ARCHAEOZOOLOGY OF THE NEAR EAST VI

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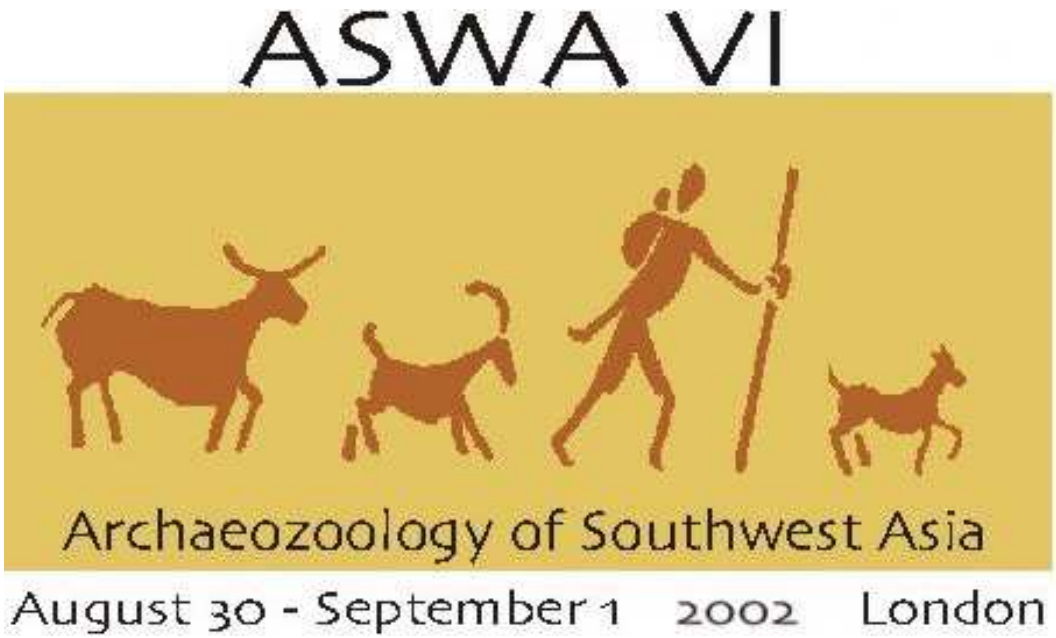

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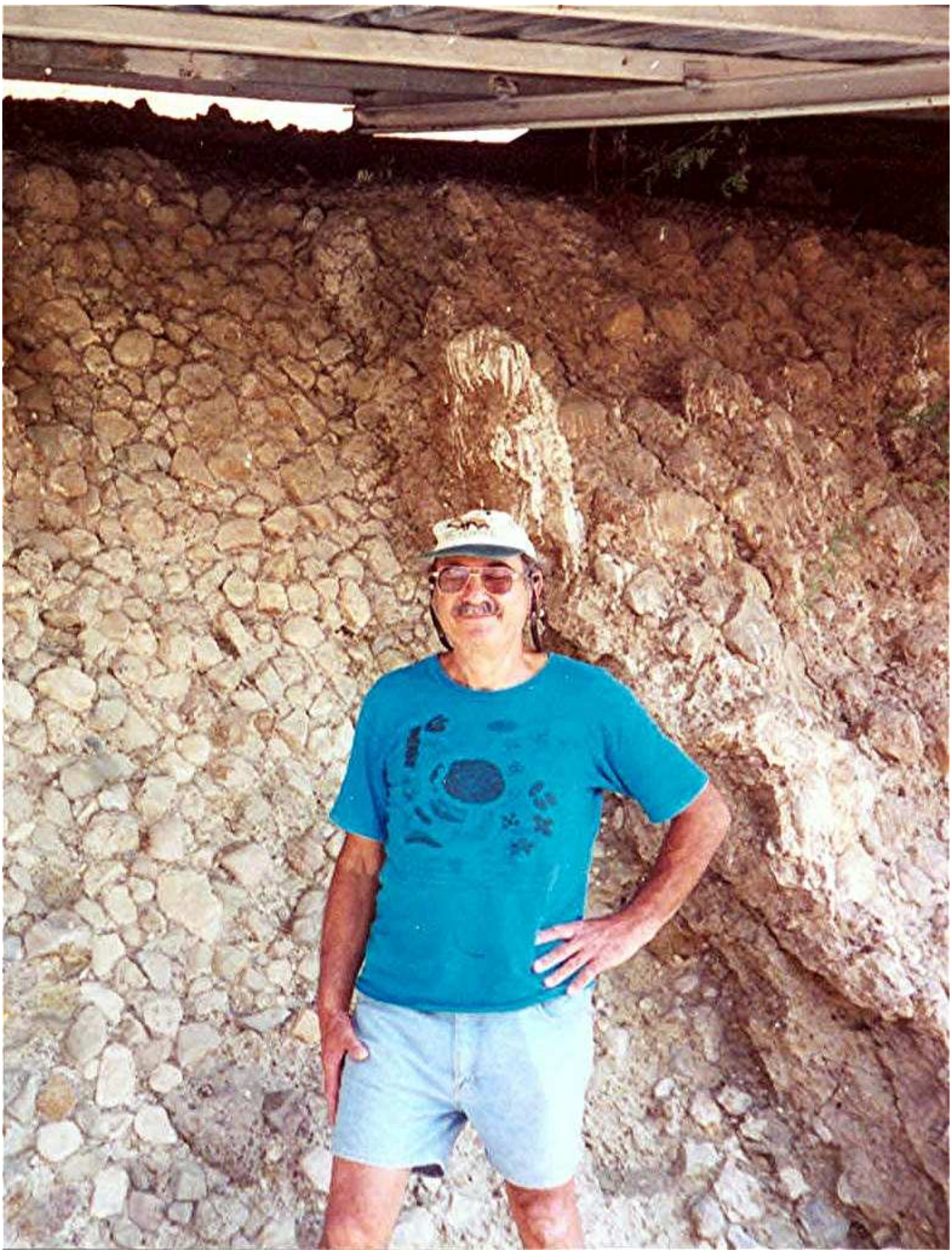

Prof.Dr. Eitan Tchernov

This volume is dedicated to the memory of Prof. Dr. Eitan Tchernov, in fond memory of his enthusiasm and support to many in the field of archaeozoology**.**

Preface

The ASWA VI meeting was held at the Institute of Archaeology, University College London, from 30th August-1st September 2002, timetabled to follow on the heels of the ICAZ meeting in Durham, UK. Over 55 participants attended the meeting, travelling from 13 countries, bringing the latest research results from our field. As usual, it was a pleasure to see so many doctoral students presenting their research – a sign for a very healthy future for zooarchaeology in south west Asia. It is still unfortunate, however, that colleagues from some Middle Eastern countries were unable to attend due to financial and political constraints.

Presentations were organized into the following six themes, which highlight the scope of the ASWA membership: Animals in Palaeolithic and Epipalaeolithic Levant; Neolithic Patterns of Animal Use; Animals in Neolithic Anatolia; Animals in the Chalcolithic and Bronze Ages; Iron Age, Nabatean and Roman Patterns of Animal Use; Animals in Ancient Egypt. There was also a poster session, and contributors were invited to submit papers to this volume.

As always with the ASWA forum, the meeting served to welcome new scholars to the group, but was also very much a reunion of old friends and colleagues who have been sharing new information and discussing issues of joint interest for many years now. In this vein, it is a great sadness that ASWA VI was the last international meeting attended by Prof. Eitan Tchernov, an original founder of the group and mentor and inspiration to so many. For many of us, it was the last time we saw Eitan, and experienced his usual incisive comment, unstoppable enthusiasm for the subject, and warm friendship. He will be greatly missed.

ASWA VI was supported by the Institute of Archaeology, UCL, who provided facilities and financial and administrative help. In particular, the organizing team was aided greatly by the administrative assistance of Jo Dullaghan at the Institute. ARC bv (Archaeological Research and Consultancy, Groningen, The Netherlands) once again shouldered the finances of the publication of the proceedings, and we are extremely grateful for their continuing support. Many thanks are also due to the postgraduate student helpers from the Institute of Archaeology who made the meeting run so smoothly: Banu Aydinoğlugil, Jenny Bredenberg, Chiori Kitagawa, Peter Popkin, and Chris Mosseri-Marlio (who also produced the logo reproduced on the frontispiece of this volume).

Many thanks to all the participants for making the meeting such a success!

Louise Martin
London 2005

Participants of the 6th ASWA Conference, held at the Institute of Archaeology, University College London.

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Preface

THE LOVED ONES: EGYPTIAN ANIMAL MUMMIES AS CULTURAL AND ENVIRONMENTAL INDICATORS

Salima Ikram[1]

Abstract

The ancient Egyptians are unique in mummifying animals as well as people. Although ways of preparing the mummies is rooted in practical methods of food preservation, animal mummies are expressions of ritual behavior. They are of four types: victual mummies, (funerary food offerings for humans); beloved pets buried with their owners; sacred animals; votive offerings. In the early days of archaeology many samples from all these categories were regarded as mere curiosities, and often ignored or even thrown away after excavation (some were used as fuel, fertilizer, and even ship's ballast). Gradually their importance in elucidating the environmental as well as religious and cultural history of Egypt was recognised, and examples were collected and kept in museums. This paper will present some of the results of the Animal Mummy Project (AMP) of the Egyptian Museum, Cairo. The AMP has studied the mummies through non-destructive techniques: X-rays and visual examination. Results have shed light on the role of pets, diet, veterinary practice in ancient Egypt, the changing species found in Egypt, as well as information concerning changes in mummification techniques over time.

Résumé

Les anciens égyptiens sont uniques pour momifier les animaux comme les humains. Même si les méthodes de préparation des momies sont enracinées dans les pratiques de conservation de nourriture, les momies animales sont une expression du comportement rituel. Elle sont de quatre types : les momies victuailles (les offrandes en nourriture pour les humains) ; les animaux de compagnies aimés et inhumés avec leurs propriétaires ; les animaux sacrés et les offrandes votives. Au début des recherches archéologiques beaucoup d'échantillons de toutes ces catégories étaient considérés comme des curiosités et souvent ignorées ou même jetées après la fouille (certaines étaient utilisées comme combustible ou fertilisant et même le ballast de bateau). Progressivement leur importance dans la compréhension de l'environnement aussi bien que la religion et l'histoire culturelle de l'Egypte a été reconnue et des exemplaires ont été collectés et conservé dans les musées. Cet article présentera certain des résultas du Projet de Momies Animales (AMP) du Musée Egyptien de Caire. L'AMP a étudié les momies suivant une méthode non destructive : Rayon X et observation à l'œil nu. Les résultats ont montré le rôle des animaux se compagnie, de la diète et des pratiques vétérinaires dans l'Egypte ancien, aussi bien que l'évolution des espèces animales et les techniques de momification au cours du temps.

Key Words: Ancient Egypt, bandages, Cairo, Egypt, fakes, food, mummy, pet, religion, resins, sacred, victual, votive, x-ray.

Mots Clés: Egypte ancien, bandages , Caire, Egypte, faux, nourriture, momie, animaux de compagnie, religion, résines, sacré, victuaille, votive, rayon X.

Introduction

Few people are aware of the fact that the ancient Egyptians mummified animals as well as humans, so that they too could live forever. Animal mummies are a rich and unique source of information for understanding the environmental as well as the religious and cultural history of ancient Egypt. There are four types of these animal mummies. Pets, beloved of their owners, were mummified and buried in their owners' tomb, or outside of it. Sometimes they had their own sarcophagus or coffin, as well as their own food offerings so that they would not go hungry in the Afterlife. Victual mummies consisted of funerary food offerings for humans. Meat and poultry, prepared to be consumed, was wrapped up and sometimes placed in individual coffinets or large (picnic?) baskets, and interred with the deceased. Sacred animal, believed to hold an aspect or essence of a deity, were worshipped during their lifetime and mummified with pomp upon their death. Votive mummies were dedicated as offerings at the shrines of specific gods to whom these animals were sacred, much as votive candles are burnt in churches.

Unfortunately, in the early days of archaeology many samples from all these categories were regarded as mere curiosities, and often ignored or even discarded after excavation. Some were used as

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fuel, due to the paucity of wood in Egypt. Cat mummies, mainly from Bubastis, in the Egyptian delta, were used as ballast in ships travelling from Alexandria to Europe. Once in Europe the mummies were broken up and used as fertilizer, a custom that was only briefly practice as it resulted in cholera that was brought in by the mummies being in contact with modern contaminated material from Egypt in the ships' holds. Only gradually the importance of animal mummies was recognised and collections made for museums. Until recently, these mummies were primarily used by zoologists to study comparative anatomy, and, to a lesser extent, by archaeologists and Egyptologists for the cultural information that they provided.

One of the world's largest collections of animal mummies is housed in the Egyptian Museum, Cairo. They were last examined and catalogued in 1905; since then several more mummies have been added to the collection, while others have been de-accessioned to other museums in Egypt so that a wider audience can enjoy them. Some of the mummies were unwrapped and accurately identified, while others were catalogued as, for example, "a wrapped animal mummy, probably a hawk-/falcon/etc.", with no actual examination of the contents of the wrapped package. The work of the Animal Mummy Project (AMP) is the first modern non-destructive study of the animal mummies in the Cairo Museum.

Aims and Methodology

The goals of the project are to non-destructively study the mummies in order to elicit as much information as is possible, and to provide up-to-date documentation of the Cairo collection. The methods used are visual examination, and radiography, with the results recorded on a data sheet that served as the basis for a new animal mummy catalogue. CT-scanning would have been an added method of examination, but unfortunately the Cairo Museum does not have such technology at the present.

The visual examination yields information concerning the condition of the mummy, its dimensions, containers (sarcophagi or coffins), the style of bandaging, any applied decoration (including masks), information concerning mummification (presence of resins, salt/natron, etc.), and a zoological identification of the animal (genus and species wherever possible) if it were unwrapped. After the initial visual examination, the mummy is photographed and x-rayed. X-rays also inform us of the genus and often the species of a given animal, its age, any diseases manifest in its bones, and their resulting treatments, if any, its method of death, and the method of mummification.[2] It is hoped that this information will help to provenance mummies and to date them by their external appearance as well as their method of manufacture.

Once each mummy is studied, and the results entered onto a data sheet, it is conserved and re-photographed. Ultimately (May, 2003) the studied and conserved animal mummies will be put on display in an Animal Mummy Room (Room 53) in the Egyptian Museum, Cairo.

Selected Results

Both the visual examination and the radiography have provided a great deal of information concerning the Cairo collection, which can be extended to animal mummies in general. As over one hundred and fifty mummies were examined, only a few selected results from each category of mummy will be presented below.

Pet Mummies

The most charming type of animal mummy is that of beloved pets. From the Old Kingdom (2649-2150 BC) onward, Egyptians are pictured in their tombs with their pets, thus ensuring their continued joint existence in the Afterlife. Occasionally the pets would have their names carved above their im-

[2] Another subsidiary part of the project was experimental mummifications carried out on rabbits, ducks, and fish. These experiments served to lead to a better understanding of mummification technology. Their results will be published in *Divine Creatures: Animal Mummies from Ancient Egypt*, by the author of this article.

age, providing further insurance for their eternal life. Some pet-lovers went so far as to bury their pets with them. A man called Hapy-min was buried with his pet dog curled up at his feet, very much like the medieval tomb carvings of Europe which featured the knight, his lady, and their respective hounds.

In some instances the pets would be provided with their own coffins or sarcophagi, as well as food offerings. Prince Djhutmose, eldest son of Amenhotep III (1391-1353 BC), had a special limestone sarcophagus carved for his pet cat, Miao. On one side, the cat is pictured alive and seated before a loaded offering table. On the other side the cat is shown as a mummy before another offering table loaded with food. Isetemkheb D was buried with her pet gazelle (*Gazella dorcas*) in her tomb (Ikram, 2000). The gazelle was a female, over four or five years of age (Fig. 1). The animal was mummified in the same manner as upper class humans of the time: the viscera was separately mummified, and then probably returned to the body cavity after the gazelle herself had been desiccated. The cavity was further stuffed with soil and sawdust, thus giving the gazelle the shape she had enjoyed in life, after which she was wrapped in linen, and then placed in a gazelle shaped wooden coffin.

Baboon mummies from the Valley of the Kings, tomb 51, show that they were eviscerated, and the upper portion of the thoracic cavity was filled with packages that was possibly made of linen

Fig. 1. A pet gazelle, CG 29835, that was mummified in the same manner as high status humans were in Dynasty XXI.

Fig. 2. An x-ray of a baboon, CG 29839, with its canines removed.

bandages. It is possible that they were eviscerated either with a cut in theside or, more probably, per anum. Their canines have been removed so that they would not seriously harm anyone that they might have bitten (Fig. 2). It is still unclear as to when and how the canines were removed as it is a painful procedure, best carried out when the animal is anaesthetised. This raises questions as to veterinary practices in ancient Egypt. A further instance of veterinary activity is provided by a damaged and mended baboon humerus that is visible in an x-ray. Clearly, these animals were cared for by trained personnel.

Victual Mummies

Most victual mummies come from the necropoleis of the New Kingdom (1550-1070 BC) in Thebes, although the roots of this practice extend back to the Old Kingdom (2649-2150 BC) (see Ikram, 1995 for a discussion, and Ikram and Iskander, 2002 for a list of these). Tutankhamun had over forty such cases of food mummies buried with him to feed him in the Afterlife. These mummies consist of joints of beef as well as whole birds (ducks, geese, and pigeons), and provide significant evidence for jointing and butchery practices from ancient Egypt (Ikram, 1995). The poultry offerings are prepared in the same way as they are today: the head, feet, and wing tips are removed, they are eviscerated, and then some of the internal organs are reintroduced into the body cavity for consumption or gravy making (Fig. 3). The victual offerings are then 'cured' using salt, and, in some instances, crude natron (a naturally occurring compound consisting of sodium carbonate and sodium bicarbonate commonly used in human mummification), bandaged, and put into coffins which are coated with resins to keep away insects and bacteria. Recent tests have shown that in some instances a great deal of vegetable oil was poured over the wrapped mummies--perhaps as a prelude to cooking them in the Afterlife?

All body parts have been found, including various viscera and an alleged tongue (from the tomb of Tutankhamun). Lungs (one instance), liver, and intestines (one probably instance) have all been recovered from different tombs. Even the tail of a cow/ox was found; clearly ox-tail soup was on the menu in the Afterlife.

Fig. 3. A mummified pigeon or dove, CG 51094, prepared for consumption.

It is especially interesting to study whole assemblages from single tombs as one sees how many animals are sacrificed, and what portions of these animals are offered to the deceased and which elements might be consumed by the mourners at the funerary banquet or given to the priests as payment. In some instances, e.g. Lady Isetemkheb D (c. 984-959 BC), one entire calf (between 8-11 months of age) was jointed and placed in the tomb, save for the right fore-leg, which is the favoured offering associated with the Opening-of-the-Mouth ritual, a revivification ceremony performed at the tomb entrance. The assemblage of Yuya and Thuiu (c. 1400-1360 BC) differs radically as portions of at least two *Bos taurus* are offered, while the remaining portions might have been consumed by priests or at the funerary banquet. The animals were of different ages: one was approximately ten months of age, while the other was older, between one and a half and three years of age.

Sacred Mummies

A Sacred or Cult animal is a special animal that was chosen, on account of a set of specific and unusual markings, to represent the physical presence of a god. The god's 'divine essence' was thought to enter into the animal, and upon the animal's death would enter into a different animal that had to be

sought out by priests. The process might be compared to the transference of the spirit of the Dalai Lama, and the search for the new Lama. Thus the Apis Bull at Memphis was revered as the spirit of the god Ptah, the Buchis bull at Armant was the embodiment of Montu, the Crocodile in the Fayum and at Kom Ombo in Upper Egypt was an incarnation of Sobek, and the Ram at Elephantine was the personification of the god Khnum. Many of these animals lived to a great age as they were well fed and carefully tended in temple enclosures on land or in the water. These animals are differentiated from votive examples (see below) by the elaborateness of their burials (e.g. in coffins or sarcophagi), by their size (a sacred crocodile in the Cairo Museum measures over 5.20 m (Fig. 4), and a sacred Nile Perch (*Lates niloticus)* measures 1.45 m), and sometimes by textual references.

The Cairo Museum's mummy of the Mother of the Buchis bull is particularly interesting because of how it was mummified in comparison to humans. Human mummification, in its classic phase, was carried out by first extracting the brain from the nose and then filling the cranial cavity with resin. Then a cut was made in the left side of the torso and the lungs, liver, stomach and intestines were physically removed by the embalmer. The body cavity was then filled with natron, incenses, and spices, and allowed to desiccate. Once dry, it would be wrapped in bandages and prepared for burial. Many animal mummies were prepared in this manner. However, it seems that an alternative method

Fig. 4. A sacred crocodile, CG 29631, who was mummified by being eviscerated ventrally and filled with resins.

Fig. 5. A votive cat mummy, CG 29655, wearing a cartonnage mask.

was used on these cows and bulls. A large enema of juniper or cedar oil, equivalent to turpentine, was injected into the animal's anus, and then plugged up with a wad of linen. The cow/bull was then placed in natron. After several days--at least ten--the plug would be removed and the bull drained of the turpentine and the dissolved viscera, helped along with thin metal hooks. This procedure might have been repeated until the majority of viscera were removed. Then the natron induced desiccation of the bull would continue until it was quite dry, after which it would be wrapped up and given a royal burial with pomp and circumstance. The Animal Mummy Project is trying to establish if other sacred animals were mummified in the same way, or whether this method was used exclusively on the Mothers of the Buchis Bulls, as well as on the Buchis Bulls themselves. This method, in a modified version, was also used in the preparation of some human mummies.

Votive Mummies

Votive animal mummies were purchased by pilgrims from priests and were placed in catacombs dedicated to a specific god. They were probably mass produced by the priests and kept available for pilgrims, especially during festivals. These animals performed the same function that a lighted candle

does in a church; they acted as the physical manifestation of a prayer addressed by the pilgrim to the divinity throughout eternity. Several different species of animals are included in this mummy type, ranging from cats and dogs to ibises, scarab beetles, and snakes. Votive animal mummies became particularly popular in the twilight of Egyptian history, during the Late Period and the Graeco-Roman Period (c. 650 BC-AD 398), when Egypt had been overrun by foreigners and its religion had become far more diverse, and some might say debased, than it had been in its earlier history. Unlike pets and sacred animals, votive mummies were not, for the most part, allowed the luxury of a natural death, as can be seen in the x-rays.

Hundreds of cat mummies come from catacombs located near temples dedicated to the cat headed goddess Bastet who was associated with music, love, and the more sensual of life's pleasures (Fig. 5). Many of the votive cats that were to be prepared as mummies had to be killed so that they could be mummified. X-rays show that they were killed by having their necks broken, while others had their skulls crushed with a blunt instrument. In terms of kill-off pattern, most of the cat mummies fall into two groups; the first consists of quite young kitten, about 5-9 months of age, and the second is made up of older animals with fused long bones, all over a year old. A similar pattern was found by P. Armitage and J. Clutton-Brock when they examined the cat mummies from the British and Natural History Museums (1981). They were then eviscerated, covered with crude natron to desiccate them, and bandaged, with resins being applied to the bandages, and in some cases, to the animal itself. Young crocodiles might have been killed by having their nostrils split, or just through neglect.However, it is not clear how all votive animals were killed. Ibises, sacred to the god Thoth, god of wisdom and writing, and various raptors, sacred to solar deities, such as Horus, were mummified, but x-rays reveal nothing of how they died. It is possible that they died naturally, although some scholars have suggested that the live birds were dipped into boiling vats of resin or pitch and that is how they were mummified. This theory is not, however, totally supported by the findings of the AMP. It is remarkable how many ibises were mummified; they are now extinct in Egypt, although they can be found further south in Africa. Their abandonment is due primarily due to loss of habitat, rather than mum-

Fig. 6. A beautifully wrapped raptor mummy, CG 29881, which actually does not contain a bird.

mification, as suggested by some scholars.

Shrews, associated with the nocturnal aspect of solar deities, are also found, either singly, or in groups--often of 15 or more. Again there is no way of knowing how they died, or indeed how these notoriously shy animals were captured. It is possible that there might have been some sort of breeding program attempted, as was established for the ibises and cats.

In addition to providing more basic information, x-rays have particularly dramatic results with completely wrapped specimens as they reveal, for example, whether a mummy is genuine or an ancient fake (Fig. 6). The Egyptians carefully wrapped up odd bones and rags to look like the animal that was supposed to be mummified. It often seems that the more elaborate the wrapping, the more likely it was that the mummy bundle was empty, or contained a fragment of the animal that it was supposed to represent. In this case, it has been suggested that the Egyptians were using the theory that a part represented the whole. This might have been the case when there was a dearth of an animal type, for example raptors, which do not breed successfully in captivity. The Egyptians also had the idea that a representation, once labelled (by written or spoken words) became the actual thing that it was representing, thus, magically, the empty bundles that were so carefully prepared so that there was no mistaking the identity of the animals that they represented, became those beasts.

Conclusion

Clearly, the study of animal mummies can provide information beyond providing us with the genus and species of the animals present in ancient Egypt. The AMP has gleaned significant information about mummification methods, textile technology, dispatching and care of animals, environmental and climactic conditions in antiquity, as well as the religious beliefs of the ancient Egyptians. Further studies, including DNA work, might yield much more useful information concerning the natural, cultural, and environmental history of Egypt. It is hoped that similar studies will be carried out in more museums, as well as on new excavations of these mummies.

* The Animal Mummy Project is indebted to the Bioanthropology Foundation for generously supporting its work.

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