

# Speculations on the Role of Animal Cults in the Economy of Ancient Egypt

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IN KEEPING WITH MANY OTHER ANCIENT CULTURES, the ancient Egyptians had a complex relationship with animals. Animals not only were an important source of food themselves, but they also protected humans and food supplies against predators and vermin, as pets they provided companionship for humans, as well as sometimes serving as a status symbol. Animals were employed in transportation and as draft animals, and portions were used to produce furniture and jewellery, as well as inspiration for the forms of these objects. They were also important in literature, and provided the inspiration for much of the Egyptian script (at this author's calculation, about 20 % of hieroglyphic signs are derived from animals), and for their religious beliefs. For the Egyptians, animals seemed to be endowed with supernatural powers and gifts, and these, together with their "otherness", provided the basis for many Egyptian religious beliefs that linked specific animals to certain deities that shared their attributes and strengths<sup>1</sup>. Thus, Thoth, the god of wisdom and writing, was associated with the Sacred Ibis (*Threskiornis aethiopicus*), a bird with a thin, curved beak, reminiscent of a reed pen that, head bent to the ground, quipped diligently, as if for knowledge. His beak might also suggest the crescent moon, associated with that god as well. The goddess Bastet, patroness of love, motherhood, beauty, and self-indulgence, was linked with cats, who shared the goddess' proclivities in both looks and behaviour; Horus and Re were associated with a variety of raptors, magnificent, fierce birds, with shimmering gold wings, that soared into the heavens, flying close to sun, with a commanding view of the world<sup>2</sup>. It is this last, religious, aspect of the relationship between animals and humans that is the subject of this paper, focussing on animal cults and the possible role that they played in the economy of ancient Egypt<sup>3</sup>.

The Egyptians believed that certain animals that were divine totems could also serve as vessels for the whole or partial spirit or *ba* of a god. The particular specimens that were blessed or chosen by the god could be identified by special markings that set them aside from others of their kind<sup>4</sup>. The chosen animal was cared for lavishly during its lifespan, was

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<sup>1</sup> Fr. DUNAND, R. LICHTENBERG, A. CHARRON, *Des animaux et des hommes*, Paris, 2005; S. IKRAM, *The Animals of Ancient Egypt*, in preparation.

<sup>2</sup> P. HOULIHAN, S. GOODMAN, *The Birds of Ancient Egypt*, Cairo, Warminster, 1986.

<sup>3</sup> For a vivid picture of the Memphite area during the Ptolemaic era, a time when animal cults flourished in the region, and for the role of these cults, see D. THOMPSON, *Memphis under the Ptolemies*, Princeton, 1988.

<sup>4</sup> Herodotus III, 28; D. KESSLER, s. v. "Tierkult", *LÄ VI*, 1986, col. 571-587; S. IKRAM, *Divine Creatures: Animal Mummies from Ancient Egypt*, Cairo, 2005, p. 1-3; J.D. RAY, "Animal Cults", *The Oxford Encyclopedia of Ancient Egypt*, D.B. Redford (ed.), New York, 2001, p. 345-348; R.L. VOS, "The Colors of Apis and other Sacred Animals", in W. Clarysse, A. Schoors, H. Willems (eds.), *Egyptian Religion: The Last Thousand Years*.

worshipped as a manifestation of the god, it provided oracular pronouncements, and it was the focus of letters of supplication<sup>5</sup>, dedicatory objects, inscriptions, and festivals<sup>6</sup>. Upon its death the Sacred Animal was mummified with veneration, and laid to rest in a specially cut sepulchre. One of the most potent of such animal deities was the Apis bull whose cult was celebrated from the First Dynasty onward<sup>7</sup>. It is unclear as to whether such cults with live animals were continuously active from the dawn of Egyptian history until their end with the Christian domination of Egypt, or if they enjoyed sporadic popularity. If any single animal were continuously revered, it would have been the Apis bull, although there is a significant lacuna in the evidence concerning this cult between the inception of Pharaonic history, the reign of Amenhotep III (c. 1388-1348 BC) where it saw a resurgence, with a second flowering from the Late Period (c. 664-332 BC) onward. In general, cults with animal manifestations of the gods<sup>8</sup> really came into their own in the Late Period<sup>9</sup> and flourished into

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*Studies dedicated to the memory of Jan Quaegebeur*, OLA 84-85, 1998, p. 709-718; K.A. WIEDEMANN, "Le culte des animaux en Égypte", *Muséon* 8, 1889, p. 211-225, 309-318.

<sup>5</sup> E. BLEIBERG, Y. BARBASH, L. BRUNO, *Soulful Creatures: Animal Mummies in Ancient Egypt*, Brooklyn, 2013, p. 84; A.-el-G. MIGAHID, *Demotische Briefe und Götter* 1-2, Dissertation, Würzburg; K. ENDREFFY, "Reason for Despair: Notes on Some Demotic Letters to Thoth", in B. El-Sharkaway (ed.), *The Horizon: Studies in Egyptology in Honour of M.A. Nur el-Din*, Cairo, 2010, p. 241-251.

<sup>6</sup> J.D. RAY, *Texts from the Baboon and Falcon Galleries: Demotic, Hieroglyphic and Greek Inscriptions from the Sacred Animal Necropolis, North Saqqara*, edited and updated by C.J. Martin (2008), London, 2011; H.S. SMITH, "The Saqqara Papyri. Oracle Questions, pleas and letters", in K. Ryholt (ed.), *Acts of the Seventh International Conference of Demotic Studies. Cambridge 1999, 2002*, Copenhagen, p. 367-375; K.M.D. SMELIK, "The Cult of the Ibis in the Graeco-Roman Period: With Special Attention to the Data from the Papyri", in M.J. Vermaseren (ed.), *Studies in Hellenistic Religions, EPRO 78*, 1979, p. 225-243; J.D. RAY, "Animal Cults"; *id.*, *The Archive of Hor, MEES 2*, 1976; D. KESSLER, *Die Heiligen Tiere und Der König I, ÄAT 16*, 1989; *id.*, "Tierkult"; H.J. THISSEN, "Demotische Inschriften aus den Ibisgalerien in Tuna el-Gebel", *Enchoria* 18 1991, p. 107-113.

<sup>7</sup> W.K. SIMPSON, "A Running of the Apis in the Reign of the 'Aha and Passages in Manetho and Aelian", *Or* 26 1957, p. 139-142; J.H. BREASTED, *Ancient Records of Egypt I*, sections 76-167, Chicago, 1906.

<sup>8</sup> Many Classical authors have written about Egyptian animal cults, most notably Herodotus (II: 67-76). For an overview of Classical writings and attitudes toward such cults, see K.A.D. SMELIK, E.A. HEMELRIJK, "Who knows not what monsters demented Egypt worships? Opinions on Egyptian Animal Worship in Antiquity as Part of the Ancient Conception of Egypt", in W. Haase (ed.), *Aufstieg und Niedergang der römischen Welt* 17/4, 1984, p. 1853-2000.

<sup>9</sup> The animal burials at the Sacred Animal Necropolis at Saqqara are dated from the Late Period on, as per H.S. SMITH, C.A.R. ANDREWS, S. DAVIES, *The Sacred Animal Necropolis at North Saqqara: The Mother of Apis Inscriptions* 1-2. London, 2011, p. 4, with a florescence in the Ptolemaic Period, when newer installations were established (J.D. RAY, *Texts from the Baboon*, p. 31, 72). Based on the textual evidence, Ray (*Texts from the Baboon*, p. 72) does not believe that the baboon cult at Saqqara lasted into the Roman era. However, this is not true for other cults located elsewhere; see A. CHARRON, "Massacres d'animaux à la Basse Époque", *RdE* 41, 1990, p. 209-213; *id.*, "Les canidés sacrés dans l'Égypte de la Basse Époque", *Égypte, Afrique & Orient* 23, 2001, p. 7-22, and above.

the Roman era<sup>10</sup>, even as late as the Fourth century AD, as attested by Constantius II's (AD r.337-361) dedication to the Buchis Bull of Armant<sup>11</sup>.

During this time (c. 664 BC-AD 361), a new form of votive offering specific to the animal cults became popular: animal mummies. These mummified animals were creatures that were associated with the god in question (for example, cats for Bastet, ibises for Thoth, raptors for Re/Horus, and canines for Anubis/Wepwawet), but clearly were not sacred in themselves. The devotee offered these mummies to the god, together with a prayer, request, or complaint<sup>12</sup>. Many of these animals were killed deliberately in order to be mummified<sup>13</sup>, as the demand for such offerings must have been great during festivals of the gods. Animal cemeteries have been found throughout the length of Egypt as well as in the oases<sup>14</sup>.

There is some debate as to the type of people who "purchased" the animal mummies: were they locals or pilgrims coming from afar, were they offered only by priests, or were they given by anyone with an affiliation to a particular god<sup>15</sup>. The evidence tends to support the idea that such offerings were not restricted to priests<sup>16</sup>. Perhaps this form of ex votos gained in popularity as the idea behind it was that the god, manifest as an animal, would pay more attention to a once live, and reanimated after death, creature, than to an image cast in metal or carved in stone, and would thereby be more inclined to grant the prayer. Once consecrated, these animal mummies were not immediately interred. Rather, they stayed in the 'house of waiting' or its equivalent until a day (or days) of festival that occurred at least once a year,<sup>17</sup> when they were finally interred in their "house of rest"<sup>18</sup>. The forms that these tombs took were diverse: the catacombs at Saqqara and Tuna el-Gebel, the pit tombs of Abydos or Stabl

<sup>10</sup> Fr. DUNAND, R. LICHTENBERG, "Des chiens momifiés à El-Deir. Oasis de Kharga", *BIFAO* 105, 2005, p. 75-88; Fr. DUNAND, R. LICHTENBERG, C. CALLOU. "Dogs at el-Deir", in S. Ikram, J. Kaiser, R. Walker (eds.), *The Bioarchaeology of Ancient Egypt, Conference Proceedings 2012*, Cairo, 2015, p. 169-174; S. IKRAM, "Canine Cults in Kharga Oasis: the Dogs of Dabashiya", in G. Tallet, Chr. Zivie-Coche (eds.), *Le Myrte & la rose. Mélanges offerts à Françoise Dunand par ses élèves, collègues et amis*, *CENiM* 9, 2014; D. KESSLER, A. NUR EL-DIN, "Ein Tierkäfig am Tierfriedhof von Tuna el-Gebel, Mittelägypten", in C. Becker *et al.* (eds.), *Historia Animalium ex Ossibus*, Rahden, 1999; J. TOUTAIN, "Le culte du taureau Apis à Memphis sous l'empire romain", *Le Muséon* 3.1, 1916, p. 193-202.

<sup>11</sup> R. MOND, O.H. MYERS, *The Bucheum* 1-3, London, 1934; A. VON DEN DRIESCH, D. KESSLER, Fr. STEINMANN, V. BERTEAUX, J. PETERS, "Mummified, deified and buried at Hermopolis Magna - the sacred birds from Tuna El-Gebel, Middle Egypt", *ÄgLev* XV, 2005, p. 203-244.

<sup>12</sup> Letters asking to solve crimes like theft, or cure sickness, right an injustice, deal with cases of libel or even a bad work situation accompanied some mummies. The letters were fairly formulaic with a complaint put forward, followed by a request; see A.-el-G. MIGAHID, *Demotische Briefe an Götter von der Spät- bis zur Römerzeit: ein Beitrag zur Kenntnis des religiösen Brauchtums im alten Ägypten*, 1986.

<sup>13</sup> P.L. ARMITAGE, J. CLUTTON-BROCK, "A Radiological and Histological Investigation into the Mummification of Cats from Ancient Egypt", *Journal of Archaeological Science* 8, 1981, p. 185-196. P.L. ARMITAGE, J. CLUTTON-BROCK, "Egyptian Mummified Cats held by the British Museum", *MASCA Research Papers in Science and Archaeology* 1, 1980, p. 185-188; S. IKRAM, N. ISKANDER, *Non-Human Remains*, *CGC*, 2002; A. ZIVIE, R. LICHTENBERG, "The Cats of the Goddess Bastet", in S. Ikram (ed.), *Divine Creatures: Animal Mummies in Ancient Egypt*, Cairo, 2005; M. HARTLEY, A. BUCK, S. BINDER, "Canine Interments in the Teti Cemetery North at Saqqara during the Graeco-Roman Period", in F. Coppens, K. Krejsi (eds.), *Abusir and Saqqara in the Year 2010*, Prague, 2011, p. 17-29.

<sup>14</sup> D. KESSLER, "Tierkult" and S. IKRAM, *Divine Creatures*, p. xvii-xx; Fr. DUNAND, R. LICHTENBERG, C. CALLOU. "Dogs at el-Deir", p. 169-176.

<sup>15</sup> D. KESSLER, "Tierkult"; J.D. RAY, "Animal Cults"; D. KESSLER, *Die Heiligen Tiere*.

<sup>16</sup> J.D. RAY, *Texts from the Baboon*; A.-el-G. MIGAHID, *Demotische Briefe*.

<sup>17</sup> J.D. RAY, *Texts from the Baboon*, p. 223, 234, 269, 305, 324; *id.*, *Archive*, p. 82-84, 138; D. KESSLER, *Die Heiligen Tiere*.

<sup>18</sup> J.D. RAY, *Archive*, p. 80, 140.

Antar, the reused and reconsecrated human tombs at Thebes, Saqqara, Sheikh Fadl, and in the oases of Kharga and Dakhla<sup>19</sup>. Millions of votive animal mummies were produced; at Saqqara, an estimated eight million dogs were interred at the Anubeion<sup>20</sup>, and four million ibises in the neighbouring ibis catacombs<sup>21</sup> while at least 1.8 million birds were buried at Tuna el-Gebel<sup>22</sup>. Other, smaller catacombs and animal burial sites throughout Egypt have yielded fewer, albeit still significant numbers of mummified creatures, dedicated to the gods.

Various reasons have been given for the flowering and proliferation of animal cults during this time: they were a way of reasserting an Egyptian national and religious identity in the face of invaders and colonists, both from the south and the north; these cults with viewable manifestations of deities made the gods, on some level, more accessible to the people; the living gods emphasised the king's link with the divine and the constant presence of the gods in Egypt<sup>23</sup>. However, this is not the place to address these issues, or the more subtle mechanics of the functioning of these cults, as many other scholars have dealt with them more than adequately<sup>24</sup>. Rather, this article will examine the phenomenon of animal mummies with regard to the economy. It has been previously remarked that animal cults must have played an important role in the local economy<sup>25</sup>, but this observation has not been taken much further. Given the multifaceted roles of animal cults, their contribution to Egypt's economy must have been considerable. This article is a starting point of a longer exploration/discussion of this topic, bringing into focus the different elements of these animal cults that would have contributed to the economy: the functioning of the cult, cult personnel, structures associated with the cult, the acquisition of animals, the care and upkeep of the animals, their mummification, the visitors to the temple, the devotees/pilgrims who purchased the mummies, their upkeep, and any incidental business that the cult and its followers might occasion.

## The Cult

### *The Physical Structure*

Based on what is known in particular from the Sacred Animal Necropolis at Saqqara, the cult of the Apis Bull, and the installations at Tuna el-Gebel, temples with divinities in the shape of live animals, shared several common aspects with temples that housed images of deities. Thus, a building of some sort to house the living god (or a mummy thereof) was required, although its grandeur would vary depending on whether it was a royal installation or not and

<sup>19</sup> D. KESSLER, "Tierkult", and S. IKRAM, *Divine Creatures*, p. xvii-xx.

<sup>20</sup> S. IKRAM, P. NICHOLSON, L. BERTINI, D. HURLEY, "Killing Man's Best Friend?", *Archaeological Review from Cambridge* 28/2, 2013, p. 48-66.

<sup>21</sup> J.D. RAY, *Archive*, p. 138.

<sup>22</sup> D. KESSLER, A. NUR EL-DIN, "Tuna el-Gebel: Millions of Ibises and Other Animals", in S. Ikram (ed.), *Divine Creatures: Animal Mummies in Ancient Egypt*, Cairo, 2005, p. 120-163; VON DEN DRIESCH *et al.*, "Mummified, deified", p. 204-244.

<sup>23</sup> D. KESSLER, *Die Heiligen Tiere*.

<sup>24</sup> The literature on animal cults is vast and cannot all be cited. Only a few of the most pertinent works are mentioned here; their bibliographies contain other references. Herodotus II: 67-76; J.D. RAY, *Archive*; D. KESSLER, *Die Heiligen Tiere*; J.D. RAY, "Animal Cults"; D. KESSLER, "Tierkult"; K.A.D. SMELIK, E.A. HEMELRIJK, "Who knows not"; H.S. SMITH, *A Visit to Ancient Egypt: Life at Memphis and Saqqara (c. 500-30BC)*, Warminster, 1974; S. IKRAM, ed. *Divine Creatures*; S. GABRA, "Aspect du culte des animaux à Hermopolis Ouest", *BIE* 25, 1943, p. 237-244; K.A. WIEDEMANN, "Le culte des animaux"; D. MEEKS, *Le grand texte des donations au temple d'Edfou*, *BiEtud* 59, 1972.

<sup>25</sup> J.D. RAY, *Texts from the Baboon*, p. 221.

whether it was located in an important city or a more humble town, or even village. Examples of state sponsored temples that might have had such deities include Kom Ombo, many of the temples of the Fayum (Karanis, Qasr el-Qarun, Medinet Maadi), Ashmunein/Tuna el-Gebel, as well as installations at Memphis<sup>26</sup> and Heliopolis for the Apis and Mnevis Bulls, respectively<sup>27</sup>. Possibly less grand edifices, in mud brick, were erected in the oases, which also boasted some form of animal cults<sup>28</sup>. Constructing such a building, whether of stone or brick, would have needed large numbers of laborers who had to be summoned, housed, fed, and coordinated<sup>29</sup> by administrators and support staff, and supplied with the raw materials, water, and fuel that were needed for the work. Stone temples would have been more costly, due to the raw materials, their transport, and the larger number of experts needed (quarry workers, masons, specialized carvers as well as artists/artisans), but any temple building would have contributed to the economy on both a state and local level<sup>30</sup>.

Such temples would have been physically linked to the embalming houses<sup>31</sup> and burial places of the gods, and their “mortuary” temples<sup>32</sup>. These could be simple pit tombs, such as those found in Kharga<sup>33</sup>, portions of Stabl Antar, and Abydos<sup>34</sup>; galleries constructed of mud brick, such as those found at Quesna<sup>35</sup>, Abydos<sup>36</sup>, and Dendera<sup>37</sup>; or reused tombs of humans that were extended such as the cat catacombs of the Bubasteion at Saqqara<sup>38</sup>, the dog

<sup>26</sup> Herodotus II: 153; M. JONES, “The Temple of the Apis in Memphis”, *JEA* 76, 1990, p. 141-147; D. THOMPSON, *Memphis under the Ptolemies the Ptolemies*, p. 190-211.

<sup>27</sup> D. KESSLER, “Tierkult”.

<sup>28</sup> S. IKRAM, “Canine Cults in Kharga Oasis”; Fr. DUNAND, R. LICHTENBERG, “Des chiens momifiés”; Fr. DUNAND, J.-L. HEIM, R. LICHTENBERG, *El-Deir Nécropoles I. La nécropole Sud*, Paris, 2010; Fr. DUNAND, R. LICHTENBERG, C. CALLOU, “Dogs”.

<sup>29</sup> The Workmen’s Village at Giza (<http://www.aeraweb.org>) illustrates the organisation and infrastructure necessary for a large-scale building project, as do, to a lesser extent due to its slightly more diverse function, the towns of Lahun/Kahun (W.M.FI. PETRIE, *Illahun, Kahun, and Gurob*, London, 1891), Deir el-Medina (B. BRUYÈRE, “Rapport sur les Fouilles de Deir el Médineh”, *FIFAO* 2-26, 1924–1953), and the Workmen’s Village at el-Amarna (B.J. KEMP, *Amarna Reports* 1-2, 4-5; London, 1984-1987), would share elements of state care and organisation.

<sup>30</sup> This would have taken place in fits and starts over time as many large temples were built in small increments under different rulers.

<sup>31</sup> The inscription on a statue of Djedhor of Athribis, a priest responsible for the burial of falcons in the Delta, states that he was responsible for the construction of the embalming house of the falcons, “80 cubits in length and 64 cubits in width”; sadly there are no costs recorded for this operation; see E.J. SHERMAN, “Djedhor the Saviour Statue Base OI 10589”, *JEA* 67, 1981, p. 82-102. The author is most grateful to Dr. Joanne Rowland for sending the reference to this article in a serendipitous manner at a most fortunate moment.

<sup>32</sup> S. DAVIES, H.S. SMITH, K.J. FRAZER, *The Sacred Animal Necropolis at north Saqqara: the falcon complex and catacomb: the archaeological report*, *EES ExcMem* 73, 2005, p. 1-2; *id.*, *The Sacred Animal Necropolis at North Saqqara: the Main Temple complex: archaeological report*, *EES ExcMem* 75, 2006 G.Th. MARTIN *et al.*, *The Sacred Animal Necropolis at North Saqqara. The Southern Dependencies of the Main Temple Complex*, *EES ExcMem* 50, 1981; P. NICHOLSON, “The Sacred Animal Necropolis at North Saqqara, the Cults and Their Catacombs”, in S. Ikram (ed.), *Divine Creatures: Animal Mummies from Ancient Egypt*, Cairo, 2005, p. 44-71.

<sup>33</sup> Fr. DUNAND, R. LICHTENBERG, “Des chiens momifiés”; Fr. DUNAND, R. LICHTENBERG, C. CALLOU, “Dogs”.

<sup>34</sup> S. IKRAM, “Animals in a Ritual Context at Abydos. A Synopsis”, in Z. Hawass, J. Richards (eds.), *The Archaeology and Art of Ancient Egypt: Essays in Honor of David B. O’Connor*, Cairo, 2007, p. 417-432; T.E. PEET, W.L.S. LOAT, *Cemeteries of Abydos III*, London, 1913.

<sup>35</sup> J. ROWLAND, S. IKRAM, G.J. TASSIE, L. YEOMANS, “The Sacred Falcon Necropolis of Djedhor(?) at Quesna: Recent Investigations from 2006-2012”, *JEA* 99, 2013, p. 53-84.

<sup>36</sup> L. BESTOCK, “Brown University Abydos Project: Preliminary Report on the First Two Seasons”, *JARCE* 48, 2012, p. 35-79.

<sup>37</sup> W.M.FI. PETRIE, *Denderah 1898*, London, 1900.

<sup>38</sup> A. ZIVIE, R. LICHTENBERG, “The Cats of the Goddess Bastet”.

tombs at Kharga<sup>39</sup>, Sheikh Fadl, and Asyut<sup>40</sup>, the rock cut catacombs of the Sacred Animal Necropolis<sup>41</sup> and the Serapeum<sup>42</sup> at Saqqara, and those of Tuna el-Gebel<sup>43</sup>. All of these burial places would have required construction or excavation of some sort, again with an economic impact in both the short and the long term. It is possible that the mud brick galleries were constructed using local workforces associated with temples, or even employed on an ad hoc basis (texts regarding this are as yet unknown), which would have created a spike in employment for a short period. At Saqqara, texts show that a dedicated team of masons, seemingly continuously employed, served at least one, if not more of the animal cults<sup>44</sup>, thereby swelling the ranks of temple personnel.

Smaller and sporadic construction projects would also provide occasional scope for employment, possibly to locals, rather than people who were generally employed by the temple. Such projects might include the construction of accommodation for temple personnel, as well as for the living sacred and votive animals (see below).

### *Personnel*

The cults would have had their priesthoods, serving the living and dead gods — possibly one group of priests shared the duties between the areas for the living and the dead, although this is yet to be established. The extant texts, at least for the Baboon cult at Memphis/Saqqara, indicate that only a few families<sup>45</sup>, both women<sup>46</sup> and men, served as specific groups of priests<sup>47</sup>, a pattern that is also seen from other priestly archives, particularly those associated with embalming.<sup>48</sup> However, even a few families can produce a considerable number of priests. Thus, *wâb* priests (including variants, such as *na wâb* or the 25 *wâb* who conclude affairs<sup>49</sup>), lector priests, inspectors, the workers, the men who serve the Ibis (feeding, cleaning, possibly including veterinarians), the men who perform burial, embalmers, prophets, magicians, administrators, strategoi, scribes, servants, controllers, foremen,

<sup>39</sup> Fr. DUNAND, R. LICHTENBERG, “Des chiens momifiés”; Fr. DUNAND, R. LICHTENBERG, C. CALLOU, “Dogs”; S. IKRAM, “Canine Cults in Kharga Oasis”.

<sup>40</sup> J. KAHL, C. KITAGAWA, “Ein wiederentdeckter Hundefriedhof in Assiut”, *Sokar* 20, 2010, p. 77-81; J. KAHL *et al.*, “The Asyut Project: sixth season of fieldwork (2008)”, *SAK* 38, 2009, p. 113-130; *id.*, “The Asyut project: eighth season of fieldwork (2010)”, *SAK* 40, 2011, p. 181-209; *id.*, “The Asyut Project: ninth season of fieldwork (2011)”, *SAK* 41, 2012, p. 189-235.

<sup>41</sup> S. DAVIES, H.S. SMITH, K.J. FRAZER, *EES ExcMem* 73, 2005; *id.*, *EES ExcMem* 75, 2006; G.Th. MARTIN *et al.*, *EES ExcMem* 50, 1981.

<sup>42</sup> A. MARIETTE, “Renseignements sur les 64 Apis trouvés dans les souterrains du Sérapéum”, *BAAF* 45ff, 1855, repr. 1904; *BiblEg* 18 [A. MARIETTE, *Œuvres diverses* I], p. 133-255; A. MARIETTE, *Choix de monuments et de dessins découverts ou exécutés pendant le déblaiement du Sérapéum de Memphis*, Paris, 1856, repr. 1904. *BiblEg* 18 [A. MARIETTE, *Œuvres diverses* I], p. 311-319; A. MARIETTE, *Le Sérapéum de Memphis découvert et décrit par Auguste Mariette*, Paris, 1857.

<sup>43</sup> D. KESSLER, *Die Heiligen Tiere*; *id.*, NUR EL-DIN, “Tuna el-Gebel: Millions of Ibises”; D. KESSLER, J. BOESSNECK, A. VON DEN DRIESCH, *Tuna el-Gebel I. Die Tiergalerien*, Hildesheim, 1987.

<sup>44</sup> J.D. RAY, *Texts from the Baboon*.

<sup>45</sup> *Ibid.*, p. 162-63; Fr. DE CENIVAL, “Deux papyrus inédits de Lille : avec une révision du P.dém. Lille 31”, *Enchoria* 7, 1977, p. 1-49.

<sup>46</sup> J.D. RAY, *Texts from the Baboon*, p. 301; Fr. DE CENIVAL, *loc. cit.*

<sup>47</sup> J.D. RAY, *Texts from the Baboon*, p. 162-63; K.M.D. SMELIK, “The Cult of the Ibis”.

<sup>48</sup> E.A. REYMOND, *Catalogue of Demotic Papyri in the Ashmolean Museum I. Embalmers' Archives from Hawara*, Oxford, 1973; E. REVILLOUT, “Taricheutes et choachytes”, *ZÄS* 18, 1880, p. 70-80; D. THOMPSON, *Memphis under the Ptolemies the Ptolemies*, p. 155-189.

<sup>49</sup> J.D. RAY, *Archive*, p. 141-144, 181.

watchmen<sup>50</sup>, and possibly priests of higher levels, would all form part of the personnel for the different temples associated with animal cults. Based on the texts from the Baboon Galleries and the Archive of Hor, both of Saqqara, a *minimum* of fifty people would have been employed by the cult, probably more. If at any particular cemetery, such as Saqqara, there were more than one animal cult, then the numbers of temple personnel servicing the cults would have been among the 100s. Thus, a considerable population would have to be housed<sup>51</sup>, fed (no doubt as part of the temple expenses<sup>52</sup>), and would also be part of the local economy of the town or city to which they were attached.

### *The Animals*

The animals, both sacred and votive, were, of course, the key component of these cults. Many species of animals were revered by the animal cults<sup>53</sup>, ranging from tiny scarab beetles to six metre long crocodiles, with some representatives acting as sacred animals, and the vast majority being votive offerings. The majority of mummified animals such as the beetles, crocodiles, sheep, goats, gazelle, cats, dogs, shrews, ibises, raptors, serpents, and lizards were native to Egypt and could be acquired within its boundaries. Other creatures, such as monkeys, had to be ~~obtained elsewhere~~, at least initially, and then could be bred within Egypt. It is clear that many species had to have been very deliberately purpose-bred as the number of votive mummies<sup>54</sup> was enormous, and could not have been achieved by killing normal populations of these animals without bringing them to extinction in the early years of these cults.

The eight million dogs at the Anubieion catacombs at Saqqara, four million ibises at the Ibis Catacombs of Saqqara, with estimated 60,000 living birds being looked after in the Ibiotropheia there<sup>55</sup>, surely argue for puppy<sup>56</sup> and ibis farms (or areas with encouraged breeding), respectively. Tuna el-Gebel also boasted ibis burials in the millions, with an estimated 15,000 interments a year or average<sup>57</sup>, with several thousand birds a year being interred at Kom Ombo, no doubt culminating in hundreds of thousands, if not millions of bird burials<sup>58</sup>. The number of eggs found in the ibis cemeteries<sup>59</sup>, coupled with the proximity of

<sup>50</sup> *Ibid.*, p. 180-82; D. KESSLER, "Tierkult"; K.M.D. SMELIK, "The Cult of the Ibis"; J. QUAEGEBEUR, "La désignation 'porteur(s) des dieux' et le culte des dieux crocodiles dans les textes des époques tardives", dans *Mélanges Adolphe Gutbub, OrMonsp* 2, 1984, p. 161-176; D. THOMPSON, *Memphis under the Ptolemies the Ptolemies*, p. 26.

<sup>51</sup> A. EL-H. NUR EL-DIN, D. KESSLER, "Das Priesterhaus am Ibiotapeion von Tuna el-Gebel", *MDAIK* 52, 1996, p. 262-293.

<sup>52</sup> J.D. RAY, *Archive*, p. 145-146 in particular.

<sup>53</sup> For the varieties of animals, see L.C. LORTET, Cl. GAILLARD, *La faune momifiée de l'Ancienne Égypte*, Lyon, 1903-09; D. KESSLER, "Tierkult"; S. IKRAM, *Divine Creatures; ead.*, N. ISKANDER, *Non-Human Remains, CGC*, 2002.

<sup>54</sup> Some debate about the nature of votive mummies remains: see D. KESSLER, "Tierkult"; *id.*, *Die Heiligen Tiere; id.*, NUR EL-DIN, "Tuna el-Gebel: Millions of Ibises"; J.D. RAY, "Animal Cults"; *id.*, *Archive*; S. IKRAM, *Divine Creatures*, p. 1-15; A. CHARRON, "Les canidés sacrés dans l'Égypte de la Basse Époque", *Égypte, Afrique, et Orient* 23, 2001, p. 7-22.

<sup>55</sup> J.D. RAY, *Archive*, p. 41, 138.

<sup>56</sup> S. IKRAM, P. NICHOLSON, L. BERTINI, D. HURLEY, "Killing Man's Best Friend?", *Archaeological Review from Cambridge* 28/2, 2013, p. 48-66; D. KESSLER, 1986: 23.

<sup>57</sup> D. KESSLER, NUR EL-DIN, "Tuna el-Gebel: Millions of Ibises"; VON DEN DRIESCH *et al.*, "Mummified, deified".

<sup>58</sup> F. PREISIGKE, W. SPIEGELBERG, *Die Prinz-Joachim Ostraka*, Strasbourg, 1914.

<sup>59</sup> J.D. RAY, *Archive*, p. 138.

the Hod Tuna<sup>60</sup>, and Abusir lake (and indeed the Nile, at many periods of Egyptian history<sup>61</sup>), provided ideal breeding areas for these birds. Indeed, at the southwestern edge of the Abusir lake geomagnetic surveys revealed the presence of mud brick structures that look like dwellings, as well as enclosures that might have housed flocks of birds<sup>62</sup>. The Archive of Hor and the Prinz Joachim Ostraka, as well as material from Tuna el-Gebel, clearly provide evidence for the breeding of birds, and it is also possible to extrapolate encouraged breeding of crocodiles, particularly in the Fayum, on the basis of the number of eggs and juvenile animals that have been found in crocodile cemeteries<sup>63</sup>.

Although no numbers are available for the cat interments from Bubastis, they would surely have also been in the millions given the number of cat mummies that were taken from Egypt allegedly as ballast and fertilizer during the nineteenth century<sup>64</sup>, as well as the numerous specimens found in museum collections all over the world. Clearly, a demand for a large cat population for mummification had to be met. It is interesting that, when writing about cats, Herodotus reports (II: 66) that tom-cats make female cats mate with them repeatedly by doing away with the babies (untrue), thereby ensuring that the females will mate again and breed. Although there is no record of tom-cats behaving thus it is more than possible that the caretakers of the cats in the various temples to Bastet forced multiple litters by removing the young so that the she-cat would mate again; removing the young in an untimely manner is also used in modern day puppy farming, and this ruse forces multiple litters in a short time, making these animals available for mummification<sup>65</sup>. Unlike dogs, which come into oestrus only twice a year, a cat can have as many as three litters a year safely; more are possible, but take their toll upon the mother.

The many baboon and monkey mummies, coming primarily from Saqqara and Tuna el-Gebel also indicate a limited breeding program, as well as the import and trade in these creatures, which had died out in Egypt long before the Late Period<sup>66</sup>. Most telling are the texts from the Baboon galleries at Saqqara that document the importation of animals from the south (baboons and other types of monkeys) as well as the northwest (Barbary apes)<sup>67</sup>, as is further supported by the different varieties of monkey remains of both sexes identified in the catacomb<sup>68</sup>. The animals also seem to have been bred in Alexandria, perhaps at the royal zoo or in a temple, with attempts at breeding also made in Memphis, and possibly even by private

<sup>60</sup> VON DEN DRIESCH *et al.*, "Mummified, deified", p. 204.

<sup>61</sup> J.D. RAY, *Archive*, p. 138, n. 1; K. LUTLEY, J. BUNBURY, "The Nile on the Move", *EgArch* 32, 2008, p. 3-5.

<sup>62</sup> The author was working with Ian Mathieson at the time that he carried out the survey, the results of which have not all been published due to Mathieson's untimely demise.

<sup>63</sup> E. BRESCIANI, "Sobek, Lord of the Land of the Lake", in S. Ikram (ed.), *Divine Creatures: Animal Mummies from Ancient Egypt*, Cairo, p. 199-206; G. BAGNANI, "The Great Egyptian Crocodile Mystery", *Archaeology* 5/2, 1952, p. 76-78.

<sup>64</sup> J. MALEK, *The Cat in Ancient Egypt*, London, 1993.

<sup>65</sup> As evidenced by the archaeozoological evidence (see IKRAM ET AL, 'Killing Man's Best Friend?); also see activities in puppy/kitten farms; [http://www.humanesociety.org/issues/puppy\\_mills/](http://www.humanesociety.org/issues/puppy_mills/); <http://www.purebredcatrescue.org/kitten-mills/>; <http://peopleforanimals2011.wordpress.com/2011/11/10/kitty-mills/>, all accessed on 19 November 2013.

<sup>66</sup> R. PERIZONIUS, M. ATTIA, H. SMITH, J. GOUDSMIT, "Monkey Mummies and North Saqqara", *EA* 3, 1993, p. 31-33; J.D. RAY, *Texts from the Baboon*; A. VON DEN DRIESCH, "The Keeping and Worshipping of Baboons during the Later Phase in Ancient Egypt", *Sartonia* 6, 1993, p. 15-36; D. KESSLER *et al.*, *Tuna el-Gebel I*.

<sup>67</sup> J.D. RAY, *Texts from the Baboon*, p. 28, 31, 34.

<sup>68</sup> J. GOUDSMIT, D. BRANDON-JONES, "Evidence from the Baboon Catacomb in North Saqqara for a West Mediterranean Monkey Trade Route to Ptolemaic Alexandria", *JEA* 86, 2000, p. 111-119; VON DEN DRIESCH, "The Keeping and Worshipping".



individuals who hoped to make a sale to the temples<sup>69</sup>. Certainly this trade in exotic creatures would have played a significant role in long-distance (as well as more national) trade, as the western part of North Africa as well as Sudan, Ethiopia and surrounding lands were involved in the trade<sup>70</sup>. Breeding the animals, whether in Alexandria or Memphis or Tuna el-Gebel would also involve an initial outlay for at least one pair, and probably more, of animals, with a few extra females. Space, food, and caretakers would also be required<sup>71</sup>. It is true that despite their importance, the animals were not always kept in favorable conditions — many of them show signs of malnutrition and resulting diseases, broken bones, or disease<sup>72</sup>. Of course, it is possible that the majority of these diseases and problems were a result of long-distance travel where the animals would have been kept in confined, dirty, spaces, with a limited amount of food and water, rather than a result of their treatment in the temple compound. However, one must also bear in mind the complaints levied against the caretakers of animals that appear in the Archive of Hor, when they are accused depriving the ibises of food<sup>73</sup>.

Both the importation of animals, as well as breeding them, would have had an impact on the economy, with different sectors and attendant groups of people being affected. Providers of transport (both land and sea), guards, as well as groups of traders would have participated in the import of animals. Breeding might have been part of the temple economy, but animals might also have been supplied for votive offerings by independent breeders in surrounding villages, or even distant ones, thus contributing to more local economies.

All the animals kept as Sacred Animals as well as votive offerings would have to be fed, watered, and cared for by personnel who had to be remunerated, to varying degrees. The majority of textual information concerning the upkeep of these populations within temple contexts comes from ibis cults (and some from the Baboon and Falcon galleries at Saqqara). These sources give information about amounts of food (sometimes provided by the state/king) and endowed lands that provided both food and revenue for the animals' support, as well as establishing the tax-free status of the temple<sup>74</sup>. Special lands and tax-free status of course indicate state subsidy, which is not uncommon for temples. Some aspects of the care of the animals can be extrapolated from their remains<sup>75</sup>. Sadly, as is detailed in the Archive of Hor, the animals were often cheated of their food and not always well cared for<sup>76</sup>. However, there is an instance when the broken leg of an ibis was set, perhaps by priest-veterinarians<sup>77</sup>, and some of the dogs in the Dog Catacombs of Saqqara might also have had some medical

<sup>69</sup> J.D. RAY, *Texts from the Baboon*, p. 25, 27, 28, 31, 34, 38.

<sup>70</sup> R. PERIZONIUS *et al.*, "Monkey Mummies"; A. VON DEN DRIESCH, "The Keeping and Worshipping"; GOUDSMIT, D. BRANDON-JONES, "Evidence from the Baboon Catacomb".

<sup>71</sup> Texts from several ibis burial grounds refer to the *ibiotropheia*, the ibis feeding places.

<sup>72</sup> A.G. NERLICH, F. PARSCHE, A. VON DEN DRIESCH, U. LÖHRS, "Osteopathological findings in mummified baboons from Ancient Egypt", *International Journal of Osteoarchaeology* 3, 1993, p.189-198; J. GOUDSMIT, D. BRANDON-JONES, "Evidence from the Baboon Catacomb"; A. VON DEN DRIESCH, "The Keeping and Worshipping".

<sup>73</sup> J.D. RAY, *Archive*.

<sup>74</sup> PREISIGKE, SPIEGELBERG, *Prinz-Joachim Ostraka*, p. 33; J.D. RAY, *Archive*, p. 136ff; FR. DE CENIVAL, "Deux papyrus inédits", p. 24ff; K.M.D. SMELIK, "The Cult of the Ibis", p. 225-241; J.D. RAY, *Texts from the Baboon*, p. 309.

<sup>75</sup> S. IKRAM, P. NICHOLSON, L. BERTINI, D. HURLEY, "Killing Man's Best Friend?"; M. HARTLEY, A. BUCK, S. BINDER, "Canine Interments".

<sup>76</sup> J.D. RAY, *Archive*.

<sup>77</sup> Barbara Ghaleb, personal communication with regard to ibis remains found in the Ibis Catacombs at Saqqara.

attention (personal observation). Sacred Animals, no doubt, were well looked after, as is attested by their longevity despite physical handicaps<sup>78</sup>.

Not all animals that were buried in the sacred areas were purpose-bred in the temple or nearby, although that was the norm. In one instance in Saqqara, there is a record of, “A perished one which was found lying (in) the buildings (at) the entrance to the southern (?) vault (of) the Serapeum”<sup>79</sup>, and it seems that more than one animal was sent/brought from afar to be buried at Tuna el-Gebel<sup>80</sup>. Indeed, their transportation incurred costs as well<sup>81</sup>. Nonetheless, the majority of the votive animals were local, and would have influenced the local economies to some degree, depending on the extent and popularity of the cult.

### *Embalming the Animals*

Another large cog in the wheels of the economy was the embalming of the animals. Mummification in its most proper form for non-human animals required a corpse (either due to a natural or induced death, as discussed above), evisceration, tools of metal or stone to carry this out<sup>82</sup>, desiccation and de-fatting using natron, sealing the areas with alum (not always necessary or observed), anointing with oils and resins, wrapping in linen bandages, the occasional inclusion of amulets (especially for Sacred Animals), providing masks of cartonnage and mud, and burial containers in the form of stone sarcophagi, wooden or cartonnage coffins, or pots. Of course, not all animals were equally well mummified, thus there would have been considerable variation in the costs incurred for each embalming.<sup>83</sup> It is quite possible that group embalming took place, with several animals being desiccated at the same time, being laid out or buried en masse, thus producing, in an economical manner, the vast number of mummies interred. Certainly, many mummies in the dog and ibis catacombs at Saqqara, as well as ibis burials at Tuna el-Gebel, bird and shrew burials from Abu Rawash, dogs from Dabashiya in Kharga Oasis, Sheikh Fadl, Sharuna and Asyut, cats from Stabl Antar and the Bubasteion, to name but a few sites, show signs of having been cursorily prepared, probably in groups, based on this author’s observations<sup>84</sup>.

Regardless of the quality and type of mummification employed, significant volumes of raw material were needed. For example, to properly mummify one fat-tailed sheep at least 400 kg of natron are required<sup>85</sup>, and in a modern experiment 182 kg of natron have been used for a human mummification (which probably could have benefitted from more natron)<sup>86</sup>. Small mammals, such as cats require far less natron, as one might imagine, while moderately sized fish, most reptiles, amphibians, and birds require even less as they have reduced flesh and

<sup>78</sup> E. Delange, H. Jaritz (eds.), *Der Widderfriedhof des Chnumtempels, Mit Beiträgen zur Archäozoologie und zur Materialkunde*, *ArchVer* 105, 2013, p. 209-222.

<sup>79</sup> J.D. RAY, *Texts from the Baboon*, p. 271

<sup>80</sup> D. KESSLER, *Die Heiligen Tiere*.

<sup>81</sup> P. Tebt 1086 records travelling expenses (second century BC) “4 copper drachmae spent ‘on behalf of the ibis’”, as quoted in J.D. RAY, *Archive*, p. 237.

<sup>82</sup> Fr. JANOT, *Les instruments d'embaumement de l'Égypte ancienne*, *BiEtud* 125, 2000.

<sup>83</sup> S. IKRAM, *Divine Creatures*, p. 16-43; *ead.*, N. ISKANDER, *Non-Human Remains*, *CGC*, 2002; R.L. VOS, *The Apis Embalming Ritual*, *OLA* 50, 1993; D. KESSLER, *Die Heiligen Tiere*; *id.*, “Tierkult”.

<sup>84</sup> The noted specialist in animal mummies, Alain Charron concurs in this opinion (personal communication).

<sup>85</sup> S. IKRAM, “Experimental Archaeology: From Meadow to Em-baa-lming Table”, in C. Graves-Brown (ed.), *From Experiment to Experience: Ancient Egypt in the Present*, Swansea, Cardiff, 2015, relates how in a modern experiment 182 kg have been used for a human mummification (Brier personal communication); see n. 81.

<sup>86</sup> B. BRIER, R.S. WADE, “The Use of Natron in Human Mummification: A Modern Experiment”, *ZÄS* 123, 1996, p. 89-100.

fat<sup>87</sup>. The natron would have been acquired from the Wadi Natrun or Elkab. If it were of good quality, it would have had to have been processed (by sieving or even washing, drying, and sieving), and then transported, most probably by donkey or camel caravan, or by boat, to where it was required.

The oils and resins used in mummification would also have been costly<sup>88</sup>. Although thus far, the majority of resins tested come from human<sup>89</sup> and vidual mummies<sup>90</sup>, the materials used to fabricate a few votive mummies have also been identified<sup>91</sup>. Pistacia resin and beeswax are two expensive items that have been identified amongst the embalming materials, the former being imported from what is now modern day Syria/Lebanon, and thus a high status, relatively expensive, imported item<sup>92</sup>, while beeswax was also dear. The oils used in the process were also an expense (from their creation to their acquisition), although the precise prices of these different oils over time, no doubt varied. The significant costs of all these items indicate a considerable investment in the creation of the mummies.

Although the linens used for the wrappings might have been obtained from the equivalent of an ancient rag-and-bone man or from various temple cast-offs, these would still have been acquired at some price. Sacred Animals would have had a vast amount of linen wrapped around them—certainly, large animals like cattle would require significant wrapping<sup>93</sup>, while some votive mummies were more economically wrapped. Cartonnage masks would have incurred some costs, particularly when gilded, while the painted mud masks found on some hawks would have been far cheaper<sup>94</sup>. In addition to linen, reed mats, papyrus and palm ribs have also been used in wrappings of votive mummies<sup>95</sup>. None of these is particularly dear, and could have been acquired relatively easily by temple workers, but taken together, they have a cost, albeit minimal. Until more textual evidence concerning the cost of embalming emerges, the amounts spent on the materials will remain a matter of speculation<sup>96</sup>.

<sup>87</sup> S. IKRAM, *Divine Creatures*, p. 16-43.

<sup>88</sup> One of the oils used is *merhet*-oil (*mrht*), which can also be used on birds (and perhaps other animals) that have been left unburied for some time, as recorded on the statue of Djedhor (E. SHERMAN, “Djedhor the Saviour”, p. 90). The identification of the oil is disputed, but it is most probably a form of resin or resin mixed with oil and possibly beeswax, such as has been identified in other contexts (*ibid.*, p. 96; S.A. BUCKLEY, K.A. CLARK, R.P. EVERSLED, “Complex organic chemical balms of Pharaonic animal mummies”, *Nature* 431, 2004, p. 294-299; and n. 88 below). Unfortunately the value of this oil is not provided in the text.

<sup>89</sup> S.A. BUCKLEY, R.P. EVERSLED, “Organic chemistry of embalming agents in Pharaonic and Graeco-Roman mummies”, *Nature* 413, 2001, p. 837-841; A. TCHAPLA, P. MEJANELLE, J. BLETON, S. GOURSAUD, “Characterisation of embalming materials of a mummy of the Ptolemaic era; Comparison with balms from mummies of different eras”, *Journal of Separation Science* 27, 2004, p. 217-234; J. MAURER, T. MÖHRING, J. RULLKÖTTER, A. NISSENBAUM, “Plant lipids and fossil hydrocarbons in embalming material of Roman Period mummies from the Dakhleh Oasis, Western Desert, Egypt”, *JAS* 29, 2002, p. 751-762.

<sup>90</sup> S. IKRAM, “A Re-Analysis of Part of Prince Amenemhat Q’s Eternal Menu”, *JARCE* 48, 2012, p. 119-135.

<sup>91</sup> S.A. BUCKLEY, K.A. CLARK, R.P. EVERSLED, “Complex organic chemical balms”, p. 294-299.

<sup>92</sup> K.A. CLARK, S. IKRAM, R.P. EVERSLED, “Organic chemistry of balms used in the preparation of pharaonic meat mummies”, *Proceedings of the National Academy of Sciences*; published ahead of print November 18, 2013, doi:10.1073/pnas.1315160110 <http://www.pnas.org/content/early/2013/11/15/1315160110>; S. IKRAM, “Prince Amenemhat”, p. 119-135.

<sup>93</sup> Currently two cattle mummies from Saqqara and now in the Smithsonian Institution’s Natural History Museum are being studied by this author and colleagues from that museum; significant amounts of different qualities linen were used to create these mummies.

<sup>94</sup> J.D. RAY, *Texts from the Baboon*, p. 263; S. IKRAM, N. ISKANDER, *Non-Human Remains*, CGC, 2002.

<sup>95</sup> S. IKRAM, N. ISKANDER, *op. cit.*; author’s personal observation.

<sup>96</sup> The best-known text concerning costs of embalming is found in A.F. SHORE, H.S. SMITH, “A Demotic Embalmers Agreement”, *AcOr* (C) 25, 1956, p. 277-294.

The containers for the mummies were more expensive, but within these there was also a range from economical to costly<sup>97</sup>. The cheapest would have been ceramic containers, purpose made for the job. These were used most commonly for bird mummies, as is seen at Saqqara, Tuna el-Gebel, and Abydos, to name but a few sites<sup>98</sup>. In some instances even dogs were placed in pots<sup>99</sup>. It is unlikely that dedicated potteries were associated with each burial ground, but it is possible that temple potteries existed, or at least temples had some sort of arrangement with potters who would produce several thousand vessels a year for interring the mummies<sup>100</sup>. Doubtless the same potters (possibly more than one atelier) would also supply other containers necessary for the daily life of the priests and the temples, and thus quite possibly were supported by the temple.

Fewer wooden containers survive, or have been noted<sup>101</sup>. Wood was dearer than Nile Silt, and thus wooden coffins (especially if they were made of imported wood, such as cedar) were more valuable. Some wooden ibis coffins, either plain or with painted decoration, have been noted, and many baboons were provided with simple wooden boxes. Cats, in particular, and some canines, also had wooden coffins, which were carved in the shape of the animal, plastered and painted. These required more skill than the plain rectangular or square coffins used for the birds<sup>102</sup>. Quite possibly, especially for the cat cemeteries, dedicated carpenters might have produced the cat-shaped mummy containers. Although not as numerous as the ceramic containers, the production of wooden coffins would certainly have contributed to the economy.

Stone coffins/sarcophagi would have been the most expensive container for the animals. Granite, used for the burials of the Apis bulls, and for a few of the rams from Elephantine<sup>103</sup> and Mendes<sup>104</sup>, would have been the most costly stone, particularly when brought to Memphis from Aswan. The acquisition and transport of the large blocks required for the sarcophagi of the Apis Bulls (or any of the other Sacred Animals) would have been part of the costs incurred by the state, but would have also fed into the economy in general. Possibly

<sup>97</sup> Work on the cost of human coffins is well documented, particularly by K. Cooney. See especially K.M. COONEY, *The Cost of Death: the Social and Economic Value of Ancient Egyptian Funerary Art in the Ramesside Period*, *EgUit* 22, 2007.

<sup>98</sup> A useful typology of pots from Tuna el-Gebel appears in VON DEN DRIESCH *et al.*, "Mummified, deified".

<sup>99</sup> S. IKRAM, "A Curious Case of Canine Burials from Abydos", in M.C. Flossmann-Schütze, M. Goecke-Bauer, F. Hoffmann, A. Hutterer, K. Schlüter, A. Schütze, M. Ullmann (eds.) with the cooperation of P. Brose, *Kleine Götter-Grosse Götter: Festschrift für Dieter Kessler zum 65. Geburtstag*, Vaterstetten, 2013, p. 265-271.

<sup>100</sup> The number of pots fired differs from kiln to kiln (personal observation). At Ballas, a noted contemporary ceramic centre, in 2009-2010, between 500 to 600 Ballas jars were fired at a time, although, due to decreasing demand in 2011-2012 sometimes they only fired between 300 to 350 pots. At Fustat between 250 and 300 *khashbooha* pots were fired at a time due to the small size of kilns (Sonali Gupta, personal communication); P. NICHOLSON, "The Ballas Pottery Project: Ethnoarchaeology in Upper Egypt", in G.J. Bey III, C.J. Pool (eds.), *Ceramic Production and Distribution: An Integrated Approach*, Boulder, Colorado, 1992, p. 25-47.

<sup>101</sup> A few examples of the different types of wooden containers for animal mummies can be found in: C. VAN SICLEN III, "An illustrated checklist for "Mummies, myths, and Magic", *VarAeg* 6/1-2, 1990, p. 27-74; Anonymous (ed.), Katalog "Ausgrabungen, Auktion 19. Okt. 1995 Palais Dorotheum", Vienna, 1996, n° 122; K.A. KITCHEN, *Catalogue of the Egyptian Collection in the National Museum, Rio de Janeiro* 1, Warminster 1990, n° 70; L. FANFONI, "Due elementi lignei di sarcofagi di babuini", *OrAnt* 17, 1978, p. 197-198; S. IKRAM, "A Monument in Miniature: The Eternal Resting Place of a Shrew", in P. Janosi (ed.), *Structure and Significance*, *UZK* 25, 2005, p. 335-340; S. IKRAM, N. ISKANDER, *Non-Human Remains*, *CGC*, 2002.

<sup>102</sup> S. IKRAM, N. ISKANDER, *loc. cit.*

<sup>103</sup> E. Delange, H. Jaritz (eds.), *Der Widderfriedhof des Chnumtempels*, *ArchVer* 105, 2013, p. 209-222.

<sup>104</sup> D. REDFORD, S. REDFORD, "The Cult and Necropolis of the Sacred Ram at Mendes", in S. Ikram (ed.), *Divine Creatures: Animal Mummies from Ancient Egypt*, Cairo, 2005, p. 164-98.

some smaller Sacred Animals, and most certainly votive animal mummies were placed in limestone containers; some of these have dedications inscribed upon them<sup>105</sup>. These were probably more easily acquired from accessible stone from the various sites, or from reused blocks, and could have been easily (and inexpensively) carved by the masons employed by the temples who worked on the catacombs.

Containers for mummies made from cast bronze or copper-bronze alloys in the form of naoi, simple boxes, or animals<sup>106</sup>, particularly if gilded, would have probably rivalled or surpassed the cost of limestone boxes. Some of these, especially those for shrews, snakes, and lizards/young crocodiles, have loops on their tops, suggesting that they would have been suspended, whether in shops, within the temple, or perhaps even in parts of the catacombs. If in the temple, the noise they must have made when knocking together would have provided musical accompaniment to the cult ritual (perhaps calling out to the gods?), reminiscent of sistrum, or the bells that were traditionally used in the Coptic liturgy, or even in the Hindu tradition.

### *Cult Activities and Visitors*

The animal cults were particular foci for religious visitors, be they regular devotees, people seeking oracular statements, festival celebrants and pilgrims (opportunistic or deliberate) who also might go to these temples for incubation or other medico-spiritual cures<sup>107</sup>, as well as for the curious: tourists, particularly those of Greek or Roman origin<sup>108</sup>. There is some debate as to the volume of pilgrims who visited the cults<sup>109</sup>. Presumably, in general the cults would be paid most attention by local people, unless there were a particularly renowned oracle operating at a particular time, or if cures had been especially effective, when the cults would attract visitors from a wider catchment area. Festivals, though, would probably attract many more people, particularly in the Graeco-Roman era when there was increased mobility<sup>110</sup> than what is currently supposed for earlier times<sup>111</sup>. Herodotus, who admittedly is not always the

<sup>105</sup> J.D. RAY, *Texts from the Baboon*; K.M.D. SMELIK, "The Cult of the Ibis"; S. IKRAM, N. ISKANDER, *Non-Human Remains, CGC*, 2002; K.A. KITCHEN, *Catalogue of the Egyptian Collection*, n° 70; H.S. SMITH, S. DAVIES, *The Sacred Animal Necropolis at north Saqqara, EES ExcMem 73*, 2005.

<sup>106</sup> P. JETT, Sh. STURMAN, T.D. WEISSER, "A Study of the Egyptian Bronze Falcon Figures in the Walters Art Gallery", *Studies in Conservation* 30/3, 1985, p. 112-118; G. ROEDER, *Ägyptische Bronzefiguren, MÄS* 6, 1956; for crafts in the Memphite area, see D. THOMPSON, *Memphis under the Ptolemies the Ptolemies*, p. 32-81.

<sup>107</sup> J. YOYOTTE, "Les Pèlerinages dans l'Égypte ancienne", in *Les Pèlerinages, SourcOr* 3, 1960, p. 18-74; M. LICHTHEIM, *Ancient Egyptian Autobiographies Chiefly of the Middle Kingdom. A Study and an Anthology*, Göttingen, 1988; J.D. RAY, *Archive*, p. 132; H.S. SMITH, *A Visit to Ancient Egypt*; P. GALLO, "The Wandering Personnel of the Temple of Narmuthis in the Faiyum and Some Toponyms of the meris of Polemon?", in J.H. Johnson (ed.), *Life in a Multi-Cultural Society. Egypt from Cambyses to Constantine and Beyond*, Chicago, 1992, p. 119-29; I.C. RUTHERFORD, "Down-stream to the cat-goddess: Herodotus on Egyptian pilgrimage", in J. Elsner, I. Rutherford (eds.), *Pilgrimage in Graeco-Roman & early Christian antiquity: seeing the gods*, Oxford, 2005, p. 131-149; *id.*, "Pilgrimage in Greco-Roman Egypt: new perspectives on graffiti from the Memnonion at Abydos", in R. Matthews, C. Roemer (eds.), *Ancient perspectives on Egypt*, London, 2003, p. 171-190; Y. VOLOKHINE, "Les déplacements pieux en Égypte pharaonique: sites et pratiques culturelles", in D. Frankfurter (ed.), *Pilgrimage and holy space in late antique Egypt, RGRW* 134, 1998, p. 51-97; É. DRIOTON, "Les fêtes de Bouto", *BIE* 25, 1943, p. 1-19; F.L.L. GRIFFITH, *Catalogue of the Demotic Graffiti of the Dodecaschoenus I*, Oxford, 1937, p. 11 in particular; Herodotus II: 40, 60ff.

<sup>108</sup> K.A.D. SMELIK, E.A. HEMELRIJK, "Who knows not".

<sup>109</sup> D. KESSLER, *Die Heiligen Tiere*; J. YOYOTTE, "Les pèlerinages"; J.D. RAY, "Animal Cults".

<sup>110</sup> Y. VOLOKHINE, "Les déplacements pieux"; É. DRIOTON, "Les fêtes de Bouto".

<sup>111</sup> J. YOYOTTE, "Les pèlerinages"; M. LICHTHEIM, *Ancient Egyptian Autobiographies*.

most reliable of sources, writes that 700,000 men and women went to Bubastis for the festival of Bastet (II: 60). He continues with his description of festivals at other sanctuaries, all of which seem to be extremely well attended (II: 61-63). Certainly the numbers of offerings of animal mummies per year at large cult centres like Saqqara, Tuna el-Gebel and Bubastis (see above) would suggest that hundreds of thousands of people visited these temples every year. Of course, one person or family might be excessively pious (or wish to be seen as such), and might, as is the case with one Imhotep, offer a vast number of animal mummies at one go. Such massive dedications by a single individual would, of course, affect the calculation of number of visitors per annum to any one shrine<sup>112</sup>, and their economic impact, although this has no bearing on the economic impact of the number of mummies given as offerings.

Devotees did not only offer votive mummies. Other, more traditional *ex votos* figure in the donations at these shrines. Metal objects (for example, beakers, situlae, incense stands, cups) were presented as *ex votos*, some bearing dedicatory inscriptions<sup>113</sup>. One such item, a bronze incense stand, gives its worth as being equivalent to 28 pieces of silver<sup>114</sup>! Although prices/values do not always appear in the inscriptions, it is plain that these metal objects were not cheap; their production and trade would have contributed significantly to the economy. Additionally, stelae and votive images of gods, in various sizes, materials, and of different qualities (for differing costs, probably), would also be offered, and their production would also contribute to local and state economies<sup>115</sup>.

Although impossible to accurately calculate, the number of pilgrims coming to a site for a festival<sup>116</sup>, rather than opportunistic pious visits (ones combined with other business)<sup>117</sup>, would have had an enormous impact particularly on the local and even on the national economy. If people were coming from further away than a day's walk, then transport should be taken into consideration. As is seen in *moulids* (religious festivals associated with shrines of holy men and women, akin to saints) today and historically<sup>118</sup>, people walk, often for days to reach the shrine. In the past, this was probably more for economy than piety<sup>119</sup>. Depending

<sup>112</sup> The animals in Falcon Gallery 19 at Saqqara might all be dedicated by a single person. J.D. RAY, *Texts from the Baboon*, p. 264-270.

<sup>113</sup> *Ibid.*, p. 277; C.I. GREEN, *The Temple Furniture from the Sacred Animal Necropolis at North Saqqara 1964-1976*, *EEM* 53, 1987; S. DAVIES, "Bronzes from the Sacred Animal Necropolis at North Saqqara", in M. Hill, D. Schorsch (eds.), *Gifts for the Gods: Images from Egyptian Temples*, Metropolitan Museum of Art, New York, 2007, p. 174-188.

<sup>114</sup> J.D. RAY, *Texts from the Baboon*, p. 277; C.I. GREEN, *Temple Furniture*, p. 36, n° 75; H.S. SMITH, S. DAVIES, *The Sacred Animal Necropolis at north Saqqara*, *EES ExcMem* 73, 2005, p. 111.

<sup>115</sup> G.J.F. KATER-SIBBES, M.J. VERMASEREN, *Apis I-III*. *EPRO* 48, 1975-1977; C.I. GREEN, *Temple Furniture*.

<sup>116</sup> As noted above, there is some debate as to the number of pilgrims coming from afar for a festival. Although this issue can neither be adequately discussed nor resolved within the framework of this article, there is sufficient evidence to suggest that a significant number of pilgrims coming from more than a day's walk away would attend religious festivals, much as is the case today. See J.D. RAY, *Texts from the Baboon*, p. 215, 221; *id.*, "Animal Cults", p. 246;

<sup>117</sup> J. YOYOTTE, "Les pèlerinages".

<sup>118</sup> J.W. MCPHERSON, *The Moulids of Egypt*, Cairo, 1941. C. MAYEUR-JAOUEN, *Pèlerinages d'Égypte: Histoire de la piété copte et musulmane XV<sup>e</sup>-XX<sup>e</sup> siècles*, *Recherches d'histoire et de sciences sociales* 107, EHESS, 2005.

<sup>119</sup> Even in modern contexts pilgrims believe that they gain more spiritual credit for walking a sacred route, such as those people going to Santiago de Compostela or Our Lady of Walsingham. For Santiago de Compostela, well over 2000 (in 1986) and as many as 272,135 (in 2010, notable for being a holy year) (<http://www.csj.org.uk/present.htm> accessed 10 November 2013) pilgrims have been recorded. For Walsingham, currently about 100,000 pilgrims per year (<http://www.arcworld.org/downloads/ARC%20pilgrimage%20statistics%20155m%2011-12-19.pdf> accessed 10

on points of origin and socio-economic status, people would also take water transport to reach a site. For the elite, private boats (or state vessels, if access were possible) would be used. The majority of the population, however, might have used boat services such as were used in the recent past in Egypt, and which now have been replaced by the 'service taxi' or minibus: short hops between urban centres being provided by private group transport. It is unlikely that carts or chariots were consistently used in this way. Horses and camels, both possible, but not necessarily popular, means of long-distance travel, would have been used by the wealthy (who might also have used wheeled vehicles). Donkeys, though, might have been used by the lower echelons of society <sup>120</sup>.

Once at the shrine, or in the urban centre associated with it, the celebrants had to find shelter. The poorer ones might bring their own tents or sleep in the open near the cult activity, as is done even today (personal observation at *moulids*). The wealthier ones would seek the ancient equivalent of an inn, hotel, or motel, thereby enriching the local economy. The celebrants would also have to purchase food and drink (although possibly some of the meals might be provided by the temple offerings for some, if not all, of the visitors, or maybe provided as an act of piety/generosity by a wealthy donor, such as is the case in Egypt today), which would provide another source of revenue for the locality. Side benefits of a temporary increase in the population would be a general rise in trade (the pilgrims themselves might bring commodities or skills to trade), with a variety of commodities, services, and votive offerings being traded. It is possible that then, as now, the religious institution (or even the state) might temporarily hire workers to deal with the extra people and to maintain order and possibly some level of hygiene during these times. If the ancient festivals resembled Herodotus's descriptions, which have elements in common with historic as well as recent saints' festivals in Egypt and elsewhere, then vendors, hawkers, touts, and a vast spectrum of humanity would have bought and sold, and in general enjoyed economic, if not spiritual, enrichment.

In the interest of intellectual inquiry, it is interesting to try to calculate a possible number of individuals who might attend a festival, using the dog catacombs at Saqqara as an example, with the caveat that this is all highly speculative. If eight million dogs were buried in the catacombs over a period of 500 years (to be generous), this would mean 16,000 burials a year. If one were to randomly deduct 6000 offerings as ones being made throughout the year, this would leave 10,000 offerings that could be dedicated at the festival. If each mummy were given by a single individual, then this would mean that 10,000 people would attend the festival, thus increasing the population of the Memphite area for a period of one to three days at very least. Even if it were a lesser number of individuals, they still would make a substantial impact on the local economy <sup>121</sup>.

These sanctuaries were not only visited by the pious, but also by the curious. Although the number of tourists to such cults is not documented, the fact that these sites were part of the regular itinerary is documented. As recorded in P. Tebtunis I. 33, in 112 BC Lucius Memmius

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November 2013) have been recorded. For distances for pilgrimages, some interesting information appears on the following websites: [http://www.thepilgrims.org.uk/pilgrimage\\_statistics.php](http://www.thepilgrims.org.uk/pilgrimage_statistics.php); <http://www.caminoforums.com/general-chat/2604-pilgrim-statistics-when-they-walk-where-theyre.html>;

<sup>120</sup> It should be noted that to do the Hajj, historically people would travel for months using their feet, quadrupeds, boats, and any means of transport available to achieve their goal (see V. PORTER, M.A.S. ABDEL HALEEM, *Hajj: Journey to the Heart of Islam*, London, 2012. For recent pilgrim numbers see: <http://www.ummah.com/forum/showthread.php?379857-Hajj-2013-Statistics>, accessed 12 November 2013.

<sup>121</sup> For a general overview of the economy of Memphis in the Ptolemaic era, see Thompson, *Memphis under the Ptolemies the Ptolemies*, particularly p. 32-81, 106ff.

visited the sacred crocodile of that era. Strabo also records tourist visits to the Apis (XVII.1: 22, 31) as well as to various Sobek cult centres<sup>122</sup>. In the case of the latter, he describes tourist activities in the Fayum thus: "...there is a sacred one (crocodile) there which is kept and fed by itself in a lake, and is tame to the priests. It is called Suchus; and it is fed on grain and pieces of meat and on wine, which are always being fed to it by the foreigners who go to see it... [we went] to the lake, carrying from the dinner a kind of cookie and some roasted meat and a pitcher of wine mixed with honey. We found the animal lying on the edge of the lake; and when the priests went up to it, some of them opened its mouth and another put in the cake, and again the meat, and then poured down the honey mixture. The animal then leaped into the lake and rushed across to the far side; but when another foreigner arrived, likewise carrying an offering of first-fruits, the priests took it, went around the lake in a run, took hold of the animal, and in the same manner fed it what had been brought" (Strabo XVII.1: 38). Thus, the curious visitors who came to watch the Apis stride about, to visit the ibises, and to observe the sacred crocodiles in the Fayum being fed delicacies, by travelling, staying in inns, eating, drinking, and visiting temples (no doubt for a price), would all have contributed in some small way to the economy of Graeco-Roman Egypt.

## Conclusion

Animal cults clearly had a tremendous impact on many aspects of Egyptian life, particularly religious and economic. They provided a more intimate access to the gods, thereby fulfilling a spiritual and social need for the Egyptians, as well as for other believers<sup>123</sup>. Caring for, praying to, and burying a Sacred Animal, particularly one as prominent as the Apis Bull, was a unifying act, involving people from all walks of life in caring for the animal, the actual preparation of the tomb, the mummification, and the final burial procession, which would have been attended by masses of people and would have been a time of public mourning<sup>124</sup>. In a way, this process would unite the people and be a large-scale project, akin to, albeit on a smaller scale, the construction of the pyramids and the burial of the god-king. The act of giving offerings — and the varieties of ex votos was far greater in animal cults, perhaps providing more numerous and affordable options to people — allowed the individual donors to maintain a sustained presence before the god, long after the pilgrim had departed the venue, and indeed, this earth.

Although as yet no monetary amounts can be attached to their contribution, animal cults certainly had a tremendous impact on the economy in general, and in local economies where the cults were housed, in particular. The temples, their personnel, their support staff, the workers involved with excavating and constructing temples and tombs, the acquisition, breeding, care, and upkeep of the animals, the materials and technologies required for their mummification, burial containers, funerary equipment, the production of ex votos in other

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<sup>122</sup> K.A.D. SMELIK, E.A. HEMELRIJK, "Who knows not"; J.D. RAY, "Animal Cults"; F.L.I. GRIFFITH, *Catalogue of the Demotic Graffiti*, p. 11 in particular stresses the multiplicity of languages representative of diverse nationalities and the large-scale revival of cultic activity during the Saite period.

<sup>123</sup> J. YOYOTTE, "Les pèlerinages", p. 54ff; F.L.I. GRIFFITH, *Catalogue of the Demotic Graffiti*; J.D. RAY, "Animal Cults", p. 356.

<sup>124</sup> Structures associated with such processions were tentatively identified by Ian Mathieson during the course of his work at Saqqara. They are touched upon in the following publications: A. LEAHY, I. MATHIESON, "Late Period temple platforms at Saqqara", *EgArch* 21, 2002, p. 14-16; I. MATHIESON, "The National Museums of Scotland Saqqara survey project 1990-2000", in M. Barta, J. Krejčí (eds.), *Abusir and Saqqara in the year 2000*, Prague, 2002, p. 33-42; THOMPSON, *Memphis under the Ptolemies the Ptolemies*, p. 198-203.



materials, the sale of the mummies as well as other types of votive offerings, the presence of pilgrims who had to be housed, fed, and who engaged in trade, all are parts of an enormous chain of supply and demand that affected the Egyptian economy, both state and local, for almost a millennium. As an increasing number of texts are made available and further archaeological and archaeozoological work is carried out, one can come to a better understanding of these animal cults and the Egyptians' relationship with animals in their earthly and divine forms.