud by Max Mallowan, Agatha Christie's archaeologist husband—bear witness, too. When this ancient Assyrian city was conquered in 612 B.C., looters dumped the ivories in a well to try to blot out Assyria's culture. Their efforts failed: The ivories survived, revealing the multicultural power that was Assyria, and they will continue to bear witness to the greatness of Iraq's ancient heritage, which has been under violent attack in recent years. Destroying ruins is a vain attempt to obliterate the past. Traces will remain, bearing witness to the testimony of our ancestors—whether through massive walls of stone or small fragments of ivory.

Amy Briggs

Amy Briggs, Executive Editor

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HISTORY

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HISTORY

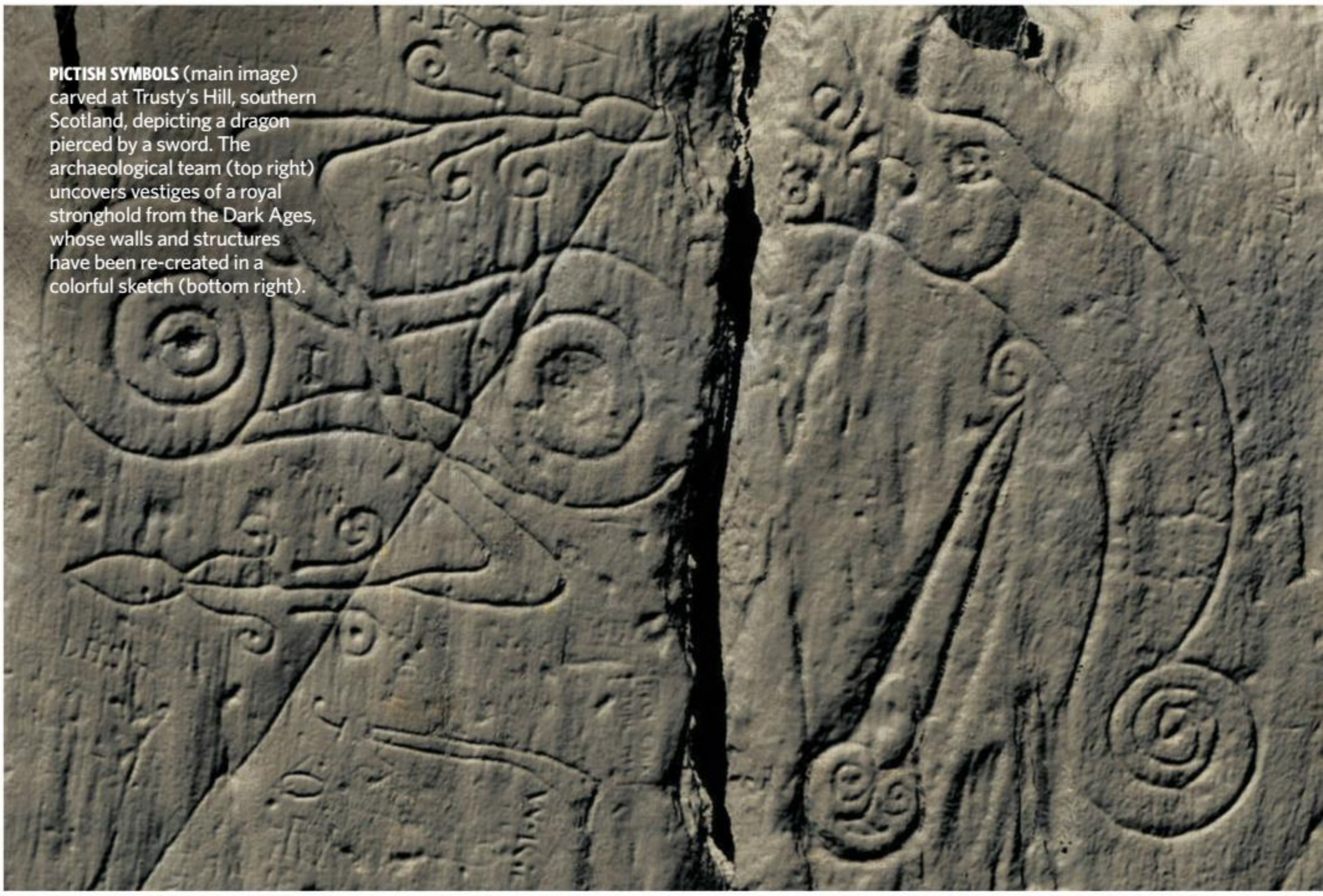
VOL. 3 NO. 2

AGATHA INVESTIGATES
The Queen of Crime observes workers at Chagar Bazar in Syria in 1935. The dig at the Bronze Age settlement was directed by Christie's second husband, Max Mallowan.

Features

AGE OF DISCOVERY RELIQUARY IN THE FORM OF A SHIP, CIRCA 1500, REIMS CATHEDRAL, FRANCE

Departments



PICTISH SYMBOLS (main image) carved at Trusty's Hill, southern Scotland, depicting a dragon pierced by a sword. The archaeological team (top right) uncovers vestiges of a royal stronghold from the Dark Ages, whose walls and structures have been re-created in a colorful sketch (bottom right).

CELTIC BRITAIN

Rheged Revealed! Lost Arthurian Kingdom Found

Home to the legendary slayer of the Black Knight, Rheged has been hard to find, but archaeologists in Scotland have new clues to its location.

Camelot, Avalon, Tintagel: These locations feature prominently in the British legends of King Arthur and the Knights of the Round Table, which were set during the tumultuous sixth century between the collapse of Roman power and the coming of the Saxons. While the tales might be legendary, many of these places were very real.

Historians believed that Rheged, a powerful kingdom celebrated in Arthurian legends, existed, but they were never quite sure where it was. Led by Scotland-based GUARD Archaeology, a research team now thinks it might have an answer.

A Royal Hub

Like many archaeological breakthroughs, the researchers were looking for something entirely different when they started digging at Trusty's Hill, a hill fort in Galloway, in southern Scotland. "What drew us to Trusty's Hill were Pictish symbols carved onto bedrock

BRONZE JEWEL FROM THE ANGLO-SAXON PERIOD, FOUND AT TRUSTY'S HILL. IT IS BELIEVED TO HAVE BEEN BROUGHT THERE AS LOOT.
DGNHAS/GUARD ARCHAEOLOGY LTD

LEFT: DGNHAS/CDDV **TOP AND BOTTOM:** DGNHAS/GUARD ARCHAEOLOGY LTD

here, which are unique in this region," said Ronan Toolis, who directed the team consisting of some 60 volunteers.

Vestiges of the Pictish culture of Scotland, which flourished between the Iron Age and the early medieval period, are usually found much farther north than Trusty's Hill. On examining the site further, however, Toolis realized they had stumbled on a remarkable find. The Pictish engravings seem to have formed a symbolic entranceway, reminiscent of other sites in Scotland associated with royalty.

The dig also turned up pottery from France and a workshop that had produced costly metalwork and fine jewelry, suggesting the site was a significant trade center. All of these elements demonstrate that the hilltop was once a royal stronghold about A.D. 600 for the local Britons of Galloway, a region whose wealth at this time makes it the strongest contender yet for the kingdom of Rheged.

Celebrated in Song

Rheged was once famous for one of its kings, Urien of Rheged, whose military exploits were praised in verse by Taliesin, a sixth-century poet. Urien of Rheged's adventures were later woven into the Arthurian romances, developed from the 12th century onward. The most popular version was the 15th-century Thomas Malory's *Le Morte d'Arthur,* which was, despite its French title, the first prose version of the Arthur cycle in English.

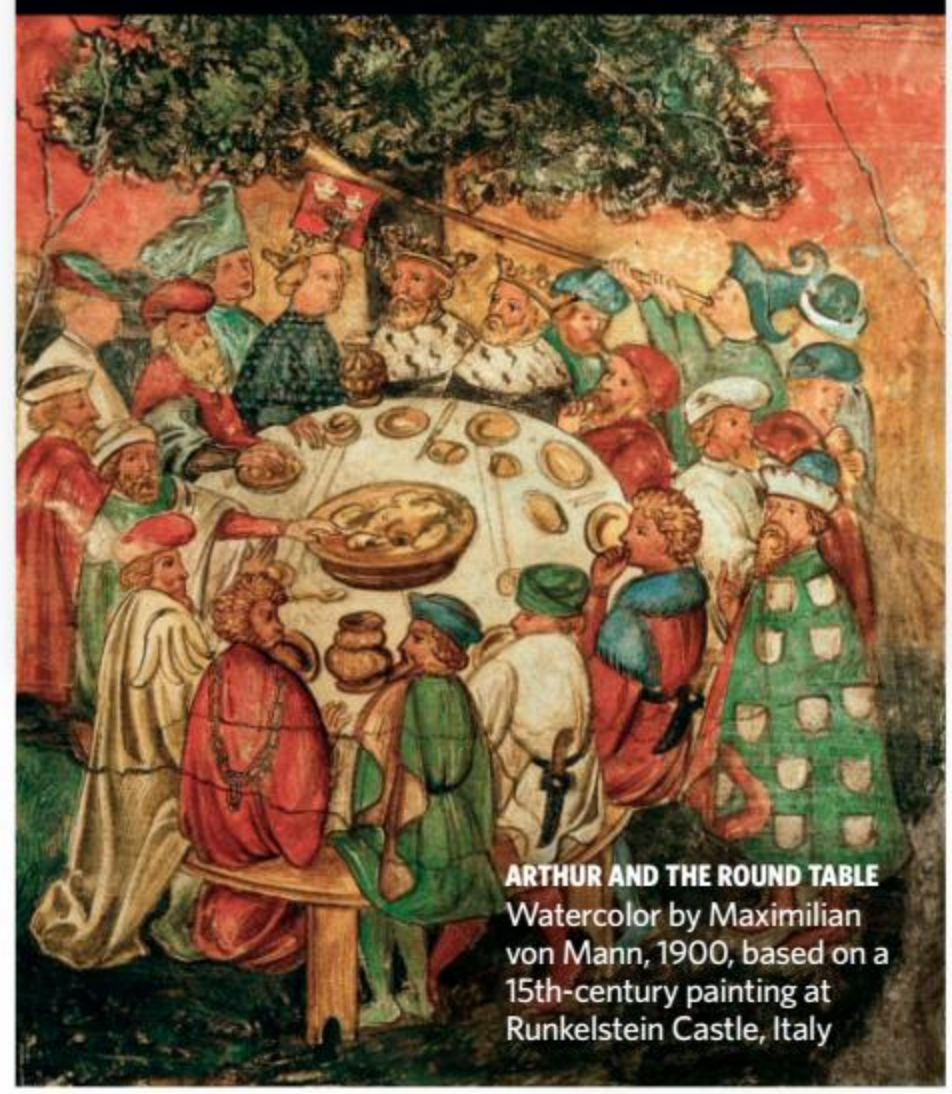
In Malory's tales, Urien of Rheged is married to Arthur's half sister, Morgan le Fay. They have a son: a knight of the Round Table known as Owain of Rheged.

Trusty's Hill archaeological director Toolis declares that the accumulation of evidence makes a compelling case that this was once Rheged. After centuries wreathed in mystery, Owain's elusive kingdom might soon have a solid, Scottish address. ■

OWAIN: HERO OF RHEGED

IN SIR THOMAS MALORY'S *Le Morte D'Arthur,* Owain, a knight of the Round Table, hails from Rheged and is the son of King Urien and Morgan le Fay, King Arthur's half sister.

"Sir Owain of Rheged journeyed many a day until at last he reached the valley of which Sir Kynon had told . . . And with the dawn, Sir Owain of Rheged rose, mounted his horse, and rode forward until he had found the fountain. Then he dashed water on the marble slab and instantly there burst over him a fearful hailstorm, and through it there came pricking towards him the Black Knight on the black steed. In the first onset, they broke their lances and then, drawing sword, they fought blade to blade. Sore was the contest, but at the last Owain dealt the Black Knight so fierce a blow that the sword cut through helmet and bone to the very brain."



ARTHUR AND THE ROUND TABLE Watercolor by Maximilian von Mann, 1900, based on a 15th-century painting at Runkelstein Castle, Italy

AKG/ALBUM

Cuauhtémoc: The Last Aztec Hero

In 1521 the Spanish overran the Aztec capital, but only after overcoming the furious resistance of its last emperor. Captured, deceived, and tortured, Cuauhtémoc kept fighting to the bitter end.

Brutal, Brave, and Brief

Circa 1495

Cuauhtémoc, son of Emperor Ahuizotl, is born. In 1502 his uncle (or cousin) Moctezuma II becomes ruler of the Aztec Empire.

1519

Moctezuma admits Cortés's troops into Tenochtitlan. Cuauhtémoc, then a military leader, is angered by the Spanish presence.

1520

Moctezuma dies, and the Spanish are driven out. Soon after, Cuauhtémoc is appointed emperor as Spanish forces regroup.

1521

Tenochtitlan is taken by Hernán Cortés, and the Aztec Empire falls. Cuauhtémoc tries to escape by canoe but is captured.

1521-25

Cuauhtémoc governs, in name only, the Aztecs before Cortés imprisons and ultimately executes him for treason.

In the Zócalo in modern Mexico City, the main public square at the heart of the Mexican capital, a bust honors the 11th and last ruler of the Aztec Empire: Cuauhtémoc. His brief reign lasted less than a year, and his death by hanging at the hands of Spanish conquistador Hernán Cortés brought to an end a century of Aztec dominance of central America. Cuauhtémoc's steadfast resistance in the face of the technologically superior Spanish invaders, and his astonishing courage when subjected to torture, inspires many Mexicans to this day.

When Cuauhtémoc was appointed *tlatoani* (ruler) in 1520, the empire was in dire straits. The previous year, Aztec ruler Moctezuma II had allowed Spanish troops under Cortés to enter Tenochtitlan, the Aztec capital, in a calculated act of appeasement. Following the massacre of native worshippers in the Great Temple and the death of Moctezuma in 1520, the Aztec revolted against the invaders. The Spanish fled the city on June 30, 1520, during the so-called *Noche Triste,* or Night of Sorrows.

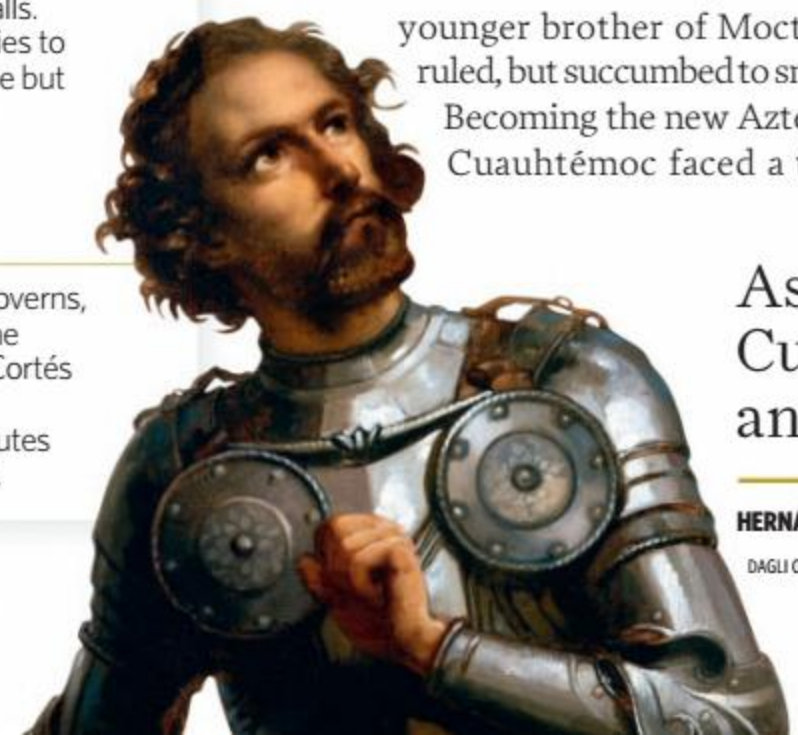
For a few months, Cuitláhuac, younger brother of Moctezuma, ruled, but succumbed to smallpox. Becoming the new Aztec ruler, Cuauhtémoc faced a terrible situation: His people were being ravaged by disease and facing an impending assault by the Spanish, who had strengthened their numbers through powerful alliances with the Aztec's indigenous enemies. A major assault on the imperial capital was imminent.

The Last Emperor

Cuauhtémoc, the son of Emperor Ahuizotl, was born around 1495 in Tenochtitlan, a city surrounded by the waters of Lake Texcoco (after the fall of the Aztec Empire, the lake was drained by the Spanish). The day of the birth coincided with a solar eclipse, which the priests read as an omen. They chose a powerful name for the prince: Cuauhtémoc, which means "descending eagle."

The prince attended the compulsory military school where young Aztec men finished their education, and he soon established a reputation as a strong warrior. Having achieved the rank of *tlacatécatl* (the Aztec equivalent of a general), he led the armies of Moctezuma II in various campaigns. Cuauhtémoc was among the first to become uneasy about Moctezuma's opening of Tenochtitlan to Cortés and his men in November 1519.

Following the massacre in the Great Temple in June 1520, Cuauhtémoc joined



As Cortés drew closer, Cuauhtémoc refused to negotiate any kind of surrender.

HERNÁN CORTÉS, DETAIL FROM AN 1868 OIL PAINTING BY PETER JOHANN NEPOMUK GEIGER

DAGLI ORTI/ART ARCHIVE

CUAUHTÉMOC (LEFT) AND HIS COUSIN ARE TORTURED BY HERNÁN CORTÉS. OIL PAINTING BY LEANDRO IZAGUIRRE, 1893, NATIONAL MUSEUM OF ART, MEXICO CITY

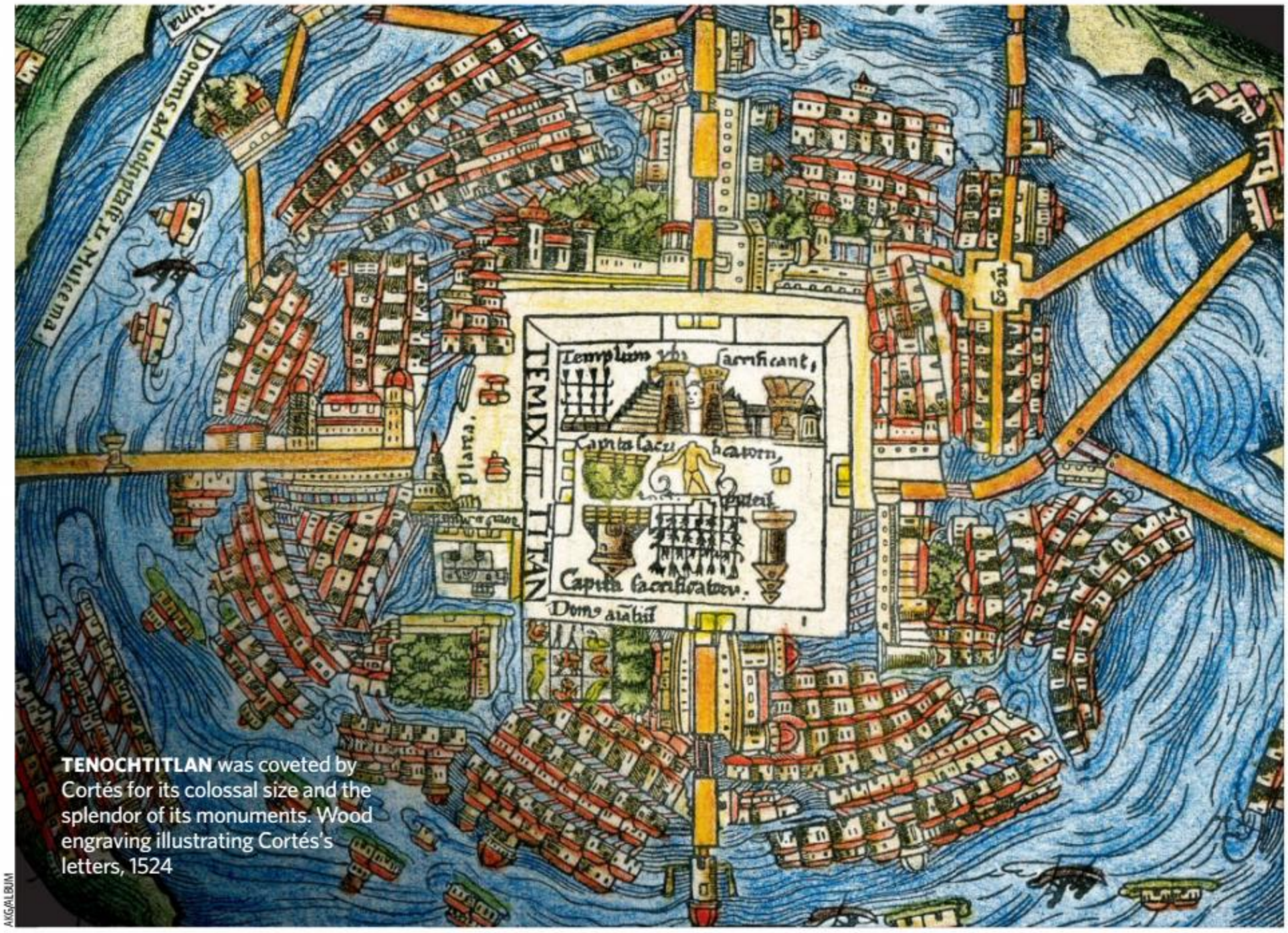
DEA/SCALA, FLORENCE

the growing rebellion against the invaders. When Moctezuma, held hostage by the Spanish, addressed the rebels from the roof of the palace in an attempt to quell the resistance, they allegedly pelted him with stones.

According to a 16th-century chronicle, the Codex Ramírez, the young general Cuauhtémoc exclaimed: "What says the unscrupulous Moctezuma, wife of the Spanish? For that is what he must be called, as with a woman's spirit he handed himself over to them out of pure fear and in saving himself has involved us all? We do not want to obey him, because he is no longer our king, so now we must ensure punishment and retribution for this despicable man."

Later that night, Moctezuma died, although the exact cause of his death has never been definitively identified. Spanish sources claim he died from injuries sustained from the rocks thrown at him by his people, while Aztec sources say the Spanish murdered the hostage king and threw his body from the palace. Following the death of Moctezuma, local forces rose up and drove the Spanish from the city. Following the brief reign of Moctezuma's younger brother, General Cuauhtémoc became the 11th Aztec emperor—and the empire's last hope—in the fall of 1520.

Meanwhile, Cortés had mustered an army outside Tenochtitlan made up of some 900 Spaniards and tens of thousands of indigenous allies. Knowing an attack was coming, Cuauhtémoc ordered the bridges linking Tenochtitlan to the mainland be raised and stockpiled weapons and provisions across the city. As Cortés drew nearer, Cuauhtémoc refused to negotiate any kind of surrender.



TENOCHTITLAN was coveted by Cortés for its colossal size and the splendor of its monuments. Wood engraving illustrating Cortés's letters, 1524

AKG/ALBUM

A Desperate Siege

Starvation and smallpox ravaged Tenochtitlan during the siege, but Cuauhtémoc held strong. Cortés employed brigantines, two-masted sailing ships, as a blockade on the waters of Lake Texcoco, forcing Cuauhtémoc and his men to retreat to Tlatelolco, the city adjacent to Tenochtitlan in the north of the island. Here, Cortés himself later recorded in his letters that "of hunger and thirst they would die as there was nothing to drink except the salt water of the lagoon." Even so, Cuauhtémoc warned his generals that "anyone daring to demand peace would be killed."

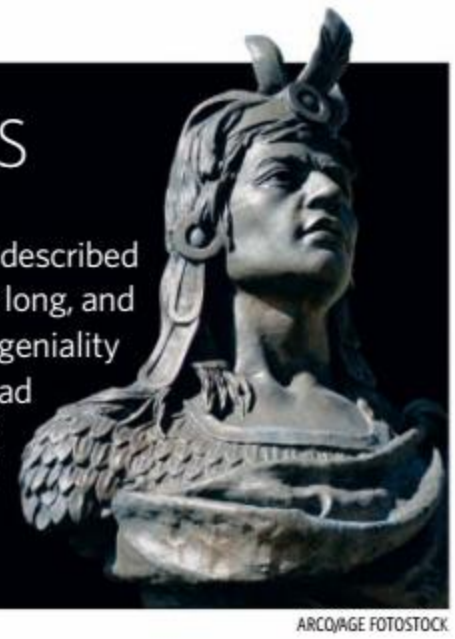
At the end of July 1521, Tenochtitlan was overrun. The temples were destroyed, and bodies filled the streets. Despite the bloodshed, Cuauhtémoc would not yield. In August, as the Spanish and their allies made a final assault on neighboring Tlatelolco, Cuauhtémoc tried to flee in a canoe with his family and some dignitaries. The canoe was spotted, and a brigantine cut off its escape route. Seeing the overwhelming strength of his enemies, who bore down on him with bows and arrows and rifles, Cuauhtémoc finally surrendered.

The emperor was taken to Hernán Cortés, who had been watching the showdown from the palace. There, Cuauhtémoc is reported to have said: "Ah captain! I have now done everything in my power to defend my kingdom and liberate it from your hands, and as fortune has not favored me, take my life, as is just,

THROUGH SPANISH EYES

SPANISH CHRONICLER Bernal Díaz del Castillo described Cuauhtémoc's appearance: "His face was rather long, and cheerful; he had fine eyes, and . . . could express geniality or, when necessary, a serious composure . . . He had many women as his mistresses, the daughters of chieftains, and two wives who were tribal leaders."

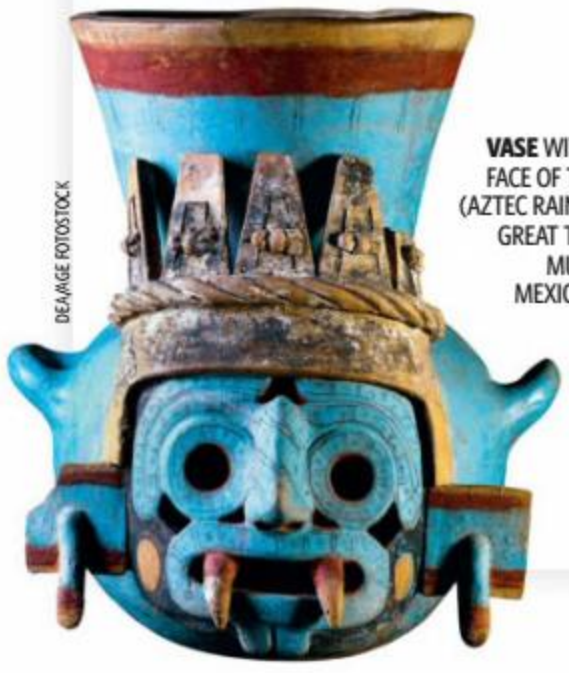
BUST OF CUAUHTÉMOC, ZÓCALO, MEXICO CITY



ARCO/AGE FOTOSTOCK

SETTLING TRIBAL SCORES

THE TLAXCALA, who had allied with Cortés against the Mexica (the Tenochtitlan-based Aztec ruling class) depicted the surrender of Cuauhtémoc in an illustrated history known as the Linen of Tlaxcala. In this later copy of the linen (right) produced in the 19th century, Cortés, seated, receives the captured emperor. Above them is written in Náhuatl: "With that, the Mexica were finished."



DEA/MGE FOTOSTOCK

VASE WITH THE FACE OF TLALOC (AZTEC RAIN GOD), GREAT TEMPLE MUSEUM, MEXICO CITY

CUAUHTÉMOC SURRENDERS TO HERNÁN CORTÉS. 19TH-CENTURY COPY OF PANEL 48 OF THE LINEN OF TLAXCALA

BRITISH LIBRARY/MGE FOTOSTOCK

and so doing you will finish the Mexican kingdom." At first, Cortés wanted to placate Cuauhtémoc and so offered to recognize him as leader of the Aztec, in return for tribute. He pledged that the Aztec would be allowed to reconstruct their city and continue with their lives.

Cortés soon broke his promises to the ruler. Although Cuauhtémoc continued as governor of Tenochtitlan in name, little by little he noted that any real power he enjoyed was being transferred to his cousin Tlacotzin, who was viewed by Cortés as the more pliable man. Cortés by this time deeply feared Cuauhtémoc, regarding him as "bellicose." He suspected, with justification, that the gifted general would be capable of leading another rebellion. To quell his fears, he ordered the ex-emperor to be kept in prison in Coyoacán, near Tenochtitlan, where he kept a close eye on him.

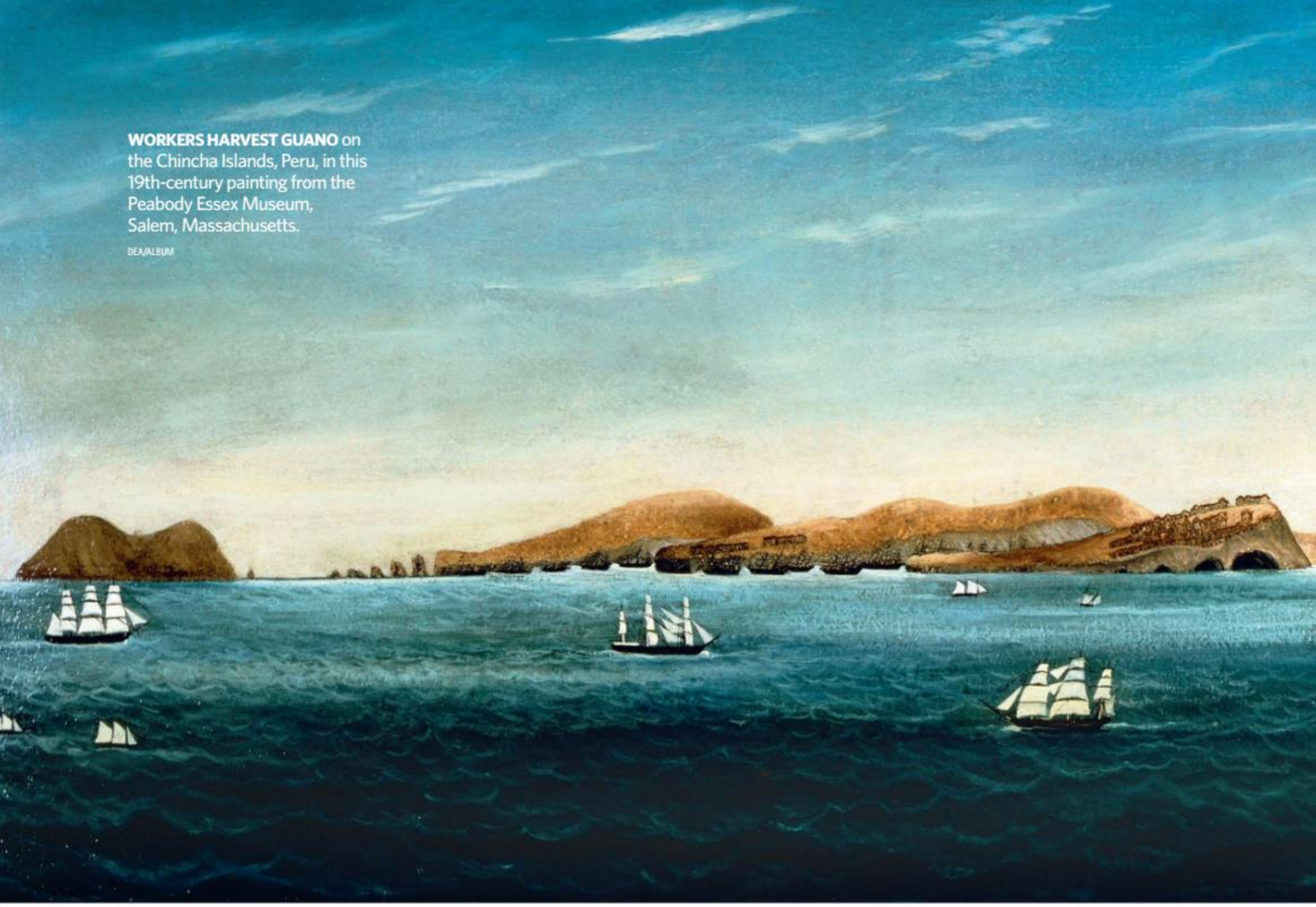
Torture and Death

Treasure was uppermost in the Spaniards' minds, especially the rumored cache abandoned in Tenochtitlan during the Night of Sorrows. In time, when other tactics had failed, Cortés resorted to torture to encourage Cuauhtémoc to cooperate with the hunt for the lost gold. Cuauhtémoc and his cousin had their feet plunged into boiling oil. In the middle of this torment, when, in desperation, his cousin urged him to give up the whereabouts of the treasure, Cuauhtémoc coolly observed, "Am I enjoying some kind of delight or bath?" Finally though, Cuauhtémoc did talk, telling Cortés that shortly before the city had fallen, the gods had revealed that the end of Tenochtitlan was inevitable. At this point, he said, he had all the gold tossed into the lake. Despite extensive searches by the Spanish, no treasure was ever found.

In October 1524 Cortés was forced to leave Tenochtitlan and travel to Honduras to quash an ongoing rebellion there. For protection, he took Cuauhtémoc and his high officials with him so they could not stir up a revolt in Tenochtitlan. During the trip, a noble from the city of Tlatelolco told Cortés that Cuauhtémoc was plotting a new revolt against him.

In early 1525 Cortés ordered his men to interrogate Cuauhtémoc and his cousin on suspicion of treason and then ordered them to be executed. Before he was hanged, Cuauhtémoc's final words to the conquering Cortés are said to have been: "I knew what it was . . . to trust to your false promises; I knew that you had destined me to this fate since I did not fall by my own hand when you entered my city of Tenochtitlan."

—Isabel Bueno



WORKERS HARVEST GUANO on the Chincha Islands, Peru, in this 19th-century painting from the Peabody Essex Museum, Salem, Massachusetts.

DEA/ALBUM

Gaga for Guano! The Oddest Boom of the 1800s

In the 19th century a frenzy for better fertilizer sent global demand for guano soaring, sparking colonial wars, American expansion, envious fortunes, and cruel exploitation.

When the first shipment of Peruvian guano arrived at the docks of Southampton, England, in 1840, the stench reportedly left the townspeople reeling. Few recognized it at the time, but this noxious cargo was poised to become the hottest, if not the smelliest, commodity of the mid-19th century. Across both Europe and the United States, population growth was straining the limits of agriculture, but guano (a polite term for dried bird excrement) had exactly the right fertilizing properties to revive depleted soil. Guano's near-miraculous properties caused demand to skyrocket, triggering a financial boom that would shape diplomacy and trigger wars. For some, the craze brought fabulous riches; for all too many, however, it brought misery and financial ruin.

Highs and Lows

Guano contains nitrogen, phosphorus, and potassium, essential nutrients for healthy soil. In 1803, during his journey around South America, the Prussian naturalist Alexander von Humboldt had noted that even in the desert coastal areas of Peru, plants fertilized with guano grew exuberantly. Its use in Peru was the outgrowth of centuries of agricultural practice, its properties recognized by the

AKG/ALBUM

FINE FEATHERED FERTILIZER

EVERY DAY FOR MILLENNIA, seabirds on the islands and islets of Peru each deposited roughly 1.5 ounces of excrement. The dry climate preserved the nutrients in these mountains of dung. Consisting of 9 to 21 percent nitrogen, 4 percent phosphorus, and about 2 percent potassium, guano was a boon for the nutrient-starved fields of Europe and America.

SAILORS ON A GUANO ISLAND IN PERU, 1880 ENGRAVING

pre-Columbian civilizations of the Moche and the Inca. The name guano comes from *huanu*, which in the Inca language, Quechua, means "dung."

The guano shipped to Southampton in 1840 originated on the Chincha Islands, some 14 miles off the Peruvian coast and the nesting grounds for millions of seabirds. Vast flocks of seagulls, pelicans, cormorants, gannets, and others gather there to feast on the schools of fish that teem in the waters cooled by the Peru Current. Formerly named for that same scientist who noted the properties of guano, the Peru Current flows north along the west coast of South America, creating favorable conditions for marine life, which in turn provides a cornucopia for hungry birds. Generations of them had left excrement layers over a hundred feet deep on undisturbed islands. The arid conditions of these places kept the fertilizing properties intact (too much rain would wash away the nutrients and lower their concentration). Thanks to its desert conditions, the Chincha Islands contained what many considered to be the source of the finest guano on the planet.

UIG/ALBUM

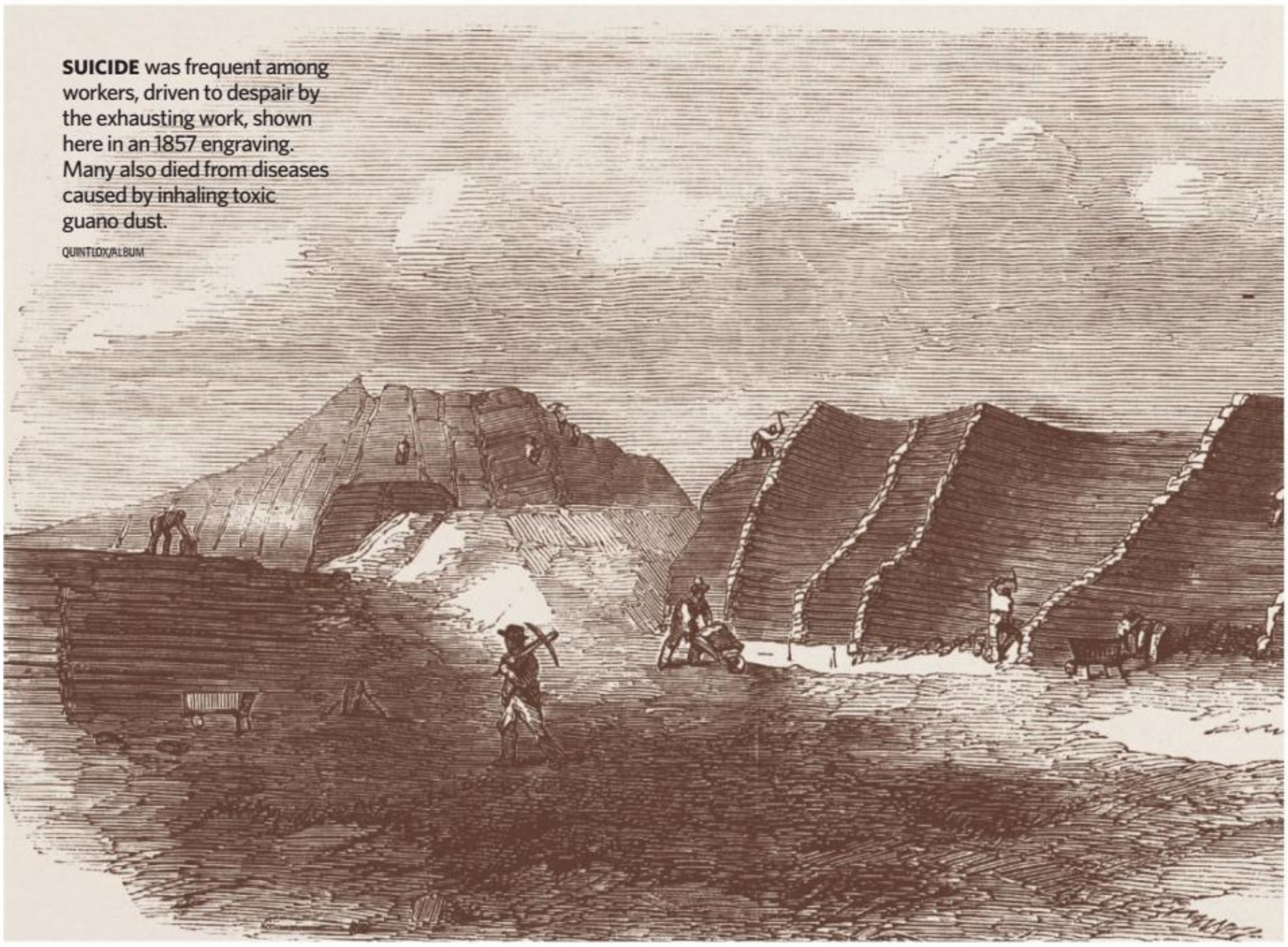
WILLIAM GIBBS, OIL PAINTING BY EUGÈNE-FRANÇOIS-MARIE-JOSEPH DEVÉRIA, 1850, TYNTESFIELD ESTATE, SOMERSET, ENGLAND

> William Gibbs's firm reaped profits of 80,000 to 100,000 pounds sterling a year.

Winners and Losers

Experiments carried out in 1840 demonstrated that Peruvian guano was far superior to the slurry traditionally used to fertilize British crops. Alert to the potential, the Peruvian government allowed British and French companies, as well as local ones, to collect and trade this valuable commodity in return for a cut of the profits, which were considerable: Merchants who bought guano at 12 pounds sterling per ton could sell it for double that amount. A single guano shipment could bring in 100,000 pounds profit for merchants.

The British entrepreneur William Gibbs had business interests in Peru that enabled him to enter the guano game very early. He became the principal exporter to Britain and grew fabulously wealthy as a result. Between 1842 and his death in the 1870s, William Gibbs's firm reaped profits of 80,000 to 100,000 pounds sterling a year.



SUICIDE was frequent among workers, driven to despair by the exhausting work, shown here in an 1857 engraving. Many also died from diseases caused by inhaling toxic guano dust.

QUINTLOX/ALBUM

For a while, guano was the linchpin of the Peruvian economy. In the late 1840s it accounted for some 5 percent of tax revenues; between 1869 and 1875 it had risen to around 80 percent. Peru was living off bird excrement: From 1840 to 1870, Peru exported 12 million tons of it.

Yet, many others were dying from it. Removing solidified bird feces was an arduous task, and not only because of the stink and the searing heat. When the workers, using picks and shovels, opened up breaches in the guano in order to extract it, they inhaled noxious dust containing pathogens that caused respiratory illnesses such as histoplasmosis, as well as severe dysentery caused by the deadly *Shigella* bacteria.

Nobody in Peru wanted to work on the guano islands, and nobody could be forced to do so as the country had abolished slavery in 1854. In fact, some of the income from guano was being used to pay off the former slave owners. In the absence of a local workforce to harvest the guano, Chinese indentured servants were brought in. But the conditions proved unendurable even for these hardy workers. As replacements, laborers were sought from Pacific islands such as Easter Island. Often recruited using underhand tactics, many islanders effectively became prisoners of the guano press-gangs.

Reaping the Results

The boom sparked a frenetic search for new guano reserves. In 1843, for example, British traders started to exploit a 25-foot-deep layer covering the island of Ichaboe, off the coast of West Africa. By 1845 up to 450 boats and thousands of men

THE SWAN LEGACY

ONE TERRITORY appropriated under the U.S. Guano Islands Act (1856) was the Swan Islands, off the coast of Honduras. An enduring symbol of American regional influence, the islands hosted the anti-Castro broadcaster Radio Swan in the 1960s, and were later used as a base for U.S.-sponsored rebels opposed to the Sandinista regime in Nicaragua.

AMERICAN ADVERTISEMENT FOR PERUVIAN GUANO

ALAMY/MD

A CULTURE DESTROYED

Faced with reluctance on the part of Chinese indentured servants to harvest guano, Peruvian merchants sought labor elsewhere. In 1862 the Peruvian ship *Bella Margarita*, scouring Polynesia in search of manual labor for sugarcane plantations and guano islands, anchored at Easter Island. It returned to Peru with 154 islanders on board, later sold by the captain for large sums of money, despite the official prohibition on slavery. Although some islanders came willingly, there is ample evidence that they were misled as to the nature, and period, of the work they would be assigned—an underhand practice that became known as "blackbirding." According to the Chilean consul in the Peruvian port of Callao, the Easter Islanders did not understand the language in which their "contracts" were written. In total, around 1,400 islanders were taken, estimated at around 34 percent of the population. Only about 15 ever made it back. On their reintegration into society, these returnees spread smallpox, further depleting the population and contributing to its cultural and social collapse.

ENGRAVING OF EASTER ISLAND FROM 1797 DEPICTING A VISIT BY FRENCH EXPLORER JEAN-FRANÇOIS DE GALAUP. DESPITE SUCH CONTACT, THE ISLAND'S CULTURE REMAINED LARGELY UNTOUCHED BY COLONIALISM UNTIL THE 1860S.

ORONOZ/ALBUM

fought over whatever was left. The next spring, when the last sack of guano had been loaded, the island was abandoned.

The United States also wanted more access to cheaper guano but was frustrated by established British interests in Peru. As farmers formed an influential sector of his electorate, U.S. president Millard Fillmore included references to guano in his State of the Union address in 1850, indicating he would do all he could for the "purpose of causing that article to be imported into the country at a reasonable price."

The U.S. government took more formal action in August 1856 when the U.S. Congress passed the Guano Islands Act, which authorized American citizens to take possession of any island containing deposits of guano, provided it was not inhabited or under the jurisdiction of another state. The imperial expansion was, in part, prompted by guano fever and motivated the United States to take over its first territories in the Pacific and Caribbean, such as the atolls of Midway and Johnston in the Pacific, and Navassa Island in the Caribbean. To this day, the latter is still the subject of an ownership dispute between the United States and Haiti.

The island also evidenced the darker side of the guano trade. Revolting against barbaric working conditions, in 1889 black guano workers on Navassa Island rose up and killed five of their supervisors. Three of the ringleaders were condemned to death. But in one of the first demonstrations of political mobilization by the U.S. African-American community—spearheaded by the fraternal societies such as the Order of Galilean Fishermen —their appeal reached the American president himself, Benjamin Harrison, who commuted the men's death sentences to life imprisonment.

In the end, however, dwindling reserves took the air out of the guano bubble. Even though Spain occupied the Chincha Islands in 1864 to recoup the debt it claimed Peru owed them, the guano boom was winding down. When Norway began the production of artificial nitrogen fertilizer in 1905, the guano era was over.

The influence of the boom, however, is not. The 1856 legislation that granted U.S. control over guano-bearing islands has been applied as recently as 2014—but this time it was for preservation, not profit. The United States relied on the 1856 act to expand the size of the Pacific Remote Islands Marine National Monument, now the world's largest marine reserve. About 490,000 square miles are protected now, largely thanks to the 19th-century craze for guano.

—Enrique Meseguer

ANTONY AND CLEOPATRA

Taking Liberties With the Queen

Although the Egyptian ruler may well have been shrewd and level-headed, Shakespeare reimagined her as a manipulative femme fatale. "Age cannot wither her," he wrote in *Antony and Cleopatra,* and his iconic creation has colored history ever since.

CLEOPATRA (right), in a relief at the Temple of Hathor, Dendera, Egypt, stands with her son, Caesarion (far right), fathered by Julius Caesar. After her suicide in 30 B.C., Caesarion was executed on the order of Octavian.

GEORGE STEINMETZ

Hollywood legend says that when the American director Cecil B. DeMille offered the actress Claudette Colbert the title role in the 1934 film *Cleopatra,* he asked her: "How would you like to be the wickedest woman in history?" DeMille's harsh assessment is just one of the many scathing judgments of Cleopatra, queen of Egypt from 51 to 30 B.C., and last of the Ptolemaic rulers. Dante placed her in the second circle of hell for carnal lust, and George Bernard Shaw dubbed her "a silly little girl."

GRANGER/ALBUM

WILLIAM SHAKESPEARE
CIRCA 1610, NATIONAL PORTRAIT GALLERY, LONDON

Perhaps the most famous depiction of Cleopatra was created by William Shakespeare, whose 1607 play *Antony and Cleopatra* paints her as a sinister marvel of seductive eloquence, capable of destroying great Roman leaders and vast empires.

Shakespeare's primary ambition was to write captivating drama rather than historically accurate biography, so it's no surprise that his Cleopatra is an accretion of myth and legend. But the ancient authors who claim to document the truth about Cleopatra often seem just as fanciful as Shakespeare. The best ancient account of her life comes from the Greek biographer Plutarch, whose *Life of Mark Antony,* written more than a century after Cleopatra's death, was the main source that Shakespeare consulted for his play. Many aspects of the "true" Cleopatra are impossible to establish, but the popular image of Cleopatra as a cunning seductress is largely a Shakespearean creation made from borrowed and embellished bits of Plutarch's narrative.

The Conqueror and the Queen

Following the death of Alexander the Great, the Ptolemies founded a new dynasty in Egypt in 305 B.C. By the time Cleopatra was born, around 69 B.C., most of the Ptolemies' greatest achievements had taken place centuries before. The Library of Alexandria and the Great Lighthouse of Alexandria both date to the third century B.C., as do the dynasty's scientific breakthroughs, such as the calculation of the Earth's circumference by Eratosthenes. As a Ptolemy herself, Cleopatra was heir to an illustrious cultural tradition, and she could count Alexander the Great among her ancestors.

Life and Loves in Egypt

305 B.C. Ptolemy, former bodyguard and general under Alexander the Great, founds the Ptolemaic dynasty in Egypt.

Circa 69 B.C. Cleopatra VII is born. She will ascend to the throne and co-rule Egypt with her younger brother Ptolemy XIII in 51 B.C.

48 B.C. After being forced by her brother to flee to Syria, Cleopatra raises an army and returns to battle for power. Julius Caesar arrives in Alexandria to broker a peace.

47 B.C. After becoming Julius Caesar's lover, Cleopatra returns to power. She will later give birth to their son, Caesarion.

Plutarch probably exaggerated somewhat when he claimed that Cleopatra could speak nine languages, but other sources confirm that she was a gifted polyglot. In addition to her native Greek, she also spoke Egyptian, which made her popular among the native Egyptian population. She may also have spoken some of the native languages of Syria, Persia, and the Near East. Plutarch compared her voice to "an instrument of many strings, with which she could pass from one language to another."

In 48 B.C. a 21-year-old Cleopatra was feuding with her 13-year-old brother over the throne. Eager to secure the grain supply from fertile Egypt for the Roman world, Julius Caesar and his men docked at Alexandria just in time to act as arbitrators in the dispute. Although Caesar could have seized the empire for Rome, or put the young Ptolemy on the throne, he opted instead to support Cleopatra.

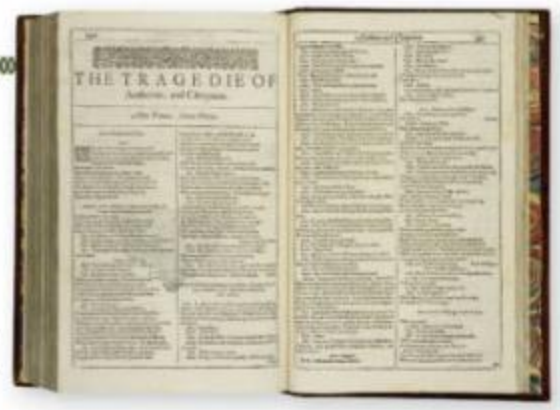
Plutarch related her now famous ruse to enter the palace where Caesar was quartered: She concealed herself in a rolled-up carpet and a servant delivered her as a gift. After she was smuggled inside, Caesar found her utterly convincing and captivating. He lingered in Egypt

44 B.C. Cleopatra makes a state visit to Rome with Caesarion. While she is there, Julius Caesar is assassinated.

41 B.C. Mark Antony summons Cleopatra to meet him at Tarsus in modern-day Turkey. The pair become lovers.

31 B.C. Cleopatra and Mark Antony's joint naval forces engage with Octavian at Actium, and are routed.

30 B.C. Mark Antony commits suicide, followed shortly by Cleopatra. Octavian has Caesarion killed.


THE TRAGEDIE OF

OPENING PAGE OF *ANTONY AND CLEOPATRA*, FIRST FOLIO, 1623, FOLGER SHAKESPEARE LIBRARY, WASHINGTON, D.C.

COURTESY FOLGER SHAKESPEARE LIBRARY

United in Death

CLEOPATRA AND ANTONY struggled for a decade against Octavian over control of Egypt, only to be defeated at the Battle of Actium in 31 B.C. When Octavian's forces entered Alexandria the next year, Antony took his life. Cleopatra barricaded herself in her mausoleum where she would, it is said, take her own life by snakebite. In his play, Shakespeare includes the detail that her body was reunited with that of Mark Antony: "She shall be buried by her Antony," Octavian orders. "No grave upon the earth shall clip [embrace] in it / A pair so famous." Archaeologists have not yet found this famed tomb—but not for lack of trying. Excavations have occurred off the shores of Alexandria, where much of the old city has been submerged, and at the temple of Taposiris Magna on the outskirts of the city.

MARK ANTONY ON AN AUREUS, STRUCK IN GAUL

AKG/ALBUM

"THE DEATH OF CLEOPATRA"
BY GUIDO CAGNACCI, PAINTED 1659-1663, VIENNA MUSEUM OF FINE ARTS, AUSTRIA

G. NIMATALLAH/DEA/ALBUM

THE FAIREST OF THEM ALL?

DESPITE BEING ONE of history's first sex symbols, nobody knows for certain what Queen Cleopatra looked like. Archaeologists have found no true-to-life depiction of her face. Egyptian likenesses are idealized, and Roman coins with her profile are unflattering, each creator revealing their own bias toward Egypt's last pharaoh. As Plutarch described her, Cleopatra was beguiling, but her looks were not "the sort that would astound those who saw her; interaction with her was captivating, and her appearance, along with her persuasiveness in discussion and her character that accompanied every interchange, was stimulating." Perhaps it is this "blank canvas" that compels artists to try to depict Cleopatra: To date, she has been the subject of five ballets, seven films, 45 operas, 77 plays, and hundreds of paintings.

CLAUDETTE COLBERT AS THE EGYPTIAN QUEEN IN CECIL B. DEMILLE'S 1934 MOVIE *CLEOPATRA*

SILVER SCREEN/GETTY IMAGES

with the young queen long after the dynastic dispute was resolved in her favor, enjoying a sightseeing pleasure cruise up the Nile, and fathering a son with her.

Facts and Fictions

In Shakespeare's play, Cleopatra's story begins several years after the assassination of Julius Caesar in 44 B.C., an event already portrayed in the eponymous 1599 tragedy, *Julius Caesar*. When *Antony and Cleopatra* opens, she and Caesar's ally Mark Antony are already enraptured lovers luxuriating in Alexandria as turmoil shakes the broader Mediterranean.

But Shakespeare cannot resist a flashback to their first meeting, also a prominent scene in Plutarch's work. Summoned to see Antony at Tarsus in 41 B.C. (Antony was also interested in securing Egyptian grain for Rome), Cleopatra arrived on a barge dressed as Venus while beautiful boys, costumed as cupids, fanned her. Sensuous flute music and sweet-smelling incense completed the multisensory scene.

Shakespeare incorporated almost every element of Plutarch's description—the purple sails, the perfumed air, and the melodies of flutes. Cleopatra is presented not as a strategic ruler, but as a sexual force that bewitches Antony.

While Plutarch's Cleopatra is shrewd, Shakespeare's Cleopatra is corrupt. She is "cunning past man's thought," a "serpent," a "strumpet," a "whore," and the "false soul of Egypt," to name a few choice insults. Shortly after meeting her, the "ne'er-lust-wearied" Antony is soon transformed into "a strumpet's fool." Antony's closest adviser, Enobarbus, essentially warns Cleopatra that her presence will distract Antony and lead to a loss at the Battle of Actium in 31 B.C.

Despite stubbornly insisting on a sea battle when his land troops were superior, Antony blames his defeat at Actium by his rival Octavian on Cleopatra: "Triple-turn'd whore! / 'tis thou / Hast sold me to this novice," he tells her. Long before this final defeat, he already describes Cleopatra as a habit he must kick: "I must from this enchanting queen break off," he declares. Shakespeare's male characters regard Cleopatra as deadly as the serpent she uses to kill herself at the play's close.

Many writers have noted that decisions called strategic when made by men are often branded manipulative when made by women. This is especially true when the sources on a subject are entirely male, as in Cleopatra's case. What might otherwise be remembered as her achievements—the first pharaoh to introduce coins of different denominations to Egypt, the first Ptolemy to learn the language of the local Egyptians, and an expert negotiator who bargained effectively for territory and bitumen with client kings—are often overshadowed by her supposed sexual manipulations of powerful men. To his credit, Shakespeare has Cleopatra voice a complaint that aptly summarizes the predicament of any powerful female ruler: "Be it known, that we, the greatest, are misthought / For things that others do."

—*Nick Romeo*

Egyptian Hieroglyphics

LOST IN TRANSLATION

Once the sacred script of ancient Egypt, hieroglyphics fell into obscurity, and understanding of its meanings almost disappeared. Through passionate efforts, dedicated scholars never gave up trying to crack the code behind the mysteries of Egyptian writing.

JAVIER MARTÍNEZ BABÓN

A TOWERING MYSTERY

Hieroglyphs adorn the obelisk that stands at the Luxor Temple in Egypt, completed by Ramses II in the 13th century B.C. Its twin was removed and taken to Paris in 1833, a decade after French scholar Jean-François Champollion cracked the hieroglyphic code that had baffled scholars for centuries.

RICHARD MASCHMEYER/GETTY IMAGES

FASCINATION WITH EGYPT

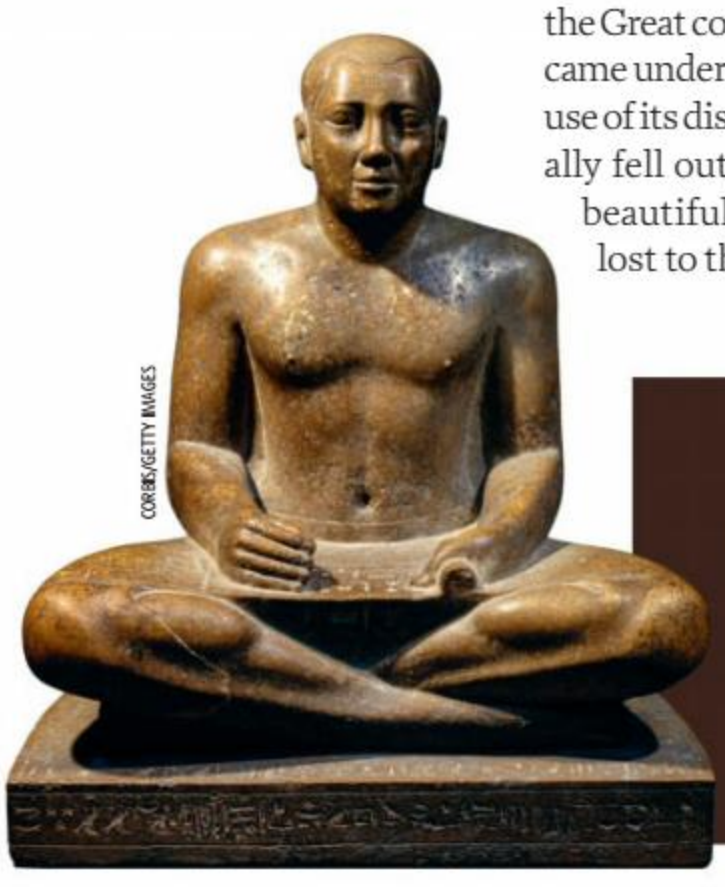
In the 1800s, as the race to decipher hieroglyphs gathered pace, artists flocked to Egypt to satisfy European demand for Egyptian monuments. Lithograph by David Roberts, Newberry Library, Chicago

BRIDGEMAN/ACI

Massive pyramids, the silent Sphinx, and engraved hieroglyphics—nothing seems quite as eternal as ancient Egypt. Egyptian civilization dominated the Mediterranean world for thousands of years, becoming an iconic presence in the Western mind. It is difficult to imagine that any aspect of this magnificent culture could disappear, but that is almost what happened after Alexander the Great conquered Egypt in 332 B.C. After Egypt came under Greek and then Roman control, the use of its distinctive hieroglyphic writing gradually fell out of favor until the meanings of its beautiful symbols and shapes were almost lost to the sands of time.

Even at the height of Egypt's power, only a few people, typically the priests and government officials, understood how to read and write hieroglyphics. The characters—sometimes depicting an object or standing for different sounds and letters—helped formed the basis of the religious culture and political stability of Egypt. Hieroglyphic writing was mostly reserved for inscriptions on stone monuments and reliefs, often adorning the walls of temples and tombs.

Meaning "sacred carving" in Greek, the word "hieroglyph" reflects a much earlier Egyptian term that meant something like "the god's words." This connection between hieroglyphics and the sacred probably led to the ultimate decline in their usage and meaning. As the influence



CORBIS/GETTY IMAGES

SIGNS OF THE TIMES

CIRCA A.D. 390
The last verifiable Egyptian text is written in hieroglyphics. The rise of Christianity causes the ancient writing to fall out of favor because of its association with the old Egyptian religion.

FIFTH CENTURY
Horapollon, a Greek Egyptian, writes the *Hieroglyphica*, which offers interpretations of 189 hieroglyphs. Some have been proved correct, while most miss the mark.

THE PRIESTLY SCRIBE PEDIAMENOPET, SEVENTH CENTURY B.C., MUSEUM OF EGYPTIAN ANTIQUITIES, CAIRO

SYMBOLS OF PAGANISM

The Temple of Isis at Philae, where many of the Roman-era inscriptions were later defaced by Christians. The new, anti-pagan mood hastened the decline of hieroglyphic writing across Egypt.

JAN WLODARCZYK/AGE FOTOSTOCK

15TH CENTURY

Horapollon's treatise is discovered in modern-day Greece and taken to Florence, where it will be translated into Latin and other languages.

17TH CENTURY

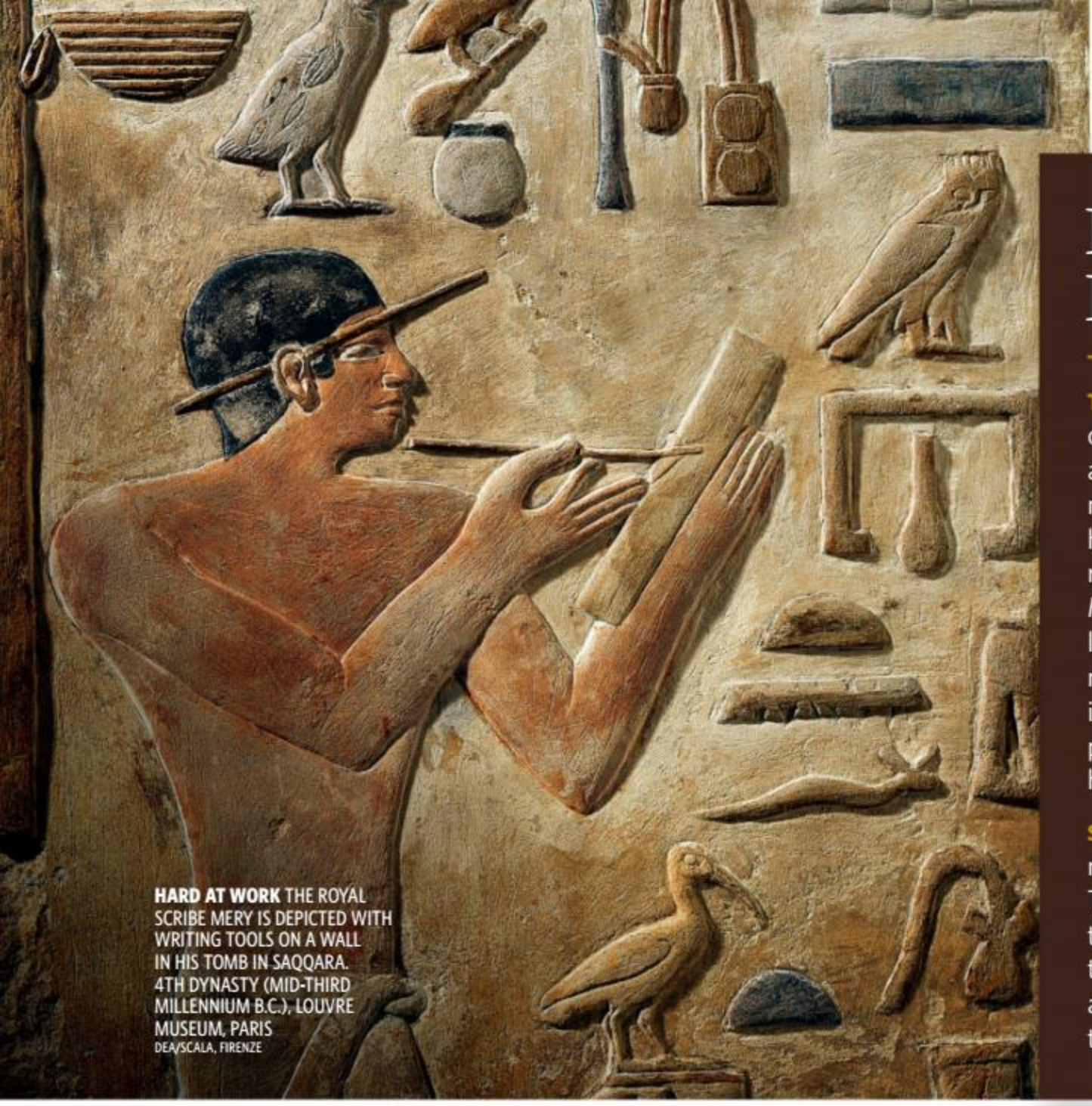
Athanasius Kircher, a Jesuit, suggests there is a relationship between hieroglyphs and the Coptic language, an insight that will greatly aid scholars' understanding of hieroglyphs.

1799

The Rosetta Stone is discovered in Egypt. It bears the same text in hieroglyphic, Demotic, and Greek, and will prove the key to crack the code.

1822-1824

Jean-François Champollion deciphers the Rosetta stone. He publishes a book explaining the workings of the entire hieroglyphic writing system.



HARD AT WORK THE ROYAL SCRIBE MERY IS DEPICTED WITH WRITING TOOLS ON A WALL IN HIS TOMB IN SAQQARA. 4TH DYNASTY (MID-THIRD MILLENNIUM B.C.), LOUVRE MUSEUM, PARIS
DEA/SCALA, FIRENZE

Missing Identities

THE NAME HORAPOLLON is a combination of the names of the Egyptian god Horus and the Greek god Apollo. It was a common name in fifth-century Egypt, which has given rise to intense scholarly debates regarding the identity of the author of the *Hieroglyphica*. A 10th-century Byzantine lexicon written in Greek mentions two men called Horapollon: a writer who lived in the first half of the fifth century and a philosopher documented in the second half of the same century.

SCHOLARS do not agree on which of these men may have penned the *Hieroglyphica*. The scarcity of information has given rise to a third theory: that the book was written entirely by Philippus, who is presented as the Greek translator of the text in the treatise's full title.

ONE OF PHARAOH'S MANY NAMES

Inscribed on this funerary figurine (ushabti) is an alternative name for Tutankhamun, written in a cartouche: *nesu-bity* (Lord of the Two Lands).

CORBIS/GETTY IMAGES

of Christianity spread across the Roman Empire, including Egypt, in the fourth century A.D., the writing system became negatively associated with paganism. Scholars believe that the last known hieroglyphic inscription was made sometime in the 390s, as the last few of the priestly caste were dying out. Scholars would be chasing after their knowledge for centuries to come.

The First Attempts

The first major attempt to decipher hieroglyphic characters was published barely a century after understanding of their meaning had disappeared. Dating from the second half of the fifth century, the *Hieroglyphica* is credited to a Greek Egyptian, Horapollon. He wrote the original text in Coptic, successor to the ancient Egyptian language which was written in the Greek alphabet. It consists of two books: The first examines 70 hieroglyphs; the second, an additional 119. The version of the *Hieroglyphica* that has survived to the present day is a Greek translation written by a scribe named Philippus, who is believed to have made some additions of his own. Some modern scholars even believe Philippus could be the original author.

Horapollon, or whoever the author was, refrains from identifying an underlying grammatical structure for hieroglyphics. Instead, he focuses on individual hieroglyphs themselves. The text attributes symbolic meanings to the characters, more often than not based on ingenious speculation. Modern scholarship has confirmed that some of the author's pronouncements were correct, but that his methods for arriving at them were suspect.

For example, the character depicting a hare, Horapollon argues, is linked to the idea of opening. Modern scholars agree that while the meaning was correct, Horapollon's methods were not. Horapollon's explanation is that a hare's "eyes are always open." But modern scholars have found that the relationship between opening and rabbits was, in fact, phonetic, not symbolic: Both were pronounced "wn" in the ancient Egyptian language.

Horapollon also argued, correctly, that the hieroglyph for "son" was a goose. His explanation for its origin, however, seems very tenuous: He claimed that geese are known for the love they feel for their goslings, often sacrificing themselves to hunters to save their sons' lives.

IN THE NAME OF THE KING

Columns in the second courtyard at Medinet Habu, Thebes. Toward the base of the column in the foreground, sacred serpents—uraei—flank cartouches containing the name, in hieroglyphs, of Ramses III.

JOCHEN SCHLENKER/CORDON PRESS

PROTECTING THE QUEEN

Colorful characters (above) adorn the tomb of Nefertari, wife of Ramses II. Hieroglyphs on the walls of her grave, located in the Valley of the Queens near Luxor, proclaim that the god Osiris will secure a place for her in the afterlife.
ARALDO DE LUCA

Many of the *Hieroglyphica*'s other interpretations are less successful and bear no resemblance to today's interpretations of Egyptian writing. For example, the text claims that ancient Egyptians used an ant to express the concept of "knowledge," supposedly because ants knew where people kept their secret winter food stores. Later studies revealed, however, that ants are not among the insects included in hieroglyphs from the pharaonic era.

Another symbol common in hieroglyphics was the horned viper, a venomous snake common in Egypt. Following the same sort of logic, Horapollon claimed that the viper meant "a woman who hates her partner" because he believed female vipers killed their mates after copulation. Horapollon's interpretation is colorful and dramatic but incorrect. Science has now established that the desert vipers are not sexual cannibals, while modern scholars later identified the serpentine symbol as something more masculine: the pronoun "he" or the possessive "my," as well as the concept of "father."

S. VANNINI/GETTY IMAGES

CARTOUCHE BEARING THE NAME OF TUTANKHAMUN, MUSEUM OF EGYPTIAN ANTIQUITIES, CAIRO

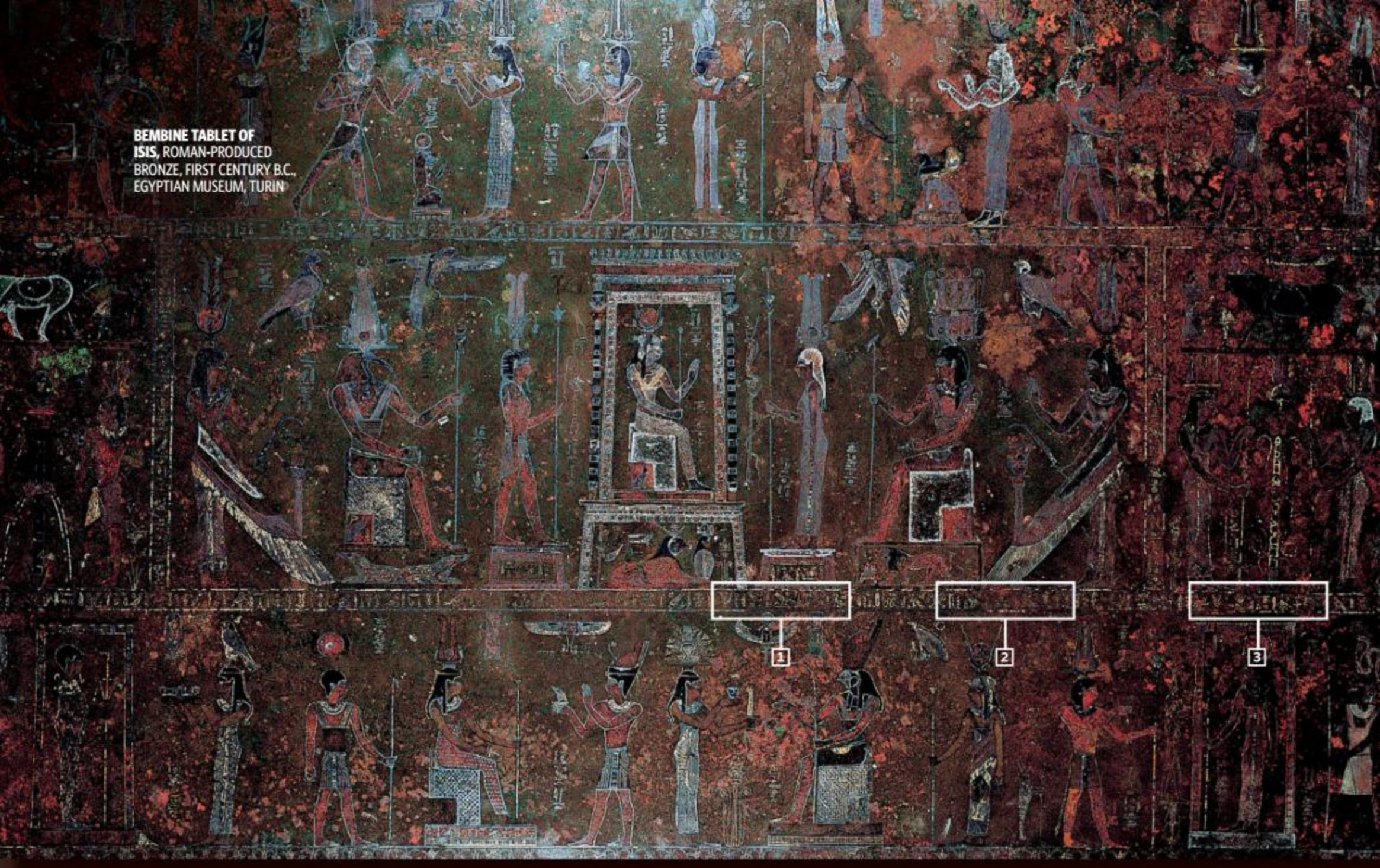
> "The Sphinx has been killed . . . and all the secrets of the Hieroglyphic Art . . . fully comprehended by me"
> —Athanasius Kircher (1666-67)

One Step at a Time

The *Hieroglyphica* was itself considered lost until 1419, when an Italian trader found a copy on the Greek island of Andros and took it to Florence. Greek and Latin versions were printed, followed in the next century by translations in several European languages. Renewed interest in antiquity, including Egypt, catapulted this obscure work to the top of the Renaissance reading list.

Hieroglyphics attracted particular attention in cities like Rome where they were clearly visible on monuments brought back from Egypt during the Roman Empire. Horapollon's treatise, with its theory that hieroglyphs were a solely symbolic language often used to express religious and moral ideas, seems to have struck a chord during the Renaissance. Humanist scholars, such as Marsilio Ficino in Florence, believed that long-forgotten, divine secrets lay encoded in the ancient Egyptian symbols. He wrote: "When Egyptian priests wished to signify divine mysteries, they did not use the small characters of script, but the whole images of plants, trees or animals, for God has knowledge of things not by way of thought but like the pure and firm shape of thing itself."

The fashion for a purely symbolic interpretation of hieroglyphs continued through the 17th century. The most prominent author in this field was the German Jesuit Athanasius Kircher, who published various books on Egypt in the mid-1600s and is sometimes regarded as the father of Egyptology. His interpretations of Egyptian inscriptions were as erroneous as his predecessors for he clung to the stubborn belief that hieroglyphics were a form of picture writing. However, Kircher's work did yield some successes. He was the first to have the insight that Coptic was the successor of the ancient Egyptian language, a development that would prove invaluable to future scholars. Kircher also had unbounded confidence in his own abilities: "The Sphinx has been killed, her riddles answered, and all the secrets of the Hieroglyphic Art, its rules and methods and principles are by the Influence and Grace of the Divine Spirit fully comprehended by me."



BEMBINE TABLET OF ISIS, ROMAN-PRODUCED BRONZE, FIRST CENTURY B.C., EGYPTIAN MUSEUM, TURIN

FMAE/SCALA, FIRENZE

WERNER FORMAN/GETTY IMAGES

THE BEMBINE TABLET

THIS SINGLE SHEET of cast bronze (above) appears to be dedicated to the goddess Isis—the main figure seated in the center—and features what seems to be hieroglyphic writing. Popularized in the 1500s by Archbishop Bembo, for whom it is named, the Bembine Tablet with its mysterious markings was published in 1559, and it caused something of a wild goose chase. Scholars believed these markings to be true hieroglyphs, dating back to Egypt's earliest periods. Athanasius Kircher, for instance, used it as the basis of his project to decipher hieroglyphs. In truth, the symbols were an artistic imagining, with no relation to real hieroglyphs. Historians now believe the Bembine Tablet is not even Egyptian in origin, but was made by Roman craftsmen during the period of Emperor Augustus in the first century B.C.

STATUE OF GODDESS ISIS ENTHRONED, CIRCA 530 B.C., MUSEUM OF EGYPTIAN ANTIQUITIES, CAIRO

1

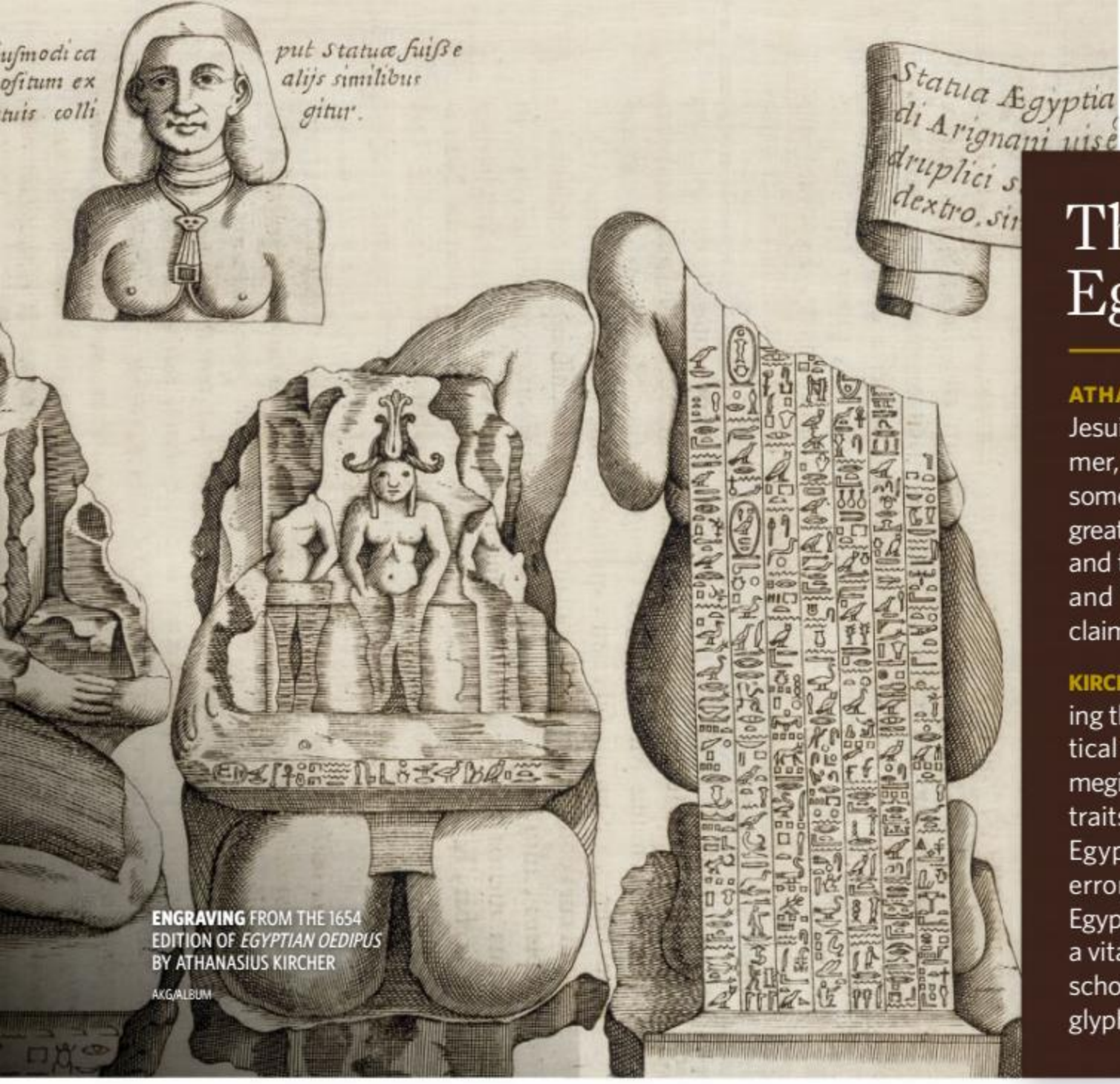
2

3

BNF

Stuff and Nonsense

Many of the hieroglyphs (above) from the Bembine Tablet reflect the fanciful notions of the craftsman and are not found in Egyptian writing. The symbols are arbitrarily joined together and do not form a coherent grammar.



ENGRAVING FROM THE 1654 EDITION OF *EGYPTIAN OEDIPUS* BY ATHANASIUS KIRCHER

AKG/ALBUM

The First Egyptologist

ATHANASIUS KIRCHER, a 17th-century Jesuit, was a mathematician, an astronomer, and a geologist, and is regarded by some as the world's first Egyptologist. His great passion was to decode hieroglyphics, and two of his works—*Egyptian Oedipus* and *The Egyptian Language Restored*—claimed to have done so.

KIRCHER PUBLISHED his translations, claiming that hieroglyphs were rooted in mystical writings attributed to Hermes Trismegistus, a syncretic figure who combined traits of the Greek god Hermes and the Egyptian god Thoth. Despite this large error, Kircher did successfully connect Egyptian writing with the Coptic language, a vital identification that would help later scholars in their quest to crack the hieroglyphics code in the 19th century.

ATHANASIUS KIRCHER
17TH-CENTURY ENGRAVING, BIBLIOTHÈQUE NATIONALE, PARIS

CULTURE-IMAGES/ALBUM

Kircher's method, however, was as subjective and fanciful as those of his predecessors. In his "translation" of the inscriptions found on the Obelisk of Domitian, and incorporated into Bernini's famous fountain on the Piazza Navona in Rome, he wrote: "There is allusion to a waterspout, thus preserving the life of things intact. The amulets and pentacles that follow would contribute greatly to this as they are based on supernatural principles. They have the power to obtain the goods one wishes in life." Like many of his contemporaries, Kircher did not consider that hieroglyphs might stand for sounds as well as the object depicted.

The Final Piece

By the 18th century, reflecting the principles of Enlightenment scholarship, attempts at deciphering hieroglyphs became more rigorous. Kircher's insight that they were related to the Coptic language helped steer efforts toward a philological rather than mystical solution to the symbols. It was not, however, until the discovery of the Rosetta Stone, unearthed by French troops accompanying Napoleon on his great Egyptian campaign in 1799, that the key to the age-old puzzle was found. Inscribed with an edict by King Ptolemy V from 196 B.C., the Rosetta Stone stunned the world not so much for what the text said, but for the three scripts in which the same text was written: Demotic (a cursive form of hieroglyphic writing), Greek, and hieroglyphics.

Comparing the three versions opened up the possibility of determining the meaning of the characters. Even so, progress was not instantaneous. Investigation would continue until 1822, when French Egyptologist Jean-François Champollion had a breakthrough. He finally cracked the Rosetta text and determined that each character could stand for different things: alphabetic letters, syllables, concepts, and entire objects. In finding the key to the Rosetta Stone, Champollion enabled researchers to unlock the meanings of the hieroglyphs on all ancient Egyptian monuments. His discovery revealed the rich beauty of the Egyptians' sacred writing, and deepened historians' knowledge of the eternal culture of pharaonic Egypt. ■

EGYPTOLOGIST **JAVIER MARTÍNEZ BABÓN** HAS WORKED ON NUMEROUS ARCHAEOLOGICAL SITES IN EGYPT, MOST RECENTLY THE TEMPLE OF THUTMOSE III.

THE MISSING PIECE

Inscribed in 196 B.C., the Rosetta Stone bears the same text in hieroglyphics, Demotic, and Greek, providing scholars with the key to solving the hieroglyphics puzzle. British Museum, London

BRITISH MUSEUM/SCALA, FLORENCE

WIN, LOSE, OR DRAW: HORAPOLLON'S *HIEROGLYPHICA*

In the fifth century A.D. the mysterious author known as Horapollon presented meanings for Egyptian hieroglyphs by framing each symbol as a specific idea. Sometimes he got it right, and other times, he was very wrong. Several editions of his treatise, rediscovered by an Italian collector in 1419, were published in the 16th century and featured illustrations in the form of elaborate tableaus, like the three shown here from a 1543 French edition.

SCALA, FLORENCE

FRESCO BORDERED BY HIEROGLYPHS, LOGGIA DELLE MUSE, PALAZZO TE, MANTUA, BUILT FOR MARQUIS FEDERICO II GONZAGA BETWEEN 1524 AND 1534

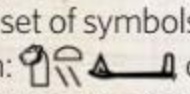
The Lion: Symbol of Strength?

BNF

The *Hieroglyphica* Answer

When they want to express "courage" the Egyptians paint a lion, as that animal has a large head, fiery eyes, a round face, and a mane like lightning. To write "physical strength" they draw the front part of the lion because his forelegs are his most vigorous limbs.

The True Meaning Revealed

Horapollon's description is of the hieroglyph  , which does indeed show the front quarters of a lion, but it means "beginning," not "physical strength." The latter concept is expressed with a set of symbols that includes the head of a leopard, not a lion:  or the head duplicated:  However, in later times, the lion's head became confused with that of a hippopotamus, which also meant "strength."

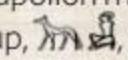
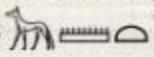
The Dog: Symbol of the Judge?

BNF

The *Hieroglyphica* Answer

When they want to refer to a judge, they put royal vestments next to a picture of a dog. Like the dog, who . . . gazes intently on the images of the gods, so likewise . . . a judge also is used to see the king naked, and on this account they add the royal garment.

The True Meaning Revealed

Horapollon may have based his meaning on a hieroglyphic group,  , which actually does mean "judge." The dog sign  is selected for its sound rather than its meaning. However, the "royal vestments" Horapollon mentions in his description are not found in hieroglyphs. One writer has suggested that Horapollon based it on the symbols  , which mean "supreme judge" and refer to the position of vizier.

The Sun, the Snake, and the Moon: Symbols of Eternity?

BNF

The *Hieroglyphica* Answer

They draw a sun and a moon to write "eternity" because these bodies are eternal. They also draw a snake called an "uraeus" or "basilisk," with the tail hidden beneath the body, clinging to the gods. They say eternity is revealed through this animal because only this snake is immortal.

The True Meaning Revealed

The hieroglyphs for sun  and moon  are related to timekeeping and agriculture, or, in the case of sun, with pharaonic names. Their combination does not mean "eternity." Scholars believe Horapollon was thinking of ideograms developed later, in which sun  and moon  represented "every day" or "day and night, always." The snake biting its tail was a phonetic, not symbolic, character for "eternity."

CARVING OUT A CAREER
This ivory carving of a young man grasping a lotus flower, a symbol of eternity, was found at Nimrud during excavations in the 1950s led by Agatha Christie's second husband, Max Mallowan. The photo of the happy couple (opposite) was taken in 1946, just as Mallowan was poised to begin the greatest project of his career.

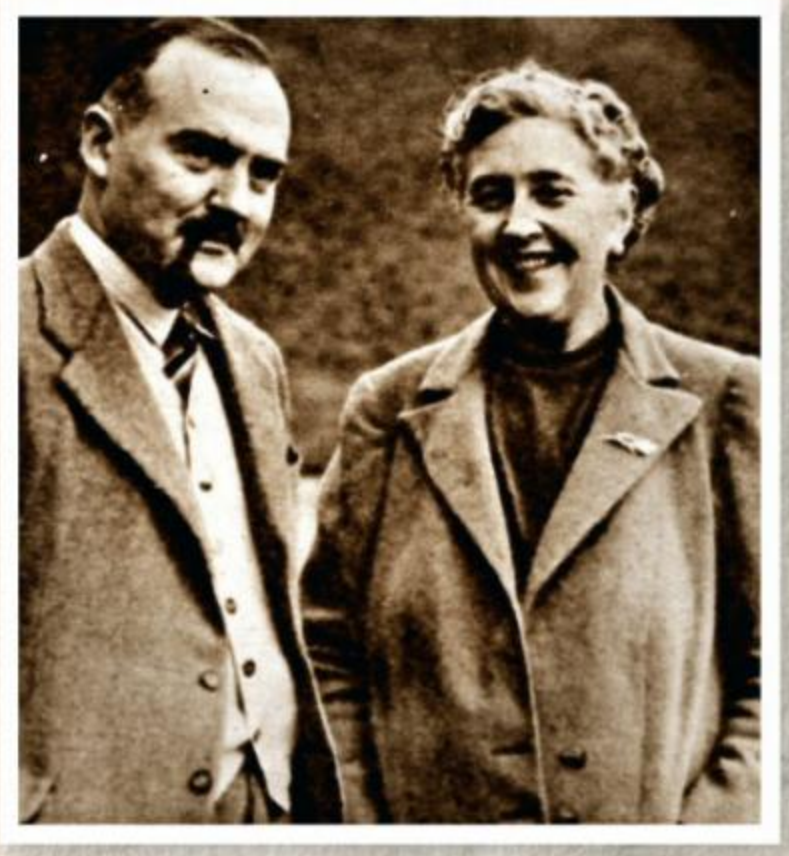
IVORY: BRIDGEMAN/ACI
CHRISTIE & MALLOWAN: MARY EVANS/SCALA, FLORENCE

Mystery, Murder, and Marriage

AGATHA CHRISTIE IN MESOPOTAMIA

AFTER A DEVASTATING DIVORCE, AGATHA CHRISTIE EMBARKED ON A FATEFUL TRIP TO IRAQ. THERE, SHE FELL IN LOVE AGAIN—NOT ONCE, BUT TWICE. HER WHIRLWIND ROMANCE WITH ARCHAEOLOGY AND AN ARCHAEOLOGIST BEGAN A NEW CHAPTER IN THE LIFE OF THIS BEST-SELLING AUTHOR.

IGNACIO MÁRQUEZ ROWE



ASHURNASIRPAL'S MIGHTY CAPITAL

Known as Calah, Nimrud emerged as a powerful capital of the Assyrian Empire under the ninth-century B.C. rule of Ashurnasirpal II. Above, a re-creation of his palace in Nimrud as rendered by Austen Henry Layard, British Museum, London

BRITISH MUSEUM/SCALA, FLORENCE

When crime novelist Agatha Christie wrote, "We found the woman in the well! They brought her in on a piece of sacking, a great mass of mud," she was not describing the murder victim in her latest mystery. The detectives trying to identify the woman were not the Belgian detective Hercule Poirot nor the English dowager Jane Marple.

The woman in question was not a person at all, but an artifact retrieved as part of an archaeological dig. Christie was describing the ivory mask, now nicknamed the Mona Lisa of Nimrud, which was discovered in 1952 during the excavations that were being carried out in the ancient Assyrian capital of Calah in modern-day Iraq—known now by the name of Nimrud.

Christie's second husband, Max Mallowan, was the lead investigator, and the "detectives" in this case were not police officers, but archaeologists. Christie was assisting Mallowan in the collection, cleaning, and storage of artifacts on the dig. More than 20 years earlier, Christie had fallen in love with both him and archaeology among the ruins of Mesopotamia.

THE PEN AND THE SPADE

1929

Following her divorce, the best-selling mystery writer Agatha Christie travels to Iraq. She visits the Ur dig and becomes friends with Leonard Woolley, the director of the site, and his wife, Katharine.

URG/ALBUM

1930

On a second trip to Iraq, Christie meets the young archaeologist Max Mallowan, who is working as an assistant to Leonard Woolley at the archaeological excavations in Ur. Christie and Mallowan get married just a few months later.

LOTUS FLOWER IVORY FROM NIMRUD

Endings and Beginnings

Over the course of her life, Agatha Christie published 66 detective novels. Roughly two billion copies have been sold worldwide, making her the best-selling novelist of all time. Her path to greatness was not without heartache. She discovered her first husband, Archie Christie, was having an extramarital affair in 1926. Devastated by the betrayal, Christie suffered a nervous breakdown, during which she disappeared. A massive police search operation was launched and, over a week later, the runaway author was found in a hotel in northern England. Two years later, Christie's marriage to Archie was over.

At age 39, Agatha decided that a solitary holiday in the West Indies might help her recover from the breakup. But two days before leaving, she had dinner at a friend's house in London where she met a couple who had recently returned from Baghdad. Christie was utterly seduced by their tales of the Middle East: the bazaars of Mosul and Basra and the fascinating ruins of ancient Ur, which, thanks to the sensational discoveries unearthed by British archaeologist Leonard Woolley, were being widely reported in the newspapers.

The most obvious way to travel there was by steamboat—but there was another option: the

ON THE CUSP OF CELEBRITY

Christie in her 30s, pictured (below) a few years before the publication of her third Poirot thriller, *The Death of Roger Ackroyd,* in 1926, a critical success that earned her celebrity.

ALAMY/ACI

1932-33

Mallowan takes his first position as director of excavations at Tall Arpachiyah, Iraq, accompanied by Christie. She writes much of the novel *Murder on the Orient Express* on the dig itself.

1935-37

Mallowan and Christie work in Syria at the settlements of Chagar Bazar and Tall Birak. In her memoir *Come, Tell Me How You Live,* Christie recalls the trials and wonders of living in such remote locations.

1947

Mallowan becomes director of the British School of Archaeology and will lead a multiyear excavation of Nimrud in Iraq. Over the next decade, his team will unearth thousands of Assyrian ivories.

LIFE ON AN EXCAVATION

VEXING VERMIN

In her memoir, *Come, Tell Me How You Live,* Agatha Christie recounted her experiences in Syria with her husband, the archaeologist Max Mallowan. The writer applied good humor to describing the numerous discomforts that they endured during the expedition, one of these being their lodgings at the Syrian settlement of Chagar Bazar. On arriving at the house they had rented there, Christie and Mallowan found it "innocent of whitewash, highly unclean," and still occupied by several families and their animals. After a lot of talking, "women, children, hens, cats, dogs—all weeping, wailing, screaming, shouting, abusing, praying, laughing, meowing, clucking and barking—depart slowly from the courtyard like some fantastic finale in an opera." But settled into their quarters that same night, hoards of rats skulked around them. They stopped up the holes in the bedroom, whitewashed the house, and brought in a cat. The rat problem was solved, but the situation deteriorated again with the arrival of fleas. Christie wrote: "Anointing beds with carbolic merely stimulates the fleas to even greater displays of athletics. It is not, I explain to [Mallowan], so much the bites of the fleas. It is their tireless energy, their never ending hopping races round and round one's middle that wears one out. Impossible to drop off to sleep when fleas are holding the nightly sports round and round the waist."

CHRISTIE AT CHAGAR BAZAR

This painting by Dora Collingwood shows the writer seated in the expedition house in Chagar Bazar, Syria, surrounded by artifacts unearthed from the Bronze Age settlement.

BRIDGEMAN/ACI

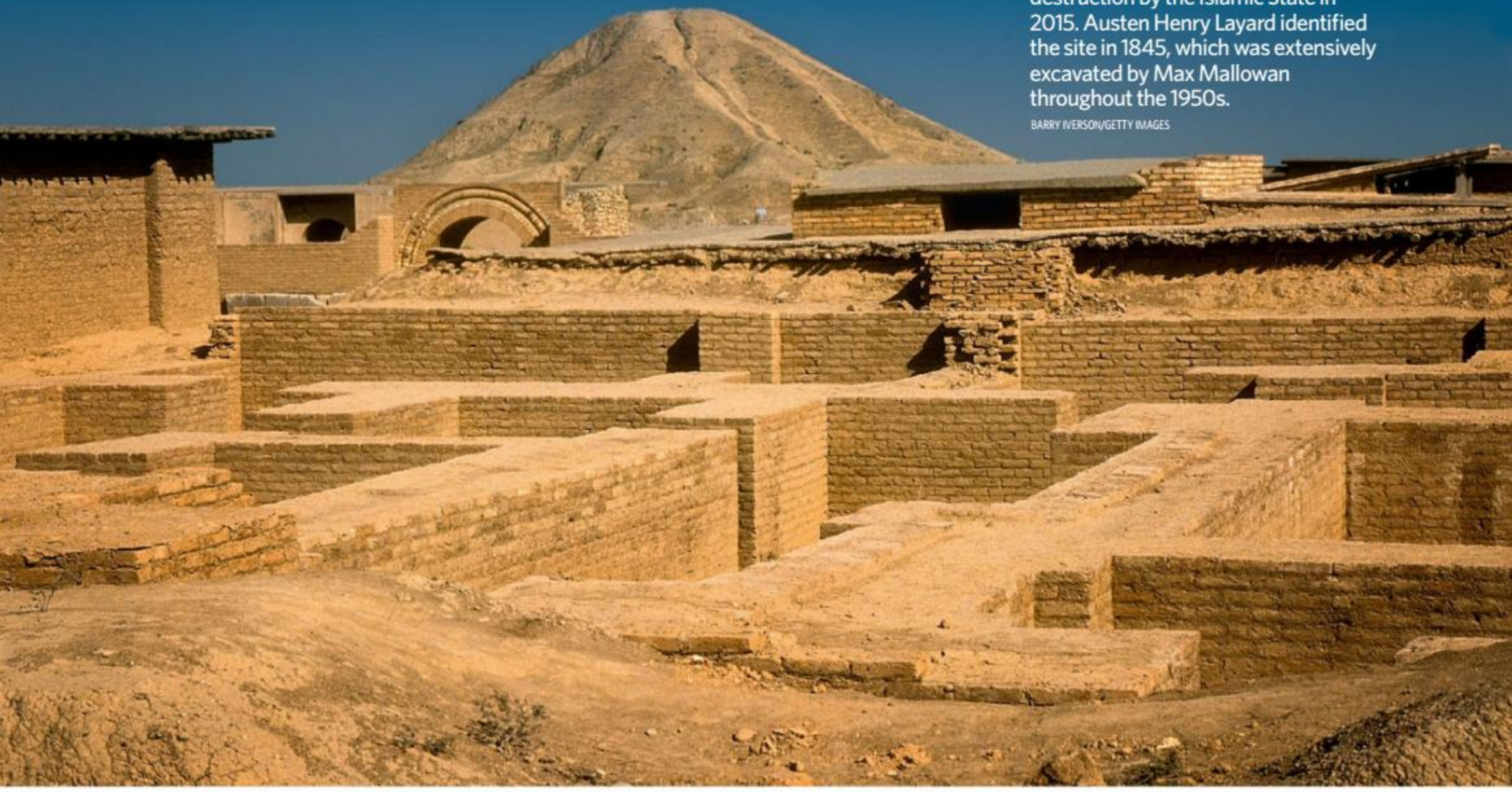
Orient Express, the train that took travelers to Baghdad via Milan and Istanbul. The prospect of such a journey was a turning point in Christie's life. The next day, she canceled her ticket to Jamaica and bought one for Baghdad.

Already a well-known author by the late 1920s, Christie received a steady stream of invitations from the British colonial population when she arrived. But their games of bridge, tennis, and cricket bored her. She longed to escape from the things that reminded her of England and to explore the rich culture and illustrious history of Iraq. After a few days in Baghdad, she set off alone on a trip to the site of Ur, the great capital of the kings of Sumeria from the middle of the third millennium B.C. It was the perfect remedy, as she later recalled:

> I fell in love with Ur, with its beauty in the evenings, the ziggurat standing up, faintly shadowed, and that wide sea of sand with its lovely pale colors of apricot, blue and mauve, changing every minute. I enjoyed the workmen, the foremen, the little basket boys, the pick men—the whole technique and life. The lure of the past came to grab me. To see a dagger slowly appearing with its gold glint, through the sand was romantic. The carefulness of lifting pots and objects from the soil filled me with a longing to be an archaeologist myself.

> "The carefulness of lifting pots and objects from the soil filled me with a longing to be an archaeologist myself." —*Agatha Christie*

During this first trip to Ur, Christie met Leonard Woolley, the director of the excavation, and his wife, Katharine. A close friendship developed between the two women, which grew in part from Katharine's fascination with the author's work. She had been enthralled by Christie's novel *The Murder of Roger Ackroyd,* published



THE FRAGILE GLORY OF NIMRUD
A ziggurat rises behind the ruins of the ancient Assyrian city, before its destruction by the Islamic State in 2015. Austen Henry Layard identified the site in 1845, which was extensively excavated by Max Mallowan throughout the 1950s.

BARRY IVERSON/GETTY IMAGES

three years earlier. Later, after Christie returned from the Iraqi desert, she hosted the Woolleys at her home in Chelsea, London. In turn, they proposed that she join them when they returned to the dig in Ur. Christie needed no persuading and joined them in 1930.

Love Among the Ziggurats

On this second visit to the ancient Sumerian site, Agatha Christie first met Max Mallowan, Leonard Woolley's assistant. Thirteen years her junior, the two got to know each other over the course of the season and fell in love. Six months later, the young archaeologist became the writer's second husband.

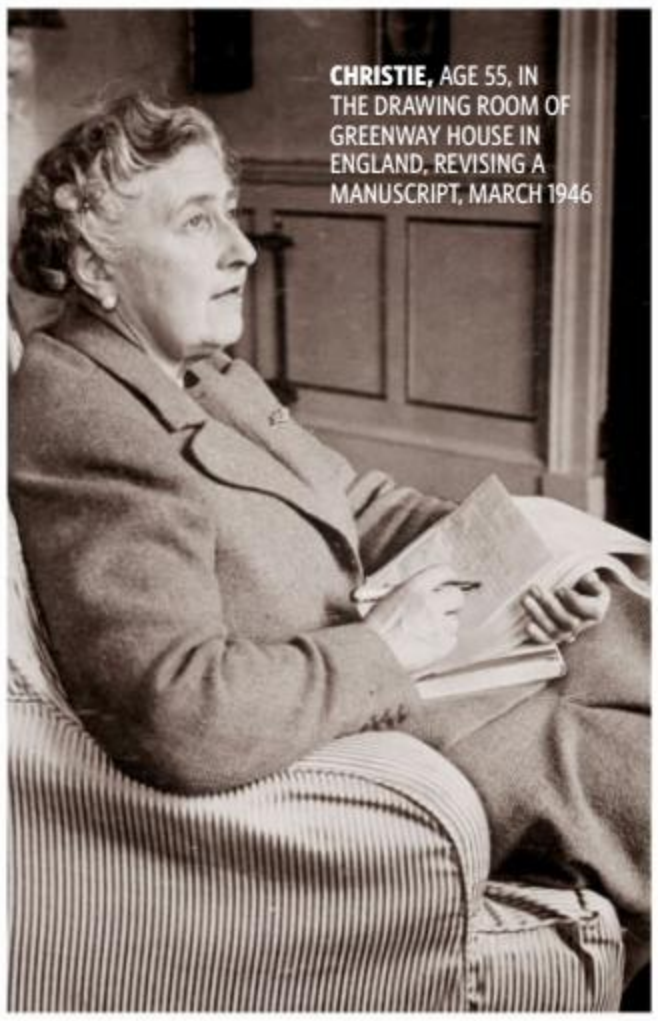
From then on, leaving aside the interlude imposed by the Second World War, Agatha Christie would spend long seasons at various excavation sites in Syria and Iraq, accompanying her husband's expeditions. She worked on restoring pieces of pottery, inventorying finds, and photographing artifacts. The long, exhausting journeys and austerity of life on a dig proved to be no obstacle to her writing, and enriched her murderous plots. While Mallowan was working near Nineveh at Tall Arpachiyah, a Neolithic settlement dating from the sixth millennium B.C., Christie wrote her celebrated 1934 novel *Murder on the Orient Express*. Dedicated to Mallowan, it was inspired by the many journeys she had taken on that remarkable train to Baghdad.

Throughout the 1930s and 40s, Mallowan continued his rise, emerging from Woolley's shadow to become a director in his own right. Christie's writing career exploded as she prolifically published novel after novel. Many of her new works, such as 1936's *Murder in Mesopotamia* and 1937's *Death on the Nile*, were colored by her new experiences with Mallowan and the world of archaeology.

After Tall Arpachiyah, Mallowan went on to direct expeditions at sites in modern-day Syria,

MOTHER AND CHILD
This small ivory plaque, carved in Phoenician style, is one of many discovered by archaeologist Max Mallowan in 1951 at the bottom of a well in Nimrud. It depicts a cow suckling its calf. Cleveland Museum of Art

BRIDGEMAN/ACI

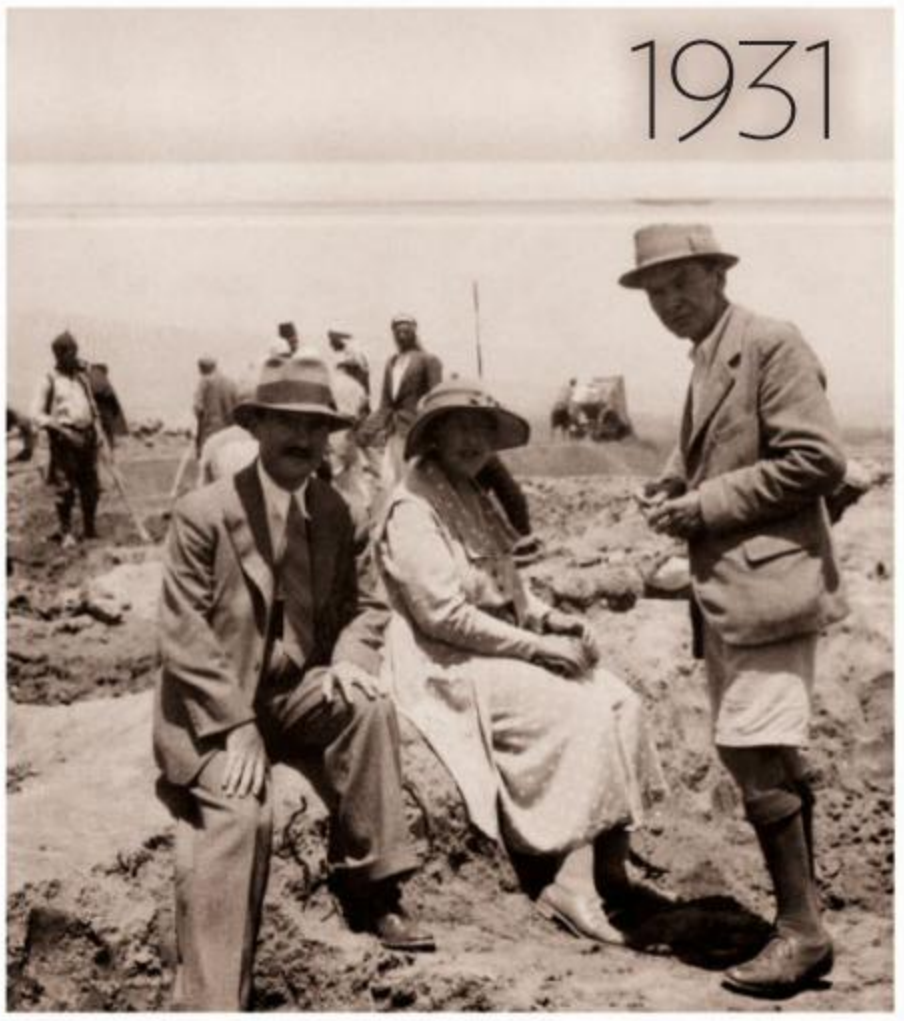


SSPL/MGE FOTOSTOCK

INSPIRATION FOR MURDER

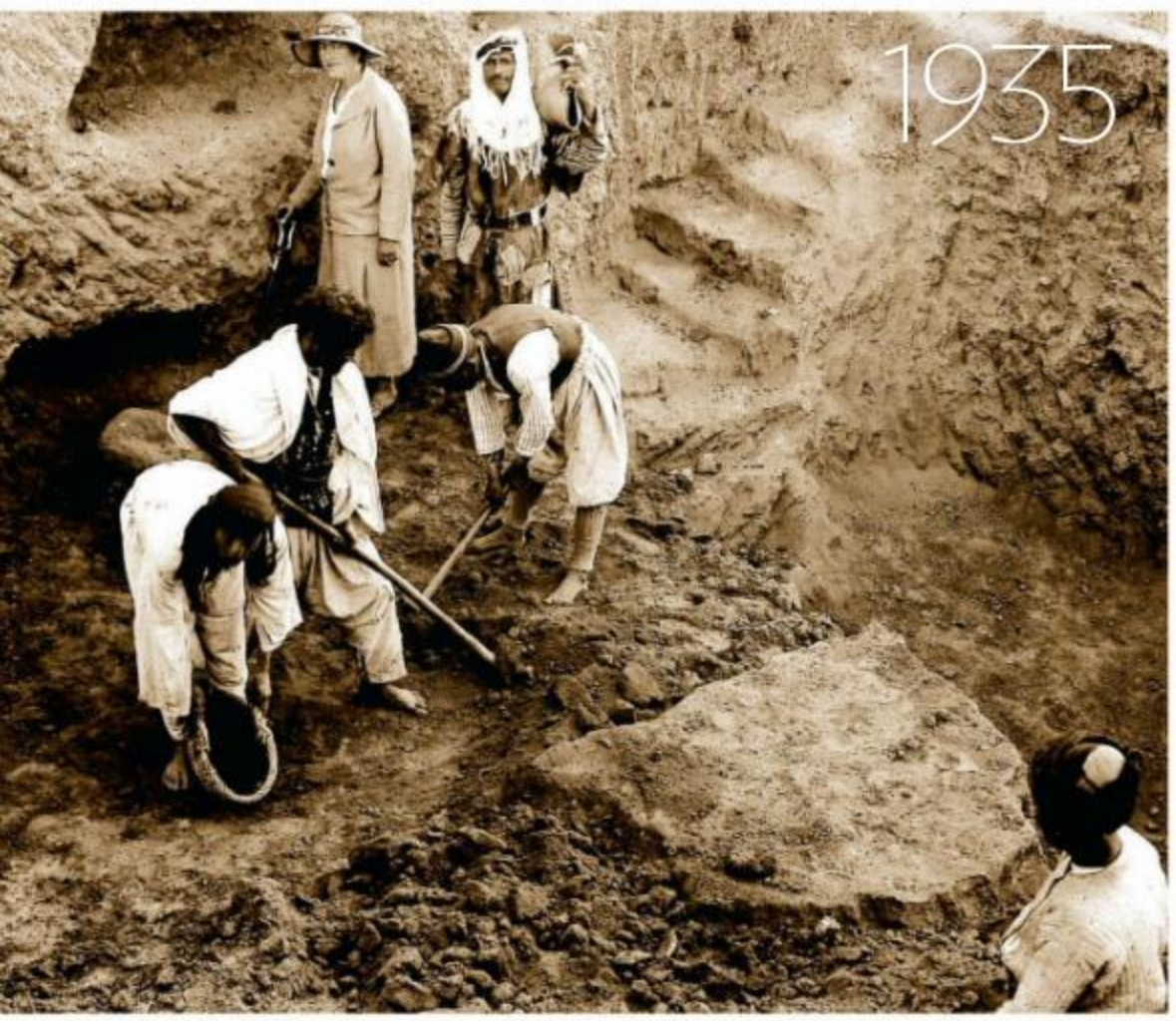
Christie's experiences in Syria and Iraq directly inspired the 1936 thriller *Murder in Mesopotamia*. Her friend Katharine, the wife of Ur archaeologist Leonard Woolley, served as the model for the murder victim, Louise, who is the wife of the fictional excavation director. The services of Poirot are called for when Louise is found dead—a possibly unnerving plotline for Katharine, who had developed a close friendship with Christie. In a subsequent Christie novel, *Death on the Nile* (1937), Poirot explains how archaeology inspires his sleuthing: "In the course of an excavation, when something comes up out of the ground, everything is cleared away very carefully all around it. You take away the loose earth, and you scrape here and there with a knife until finally your object is there, all alone, ready to be drawn and photographed with no extraneous matter confusing it."

ALAMY / ACI



1931. NEWLYWEDS IN UR
Christie got to know Mallowan in Ur in 1930, and they married soon after. The photo shows the couple in Ur, accompanied by Leonard Woolley, standing on the right.

1933. BACK TO IRAQ
When this photo was taken, Mallowan was appointed director of the excavation of Tall Arpachiyah in Iraq. Christie went with him, observing the dig and writing her mysteries on-site.



1935. IN CHAGAR BAZAR
At Chagar Bazar in Syria, Christie—by now a seasoned amateur archaeologist—helped the archaeological team to catalog finds, clean pottery, and take photographs while enduring spartan living conditions.

1946. GREEN GRASS OF HOME
Greenway, in the rolling English countryside, served as the Mallowans' home between expeditions. Here, Christie would hold family get-togethers and read from her latest novels.

1956. NIMRUD DAYS
Here Mallowan directed what he believed to be a significant excavation while Christie began to write her autobiography. The image shows the couple examining an artifact in the blazing desert light.

1935. BRITISH MUSEUM/SCALA, FLORENCE. 1946. BRITISH MUSEUM/SCALA, FLORENCE. 1956. INTERFOTO/IMAGE FOTOSTOCK. 1933. MARY EVANS/SCALA, FLORENCE. 1946. ILLUSTRATED LONDON/IMAGE FOTOSTOCK

SCALA, FLORENCE

FROM IRAQ TO ENGLAND

THE FATE OF NIMRUD'S IVORIES

Many of the 6,000 or so of Nimrud's ivories found to date were made by craftsmen from Phoenicia (an area centering on modern-day Lebanon) and brought to Nimrud as tribute or booty. Following Mallowan's excavation, many were destined for yet another long journey. In 1963 a major portion of the hoard was sent to the United Kingdom and stored as part of the collection of the British School of Archaeology in Iraq (now the British Institute for the Study of Iraq), the body that sponsored Mallowan's project. In 2011 two-thirds of these ivories were bought by and donated to the British Museum. The remainder are still in the hands of the institute, in the hope that, one day, they might be returned to Iraq. The institute is understandably cautious.

Nimrud ivories already in Iraqi collections were looted after the 1991 Gulf War. During the 2003 Iraq War, some 15,000 treasures from Baghdad's National Museum of Iraq were stolen, a fate from which the Mona Lisa of Nimrud (left) was spared. The site of Nimrud itself was ravaged in recent years: The Islamic State leveled the ziggurat and demolished palace ruins, a loss mourned by the world.

THE MONA LISA OF NIMRUD
EIGHTH CENTURY B.C., NATIONAL MUSEUM OF IRAQ, BAGHDAD

including Chagar Bazar—an early Bronze Age settlement where numerous cuneiform tablets were discovered—and another at Tall Birak, once a thriving city of northern Mesopotamia.

A Dream of Nimrud

Christie recalls in her memoirs that as early as 1932, Mallowan had taken her to see Nimrud. It was, he confessed, the site he longed to excavate above any other in the world. He felt it was a place as important as Ur and potentially as rich as Tutankhamun's tomb in Egypt. Following service in the British Royal Air Force in North Africa during World War II, that dream became a reality. Appointed the first director of the British School of Archaeology in Iraq, Mallowan secured the necessary support for the excavation from the Metropolitan Museum of Art in New York.

Part of the fascination with Nimrud, which is also known by its ancient name of Calah, lay in its biblical connection. In the ninth century B.C., it was the military capital of Assyria under the brilliant, if brutal, ruler Ashurnasirpal II, whom the Old Testament describes as "a mighty hunter before the LORD," an empire builder who "went to Assyria, where he built Nineveh [and] Calah" (Genesis 10:8–12).

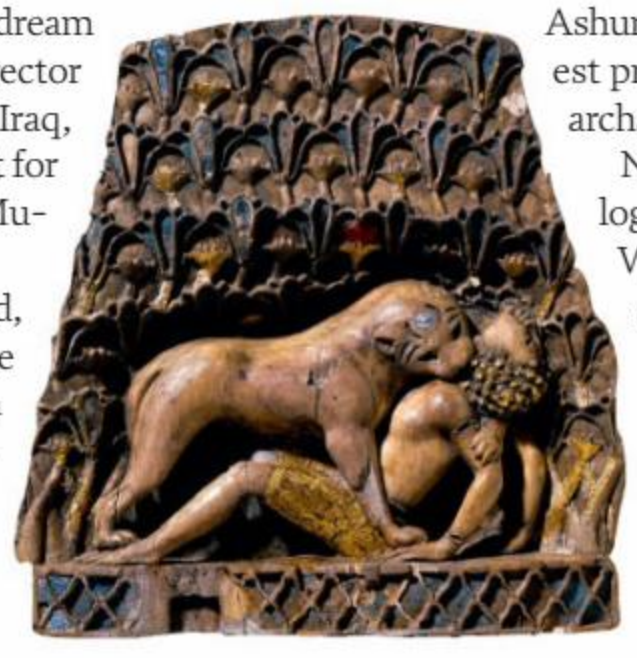
Throughout the 1950s, Nimrud became a second home for Christie, who by this time had some 45 novels to her name. A small room for writing was put aside for her, where her literary output continued unabated. A sign on the door, written in cuneiform, read *Beit Agatha* (Agatha's House). Mallowan was responsible for the in-depth excavation of the great palaces of Ashurnasirpal II and his heirs, one of the greatest projects in the history of Mesopotamian archaeology.

Nimrud proved a rich source of archaeological finds, comparable to those Leonard Woolley had found in Ur. Among the many spectacular discoveries was a fabulous collection of thousands of ivories. Of outstanding artistic quality, these exquisite carvings, dating from the ninth to the seventh centuries B.C., have been

EATEN BY A LIONESS

This ivory panel (below) discovered in the palace of Ashurnasirpal II in Nimrud depicts a young man being attacked by a lioness. It is believed to have formed part of a larger throne. British Museum, London

BRITISH MUSEUM/SCALA, FLORENCE



traced to workshops across northern Mesopotamia and to the coast of Phoenicia, in what is today Lebanon.

Some of these treasures would have been sent as tribute by princes of the kingdoms that had fallen under Assyrian subjugation. Others were probably appropriated and carried off as war booty to the Assyrian capital in the aftermath of Assyrian military campaigns. The ivories would originally have been encrusted with semiprecious stones and gold leaf, which accentuated the beauty of the figurative scenes, and the botanical or geometric designs. In their day they were used to adorn furniture, vessels, horses' harnesses, and royal carriages. Today many can be admired in the British Museum in London and in other institutions around the world.

After the artifacts were recovered, Christie often helped by cleaning and documenting them, a process she describes in her memoirs:

> I had my part in cleaning many of them . . . I had my own favorite tools just as any professional would: an orange stick, . . . a very fine knitting needle . . . and a jar of cosmetic face cream, which I found more useful than anything else for gently coaxing the dirt out of the crevices without harming the friable ivory. In fact there was such a run on my face cream that there was nothing left for my poor old face after a couple of weeks!

In all, the couple spent 10 years working at Nimrud before retiring in 1958. Looking back, Christie described Mallowan's successes there as "his life work: what he has been moving steadily towards ever since 1921 . . . It seems a kind of miracle that both he and I should have succeeded in the work we wanted to do." ■

HISTORIAN **IGNACIO MÁRQUEZ ROWE** HAS AUTHORED NUMEROUS BOOKS ON MIDDLE EASTERN ARCHAEOLOGY, INCLUDING A STUDY OF DIPLOMACY IN MESOPOTAMIA.

Learn more

BOOK

Come, Tell Me How You Live: An Archaeological Memoir Agatha Christie Mallowan, William Morrow Paperbacks, Reprint edition, 2012.

An Autobiography. Agatha Christie, William Morrow Paperbacks, Reprint edition, 2012.

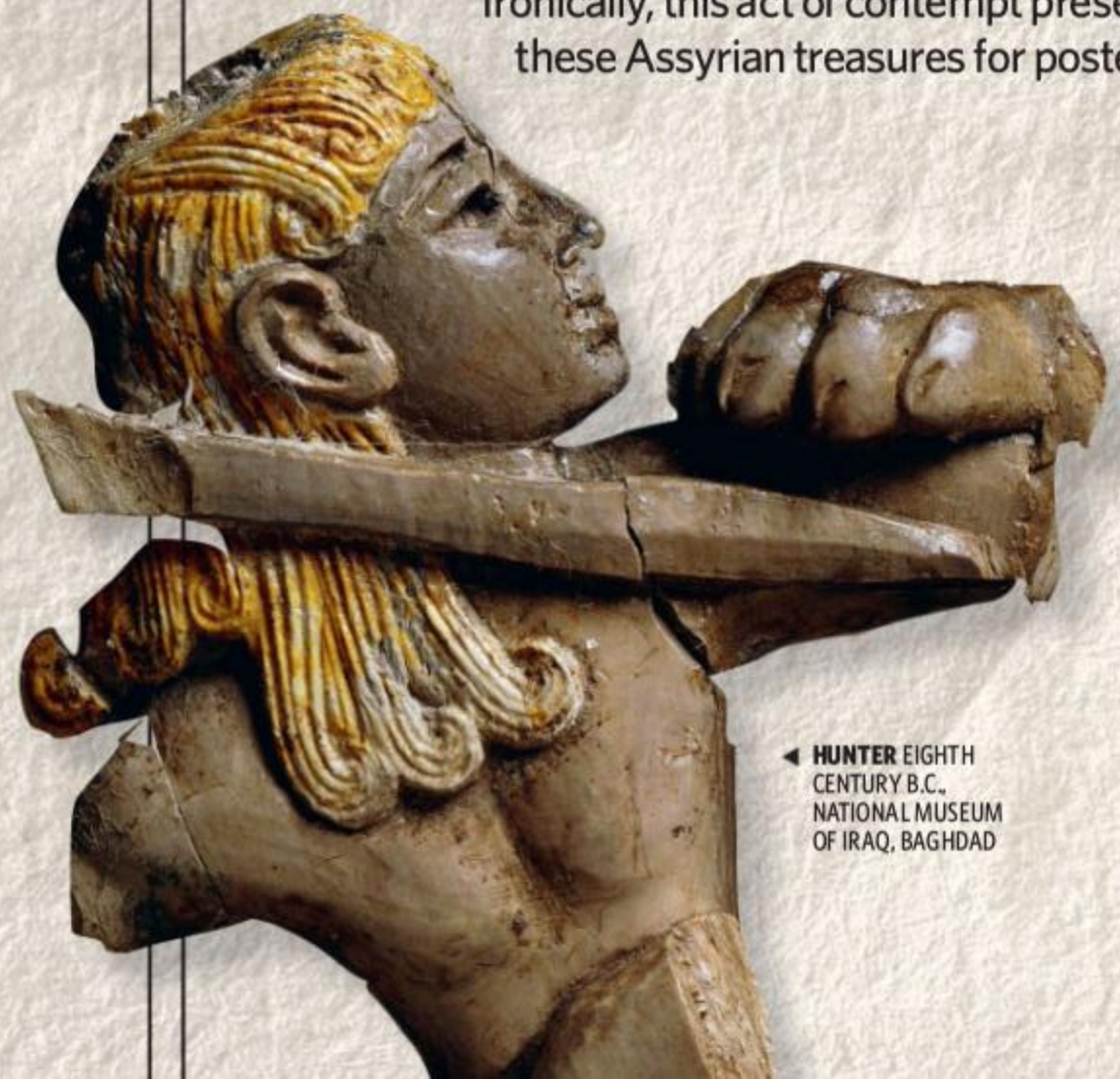
PUZZLE PIECES

The British Museum, current custodian of the above ivories found during Mallowan's excavation, described his work as "arguably the most important British archaeological venture ever undertaken in the Middle East."

OLI SCARFF/GETTY IMAGES

TREASURES FROM ASSYRIA'S EMPIRE

The ivories unearthed in Nimrud were produced from all over the Assyrian Empire: as far afield as Phoenicia (modern-day Lebanon and Israel) and many inspired by faraway Egypt, one of many vassal states of the Assyrian court. These fragments, which once decorated tables, thrones, and chests, were thrown into a well, possibly by the Median forces who destroyed the Assyrian Empire in 612 B.C. Ironically, this act of contempt preserved these Assyrian treasures for posterity.



◀ **HUNTER** EIGHTH CENTURY B.C., NATIONAL MUSEUM OF IRAQ, BAGHDAD

Gryphon

This mythical animal was a common iconographic subject in the ancient Near East. At Nimrud, Mallowan found two plaques with winged gryphons.

WINGED GRYPHON ▶ EIGHTH CENTURY B.C., ROYAL MUSEUMS OF FINE ARTS OF BELGIUM, BRUSSELS

Hunter

This fragment depicts a blond youth confronting a lioness of which only the claws have been preserved. Along the hunter's neck and hair is the sword he wields against the beast.

▼ **SPHINX IN PROFILE**
NINTH TO EIGHTH CENTURIES B.C., BRITISH MUSEUM, LONDON

▲ **WINGED SPHINX**
EIGHTH CENTURY B.C., NATIONAL MUSEUM OF IRAQ, BAGHDAD

Sphinx

Both of these sphinxes—mythological creatures with a human head and lion's body—show clear Egyptian influences. Each wears the *nemes* (striped royal head cloth) and is surrounded by lotus blossoms, a popular Egyptian motif.

PHOTOS (CLOCKWISE FROM THE LOWER LEFT): BRITISH MUSEUM/SCALA, FLORENCE; DEA/SCALA, FLORENCE; DEA/SCALA, FLORENCE; DEA/SCALA, FLORENCE

SMOKE AND MIRRORS

Although Archimedes' use of mirrors to burn enemy boats, depicted in this 1646 engraving, is almost certainly invented, the "Genius of Syracuse" did revolutionize mathematics, astronomy, and engineering. Marble relief of Archimedes (opposite), first century B.C., Capitoline Museums, Rome

ENGRAVING: AKG/ALBUM
RELIEF: LEEMAGE/PRISMA

Inventions and Innovations

ARCHIMEDES

Archimedes' legacy looms large: Many of history's most prominent scientific minds were inspired by stories—some fact, some fanciful—of this master mathematician and insightful inventor from ancient Greece.

MIREIA MOVELLÁN LUIS

Archimedes Through the Ages

Circa 287 B.C.
The son of an astronomer, Archimedes is born in Syracuse, Sicily. He studies at the Library of Alexandria with other luminaries of the age.

214 B.C.
During the Second Punic War the troops of the Roman general Marcellus besiege Syracuse. Archimedes develops ingenious war machines to defend the city.

212 B.C.
The siege is renewed by the Romans. Following the fall of the city, Archimedes reportedly perishes at the hands of an enemy soldier.

Circa A.D. 800-900
In Constantinople, various works containing texts by Archimedes are written in Greek, some of which find their way to western Europe.

900-1000
Archimedes' works spread widely in the Islamic world, where he is called Ersemides or Arsamithes (among other names) and greatly respected.

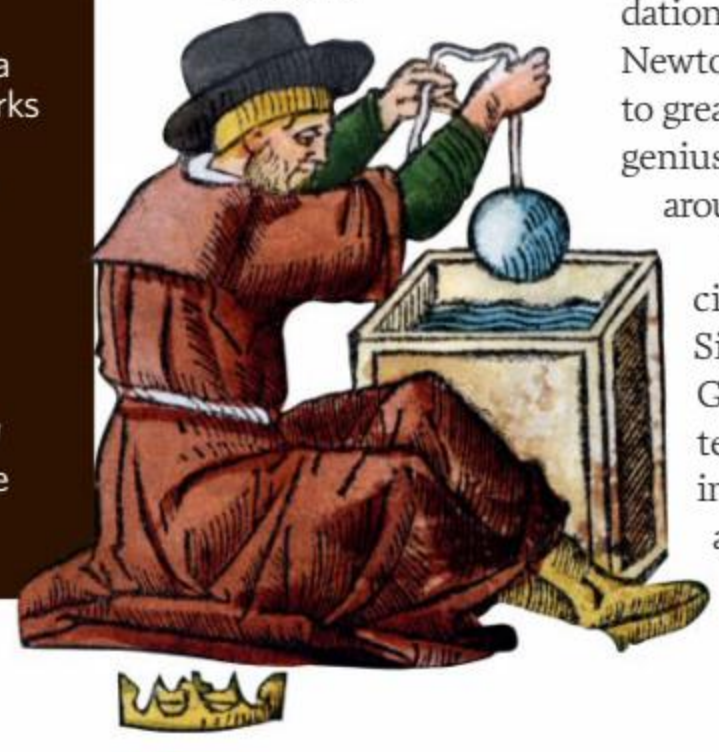
1450
Pope Nicholas V promotes a new Latin version of the works of Archimedes. William of Moerbeke had prepared an earlier version in 1269.

1906
In Constantinople Johan Heiberg discovers the Archimedes treatise *Method of Mechanical Theorems*, once considered lost.

ALL THAT GLITTERS

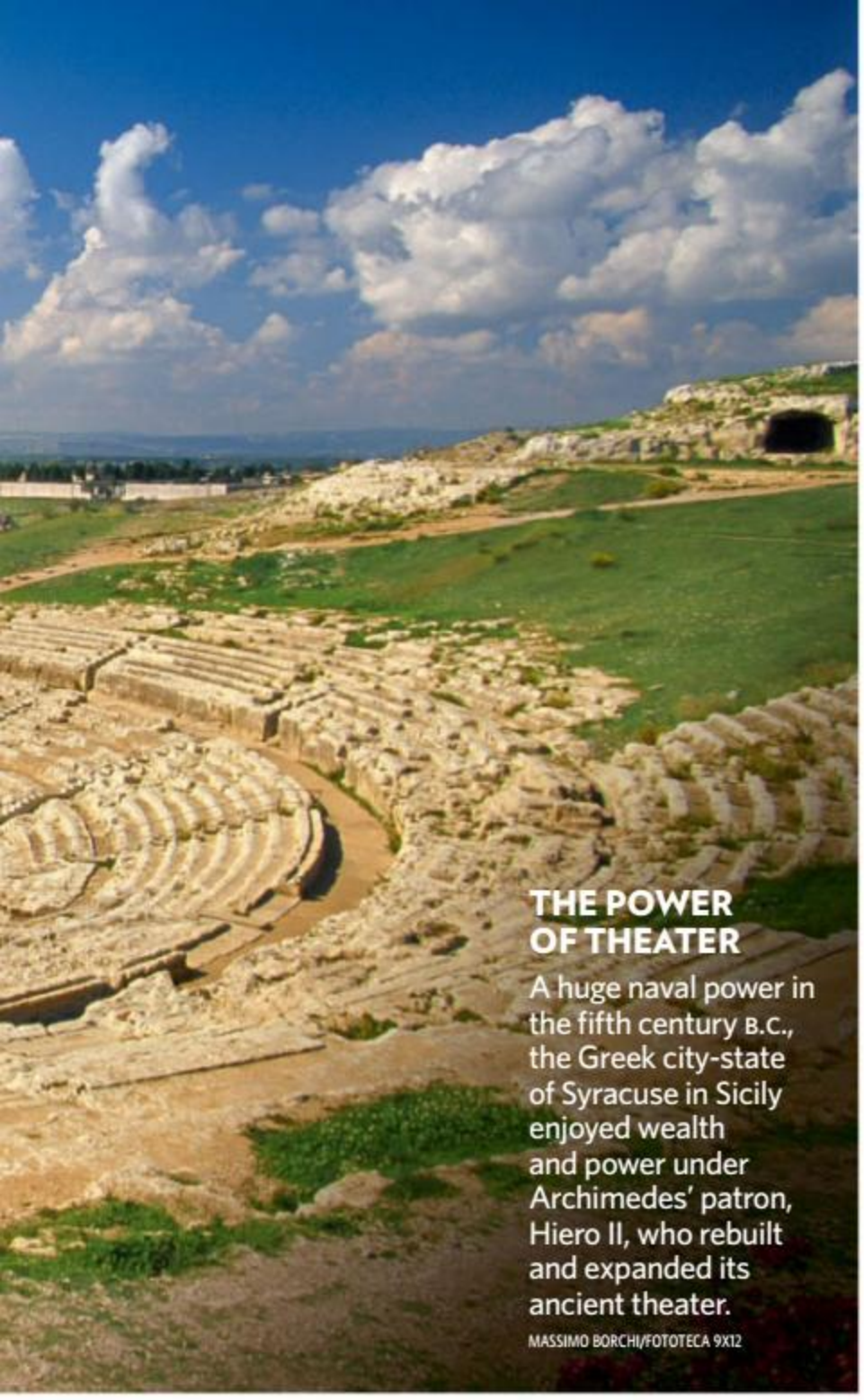
A 17th-century engraving depicts Archimedes testing the density of King Hiero's crown to determine—by means of water displacement—whether the crown is pure gold.

LEEMAGE/PRISMA



Eureka! This exclamation of discovery was popularized by a story about Archimedes, ancient Greece's most famous mathematician. In Greek, the phrase means "I have found it," and Archimedes is often found at the center of fantastic stories of discovery and invention. Ancient Greece has no shortage of brilliant minds, such as Euclid and Pythagoras, but Archimedes became the most popular of all, partly for the ways in which his applications remained relevant and became foundations for later scientists, like Galileo and Isaac Newton. What also helped propel Archimedes to greater, long-lasting fame, in addition to his genius, were the colorful legends that swirled around him and his work.

Born around 287 B.C. in Syracuse, a Greek city-state located on the eastern coast of Sicily, Archimedes came of age when the Greek world and its rich city-states scattered across the Mediterranean were coming under increasing attack from Rome, the aggressive new power in the region. Little is known about his family other than



THE POWER OF THEATER

A huge naval power in the fifth century B.C., the Greek city-state of Syracuse in Sicily enjoyed wealth and power under Archimedes' patron, Hiero II, who rebuilt and expanded its ancient theater.

MASSIMO BORCHI/FOTOTECA 9X12

ARCHIMEDES EXPERIMENTS WITH LEVERS. 17TH-CENTURY ENGRAVING FROM VITRUVIUS'S *DE ARCHITECTURA*

LEEMAGE/PHOTOSMA

METHOD IN HIS MATHEMATICS

IN *METHOD OF MECHANICAL THEOREMS,* a work rediscovered in Constantinople in 1906, Archimedes explains his method of investigating problems mechanically before attempting to arrive at a mathematical solution: "Certain things first became clear to me by a mechanical method, although they had to be demonstrated by geometry afterwards." This practical approach is still an invaluable tool for mathematical and scientific problem-solving.

that his father Phidias was an astronomer, a fact that comes from Archimedes' own writings.

For all the political turmoil of the period, Archimedes was well traveled and clearly enjoyed an elite education in different lands. It was probably at the great Library of Alexandria in Egypt where he met other great minds of the time, such as Conon of Samos and Eratosthenes of Cyrene, and formed lifelong friendships. He maintained a correspondence with these scholars throughout his life and dedicated many of his books to them as well. In the end, however, the violent upheaval of the age caught up with Archimedes. He was killed in 212 B.C., following the Roman siege of Syracuse during the Second Punic War, in which Rome crushed the kingdom of Carthage and became master of the western Mediterranean.

An Inventive Mind

Archimedes' nine surviving written works are all of a theoretical nature and range across the fields of geometry, optics, and mechanics. *The Sand-Reckoner,* written for the son of Hiero II, the king of Syracuse and Archimedes' patron, is an intriguing work that today might be classified as popular science. In just a few pages written in accessible language, Archimedes sought to estimate how many grains of sand would fit into the universe. More remarkably still, the model he considered was heliocentric, which places the sun—not the Earth—at the heart of the heavens. For many centuries following Archimedes' death, this idea would be rejected by others, who taught that the Earth was the fixed center of the universe and everything, including the sun, revolved around it.

These nine treatises provide the most direct insight into Syracuse's most famous son. Archimedes' better known contributions, as an engineer and inventor, are not described in anything that he wrote. Most of what is known about his work in these areas was written centuries after his death. The first-century A.D. biographer Plutarch, while writing extensively of Archimedes' inventions, suggests the lack of material describing them

HEAVY LIFTING

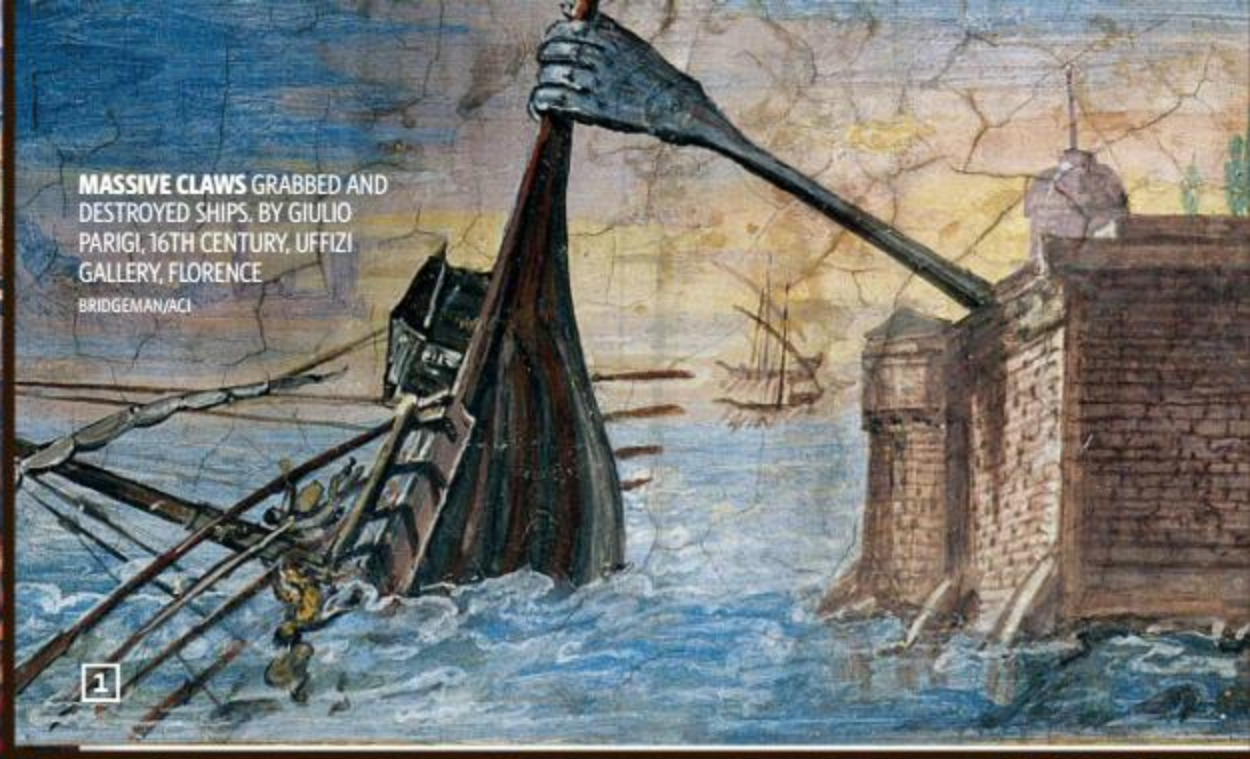
This drawing from a 1744 edition of Joseph Sauveur's *Compendium of Mechanics* re-creates one of Archimedes' inventions: A device that harnesses the strength of only four men to lift large quantities of water.

DEA/SCALA, FLORENCE

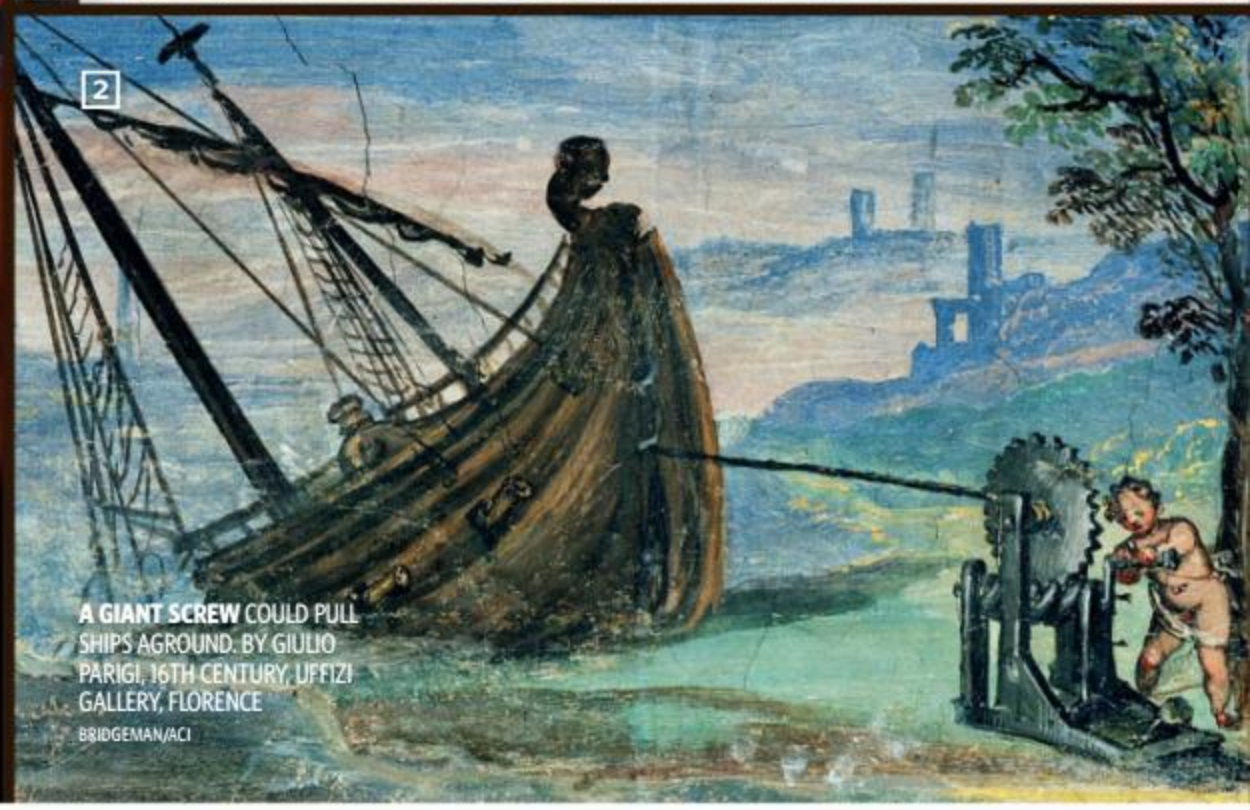
THE SIEGE OF SYRACUSE
BY THOMAS RALPH SPENCE, 1895
HERITAGE IMAGES/SCALA, FLORENCE

STRENGTH IN SCIENCE

The Romans besieged Syracuse in 214 B.C. Centuries later, the historian Plutarch and the writer Lucian of Samosata described how the Romans were fended off by the machines devised by Archimedes. It is unclear if such machines were ever actually built, or—if some were—to what extent these accounts exaggerate their efficacy.



MASSIVE CLAWS GRABBED AND DESTROYED SHIPS. BY GIULIO PARIGI, 16TH CENTURY, UFFIZI GALLERY, FLORENCE
BRIDGEMAN/ACI



A GIANT SCREW COULD PULL SHIPS AGROUND. BY GIULIO PARIGI, 16TH CENTURY, UFFIZI GALLERY, FLORENCE
BRIDGEMAN/ACI

was no accident: "Archimedes possessed . . . so profound a soul, and such a wealth of scientific theory, that although his inventions had won for him a name and fame for superhuman sagacity . . . he would not consent to leave behind him any treatise on this subject, regarding the work of an engineer as ignoble and vulgar."

Of Crowns and Kings

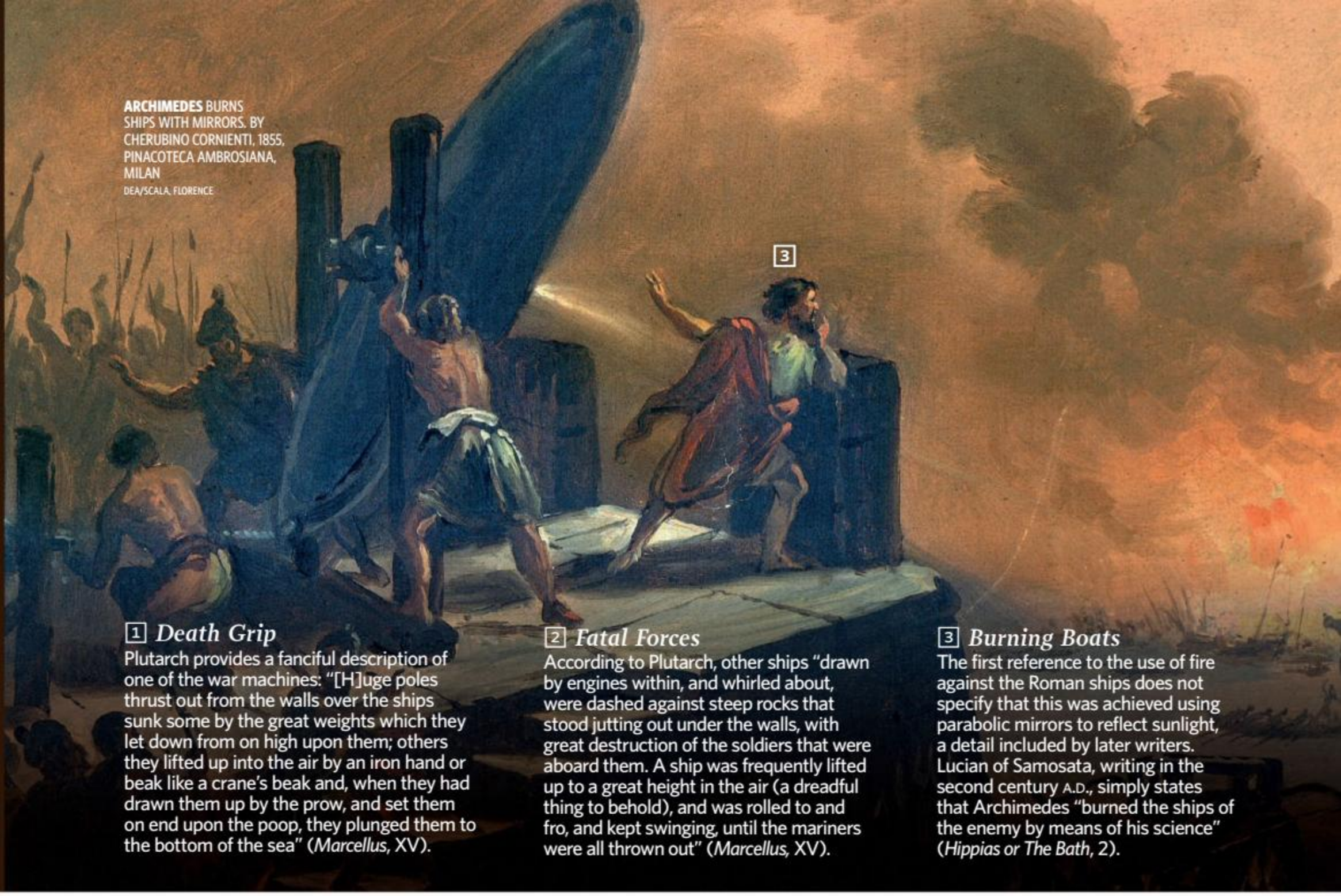
In spite of—or perhaps because of—Archimedes' reticence to focus on the "vulgarity" of his practical inventions, colorful stories about his ingenuity began to circulate after his death and were recorded by many of his biographers. Most historians now believe that many details, both of Archimedes' life and his inventions, have been embellished over time.

It is possible that while in Alexandria he devised his own model for a hydraulic screw pump. Often referred to as the Archimedean screw, it proved invaluable in dry areas of Egypt for drawing water from underground sources to irrigate crops. The invention did not appear from nowhere, as there is some evidence of previous prototypes, but it is believed that Archimedes refined the design. This ancient invention is so effective that it is still used today in parts of the world.

MATH MENTORS
This 15th-century marble tile shows Pythagoras and Euclid (sixth and fourth century B.C., respectively) who both strongly influenced Archimedes' work. Cathedral of Florence, Italy
DEA/ALBUM

Archimedes returned from Egypt to Syracuse, where he became closely acquainted with its ruler, King Hiero II. Their interactions provided much material for historians. One of the best known anecdotes is told by Vitruvius, a writer on architecture and engineering who served as an army engineer under Julius Caesar in the first century B.C. Vitruvius recounts that Hiero gave a smith a quantity of gold to make a crown. On receiving the finished crown, Hiero suspected that the artisan had pocketed some of the gold, replacing it with cheaper silver. He asked Archimedes to investigate, but he forbade him from altering the crown in any way.

The popular legend goes that Archimedes was taking a bath and pondering the king's puzzle when he noticed how the bathwater spilled out of the tub when he submerged his body in it. As



ARCHIMEDES BURNS SHIPS WITH MIRRORS. BY CHERUBINO CORNIENTI, 1855. PINACOTECA AMBROSIANA, MILAN
DEA/SCALA, FLORENCE

3

1 *Death Grip*
Plutarch provides a fanciful description of one of the war machines: "[H]uge poles thrust out from the walls over the ships sunk some by the great weights which they let down from on high upon them; others they lifted up into the air by an iron hand or beak like a crane's beak and, when they had drawn them up by the prow, and set them on end upon the poop, they plunged them to the bottom of the sea" (*Marcellus*, XV).

2 *Fatal Forces*
According to Plutarch, other ships "drawn by engines within, and whirled about, were dashed against steep rocks that stood jutting out under the walls, with great destruction of the soldiers that were aboard them. A ship was frequently lifted up to a great height in the air (a dreadful thing to behold), and was rolled to and fro, and kept swinging, until the mariners were all thrown out" (*Marcellus*, XV).

3 *Burning Boats*
The first reference to the use of fire against the Roman ships does not specify that this was achieved using parabolic mirrors to reflect sunlight, a detail included by later writers. Lucian of Samosata, writing in the second century A.D., simply states that Archimedes "burned the ships of the enemy by means of his science" (*Hippias or The Bath*, 2).

if struck by a bolt of lightning, Archimedes is said to have leaped from the bath and run naked through the streets yelling "*Eureka! Eureka!*"

Archimedes went to Hiero to demonstrate the discovery. He put a weight of pure gold equal to the weight of the king's crown into a bowl and filled it to the brim with water. Then the gold was removed, and the king's crown was put into the bowl in its place. If the goldsmith had used silver, the crown's density would be different, and the water level would change. Applying this theory proved that the king's suspicions were correct. The goldsmith had indeed kept some of the king's gold and replaced it with silver, affecting the density of the finished crown. The bathtub portion of the story is almost certainly an invention, but Archimedes' use of the principle of buoyancy to solve the crown conundrum is probably true.

War Machines

Archimedes' innovations did much more than solve mysteries. They also fought wars. Plutarch, in his history of the Roman general Marcus Claudius Marcellus, described in some detail the elaborate array of war machines attributed to Archimedes. These inventions were used against the Romans during the siege of Syracuse in 214 B.C.

If Plutarch's account is accurate, mathematics were as vital to these projects as the machines themselves. To construct catapults, Archimedes plotted the trajectories of various projectiles, using these calculations so that they would work at different distances, even when positioned right under the defensive wall: "Whence the Romans, seeing that indefinite mischief overwhelmed them from no visible means, began to think they were fighting with the gods," Plutarch wrote. The biographer also described—less plausibly—how large cranes were constructed that could lift the Roman ships out of the water and shake them to pieces. In any case, the Romans are said to have fled in panic.

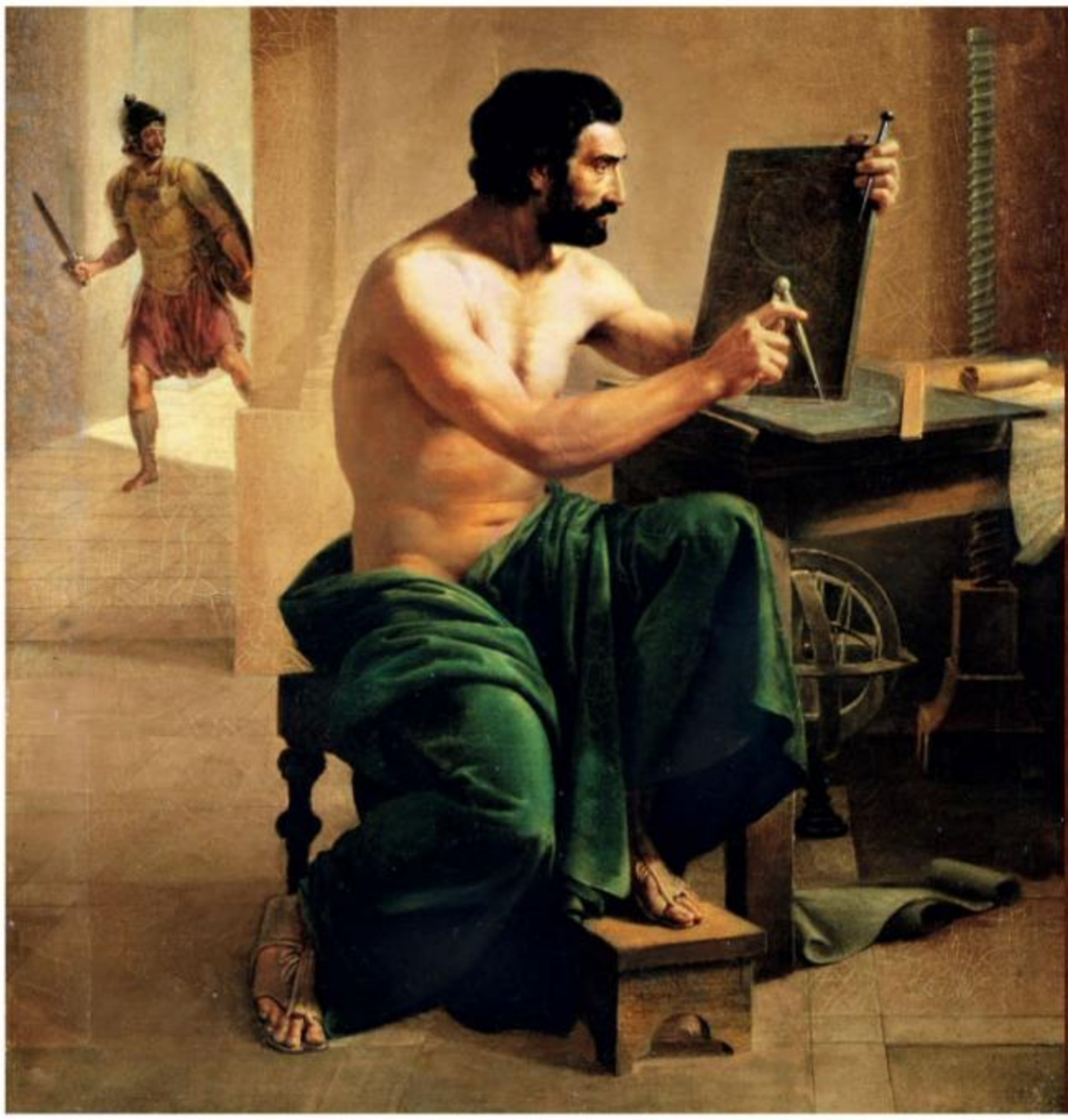
Perhaps the most famous story attributed to Archimedes' defensive genius—his use of sunlight reflected off parabolic mirrors to burn approaching Roman ships—is most likely apocryphal. It is not until the second century A.D. that

STUDY OF CANNON
LEONARDO DA VINCI, CODEX ATLANTICUS, BIBLIOTECA AMBROSIANA, MILAN
PHOTOAISA

LEONARDO AND ARCHIMEDES

LEONARDO DA VINCI revealed his admiration for Archimedes on various occasions. The great Renaissance polymath was fascinated not only by accounts of Archimedes' inventive war machines but also by his ability to answer questions of geometry and find practical applications for his theories. Interested in improving firearms, Leonardo worked on a special steam cannon, which he termed the *architronito,* a device inspired by first-century historian Plutarch's description of such a machine that he attributed to the great Syracusan inventor. Leonardo defined the architronito as an "Invention of Archimedes . . . a machine of fine copper, which throws balls with a loud report and great force." The machine was triggered when the casing of the cannon heated up and water, introduced via a valve, turned to steam and launched the projectile. Like other scientists throughout history, Leonardo was also intrigued by the idea of using mirrors to start fires at a distance. Proof that Archimedes achieved such a feat is lacking, but the legend lingered long enough for Leonardo to try it himself.

LEONARDO, SELF-PORTRAIT, 1513, ROYAL LIBRARY OF TURIN
WHITE IMAGES/SCALA, FLORENCE



MANUSCRIPT MYSTERY

THE IDENTIFICATION in 1906 of a manuscript containing several of Archimedes' works, including *Method of Mechanical Theorems,* is almost as remarkable as its contents. In the 1840s a visiting scholar to the Metochion of the Holy Sepulchre in Constantinople (now Istanbul) glimpsed traces of mathematical symbols written underneath the text in a prayer book. Several transcribed lines were cataloged as part of the library's collection. After learning of the text, Archimedes scholar Johan Heiberg traveled to see the manuscript and later identified it as Archimedes' work, much of it previously considered lost, in 1906. The manuscript then disappeared, reappearing in 1998, when an anonymous buyer acquired it at auction for two million dollars and donated it to the Walters Art Museum in Baltimore, Maryland, where it has been restored and digitized.

Lucian of Samosata and the physician Galen of Pergamum speak for the first time about Roman ships being burned thanks to Archimedes' arts. It is not until the sixth century that Anthemius of Tralles specifically mentions the use of mirrors to ignite fires at a distance.

Since then, much ink has been spilled on the topic of whether it would have been feasible to start fires using this method. It is clear that Archimedes took a great interest in catoptrics—the phenomenon of reflected light—and was influenced by the works of Euclid, but there is no evidence the theory was put into practice. From a technical point of view, even if Archimedes did attempt it, he is more likely to have used a series of flat mirrors to ignite the Roman fleet rather than the parabolic mirror of legend.

Archimedes' extraordinary war machines proved so effective in protecting Syracuse that the Roman general Marcellus decided to halt the offensive and to wait until the siege had weakened the defenses. Later, as the Syracusans celebrated a festival in honor of the goddess Artemis, they were surprised by Roman troops who seized control of the city. One story, almost certainly apocryphal, tells how as troops entered they discovered Archimedes lost in thought, unaware that his city was crumbling around him. A soldier ordered him to follow him to Marcellus—but Archimedes refused as he was in the middle of solving a problem and wanted to finish. His last words, according to the first-century A.D. writer Valerius Maximus, are said to have been: "*Noli turbare circulos meos!*—Do not disturb my circles!" Annoyed by the response, the soldier is said to have killed the great mathematician where he stood.

Plutarch records Archimedes' request for his gravestone: It was to be engraved with the image of a sphere inside a cylinder, "with an inscription giving the proportion by which the containing solid exceeds the contained." The stone itself, with its famous inscription, is long gone, but the tomb can be seen in Syracuse, and people still go to pay homage to the man at the center of both fabulous stories and factual science. ■

A SPECIALIST IN GREEK PHILOLOGY AND HISTORY, **MIREIA MOVELLÁN LUIS** IS A RESEARCHER AT THE COMPLUTENSE UNIVERSITY OF MADRID, SPAIN.

DEATH OF A GENIUS

The 1790 painting by Jacques-Henri Sablet (above) re-creates the moment of Archimedes' death when, absorbed in mathematical calculations, he is surprised and struck down by a Roman soldier, following the fall of Syracuse in 212 B.C.

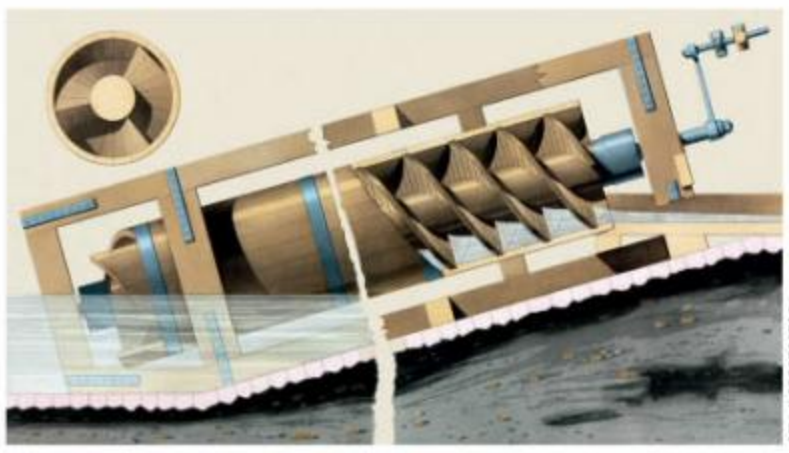
BRIDGEMAN/ACI

THE TURN OF THE SCREW

DRAWING OF HYDRAULIC SCREW BY LEONARDO DA VINCI, CODEX ATLANTICUS, BIBLIOTECA AMBROSIANA, MILAN
ART ARCHIVE

The hydraulic screw probably developed long before the time of Archimedes. Some authors have argued that a similar device was used as far back as the seventh century B.C. to water the gardens of Sennacherib in Nineveh, the Assyrian capital. Even so, it seems likely that Archimedes set his inventive mind to work on refining the mechanism, perhaps having witnessed its use in agriculture when he was studying at the Library of Alexandria in Egypt. In any case, the term "Archimedean screw" has stuck. The architect Vitruvius, writing in the first century B.C., describes the importance of the screw in the Roman world, used extensively in agriculture, water storage, and in draining mines.

WARSHIP DEPICTED IN A FRESCO, POMPEII, FIRST CENTURY A.D., ▶
NATIONAL ARCHAEOLOGICAL MUSEUM, NAPLES

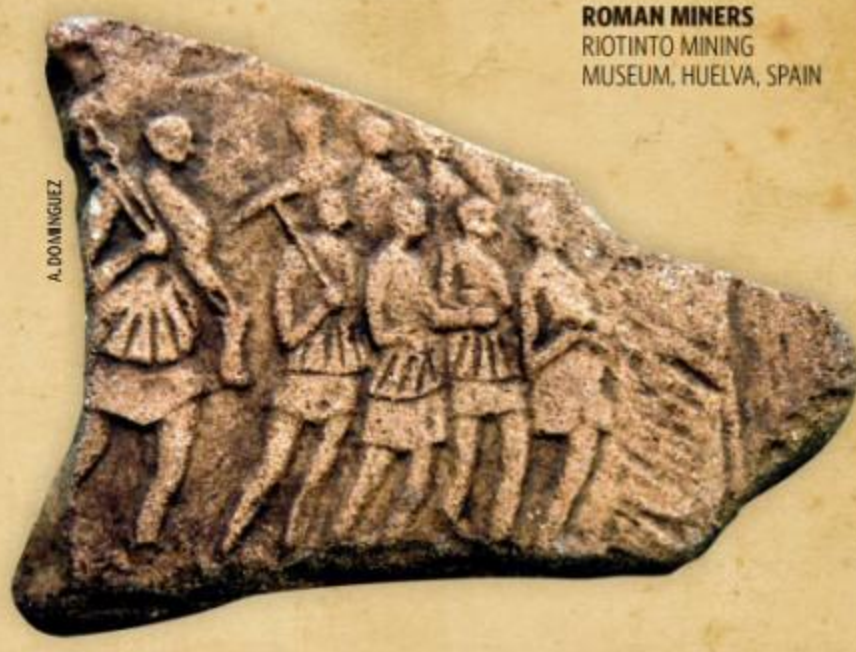


SPLASH FOTOSTOCK

The screw consists of a spiral encased in a wooden tube and connected to an axle. As the axle turns, the screw can move the water either up or down, a mechanism demonstrated in this 1856 lithograph.

1 *Irrigating Crops*

In Egypt, where Archimedes is thought to have come up with, or at least refined the idea, the device was used to irrigate fields not watered by the annual flooding of the Nile. A version of the system is still used for irrigation in the Nile Delta.



ROMAN MINERS
RIOTINTO MINING MUSEUM, HUELVA, SPAIN

A. DOMINGUEZ

2 *Pumping Out Mines*

In Spain, the hydraulic screw was used to extract water from the rich silver mines that supplied Rome with the all-important precious metal. A complete Archimedean screw has been discovered at El Centenillo, one of five used at the complex.

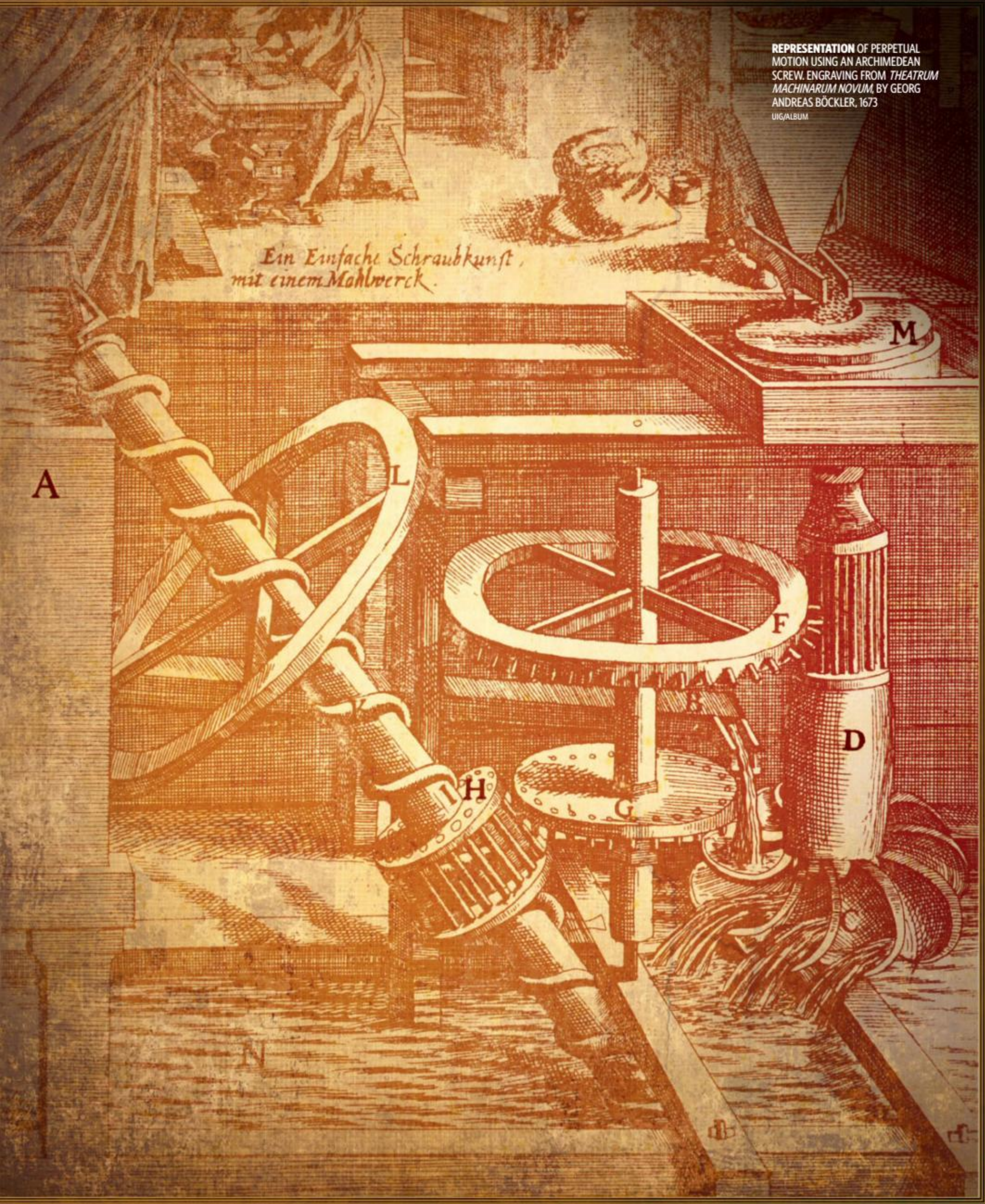
ALBUM

3 *Bailing Out Boats*

The *Siracusia,* built by Archimedes' patron, King Hiero II, was one of the largest ships in antiquity. Although it weighed more than 1,500 tons, it was said that just one man turning the hydraulic screw was enough to keep its giant hulk bailed out.

4 *Inspiring Inventors*

The intriguing nature of the "endless" screw inspired the 17th-century inventor Georg Andreas Böckler's mechanism for perpetual motion (right): a mill [M] is set in motion by a hydraulic wheel [D]; this moves an Archimedean screw [H] which lifts water up into a cistern [A], from which it falls and turns the hydraulic wheel.



REPRESENTATION OF PERPETUAL MOTION USING AN ARCHIMEDEAN SCREW. ENGRAVING FROM *THEATRUM MACHINARUM NOVUM*, BY GEORG ANDREAS BÖCKLER, 1673

UIG/ALBUM

DECORATION FOR THE DEAD

Early Roman Christians decorated their underground tombs with frescoes and mosaics, as is the case with the second-century family vault of Marcus Clodius Hermes in the Catacombs of St. Sebastian. A detail from a third-century fresco (right) in the Crypt of Lucina in the Catacombs of St. Callixtus shows Christ the Good Shepherd.

TOMB: ARALDO DE LUCA
GOOD SHEPHERD: V. PIROZZI/DEA/AGE FOTOSTOCK

The Christian Catacombs

ROMAN EMPIRE OF THE DEAD

Underneath the streets of Rome lies another Eternal City: one made of a twisting labyrinth of catacombs. Built to hold the bodies of early Christians, these subterranean burial chambers reveal intriguing insights into the church's development in Rome.

MAR MARCOS

Catacombs Lost and Found

First Century
Martyred during the Christian persecution under Emperor Nero, the Apostle Peter is said to be interred in the public necropolis on Vatican Hill.

Second Century
Still a persecuted minority in Rome, Christians begin to bury their dead in communal underground burial sites, later known as the catacombs.

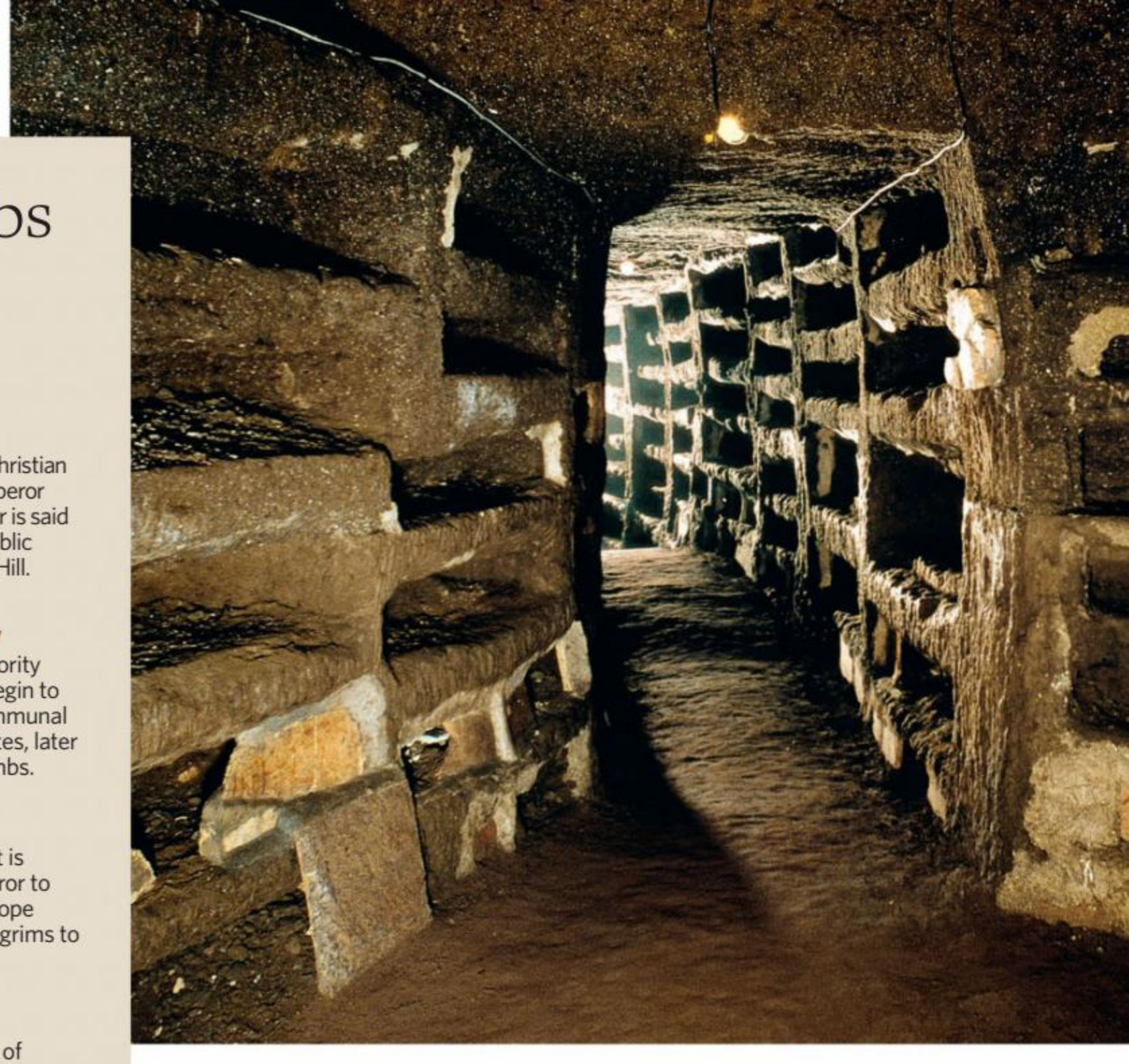
Fourth Century
Constantine the Great is the first Roman emperor to profess Christianity. Pope Damasus I attracts pilgrims to the catacombs.

Sixth Century
Following the transfer of saintly relics to Catholic churches, knowledge of many of the catacombs' locations becomes forgotten.

16th Century
Rome's fight against Protestantism reawakens interest in the early church. The catacombs are the subject of a study by the scholar Onofrio Panvinio.

1632
Roma Sotterranea (Subterranean Rome) is published three years after the death of author Antonio Bosio, the "Columbus of the Catacombs," who pioneered the rediscovery of lost sites.

1849
Archaeologist Giovanni Battista de Rossi discovers the Catacombs of St. Callixtus, on the Appian Way.



NICHE MARKET
These niches—*loculi*—in the Catacombs of Priscilla (above) were in use from the second to fifth centuries. A *loculus* housing two bodies was called a *bisomus;* for three, a *trisomus*, and for four, a *quadrisomus.*

G. CARGAGNA/DEA/AGE FOTOSTOCK

FACE OF PERSECUTION
NERO ON A SESTERTIUS, A.D. 64

HOBERMAN/CORBIS/GETTY IMAGES

Shortly before his death in Bethlehem in A.D. 420, St. Jerome remembered a childhood episode, when he and his friends snuck beneath the ground to explore the catacombs in Rome: "These are excavated deep in the earth and contain, on either hand as you enter, the bodies of the dead buried in the walls . . . Only occasionally is light let in to mitigate the horror of the gloom, and then not so much through a window as through a hole. You take each step with caution as, surrounded by deep night, you recall the words of Virgil: 'Everywhere there is horror, at the same time the silence itself terrifies the mind.'"

Consisting of winding passages containing thousands of tombs, Rome's catacombs once housed the remains of early Christians and the relics of bishops and martyrs. Decorated with murals, mosaics, and frescoes, these underground tombs have intrigued people for centuries as a place where the sacred meets the macabre. Nineteenth-century horror author Edgar Allan Poe even set one of his short stories

A FOSSOR AT WORK
FRESCO, CATACOMBS OF STS. MARCELLINUS AND PETER
SCALA, FLORENCE

CATACOMB CARVERS

THE FOSSORS (DIGGERS) built and maintained the Roman catacombs. These specialized workers who excavated the galleries sometimes adapted existing cisterns. They prepared the tombs and connected different areas of the sprawling system of galleries. In the fourth century, they were permitted to sell niches, increasing their status. Various frescoes and murals of fossors can be found in the catacombs, revealing their importance in the community.

in one: The 1846 tale "The Cask of Amontillado" tells how an Italian nobleman mercilessly walls up his rival in a Roman catacomb, leaving him to die alone in the dark. The origins of these underground cities of the dead are not quite as fantastic as Poe's imagining but certainly no less fascinating.

Over Their Dead Bodies

The practice of entombing the dead in underground crypts dates far back into Rome's past. The earliest subterranean galleries date to the first century A.D. and were primarily used by Rome's Jewish population.

During the very early period of Christianity in the Roman capital, Christian dead intermingled with that of the Jewish and pagan populations. The Christian community began creating their own separate underground burial areas, now known as the catacombs, in the late second or early third century. By the time the practice of using catacombs lost popularity in the fifth century, there were more than 6.5 million burials in these chambers.

A long-standing practice of Greco-Roman societies prohibited the burial of the dead within the city limits, so tombs—whether pagan, Jewish, or later Christian—were typically placed outside the walls. According to tradition, St. Peter, martyred during the persecution unleashed by Nero in A.D. 64, was entombed in a public cemetery outside the city walls on Vatican Hill. A year or two later, St. Paul was believed to have been buried in a cemetery along the Ostian Way following his martyrdom.

Along the Appian Way (the highway that ran south from Rome), soft, volcanic rock known as tuff was perfect for constructing catacombs. It was pliant enough to hollow out niches and chambers yet strong enough to support multiple levels of structures. The fossors, or "buriers," were specialized workers who built and maintained the catacombs. They are often depicted working with a pick and a lamp or beside a body about to be interred.

LIGHT IN THE DARKNESS

Often seen in early Christian art, a Chi-Rho symbol (the first two letters of "Christ" in Greek) adorns a fourth-century clay lamp (below). Episcopal Museum, Vic, Spain
PRISMA/ALBUM

BRIDGEMAN/ACI

In Living Color

The 19th-century flurry of academic interest in the catacombs inspired several paintings. **Above,** Jean-Victor Schnetz's 1847 work imagines the body of a martyr brought to the catacombs. (Musée des Beaux-Arts, Nantes) **Right,** Jules-Eugène Lenepveu's 1855 colossal canvas "The Martyrs in the Catacombs" was painted soon after the discovery of the Catacombs of St. Callixtus. Lenepveu's scene includes a fossor sealing a *loculus* in the background. (Musée d'Orsay, Paris)

Catacombs also became popular for economic reasons. Land was expensive both in central Rome and in the suburban areas where the aristocracy built their villas. Collective burial in areas just outside the city walls not only maximized space by stacking as many tombs as possible below ground, but also lowered the cost. It was one way to guarantee a proper burial for those least able to afford it.

Christian leaders favored the use of catacombs for spiritual reasons as well. The early church frowned on cremation and believed that corpses should be interred in as complete a physical state as possible in anticipation of the resurrection of the body. Death was seen as a rest, as reflected by early Christian writers being the first to describe burial grounds with the word "cemetery," derived from the Greek *koimeterion,* meaning "sleeping place."

Historians are divided as to how the term catacomb evolved. In the literature of the time the common word for such tombs would have been *crypta.* "Catacomb" may derive from the Greek *katà kúmbas* (beside the bodies) or from the original place-name for where the third-century martyr St. Sebastian was buried. An underground Christian cemetery had established itself there and was said to have been known as *ad Catacumbas,* meaning "near the quarry or hollows." Whatever the origin, the Roman term of catacomb became applied to similar underground Christian burial complexes across Europe, including those in Paris and Malta.

IN A GLASS DARKLY

Fragment of a fourth-century glass goblet found in the Roman catacombs. The couple in the center are surrounded by biblical scenes, including Christ healing a paralyzed man and Lazarus coming forth from the tomb. Ashmolean Museum, Oxford

BRIDGEMAN/ACI

The Catacombs of St. Callixtus

As the Christian community began to expand in the second and third centuries, an organized ecclesiastical structure developed as well. Notions of philanthropy and solidarity strengthened these bonds, which stretched from the cradle to the grave. Christian cemeteries benefited from these strong ties as wealthy donors and other individuals contributed their own funds to support them and their upkeep.

The construction of the catacombs, with their network of linked galleries able to house hundreds, or even thousands, of

BRIDGEMAN/ACI

tombs, was meticulously planned, always leaving open the possibility of future extensions. This feature sets them apart from the pagan hypogea which were designed as closed structures. From the middle of the second century, one of the first communal Christian cemeteries in the city later became one of the largest and most richly decorated of the catacombs: St. Callixtus.

This complex occupies about 90 acres of land, underneath which snakes some 12 miles of tunnels and galleries. Four levels of tombs housed Christians of all kinds, from popes to martyrs to everyday people. These catacombs are named for their superintendent, who despite his slave origins and being found guilty of embezzlement, rose to become Pope Callixtus I in 218, although he wasn't actually buried in the cemetery that still bears his name.

Several popes and bishops were buried in the Catacombs of St. Callixtus. The area where nine popes were laid to rest is nicknamed "the little Vatican." These catacombs also held the remains of St. Cecilia, the patron saint of music, who was martyred in the third century. Her remains and relics rested in her crypt for five centuries but were moved to the district of Trastevere in the ninth century. A statue was erected to honor her original resting place.

A Hierarchy of the Dead

Lying on the Via Salaria is another ancient and extensive Roman complex: the Catacombs of Priscilla, first dug out in the second century A.D., and in use until the fifth. A grave inscription found inside identifies one of the deceased as Priscilla c[*larissima femina*] (Her Grace Priscilla)—believed to be the very Priscilla who founded the cemetery, which contains a high number of martyrs, and detailed wall art.

In the Catacombs of St. Callixtus, the area where nine popes were laid to rest is nicknamed "the little Vatican."

A Visit With Popes, Saints, and Martyrs

IN 1849 THE ARCHAEOLOGIST Giovanni Battista de Rossi made a sensational find: the Catacombs of St. Callixtus on the Appian Way. There, in the so-called Crypt of the Popes, nine pontiffs had been laid to rest. Elsewhere in the complex, Rossi found the remains of three African bishops who had died during their trip to Rome, the tomb of St. Cecilia (patron saint of music), and a huge variety of art. The sensational find prompted Pope Pius IX (depicted here) to visit in 1854, believed to be the first pontiff to enter these galleries for over a millennium. Deeply moved by the experience, he was heard to murmur in awe: "Are these the tombstones of my predecessors?"

A SAINTLY VISIT: PIUS IX OBSERVES THE CRYPT OF ST. CECILIA DURING HIS 1854 VISIT TO THE CATACOMBS OF ST. CALLIXTUS. 19TH-CENTURY PAINTING, VATICAN MUSEUMS, VATICAN CITY

BRIDGEMAN/ACI

THE JEWISH CATACOMBS

MOST OF ROME'S catacombs are of Christian origin, but six are exclusively Jewish. The Monteverde Catacomb was rediscovered in the early 1600s, and the rest were identified in the 19th and early 20th centuries. The most recent was found in 1918 to the northeast of Rome on the Nomentan Way: the Catacombs of Villa Torlonia, a complex of galleries richly decorated with Jewish symbols, including representations of a menorah. Cubicle C of the Jewish Catacombs of Vigna Randanini on the Appian Way (left) is adorned with colorful vegetable and bird motifs. Discovered in 1859, it was in use from the second to the fourth centuries. The tombs used by Rome's Jews are known in Hebrew as *kochim*, and similar structures have been found in and near Jerusalem.

ARALDO DE LUCA/CORBIS/GETTY IMAGES

The architecture and decoration of the Priscilla Catacombs reveals a great deal about early Christian society. Because catacombs were community cemeteries, it has often been claimed that they championed equality. But the archaeology tells another story, showing clear evidence of a pecking order among the dead. The *loculi* were simple niches excavated in the walls , one above the other right up to the ceiling. These tombs were generally occupied by poorer Christians and not elaborately decorated. The loculi are mainly anonymous or include brief inscriptions of the names of the deceased.

Larger tombs for rich clients were known as *cubicula*. The same term used for a bedroom (continuing the theme of death as sleep), a *cubiculum* was like a tiny chapel with a burial niche protected by an arch *(arcosolium)*. These tombs were often engraved with lengthy epitaphs, frescoes, and sometimes mosaics. They offer insights into the preferred iconography of early Christians; the figure of the Good Shepherd predominates, along with images of paradise and portraits of the deceased, both men and women, in attitudes of prayer.

The Catacombs of Priscilla are also home to the exclusive hypogeum of the aristocratic family of Acilius Glabrio, as well as the so-called "Greek chapel" where tombs of the same family are found with inscriptions in Greek. This chapel is richly decorated with scenes depicting episodes from the Old Testament, such as Moses striking the rock and Daniel in the lions' den. Other paintings, inspired by the New Testament, show Lazarus coming forth from the tomb, and the adoration of the Magi. Together they make up one of the earliest art collections in the history of Christianity.

From Persecution to Acceptance

The politics of Rome also shaped the development of the catacombs. In the first century, as Christianity spread, the refusal of Roman Christians to sacrifice to pagan deities was seen as subversive, since the gods were believed to protect the empire.

GLITTERING GLASS

Decorated with a golden menorah, this fourth-century glass base of a goblet (below) was found in the Roman catacombs. Israel Museum, Jerusalem

BRIDGEMAN/ACI

1

2

ORONOZ/ALBUM

Queen of the Catacombs

Named for the noblewoman who gave the land to the church, and nicknamed in Latin as *Regina catacumbarum*, the Catacombs of Priscilla gained their elevated status both for the quantity of martyrs buried in its eight miles of tunnels, and the richness of its decoration. The third-century **"Greek Chapel"** (left) is a mausoleum, equipped with seating for meals held in honor of the dead, and whose frescoes contain some of the oldest examples of Christian art. Other notable scenes include the adoration of the Magi and what some art historians believe is an early take on the Last Supper.

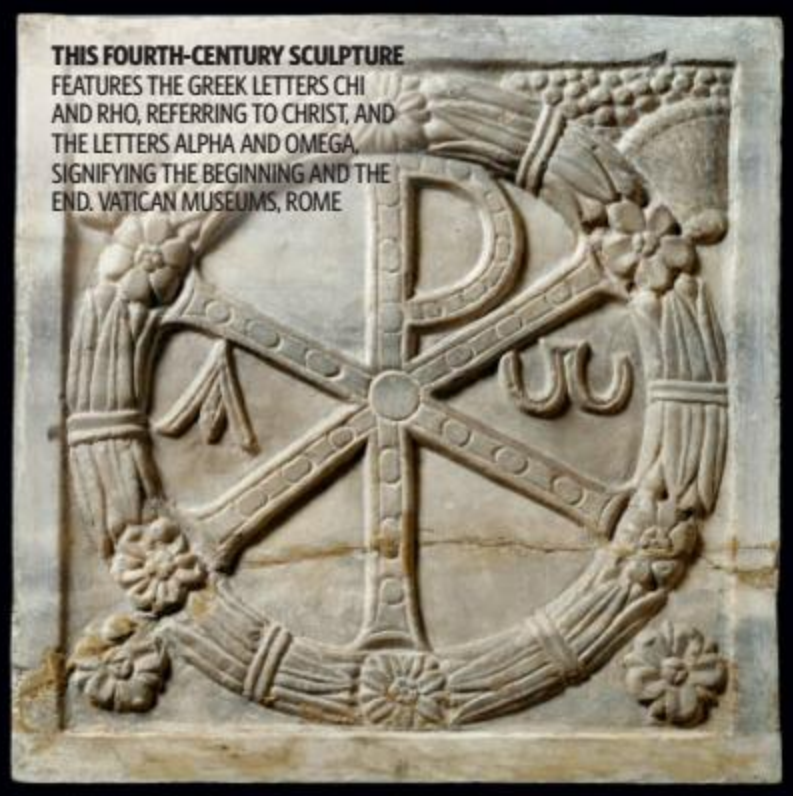
1 DEA/ALBUM. 2 E. LESSING/ALBUM. 3 DEA/ALBUM. 4 GRANGER/ALBUM

1 **ADORATION OF THE MAGI, GREEK CHAPEL**
This biblical scene, a symbol of the founding of the church, contains the oldest known representation of the Virgin and Child (right) and the Magi bearing gifts and approaching to worship the Christ Child.

2 **THE FIERY FURNACE, GREEK CHAPEL**
The Book of Daniel relates how the three Hebrews who refused to worship the idols of Babylon are thrown into a fiery furnace by the king but emerge unscathed—a potent symbol for a persecuted community.

3 **CUBICULUM OF THE VEILED WOMAN**
The painting depicts scenes from the life of the deceased woman: A bishop blesses her nuptials (left); she enters motherhood, seated on a birthing stool (right); and, standing (center), she raises her arms in prayer.

4 **BREAKING BREAD, GREEK CHAPEL**
A bearded man reaches out his arms to break the bread; in front of him stands a chalice and a plate with two fishes and another with five loaves—an early example of the developing iconography of the Last Supper.



THIS FOURTH-CENTURY SCULPTURE FEATURES THE GREEK LETTERS CHI AND RHO, REFERRING TO CHRIST, AND THE LETTERS ALPHA AND OMEGA, SIGNIFYING THE BEGINNING AND THE END. VATICAN MUSEUMS, ROME

SCALA, FLORENCE

New Art for a New Faith

Emerging during the third century, Christian iconography developed a look different from pagan art. Greek letters, such as the monogram of Christ (above), could mark the tombs of poor Christians, along with crudely drawn symbols of doves. Rich Christians were buried in tombs decorated with complex biblical scenes (right).

SCENES FROM THE PASSION MID-FOURTH CENTURY A.D., VATICAN MUSEUMS, ROME

Cain and Abel (the latter with a lamb) make an offering to God the Father. Cain later murders his brother Abel, whose holding a lamb is an allusion to Christ's sacrifice to save humanity.

The Arrest of Peter. The Apostle appears between two soldiers. The scenes on the tomb are separated by six olive trees whose branches form arches in which doves nestle.

Many Romans lapped up lurid tales of Christians as cannibals, no doubt misled by garbled accounts of the Communion rite.

In A.D. 64 swaths of Rome were destroyed by a great fire. Casting around for a scapegoat, Emperor Nero launched the first, major persecution of Christians. Describing it later in the first century, the historian Tacitus recounted how Christians "were torn by dogs . . . or doomed to the flames and burnt, to serve as a nightly illumination." Not that Tacitus seems to have had much sympathy: Christianity was a "mischievous superstition" that had taken root in Rome, "where all things hideous and shameful from every part of the world become popular." It is believed that Sts. Peter and Paul were martyred in the city during the anti-Christian frenzy of these years.

The persecution was not continuous, and Christians seem to have benefited from lulls in which they practiced their faith and buried their dead in relative peace. But violence could flare at any time, notably spiking under Domitian at the end of the first century. In the mid-third century, a period of relative calm ended when Decius ordered all citizens to make a pagan sacrifice. Many Christians were slaughtered on refusing to do so, including the bishops of Rome, Jerusalem, and Antioch.

The development of the catacombs throughout this period later fed a widespread notion that they doubled as hideouts, where persecuted early Christians could gather underground by the light of flickering torches to celebrate Mass. Although it is recorded that Pope Sixtus II hid out in one of the catacombs during the persecution of the mid-third century, it is unlikely that these cramped galleries could have accommodated the thousands of Roman Christians for the purpose of worship.

Even so, as a reminder of the continuity of the faith during

WORDS OF LOVE

This funerary inscription (below) found etched in the Catacombs of St. Callixtus says: "Nicella, God's virgin, who lived for around 35 years. She was placed here 15 days before the Kalends of May. For the well deserving one in peace."

BRIDGEMAN/ACI

GRANGER COLLECTION/CORDON PRESS

The Anastasis, or Resurrection of Christ, is symbolized by the monogram of Christ surrounded by a laurel wreath (the Roman emblem of victory) placed on the cross where Jesus died.

The arrest of Paul, who has his hands tied behind his back. The depiction of his arrest and that of Peter are placed either side of the Anastasis, an allusion to the final victory of Christ over paganism.

Job, to whom the devil sent all kinds of trials in an attempt to break his faith in God, is comforted by his wife and a friend. His story represents inextinguishable faith in God.

the long, grim years of persecution, the underground cemeteries became a powerful symbol. As the political tide started to turn in favor of the Christian faith, the catacombs began to evolve into memorials. Emperor Constantine, after embracing Christianity in the fourth century, initiated the process of turning key catacombs into monuments. Basilicas were constructed and dedicated to the martyrs laid to rest there; the most important of them is St. Peter's Basilica in the Vatican.

Once Christianity had established itself, the catacombs became pilgrimage sites, a useful asset to the burgeoning ecclesiastical power of Rome. Damasus I, pope from 366 to 384, launched an intensive public relations campaign to encourage veneration of the martyrs and their tombs. The pope created what might today be called a visitor trail (*itinera ad sanctos:* itinerary of the saints) to orient pilgrims during their travels. Damasus's publicity campaign helped to cement Rome as the center of Western Christianity.

From A.D. 380, when it became the state religion of the empire, Christianity moved to the heart of Rome. But by the sixth century, catacomb burial had largely ceased, and the church began transferring relics out of the catacombs for safekeeping. During the medieval period, legends proliferated about the lost burial sites of saints, mysterious places that had long been abandoned.

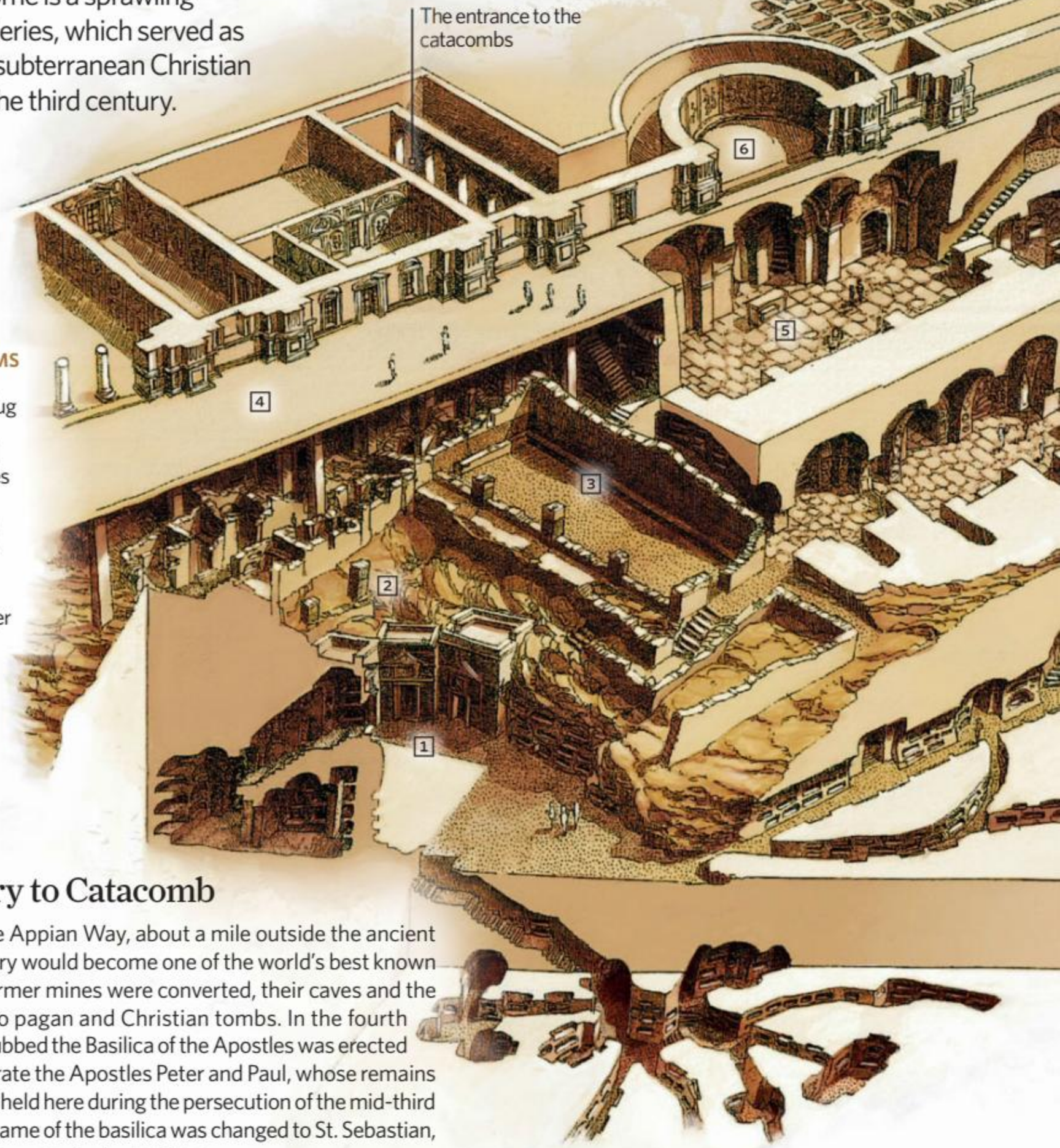
By the 16th century only a few were still known for the basilicas that commemorated them. During this period, the Counter-Reformation's efforts to resist the rise of Protestantism led to a revival of the Catholic Church's interest in early Christianity, a period exalted for its faith and piety. The research of an erudite 16th-century Augustinian Onofrio Panvinio, and the excavations carried out a century later by the scholar Antonio Bosio, led to the rediscovery of these sacred places, for which fascination has never fully waned. ■

A SPECIALIST IN THE CHRISTIANIZATION OF THE ROMAN EMPIRE, **MAR MARCOS** IS ASSOCIATE PROFESSOR OF ANCIENT HISTORY AT THE UNIVERSITY OF CANTABRIA, SPAIN.

THE BODIES BURIED BENEATH

Extending under the Basilica of St. Sebastian in Rome is a sprawling complex of galleries, which served as one of Rome's subterranean Christian cemeteries in the third century.

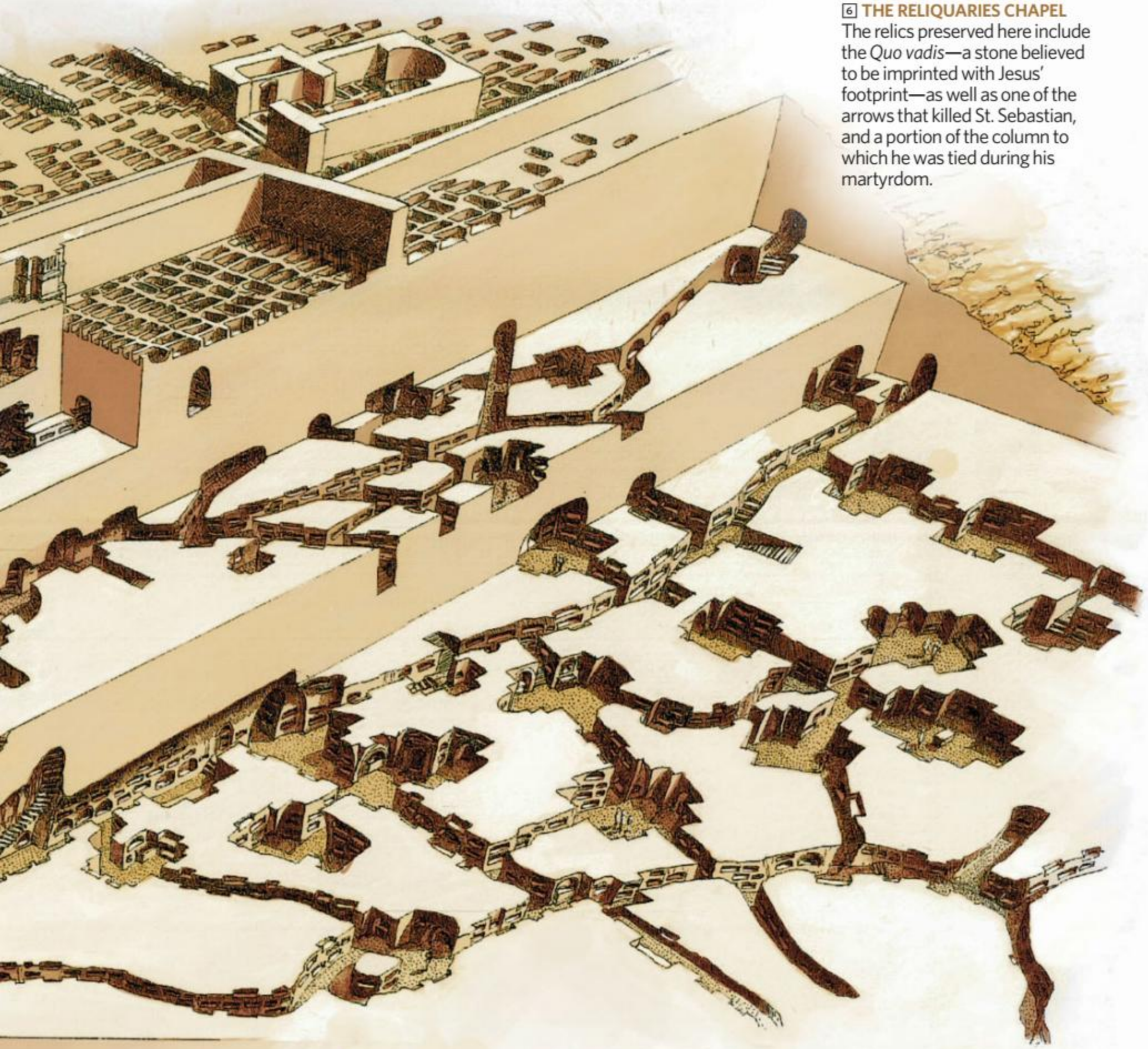
5 THE CRYPT OF ST. SEBASTIAN
For centuries the resting place of St. Sebastian, this chamber may predate the church. Alarmed by the prospect of Muslim raids on Rome, the church in 826 transferred the remains either to France, or, as other sources suggest, the Vatican.



1 THE MAUSOLEUMS
These three mausoleums were dug into the walls of the quarry in the second century. Their facades were initially open to the outside, but in the third century the quarry was filled in to erect a memorial dedicated to Sts. Peter and Paul.

From Quarry to Catacomb

Situated beside the Appian Way, about a mile outside the ancient Roman wall, a quarry would become one of the world's best known catacombs. The former mines were converted, their caves and the tunnels turned into pagan and Christian tombs. In the fourth century a church dubbed the Basilica of the Apostles was erected here to commemorate the Apostles Peter and Paul, whose remains were believed to be held here during the persecution of the mid-third century. Later, the name of the basilica was changed to St. Sebastian, after the third-century martyr buried here.



6 THE RELIQUARIES CHAPEL
The relics preserved here include the *Quo vadis*—a stone believed to be imprinted with Jesus' footprint—as well as one of the arrows that killed St. Sebastian, and a portion of the column to which he was tied during his martyrdom.

2 APOSTLES' MEMORIAL
Built over the filled-in quarry in the third century for the purposes of honoring the Apostles Peter and Paul. A staircase led to a fountain that provided water for the *refrigeria,* or funeral libations.

3 THE *TRICLIA*
Part of the memorial, this was a large, arched room, where the reliquaries containing the remains of the two Apostles were stored in the third century. Its walls are adorned with graffiti invoking Peter and Paul.

4 THE BASILICA
Constructed in the fourth century, the basilica dedicated to St. Sebastian was rebuilt in the 800s; the current structure dates to the 1600s, and for many years it was on the circuit of seven key churches visited by pilgrims.

ILLUSTRATION: FRANCESCO CORNI. COLOR: SANTI PÉREZ

JEWEL OF THE SEINE

Construction of Notre-Dame de Paris began in 1163 on the Île de la Cité, the heart of the medieval city of Paris. Nearly 900 years later, its sculptures, stained glass, and flying buttresses still inspire and awe.

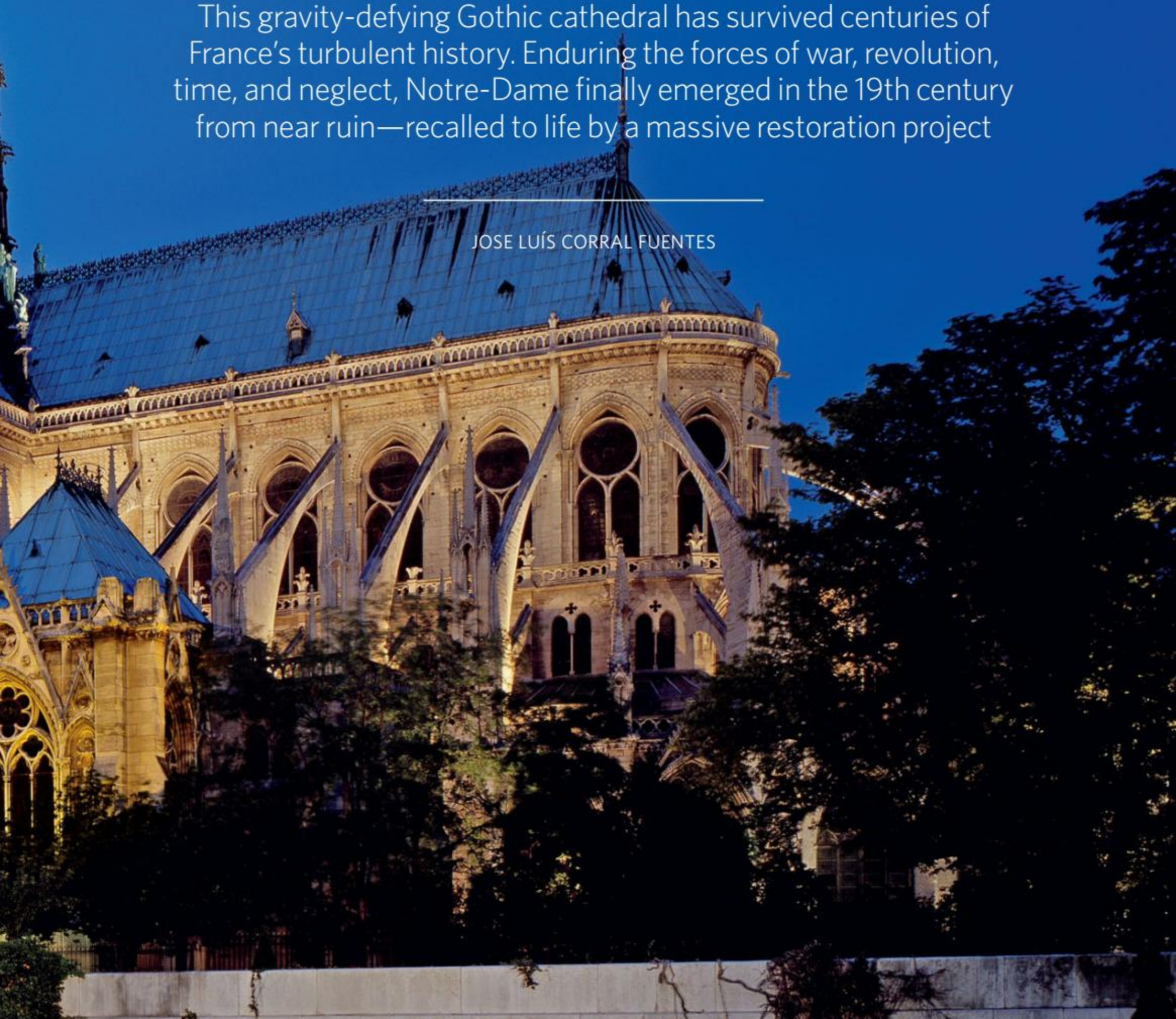
GÜNTER GRÄFENHAIN/FOTOTECA 9X12

The People's Cathedral

NOTRE-DAME DE PARIS

This gravity-defying Gothic cathedral has survived centuries of France's turbulent history. Enduring the forces of war, revolution, time, and neglect, Notre-Dame finally emerged in the 19th century from near ruin—recalled to life by a massive restoration project

JOSE LUÍS CORRAL FUENTES



Notre-Dame de Paris is perhaps Frances's most famous landmark: standing tall at the heart of the city for centuries, accepting the people's reverance one day, then facing their rejection on another. From the first stones of construction to the last of restoration, the history of this Gothic cathedral tells the story of France itself.

Notre-Dame sits on the Île de la Cité, an island in the center of the Seine. The river runs through Paris, where people have been living for centuries. Paris takes its name from the Celtic tribe of the Parisii, subjugated by Julius Caesar in the first century B.C. By the third century A.D. Paris was already a sizable city, encompassing the Île de la Cité and the Île Saint-Louis, another island situated in the Seine. The town was well-placed to control the passage of goods along the waterway and grew wealthy. By the 10th century, Paris was the center of an emerging new European power.

Trade was key to the city's burgeoning fortunes, but Paris was gaining a reputation as a spiritual center as well. A saintly cult had been developing around its local martyr, St. Denis. According to tradition, Denis was beheaded on the hill of Montmartre ("martyrs' mount") in the mid- to late-third century A.D., after which he ran six or so miles while carrying his severed head. In a spot north of the city, alleged to be where he stopped running, a basilica was built in the 12th century to honor him.

One witness of the construction of the Basilica of Saint-Denis was the 12th-century Bishop of Paris, Maurice de Sully. He admired the work of the pioneering architects, who were building in the new Gothic style of soaring ceilings and abundant light. Sully decided to create a rival structure in the heart of Paris itself: a cathedral that would be the wonder of Christendom and dedicated to the Virgin Mary.

The times smiled on Sully's project. This stage of the high Middle Ages was marked by an economic boom in Europe, especially in France. With the generous financial backing provided by the crown, Sully contracted an architect (whose identity is unknown) to design the new church in 1160. Its construction required demolishing various houses in the cramped medieval neighborhood and two existing churches on the Île de la Cité that had, in their own day, been built over an ancient pagan temple. The first stone was laid in June 1163, in a lavish ceremony attended by Pope Alexander III.

Building a Church

Building Notre-Dame took nearly two centuries from start to finish. The cathedral became a lifelong project for Sully. Work on the sanctuary and nave began first. In 1182, under the reign of the new king, Philip II, the high altar was consecrated. Sully was able to celebrate the first Mass in the cathedral but would die in 1196, nearly 150 years before the main structures of the cathedral would be finished in the 1300s.

Bishop de Sully could rely on the generosity of France's kings to fund the building of Notre-Dame.

KING PHILIP II (REIGNED 1179-1223), 13TH-CENTURY MANUSCRIPT, BIBLIOTHÈQUE SAINTE-GENEVIÈVE, PARIS

AKG/ALBUM

RAISED, REJECTED, RESTORED

1163
The first stone of the cathedral is laid with Pope Alexander III in attendance.

1182
Bishop Maurice de Sully celebrates the first Mass after the high altar has been consecrated.

1240–1345
Incorporating Gothic elements, several different builders guide the cathedral to completion.

1789
French revolutionaries cause major damage to the building, especially the statuary.

1831
Publication of Victor Hugo's *The Hunchback of Notre-Dame* sparks a campaign to restore the cathedral.

1844
Viollet-le-Duc is appointed to lead a complete restoration of Notre-Dame.

GOLDEN CHALICE OF CARDINAL LOUIS-ANTOINE DE NOAILLES, NOTRE-DAME TREASURY, PARIS

SCALA, FLORENCE

AN IMPRESSIVE FACE

Crowned with twin towers, each 226 feet high, the west facade contains three sculptural groupings over the doors, dedicated (left to right) to the Virgin, the Day of Judgment, and St. Anne. Above them are a gallery of Old Testament kings and one of the three rose windows.

TOMAS SEREDA/GETTY IMAGES

A TOUR OF MEDIEVAL PARIS

THIS ENGRAVING from the mid-16th century (right) offers a retrospective of a Paris that was similar to the layout of the city between the 12th and 14th centuries, the period in which Notre-Dame was being built. The city was still enclosed by its 13th-century walls, later extended at the end of the 14th century. The River Seine divided the city into three main areas that were connected by four bridges. The two closest to Notre-Dame were constructed at the end of the 14th century. The Île de la Cité, the original population center, formed the religious and political hub, bringing together the Cathedral of Notre-Dame and the Palais de la Cité, the permanent residence of the kings of France until the 14th century. The second main area was situated around the university district. The area of trade and the bourgeoisie was concentrated on the other side of the river, near the Hôtel de Ville (City Hall). Today little from medieval Paris still stands, apart from buildings on the Île de la Cité such as the Conciergerie (below)—one of the oldest remaining parts of the Palais de la Cité—and, of course, Notre-Dame itself.

MURAT TANER/GETTY IMAGES

GÉRARD BLOT/INSTITUT DE FRANCE/RMN-GRAND PALAIS

1 ***The Temple***
This fortress served as the headquarters of the wealthy Knights Templar, founded during the Crusades. Its fortifications did not save the order from persecution. After their dissolution in 1312, the temple passed to the rival order of the Hospitallers.

2 ***13th-Century Wall***
Philip II ordered the construction of a defensive wall around the city. Some three miles in diameter, it was completed around 1210. The population growth in that area of the city made it necessary to expand the wall again at the end of the 14th century.

3 ***The Bastille***
This fortress was constructed at the end of the 14th century as a defensive bastion against English forces during the Hundred Years' War, and later was used as a prison in the 17th and 18th centuries. It had eight towers and was surrounded by an enormous moat.

4 ***The Hôtel de Ville***
Paris's City Hall was built in the mid-14th century in the middle of a bustling economic zone. In the 16th century it was replaced with a new Renaissance-style building. It was later burned down during the radical Paris Commune of 1871 and reconstructed.

5 ***The Louvre***
The simple defensive fortification erected by Philip II in the late 1100s evolved into a medieval castle. It was razed to build a Renaissance palace, which was opened to the public during the French Revolution. Today the Louvre is one of the world's greatest museums.

6 ***Notre-Dame de Paris***
The cathedral has stood on the Île de la Cité since the mid-12th century. This site has long held spiritual importance for the people of Paris: Notre-Dame replaced two previous churches, which had in turn been built on the ruins of a pagan temple.

7 ***Palais de la Cité***
Permanent home to the kings of France from the 10th to the 14th centuries. After this period, the complex continued to house key judicial buildings such as the Conciergerie (see photo, opposite), later used as a prison during the French Revolution.

8 ***The University***
In the mid-1100s a university was established as a department of the existing cathedral school of Notre-Dame. It was recognized as a university by Philip II in 1200, and in 1257 the celebrated college of the Sorbonne was founded on the site.

THE NORTHERN LIGHTS

Most of the original 13th-century glass of Notre-Dame's northern rose window is intact. At the center, an enthroned Mary holds the infant Jesus, surrounded by Old Testament kings and prophets.

PATRICK KOVARIK/GETTY IMAGES

When the church was initially designed, the heavy roof called for thick, sturdy walls to support it, which limited the size of the windows and reduced the amount of natural light in the building. In 1220 the ceiling was reconceived with rib vaults, one of the great innovations of the Gothic style, that used intersecting stone ribs to brace the structure. As a result, less pressure was put on the supporting walls, and more windows could be featured.

In the 1240s the Master of Works, Jean de Chelles—the first architect of Notre-Dame whose identity is known—finished the nave and the two towers of the main (west) facade. Work began on the transept facades, which were completed by his successor, Pierre de Montreuil. During his tenure, de Montreuil oversaw the installation of new, bigger windows including the three rose windows in the northern, southern, and western walls.

The final touches to the monument were put in place in the 1300s by master builder Jean Ravy, who was one of the first to employ another great Gothic architectural innovation: flying buttresses, exterior braces to help support the roof and walls. These arches allow the force imposed by the high ceiling to be transferred to the exterior, thereby leaving the interior walls clear of supports and enhancing the building's majesty and grace. These structures can be seen along the sanctuary and have become one of Notre-Dame's most emblematic features.

Fools and Philosophy

Culturally, Notre-Dame was never of central importance to the French monarchy. They preferred to start their reigns by being crowned at the Cathedral of Reims some 80 miles northeast of Paris, and to end them by being interred at the Basilica of Saint-Denis. The only medieval monarch to be crowned in the Cathedral of Notre-Dame was not French at all: Henry VI of England was proclaimed king there in 1431, as part of England's (by then, increasingly doomed) campaign to extend political control over France during the Hundred Years' War.

Instead, Notre-Dame became an urban icon and the backdrop against which generations of Parisians lived their lives. During the Middle Ages, it played host to the annual Feast of Fools. Perhaps a throwback to earlier pagan rituals, this celebration centered on a raucous ceremony in which a lowly member of society was appointed a mock pope or archbishop and presided over the festivities of the day.

Notre-Dame also became the landmark around which the intellectual life of France began to develop. In the early 1100s the great philosopher Peter Abelard taught at Paris's cathedral school, an institution that predated Notre-Dame. The new cathedral rose in prominence as the school's reputation began to flourish, and students flocked to Paris to gain access to the latest philosophical teachings of the 12th and 13th centuries.

HIGH GOTHIC

Modeled after a basilica, Notre-Dame is divided into five aisles. The central one, the nave (pictured), soars to three levels, with columns supporting arches, above which rib vaults form the ceiling.

SCALA, FLORENCE

ARTISTRY AND ARCHITECTS

"The greatest products of architecture are less the works of individuals than of society," wrote Victor Hugo. The building he immortalized in his writings is the work of many hands over many centuries. It includes some intriguing architectural details, ranging from the very large to very small.

AKG/ALBUM

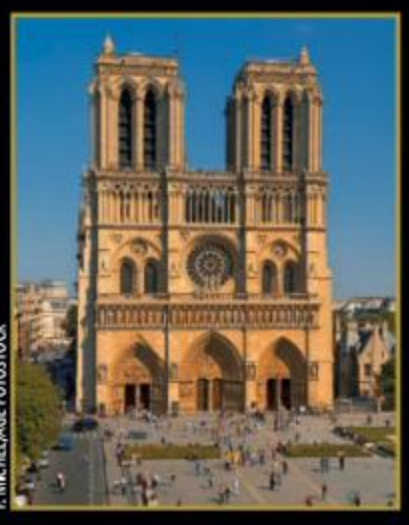
1 *The Spire*

Notre-Dame's original spire was taken down in the 18th century. Viollet-le-Duc's wood and lead replacement was built in the 1860s, and it soars to 305 feet above the ground.

BERTRAND RIEGER/GTRES

2 *The Bells*

The cathedral's massive bells are well known, each one with its own name. Housed in the South Tower, the main bell is called Emmanuel. Recast in the 17th century, it weighs 13 tons—its clapper alone weighs 1,100 pounds.



P. MICHEL/AGE FOTOSTOCK

3 *The West Facade*

Balanced and harmonious, this Gothic facade is considered one of the world's most beautiful. Its two towers were built between 1210 and 1250 and stand 226 feet tall. Surrounding its doors are early Gothic stone carvings of biblical figures, including the Old Testament kings.

DEA/ALBUM

4 *The Gargoyles*

Many of the grotesque gargoyles and chimeras of Notre-Dame were devised by the architect Viollet-le-Duc and sculptor Victor Pyanet in the 1800s. Among Notre-Dame's most famous features, the monstrous forms reflect 19th-century ideas about human nature.

ILLUSTRATION: JEAN-BENOÎT HÉRON

P. DUCEPT/GETTY IMAGES

5 *The Apostles*

At the base of the spire, 19th-century restorer Viollet-le-Duc placed four descending rows of statues depicting the Apostles. The figure of St. Thomas is said to bear his likeness and represents Viollet-le-Duc's contemplation of his great work.

JEAN LEMONNE/GETTY IMAGES

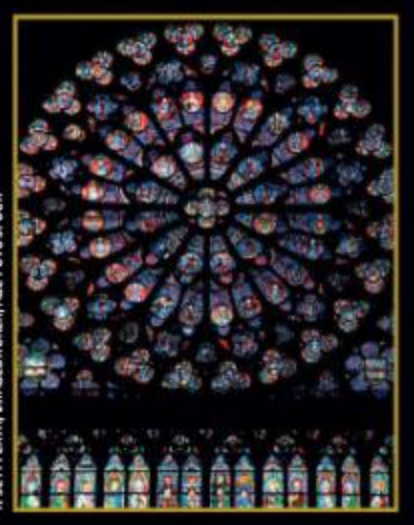
6 *The Flying Buttresses*

Notre-Dame was one of the first Gothic buildings to adopt flying buttresses. These braces enabled the building to rise higher by placing the weight from the roof and walls on them.

P. ESCUDERO/GETTY IMAGES

7 *The Nave*

Begun in 1178, it took 12 years to complete the central nave, which can accommodate as many as 9,000 people. The chamber is 115 feet tall, and each of the ceiling vaults is sexpartite vault, which is a ribbed vault divided into six bays.



P. SEYFFERTH/IMAGEBROKER//AGE FOTOSTOCK

8 *The Rose Windows*

Three spectacular rose windows have been dazzling visitors to Notre-Dame since the mid-13th century, including the southern rose (pictured). Unlike Notre-Dame's other windows, the three roses contain much of their original glass.

THE ROMANTIC RESTORER

AS AN ARCHITECTURE STUDENT, Eugène Viollet-le-Duc (1814-1879) was fascinated by all things Gothic. Learning his trade as a restorer of medieval Carcassonne in southern France, he landed the commission of his career in 1844 when he was awarded the project to restore Notre-Dame. A little later, he was also appointed restorer of France's other jewel of Gothic architecture, the Basilica of Saint-Denis. The aim of restoration, Viollet-le-Duc believed, was to return the building to its "original" state, even if this meant adding elements that had been planned but never built, typified by the famous Notre-Dame gargoyles (right). His vision of what was authentically Gothic was highly subjective. Although accused of destroying elements that did not conform to his "unity of style," he was a landmark figure who did much to preserve Notre-Dame for future generations.

MASSIMO RIPANI/FOTOTECA 9X12

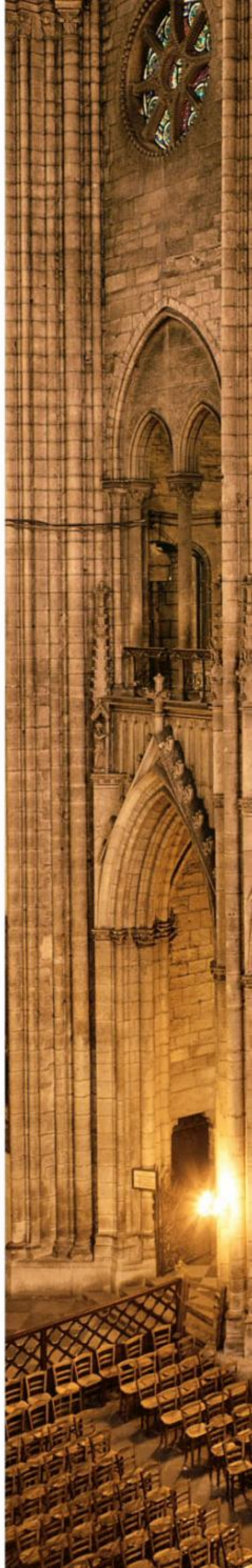
Many students arrived in Paris without the resources to pay for their educations, and turned to begging and crime to earn a living. These people were known as *goliards*. They frequented the bars and bordellos that existed in the shadow of the imposing church. The bishops of Paris eventually agreed to put an end to student excesses. In 1215 Cardinal Robert de Courçon ordered a decree to be read out from the doorway of Notre-Dame, setting out various statutes aimed at imposing order in the university community. A magnet for all kinds of gatherings or spectacles, the cathedral was also the scene of trials and executions. In 1314, on an islet beside the apse of Notre-Dame, Jacques de Molay, the last Grand Master of the Templars, was burned at the stake.

Ransacking and Revolt

In the 18th century ideas of architectural taste radically shifted. In the middle of the reign of Louis XIV, the venerable cathedral faced a radical and controversial makeover, a "restoration" that later generations would consider caused more damage than centuries of wear and tear. The rood screen, studded with sculptures, was pulled down. The stained glass windows from the 12th and 13th centuries were replaced with clear glass. Only the three rose windows retain much of their original glazing. A pillar of the central doorway was demolished to allow grand processional carriages to pass through.

More devastation was to come in 1789. Regarded as a symbol of the power and aggression of church and monarchy, the building was ransacked during the French Revolution. The heads of the 28 statues in the Gallery of Kings on the main doorway were struck from their bodies, the crowd believing them to represent the hated royal lineage of France—in fact, they depicted the ancient kings of Judea and Israel. Also destroyed were the sculptures adorning the doorways, and the reliquaries and bronze statues inside. Lead from the roof was pillaged for bullets. The bronze bells were melted down to make cannon. Only the enormous Emmanuel bell, which hung in the southern tower and weighed some 13 tons, was spared.

During the revolutionary period, the cathedral was de-Christianized, and the firebrand Robespierre dedicated the church to the cult of the Supreme Being. Once the Terror had abated, the cathedral resumed its former role, but it was a shadow of its former splendor. Many of its windows had been shattered and its treasures ripped out or desecrated. Birds flew in and out through the broken panes, nesting high in the galleries



ATTENTION TO DETAIL

The choir stalls, with their exquisite 14th-century carvings, are located in the sanctuary. The tops of the columns, capitals (seen here), were carved to resemble the thistlelike leaves of the acanthus, a common medieval motif.

SCALA, FLORENCE

QUEEN OF HEAVEN

Carved in the 1200s, the Portal of the Virgin on Notre-Dame's west facade depicts the prophets foretelling the Virgin's role (bottom), her death (middle), and ascent to heaven, where she is crowned queen (top).

WILLIAM PERRY/AGE FOTOSTOCK

and overhangs of what was turning into a giant ruin. Finally, in 1801, the government of Napoleon Bonaparte signed a concord with the Holy See under which the Catholic Church would take back control of Notre-Dame. Work began immediately to clean up the building and repair the windows. By 1804 it was in an acceptable enough state for Napoleon to be crowned there as emperor.

Cathedral's Comeback

Notre-Dame was returned to glory in the mid-19th century, owing in no small part to the novelist Victor Hugo. A leading light of French romanticism, Hugo spearheaded the resurgence of interest in the medieval past and Gothic art. Writing in his 1831 blockbuster novel—later published in English as *The Hunchback of Notre-Dame*—Hugo imagines the medieval turmoil of Paris, "mingled, combined, amalgamated in Notre-Dame."

Set in and around the cathedral, the plight of Quasimodo, the cathedral's hunchbacked bell ringer, and the beautiful gypsy girl Esmeralda, fired the imaginations of Hugo's French readership. Parisians and the city authorities rallied around the decaying building as a treasure worth restoring. Hugo wrote: "It is difficult not to wax indignant, before the numberless degradations and mutilations which time and men have both caused the venerable monument to suffer."

A restoration of the cathedral was launched in the 1840s. Architect Eugène Viollet-le-Duc was tapped in 1844 to lead the work. For nearly 25 years, he strove to revive Notre-Dame's strength and beauty. He restored the west facade and the Gallery of Kings, and also added new features: a towering spire, sculptures of the Twelve Apostles, and the now famous gargoyles and chimeras who perch on the stone walls.

In the 19th century the city of Paris itself also began to modernize in ways that would benefit the old cathedral. In the 1850s Napoleon III employed urban planner Baron Haussmann to undertake a massive urban regeneration of Paris, during which many of the city's old buildings would be cleared to create boulevards and large open squares. On the Île de la Cité, Haussmann had houses and other buildings around the cathedral pulled down in order to open up a new square in front of the main facade. For the first time, Parisians could stand back and contemplate the cathedral in all its grandeur.

Since then, the image of Notre-Dame has become inseparable from that of Paris. The building is celebrated in the paintings of Matisse and Picasso, while *The Hunchback of Notre-Dame* has inspired several films. Hugo himself would not have been surprised by the building's universal appeal, describing Notre-Dame as "a central mother church . . . It has the head of one, the limbs of another, the haunches of another, something of all."

JOSÉ LUÍS CORRAL FUENTES IS PROFESSOR OF MEDIEVAL HISTORY AT THE UNIVERSITY OF ZARAGOZA, SPAIN.

LEAP OF FAITH

Adding to the sense of a building about to spring heavenward, the 14th-century flying buttresses of Notre-Dame arch almost 50 feet from the sanctuary at the east end. The spire was added in the 19th century by Viollet-le-Duc.

GÜNTER GRÄFENHAIN/FOTOTECA

Exploring Truth and Lies

AMERIGO VESPUCCI

Thrilling tales—some true, some false—of discoveries in the New World made Amerigo Vespucci famous at the turn of the 16th century, leading to a new continent being named after him.

CONSUELO VARELA

A little book was published in Florence in 1504, entitled *Mundus novus (New World).* The author was a Florentine, one Americus Vesputius (the Latin form of his name), a navigator on at least two European voyages to the New World. Better known as Amerigo Vespucci, he told a marvelous tale of his voyages to the other side of the Atlantic Ocean. Like others before him, he had followed the route first sailed by Christopher Columbus's pioneering expedition in 1492. But Vespucci went farther, exploring the coastlines of previously unexamined territory. The Florentine believed he had discovered something much bigger than the Caribbean islands visited by Columbus. Just to the west, he declared, lay an entire continent.

GUIDED BY STARS

Among his contemporaries, Vespucci had a reputation for being an expert astronomer. This engraving shows him using various cosmic instruments, such as the compass and an armillary sphere (opposite).

ENGRAVING: GETTY IMAGES
SPHERE: ORONOZ/ALBUM

Vespucci's Continental Divide

Circa 1454
Amerigo, the third son of Lisa di Giovanni Mini and the notary and well-to-do trader Nastagio Vespucci, is born in the Republic of Florence.

1492
Vespucci is working in the Spanish city of Seville for the Medici family (then rulers of Florence) when Columbus sets sail for the New World.

1497-98
According to his accounts, Vespucci sets off on his first expedition to the New World. However, historians doubt the veracity of this story.

1499-1500
Vespucci travels to the New World under a Spanish flag as part of the expedition commanded by Alonso de Ojeda. They sail along the coast of present-day Venezuela.

1501-02
Vespucci sails from Lisbon as a navigator, this time on a Portuguese expedition. They explore much of the South American Atlantic coastline, from Brazil to Patagonia.

1508
Living in Seville, Spain, Vespucci is appointed chief navigator of the House of Trade. He helps plan and manage future expeditions to the New World.

1512
Vespucci dies in Seville, maybe from the plague. Shrouded in a Franciscan habit, he is buried in the Church of San Miguel.

BIRTH OF EXPLORATION
In this view of Florence (above), birthplace of Vespucci, the Arno River divides the city, in the foreground, from the imposing Palazzo Vecchio and the Cathedral of Santa Maria del Fiore in the background.
PIETRO CANALI/FOTOTECA 9X12

In Vespucci's first published account, he wrote:

> We arrived at a new land, which we found to be *terra firma* . . . I reached part of the Antipodes, which is the fourth part of the world, based on my navigation . . . We knew that land was a continent rather than an island because long beaches stretched on and on without surrounding it, and it is full of innumerable inhabitants . . . I have discovered a continent inhabited by a greater number of peoples and animals than our own Europe, Asia or even Africa. And I found the air to be more temperate and pleasant than in other regions we know of . . . Part of this continent is in the torrid zone beyond the equinoctial line toward the Antarctic pole.

The *New World* and another text published the following year, the *Letter of Amerigo Vespucci Concerning the Isles Newly Discovered on His Four Voyages,* in which the author gave an account of other voyages in the same area, sent ripples of excitement through Europe. Geographical

discoveries had created a thirst for accounts of ocean-crossing voyages and exploration of unknown lands. Educated Europeans also realized that the image of the world they had inherited from antiquity—as set out in *Geographia* by Ptolemy, the Greek scholar from the second century A.D.—was incomplete. They eagerly awaited any new information about lands unknown to the ancients.

The discovery of a new continent was bound to cause a sensation. René II, Duke of Lorraine, obtained a copy of the *Letter of Amerigo Vespucci* together with a map on which the lands recently discovered by the Spanish and Portuguese were drawn. The duke gave the letter and map to the academy he had founded at Saint-Dié Abbey where a group of learned men were working on a revision of Ptolemy's *Geographia*.

These scholars, who already knew about Vespucci's *New World*, were excited by the *Letter of Amerigo Vespucci* and decided to publish it. A team was assembled, consisting of two poets—Jean Basin de Sandaucourt and Matthias Ringmann—and a cartographer, Martin Waldseemüller. Basin translated Vespucci's letter into Latin, Ringmann wrote an introduction to explain its contents, and Waldseemüller drew up a new map.

On April 25, 1507, the result of their efforts came off the Saint-Dié Abbey press: the *Cosmographiae introductio (Introduction to Cosmography)*. The map was provided alongside the text, with a cutout that would give an exact idea of the Earth as a globe when stuck onto a sphere. It was so successful that the monastery's press had to print two editions on the very same day.

Although the three men's work was undoubtedly of considerable scholarly importance during its time, the book is mainly remembered today for proposing a name for the "new" continent Amerigo Vespucci claimed to have discovered. In the introduction, Ringmann wrote: "Now that . . . another part of the world has been discovered by Americus Vesputius, I can see no reason for us not to call it America, i.e. the land of Americus, its discoverer . . . just as Europe and Asia were named for women."

LOOK TO THE HEAVENS

"Astrolabe" literally means "star taker," and the instrument was used by sailors to do precisely that: Take the position of a star to calculate their own position on Earth.

ORONOZ/ALBUM

AKG/ALBUM

SHIP RELIQUARY, CIRCA 1500, REIMS CATHEDRAL, FRANCE

Explorers in the NEW WORLD

There has long been controversy regarding who was the first European explorer to set foot in different regions of North and South America. Some say it was Vespucci; others argue for Columbus, and some for the explorer Cabot. The debate is now moot, as modern historians believe that Leif Eriksson had already led the Vikings to North America many centuries earlier.

PRISMA ARCHIVO

1 Cabot in Newfoundland *(1497)*

Even though he was Italian by birth, John Cabot sailed to the New World in the service of the English crown, setting off from Bristol, England. During his first voyage, in 1497, he reached the coast of modern-day Canada. He went as far as Cape Breton Island and explored the Gulf of St. Lawrence and the Newfoundland coast. He was the first European to explore North America since the Vikings reached the region around 1000. In 1498 he embarked on a second voyage with a larger crew and fleet, but historians dispute if he successfully made it back to North America or if the ships were lost at sea.

PRISMA ARCHIVO

2 Columbus in Venezuela *(1498)*

Christopher Columbus is considered to be the discoverer of the Americas, which he dubbed "the Indies" as he believed he had sailed to India. Columbus went on four voyages to the New World. After his first two expeditions in 1492 and 1493, in which he explored various islands in the Caribbean, he found terra firma on his third voyage, when he reached the Gulf of Paria, in modern-day Venezuela, in August 1498. He realized the land he had reached was a continent, but he mistakenly thought it was part of Asia.

ORONOZ/ALBUM

3 Vespucci in South America *(1499)*

The Florentine navigator's name graced the new continents, as he was the first to realize that the land he had traveled to was not part of Asia. He traveled on two confirmed voyages to the New World. The first in 1499 was with Alonso de Ojeda and Juan de la Cosa. The fleet is said to have reached Brazil, although there is some doubt about the extent of their journey. During his second voyage of 1501-02, he navigated along the Brazilian, Uruguayan, and Argentine coast.

PHOTOAISA

4 Cabral in Brazil *(1500)*

This Portuguese navigator commanded the second Portuguese fleet headed for India. During this voyage, Pedro Álvares Cabral changed course and ended up in Brazil on April 22, 1500, leading many to consider him the discoverer of Brazil, which he initially called Vera Cruz ("the true cross"). However, Vicente Yáñez Pinzón from Spain, who took part in Columbus's first voyage, had gone on an expedition that reached Brazil on January 26, 1500, just months before the region was officially explored by the Portuguese.

CACODEMON ATTACKING THE SAVAGES, COLORED ENGRAVING BY THEODORE DE BRY FROM *LES GRANDS VOYAGES*, 16TH CENTURY

BRIDGEMAN/ACI

Titillating Tales

The popularity of the accounts of Vespucci's voyages was due to his colorful—and often embellished—descriptions of indigenous Americans. Vespucci said that the local people he encountered in modern-day Brazil wore no clothes, were promiscuous, and "human flesh is a common article of diet with them." He also claimed that such people could live for as long as 150 years. Vespucci—or his publishers—had a commercial interest in offering the public spiced-up accounts. Following in this tradition, editors such as Theodore de Bry produced books in the 16th century about the New World based on little direct knowledge. Their provocative illustrations aimed to titillate rather than inform.

160°W 140°W 120°W 100°W 80°W 60°W 40°W 20°W 0°

60°N

40°N

Equator

Tropic of Capricorn

GREENLAND

Arctic Circle

ICELAND

LABRADOR

NEWFOUNDLAND

Cape Breton I.

Missouri River

Mississippi River

ENGLAND

FRANCE

PORTUGAL

Lisbon

SPAIN

Cádiz

Azores

Canary Islands

Cape Verde Islands

Demarcation line, Treaty of Tordesillas, 1494

Spanish

Portuguese

BERMUDA ISLANDS

FLORIDA

Gulf of Mexico

CUBA

HISPANIOLA

Santo Domingo

HONDURAS

Gulf of Paria

VENEZUELA

ATLANTIC OCEAN

PACIFIC OCEAN

Amazon River

Island of the True Cross [BRAZIL]

Cape São Roque

Cabo de Santo Agostinho

All Saints Bay

Porto Alegre

Rio de Janeiro

Rio de la Plata

PATAGONIA

Strait of Magellan

Cabot (1497)

Columbus (1502)

Columbus (1498-1500)

Ojeda and Vespucci (1499)

Pinzón (1500)

Vespucci (1501)

Cabral (1500)

1

2

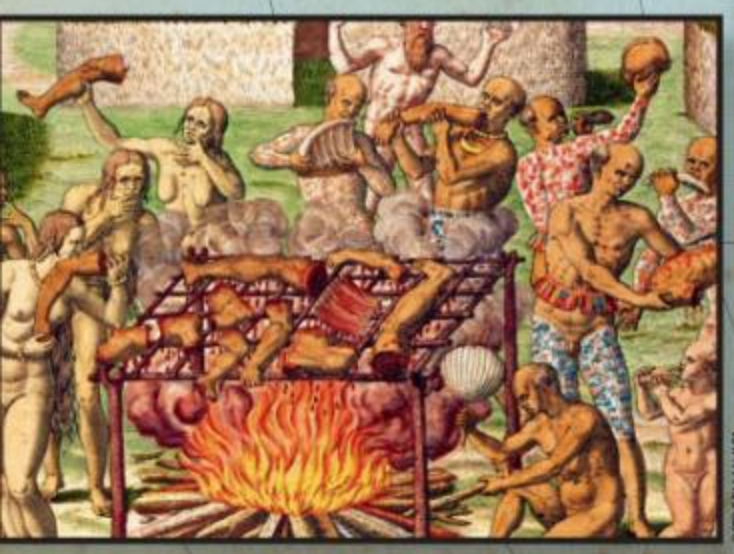
3

4

Greenwich Meridian

MAP: EOSGIS.COM

SCENE OF CANNIBALISM, COLORED ENGRAVING BY THEODORE DE BRY FROM *LES GRANDS VOYAGES,* 16TH CENTURY



BRIDGEMAN/ACI

THE FIRST LOOK

BRAVE NEW WORLD

The reason the continent ended up being called America is mainly because of this map (above), designed by Martin Waldseemüller in 1507. It was the first map to show the undiscovered lands west of the Atlantic as a continent and to use the actual term "America." The map was made of 12 large sheets, which could be assembled to form a wall map. A thousand copies were printed, but only one, discovered in 1901, has survived.

① **Vespucci** is depicted with a compass in front of the map of the Western Hemisphere, in which the new continent can be seen.

② **Ptolemy** holds a ruler or set square in front of the map of the Old World, which he described in his classic work *Geographia*.

③ **The name** America is used to describe the southern region of the continent, which Amerigo Vespucci explored on his second journey in 1501.

④ **The regions** explored by Portuguese sailors along the African coast are also shown, all the way to the Cape of Good Hope.

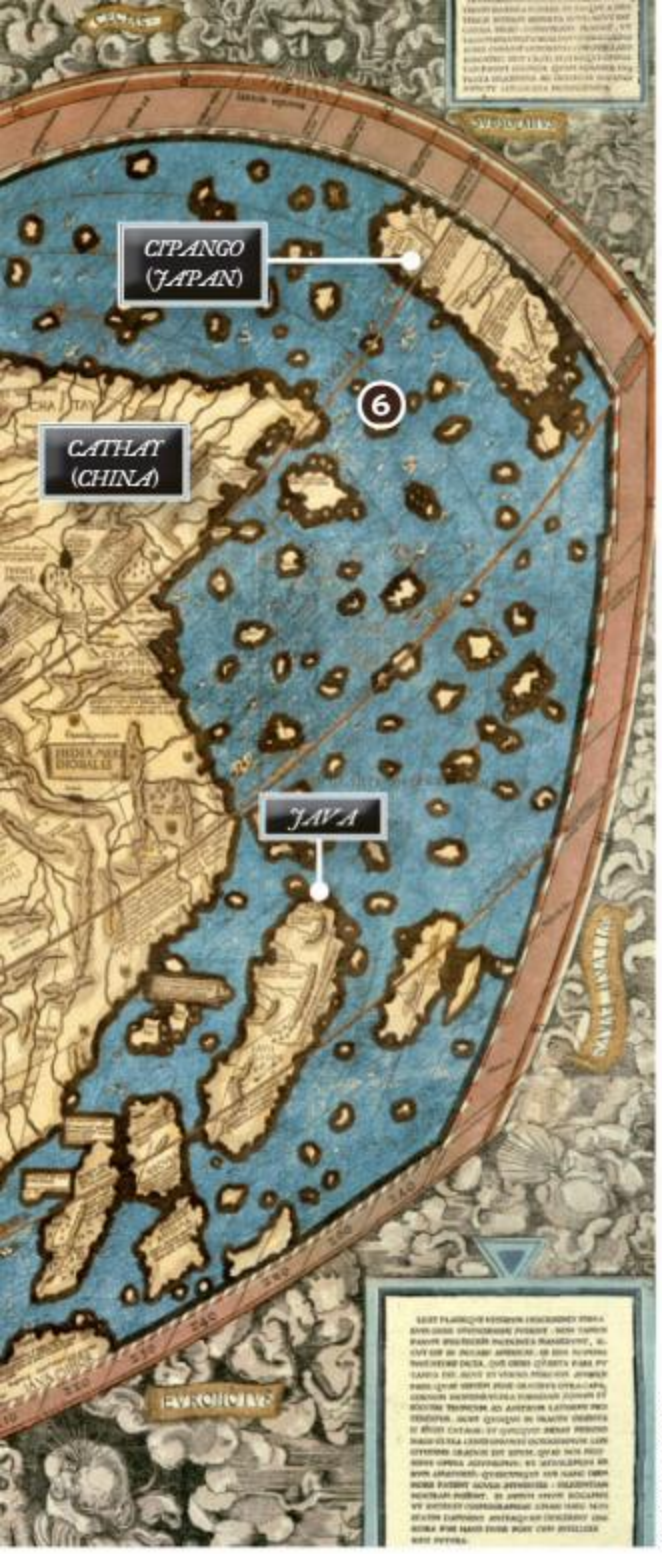
⑤ **Taprobana** was a fantasy island in the Indian Ocean, mentioned by Marco Polo and often confused with Ceylon (Sri Lanka).

⑥ **Europeans** also had hopes of reaching Japan and China—then known as Cipango and Cathay—by way of a quicker route believed to lie to the northeast.

The Florentine Adventurer

Born in Florence around 1454, Amerigo Matteo Vespucci was very close to his uncle, Giorgio Antonio, a cleric in the social circle of the powerful Medici family. Amerigo came of age in an intellectual, courtly setting, and he knew many Florentine painters of the time. Verrocchio and Sandro Botticelli were neighbors of his, and it is not too fanciful to imagine that he may have witnessed Leonardo da Vinci asking his grandfather for permission to paint his portrait. Amerigo himself posed with other members of his family for Domenico Ghirlandaio in a beautiful fresco preserved to this day in the Florentine church of Ognissanti.

When Amerigo was 24 years old, another uncle of his, Guido Antonio, was appointed as Lorenzo de'Medici's ambassador to Louis XI of France, and he took Amerigo with him to Paris as his secretary. Amerigo completed his university education there and may have met Bartholomew Columbus when he was there to raise financial support for his brother Christopher's voyages. On returning to Italy, the young man went into



BPK/SCALA, FLORENCE

THE GATEWAY TO AMERICA

Belém Tower (above) stands near the Tagus estuary in Lisbon, from where Vespucci set sail in 1501 on the voyage that would explore the coast of South America.

MASSIMO BORCHI/FOTOTECA

the service of a member of the Medici family, Lorenzo di Pierfrancesco, as a lowly accountant. At the beginning of 1492 his patron sent him to Seville in southern Spain to supervise the family's accounts in the city. Vespucci's fortunes would be tied to Spain from that moment, and he would never return to his native city again.

The man in charge of Medici affairs in Seville was Juanoto Berardi, a Florentine trader who had played an important role in financing Christopher Columbus's expeditions. Meeting him changed Amerigo Vespucci's life. He and Berardi helped prepare Columbus's first two voyages, and when Berardi died in 1495, Vespucci took over as head of the Medici affairs in Andalusia.

Business did not go well, and Vespucci was forced to close the trading company. Since going back to Florence held little attraction for him, with his patron disgraced and the political situation in upheaval after the Medici had been overthrown in 1494, he decided, perhaps simply out of a desire to travel, to enroll in the expeditions sailing from Seville to the new lands across the Atlantic Ocean.

Voyages to the New World

Letters published by the Saint-Dié Abbey scholars indicate that Vespucci went on four voyages to the new continent, just like Columbus. There is, however, some doubt as to whether the first and fourth ones took place. The first supposedly left Cádiz in May 1497 and would have reached land after sailing for 37 days. This would have made the Florentine the first to discover the American continent. Vespucci describes a region that seems to be Venezuela and then explains that he rounded the Florida Peninsula, passed by the Bermuda Islands, and returned to Spain.

It is significant that Vespucci never mentions who was commanding the expedition. The fourth voyage mentioned in his letter—which supposedly took place between May 1503 and June 1504—is also dubious. The purpose of this voyage was to find a strait leading to the Spice Islands, "the island of Malacca, which is in the east." But it has not been possible to establish the route he took. Little hard evidence supporting the existance of this mission exists outside

A HOME FROM HOME
THE GIRALDA BELL TOWER SOARS OVER THE 15TH-CENTURY CATHEDRAL OF SEVILLE. THE CITY, ENRICHED BY SPAIN'S NEW WORLD WEALTH, WAS THE HOME OF FLORENCE-BORN AMERIGO VESPUCCI FOR MUCH OF HIS ADULT LIFE.

MASSIMO RIPANI/FOTOTECA

CREDIT LIMITS

THE CASE FOR COLUMBUS

Some chroniclers complained that the credit given to Vespucci by naming the American continent after him was undeserved. A 16th-century Spanish historian, Bartolomé de Las Casas, wrote that Vespucci "took from Admiral Christopher Columbus what was rightfully his." He also accused Vespucci of having lied: For example, that the voyage he supposedly undertook in 1497—in which he "discovered" America before Columbus—was a figment of his imagination. Modern historians, however, think Vespucci was not personally responsible for all the exaggerations and inaccuracies surrounding his expeditions. The accounts of his voyages were much edited by his publishers to please a readership avid for novelties. Vespucci also had nothing to do with the decision to name the new continent after him. The mapmakers placed his name along the coast of South America that he had explored in 1499-1500. The name's use was later extended to both the northern and southern continents. The clearest proof that Vespucci had no intention of depriving Columbus of any credit is that they were friends, as shown in a letter in which Columbus describes Vespucci as a "fine man."

of these letters, leading scholars to continue to debate whether or not they occurred.

There is, however, no doubt that Vespucci took part in his "second" expedition that left Cádiz in May 1499, commanded by Alonso de Ojeda, with Juan de la Cosa as chief pilot. The fleet is believed to have reached Brazil a year before Vicente Yáñez Pinzón and Pedro Álvares Cabral arrived, followed the coast to Honduras, and then returned to Spain.

News of Ojeda's voyage spread quickly and aroused particular interest to the Portuguese, as the part of Brazil they had found was in the area assigned to Portugal according to the terms of the Treaty of Tordesillas (1494). The king of Portugal quickly recruited Vespucci for an expedition to explore the area and travel farther south, with a view to a possible passage to India. The fleet left Lisbon in May 1501, with Vespucci serving as the navigator.

On this voyage (the third of Vespucci's purported total of four), the crew traveled along much of the South American Atlantic coastline to what is now known as the Río de la Plata

(which they called the Jordan) and down the coast of Patagonia. Here, they reached an area that was very close to the strait that links the Atlantic and Pacific, which Magellan would discover a few years later.

Frustrated Ambitions

When he returned to Spain, Vespucci decided to write an account of his experiences in the two works that quickly spread throughout Europe. In these accounts, Vespucci said that he had taken part in the expeditions for unselfish reasons: "We traveled to make discoveries not profits." Sincere or otherwise, it seems he did not financially gain from his ocean crossings.

Back in Seville, he moved into a modest home in the parish of Santa María with his wife, María Cerezo. He was given little reward by the Spanish authorities for his endeavors, as observed by Columbus himself, a friend of Vespucci's who was also in financial trouble at the time. He wrote in a letter to his son: "[Vespucci] always tried to please me, he is a fine man. Fortune has not favored him, just like so many others. His work has not been as well rewarded as reason requires."

In 1505 things briefly looked up: King Ferdinand of Spain summoned Vespucci to court to present him with citizenship and propose that he take part in an expedition to the Spice Islands (modern-day Indonesia). He would be captain alongside Vicente Yáñez Pinzón, but a series of unforeseen events prevented the voyage from taking place. Finally, in 1508, the Castilian king appointed him master navigator at the Casa de la Contratación (House of Trade), responsible for exploration and colonization.

Vespucci's last years were not spent undertaking exciting voyages, but as a naval bureaucrat: checking the accuracy of maps, and making sure navigation instruments were reliable. He traveled around Spain to procure provisions for the fleets. Perhaps a victim of the plague, Vespucci died in Seville on February 22, 1512. He was buried in the Spanish city that had been his home for so long, in the Church of San Miguel, with a Franciscan friar's habit as his shroud. ■

A RESEARCHER AT THE SPANISH NATIONAL RESEARCH COUNCIL (CSIC), **CONSUELO VARELA** HAS WRITTEN BOOKS BOTH ON COLUMBUS AND VESPUCCI.

THE COAST OF BRAZIL

On his second voyage to the New World, Vespucci explored the Brazilian coastline, as shown in this 16th-century engraving by Theodore de Bry (above).

AKG/ALBUM

The Red Queen: Mysterious Maya Tomb in Palenque

In 1994 a Maya tomb from the seventh century A.D. was found in a hidden chamber in Palenque, Mexico. Inside it was the body of a mystery woman, surrounded by treasure and covered in poisonous powder the color of blood.

Encircled by thick jungle, Palenque is one of the most impressive and mysterious of all Mexico's ancient Maya sites. Known by the ancient Maya people as Lakamha, and today a UNESCO World Heritage site, the ruins of Palenque lie in the lush basin of the Usumacinta River in the modern Mexican state of Chiapas.

Palenque's heyday was the seventh century A.D., when, under the reign of K'inich Janaab' Pakal I (King Pakal the Great), the city was transformed from relative obscurity into a powerful Maya capital. Its imposing palaces, extensive administrative buildings, and temples filled with expressive bas-relief sculptures set Palenque apart from other Maya sites in Mexico, and it even rivals the grandeur of Tikal in modern-day Guatemala. Its secrets have been slowly unveiled by archaeologists, including the resting place of King Pakal himself, and more recently, the tomb of a noblewoman covered in a deadly red powder.

Secret Chambers

Palenque's most notable ruin is the Temple of the Inscriptions, a 90-foot-high pyramid containing some of the most detailed Maya hieroglyphic inscriptions ever found. The monument was assumed to be a religious center until 1952, when the French-Mexican archaeologist Alberto Ruz discovered the tomb of Pakal hidden underneath in a well-preserved chamber.

In 1994 the archaeological director of Palenque, Arnoldo González Cruz, decided to excavate Temple XIII, a structure alongside the Temple of the Inscriptions. A tunnel was dug from the staircase on the main facade in order to access the very heart of the structure. His team came upon a corridor leading to three chambers, two of which were found to be open and empty. The

IN THE VAULTED burial chamber of Temple XIII at Palenque, Mexico, a researcher examines the stained interior of the stone sarcophagus of the Red Queen.

KENNETH GARRETT/NGS

DAGLI ORTI/ART ARCHIVE

SEASHELL WITH A SMALL HUMAN FIGURE, TEMPLE XIII, PALENQUE

1952
Archaeologist Alberto Ruz discovers the tomb of **Pakal the Great** beneath the Temple of the Inscriptions.

1994
The tomb of the **Red Queen** is discovered by archaeologist Arnoldo González Cruz in Temple XIII, alongside the Temple of the Inscriptions.

1997
Anthropologists in Mexico City begin **extensive tests** on the remains, and build up a complex picture of her identity.

2012
After 18 years in Mexico City, the remains of the Red Queen are **returned to Palenque,** where they are now on display.

entrance to the largest, central chamber was the only one sealed off by a wall. The archaeologists felt sure that this opening had been closed to protect something important.

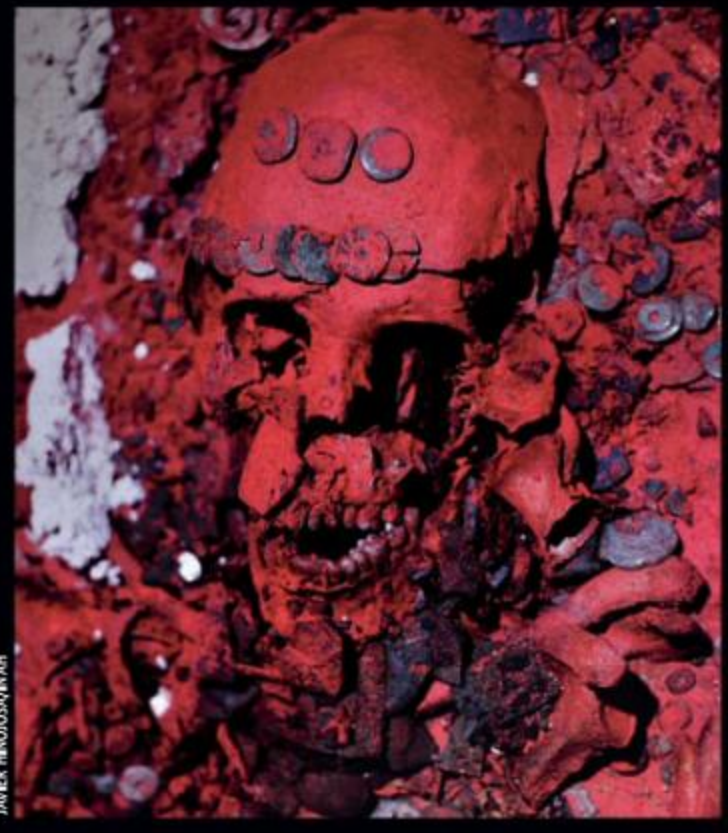
Before they accessed the room, they knew they must proceed with caution so as to avoid damaging the ornamentation or any objects that might be inside. Their first step was to create a small hole in the wall through which they could glimpse whatever was hidden behind it.

A Grisly Discovery

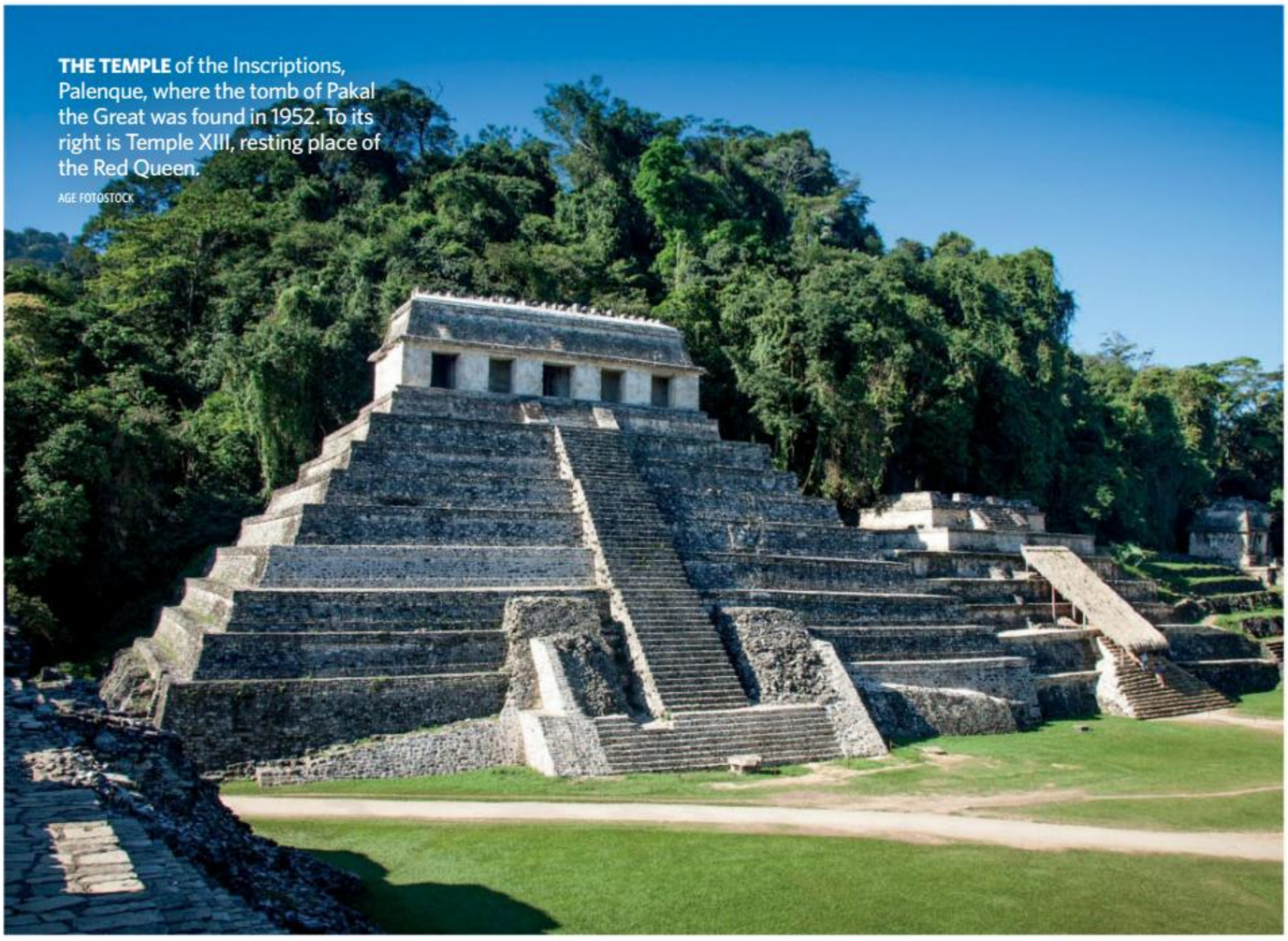
Pushing a light through the hole, González Cruz could make out a small, vaulted room measuring some 14 by 8 feet. It was almost entirely filled by a monolithic limestone sarcophagus with various ceramic objects spread

STUDY IN SCARLET

THE RED QUEEN was interred in style. Among the many grave goods found with her were a jade tiara, a malachite funerary mask, necklaces, anklets, pearls, bone needles, and daggers made of obsidian and seashells.



JAVIER HINOJOSA/INAH



THE TEMPLE of the Inscriptions, Palenque, where the tomb of Pakal the Great was found in 1952. To its right is Temple XIII, resting place of the Red Queen.

AGE FOTOSTOCK

around it. They decided to carefully remove the stones blocking the passage and open the chamber that had not been entered in more than 1,300 years.

The archaeologists were greeted first by the sight of two skeletons. One was of an adolescent male, about 11–12 years of age. His body lay on its back. There was evidence of cuts and blows to his rib cage, believed to have been inflicted as part of a sacrificial ritual.

The other body lying outside the sarcophagus was an adult female thought to be in her 30s. She was also stretched out on the floor, and her bones bore signs of fatal injuries as well. It is believed the two had been sacrificed to accompany the occupant of the tomb—whoever it was—on the journey into the afterlife.

Lifting the Lid

The sarcophagus itself was chiseled out of a single block of limestone and covered with a heavy flagstone. When it was placed in the tomb, it would probably have been painted red. No trace of pigment remained as the damp conditions in the tomb would have washed it away over the centuries. On top of the lid was a small circular aperture. Archaeologists use the Greek term psychoduct to describe this kind of feature: The Maya believed the tube would enable the psyche, or soul, of the deceased to communicate with the world of the living.

Inserting a small camera through the psychoduct enabled the archaeologists to see into the interior of the tomb before they attempted to open it. On seeing human remains, they decided to open the coffin.

Having made a lifting device from wood, metal, and car jacks, the team managed

The Maya believed the Red Queen's mask, fashioned from malachite, accompanied her into the underworld.

FUNERARY MASK OF THE RED QUEEN AFTER RESTORATION, PALENQUE MUSEUM, MEXICO

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Faces of the Past

AMONG THE ARRAY of grave goods found with the Red Queen, her magnificent funerary mask stands out. When it was discovered in the tomb, the mask lay shattered in pieces, which have since been painstakingly put back together. The mask is made of malachite, a striking green mineral, which is believed to have been mined in the area. Another smaller mask made of jade was also found in the tomb. It is thought that this would have been displayed on a belt.

Obsidian was used to create the pupils of the large funerary mask, and pieces of jade were used to make the irises. The mask's ear decorations were made from cleverly placed tubular and circular beads.

Malachite fragments, more than 100 of them, were carefully put back together to reassemble the Red Queen's mask.

The smaller jade mask is made of 106 fragments and two obsidian plates.

KENNETH GARRETT/NGS

to raise the heavy lid. They began immediately to photograph what was inside. To their surprise, they saw that everything, including a striking green funerary mask, was covered with a scarlet powder, later confirmed to be cinnabar, the common term for mercuric sulfide.

So far, it is not entirely clear why the grave interior, the body, the mask, and the jewel-encrusted treasure, were so liberally coated with this highly toxic powder. Cinnabar was used as a pigment in Maya art, and its red color may have been regarded as sacred. Evidence of its use in funeral rites has been found at other Maya sites, and the color may have represented the red of the rising sun, a symbol of resurrection and new life. Its use was one of many indicators of the elite status of the tomb's inhabitant, who came to be known as the Red Queen.

Search for the Queen

Extensive studies of the remains were carried out by Mexican researchers between 1997 and 2002, as part of the Red Queen Archaeological Project. Analysis shows that they belonged to a 50- to 60-year-old woman who once stood a little over five feet tall. The richness of her grave goods, her huge monolithic tomb, and the minimal wear to her teeth all suggest that she had belonged to the Palenque aristocracy. She was almost certainly a contemporary of the great King Pakal; the two figures were buried in adjoining temples, and in both cases, human victims had been sacrificed for them.

Although the study is not conclusive, the team's findings build a convincing case for identifying the Red Queen. The results of facial reconstruction were compared with the malachite mask, as well as with sculptures of Maya women, which are rendered in a style noted for its individualized expressions. DNA analysis has proven there is no blood link between the Red Queen and Pakal, while studies of her teeth reveal that she came from the local population of women.

All these conclusions fit with identifying the body as that of Pakal's wife, Ix Tz'akb'u Ajaw, who came to Palenque from a nearby city to marry Pakal in the year 626. If the tombs of her sons, later rulers of Palenque, can be located, and their DNA tested and found to match hers, the Red Queen of Palenque will finally have a name once more.

—Ana García Barrios

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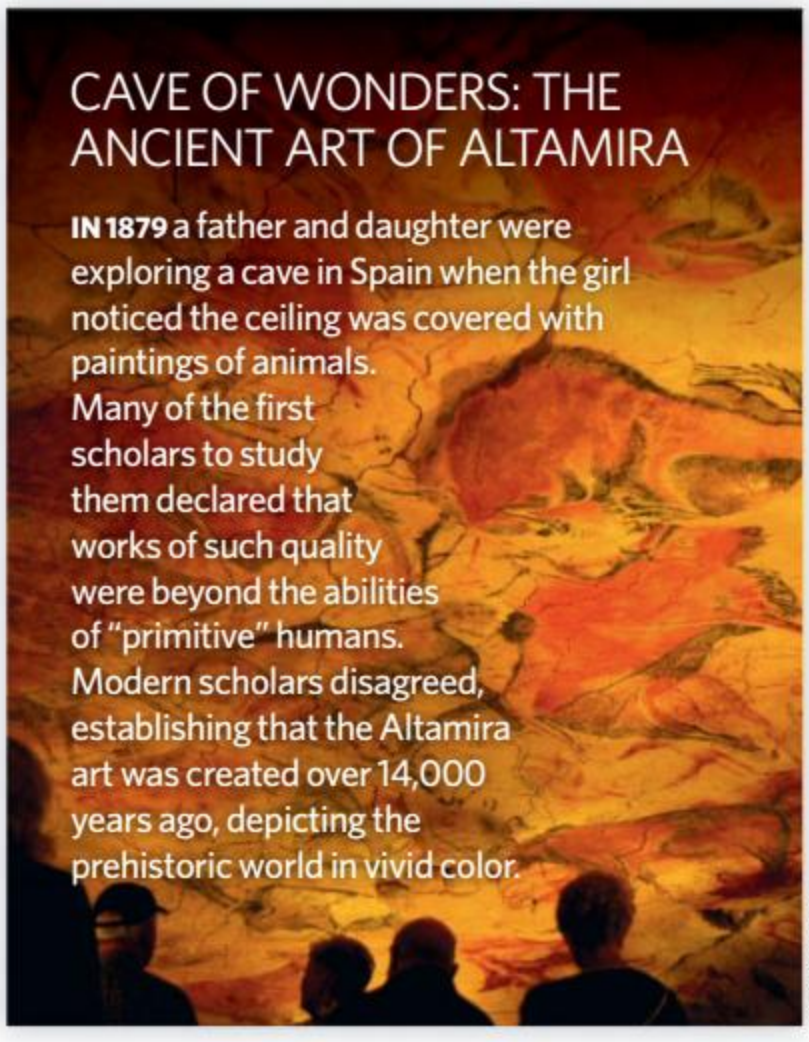
OCTAVIAN ROME'S COMEBACK KID

THE FIRST ROMAN EMPEROR is remembered for his iron grip on power, but it was Octavian's resilience that enabled him to survive the turmoil following Julius Caesar's assassination. Tested by a string of disasters—including his near death at the hands of a Roman mob and his fleet's defeat by a powerful rival, Sextus Pompey—Octavian was able to bounce back again and again. In 36 B.C. Octavian's brutal counterattacks would ultimately lead to the Roman world coming under his control.



TINO SORIANO/NGS

CAVE OF WONDERS: THE ANCIENT ART OF ALTAMIRA

IN 1879 a father and daughter were exploring a cave in Spain when the girl noticed the ceiling was covered with paintings of animals. Many of the first scholars to study them declared that works of such quality were beyond the abilities of "primitive" humans. Modern scholars disagreed, establishing that the Altamira art was created over 14,000 years ago, depicting the prehistoric world in vivid color.

Captain Cook's Great Endeavour

A brilliant navigator, the 18th-century explorer James Cook led astonishing expeditions that opened up Australia and mapped out swathes of the Pacific. His humane, scientific leadership style has represented the more enlightened side of British imperialism as it stood poised to conquer the globe.

The Iliad: Homer's Realities of War

Despite the heroic depictions of battle between Greece and Troy, the ancient Greek epic poem *The Iliad* was not pro-war. Homer used his writings to take an unflinching look at the horrors of war: grief for fallen comrades, parents' losing children, and atrocities committed on both sides.

Killer Queens of Thebes

In the second millennium B.C. the Hyksos had invaded and conquered Egypt. Leading from the city of Thebes, a series of queens rebelled against the invaders, drove them out, and reunited the kingdom. Their strong female leadership would leave a legacy to inspire later Egyptian leaders.

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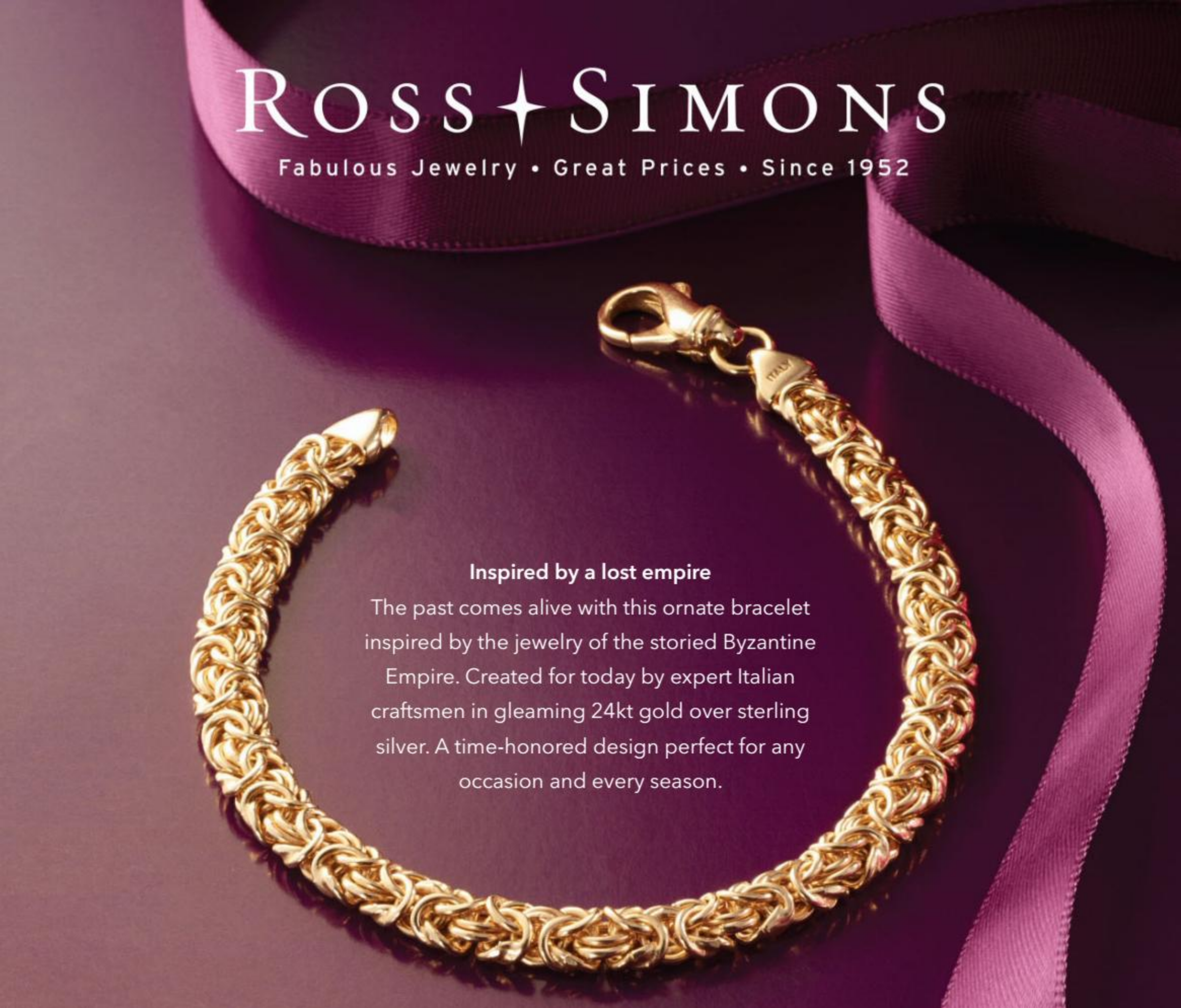

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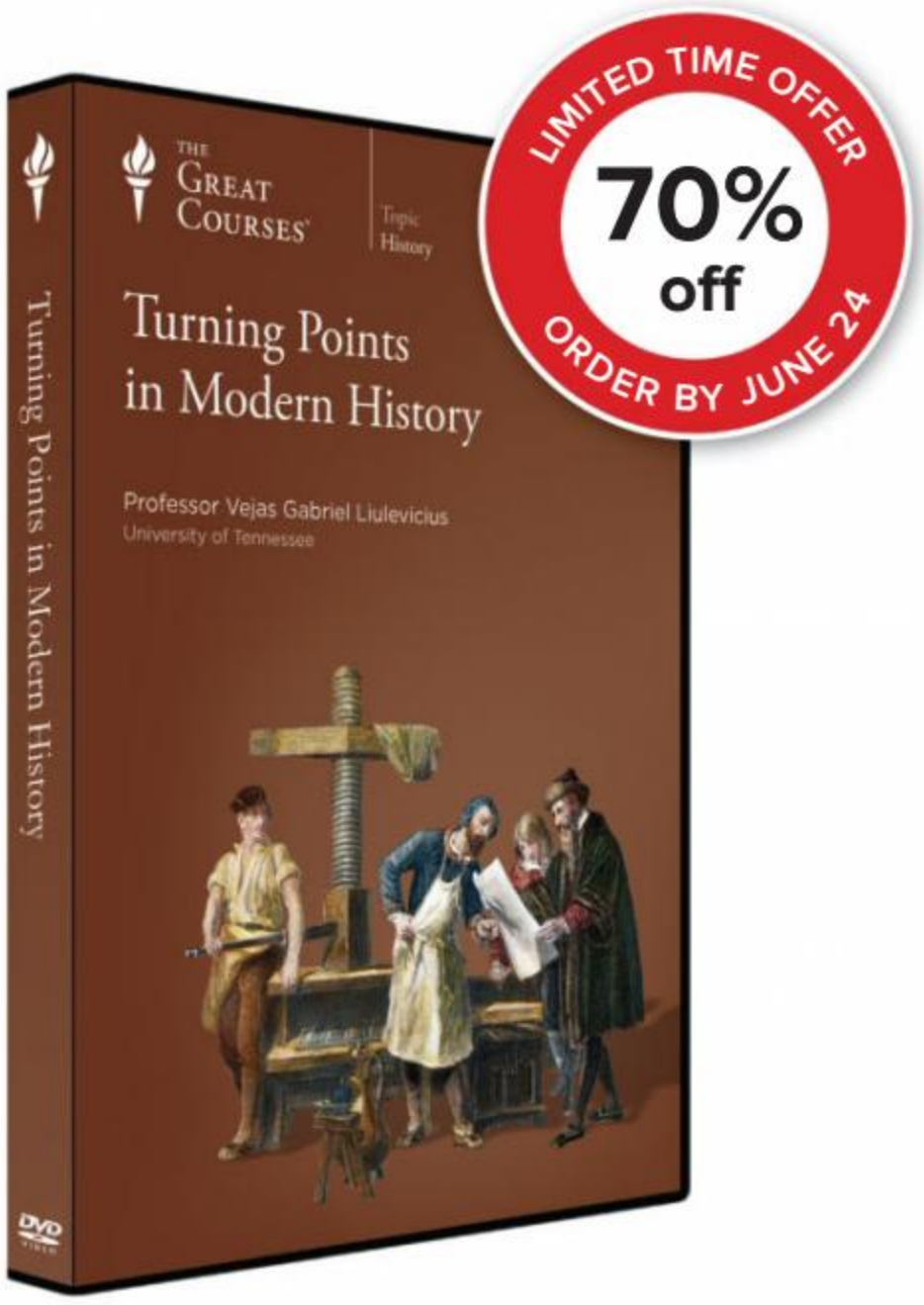

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