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التحنيط

*Salima Ikram*

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## MUMMIFICATION

### التحنيط

Salima Ikram

Mumifizierung

Momification

*The ancient Egyptians carried out mummification, the artificial preservation of the body, to ensure the survival of the body after death. They believed that the dead body could be reanimated by the *ka* (spiritual essence) and that the destruction of the body threatened the survival of the soul and the individual's identity for eternity. Mummification was used primarily by elites from the early Old Kingdom on, with variations becoming available for those of lesser social and economic standing over time. The word "mummy" is derived from the Persian and Arabic word "mum", meaning liquid pitch, asphalt, or bitumen, a substance that the Arabs mistakenly thought was used to make mummies and responsible for their dark coloring.*

قام المصري القديم بحفظ جثمان المتوفي بطريقة تضمن المحافظة عليه بعد الوفاة، واعتقد المصري القديم أنه يمكن للجسد أن يحيا من خلال الـ «كا» وهي خلاصة الروح، وإذا تدمر الجسد أصبحت الروح مهددة بالفناء. بدأ التحنيط منذ عصر الدولة القديمة حيث كان متاحاً لعلية القوم، ولكن بمرور الزمن أصبح التحنيط متاحاً للطبقات المختلفة على حسب مستواهم الاجتماعي والمادي. تأتي كلمة «مومياء» من كلمة «موم» والتي تعني بالفارسية والعربية «القار» أو «البيتومين»، وهي المادة التي أخطأ العرب في الإعتقاد إنها مستخدمة في التحنيط حيث أنها تعطي المومياءات لونها الغامق.

**E**gyptian funerary beliefs dictated that the body be preserved after death so that the soul—particularly the *ka*—could use it as a vehicle for reanimation. Without a physical manifestation (the body or images of the deceased), no aspect of the soul (*ka*, *ba*, or *akh*) could function in the eternal realm effectively. Mummification was the way in which the Egyptians attempted to arrest and control the decomposition of the flesh and preserve the body. The principle of mummification is very simple: it focuses on artificially dehydrating the body and preserving it with natron (a form of salt consisting of a mixture of sodium carbonate, sodium bicarbonate, a small amount of sodium chloride, and traces of sodium

sulphate); the natron also dissolves fatty tissues and protects the flesh from bacterial and fungal attack. Over time, the materials used in preserving the body, as well as the methods employed, changed, although the basic principles remained constant. As variations were introduced, it became usual to have several different methods of mummification practiced concurrently, depending on the embalming house used, costs, and the preference of the deceased. Anyone who could afford it was mummified, although the type of mummification depended to some extent on an individual's wealth.

The Egyptian word for a mummified body was *sḥ*. The word "mummy" is derived from

the Persian and Arabic word *mum* (موم), meaning asphalt, bitumen, or wax. The Arabs gave this name to the preserved bodies of the ancient Egyptians that were coated with a black substance, which they mistakenly identified as a form of bitumen known from the Mummy Mountain in Persia. However, for the most part the black color was not derived from bitumen but rather from a combination of oils, resins, dirt, and age. This mistake led to powdered mummies being used as a source of medicine (bitumen/asphalt) starting in the 12<sup>th</sup> century CE if not before (Ikram and Dodson 1998: 61 - 67), as mineral pitch or asphalt was supposed to be a useful *materia medica* in the treatment of a wide range of illnesses and ailments, including abscesses, eruptions, fractures, concussions, paralysis, hemicrania, epilepsy, vertigo, spitting of blood from the lungs, sore throats, coughs, nausea, ulcers, poisons, disorders of the liver and spleen, joint pains, and staunching the blood; it was also thought to booster longevity. Mummy powder was not only used in the East but was imported into Europe and used extensively by healers of the time. The high demand for mummy powder led merchants in Egypt to produce fake mummies and export them (Ikram and Dodson 1998: 65). Mummies were not regarded as particularly important artifacts and were thus used for other purposes in addition to medicine: cat mummies, for example, were used as ballast for ships leaving Egypt and then as fertilizer in Europe (Málek 1993: 129), mummies were burned in Egypt due to an insufficiency of other fuel (Ikram and Dodson 1998: 72), and mummy bandages were used as a raw material to make brown paper during the American Civil War. The huge number of mummies remaining attest to the widespread nature and longevity of this practice.

The “classic” manner of mummification involved the removal and separate preservation of the internal organs (the first confirmed attestation is from Dynasty 4, although it is possible that earlier examples exist), disinfecting the body with palm wine and/or a natron solution, and the desiccation of the body inside and out with powdered

natron. In the 18<sup>th</sup> Dynasty, it was common to remove the brain, first via the foramen magnum and then from the left nostril by breaking through the ethmoid bone; afterwards the cranial cavity was filled with liquid resin. Traditionally, desiccation took 40 days. It was followed by a 30-day period of final preparations that included anointing the body with sacred oils, which also served the practical purpose of returning some flexibility to the body so the extremities would not snap off; the recitation of prayers; and, finally, incensing and wrapping the body in linen bandages prior to its burial. This wrapping of the body was the final part of the process that metamorphosed the deceased from an ordinary being to a divine one. The 70-day period of mummification was equated with the length of time that the constellation Sirius vanished from the sky only to reappear or be “resurrected” at the start of the Egyptian’s New Year and the inundation. From the Middle Kingdom onward, the resurrected deceased was commonly referred to as “Osiris”. The yellow paint and/or gold leaf used on masks were symbolic of the physical manifestation of this transformation as the flesh of the gods was made of gold, an incorruptible metal. Although mummification is considered a Pharaonic practice, it continued into the Coptic Period—albeit in a simplified fashion—and is even carried out today in Coptic monasteries for particularly important monks and bishops.

The derivation of the process of mummification is obscure; perhaps the idea originated in the minds of the Egyptians when they came upon the bodies of animals or humans that had been buried in the sand and had been naturally preserved. Most Predynastic burials do not show evidence for mummification, although some bodies from the Naqada II Period at Hierakonpolis indicate early attempts at artificial preservation (Friedman 1997 - 2004). Mummification proper was established during the Old Kingdom. Initially, mummies were not of great interest to scholars of Egyptian history other than as curious examples of funerary practices. Sporadic studies of them have been

made since the end of the nineteenth century, with more systematic studies being carried out from the 1960s onward. Since that time, mummies have been used to shed light on the Egyptian's diet, diseases, medical practices, family relationships, health, technology, ethnicity, and trade goods (particularly in terms of embalming materials). The methods used to study these subjects range from visual examination to the analyses of embalming materials, paleopathology, radiography, histology, CT-scans, DNA tests, etc. (Cockburn and Cockburn 1980; David 1979; Ikram *fc.*; Ikram and Dodson 1998: 95 - 101).

As the Egyptians did not leave any texts that clearly outline how mummification was carried out at any period, our knowledge of this derives from the study of the mummies themselves; secondary sources such as Herodotus (Book II, chapters 85 - 90; translation by de Sélincourt 1972: 180 - 182) and Diodorus Siculus (91; translation by Murphy 1985: 118 - 121), who gives a less elaborate overview of the process; vignettes on coffins of the Late and Ptolemaic Periods showing the purification of the body (e.g., the sequence from el-Hibeh, some are now in the Egyptian Museum at Hildesheim); small portions of texts such as the Apis Embalming Ritual (Vos 1993), the funerary Papyri Rhind I and II (Smith 2009: 302 - 348), as well as the so-called Ritual of Embalming, which is partly preserved in three papyri in the Louvre, the Egyptian Museum in Cairo, and the Oriental Museum in Durham, dates to the Roman Period, and focuses on the rituals accompanying mummification rather than the techniques involved (Smith 2009: 215 - 244); and experimental archaeology that tests the different ways in which mummification might have been executed and the efficacy of different tools (Janot 2000) and materials, which might have been used (Brier and Wade 1997, 1999; David 1979; Ikram 2005: 16 - 43).

In addition to humans, the Egyptians also mummified animals. There are at least four different types of animal mummies: pets, sacred animals, votive offerings, and food offerings (Ikram and Iskander 2002; Ikram

2005). These were produced in a similar way to human mummies, with some variations notably amongst avian species that were prepared in a simpler manner than mammals.

Pets were often mummified and buried with their owners or outside their owner's tomb so that they could accompany their owners in the afterworld. This implies that the Egyptians believed animals, like humans, possessed a *ka* and possibly even a *ba* and *akh*. Sacred animals were special animals that were chosen by priests, based on a set of particular markings, as hosts for the divine essence of particular gods and thus as a physical manifestation and living incarnation of that god. Animals such as the Apis, Mnevis, or Buchis bulls, or the Banebdjed—the Ram of Mendes—were worshipped as gods on earth and then embalmed and ceremoniously buried in labyrinthine catacombs upon their death. Votive animal mummies are offerings consisting of a specific mummified animal that was dedicated to its corresponding divinity (e.g., ibises to Thoth, cats to Bastet, etc.) so that the donor's prayers would be taken to the god and addressed throughout eternity. Some scholars dispute the identification of votive animal mummies and suggest that these animals were the image of the god and were buried in sacred cemeteries as they had died on sacred soil (for a discussion of this, see Ikram 2005: chs. 1, 3, 4, 6, 7; Kessler 1989). This practice proliferated in the Late Period, ending only with the Christian domination over Egypt. Some of the animals, particularly the cats, have shown evidence of being deliberately killed (Ikram 2005: 106 - 119). Theoretically, different qualities of mummification were employed depending on the amount that the pilgrim wished to spend as well as variations based on geography, embalming atelier, and time period. This genre of mummy includes what are termed “fake” mummies: bundles that are wrapped to resemble a specific animal but contain only a portion of a creature or nothing at all. Perhaps the priests believed that these ancient fake mummies were equivalent to the real thing once prayers had been read over them or that a part of an

animal symbolized the whole animal. Food or virtual mummies (Ikram 1995: appendix 2) were buried in elite tombs as part of the funerary goods and were most commonly produced between the 18<sup>th</sup> and 21<sup>st</sup> Dynasties.

These consisted of joints of meat or poultry that were prepared for consumption by the deceased in the hereafter and served to support his *ka* on a physical as well as a metaphysical plane.

## *Bibliographic Notes*

The majority of basic resources on mummification are mentioned in the in-text references whose bibliographies are helpful. For a general overview, *The Mummy in Ancient Egypt* (Ikram and Dodson 1998) provides the most useful information for humans and *Divine Creatures* (Ikram 2005) for animals. Increasingly, mummy literature is appearing in museum catalogs (Dawson et al. 1968; Ikram and Iskander 2002; Raven and Taconis 2005) and in medical journals as scholars trace diseases, establish familial relationships, and extract individual medical histories from mummies. A few other useful references include Dawson (1928), Goyon (1972), and Harris and Weeks (1973).

## *References*

Brier, Bob, and Ronald Wade

1997 The use of natron in human mummification: A modern experiment. *Zeitschrift für Ägyptische Sprache und Altertumskunde* 124, pp. 89 - 100.

1999 Surgical procedures during ancient Egyptian mummification. *Zeitschrift für Ägyptische Sprache und Altertumskunde* 126, pp. 89 - 97.

Cockburn, Aidan, and Eve Cockburn (eds.)

1980 *Mummies, disease, and ancient cultures*. Cambridge: Cambridge University Press.

David, Ann Rosalie (ed.)

1979 *The Manchester Museum mummy project: Multidisciplinary research on ancient Egyptian mummified remains*. Manchester: Manchester Museum, distributed by Manchester University Press.

Dawson, Warren

1928 References to mummification by Greek and Latin authors. *Aegyptus* 9, pp. 106 - 112.

Dawson, Warren, Peter Gray, and The British Museum

1968 *Mummies and human remains*. Catalogue of Egyptian Antiquities in the British Museum 1. London: British Museum.

Diodorus

1985 *Diodorus on Egypt*. Translated by Edwin Murphy. Jefferson, N.C.; London: McFarland & Company.

Friedman, Renée (ed.)

1997- *Nekben News* Volumes 9 - 16 (1997 - 2004). (Published annually by the Milwaukee Public Museum.)

Goyon, Jean Claude

1972 *Rituels funéraires de l'ancienne Égypte*. Paris: Éditions du Cerf.

Harris, James, and Kent Weeks

1973 *X-raying the pharaohs*. New York: Charles Scribner's Sons.

Herodotus

1972 *Herodotus: The histories*. Translated by Aubrey de Séincourt. New York: Penguin Books. (Revised, with an introduction and notes by A.R. Burn.)

Ikram, Salima

- 1995 *Choice cuts: Meat production in ancient Egypt*. *Orientalia Lovaniensia Analecta* 69. Leuven: Peeters.  
fc. Physical anthropology and mummies. In *The Oxford handbook of Egyptology*, ed. Ian Shaw, and James Allen. Oxford: Oxford University Press.

Ikram, Salima, and Aidan Dodson

- 1998 *The mummy in ancient Egypt: Equipping the dead for eternity*. London: Thames and Hudson; Cairo: American University in Cairo.

Ikram, Salima, and Nasry Iskander

- 2002 *Non-human mummies: Nos. 24048 - 24056; 29504 - 29903 (selected); 51084 - 51101; 61089*. Catalogue général of Egyptian antiquities in the Cairo Museum. Cairo: Supreme Council of Antiquities Press.

Ikram, Salima (ed.)

- 2005 *Divine creatures: Animal mummies in ancient Egypt*. Cairo: American University in Cairo Press.

Janot, Francis

- 2000 *Les instruments d'embaumement de l'Égypte ancienne*. Bibliothèque d'étude 125. Cairo: Institut français d'archéologie orientale.

Kessler, Dieter

- 1989 *Die heiligen Tiere und der König*. Ägypten und Altes Testament 16. Wiesbaden: Harrassowitz.

Málek, Jaromir

- 1993 *The cat in ancient Egypt*. London: British Museum Press.

Raven, Maarten, and Wybren Taconis

- 2005 *Egyptian mummies: Radiological atlas of the collections in the National Museum of Antiquities at Leiden*. Papers on Archaeology of the Leiden Museum of Antiquities 1. Turnhout, Belgium: Brepols.

Smith, Mark

- 2009 *Traversing eternity: Texts for the afterlife from Ptolemaic and Roman Egypt*. Oxford: Oxford University Press.

Vos, René L.

- 1993 *The Apis embalming ritual: P. Vindob. 3873*. *Orientalia Lovaniensia Analecta* 50. Leuven: Peeters.