The Pharaoh's Peppercorn

In the mid-1970s, conservators at the Egyptian Museum in Cairo noticed that the mummy of the Pharaoh Ramesses II was deteriorating. A fungal infestation had spread across the linen wrapping and into the body itself, and the damage was accelerating. Egypt at that time lacked the specialized conservation technology to halt it. What followed required diplomacy at the highest level, and after direct negotiations between the French President Valéry Giscard d'Estaing and Egypt's Anwar Sadat, France agreed to help.

On September 26, 1976, a French military aircraft touched down at Le Bourget Airport in Paris. The Garde républicaine stood at attention on the tarmac. This elite unit, responsible for greeting heads of state, had assembled in full ceremonial dress. The red carpet had been rolled out. Alice Saunier-Seïté, France's Secretary of State for Universities, waited to receive the passenger.

It was a mummy.

This, however, was no ordinary Pharaoh. Ramesses II (also sometimes spelt as Ramses) had ruled Egypt for sixty-seven years, from 1279 to 1213 BC. Born in 1303 BC, he ascended the throne in his late teens and reigned until he was over ninety years old, outliving most of his wives and children.

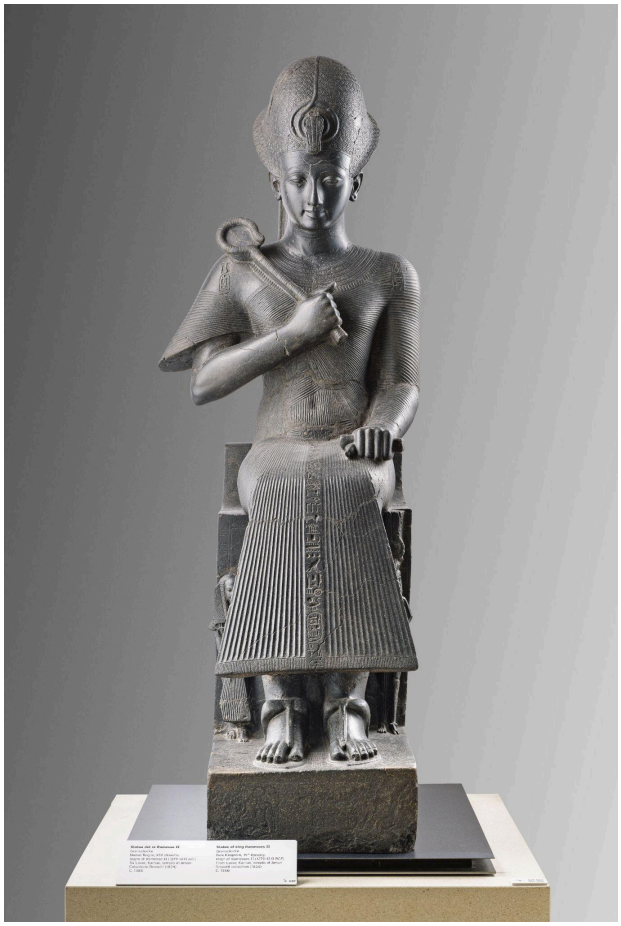

Figure 1: Ramesses II enthroned, Karnak[1]

He led at least fifteen military campaigns, expanding Egyptian control into Canaan, Phoenicia, and Nubia. These territories stretch across modern Israel, Lebanon, Jordan, Syria, and northern Sudan. He built cities on a monumental scale: Pi-Ramesses, his new capital in the Nile Delta; Abu Simbel, where four colossal statues of himself sit carved into a cliff face; the Ramesseum, his massive mortuary temple at Thebes.

He was worshipped as a deity during his lifetime, proclaimed "The Strong Bull, Beloved of Ma'at." After his death, successor Pharaohs venerated him as the Great Ancestor. Inscriptions carved into temple walls at Abu Simbel and Karnak speak of his military prowess in language meant to awe:

> *The youthful King with the bold hand has not his equal. His arms are powerful, his heart is firm, his strength is like that of the god of war, Mentu, in the midst of the fight. He leads his warriors to unknown peoples.*

[1] Granodiorite, 1279–1213 BCE (early reign), Temple of Amun, Karnak (Thebes). Museo Egizio, Turin, Cat. 1380.

He seizes his weapons, and is a wall of iron to his warriors, their shield in the day of battle.

He seizes his bow, and no one is equal to him.

Mightier than a hundred thousand united together goes he forward. His courage is firm like that of a bull which seizes. No man knows the thousands of men who fell down, nor the hundreds of thousands that sank before his glance.

Terrible is he when his war-cry resounds, bolder than the whole world, as the grim lion in the valley of gazelles. No opponent dares to speak against him.

Wise is his counsel. Complete are his decisions when he wears the royal crown Atef and declares his will, a protector of his people. His heart is like a mountain of iron. Such is King Rameses Meri-Amen.[2]

The Greeks called him Ozymandias. Twenty-six centuries after his death, Percy Bysshe Shelley immortalized that name in a poem about the futility of power:

"My name is Ozymandias, King of Kings;
Look on my Works, ye Mighty, and despair!"[3]

Some scholars believe Ramesses II was the Pharaoh of Exodus, though evidence remains inconclusive. The Book of Exodus [4]mentions the city of Ramesses (one of the many cities he founded) but does not name the ruler. When the mummy arrived in Paris in September 1976, the *New York Times* could not resist invoking the connection:

PARIS, Sept. 27—"And the children of Israel journeyed from Ramses," the Book of Exodus says in describing the flight of the Jews from the oppressive Pharaoh. Now the mummified remains of the Pharaoh have journeyed from Egypt to Paris for treatment of a mysterious disease linked to a fungus infection.[5]

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[2] Sharpley, C.E. 1925. *Anthology of Ancient Egyptian Poems.* London: Kegan Paul, Trench, Trubner & Co.

[3] Shelley, P.B. 2003. Ozymandias. In Z. Leader and M. O'Neill (eds), Percy Bysshe Shelley: The Major Works. Oxford: Oxford University Press, pp. 611–612.

[4] Coogan, M.D., Brettler, M.Z., Newsom, C.A. and Perkins, P. (eds). 2010. The New Oxford Annotated Bible with the Apocrypha: New Revised Standard Version. 4th edn. Oxford: Oxford University Press.

[5] Farnsworth, C.H. 1976. Paris Mounts Honor Guard For a Mummy. The New York Times, 28 September. Available at: https://www.nytimes.com/1976/09/28/archives/paris-mounts-honor-guard-for-a-mummy.html

Press reports claimed Ramesses had been issued an Egyptian passport for his "state visit," listing his occupation as "King (deceased)." However, this was a misinterpretation of the French word *passeport* used to describe the extensive documentation required for transport, not an actual passport. But they captured the spirit of the moment: one of history's greatest kings had come to France.

Ramesses's mummy did not go to an exhibition. Instead it was taken to the *Musée de l'Homme*, housed in a building overlooking the Seine across from the Eiffel Tower. Two climate-controlled rooms on the third floor had been prepared. Over the next eight months, more than forty laboratories and one hundred researchers would examine the remains of Ramesses II using the most advanced scientific techniques available in 1976.

Figure 2: Photograph of the mummy of Ramesses II[6]

The examination was exhaustive. Conservators used endoscopes to explore the abdominal cavity. Forensic scientists analyzed hair samples and found that the Pharaoh

[6] Lichtenberg, R.J. and Thuilliez, A.C. 1981. Sur quelques aspects insolites de la radiologie de Ramesses II. Bulletins et Mémoires de la Société d'Anthropologie de Paris 13(3): 323–330. https://doi.org/10.3406/bmsap.1981.3837

had been fair-skinned with wavy, reddish hair, likely dyed with henna in his final years. Electron microscopy revealed cellular details. Bacteriological studies identified the fungal species attacking the tissue. The French Atomic Energy Commission applied gamma radiation to sterilize the mummy without damaging it further.

But the most revealing work came from the radiologists.

A team led by R.J. Lichtenberg and A.C. Thuilliez conducted detailed X-ray studies using xeroradiography, a technique that captures both hard and soft tissue in a single image. Chromodensitography allowed them to translate the grayscale X-rays into color spectrums, revealing subtle differences in tissue density. What they found told the story of a man who had lived a long, physically demanding life and of embalmers who had worked with precision and care.

The radiographs confirmed that Ramesses II had stood approximately 170 centimeters tall, about five feet seven inches. Considering the natural shrinkage from age, death, and mummification, he would have been considered tall for his time. His skeleton showed evidence of arteriosclerosis, a hardening of the arteries common in old age. His teeth were in terrible condition. He was missing his first lower molar, and a severe abscess at the root of his left second molar would have caused constant, excruciating pain in his final years.

The radiologists also documented evidence of arthritis and spinal changes that had been previously misdiagnosed. For decades, scholars believed Ramesses II had suffered from ankylosing spondylitis, a severe inflammatory disease that fuses the spine. The 1976 X-rays disproved this. What Ramesses had was diffuse idiopathic skeletal hyperostosis, or DISH, a condition where ligaments ossify with age. It causes stiffness but not the crippling fusion of ankylosing spondylitis. The diagnosis fit better with historical accounts of Ramesses as an active military leader well into old age.

The X-rays also revealed details of the mummification process itself. Embalmers had broken a portion of Ramesses's cervical spine postmortem, deliberately, to position his head correctly for burial. The body had been padded with linen and resin in the nasal passages and abdomen to maintain its shape. Every detail spoke to the care taken to preserve the king's remains for eternity.

But one finding stood apart from the rest.

Lodged in the Pharaoh's nostrils, embedded in resin, were several black peppercorns.

Lichtenberg and Thuilliez published their results in 1981 in the *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, in a paper titled *Sur quelques aspects insolites de*

la radiologie de Ramesses II ("On Some Unusual Aspects of the Radiology of Ramesses II"). The peppercorns were mentioned briefly, almost in passing, as one among many unusual substances used in the mummification process. The implications, however, were extraordinary.

Black pepper (*Piper nigrum*) is native to the Malabar Coast of southern India, over 3,500 miles from the Nile Delta. For peppercorns to end up in the nostrils of a Pharaoh who died in 1213 BC, they had to have traveled across vast distances, through multiple civilizations, along trade routes that connected the ancient world in ways historians were only beginning to understand.

Ramesses the Great, who had commanded armies and built temples meant to last forever, carried with him into death a spice from the other side of the known world.