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ANIMAL MUMMIES IN THE COLLECTIONS OF THE NATIONAL MUSEUM IN KRAKOW AND THE PRINCES CZARTORYSKI MUSEUM

Abstract: The collections of the National Museum in Krakow and the Princes Czartoryski Museum include four Egyptian animal mummies, whose radiological and tomographic examinations were carried out twice, in 1999 and 2021, in the Department of Radiology of the Jagiellonian University Medical College. The paper will present two aspects of the examinations, crucial for the knowledge of the artifacts. On the one hand, these are provenience research that allow to determine the history of the acquisition for the collection of both museums. On the other hand, medical examinations provided the answer to the question about the authenticity and value of the objects. Images of the inside of the mummies allowed to correlate the shape of the mummies with the animal species – in our case, a cat, Marsh Harrier, Kestrel – and to clarify the biological data on birds. X-rays also revealed the imitation of the ichneumon mummy, which, considering the species of the animal and the history of its acquisition for the Princes Czartoryski Museum, had always been a unique specimen among Egyptian artifacts.

Keywords: animal mummies; ancient Egypt; Princes Czartoryski Museum; radiological examinations; tomographic examinations; fake mummy

Historical introduction

In the Gallery of Ancient Art at the Princes Czartoryski Museum (Gorzelany-Nowak 2022, 9-11), there are two female Egyptian mummies; one of Asetemachbit, who lived in the mid-9th century BC (Liptay 1993, 7-26) and the other of Tachenemti, who lived in the late 7th century BC (Liptay 2009, 83-117), as well as four animal mummies: two birds, a cat, and an 'Egyptian mongoose' (Pl. 1: 1). These last exhibits attract visitors with their unusual, somewhat 'sensational' character from the perspective of our times and are an example of the centuries-long connections between the world of people and the world of animals in the economic, religious, and emotional spheres. It was because of these motives that animals were embalmed: their internal organs were removed and the body was dried by placing in natron or without evisceration, e.g., in the case of small birds, by wrapping in linen bandages and dipping in resin (Buckley *et al.* 2004, 294-299; Morgan and McGovern-Huffman 2008, 584-587; Ikram 2005b, 20-22, Ikram 2013, 45; Ikram 2015, 10-13; Atherton and McKnight 2014, 2).

The mummification of animals was especially common in Egypt from the late New Kingdom until Roman era (Ikram 2005a, 2-3; Ikram 2015, 3). One of the earliest venerated animals, known since the times of the 1st Dynasty, was the Apis Bull, symbol of fertility, incarnation of the god Ptah (Simpson 1957, 139-142; Lurker 1995, 49). The cult of the falcon, identified with the god Horus, also belongs to the earlier ones (Lurker 1995, 94).

Animals which underwent mummification were buried in tombs together with their owners or in cemeteries designated for particular species, which could be found in every nome beginning in the Late Period. There was, for example, an extensive necropolis at Tuna el-Gebel (Driesch von den *et al.* 2005, 203-204; Kessler and Nur el-Din 2005, 120-163; Bailleul-LeSuer 2019, 89) which operated in part to serve the administration and priestly class, located in the vicinity of a lake that was fed by the Nile floods and near a branch of a canal leading in the direction of Fayum. The lake did not dry up even in the hot season because of the high groundwater level, making it a natural habitat for native and migrating birds.

Mummification was carried out in the case of animals venerated as sacred, as a manifestation of the divine; animals sacrificed to gods as votive offerings; animals intended to serve as 'nourishment' for the afterlife (except for, e.g., cats); and favourite pets (Ikram 2005a, 1-15). Domestic animals (cats, dogs, gazelles, baboons) were sometimes buried in coffins of their own, made of wood

or bronze, inside the tombs together with humans in order to accompany them in the Netherworld. First and foremost, however, animal mummies served as votive offerings, a kind of prayer directed to a specific god (Kessler 2003, 33-67; Ikram 2015, 211-228).

Egyptian artefacts at the Princes Czartoryski Museum were only in part acquired personally by Prince Władysław Czartoryski, to whom we owe an outstanding collection of antiquities in Kraków. The first Czartoryski to visit Egypt was his son, prince Augustyn, who gained several objects recovered from tombs while on his health-related voyage along the Nile in 1882 (Moczulska 2000, 425-435). Among these objects was the first mummy in the collection, the cat mummy (Inv. MNK XI-412).

The majority of the Egyptian artefacts, including the female mummies, were acquired by agents working in Egypt at the behest of prince Czartoryski. The first shipment was sent from Luxor to Kraków in July of 1884 (Moczulska and Śliwa 1972, 85-104). It was thus that the cat mummy was joined by one of the bird mummies together with a gilded wooden sarcophagus in the shape of a holy vulture. According to notes in the index of these items, the sarcophagus was believed to have come from Chemmis, present-day Akhmim, in Upper Egypt. It was entered into the inventory log of the Princes Czartoryski Museum as the mummy of a falcon (Inv. MNK XI-487).

According to the archive data, the history of the third animal mummy (Inv. MNK XI-1499) goes back to the times of Napoleon's campaign in Egypt in 1798-1799. It was brought to Poland as an Egyptian mongoose's (ichneumon) mummy by a Polish officer, Piotr Jaźwiński, and for many years remained in the possession, first, of the Jaźwiński family at Podniestrzany and then of the Żelechowski family. Stanisław I. Żelechowski received the mummy in 1895 as a valued heirloom from his uncle Tadeusz, marshal of the Rawa Ruska county, who had in turn inherited it from his mother, Wanda née Jaźwińska of the Grzymała coat-of-arms of Podniestrzany. Her father was most likely Piotr Jaźwiński (1759-1829), an officer who had fought in the Kościuszko Uprising, took part in the Napoleonic campaign in Egypt in 1798 and was also the owner of the Podniestrzany estate in Eastern Galicia in the early 19th century. As a family treasure and proof of Piotr Jaźwiński's participation in the expedition to Egypt, the mummy brought from there to Podniestrzany was treated with particular reverence (cf. Baber 2019, 67-86) and handed down over generations to become eventually the kernel of an Egyptian collection assembled by its last owner, Stanisław Ignacy Żelechowski. Before World War I, the collection amounted to 30 items.

During the Polish-Soviet War, part of the estate including the Egyptian collection was transferred to Imbramowice near Proszowice. Sometime around 1925, a fire broke out at the Żelechowski manor. A few items were saved from the Egyptian collection and two of them, the mongoose mummy and a wooden mask from a sarcophagus, were left by their owner in deposit in the Princes Czartoryski Museum (1925-1926). Several years later, in 1933, Żelechowski donated them to the Museum.

The Gallery of Ancient Art contains one more mummy of a small bird identified as a falcon, of undetermined provenance, donated to the collection of the National Museum by Ryszard Roland of Vienna in 1979 (Inv. MNK XI-a-850).

Bird mummies medical research

Large-scale studies of animal mummies belong to the projects conducted by Salima Ikram in the Cairo Museum (Ikram and Iskander 2002; Ikram 2005c), and by scholars at the Ludwig Maximilians-Universität München (Kessler and Nur el-Din 2005) and University of Manchester (McKnight 2013; cf. Pelizzari *et al.* 2013, 109-118). In November 1999, mummies from the collections of the Museum underwent radiological analysis for the first time. Further studies, extended by tomographic analysis, were conducted in 2021, however, they did not provide additional data. The analysis was carried out by a team from the Department of Radiology of Collegium Medicum, the Jagiellonian University in Kraków, under the leadership of Professor Andrzej Urbanik, head of the Department (Pl. 1: 2).

These first, strictly radiological, analyses were crucial to the determination of the species of the mummified birds. As a result of the co-operation with Professor Zbigniew M. Bocheński and Ph.D. Teresa Tomek, ornithologists from the Institute of Animal Taxonomy and Evolution of the Polish Academy of Sciences in Kraków, it has been ascertained (oral information), based on skeletal analysis, that one of the mummies heretofore described as a falcon is the mummy of a female marsh harrier (*Circus aeruginosus,* Pl. 2: 1) from the family *Accipitridae*, while the second, smaller one is the mummy of a kestrel (Pl. 2: 2), that is *Falco tinnunculus***,** from the family *Falconidae* (cf. Morgan and McGovern-Huffman 2008, 584-587; Pelizzari *et al*. 2013, 109-112). Each bundle contains the complete skeletons, positioned in the standard manner with the head upright, the wings folded in close to the body lower, and limbs outstretched. The bodies of

the birds show no clear cause of death, no broken bones were observed. The mummy of the marsh harrier, 41cm long, and the mummy of the kestrel, 27cm long, are wrapped in plain uncoloured bandages 0.5 to 1cm thick, and covered in resin.

In ancient Egypt, both species belonged to birds of prey frequently caught and used as offerings, although only the kestrel is a native species, a breeding resident in the Nile Delta and Valley and the several Western oases (Goodman and Meininger 1989, 200), captured or killed all year-round, while the Eurasian marsh harrier only overwinters in Egypt. This seasonality of occurrence impacts the number of marsh harrier mummies and their absence in religious imagery. Data from the catacombs of Tuna el-Gebel indicate a clear dominance of the kestrel with regard to other species (accounting for nearly half of the mummies) whereas the marsh harrier accounts for only 4% of the mummies found (Bailleul-LeSuer 2019, 89-91). This dominance is also reflected in religious iconography (Porter 2011, 31-37), as the kestrel is linked to the goddesses Isis and Nephthys, who protected the sarcophagi or funeral caskets of the dead either with the wings of the kestrel or in its form.

Cat mummy medical research

The most common species of the cat in Egypt was the African fallow cat (*Felis silvestris libyca*). It gained its permanent place in folk common beliefs owing to the fact that it was treated as an animal that fights evil since it hunted mice, rats, and snakes. Cats (*miu, mit*) were worshipped as the incarnation of many goddesses such as Bastet, Sekhmet, Pakhet, Mut, etc. Cats' figures were considered a protection against diseases and ill fortune (cf. Málek 1993).

The length of the studied mummified cat (*Felis catus*) is 38cm, while the skeleton inside measured 35cm, indicating a young age of a cat that had not reached maturity yet. In consideration of the two age groups identified for the mummification of cats: between the age of 1-4 months and 9-12 months (Morrison-Scott 1952, 861-867; Armitage and Clutton-Brock 1981, 193; Johansson *et al.* 2015, 177-200; Pubblico 2017, 535; Pubblico and Oliva 2019, 298), the specimen in the study belonged to the latter group. This is also be confirmed by the CT image, which shows full permanent dentition. The cat's remains were wrapped in plain uncoloured and not resinated bandages which, partly destroyed now as they are, created a layer of varied thickness of 0.5 to 3cm.

The image visible in radiological and tomographic studies (Pl. 3) shows a complete skeleton of a cat of undeterminable sex. The skull shows signs of damage; an indented zygomatic arch and the ramus of the right mandible broken, suggesting that the immediate cause of death was a blow to the head, a method of killing cats known from the study of mummies in other museums (Ikram 2005c, 247; Johansson *et al.* 2015, 185; Ejsmond and Przewłocki 2014, 252). The skull, spine, and bones of the frontal and hind limbs were arranged in an anatomical position. Fore limbs (namely the humerus, ulna, radius, carpus and metacarpus) were straightened and arranged along the body. Similarly the hind limbs (namely the femur, tibia, fibula, and the bones of the tarsus and metatarsus) were arranged in the anatomical position. The femur bones were drawn under the abdomen, and the legs were bent at the knees with the metatarsus curled under and placed adjacent to the tibia – this is the typical position for the mummified cats.

As the research shows, the cat at the Museum in Kraków was not treated as sacred: the age and the head injury suggest intentional killing for votive offering (Ikram 2005a, 13; cf. Pubblico 2017, 536). Careless manner of bandaging may account for the present poor state of preservation of the mummy.

Egyptian mongoose mummy medical research

Radiological and tomographic study of the Egyptian mongoose mummy have provided surprising results. The carefully bandaged, 25cm-long mummy has been identified by shape as an Egyptian mongoose (*Mungus ichneumon*), also called the pharaoh's rat (Cooney 1965; Diab 2020, 29). This is an animal of body length of 48-60cm and weight of 1.7-4kg. Egyptian mongooses were frequent on the banks of the Nile. They were specially valued as animals hunting snakes, and in the religious context as animals that protect the sun-god. They were the sacred animal of gods Amun, Atum, Re and of the goddess Wadjet (Brunner-Traut 1965, 123-163; Evans 2016, 221-224; Kessler 2007). Radiological examination of the mummy of an ichneumon proved it to be an ancient forgery, as suggested by the time of acquisition and way of bundle's preparation (Wilfong 2015, 60-63; Pl. 4). Inside the bundle, instead of the animal skeleton, there is a fragment of a human shank bone. This indicates that the mummy could have been made in a workshop where both humans and animals were embalmed (Kessler and Nur el-Din 2005; Ejsmond and Przewłocki 2014, 243; McKnight *et al.* 2015). Fake

mummies were not uncommon. The needs of pilgrims for votive offerings to the gods exceeded the capabilities for preparing an adequate number of mummies of animals which were captured and killed or which died of natural causes (cf. McKnight 2010, 81-87). Below the bandages of such a 'dummy mummy,' there were sometimes bundles of cloth, plant material or fragments of an animal bone (Cornelius *et al.* 2012, 134-137; Driesch *et al***.** 2005, 239) or, as in our case, of a human bone (Ejsmond and Przewłocki 2014, 255-256; McKnight *et al.* 2015; Wilfong 2015, 62-63). The Egyptian mongoose mummy was deposited among the grave goods of a man as a part of his hunting accoutrements (Evans 2016, 223-224) or donated as votive offerings and buried, for instance, at Tuna el-Gebel or Sakkara (Kessler 2015). As in the case of any forgery, the buyer/pilgrim was unaware whether they were purchasing a true or fake mummy. This was unverifiable. The Egyptians must have been aware of making fake mummies, because such practices cannot be concealed for a long time. The collectors in the 19th century as well as the Arabs selling them antiquities did not have this knowledge, though. Due to these historical circumstances, the fake mummy, appropriately described, is presented in the exhibition as an ancient object along with three true animal mummies.

Conclusion

Radiological and tomographic studies (Jiang and Vannier 2013, 107-108) allowed to determine the species of birds whose mummies are in the collection of Princes Czartoryski Museum and National Museum in Krakow without unwrapping or damaging them. In addition, the method of death of one animal, consistent with what is known of other mummies, was also established, together with the verification of the originality of the mummy. The fake mummy of an Egyptian mongoose was of a votive nature (cf. Wilfong 2015, 63), similarly to the other three mummies in Kraków. Clearly, one of the animals, the cat, was intentionally killed, bur presumably the same was true for the birds. They may have lived in captivity in aviaries near the temple, but they were not treated as incarnations of gods (Ikram 2015, 211-228). Sacrificed to the gods, however, they were intended to provide a constant prayer on behalf of the offerer.

Regarding the dating of mummified animals under discussion, it may be known only in one case, because of the complete nature of the three others mummies bundle**.** In 2022, the cat mummy underwent radiocarbon dating

(C14) in the Poznan Radiocarbon Laboratory. The Laboratory uses the technique of accelerator mass spectrometry (AMS) and the calibration was made with the OxCal v4.4.2 software. A sample of the embalming bandages, which show a homogeneous structure in their entirety, has been dated to the 3rd century BC (2225 ± 35 BP).

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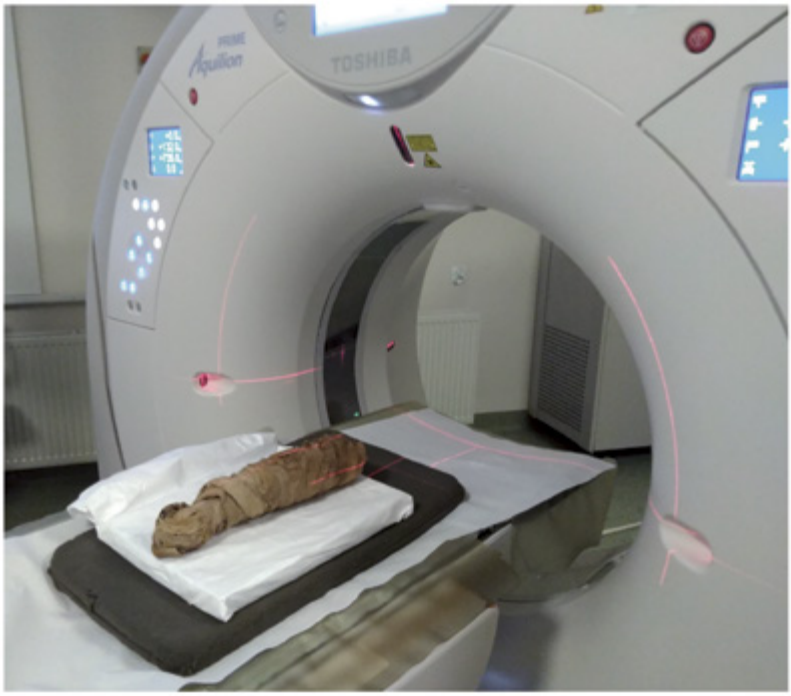


2

Pl. 1: 1 – Gallery of Ancient Art, Princes Czartoryski Museum. Photo by Ł. Wojciechowski

Pl. 1: 2 – Tomographic analysis of the cat mummy. Department of Radiology of Collegium Medicum, the Jagiellonian University in Kraków. Photo by D. Gorzelany-Nowak

1

2

Pl. 2: 1 – X-Ray image of the marsh harrier
Pl. 2: 2 – X-Ray image of the kestrel

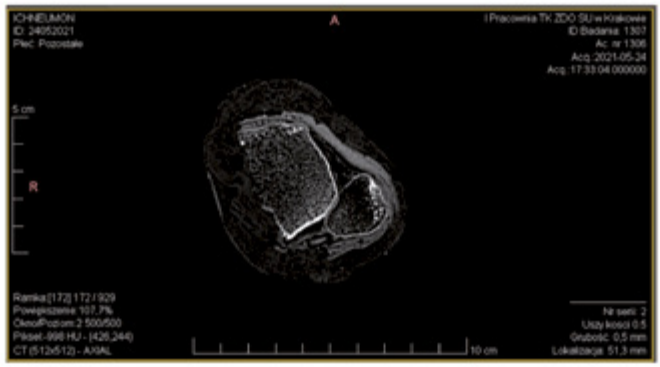
1

2

Pl. 3: 1 – X-Ray image of the cat mummy

Pl. 3: 2 – CT-scan of the cat mummy

1



2

Pl. 4: 1 – X-Ray image of the ichneumon mummy
Pl. 4: 2 – CT-scan of the ichneumon mummy