

REVEALING WHAT IS HIDDEN. TWO EGYPTIAN MUMMIES BELONGING TO THE NATIONAL ARCHAEOLOGICAL MUSEUM (MADRID)

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Abstract. Mummification is one of the most important legacies of the Ancient Egyptian civilization. Using this process the Egyptians believed that they were preserving the body so that it could live eternally. During the Predynastic Period and the first dynasties the mummification was a natural process, but shortly after this they started to mummify the dead intentionally, and the

practice was perfected little by little until it became a fixed custom, which continued right up until the dawn of the Christian-Byzantine period.

The National Archaeological Museum has in its collection two female Egyptian mummies with different histories and origins, and both are the result of the trade in antiquities in the 19th century.

Keywords. Female mummies. Bandages. Brain. Balms. CT.

Mummification, whether deliberate or intentional, is a legacy of many ancient civilizations, but no doubt one of the most significant that is left to us by the Egyptian civilization.

However, the term mummy does not appear until the Persian Period, in which the word *bitumen* is used to mean *mummy*¹.

The oldest mummies known in Egypt are from the Predynastic Period, such as the burial of the man in Gebelein, 3200 B.C., and the first dynasties. They are corpses mummified naturally, thanks to the heat and the sand drying of the desert².

At the beginning of the Old Kingdom³, Egypt began to deliberately mummify its dead, a practice which was increasingly refined, and would continue until the dawn of the Christian-Byzantine period⁴. The ancient Egyptians very soon realised that the essential factor to preserve the bodies was to take out the moisture they

¹ *Bitumen* (latin), is the generic name of some organic liquids, above all carbon and hydrogen, that we are found in nature. In the I Century, Ibn Betar, an Arab physicist, described for the first time the term *mummi*a as a material found in a country called Apollonia. In the XII Century, Abd el Latif, another Arab physicist, called *mummi*a a liquid mineral that oozed from the mountains of Persia and coagulated inside of them. The ancient people of this country thought that this product had curative qualities, especially for bones. In fact, in 1908 the king of Persia sent to the Queen of England a sample of this material as “*something more valuable than gold*”.

When the people of this country saw that the embalmed bodies of the Ancient Egyptians were covered in dark resins, they thought erroneously that it was the same material and used the term *mummi*a for this. And with time this term was extended to the body, because they thought that it was made of similar material. The doctors prescribed powdered mummy as a curative drug for injuries and burns until the beginning of the XVII Century when its sale was prohibited. El-Latif, 1810: 273; Brier, 1996: 175-176; Budge, 1894: 173-175.

Some research shows that Ancient Egypt used to import this material from the area of the Dead Sea in Palestine, not only because it was very good quality, but also because it was in a semi-solid state and this facilitated its transport. However, when they needed a lot of material they went to the zone of Gebel el Zeit in the Arabian Desert.

Studies of the Egyptian mummies have shown that the use of *bitumen* in mummification starts at the end of the Persian period and continues during the Ptolemaic times to prevent biodegradation and decomposition of the bodies. Dunand and Lichtenberg, 1998: 72-74; Harrell and Lewan, 2002: 287-291; Lucas, 1989 (4th ed.): 303-308.

² Brier, 1996: 20-21; Dunand and Lichtenberg, 1998: 28; El Mahdy, 1993: 53; Lucas, 1989: 270-271; Flemeng and Fishman, 1980: 1-3; Taylor and Antoine, 2014: 30-38, Figs. 12-13.

³ We do not know exactly when was the beginning of the intentional mummification, but it was more or less at the end of III dynasty or beginning of the IV dynasty.

⁴ Donadoni, 1988: 181.

contained, and they started to work on new methods and different materials. Finally, they found the answer in the *natron*⁵ that came from Wadi el Natrum, 60 Km to the N.W. of Cairo, although also they got it from the provinces of Beheira and El Kab.⁶

In addition to the classical authors such as Herodotus⁷ or Diodorus of Sicily⁸, who described different phases of the mummification *process*, we also have a lot of evidence that shows us that practice to a greater or lesser extent: priests purifying the deceased in the presence of Anubis or priests with a head of Anubis⁹; priests extracting the brain through the nose and the viscera through an incision on the left side¹⁰; the dead body on an embalming table and the priests cleaning it with holy water; perfumes, oils, spices, unguents, etc., and finally, the set of canopic jars with the viscera inside of them and the deceased bandaged and covered with a mask.

The tombs of Sennedjem (TT I)¹¹, Thay (TT 23)¹², Nekhtamun (TT 335)¹³, and Amenemope (TT 148)¹⁴ are very interesting; as are the papyrus of Ani¹⁵, Kerasher¹⁶, Rhind¹⁷

⁵ Natural salt/sodium carbonate with remains of sodium bicarbonate, sodium chloride and sodium sulfate.

⁶ David, 2008: 11-12; Dunand and Lichtenberg, 1998: 5-15, 29-30; Lucas, 1989 (4^a ed.): 274-303; Sandison, 1963: 259-267; Shaw and Nicholson, 2004: 253

⁷ Herodotus Book II, Cap. 86-87. He described three types of mummification, depending on the social position of the individual.

⁸ Diodorus of Sicily, Book I 96.4, 96.6

⁹ The Pelizaeus, Museum (Hildesheim, Germany), has a helmet mask of Anubis of the VI-IV Century B.B. It was used by an embalmer priest. Brier, 1996: 88, fig. 23; Dunand, y Lichtenberg, 1998: 38; Eggebrecht, 1984: 290; Eggebrecht, 1993: 87, N° 84

¹⁰ Brier, 1996: 77-78; Budge, 1894: 160-184; Dunand and Lichtenberg, 1998: 30-32; El Mahdy, 1991: 57-58; Lucas, 1989: 299, 309, 319, 432.

¹¹ 18th dynasty, Deir el Medina. Brier, 1996: 53, fig. 11; El Mahdy, 1993: 104, fig. XV; Eggebrecht, 1984: 291; Toda, 1887: 48-56.

¹² 18th dynasty, Thebes. Brier, 1996: 60, fig. 15; Champdor, 1963: 119; Parra Ortiz, 2010: 79, fig.4.1.

¹³ 18th dynasty, Deir el Medina. El Madhy, 1993: 56.

¹⁴ 20th dynasty, Thebes. Brier, 1996: 60, fig. 16; Champdor, 1963: 119.

¹⁵ 18th dynasty, BM; Budge, 1894: 157-159, 166-168; El Madhy, 1993: 12.

¹⁶ End of the Ptolemaic Period. BM; Budge, 1899: 39-43; Quirke and Spencer, 2004: 58-59, fig. 37 (n° inv. EA 9995/3).

¹⁷ Pushkin Museum (Middle Kingdom) and BM (Second Intermediate Period). Brier, 1996: 49-52, fig.9; Lucas, 1989: 273.

and Hunefer¹⁸; the coffins of Djed-bast-uef-ankh y Mutirdies¹⁹; and some carton-nages like the one in the Egyptian Museum of Turin²⁰.

The National Archaeological Museum has four Egyptian human mummies each with a different history and origin, although they all have the fact that none came from an Archaeological Site in common, but are the result of the antiquities trade at the end of the 19th Century and beginning of the 20th Century. Two of them are these female mummies:

- Human female mummy (I5208bis)
Chronology: Ptolemaic Period (332-30 B.C.)
Measurements: 156 cm high and 32 cm wide

According to the documentation that we have in the Archives of the National Archaeological Museum²¹, in 1886 the mummy arrived at this Institution inside a wood polychrome coffin that belonged to a person called Bak²². It was a present from Pacha Bey Daninos, Director of the Royal Museum of Alexandria²³.

A telegram tells us that both the mummy and sarcophagus left the port of Alexandria for Marseille in 1886, although we do not know the exact date. From here and by order of a certain M. Biger, they were transferred to Alicante in the steamship Luis de Cuadra, and arrived in this port on the 1st September. Finally, travelling by rail they arrived at the "*Royal Museum of Antiquities of Madrid*"²⁴.

We have a letter from September 3rd, which the Ministry of Development sent to the *Director of the Archaeological Museum*²⁵, asking if they could confirm if the mummy and the coffin were in this institution.

¹⁸ 19th dynasty. BM. Champdor, 1963: 148-149, 174; Parkinson, 2010: 4-5, 38-39.

¹⁹ Both in the Pelizaeus Museum de Hildesheim (Germany), and of the Ptolemaic Period. Dunand and Lichtenberg, 1998: 26, 88-89; El Madhy, 1993: 56-57; Germer, 1997: 18-19, figs. 2-3; Kruck, 2012: 12:74.

²⁰ Ptolemaic Period. Kruck, 2012: 75, 82-83.

²¹ Exp. 1886/13.

²² The coffin (Inv. No. I5208) dates from the end of the New Kingdom and beginning of the 21st dynasty. The X-ray studies carried out in 1978 by E. Llagostera showed that this mummy was really a female body about 60 to 65 years old and therefore the sarcophagus did not belong to this one. Llagostera, 1978: 44-55; Guía, 1917: 95; Rodríguez, 1916: 95.

²³ Álvarez-Ossorio, 1910: 14; Álvarez-Ossorio, 1925: 37; Pérez, 2007: 27; Pérez, 1978: 16-17; Pons Mellado et al. 2018: 394-395.

²⁴ This is a mistake of the Archive, because really it was the National Archaeological Museum.

²⁵ D. Basilio Sebastián Castellanos de Losada (1886-1891)

In 1908²⁶, the Museum received two letters from the Archives of the Ministry of Public Instruction and Development, dated the 6th and the 8th of June respectively. The first of them was for the Director D. Juan Catalina García López (1911-1919), and the second was for the Curator D. Manuel Pérez Vilamil. In both letters, Mr. Castro, the Undersecretary of the Ministry, orders the Museum to put a label on or next to the mummy with the name of "*Pacha Bey Daninos, donor*".

Finally, we have an internal note, undated, in which the Director of the Museum asks the Curator Mr. Osorio to place "*a card of origin*" next to the mummy "*as is fair*".

- Human female mummy (15210)

Chronology: Third Intermediate Period (845-664 B.C.)

Measurements: 159 cm high and 36 cm wide

This mummy forms part of the Col. Eduard Toda i Güell²⁷ collection, which arrived at the National Archaeological Museum on the 15th January 1887²⁸.

We have two documents about the purchase of these pieces by the Spanish Government and their transfer to the Archaeological Museum; "*HM the Regent Queen on behalf of her August son, the King D. Alfonso XII, decrees that the Collection of Egyptian Antiquities and Near East that the Spanish Consul in Cairo, that Mr. Eduardo Toda has offered, be acquired for the National Archaeological Museum ...*"²⁹.

The Archives of the Archaeological Museum hold two similar lists of this collection, which describe the function of the pieces and the materials they are made of, specifying the chronology and the origin when they are known.

²⁶ Exp. 1908/31

²⁷ E. Toda i Güell was Spanish Consul in Cairo between 1884 - 1886. During his stay in Egypt he acquired a very large collection of Egyptian pieces, more or less 1,600 objects. Later he sold one part to the Spanish Government, around 1,360 objects, and the rest he donated to the Museum Victor Balaguer of Vilanova i la Geltrú (Barcelona). The documentation about his life in Egypt is in the CSIC. Álvarez-Ossorio, 1910: 14; Álvarez-Ossorio, 1925: 37; Cabrera, Pérez, Pons, 1993: 371-374; Guía, 1917: 25, 95; Montero, 1991: 17-19, 27,30, 35-38; Pérez, 2007: 27; Pons Mellado et Alii, 2017: 1075-1088; Rodríguez, 1916: 95; Seco, 2009: 30-31, 300.

²⁸ Exp. 1887/1. The mummy was accompanied with some cartonnages of the Ptolemaic Period (332-30 B.C.).

²⁹ 1887/1 (p. 2).

In the case of this mummy we know that she was erroneously catalogued by his owner as “*a Priest from Thebes...*”, but we do not know why he decided that the mummy was a Priest³⁰.

Three years ago, in 2016, the National Archaeological Museum, the Quirónsalud University Hospital of Madrid and the company Story Producciones signed an agreement to carry out a study by Computed Tomography (CT) of three Egyptian mummies (two of them are these female mummies) and one Guanche mummy (from the Canary Islands) belonging to this Museum³¹. On the night of 5th June these mummies were duly transferred from the National Archaeological Museum to the Quirónsalud University Hospital in a special truck which satisfied all the necessary conditions to guarantee the safety of the mummies. The same night, once the CT had been performed, the mummies came back to the museum.

RADIOLOGIC STUDY OF THE FEMALE MUMMIES

Mummy I (I5208bis)

The high-resolution CT scans revealed the details of mummification and allowed observations about the socioeconomic and health status of the human subjects based on both the mummification technique used and the appearance of the remains, particularly the bones and teeth.

This adult mummy, with a height of 150 cm and a width of 30 cm, shows her arms crossed, with the right arm over the left arm (Fig 1). Embalming was poorly done, as some of the wrappings are not tightly fixed around the corpse, which indicates that she probably did not belong to a high socio-economic status.

This mummy is classified in the young adult group, with an estimated age of between 35-50 years old, at the time of her death. There are no signs of osteoarthritis and there is no calcification of the costal cartilages either.

There are no signs of violent death or bone fractures that could explain the cause of death.

The skull has the typical female shape, with a smooth frontal bone and occiput.

The mandibular angle is above 90° and she has a prominent and angled chin.

³⁰ The studies of X-Ray carried out in 1978 by E. Llagostera showed us that this mummy was really a female body about 25 years old. Llagostera, 1978: 30-39.

³¹ Gómez Espinosa et al. 2018: 455-472; Pérez Die et al., 2018a: 411-430; Pérez Die, y Carrascoso, 2018b: 431-454.

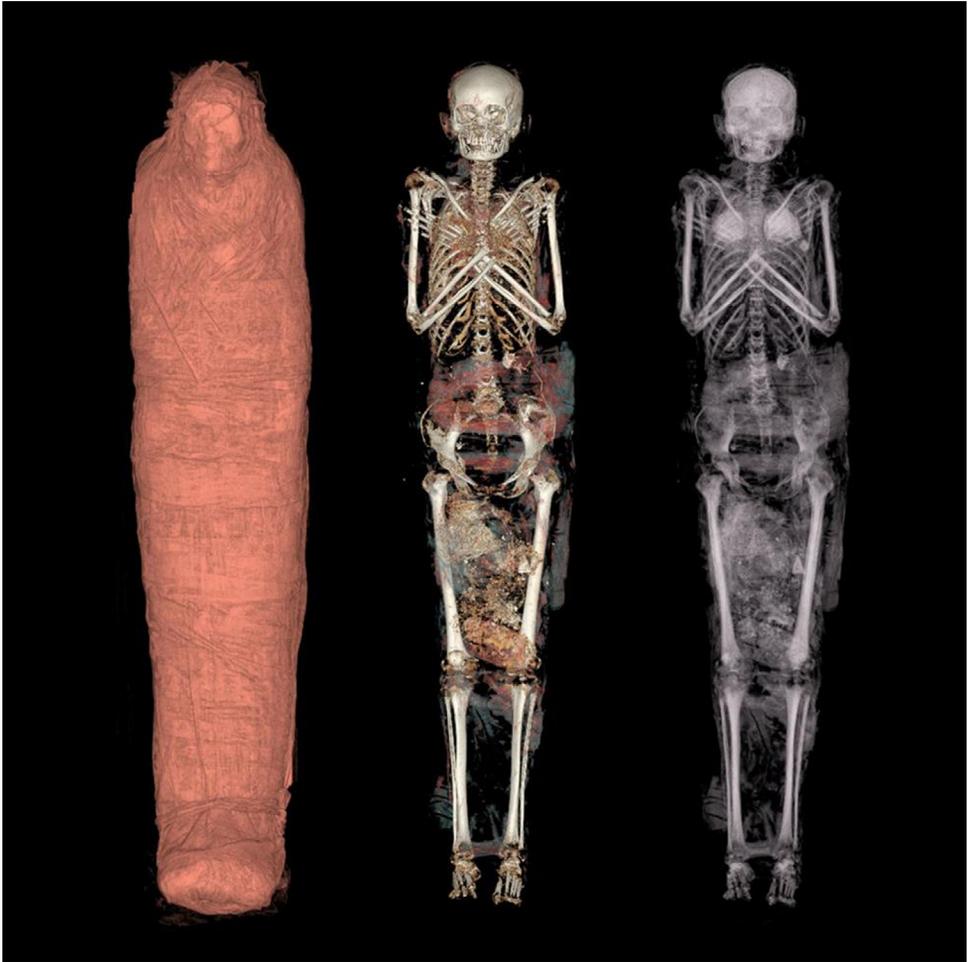


Fig. 1. Three-dimensional CT reconstruction of the whole body in its front view, that shows the mummy with its arms crossed, (typical feature of the Ptolemaic Period).

The pelvis has a typical female shape, with a subpubic angle of 102° .
Excerebration was performed via transnasal.

The teeth were in very bad condition, with some of them inside the oropharynx, probably caused by the excerebration process (Fig. 2). Also mandible atrophy was seen, secondary to the lack of teeth during many years. This is a feature that many mummies share, and it is probably due to the life style of that moment and

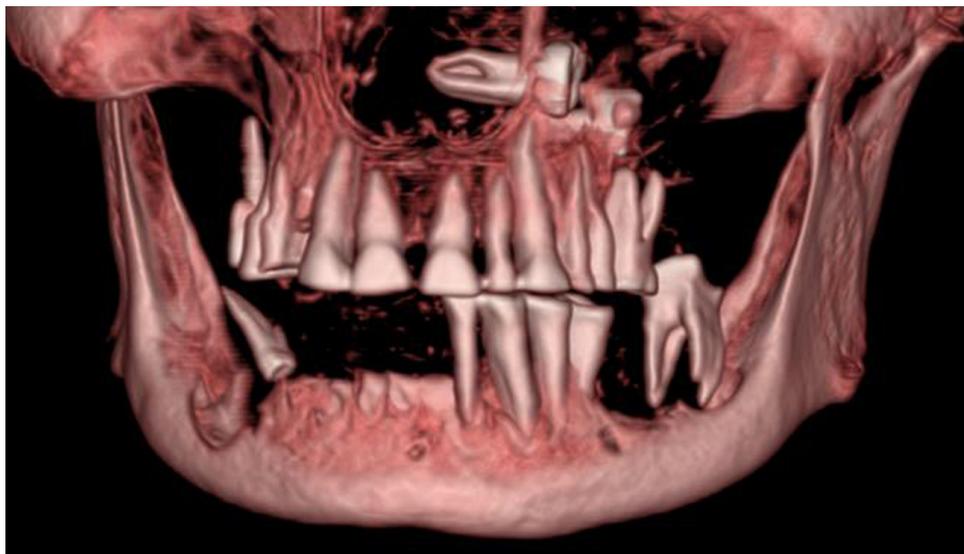


Fig. 1. 3D Reconstruction (coronal plane) of a Denta-scan, showing the poor condition of the teeth and the lack of many of them (some are located in the oropharynx).

the diet, based on cereal. The cereals were mixed with grains and sand, which contributed to the poor teeth condition (Fig. 2).

Orbits have a cuadrangular shape and linden material was introduced inside them.

Evisceration was performed through a subcostal left incisión and then, a granular material (probably sand), was introduced inside the body. This type of material is also inside the thoracic cavity.

Mummy 2 (I5210)

Three-dimensional CT reconstruction of the whole body, that shows the mummy with its arms extended along the body.

Adult mummy with a height of 169 cm and a width of 36 cm.

The mummy shows its arms extended along the body and the head slightly inclined to the right side (Fig. 3). The embalming was not done conscientiously, which suggests that the woman probably belonged to a low social caste.

She has a typical female skull, with smooth frontal bone, occiput and without supraciliary prominences. The mandibular angle is 131° . We can observe a rounded chin and a narrow maxillary bone.

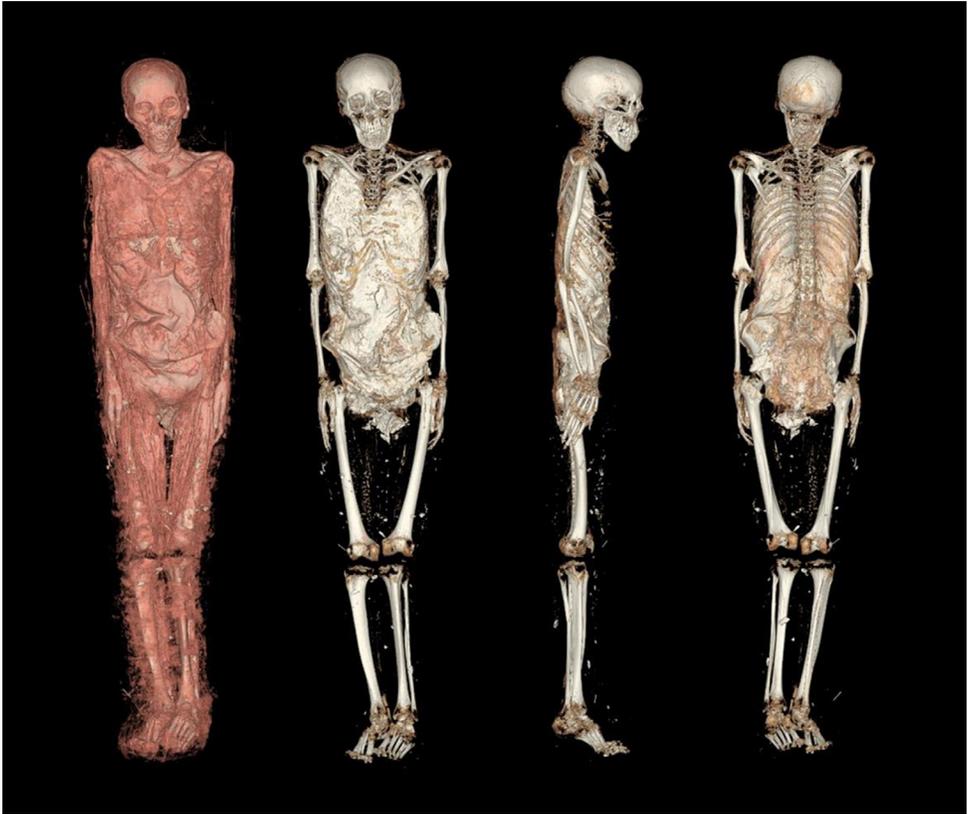


Fig. 3. Three-dimensional CT reconstruction of the whole body, that shows the mummy with its arms extended along the body.

The pelvis has a gynecoid shape, wider than it is tall and a subpubic angle of 90° .

At the time of death, this mummy was between 25-30 years old. It only shows osteoarthritic changes in the synchysis, which suggests she could have been pregnant at a certain moment during her life. There are no clear signs of death. The mummy has some fractures, (left tibia, right fibula), both knees are dislocated and also the right Achilles tendon is broken (Fig. 4).

Excerebration was performed via transnasal.

Soft tissues are very well preserved, as well as the lips, the nose and both ears. This fact has allowed us to make a three-dimensional virtual reconstruction of the face (Fig. 5).



Fig. 4. Three-dimensional CT reconstruction (right oblique-lateral view). Bone fractures, Knee dislocations and a broken Achilles tendon.



Fig. 5. Three-dimensional CT reconstruction (left oblique-lateral view). The preservation of soft tissues allow us to distinguish the lips, the nose and ears, clearly.

Inside the orbits, there was filling material. Both optic nerves and extraocular muscles are very well preserved.

Teeth were in very bad condition, due to infections and periapical abscesses.

Viscera were removed through a left flank incision and a dense material was introduced after evisceration, to fill the empty cavities. This material is observed inside the annus.

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