

THE EMBALMING RITUAL OF LATE PERIOD THROUGH PTOLEMAIC
EGYPT

by

SARAH LYNN CHAPMAN

A thesis submitted to the University of Birmingham for the degree of
DOCTOR OF PHILOSOPHY

Classics, Ancient History, and Archaeology
School of History and Cultures
College of Art and Law
University of Birmingham
October 2016

UNIVERSITY OF
BIRMINGHAM

University of Birmingham Research Archive

e-theses repository

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

Abstract

This thesis explores the embalming ritual of the Egyptian Late Period through Ptolemaic era (664 – 30 BC). Using an interdisciplinary approach, I incorporate primary and secondary texts, Egyptian funerary art and archaeological remains into my study. I utilize these lines of evidence to reconstruct the embalming ritual to the degree possible and analyze the ways in which its various stages were believed to fulfill the ultimate goal of this rite: preservation of the physical body and eternal life for the deceased. I focus particularly on the archaeological material and explore the visibility of religious practice in the archaeological record. I identify key changes and developments in the embalming ritual from the Late Period through the Ptolemaic Period in order to highlight religious significance placed on embalming during this time period. Funerary art, literature, and archaeological material of the Late through Greco-Roman Periods illustrate an increased focus on the integrity of the corpse as well as the manifestation of decay, the liquid *rdw*. I examine these ancient sources in order to better understand the nature and development of body-centered funerary practices during this period of Egyptian history.

Acknowledgments

I would like to thank my supervisor Dr. Tony Leahy for his guidance, expertise, and patience throughout this program.

I would also like to thank my examiners Dr. David Aston and Dr. Ken Wardle for their valuable feedback and guidance.

My thanks also goes to the staff of the Roemer-Pelizaeus Museum in Hildesheim for their assistance and hospitality during my research visit.

I would also like to express my gratitude to all of my colleagues in the UK and abroad who, in a variety of ways, supported me and provided me with feedback during my research period.

CONTENTS

INTRODUCTION	1
CHAPTER 1: OVERVIEW OF THE EMBALMING RITUAL	13
1.1 Introduction	13
1.2 Days 1 to 4	14
1.3 Days 4 to 16	25
1.4 Days 16 to 35	36
1.5 Days 35 to 70	41
1.6 Linen and Unguents	43
1.6.1 Types of linen	44
<i>jdmj</i>	47
<i>mnht</i>	49
<i>sš-n-nswt</i>	50
1.6.2 Acquisition of mummy bandages	50
1.6.3 Red linen	53
1.6.4 Unguents	57
CHAPTER 2: EMBALMING IN EGYPTIAN ART	65
2.1 Introduction	65
2.2 Description and analysis of the decoration on the coffins of Mutirdis, Djedbastetiouefankh, and Paiuenhor	66
2.3 Origins of the ‘mummy on a bier’ motif	87
2.4 Coffins & Cartonnage	96
2.5 Elements included in the ‘mummy on a bier’ motif	97
2.6 Symbolism of the most common elements	98
CHAPTER 3: EMBALMING IN ANCIENT TEXTS	107
3.1 Introduction	107
3.2 Textual Sources that describe the embalming ritual	108
3.2.1 Ritual of Embalming	109

3.2.2 Apis Embalming Ritual	110
3.2.3 Classical authors: Herodotus and Diodorus	111
3.2.4 Osiris Mysteries of the Khoiak festival	113
3.2.5 Stundenwachen texts (including temple and funerary)	116
3.3 The funerary industry of Late through Ptolemaic Memphis and Thebes	117
3.4 Titles of the necropolis workers of Memphis and Thebes	121
3.5 Roles and professional activities of the necropolis workers	123
3.5.1 Embalmers	123
3.5.2 <i>w3h mw</i>	125
3.5.3 Overseers of the Necropolis	129
3.6 Social aspects of the lives of necropolis workers	130
CHAPTER 4: ARCHAEOLOGICAL EVIDENCE FOR EMBALMING	132
4.1 Introduction	132
4.2 Architecture: Structures Associated with Embalming	133
4.2.1 Embalming Workshops	134
4.2.2 Embalming house of the Apis bull and other animal cults	143
4.2.3 Wabet and Open Court of Temples	158
4.3 Material Evidence: Embalming Caches	165
4.3.1 Analyses of embalming cache material	170
4.3.2 Linen	173
4.3.3 Natron	174
4.3.4 Straw and sawdust	175
4.3.5 Reed matting	176
4.3.6 Resins and 'embalming residue'	177
4.3.7 Plant remains	178
4.3.8 Embalmers' tools and tables	179
4.3.9 Texts from the context of embalming caches	184
4.3.10 Pottery types and uses	189

4.3.11 Discussion of ritual aspects of embalming caches	193
CHAPTER 5: THE CONCEPT OF <i>RDW</i> IN EMBALMING	200
5.1 Introduction	200
5.2 The Concept of <i>rdw</i>	201
5.3 <i>rdw</i> , Osiris and the Nile	206
5.4 Containing the <i>rdw</i>	208
5.4.1 Reasons for collecting the <i>rdw</i>	208
5.4.2 Methods for collecting the <i>rdw</i>	211
5.5 Archaeological materials associated with <i>rdw</i>	218
CONCLUSION	222
APPENDIX 1	237
Table 1: Memphis	237
Table 2: Thebes	239
APPENDIX 2	242
BIBLIOGRAPHY	246

TABLES

CHAPTER 1

Table 1: Inscriptions from embalming cache pottery between Days 4 and 16	27
Table 2: Pottery used in the Slaughter Room of the Apis Embalming Ritual (P. Vindob 3873)	29
Table 3: Materials used during ritual treatment of Apis after evisceration	32
Table 4: The inventory of the Slaughter Room in the Apis Embalming Ritual	35
Table 5: Inscriptions from embalming cache pottery between Days 16 to 35	40
Table 6: Inscriptions from embalming cache pottery between Days 35 and 70	42
Table 7: List of types of Linen from the Ritual of Embalming (P. Boulaq 3)	45
Table 8: Linen types from Old Kingdom linen lists	47
Table 9: Occurrences of <i>tms</i> from embalming cache # 1.3	55
Table 10: Embalming substances in text directed for use on the corpse from P. Boulaq 3	58
Table 11: Embalming substances from P, Rhind I	59

CHAPTER 2

Table 1: Scenes on coffins of Mutirdis, Djedbastetiuefankh, and Paiuenhor	86
Table 2: Mummification supplies from object friezes of Middle Kingdom coffins	92

CHAPTER 4

Table 1: Typology of embalming caches	169
Table 2: Typology of embalming caches for Memphite necropolis	170
Table 3: Tools found within Late Period embalming caches	179
Table 4: Inscriptions from Late Period embalming caches	185

CHAPTER 5

Table 1: Use of the terms <i>rdw</i> and <i>fdt</i> in the Ritual of Embalming	214
--	-----

FIGURES

CHAPTER 1

Figure 1. Tent of Purification in tomb of Qar at Giza.	18
Figure 2. Tent of Purification in the tomb of Idu at Giza.	18
Figure 3. Tent of Purification in the tomb of Pepi-Ankh at Meir.	18
Figure 4. Tent of Purification in the tomb of Mereruka at Saqqara.	19
Figure 5. Hypothetical reconstruction of the Tent of Purification.	19
Figure 6. Canopic box, Liverpool World Museum 13.12.05.34b.	23
Figure 7. The embalming workshop from the tomb of Pepi-Ankh at Meir.	37
Figure 8. The embalming workshop from the tomb of Qar at Giza.	37
Figure 9. The embalming workshop from the tomb of Idu at Giza.	38
Figure 10. Hypothetical reconstruction of the embalming workshop, isometric drawing.	38
Figure 11. Hypothetical reconstruction of embalming workshop, plan map.	39

CHAPTER 2

Figure 1. Coffin of Mutirdis (Roemer-Pelizaeus Museum 1953).	69
Figure 2. Coffin of Mutirdis, detail of embalming scenes.	70
Figure 3. Coffin of Djedbastetiouefankh (Roemer-Pelizaeus Museum 1954).	73
Figure 4. Coffin of Djedbastetiouefankh, detail of top four registers.	74
Figure 5. Coffin of Djedbastetiouefankh, detail of bottom two registers.	75
Figure 6. Coffin of Paiuenhor (Kunsthistorisches Museum 7497).	77
Figure 7. Coffin of Paiuenhor, detail of embalming scenes.	78
Figure 8. Purification scene in House 21, Tuna el Gebel.	80
Figure 9. Judgment scene on coffin of Payeftshu(em)akhonsu	82
Figure 10. Judgment scene from Bissing's tomb, Ahkmim.	82
Figure 11. Reed mat impression on mummy skin.	83
Figure 12. Vignette to BD 89.	87
Figure 13. Vignette to BD 151	88
Figure 14. Vignette to BD 154.	89
Figure 15. Outline of Middle Kingdom coffin with positions of deities.	91
Figure 16. Object Frieze from the 12th dynasty coffin of Seni (Cairo JE 32868).	91

Figure 17. Jars of seven sacred oils.	95
Figure 18. Cartonnage with Anubis (BD 151), <i>b3</i> spirit (BD 89), sun disk with rays (BD 154) (National Museums Liverpool 1973.2.432).	100
Figure 19. Eye paint outlined on 12th dynasty coffin of Seni (Cairo Museum JE 32868).	102
Figure 20. Four sons of Horus with linen (National Museums Liverpool 1973.2.456).	104
CHAPTER 4	
Figure 1. Plan of Grab IX.	137
Figure 2. Plan of Apis Embalming House, Memphis	147
Figure 3. Reconstruction of Apis Embalming Facilities.	150
Figure 4. Plan of falcon embalming facility based on Djedhor's description.	155
Figure 5. Embalming cache in the tomb of Menekhibnekau at Abusir.	181
Figure 6. Embalming cache vessel in situ from Austrian excavation in Asasif.	182
Figure 7. Embalming cache in situ from Austrian excavations in Asasif.	183
Figure 8. Embalming cache jar with linen and natron contents.	183
Figure 9. Bags of natron from Theban embalming caches.	184
CHAPTER 5	
Figure 1. Restoration of the <i>rdw</i> .	203
Figure 2. Sarcophagus orientation.	205
Figure 3. Osiris in his crypt from P. Salt 825.	209
Figure 4. The vile jug from P. Salt 825.	211
Figure 5. Lustration scene from tomb of User, Thebes.	212
Figure 6. Tomb of Thary, scene on west wall of south chamber.	217
Figure 7. Inscribed jar under chair, Tomb of Thary.	217
Figure 8. Enlargement of inscribed jar under chair, Tomb of Thary.	218
Figure 9. <i>snw</i> jar of <i>rdw</i> sprouting wheat.	219
Figure 10. <i>snw</i> jar of <i>rdw</i> surrounded by guardians.	219

INTRODUCTION

This thesis explores the ancient Egyptian embalming ritual of the late dynastic through Ptolemaic periods. Archaeological, textual, and artistic evidence will be brought together in order to build a more complete picture of the embalming ritual and to better understand how each of these sources provide information and insight on ancient Egyptian religious practices. The focus of this research will be on the ideological and ritual aspects of embalming in Late Period through Ptolemaic funerary practice. The aim of this study is to pinpoint and highlight key changes and developments in Late Period funerary ritual related to the embalming practice and particularly to gain a greater understanding of the roles of the material culture not only within the embalming ritual but also within the broader realm of ancient Egyptian funerary religion.

Both the funerary tradition and overarching religious practices that developed during this period make it particularly interesting for a study on embalming. The texts¹ that were typically placed in Late Period tombs and on coffins and sarcophagi indicate a greater focus on the well-being of the body, in particular a sense of bodily purity as well as the creation of a social identity for the spirit of the deceased in the hereafter. In addition to this emphasis on the physical body in funerary texts, two practices that disappeared during the Third Intermediate Period were revived in the Late Period. Both are significant to bodily purification through mummification and include the practice of storing the embalmed organs of the deceased in canopic jars and the depositing of caches of embalming materials in the

¹ Examples of these texts are Book of the Dead spells 89, 151, and 154, which will be discussed further in Chapter 2. For additional lists of funerary texts often found in Late Period tombs, see Stammers 2009 for Memphite tombs and Thomas 1980 for Theban tombs. Also see Elias 1993 for coffins and Manassa 2007 for sarcophagi.

necropolis. However, during the Ptolemaic Period both of these practices are gradually abandoned again. Ironically, this heightened focus on the body did not translate into superior mummification techniques. Late Period mummies are generally not as carefully preserved as those of the earlier New Kingdom and Third Intermediate Period.

Evidence from textual sources will include Egyptian funerary papyri, temple inscriptions, legal and administrative documents, and papyri detailing the embalming ritual for humans and for the sacred Apis bull. Outside documentation of the ancient Egyptian embalming process recorded by Herodotus and Diodorus will be addressed within their proper context. Archaeological evidence will include embalming caches, remains of mud brick buildings within the necropolis (including both chambers built for embalming caches and buildings suggested to be embalming workshops), burial goods, embalming tools, embalming beds, and the wabet and court feature of temple. Additionally, coffin iconography that references the embalming ritual will be analyzed. The majority of these examples depict the wrapped mummy lying on a bed within the embalming chamber attended by Anubis and other protective deities. This scene, which will be referred to as the ‘mummy on a bier’ motif throughout this thesis, is typically a vignette associated with Book of the Dead Spells 89, 151 or 154. The texts, archaeological material and art are each examined in their own separate chapters. They are brought together both at the outset to describe and analyze the embalming ritual and the timing of its various stages and then again at the end of the thesis in order to address the role of the ‘embalming residue’ or *rdw*; a crucial aspect of Late through Ptolemaic Egyptian funerary belief that is reflected in each of these lines of evidence.

This thesis is focused on the Late Period through the Ptolemaic Period. For the purpose of this study the Late Period is defined as the 26th through 31st dynasties (664 - 332 BC). The Ptolemaic Period took place from 332 - 30 BC. My primary interest is a better understanding of the Late Period embalming ritual because it has been less thoroughly researched than that of the Ptolemaic Period and because significant quantities of archaeological material pertaining to the embalming ritual survive from the Late Period. However, it is not possible to analyze the Late Period without also addressing the Ptolemaic Period. Primarily, this is because it is not always possible to date all of the archaeological and artistic evidence more precisely than between the Late and Ptolemaic Periods. Although much of the archaeological material of interest in this project can be securely dated to the Late Period, the bulk of the textual evidence is from the Ptolemaic period. The artistic evidence used in this thesis primarily consists of coffin decoration that can often only be roughly placed between the Late and Ptolemaic periods. While major changes in Egyptian funerary practice, and the embalming ritual in particular, can be identified just prior to the Late Period² and then again in the Roman Period,³ the time between the Late and Ptolemaic represents a more gradual development in the funerary traditions that were established early in the Late Period. This steady period of development along with the relative abundance of textual, artistic and archaeological material relating to embalming makes the Late through Ptolemaic periods ideal for a study of the Egyptian embalming ritual.

Evidence in the form of funerary texts, funerary art, and archaeological materials from earlier periods of Egyptian history will be utilized when and where appropriate. The date of

² For these changes in the Egyptian funerary tradition see Aston 2003: 138-166; Aston 2009; Grajetzki 2003: 94-111. For embalming specifically see Raven and Taconis 2005: 38-39.

³ For the funerary practices of Egypt in the Roman Period see Riggs 2005.

such material will be clearly indicated when it is discussed. In particular, evidence from the Old Kingdom (2686 - 2160 BC) and Middle Kingdom (2055 - 1650 BC) will be included in order to illustrate the development of certain religious concepts or practices relating to embalming. Occasionally, papyri dating to the Roman Period will also be used. These will be included when the document provides significant information pertaining to the embalming ritual where no equivalent source from earlier periods is known, such as the Ritual of Embalming papyri. The most complete of these, P. Boulaq 3 dates to the 2nd century AD and is the only known document to detail the rites associated with human embalming. Papyri and other evidence discussed that dates to the Roman Period will be clearly noted. The term Greco-Roman will be used to indicate collections of documents or archaeological material where dating ranges from the Ptolemaic through Roman Periods. There are five chapters in all: an overview of the embalming ritual and its various stages, the artistic evidence for embalming, the textual evidence for the embalming ritual and the funerary industry, the archaeological evidence for the embalming ritual and the funerary industry, and the symbolism of 'embalming residue' (*rdw*) and its role in Egyptian religion of the Late through Greco-Roman periods.

The first chapter will define the various stages of the embalming ritual and discuss the activities that took place during each of these. All available evidence including ancient Egyptian texts and accounts of Classical authors Herodotus and Diodorus, Egyptian funerary art, and archaeological material will be utilized to allow for the most complete analysis of the setting and timing of this ritual. The chapter concludes with a discussion of the different types of linen and unguents employed in the embalming ritual, including identification (as

best as possible from the surviving evidence) and analysis of these materials. This discussion is placed here in the first chapter because the offering of these items is a main component of the embalming ritual and serves as a counterpart to its purification rites. The second chapter deals with artistic evidence from the Late through Ptolemaic periods relating to the subject of embalming. The idealized embalming of Osiris is frequently the subject of coffin decoration of this period in the form of the ‘mummy on a bier’ motif, and often accompanied by one or more related Book of the Dead spells, including BD 89, 151, and 154. The various elements of this motif will be analyzed in order to better understand their symbolism as well as to identify the main components of the embalming ritual from an Egyptian perspective. Special attention will be paid to three unique coffins dating to the period in question, including those of Mutirdis (Roemer-Pelizaeus Museum 1953), Djedbastetiouefankh (Roemer-Pelizaeus Museum 1954) and Paiuenhor (Kunsthistorisches Museum 7497). The decoration on the surface of these coffins includes several vignettes that illustrate the embalming ritual and the funeral, including unparalleled scenes of ritual bathing of the corpse and early stages of mummification before wrapping had begun. The third chapter describes the textual sources that address aspects of the embalming ritual. The chapter is divided into two parts. The first half lists various ancient sources, mainly Egyptian funerary papyri and temple inscriptions. These documents provide details of the technical aspects of mummification, the materials utilized and officiates present during the embalming ritual, as well as the recitations and religious ceremonies that took place alongside mummification. The temple inscriptions are used to explore religious concepts that are central to the embalming ritual, particularly those focused on purification anointing

with unguents and offerings of linen. The temple rites are more accessible since their documentation was not subject to the same restrictions as that of the embalming ritual, and allows for a more in depth look at the rites that were expected to create a successful outcome during mummification. The second part of the chapter explores the funerary industry during the Late through Ptolemaic periods, mainly utilizing administrative and legal papyri of Memphis and Thebes. The focus is on these two sites because the greatest quantity of written evidence comes from these locations and because it allows for a comparison with the archaeological data, which also mostly originates from Memphis and Thebes. This analysis is supplemented where appropriate by the vast collection of papyri from the Greco-Roman funerary industry of Hawara in the Fayum. This allows us to place the embalming ritual in its appropriate context as part of an industry that offered mummification and funeral services for Egyptians during the Late through Ptolemaic period. It also helps us to better understand the organization, as well as the socio-economic status of the necropolis workers who were responsible for carrying out the mummification and funeral activities.

The fourth chapter presents the archaeological evidence for embalming. It is divided into two main sections. The first deals with architectural remains associated with the embalming industry. Unfortunately, there are no embalming workshops used for human mummification that have been positively identified in the archaeological record thus far. There are a few mud brick buildings that have been suggested as embalming workshops and these will be discussed, along with the context in which they were excavated in the necropolis. In order to have a more thorough discussion on facilities associated with embalming; two other related structures will be included. The first of these is the Apis embalming house, for which we

have both archaeological remains and an ancient description of the facility from P. Vindob 3873. The second structure that is discussed is the wabet and court feature of Greco-Roman temples. Although these were not used for embalming, they were utilized in a ceremony that had the same goal. The wabet feature in these temples was used for purification of the statues of the gods that were in need of rejuvenation, a similar function to the embalming workshop. Study of these structures allows us to perceive these purification rites in a three-dimensional space, adding to our understanding of how such rites were conducted and providing some insight into the workings of a similar structure for embalming. The second half of the chapter analyzes the material remains associated with the embalming ritual. This almost exclusively comes to us from caches of embalming material that were stored within ceramic vessels or wooden coffins and deposited in the necropolis. The practice of creating these embalming caches was widespread during the Late Period and these remains provide a wealth of useful data concerning both the ritual aspects of embalming and its role in Egyptian funerary religion as well as the types of products used and technical processes involved in mummification.

In order to complete this analysis I created a unique database of all the published Late Period embalming caches that have been excavated from Memphis and Thebes. The list of embalming caches published in Ikram and López-Grande 2011 provided an excellent starting point in building my database. I built upon this further by adding additional Late Period embalming caches I found from excavation reports of the Memphite and Theban Necropoles. In the case of each embalming cache the following attributes were recorded: the cemetery where the cache was buried, a description of its findspot, the cache subtype (if

known), and estimated dating of the cache (if known beyond Late Period). Additional categories were created to document the individual contents of the caches. These include: number of ceramic vessels, linen, natron, reed matting, straw / chaff, sawdust, resins, tools, coffins, and furniture. In many cases published excavation reports do not detail the nature of the contents nor specify chemical composition of the embalming materials that are recorded. In many instances the contents are simply referred to as "embalming residue". I have created a category within my database to account for the documentation of generalized "embalming residue". I also created a category to document any recorded inscriptions found on embalming cache materials. These were particularly insightful when they include names of embalming products or allude to portions of the embalming ritual that can be correlated to other textual sources such as funerary books or temple inscriptions. Finally, I included a category labeled "other" to document any notable objects mentioned in the published records that did not fit within any of the above designated categories. I have indicated the presence of each of these materials with blue shading in the database. For a number of excavated embalming caches, only the findspot is recorded without additional published documentation of the cache and its contents. These caches were included in my database in an effort to make it as thorough a resource as possible. I have included notation and yellow highlighting in these entries to indicate that I could find no documentation of the contents. I have also included Ptolemaic canopic boxes, which were found to hold some of the same contents as the embalming caches, these are indicated with a tan colored shading in the database. Only embalming caches with documented contents will be included in the analyses in chapter 4. The caches analyzed for contents are given specific designations (created for

use in this thesis) for sake of clarity and a complete list of these along with the cache findspots and primary references are located in Appendix 1. My entire Late Period embalming cache database is available on the CD included with this thesis.

Chapter five explores the concept of the *rdw*, which was a kind of liquid putrefaction from the body that was removed during mummification. This *rdw* played a significant role in Egyptian religion of the Late and Greco-Roman periods. It was connected with the god Osiris as well as the Nile flood and agricultural productivity. The nature of *rdw*, its additional names and its various positive and negative characteristics will be discussed. The chapter will focus on the role of *rdw* in the embalming ritual, particularly the evidence that documents its collection within the *snw* jar. This analysis will utilize a combination of artistic and textual sources as well as archaeological evidence.

Thus far there has not been any single work that analyzes the Egyptian embalming ritual of the Late through Ptolemaic periods by bringing together archaeological, textual and artistic evidence. There have been a few notable publications that use some similar methodology to study either Egyptian religious practice or embalming and the funerary industry. The following section will discuss the publications that most closely relate to this project in methodology or overall aims. The most comparable work to this as far as methodology is concerned is that of Eaton 2013, *Ancient Egyptian temple ritual: performance, pattern, and practice*. This book utilizes an interdisciplinary approach to examine the performance of ritual in Egyptian temples. Eaton (2013: 3) focuses on certain practices that occurred during in the temple setting both as part of daily religious practice and during festive occasions, such as bathing, clothing, and offering food to statues of the gods. According to Eaton

(2013: 3): 'Drawing on textual, art historical, architectural, and archaeological material, most of this book addresses questions about reading representations of ritual and the logistics of performing cult in ancient Egypt'. This thesis is approached in a similar way to Eaton's book, using Egyptian art and texts along with archaeological evidence to study the performance of ritual. Additionally, the type of ritual performance that Eaton (2013) discusses in temple ritual, in particular the acts of bathing and clothing, are also fundamental practices of the embalming ritual.

Another study that uses similar methodology is Uytterhoeven (2009), *Hawara in the Graeco-Roman period: life and death in a Fayum village*. This volume is an interdisciplinary study of the art, archaeology, and texts of Greco-Roman village of Hawara. Uytterhoeven (2009: 3) explains that the goal of this analysis is: 'to reach an all-embracing picture of the life and death in the village'. The first part of the book introduces the sources. The texts utilized include the Hawara Undertakers Archives, a collection of 81 papyri dating from 365-30 BC belonging to funerary workers, as well as inscriptions found in the cemetery of Hawara that include grave markers, offering tables, mummy labels and coffins. The accounts of Classical authors⁴ are also considered. Archaeological evidence is primarily derived from a survey of the site of Hawara (including the village and cemetery) that took place in March of 2000 and the published archaeological reports of early excavations undertaken at Hawara (primarily by Flinders Petrie). Funerary art, in particular mummy portraits, are also incorporated into this study. However, they are treated as archaeological materials and are not approached through an art historical analysis. The mummy portraits

⁴ These include Herodotus, Diodorus, Strabo, Pliny, Pomponius Mela, Aelius Aristides, Historia Augusta, see Uytterhoeven 2009: 238-247.

are utilized mainly in examining identity of the deceased. They are compared with an anthropological study of the well-preserved mummies from the cemetery of Hawara in order to assess the actual resemblance to the mummies they covered. The second half of the book uses all of the sources mentioned above to reconstruct the village and cemetery of Hawara as it existed in the Greco-Roman period. This volume provides an in-depth view of the settlement, including its community of necropolis workers. Of particular interest to my thesis is the second chapter of Part 2. This chapter is a mortuary analysis that brings together the tombs, mummies and graves gifts and also explores the identities (in terms of social status and cultural affiliation) of the deceased buried in the cemetery.

The realia of Egyptian burial practices in the Ptolemaic Period (332-30 BC), a PhD thesis by Maria Cannata (2009a) analyzes the funerary industry of Ptolemaic Egypt in order to present a more complete view of the actual events and processes that occurred after a person's death. Cannata (2009a) utilizes mainly demotic administrative texts and also some Greco-Roman funerary papyri. She includes a selection of archaeological material mainly consisting of different burial places dating to the Ptolemaic period. Cannata (2009a) is able to study the funerary industry from different regions across Egypt due the quantity of surviving papyri. Her analysis includes Memphis, Middle Egypt, Thebes, Edfu, and the Fayum oasis.

An article published by Shore (1992) entitled *Human and divine mummification*, attempts to reconstruct the timing and structure of the embalming ritual while taking into account the influence of the mythical embalming of Osiris. This is also a primary goal for the first chapter of my thesis, where Shore's (1992) article is referenced frequently. Shore (1992)

was the first to define the various stages of the embalming ritual and suggest a time-frame for each within an average 70 day ritual period. Shore (1992) relies exclusively on textual sources, including administrative and funerary papyri the majority of which date to the Greco-Roman period.

Shore's (1992) initial work has since been expanded upon by two more recent studies. These include the above mentioned PhD thesis by Cannata (2009a) and also two publications by Janák and Landgráfová's (2011a-b) that utilize embalming cache material to reconstruct the timing of the embalming ritual. Like Shore (1992), Cannata (2009a) also utilizes Greco-Roman administrative papyri to identify the different stages of embalming. Janák and Landgráfová's (2011a-b) use the inscribed ceramic vessels from the large embalming cache of the Late Period tomb of Menekhibnekau. Many of the vessels from this embalming cache include the names of embalming materials and / or the day in the embalming ritual on which it was used. Janák and Landgráfová's (2011a-b) analyze both these inscriptions and the ceramics to suggest a possible order in which the various embalming materials were utilized. They compare this data with the embalming stages suggested by Cannata (2009a).

CHAPTER 1: OVERVIEW OF THE EMBALMING RITUAL

1.1 Introduction

The Egyptian embalming ritual was carried out during a set period of time with a certain structure to its various stages. Many of the textual sources that discuss this ritual, which will be examined at length in this chapter, indicate that it took place over a period roughly between 69 and 75 days, with a typical length being 70 days. Shore (1992: 226) suggests this was inspired by the 70 day period when the star Sirius (identified as Osiris) disappeared from the night sky, indicating the time between the mythical death and revivification of the god Osiris. Although the technical procedures of mummifying a corpse (evisceration, drying, and wrapping) could be completed in far less than 70 days, numerous religious ceremonies were performed in order to mimic the embalming ritual of Osiris. Both the physical preservation of the corpse and the accompanying religious rites were believed to be necessary to revive the deceased and allow them to continue on into the afterlife. According to Shore (1992: 227):

For this process to be effective on a human corpse, it required acceptance of the superstitious belief that the enactment of the ritual performed on Osiris would generate the awesome and incomprehensible power by which this restoration to life came about. It would imply a scrupulous replication of words, language, gestures, and also strict adherence to the timing of the several stages of successive operations which the making of the human mummy required.

The embalming ritual can be divided into several significant stages. Shore (1992: 226-235) highlighted Day 4, an unspecified day between Days 4 and 16, Day 16, and Day 35 as

critical days⁵ marking transitions between the various stages. Cannata (2009a: 338-350) utilized textual evidence from the Greco-Roman Period⁶ to identify four different stages in the embalming ritual, where important days include Day 4, Day 16, Day 35 and Day 70. Additionally, Janák and Landgráfová (2011b: 31-45) described the stages of embalming based on archaeological finds from the embalming cache in the Late Period tomb of Menekhibnekau⁷ which includes a number of ceramic vessels bearing short inscriptions that reference the process and products of mummification. The following sections describe in detail the various stages of the embalming ritual using this previous scholarship, along with additional relevant textual and archaeological evidence.

1.2 Days 1 to 4

Textual evidence indicates that the period of embalming was counted from the fourth day after death. Shore (1992: 229) discusses two Ptolemaic texts (stela Cairo CG 31099 and stela BM 886) that note both the dates of an individual's death and the period in which they were embalmed, in each case the date of death is recorded as being four days prior to the commencement of mummification. Stela Cairo CG 31099 states that Amenher died on day 24 Pharmuthi in Year 8 of Ptolemy XII (1 May 73 BC) and his embalming began on day 28 Pharmuthi (5 May 73 BC). Amenher's embalming was completed on the day 9 of Epeiph (15 July) as his '71st day'. Stela BM 886 mentions the high priest of Ptah Psenptah III died

⁵ These days were derived from P. BM 10561, a demotic embalmers' agreement from Asyut that dates to 156 BC (Shore 1992: 231); see Shore and Smith (1960: 277-94) for a translation of this document.

⁶ Cannata's main body of evidence for the stages of the Ptolemaic embalming period includes P. Florence 3667, P. Florence 7127, P. Lille 29, P. BM EA 10561, P. Vindob 3873, Stela 31099, P. Cairo 30646, P. Rhind 1 and 2. For dates of various activities during embalming from these documents see Cannata (2009a: 340, Table 15).

⁷ This name is alternatively read as Nekaumenekhuib, see discussion by Bareš 2011: 73-74. For consistency with published archaeological reports the translation Menekhibnekau will be used in this thesis.

on day 15 Epeiph in Year 11 of Cleopatra VII (13 July 41 BC) and his ‘70th day’ (the completion of his mummification) was Thoth 30 of Year 12 of Cleopatra VII (1 October 41 BC), suggesting that his mummification would also have been counted from the fourth day after death.⁸ Cannata (2009a: 331) cites P. Leiden 374 (73 BC), a demotic administrative document in which the embalmers agree that if a corpse is given to them by mistake they will ensure it is returned within four days. Not only does P. Leiden 374 add weight to the idea that the period of embalming was counted from the fourth day after death, but Cannata (2009a: 348) also believes it indicates that corpses were moved to embalming workshops within the necropolis at some point during the first day after death. Herodotus claims that there was a four day waiting period before bodies of elite women were embalmed in Egypt, in order to prevent necrophilia (Herodotus 2.85-89). Herodotus may have been referring to the same four day period just after death as described above in the Egyptian sources, but took certain liberties in his explanation of this process to appeal to the interest of his primarily Greek audience (Shore 1992: 231; Cannata 2009a: 341, note 121).

Cannata (2009a: 348) suggests that the four day waiting period prior to embalming (if actually upheld in practice) was a custom that was used both to confirm the death of an individual and to allow grieving relatives and friends closure. She offers a parallel for this practice from Greece (classical period) where the deceased was displayed on a bed from the day after death until the morning of the third day when they would be taken to the tomb (Cannata 2009a: 339). Early use of this type of funeral custom can also be observed from ancient Mesopotamia, where the corpse was mourned while lying in state for a brief time

⁸ In his calculations Shore (1992: 229) excludes the five epagomenal days.

prior to burial.⁹ Katz (2007: 180; 2014: 429) suggests the time period for corpses lying in state was determined by climatic conditions where three days would have been the length of time a body could remain in the open before decay set in after which time chemical intervention would be required to postpone decomposition.¹⁰ Katz (2007: 180; 2014: 429) cites two days of lying in state for Baranamtara, wife of Lugalanda, king of Lagash (ca. 2047 BC) and three days lying in state for Shu-Suen, king of Ur (ca. 2347 BC) and Geme-Lama, the high priestess of Baba and wife of the king of Lagash (ca. Ur III).

The Tent of Purification (*ibw n w^cb* or *sh ntr*)¹¹ is the first place the corpse would have been taken in order to begin the embalming ritual. This structure is best known from the text of the Apis Embalming Ritual (P. Vindob 3873) as well as pictorial representations on certain 5th and 6th dynasty tomb walls and Middle Kingdom coffins. It is also alluded to in the Pyramid Texts (PT 184a, 750 a-d, 1364-5, 2100, 2012), Coffin Texts (CT 44, 45, 60, 187d), and the Book of the Dead (BD 1). The Apis Embalming Ritual states that the Tent of Purification was constructed on the first day¹² on the bank of the ‘Lake of Kings’.¹³ It was a structure made of poles covered by linen and included doors on both its eastern and western sides (P. Vindob 3873 recto 4.13). Unfortunately, the text does not detail when exactly the

⁹ For the funerary rituals that occurred during this period, see Katz (2007: 180).

¹⁰ Katz (2014: 429) notes that a study of the skeletal remains from the royal cemetery of Ur conducted by Baadsgaars *et al.* 2011 found that the bodies were treated with mercury in order to stave off decay, possibly because it took some time to arrange the bodies within the death pit.

¹¹ Hoffmeier (1981: 168-173) explains that the term *ibw n wab* (or the shortened version, *ibw*) is replaced at the end of the Old Kingdom by the term *sh nTr*, which he suggests refers to the same Tent of Purification since PT 1293, 1395 and 2012 mention the purification rites in association with *sh nTr* and the term *sh* can refer to a canopy or tent structure. According to Hoffmeier (1981: 173), the only instances where the term *ibw* can be found after the Old Kingdom are a few Middle Kingdom Coffin Texts and the Apis Embalming Ritual of the Late - Ptolemaic Period. Hoffmeier (1981: 167-180) rejects the earlier claim of Altenmüller (1972: 302) that *sh ntr* refers to an entirely separate funerary structure used in the ritual voyage to Sais.

¹² Presumably Day 1 of the embalming period is meant.

¹³ The precise identity of this location is uncertain, see Chapter 4 (section 4.2.2) for discussion of the most current hypotheses.

Apis bull was first taken inside the newly constructed tent nor does it describe the rituals that took place inside or the length of time the corpse remained there. However, it is specified that the Apis bull was first brought in through the western door of the Tent of Purification and once the rituals within were completed the Apis was removed through the eastern door as the body was taken to the embalming workshop (P. Vindob 3873 recto 4.14). A comprehensive volume dedicated to the Tent of Purification was first published by Grdseloff (1951) and includes the depictions from the following Old Kingdom tombs: Qar and Idu at Giza (**Figures 1 & 2**), Mereruka (**Figure 3**) and Ankhahor at Saqqara, and Pepi-Ankh at Meir (**Figure 4**). These illustrations show a tent with two doors at each end situated at the edge of a body of water. Brovarski (1977: 108-109) asserts that 'the most essential and constant element in all the drawings is not the temporary booth where the ritual took place but the terrace upon which the booth was erected with its slipway leading to the water's edge'. The tent itself appears to be of a lightweight construction, including a framework of poles covered by a fabric of either linen (as described in P. Vindob 3873, mentioned above) or of reed matting. A reconstruction of this structure (**Figure 5**) based on the Old Kingdom tomb art has been proposed by Badawy (1954: 67). As the Tent of Purification was a temporary structure made from perishable materials, no archaeological evidence for it has been found. Although Hassan (1943) documented what he believed to be the remains of a Tent of Purification in front of the valley temple of Khafre's pyramid, his map of the area has since been found to be inaccurate and the features he described inconsistent with other archaeological investigations of the area around the valley temple (Roode 2003: 3). Reisner,

Grdseloff, and Ricke¹⁴ suggested that the valley temples themselves represent a monumental version of the Tent of Purification used in the embalming ritual of kings (Brovarski 1977: 109). If this is the case, these valley temples represent the only archaeological remains of the Tent of Purification.

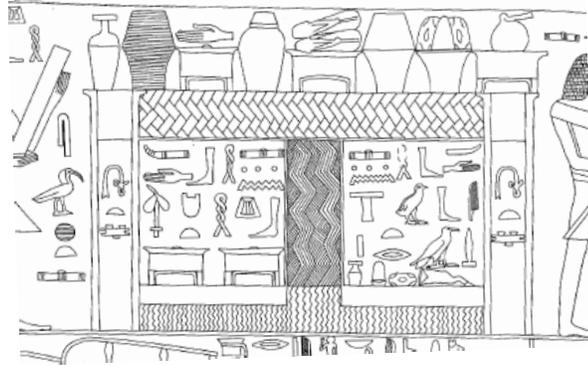


Figure 1. Tent of Purification in tomb of Qar at Giza. Simpson 1976: unnumbered page, figure 24.

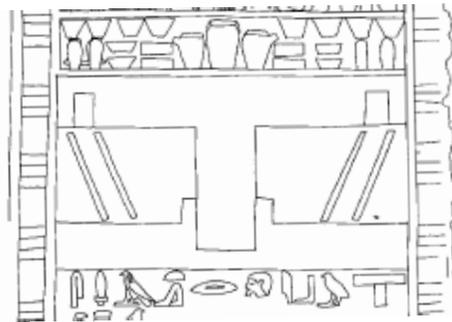


Figure 2. Tent of Purification in the tomb of Idu at Giza. Simpson 1976: unnumbered page, figure 35.

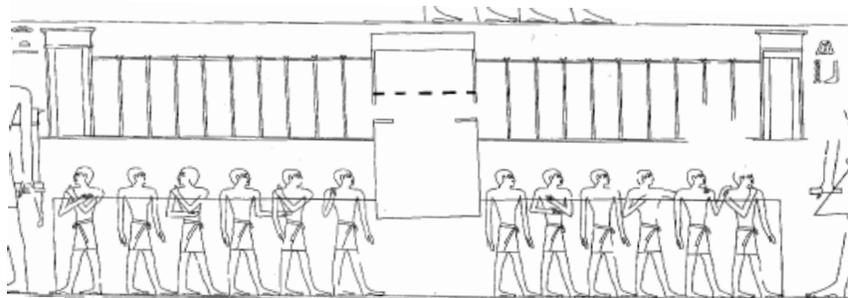


Figure 3. Tent of Purification in the tomb of Pepi-Ankh at Meir. Blackman 1953: unnumbered page, plate 43.

¹⁴ Brovarski (1977: 109) quoted the opinions of these three scholars from Edwards 1961: 110-111.

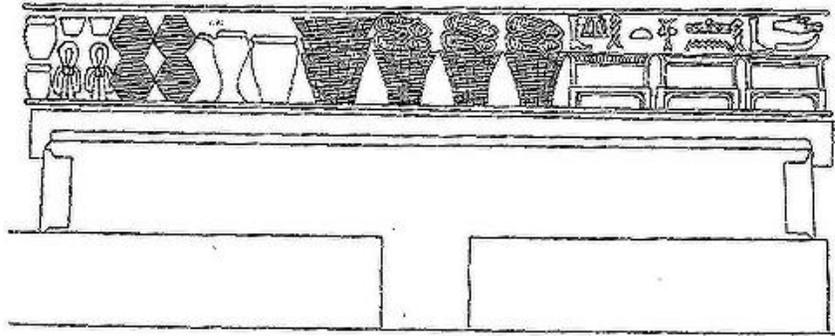


Figure 4. Tent of Purification in the tomb of Mereruka at Saqqara. Grseloff 1951: 6, figure 1.

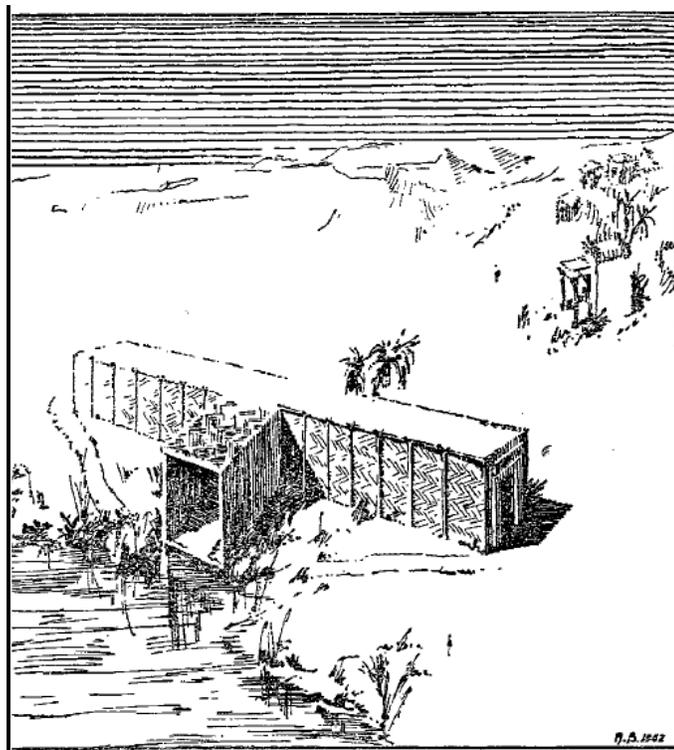


Figure 5. Hypothetical reconstruction of the Tent of Purification. Badawy 1954: 67, figure 49.

The illustrations from the tombs of Qar, Idu, and Mereruka also depict the inventory of the Tent of Purification, which includes the ritual implements required for the ceremonies that took place inside. This ritual equipment consists of the chests of the lector priest (labeled in the scenes from the tombs of Mereruka and Qar), two sets of four *nms.t* vessels and *dšr.t*

vessels, a *mrg* jar, and a *snw* jar (Roode 2003: 4). Food offerings are present in the scenes from the tombs of Qar and Idu. Hoffmeier (1981: 171) offers an explanation for the presence of these food offerings in the Tent of Purification. He states that food and other offerings to the deceased were required to undergo ritual purification before being allowed to be brought into the necropolis, which was sacred space. It is interesting to note that food offerings are also present in the illustrations of embalming workshops in the tombs of Qar and Pepi-Ankh. While there is no indication from the available textual evidence that food was offered to the deceased in the embalming workshop, the presence of food offerings in these scenes may allude to the rite of the Opening of the Mouth that occurred in both the Tent of Purification and the embalming workshop. During the Opening of the Mouth, animal sacrifices and food offerings were made to the deceased (Goyon 1972: 87-184). Janot (2008: 197) claims that the first line of the Ritual of Embalming describes a version of the rite of the Opening of the Mouth performed on the corpse in the embalming workshop during mummification. Similarly, the Apis Embalming Ritual informs us that the Opening of the Mouth was also performed within the Tent of Purification (P. Vindob 3873 rt. 4.19-20).

Another representation of the Tent of Purification can be found on certain Middle Kingdom coffins that have been extensively studied by Willems (1997: 343-372).¹⁵ These coffins, which Willems (1997: 352-357) roughly dates from the late 11th dynasty to the end of the 12th dynasty,¹⁶ include object friezes at both the head and foot ends that depict similar groups of items to those included in the Old Kingdom illustrations of the Tent of

¹⁵ Also see Willems 1988; 1996a; 1996b.

¹⁶ Also see Willems 1988 for these dates.

Purification discussed above. The object frieze at the head end¹⁷ of the coffin regularly includes a depiction of the seven sacred oils,¹⁸ green and black eye paint, the two *wnh* cloths, and a *hnm.t-wr* sieve (Willems 1997: 344-345). Texts relating to ritual purification such as PT 50-57 or CT 934-936 are often positioned below the H-frieze (Willems 1997: 344). The object frieze at the foot end¹⁹ of the coffin can include a *snw* jar, a *mrg* jar, *nms.t* jars, *dšr.t* jars, sandals, *ankh* symbols, and anklets (Willems 1997: 346). The location of object friezes on Middle Kingdom coffins corresponds with the part of the corpse for which the objects (offerings) were meant to be associated (Willems 1988: 209-211; Willems 1997: 343). Additionally, the items depicted on the object friezes are typically arranged sequentially in a way that parallels their ritual use²⁰ from the liturgical texts (Willems 1997: 344).

Thus, Willems (1997: 345-349) proposes the above described Middle Kingdom coffins²¹ create a sort of three-dimensional version of the Tent of Purification. When the mummy is placed inside, it rests between the items used to purify the head, including the *hnm.t-wr* sieve that was indicative of a ritual bath, and the ritual implements closely associated with feet, most notably the *snw* jar that was used to catch the purification water from underneath the corpse (Allen 1996: 9). In order to further demonstrate this theory, Willems (1997: 345-346, figs. 2-3) cites two similar scenes of purification from the New Kingdom tombs of

¹⁷ Willems (1997: 344) abbreviation, H-frieze, will be used to describe this side of the coffin from this point onward.

¹⁸ Expanded to ten sacred oils in later times, see section 1.6.4 at the end of this chapter.

¹⁹ Willems (1997: 347) abbreviation, F-frieze will be used to describe this side of the coffin from this point onward.

²⁰ Perhaps the illustrations of the embalming workshop and Tent of Purification from Old Kingdom tombs also follow this pattern.

²¹ For a list of these coffins see Willems 1988: 19-34 and Willems 1997, Table I.

Rekhmire and User that show the deceased being bathed by two attendants. In the better preserved scene from the tomb of User, the deceased is seated with a basketry sieve above his head and a large *snw* jar below him.²² Under the *snw* jar are two *ankh* symbols. This type of water purification was not limited to funerary practices but was also utilized in the temple Daily Ritual for the cleansing of both priests and deities (Blackman 1918: 117-124) and in the ceremonies of the king's coronation (Corcoran 1995: 61-63, Willems 1997: 358). Originally, the rite was based in solar religion but it was amalgamated with Osirian ritual early on in Egyptian history (Donohue 1978: 143-148). By utilizing what is known of the practice of purification from the images described above and their accompanying texts along with that of the temple ritual, it is possible to create a partial reconstruction of the funerary purification rite. The deceased would have been brought in to the Tent of Purification through the double doors on its western side, as described in the Apis Embalming Ritual (P. Vindob 3873 recto 4.14). According to Brovarki (1977), these doors were symbolic of the 'Doors of Heaven' that were located in the celestial realm where the sun god Ra was purified in the primeval waters of Nun each morning. Brovarki (1977: 110) explains that the deceased king is said to meet Ra at these 'Doors of Heaven' (PT 422) and upon entering them he undergoes the same purification as the sun god (PT 325, 479, 563). The 'Doors of Heaven' are also found on the vignettes to BD 161, and are sometimes present on Late Period coffins and canopic boxes²³ (**Figure 6**). These images depict a set of double doors that are operated by the gods, Horus and Thoth,²⁴ who acted as the sun god's

²² For this image see Chapter 5, Figure 5.

²³ These canopic boxes are roughly dated from the end of the Late Period through the Ptolemaic Period, see Aston 2000: 159-178.

²⁴ In some instances the god Anubis is substituted for Thoth.

bath attendants (Blackman 1918: 117).



Figure 6. Canopic box, Liverpool World Museum 13.12.05.34b. Global Egyptian Museum (accessed 2015)
<http://www.globalegyptianmuseum.org/record.aspx?id=3034>

Once inside, the deceased would have been bathed in water, dilapidated, anointed with oils, and then dressed in new white linen clothing and papyrus sandals (Leca 1981: 180). These steps were analogous with the way priests purified themselves before entering temples

(Blackman 1918: 124), where they would have washed in the sacred lake, chewed natron to cleanse their mouths, shaved their bodies and then dressed in clean linen clothing and a pair of papyrus sandals.²⁵ The water used for the bath came from the sacred lakes, believed to be residual pools of Nun in which the sun god bathed daily (Blackman 1918: 117-118). Nile water may have been utilized in the funerary ritual, as this body of water was thought to have acquired life giving properties when Osiris drowned near the river's source (Griffiths 1966: 2-3). Scenes of funerary purification typically show a pair of priests²⁶ pouring the water over the deceased's head from *nms.t* vessels.²⁷ The water is sieved²⁸ through the *hnm.t-wr* sieve and the runoff water is caught in the *snw* jar positioned below the deceased. This *snw* jar, is especially significant as the container that held the residual water from purification, it was likened to the vessel that held the fluid of the body of Osiris (Willems 1996: 118-119). The purpose of this vessel was to return this liquid to the body, which was considered essential for its revivification,²⁹ and also to capture and contain any impurities associated with death (see further discussion of this topic in Chapter 5). *Ankh* symbols are positioned under the *snw* jar in the scene of TT21 and also the F-friezes of Middle Kingdom coffins. Willems (1997: 346-347) describes the discovery of an *ankh* symbol made of reed and encrusted with natron placed inside a coffin,³⁰ below the feet. As he explains, the inclusion of this object suggests that the artistic depictions of the purification ritual may

²⁵ Herodotus observed that shoes and clothes made of animal products were not allowed to be worn inside temples (Herodotus 2.37).

²⁶ Although, artistic renderings of purification generally depict two attending priests pouring water over the deceased, the ritual itself was intended to be four-fold, see Gardiner 1950: 2-12.

²⁷ Hoffmeier (1981: 173) notes that *nms.t* vessels were used to purify the deceased in the *sh ntr* in PT 1293, 1395, and 2012.

²⁸ The act of sieving is described elsewhere in the Apis Embalming Ritual (P. Vindob 3873 recto 5.15-17).

²⁹ CT 235, which describes the return of the bodily fluids to the deceased, can often be found near the depiction of the *snw* jar on the F-frieze of Middle Kingdom coffins (Roode 2003: 5).

³⁰ A Middle Kingdom coffin, designated coffin B1C, see Willems (1988: 209-211).

have been grounded in real life practices, although the significance of this *ankh* is not well understood. Beyond the ritual purification it is uncertain which, if any, additional ceremonies took place in the Tent of Purification.

1.3 Days 4 to 16

Cannata (2009a: 341-343) notes that P. Florence 3667 (dating to 111 BC), a list of expenses for the mummification of Hor, indicates that the period between Days 4 and 16 involved ‘purification’. Unfortunately P. Florence 3667 does not elaborate on the exact nature of this purification. P. BM 10561 indicates that there was a significant day in the mummification process between Days 4 and 16, but it does not provide any specifics as to what exactly occurred during this time (Shore 1992: 231-232). Shore (1992: 231-233) remains uncertain if a specific process in mummification could be connected to this time span and instead suggests that this period was utilized for religious incantations relating to rite performed for Osiris.

Since Day 16 represented the beginning of a new stage of ceremonies, it seems reasonable to assume that certain physical processes of mummification needed to be completed as the religious rites progressed. Therefore, the steps of evisceration and drying likely belong somewhere before the transition in rites on Day 16. Exactly when these steps were completed is unknown. Shore (1992: 231) suggests that evisceration could have been completed very quickly and might have happened in the Tent of Purification within the first four days,³¹ an idea he based on a passage from P. BM 10561 that reads: ‘the embalmers had

³¹ Along with P. BM 10561 Shore (1992: 231) cites Spencer (1982: 132-135), who concludes that evisceration and drying were completed by Day 4.

charge over a corpse from the moment of death'. While his interpretation is plausible, I am unsure that this passage is meant to indicate that embalmers would begin their work mummifying a corpse immediately after death as Shore (1992: 231) suggests. Instead it may be a more general reference to the territories held by the embalmers' guilds where embalmers held the rights over both the living and deceased in certain communities.³² Shore (1992: 231) suggests that drying begun on Day 4, where the body would have been packed with natron and temporary stuffing materials. Based on a study conducted by Goyon and Josset (1988: 75), Shore estimates it would have taken a full Egyptian week of ten days for the corpse to dry after it had been stuffed and covered with natron.

Archaeological evidence for the activities that occurred between Days 4 and 16 of the embalming ritual may be present in the form of materials and inscribed vessels from Late Period embalming caches. Vessels from an embalming cache found near the Step Pyramid at Saqqara (Caches # 1.32, 1.33, and 1.34)³³ bore short inscriptions that indicated substance used in mummification and a number. I have interpreted these numbers as the days³⁴ on which each of the inscribed substances would have been used by the embalmers. This interpretation is based on the similarity of these inscribed vessels with those of the embalming cache in the tomb of Menekhibnekau at Abusir (Cache # 1.3),³⁵ where the day associated with the contents of vessels is frequently included in the inscriptions. Although the word 'day' (*hrw*) is not included in the inscriptions from Caches # 1.32, 1.33, and 1.34, it seems likely that days are being indicated since the numbers inscribed on these docket

³² See Chapter 3 (section 3.5) for a more detailed discussion of the jurisdiction of embalmers' guilds.

³³ See Appendix 1 and **Table 2** in Chapter 4.

³⁴ Töpfer (2015: 350) also interprets the numbers on these inscriptions as days of the embalming ritual.

³⁵ See Appendix 1 and **Table 2** in Chapter 4.

collectively form a sequence from 10 to 16. The inscriptions from three of these vessels that indicate they may have been used between Day 4 and 16 are arranged below in **Table 1**.³⁶

Day Indicated	Materials	Cache # in Appendix 1
10	Oil of cumin	1.32 - 1.34
11	Fresh terebinth, concentrated terebinth (incense)	1.32 - 1.34
15	resin	1.32 - 1.34

Table 1: Inscriptions from embalming cache pottery between Days 4 and 16

Even though days are not specifically indicated, it is likely that much of the linen and natron included in embalming caches³⁷ would have been utilized between Days 4 and 16 if evisceration and drying occurred during this phase.³⁸ The most common inscription from the amphorae of Cache # 1.3 is *p3 tms ḥnꜥ n3 ʿrf.w*, which has been translated as ‘red linen and bags’ (Janák and Landgráfová 2011b: 30). Other inscriptions found on amphorae of Cache # 1.3 are *p3 tms n n3 ms.w ḥr.w*, ‘red linen of the children of Horus’³⁹ and *p3 ḥsmn n n3 ms.w ḥr.w*, ‘natron of the children of Horus’⁴⁰ or simply ‘natron’ (*ḥsmn*) (Janák and Landgráfová 2011b: 33-34). These vessels were filled with the remains of linen cloth as well as natron, either loose or in small linen bags, a typical occurrence in embalming caches (see Chapter 4, sections 4.3.1 -4.3.2). Janák and Landgráfová (2011: 33-35) have interpreted this as the

³⁶ These have been translated to English from the original French.

³⁷ See Chapter 4 (section 4.3) for a detailed analysis of the contents of Late Period embalming caches.

³⁸ Although four inscriptions from Cache # 1.3 indicate that linen and natron were used after Day 16, it is highly likely that drying had begun in the proceeding phase between Days 4 and 16. Perhaps drying was still underway between Days 16 and 35 in some cases.

³⁹ Three examples; see **Table 2** in Chapter 4 and Janák and Landgráfová 2011a-b.

⁴⁰ One example, see **Table 2** in Chapter 4 and Janák and Landgráfová 2011a-b.

linen and natron used to dehydrate the body during the drying phase of mummification.⁴¹ As they explain, the small bags of natron along with linen cloth would have been stuffed inside the body cavity in order to dry it out. Linen cloth would have also been placed on the body before being covered in dry natron in order to protect the skin from this harsh drying agent and allow the natron to be removed more easily after drying was complete. Similarly, they also suggest that linen may have been used to wrap the removed organs before they were embalmed (Janák and Landgráfová 2011b: 33 & 35).

Additional insight on this phase of the embalming ritual can be gleaned from the Apis Embalming Ritual (P. Vindob 3873), which represents the most detailed description of the activities and implements relating to the embalming of the body and organs. In the case of the Apis bull, evisceration and cleansing of the organs and body cavity appears to have taken place in the embalming workshop and not the Tent of Purification. Specifically, this activity occurred in an area designated as the Slaughter Room, a name which alludes to this particular phase of mummification. This Slaughter Room is also mentioned in P. Rhind 1 (3.1), directly following a brief description of the removal and embalming of Hamsouphis' internal organs. P. Rhind 1 (2.8) states that Hamsouphis is taken into the embalming workshop (*pr nfr*), then he is said to leave the Slaughter Room 'in a state of jubilation' following the embalming of his organs (P. Rhind 1 3.1). Similar to the Apis Embalming Ritual, this account suggests that the Slaughter Room was a particular designated area or room located within the larger structure of the embalming workshop.

⁴¹ Especially in light of the inscriptions that mention the children of Horus, as these deities were charged with embalming the internal organs (Janák and Landgráfová 2011b: 34).

Only three dates are mentioned in the description of this phase of mummification, Days 1, 12, and 16. These references (to be discussed in more detail below) are both brief and vague. Unfortunately, they do not provide enough contextual clues to suggest a set time period for which the Apis bull would remain within the Slaughter Room,⁴² however the range of dates suggests that the activities described would have taken place between Day 4 and 16. It is also important to note that there may have been variances in both the location and timing of evisceration in the human embalming ritual from that of the ritual for the Apis bull.

P. Vindob 3873 includes a list of the vessels that were used during the removal and embalming of the internal organs, along with a brief description of the dimensions and main functions of each of the vessel types.⁴³ These vessels are included in **Table 2** below:

Name of Vessel	# of Vessels	Function ⁴⁴	Dimensions ⁴⁵	P. Vindob 3873
<i>psf̄j.t</i>	2	‘these are they in which they lay the Horus copper when they are finished purifying them ... the <i>wr-irj</i> -priest while while four <i>mš̄tj.t</i> are in them’	Opening: 53 cm Height: 60 cm Base: 60 cm	Recto. 5.33
<i>t̄j</i>	2	‘wherein to lay the Horus copper when they have come to enter the ...’	Opening: 53 cm Height: 60 cm Base: 60 cm	Recto 6a.1
Great <i>tjtj.t</i>	4	‘in them they ... what is in the entrails with water and oil, one for each purification’	Opening: 53 cm Height: 37.5 cm Base: 37.5 cm	Recto 5.10
<i>mš̄j</i>	4	‘these are they in which they cleanse the Horus copper after the purification of the <i>wr-irj</i> -priest’	Opening: 53 cm Height: 37.5 cm Base: 37.5 cm	Recto 5.30
<i>mš̄j</i>	4	‘in them they receive the Horus copper after they have come out of the abdominal cavity as well as the things which are in them in	Opening: 53 cm Height: 15 cm Base: 15 cm	Recto 5.4

⁴² Vos (1993: 34) suggests that the Apis bull remained in the Slaughter Room until Day 52.

⁴³ See Vos (1993: 174-178) for an inventory of these vessels and approximated drawings of each vessel type based on the dimensions provided in P. Vindob 3873.

⁴⁴ Translation quoted from Vos 1993.

⁴⁵ Approximated measurements in centimeters from Vos 1993: 176-178.

		four other <i>mšj</i> vessels’		
Great <i>hʃ.t</i>	4	‘to lay the Horus copper in when they have come out of the <i>tʃj</i> vessels’	Opening: 53 cm Height: 37.5 cm Base: 22.5 cm	Recto 6a.5
Little <i>hʃ.t</i>	4	‘wherein to purify the great entrails’	Opening: 53 cm Height: 30 cm Base: 22.5	Recto 6a.7
<i>ktj</i> wash vessels in the form of a lake	4	‘to purify the <i>wr-irj</i> -priest therein’	Opening: 53 cm Height: 30 cm Base: 30 cm	Recto 6a.3
<i>dnjt.t</i>	20	‘to lay under the <i>trf</i> of the god’	Opening: 53 cm Height: 22.5 cm Base: 22.5 cm	Recto 5.24
<i>dnjt.t</i>	15	‘these they lay under the <i>trf</i> of the god that nothing may fall therefrom’	Opening: 45 cm Height: 13 cm Base: 13 cm	Recto 5.2
<i>hn</i>	10	‘in which to lay the <i>nms</i> -cloths of the abdominal cavity’	Opening: 53 cm Height: 11 cm Base: 11cm	Recto 5.22
<i>hn</i>	10	‘these are they in which they lay the things and the <i>hbs</i> -cloths, which are in the abdominal cavity’	Opening: 53 cm Height: 7.5 cm Base: 7.5 cm	Recto 5.7
Great wash vessels	4	‘in them they spread what is in the large and small entrails, while a <i>rhnj.t</i> is in them’	Opening: 53 cm Height: 11 cm Base: 11 cm	Recto 5.3
Little wash vessels	4	‘in them they... what is in the large and small entrails’	Opening: 37.5 cm Height: 30 cm Base: 22.5 cm	Recto 5.8
Great <i>Thmj.t</i>	4	‘wherein to lay the Horus copper while they are filled with oil’	Opening: 53 cm Height: 53 cm Base: 53 cm	Recto 6a.9
<i>Thmj.t</i>	4	‘which have sieves: with these they sieve in them the water with which they purified the entrails’	Opening: 53 cm Height: 70 cm Base: 37.5 cm	Recto 5.13
Little <i>Thmj.t</i>	2	‘which have their sieves to sieve the water of the large entrails’	Opening: 53 cm Height: 53 cm Base: 37.5 cm	Recto 5.17
<i>rks</i>	16	‘these are they in which they ... the Horus copper when they have cleansed them each time of cleansing’	Opening: 53 cm Height: 60 cm Base: 22.5 cm	Recto 5.26
<i>bs</i>	20	‘in which to lay the <i>nms</i> -cloths of the anus’	Opening: unknown Height: 30 cm Base: 19 cm	Recto 5.20
<i>dlh</i>	16	‘in them they cleanse the Horus copper each time of cleansing’	Opening: 37.5 cm Height: 30 cm Base: 30 cm	Recto. 5.28

Table 2: Pottery used in the Slaughter Room of the Apis Embalming Ritual (P. Vindob 3873), after Vos 1993: 174-178

Table 3 lists the materials used during various activities associated with the treatment of the Apis bull after the organs had been removed.⁴⁶ The actual operation of removing the organs is not dealt with directly but we can infer from the description of the pottery vessels used to wash these organs (**Table 2**, above) that a tool referred to as the ‘Horus copper’ was somehow involved in organ removal (Vos 1993: 171). The activities described are patterned, where various body parts of the Apis were first anointed with oil or a medicament, then cleansed (usually with a cloth soaked in the same substances used in anointing) and finally cloth was applied as either stuffing material.⁴⁷

Three of the days from the embalming ritual are revealed in these activities described on the verso of P. Vindob 3873. Day 1 is mentioned to twice (P. Vindob 3873 verso 1.14 & 2a.1), in reference to a ‘medicament of the first day’ in both cases. This substance is apparently present during the embalming of the mouth and throat of the bull and plays some part in a ceremony referred to as the ‘Ritual of Amulets’ (P. Vindob 3873 verso 2a.1), however no additional detail is provided. A ‘medicament of the throat of the 12th day’ is also mentioned in this same ritual episode. It is brought to the Overseer of Mysteries, along with the ‘medicament of the first day’ (P. Vindob 3873 verso 1.14) and other oils and then used to anoint the mouth and throat of the Apis bull (P. Vindob 3873 verso 1.17). It is tempting to suggest that the activities described in this episode took place on Day 12, especially since

⁴⁶ The data listed in Table 3 was collected from the description of embalming taken from the verso of P. Vindob 3873. A more abbreviated version of this episode in the mummification process is recorded on the recto of the document (P. Vindob 3873 recto 2-3.13). According to Vos (1993: 13-16) the verso was written at a later date than the recto.

⁴⁷ It is unclear whether the Apis had already been thoroughly desiccated at this point or not but the application of stuffing material suggests that drying may not have taken place yet.

the first anointing of the mouth and throat utilized this ‘medicament of the throat of the 12th day’ and the four subsequent episodes of embalming the oral cavity do not mention medicaments belonging to any particular day. However, the ‘medicament of the first day’ is also involved in this episode, suggesting that the use of these substances was not confined to the day assigned by their designation. Additional support for the reuse of certain oils and ointments during the embalming process can be observed in the Ritual of Embalming (P. Boulaq 3), where instructions describing the use of many ointments (*mrh.t*) note a previous usage of the substance in question (see section 1.6.4 below for these occurrences from P. Boulaq 3). The third date mentioned on the verso of P. Vindob 3873 is Day 16. This date is given at the end of the document in reference to *hbs* cloths which may have been left inside the mouth of the Apis until Day 16 (P. Vindob 3873 verso 3.21-22). Unfortunately, the text is vague and contains numerous lacunae, so it is difficult to interpret its meaning.

Usage	Items (approximated measurements in centimeters from Vos 1993: 176-178)	P. Vindob 3873
Stuffed inside the body cavity both before and after a cleansing with oil	<i>hbs</i> cloth	Verso 1.1-2
Poured inside the body cavity	Oil	Verso 1.1
Anoint the heart	<i>ʕnd</i> oil	Verso 1.2
Wraps the heart	<i>sj.t</i> cloth soaked in pure <i>ʕnd</i> oil	Verso 1.3
Anoint the tail and sexual organs	<i>ʕnd</i> oil	Verso 1.3-4
To stuff the anus	Bags of natron and myrrh tied in a <i>hbs</i> cloth with a <i>pjr</i> bandage	Verso 1.4-7
To stuff the body cavity	6 Bags filled with natron and saw-dust	Verso 1.1
Anoint the embalming incision	Mecca balsam and fresh resin of the terebinth	Verso 1.9
Wrap the feet and tail	<i>sj.t</i> cloth and <i>kn</i> cloth soaked in either pure <i>ʕnd</i> oil or oil and natron	Verso 1.10-11

Chest anointed	medicament	Verso 1.11
Chest wrapped	<i>sj.t</i> cloth soaked in pure <i>ʕnd</i> oil, <i>sbm</i> bandage, <i>nbtj.t</i> bandage soaked in oil and natron, <i>swḥ</i> cloth soaked in oil and natron, <i>pjr</i> bandage	Verso 1.11-13
Medicaments brought to the Overseer of Mysteries	Warm and cold medicaments, medicament of the first day, medicament of the throat of the 12 th day, pure <i>ʕnd</i> oil, oil and natron mixture, oil prepared from <i>shr</i> and dry <i>shr</i>	Verso 1.13-15
Smr priests pry open the bull's mouth	<i>ḥbs</i> cloth	Verso 1.15-16
Anoint the mouth and throat	<i>ḥbs</i> cloth soaked in warm medicament of the throat of the 12 th day	Verso 1.17
Mouth and throat stuffed (cloths to be removed later)	2 <i>ḥbs</i> cloths (length: 53 cm, width: 30 cm) soaked in warm medicament, 2 <i>ḥbs</i> cloths (length: 30 cm, width 22.5 cm) soaked in warm medicament	Verso 1.18-20
Anoint the tongue	Warm medicament	Verso 1.21
Wrapping the tongue	<i>sj.t</i> cloth (length: 22.5 cm, width: 11.1 cm) soaked in warm medicament, great bnt cloth, little bnt cloth, <i>swḥ-mtr</i> cloth	Verso 1.21-23
Ritual of the Amulets	Medicament of the first day	Verso. 2a.1
Anoint the mouth and throat	Pure oil	Verso 2a.4
Mouth and throat stuffed	<i>ḥbs</i> cloth soaked in pure oil, dry <i>nm</i> cloth	Verso 2a.4-5
Anoint the eye sockets	Pure oil	Verso 2a.6
Eye sockets wrapped (or stuffed?)	<i>ḥbs</i> cloth soaked in pure oil, dry <i>nm</i> cloth	Verso 2a.6
Items brought to the Overseer of Mysteries	Cold and warm medicaments contained in 2 golden <i>bs</i> vessels, pure <i>ʕnd</i> oil, oil prepared from <i>shrj</i> , <i>ht</i> (wrapped in?) <i>sj.t</i> cloth, a <i>sbm</i> and a wooden covered in gold and wrapped in <i>ḥbs</i> cloth	Verso 2a.6-8
2 <i>smr</i> priests pry open the bull's mouth	<i>ḥbs</i> cloth (length: 106 cm, width: 11.1 cm)	Verso 2a.8-9
Anoint the mouth	<i>ḥbs</i> cloth soaked in cold medicament	Verso 2a.10-11
Anoint the eye sockets	Cold medicament	Verso 2a.12
Usage is unclear	Ritual of Amulets placed on a strip of fine linen	Verso 2a.13
Anoint the mouth and throat	<i>ḥbs</i> cloth soaked in warm medicament	Verso 2a.14-15
Chest stuffed (cloths to be removed through mouth later)	2 <i>ḥbs</i> cloths (length: 53 cm, width: 30 cm) soaked in warm medicament	Verso 2a.15-17

Tongue wrapped	<i>ḥbs</i> cloth (length: 53 cm, width: 60 cm) soaked in warm medicament, great <i>bnt</i> cloth (length: 22.5 cm, width: 11.1 cm) soaked in warm medicament, <i>pjr</i> bandage, <i>swḥ-mtr</i> cloth	Verso 2a.17-20
Tongue anointed	Warm medicament	Verso 2a.21
Mouth stuffed with cloth	7 <i>ḥbs</i> cloths soaked in cold medicament, 2 <i>ḥbs</i> cloths soaked in warm medicament	Verso 2a.21-26
Anoint the nose	Warm medicament	Verso 2a.27
Nose wrapped	2 <i>nš</i> cloths soaked in warm medicament	Verso 2a.27
Anoint the face	<i>ʿnd</i> oil	Verso 2a. 27
Face wrapped	<i>ḥbs</i> cloth soaked in pure <i>ʿnd</i> oil, <i>pjr</i> bandage, <i>swḥ</i> cloth soaked in pure <i>ʿnd</i> oil	Verso 2a.27-28, Verso 2b.1
Anoint eyebrows and eye sockets	Pure oil, pure <i>ʿnd</i> oil	Verso 2b.2-3
Eye sockets rewrapped	Oil prepared from <i>shrj</i> in a golden <i>bs</i> vessel, cloth of byssus soaked in cold medicament, wooden tool covered with gold, 4 <i>sj.t</i> cloths soaked in cold medicament, 2 <i>sj.t</i> cloths soaked in oil prepared from <i>shrj</i>	Verso 2b.4-12
Pads placed on eye sockets	2 pads, <i>ḥbs</i> cloth soaked in pure <i>ʿnd</i> oil, 16 wrappings	Verso 2b.12-14
Anoint the ears	Cold medicament, pure <i>ʿnd</i> oil, <i>ḥbs</i> cloths soaked in cold medicament	Verso 2b.15-16
Ears wrapped	<i>swḥ</i> cloths soaked in pure <i>ʿnd</i> oil that make 5 <i>pjr</i> bandages, <i>swḥ</i> cloth of dry <i>ḥbs</i> cloth, <i>mtr</i> bandage	Verso 2b.15-18
Anoint the horns	Boiled <i>ʿnd</i> oil, pure <i>ʿnd</i> oil	Verso 2b.19 & 22
Horns wrapped	<i>sj.t</i> cloth soaked in pure <i>ʿnd</i> oil, <i>nbt</i> cloth soaked in oil and natron, <i>swḥ</i> cloth, 5 <i>pjr</i> bandages soaked in pure <i>ʿnd</i> oil	Verso 2b.19-23
Anoints the chest	Syrian oil	Verso 2b.24-25
Chest wrapped	<i>sj.t</i> cloth (length: 106 cm, width: 53 cm) soaked in boiled <i>ʿnd</i> oil, <i>nbtj</i> bandage wrapped on 2 rollers of ebony	Verso 2b.25-26
Head, neck, and chest wrapped	<i>swḥ</i> cloth, 9 <i>pjr</i> bandages, 10 <i>sbn</i> bandages, <i>ḥbs</i> cloth	Verso 3.6-20

Table 3: Materials used during ritual treatment of Apis after evisceration

The items listed in **Table 4** are those specifically mentioned as belonging to the Slaughter

Room in P. Vindob 3873. The placement of this list is intriguing, as it is positioned between a ritual episode where the Apis is moved back to the Tent of Purification briefly before returning to the embalming workshop and the description of the inventory of pottery used in the Slaughter Room to cleanse the organs (P. Vindob 3873 recto 4.22-5.1). Furthermore, none of the types of cloths⁴⁸ described in this inventory are mentioned in the preparation of the body described on the verso of the document. Instead, they seem to belong to later stages of the ritual after the Apis would have left the Slaughter Room, especially since the *hrt* and *kb3(.t)* are denoted as burial cloths. Since the brick mentioned in the list was used in the return to the embalming workshop, which is detailed just before the inventory of the Slaughter Room, the inventory may in fact allude to this later stage of the embalming ritual after the mummy was wrapped. However, since these items are described as belonging to the Slaughter Room, the activities of which are the subject of this section, they will be documented here:

Item	Quantity	P. Vindob 3873
Sack of ground ... of Rostau	1	Recto 4.23
Sacks ... of the Field of Rushes	2	Recto 4.23
Sack of straw from corn	1	Recto 4.24
Thin mat of rush (dimensions: 318 cm by 318 cm)	1	Recto 4.24
Thin mat of papyrus	1	Recto 4.24
Brick of clay (Length: 29.6 cm; Width: 22.2 cm; Height: 18.5 cm)	1	Recto 4.24
<i>hrt</i> cloths	2	Recto 5.1
<i>st</i> cloths	2	Recto 5.1
<i>3trf</i> cloths	10	Recto 5.1
<i>hrt</i> cloths (for burial)	5	Recto 5.1
<i>kb3(.t)</i> cloths (for burial)	50	Recto 5.1

⁴⁸ All of the cloths from this list are of byssus quality.

<i>nbtj.t</i> bandage (for wrapping)		Recto 5.1
--------------------------------------	--	-----------

Table 4: The inventory of the Slaughter Room in the Apis Embalming Ritual

1.4 Days 16 to 35

Based on his reading of the Demotic tale of Setne I that describes the death and subsequent embalming of the prince Naneferkaptah,⁴⁹ Shore (1992: 233) suggests that human corpses were brought into the embalming workshop on Day 16 since the account of Naneferkaptah states that he entered the *pr-nfr* either ‘on day 16’, ‘in 16 days’, or ‘of 16 days’.⁵⁰ In accordance with Donohue’s (1978: 143-148) interpretation of *pr-nfr* to mean ‘house of rejuvenation’,⁵¹ Shore (1992: 233) suggests that this *pr-nfr* was actually a specifically designated area within the embalming workshop⁵² where the body would undergo ceremonies of revitalization between Day 16 and 35. This was similar to the way the Apis bull was taken to the Slaughter Room of the embalming workshop and then moved to a Wrapping Room for the final phases of wrapping. Artistic renderings of embalming workshops are known from several Old Kingdom tombs including that of Pepi-Ankh at Meir (**Figure 7**) and Qar (**Figure 8**) and Idu (**Figure 9**) at Giza. In the scenes from the tombs of Qar and Pepi-Ankh the embalming workshop is depicted as a series of rooms where food offerings are included, similar to those in the images of the Tent of Purification. Based on these depictions, reconstructions of the layout of embalming workshops (**Figures 10 & 11**) have been proposed by Ricke (1950: 96-97) and Badawy (1954: 65).

⁴⁹ This account is best preserved on P. Cairo 30646 dating to the Ptolemaic period (Lichtheim 1980: 125-126). For the purpose of this thesis translations by both Lichtheim (1980:125-138) and Ritner (2003: 453-469) have been consulted, see Lichtheim (1980: 126) for a list of previous editions and translations of this document.

⁵⁰ Also see Cannata 2009a: 343.

⁵¹ A detailed discussion of the layout of embalming facilities, particularly in light of the archaeological evidence, will be presented in Chapter 4 (section 4.2).

⁵² Shore (1992: 233) uses the term ‘wabet’ to describe the embalming workshop. For more on the use of this term see Chapter 4 (section 4.2).



Figure 7. The embalming workshop from the tomb of Pepi-Ankh at Meir. Blackman 1953: unnumbered page, plate 42.



Figure 8. The embalming workshop from the tomb of Qar at Giza. Simpson 1976: unnumbered page, figure 24.

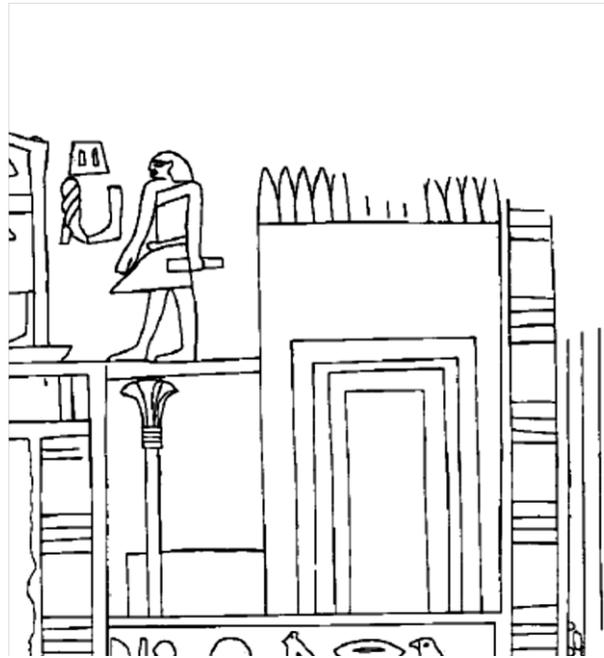


Figure 9. The embalming workshop from the tomb of Idu at Giza. Simpson 1976: unnumbered page, figure 35.

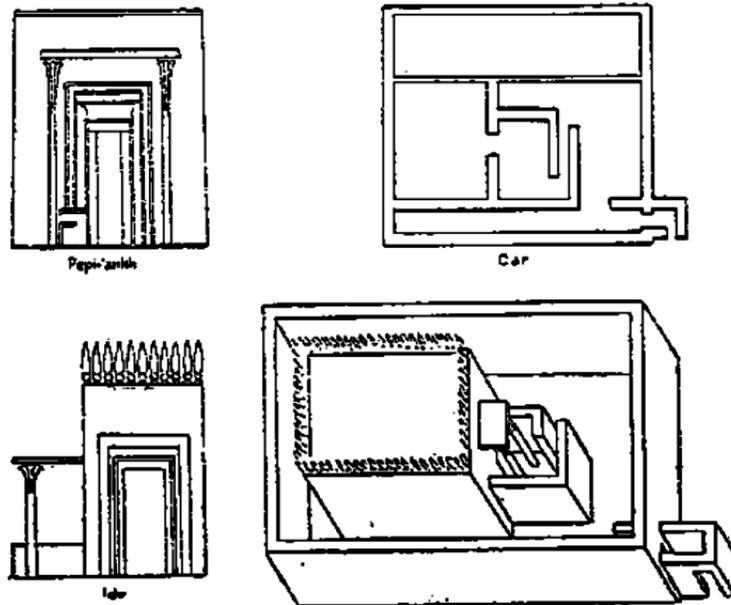


Figure 10. Hypothetical reconstruction of the embalming workshop, isometric drawing. Badawy 1954: 65.

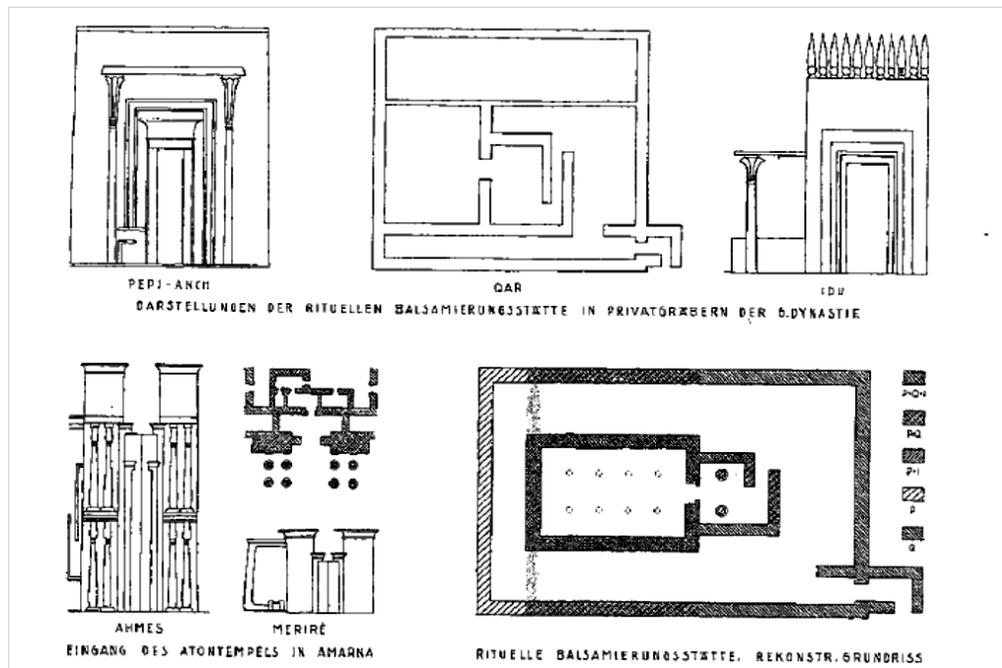


Figure 11. Hypothetical reconstruction of embalming workshop, plan map. Ricke 1950: 97.

This would have been the beginning of a process of reanimation through anointing with various substances, religious rites and incantations, and preliminary wrapping of the body. This phase of the embalming ritual for humans may have been the equivalent of episode of the Apis Embalming Ritual described above. It would have been during this episode, between Days 16 and 35, in which the activities recorded in the Ritual of Embalming texts⁵³ would have begun. Unfortunately these documents do not provide any specific dates allowing for a more precise understanding of the timing of this process. Shore (1993: 230) explains that the Ritual of Embalming papyri begin by describing a stage of mummification that would have taken place just after the body had been eviscerated and dried but before the embalmer's incision had been closed. At some point in this episode, before the head was

⁵³ Especially P. Boulaq 3, but also P. Louvre 5158, P. Durham 1983.11, P. St. Petersburg 18128, see Töpfer 2015 for translation.

wrapped, the mouth of the mummy was forced open in a rite akin to the Opening of the Mouth ceremony that was performed elsewhere in the embalming ritual and again at the funeral. According to the Ritual of Embalming (P. Boulaq 3 5.20) the mouth was first purified and then a *medjat* knife was used to open the mouth in order to allow the deceased to speak the ‘words to be spoken’ at their judgment in the hereafter (Janot 2008: 197). Additionally, Day 16 marked the first ceremony in a series of eight to be completed by Day 35 according to P. Rhind I (3.1).⁵⁴

Some of the materials that were used between Day 16⁵⁵ And Day 35 are indicated from docketts on ceramic vessels of embalming caches (Caches # 1.3, 1.32, 1.33, and 1.34 in Appendix 1). These are listed below in **Table 5**:

Day indicated	Materials	Cache # in Appendix 1
16	<i>shrt</i> mineral and wax	1.32, 1.33 & 1.34
16	Natron (also Cedar oil fine quality, oil of <i>gbty</i> fine?)	1.32, 1.33 & 1.34
16	Oil of Lebanon	1.32, 1.33 & 1.34
24	red linen and bags	1.3
28	<i>mnḥ.t</i> cloth (also 1/4 balm, 1/4 myrrh, incense 1/4 ?)	1.3
32	red linen and bags	1.3
32	The first, to be placed to his flesh to sweeten the smell	1.3

Table 5: Inscriptions from embalming cache pottery between Days 16 to 35

⁵⁴ These ceremonies were related to the *Stundenwachen*, see Töpfer (2015: 245-258).

⁵⁵ P. Florence 3667, describes the embalming of Hor (dating to 111 BC), mentions that *sbn*-bandages and resin were applied on Day 16 (Cannata 2009a: 344).

1.5 Days 35 to 70

Day 35 marked the transition to a new phase in the embalming ritual where the wrapping of the mummy began (Shore 1992: 229-230; Cannata 2009a: 349). Shore (1992: 230) based this assessment on the story of Khaemwese, which marks Day 35 as ‘the day of wrapping’ for Nanaferkaptah (P.Cairo 30646 4.25). Additionally he argues that this stage of wrapping and anointing would have taken 35 days to complete (Shore 1992: 229), since the text states that burial occurred on Day 70 (P. Cairo 30646 4.25). The transition to the wrapping phase may have necessitated relocating the mummy to a separate area of the embalming workshop, as was the case with the Apis bull (P. Vindob 3873 recto1.9-4.2) and Hamsouphis (P. Rhind 1, 3.1), discussed above. Cannata (2009a: 346-348) observes that undertakers (choachytes) collected goods specifically for Day 35 of mummification, indicating some signification of this point in the embalming ritual. The choachytes who were present within the embalming workshop on Day 35 (P. Berlin 3115) donated⁵⁶ 25 rations (P. Lille 29) and 10 cloths (P. BM EA 10561). According to the evidence collected by Cannata (2009a: 347-350) discussed above, this moment was celebrated in the embalming workshop and then the final wrapping of the mummy was carried out until the end of the embalming ritual on Day 70.

The archaeological evidence concerning the period between Day 35 and Day 70 is as follows in **Table 6**:

⁵⁶ These provisions were collected as part of membership dues in the Theban choachyte guilds and were specifically reserved for the use in the embalming rites of guild members, see Chapter 3 (section 3.5.2).

Day Indicated	Materials	Cache # in Appendix 1
36	Bandages (<i>dj.(t) r jwf db3</i>)	1.3
36	Bags (<i>ʕrf.w</i>)	1.3
40	Wrap in <i>mnḥ.t</i> cloth	1.3
44	Wrap in <i>mnḥ.t</i> cloth	1.3
45	Wrap in <i>mnḥ.t</i> cloth	1.3
52	Balm (<i>gs.w</i>)	1.3
52	Wrap in <i>mnḥ.t</i> cloth	1.3
60	Resin (<i>sff</i>), fresh myrrh (<i>ʕntjw w3d</i>)	1.3
60	Green eye paint (<i>snfr w3d</i>), ointment (<i>ndm</i>)	1.3
63	Resin (<i>sff</i>), myrrh (<i>ʕntw</i>)	1.3

Table 6: Inscriptions from embalming cache pottery between Days 35 and 70

In comparison with the evidence from **Table 5**, a clear distinction can be observed where the use of bandages increases significantly between Day 36 and Day 52. As Janák and Landgráfová (2011b: 37) note (also see **Table 6** above and section 1.6.1 below), *mnḥ.t* cloth is the most frequently used type of bandage in the Ritual of Embalming. Between Day 52 and 63, the majority of the inscriptions list various ointments and substances likely to be used in anointing the body (discussed further in section 1.6.2 at the end of this chapter). Shore (1992: 230) and Cannata (2009a: 347-349) propose Day 52 signaled some sort of transition to a final wrapping and anointing phase based on the stela of Amenher, which states that unguents (*mth*) were heated on or around Day 52 followed by wrapping in bandages (including fine quality linens) and placing amulets upon the body. This process was to continue until the end of the ritual period, which Shore (1992: 230) suggests would be between Days 68-70.⁵⁷ A parallel to this period can be found in the Apis Embalming

⁵⁷ Also see Table 3 in Janák and Landgráfová 2011b, where the inscriptions from Menekhibnekau's embalming cache (Cache # 1.3 in Appendix 1) are compared with data from the timing of the embalming ritual collected by Cannata 2009a, indicating this transition around Day 52.

Ritual, where the Apis is moved from the Slaughter Room to the Wrapping Room at Day 52 and undergoes wrapping until Day 68.⁵⁸

Day 69 in the Apis Embalming Ritual (P. Vindob 3873 rt. 4.15-4.22) marked an event where the fully wrapped mummy left the embalming workshop for a ceremonial voyage on the ‘Lake of Kings’⁵⁹ that ended at the Tent of Purification. As Vos (1993: 40) describes, the purpose of this voyage (upon a papyrus boat) was to re-enact the victory of both Osiris over Seth and Re over the snake, Apophis. Once the procession reached the Tent of Purification, the Opening of the Mouth ceremony was performed for the mummy in each of the four corners of this structure (Vos 1993: 40-41). However, we do not know whether or not human mummies would undergo a similar rite at this point in the embalming ritual. The final night of the embalming ritual before the day of the funeral is the night the *Stundenwachen* was to take place.⁶⁰

1.6 Linen and Unguents

An analysis of both the types of linen bandages and unguents used during mummification will provide additional insight into the ritual significance of embalming. The application of linen and unguents was a central focus of the embalming ritual, present in some form at every stage. It was the main activity that took place in the embalming workshop from Day 35 to the end of the rite (typically Day 70) and is the focus of the majority of the Ritual of Embalming papyrus (P. Boulaq 3). This discussion is placed here at the end of Chapter 1

⁵⁸ For this connection between the human embalming ritual and that of the Apis bull, see Shore 1992: note 32. Also see Vos (1993: 34-36) for the timing of the Apis Embalming Ritual, specifically the move between the Slaughter Room and the Wrapping Room.

⁵⁹ Vos 1993: 40 suggests this is Lake Abusir.

⁶⁰ The *Stundenwachen* is discussed in more detail in Chapter 3 (section 3.2.5).

because use of linen and unguents occurred at multiple points in the embalming ritual, making an analysis of these materials in any of the preceding sections appear misleading.

1.6.1 Types of linen

The most comprehensive source detailing the types of bandages and unguents used in human mummification is the Ritual of Embalming papyrus (P. Boulaq 3).⁶¹ Other Greco-Roman funerary papyri, including P. Rhind 1 and 2, P. BM EA 10507, and P. Harkness provide additional information on significance of certain materials in the context of embalming.

Lists of linen and toiletries from Greco-Roman temples are also essential to our understanding of the origin and usage of many of these materials. Furthermore, the linen lists of Early Dynastic and Old Kingdom funerary stelae are useful in identifying many types of linen utilized in the funerary context, as well as helping to better understand the nature of the terms that denote linen cloths⁶² and their history. These textual references will then be compared with evidence of mummification materials from archaeological contexts (embalming caches) and artistic depictions of the embalming ritual (mainly the ‘mummy on a bier’ scene of Late Period coffins, see Chapter 2 for a thorough analysis of this motif).

A complete list of the types of linen mentioned in the Ritual of Embalming is provided in

Table 7 below:⁶³

⁶¹ Although it describes mummification of a sacred animal, the Apis Embalming papyrus provides a useful comparison these materials. Many of the embalming products mentioned overlap with the Ritual of Embalming, however the Apis Embalming papyrus provides a more specific breakdown of the various stages of the process.

⁶² The difference between various words for linen is often vague and difficult to understand, see below for more discussion on this issue.

⁶³ This list is compiled from the translations of P. Boulaq 3 by Töpfer 2015 and Smith 2009. For an earlier list of linen bandages from the Ritual of Embalming (based on the translation of Sauneron 1952), see Janot 2000: 74.

Type	P. Boulaq 3
<i>jdmj</i>	3.15, 10.5
<i>ʕt</i>	3.15, 4.6
<i>wʕdj</i>	10.5
<i>wt</i>	7.5, 9.2
<i>pʕkt</i>	5.17, 5.22
<i>pyr</i>	6.3, 7.8, 8.1 (2x), 8.21, 9.1, 9.14, 9.16, 10.13, 10.14
<i>mnḥt</i>	1.11, 2.12 (2x), 2.23 (2x), 3.4, 3.12f, 4.2, 4.9-11, 4.15, 5.5, 5.17, 5.21, 6.2f, 6.14, 7.13-15, 7.21, 8.2, 8.21 (2x), 9.15 (2x), 9.16, 9.21f, 10.5, 10.10f, 10.13f
<i>mdʕt</i>	4.12-15, 6.2
<i>nwt</i>	3.15, 9.18
<i>nty</i>	7.9
<i>hrt</i>	9.18
<i>ḥbs</i>	2.19, 2.23, 3.12, 4.2, 4.11, 6.2, 7.13, 8.2, 9.21, 10.5, 10.10, 10.14
<i>sjʕt</i>	3.4, 4.9, 5.5, 5.21, 7.9, 7.12, 7.14, 7.21, 8.18f, 8.21, 9.1, 9.15, 10.14
<i>sbn</i>	3.4, 4.10, 4.15, 7.8, 7.15, 9.17
<i>sš-n-nswt</i>	7.8, 9.16
<i>sšr</i>	5.22
<i>šs</i>	10.5
<i>št</i>	5.22, 6.3, 10.5, 10.14
<i>dr</i>	10.5
<i>dʕy wdʕ</i>	3.5

Table 7: List of types of Linen from the Ritual of Embalming (P. Boulaq 3)

Discussion of linen bandages is challenging due to the complex nature of the terminology used to describe the fabric. Terms that denote linen (as cloth, clothing, or bandages) are often used interchangeably to describe various aspects such as color, quality,⁶⁴ style, shape and size. It is not always possible to know exactly what type of linen is referred to in a text and no standard translations have been agreed upon for vocabulary pertaining to linen cloth.

⁶⁴ While the actual thread-count is not provided, an indication of fine weave or smoothness, and therefore quality, of linen is denoted by a number of different terms. As discussed below this is particularly common for the Old Kingdom linen lists.

The situation is further compounded when examining the vocabulary for linen of the later periods of ancient Egyptian history, as the oldest known terms for cloth are still utilized but changes or developments in the nature or quality of the fabric over time are difficult, if not impossible, to properly assess. The situation of working with linen terminology was best described by Gardiner: ‘Perhaps no Egyptologist has been very clear as to what was exactly intended by *šs* [*sšr*] and by *mnht* respectively; something in the clothing line seemed to be meant, but nothing more precise could be said than that,’ (Gardiner1931: 166, as quoted from Riggs 2014: 253, note 66). The current understanding of linen and clothing terminology has not changed drastically since the time of Gardiner’s observation, however, a number of very useful studies on the subject of linen cloth have been published in recent years.⁶⁵

It is beneficial to further examine a number of these linen terms, particularly those mentioned in multiple ancient sources, in order to better understand their significance in ancient Egyptian religious belief and the process of mummification. **Table 8** lists the types of linen that are known from both the Ritual of Embalming (P. Boulaq 3) and Old Kingdom linen lists along with a brief description of these cloths (based on Smith 1935: 134-139; Manuelian 2003 and Scheele 2005):

⁶⁵ These include Vogelsang-Eastwood 1992; Vogelsang-Eastwood 1993; Bochi 1996: 221-253; Kemp and Vogelsang-Eastwood 2001; Manuelian 2003: 153-160 and Appendix 3; Herslund 2010: 68-80; Jones 2010: 81-119; Riggs 2014: 109-152; Hallmann 2015: 113-136.

Type of Linen	Description
<i>jdmj</i>	Finest quality royal linen
<i>sšr</i>	General term for high quality linen cloth, lesser quality than <i>jdmj</i>
ꜥ3t	‘Great linen’, high quality linen but lesser quality than <i>sšr</i>
<i>sj3t</i>	Fringed cloth
<i>mnht</i>	General term for linen cloth or clothing
<i>p3kt</i>	Fine quality linen

Table 8: Linen types from Old Kingdom linen lists.

Three of the most prominent types of linen will now be examined in more detail, including *jdmj*, *mnht*, and *sš-n-nswt*. These either occur frequently in the Ritual of Embalming (P. Boulaq 3), can be identified from archaeological or artistic sources, or occur prominently in other textual sources related to the embalming ritual.

jdmj

The *jdmj*⁶⁶ linen is mentioned twice specifically in the Ritual of Embalming (see **Table 7** above). The *jdmj* cloth was used in both temple and funerary ritual. It was included in both the embalming ritual and the funeral ceremonies, also it was used in temples in the Daily Ritual to cloth the statues of the gods and as one of the ‘four holy cloths’.⁶⁷ The *jdmj* cloth was also present on festive occasions associated with divine or royal renewal, such as the Heb-Sed festival, Khoiak festival, and the New Year’s festival.

According to Smith (1987: 95) the *jdmj* was a wide piece of fabric that could cover a whole body (in the case of temple use, the body of a statue). *jdmj* cloth was red in color (red coloring of linen used for the embalming ritual will be discussed further below). Smith

⁶⁶ Smith (1987: 93 and 2005: 93) uses the transliteration *jmy.(t)* for this word.

⁶⁷ For the use of *idmj* linen as one of the four holy cloths in the temple, see Smith 1987: 93 and Egberts 1995: 173-204.

(1987: 93-94; 2005: 93 and 2009: 245-301) and Eaton (2013: 181,185) translate *jdmj* as ‘dark red cloth’. In P. BM 10507 (VI.15) and P. Harkness (I.3, 5, 34; II.23) the *jdmj* cloth is mentioned in connection with another type of linen bandage referred to as *sšt* (or *sšd*), which Smith (1987: 93-94; 2005: 93 and 2009: 245-301) translates as ‘bright red band’.

Smith (1987: 94-95) explains that *jdmj* the cloth (offered by Nephthys) restored movement and power of the limbs, while the *sšt*⁶⁸ band (offered by Isis) gave the deceased back his sight. Smith (1987: 93-95) relies heavily on P. Berlin 8351 (the liturgy of the Opening of the Mouth for Breathing) and the London-Leiden Magical Papyrus for his understanding of the ritual functions of these cloths. He quotes directly from P. Berlin 8351 (2.10): ‘You will accomplish the act of going forth by means of the dark red cloth. You will acquire the gift of sight by the bright red band’, (Smith 1987: 94). In the Ritual of Embalming (P. Boulaq 3 3.15; see **Table 7** above) strips of *jdmj* are utilized specifically to fasten the golden nails to the fingers and toes of the corpse. Smith (1987: 95) states that these artificial nails were essential to restoring function to the limbs. Thus, it is significant that the type of linen chosen for this procedure was *jdmj*, especially considering that this cloth was wide (see above). The act of tearing strips of *jdmj* to create small finger and toe bandages appears to be a deliberate attempt to harness the ritual power of this textile for the restoration of movement to the deceased. Based on Smith’s interpretation of these cloths, I suggest that the *jdmj* and *sšt* linen are also the red textiles that are often held by Isis and Nephthys in the ‘mummy on a bier’ scenes of funerary art, a topic to be analyzed in detail for Chapter 2.

⁶⁸ For an earlier discussion on the symbolism of the *sšt* band and its role in the resurrection of the dead, see Kristensen 1992: 44-49 (translated by H. J. Franken and G. R. H. Wright from the Second Dutch Edition of 1949).

Further support for this interpretation of the offering of the red linen cloths in the ‘mummy on a bier’ scene can be found in P. Berlin 8351 (4.12-4.14), which states: ‘You will be given the mummification you desire. Hail, Osiris the mummy. The lord of the underworld, will rouse himself. Rouse yourself. Hail, Isis and Nephthys will rouse themselves with their head-covering, their *sšt* and *jdmj* in their hands’.

One documented archaeological example of *jdmj* linen comes from a Late Period Theban embalming cache (Cache # 2.57, see Appendix 1). The linen fragment is inscribed with the text: ‘Red linen (from / of) Thebes. Every protection by a *jdmj* linen of Amun (to) Padiamennebnesuttawy’ (Ikram and Lopez-Grande 2011: 214). The inscription suggests this particular cloth was purchased for the deceased from the temple (this method of acquiring mummy bandages will be discussed more below). It also indicates that the use of *jdmj* linen for embalming was based in actuality and not simply part of a ritual formula.

mnht

mnht is a generic term for linen cloth. *mnht* can also refer generally to items of clothing (Jones 2010: 99; Riggs 2014: 130). The term *mnht* is typically used in conjunction with a more descriptive word, which provides additional detail as to the specifics of the particular *mnht* cloth that is meant. In the case of the Ritual of Embalming (P. Boulaq 3) often describes cloth used for bandages or larger wrapping cloth that came from temples⁶⁹ For particularly relevant examples of this usage, see P. Boulaq 3 (3.12; 4.2; 4.9-11; 5.5; 6.2; 6.14; 7.21; 10.5). Indeed, *mnht* cloth is frequently mentioned in offering lists and inventories

⁶⁹ The re-use of cloth from temples as mummy wrappings will be discussed further below in this chapter.

of Greco-Roman temples⁷⁰ In the funerary context use of cloth from various temples across Egypt may have had symbolic association with the mummification of Osiris, whose dismembered body was reunited from various body parts (referred to collectively as ‘limbs’ in the ancient sources) scattered throughout the country. The concept of bodily restoration was connected with the idea of unification of the land of Egypt itself (for further discussion on this topic see Chapter 5). A number of amphorae from the Late Period embalming cache of Menekhibnekau (Cache # 1.3 in Appendix 1) include short inscriptions that mention *mnht* cloth. These are listed in **Table 6** above. None of these provide any further description of the *mnht* or indication of its origin (as is often the case in P. Boulaq 3).

sš-n-nswt

sš-n-nswt is the finest quality of royal linen produced in Egypt. The term *sš-n-nswt* is often translated as ‘byssus’,⁷¹ however this is misleading. The Greek word byssus is typically used to describe a certain kind of fabric, also called “sea silk”, produced in the Mediterranean region that is made from fibers excreted by sea mollusks.⁷² While it is referred to as byssus, the Egyptian *sš-n-nswt* is in fact a very fine, sheer linen cloth produced in Egypt (Riggs 2014: 117).

1.6.2 Acquisition of mummy bandages

In a mythological sense mummy bandages were woven in the Delta city of Sais by certain

⁷⁰ See Coppens 2007: 204-208, Janot 2000: 74, Eaton 2013: 181 and 185.

⁷¹ See Vos 1993 for frequent use of this translation.

⁷² Interestingly, byssus has a shimmering golden color and a fine silk-like texture. Its appearance seems appropriate for mummy wrappings, particularly of the later periods of Egyptian history where gold leaf was frequently applied to the corpse and wrappings. Riggs (2014: 117) suggests the fine quality linen may have resembled true byssus.

goddesses including Isis and Nephthys,⁷³ the patron goddess of weaving, Tait⁷⁴ and the patron deity of Sais, the goddess Neith.⁷⁵ In actuality, most mummy bandages were made from recycled linen that had previously been used either by private individuals or from temple inventories (Vogelsang-Eastwood 2000: 295; Riggs 2014: 120-126; Hallmann 2015: 113-136). The majority of linen donated for wrapping the mummy likely belonged to the deceased themselves and their immediate family (Riggs 2014: 121). Riggs (2014: 128) explains that certain articles belonging to the deceased might have been so closely associated with the person that continued use of the items by the living may not have been considered appropriate or even safe. Such articles of clothing would be given to the embalmers to make into mummy bandages. Additionally, mummy bandages could be made from cloth donated from temples. This linen would have first been used in temple ritual (such as the Daily Ritual) to clothe statues of the gods (Vogelsang-Eastwood 2000: 294-295). Eventually this linen was retired from use in the temple and some of it would be circulated into the funerary industry. Mummy wrappings made from temple linen held particular significance in the Ritual of Embalming. Temple linen was ritually charged from its contact with the divine,⁷⁶ and may have been considered especially effective for the renewal of life since, like embalming, many of the temple rites that involved the clothing of temple statues were also acts of ritual regeneration.⁷⁷ As discussed above, I would also like to suggest that in the most idealized version of the embalming ritual it was considered desirable to include linen from temples across Egypt like was described in P. Boulaq 3. This

⁷³ See P. Boulaq 3 (8.1).

⁷⁴ See P. Rhind I (5.10).

⁷⁵ See P. Boulaq 3 (4.6).

⁷⁶ See Riggs 2014: 130-140 for a discussion of this topic.

⁷⁷ See Blackman 1918-1919: 26-53 and Coppens 2007: 318.

would have likened the deceased to the god Osiris, whose mummification also symbolized the unification of Egypt itself and its annual agricultural renewal through the Nile flood.⁷⁸ A single linen cloth from a Theban embalming cache (Cache # 2.57 in Appendix 1) includes an inscription indicating that it was donated from the temple of Amun.⁷⁹ The archaeological context of this particular cloth raises some interesting questions about how temple linen was filtered into the funerary industry and the ritual significance of the embalming caches themselves. It is unclear how exactly this temple linen was distributed (Riggs 2014: 126); however, Hallmann (2015: 120) suggests that analysis of ancient linen could reveal weaver's marks that would allow for identification of individual weavers or workshops. She suggests that such identifying marks may be helpful in tracking linen that was supplied to embalmers from the Theban temple workshops. Since the quantity of temple linen was limited and the cloths were believed to possess certain unique and desirable spiritual properties from their contact with the divine, they may have held significant economic value.⁸⁰ However, if the cloths' ritual charge meant limited avenues for their circulation into society, as Riggs (2014: 126) suggests, they may have been donated by temples to the embalmers. If in fact temple linen was purchased by individuals for their own burials or those of family members (as was the case with most funerary goods and services), then such a linen cloth placed inside the embalming cache instead of upon the actual mummy may suggest a certain religious

⁷⁸ This topic is discussed further in Chapter 5 (section 5.3), also see Assmann 2005: 363-368 and Mojsov 2006: 102-110.

⁷⁹ See discussion above and also Ikram-Lopez-Grande 2011: 214.

⁸⁰ Vogelsang-Eastwood (2000: 295) states that this linen would have been sold to the elite as 'sanctified mummy wrappings', while Riggs (2014: 126) proposes that the overarching religious value of temple linen may have made it a kind of communal property that was exchanged only by the act of gift-giving and not sale. Furthermore, the ritual charge of this linen may have limited the avenues of society where it was allowed to be redistributed. She suggests used temple linen may have only been appropriate to donate to the funerary industry.

significance for the creation of the embalming caches. A more practical view of these embalming caches would suggest they are only excess supplies leftover after mummification was completed, however it would not make sense for a piece of ritually charged (and possibly expensive) linen to be discarded among the embalmers' 'leftovers'.

1.6.3 Red linen

Most of the textual,⁸¹ archaeological,⁸² and artistic⁸³ sources that reference linen in the embalming ritual frequently describe or depict the use of linen cloths that were red in color specifically. I will now examine the occurrence of this red colored linen in ancient Egypt and its role within the context of the embalming ritual. Although linen is a fabric that does not hold dyes particularly well, the most common (and oldest) color dyes achieved by the ancient Egyptians are shades of red and blue.⁸⁴ Red linen was achieved by using madder or red iron oxide to dye the thread or cloth (Vogelsang-Eastwood 2000: 278-279).

It was not unusual for mummy bandages, particularly the outermost layers, to include linen that had been dyed a reddish hue. Riggs (2014: 117) notes several examples of mummies that have red wrappings; including a Middle Kingdom princess named Itaweret and the New Kingdom royal mummies,⁸⁵ notably the burial of Tutankhamun.⁸⁶ Germer (1992: 90-95) studied dyed linen on the wrappings of mummies of the Third Intermediate Period through

⁸¹ See Chapter 3, also Töpfer 2015 and Smith 2009.

⁸² See Chapter 4 and Appendix 1.

⁸³ See Chapter 2 and Appendix 2.

⁸⁴ Other colors that linen could be dyed in ancient Egypt included yellow (safflower and iron oxides), purple (double dyeing with blue and red dyes), green (double dyeing with blue and yellow dyes) (Vogelsang-Eastwood 2000: 279) and bright white (washing with natron and sun bleaching) (Vogelsang-Eastwood 2000: 280; Riggs 2014: 117).

⁸⁵ These were re-wrapped in the Third Intermediate Period, for a detailed description of the colored linen used to re-wrap these mummies, see Germer 1992: 73-87.

⁸⁶ Red colored linen was used for shrouds covering the inner coffins.

Late Period and found numerous examples of red coloring. Hallmann (2015: 123, 130) identifies several pieces of Late Period funerary linen excavated in rock tombs of Deir el Bahri that have red or pink coloring, including one brownish-red linen shroud. Additionally, Raven and Taconis (2005: 81-203) examined 31 mummies dating from the Third Intermediate through Roman periods and reported red colored outer wrappings (usually a body-length, shroud) in three out of eight mummies from the Third Intermediate Period, seven out of eleven mummies of the Late Period, one out of four mummies from the Ptolemaic Period, and one out of eight mummies from the Roman Period. The Late Period examples are also covered with bead-net shrouds⁸⁷ that when paired with the red outer wrappings mimics the attire of Sokar and Osiris. Comparatively, coffins or cartonnage of late dynastic through Roman periods often have a red background, giving the appearance that the mummy is covered in a red shroud (Taylor 1989: 166-167; Corcoran 1995). On ‘mummy on a bier’ scenes that decorate Late Period coffins, red linen is offered to the mummy by Isis, Nephthys and the four sons of Horus (see Chapter 2, section 2.5).

The two most common types of red textiles are *ins* and *idmi* (Germer 1992: 126-131). The word *idmi* is also used frequently in the Ritual of Embalming (P. Boulaq 3) to describe other types of linen cloth that happen to be red in color, other than the specific *jdmj* textile (discussed in section 1.6.1 above). For example, P. Boulaq 3 (5.5) states:⁸⁸

šsp.k mnḥt šps(.t) m Pr-R^c
 You will receive the noble *mnḥt* fabric of the temple of Re

⁸⁷ See Cat. 9-12 and 14-16 in Raven and Taconis 2005: 115-145; Cat. 9 includes a net of blue-green thread imitating beadwork.

⁸⁸ Translation by Töpfer 2015: 117, translated to English here from the original German.

sj3t jdmj.t m r3.w-pr.w

(and) the red *sj3t* bandage from the temples.

As mentioned above, Smith (1987: 93-94; 2005: 93 and 2009: 245-301) translates *sšt* as ‘bright red band’. The *sšt* linen has been previously translated as a blue cloth,⁸⁹ but Smith (1987: 93) explains that this identification is actually a misunderstanding due to the use of *sšt* (a red cloth) as a substitute for the *irtyw* linen (a blue cloth) in Greco-Roman lists of the ‘four holy cloths’.⁹⁰

Another term that, in the context in the embalming ritual, denotes red linen is *tms*. This word is found on certain ceramic vessels from the embalming cache of Menekhibnekau (Cache # 1.3 in Appendix 1).⁹¹ **Table 9** lists the occurrence of the word *tms* from Cache # 1.3:

Number of vessels	Determinative for <i>tms</i>	Transliteration	Translation ⁹²
2		<i>n3 ʿrf.w p3 tms</i>	Bags, red linen
1		<i>p3 tms</i>	Red linen
1		[<i>p3</i>] <i>tms</i>	Red linen
1		<i>p3 t ms</i>	Red linen
1		<i>p3 tms</i>	Red linen
1		<i>hrw mh-24 p3 tms hnʿ n3 ʿrf.w</i>	24th day, red linen and bags

⁸⁹ See Vos (1993: 41) for this translation.

⁹⁰ For color terminology in ancient Egyptian language see Baines 1985.

⁹¹ *tms* is also used to refer to red cloth in Pyr. 1147 a (Lefebvre 1949: 75, note 7).

⁹² Translated by Landgráfová and Janák 2011a: 164-178.

1		<i>hrw mh-24 p3 tms hn n3 rf.w</i>	24th day, red linen and bags
1		<i>hrw mh-32 p3 tms hn n3 rf.w</i>	The 32nd day, red linen and bags
1		<i>[p3] tms hn [n3 rf.]w</i>	Red linen and bags
3		<i>p3 tms n n3 ms.w hr.w</i>	Red linen of the children of Horus

Table 9: Occurrences of *tms* from embalming cache # 1.3

From the context of the inscriptions Landgráfová and Janák (2011a: 173) suggest *tms* refers to a red colored linen.⁹³ This is based on the *Wörterbuch* (V, 369-370) definition of *tms* as a word for red color or reddish hues and the cloth determinative (Gardiner's sign list V33) that is used in three examples from Cache # 1.3. Since three of these inscriptions include a reference to the four sons of Horus, and others also mention days from the first half of the embalming ritual (Days 24 and 32), Landgráfová and Janák (2011a: 173-174) suggest that the *tms* linen was utilized in the initial stages of the embalming process. This would have included the cleansing of the body cavity, embalming the organs, and temporary stuffing of the body during desiccation. This seems to make sense as the term *tms* not only designates redness but also many negative concepts such as illness, evil, and death.⁹⁴ The preliminary stage of mummification, particularly evisceration, was viewed with contempt since this

⁹³ They also suggest that the inscriptions could refer to red pigment (Landgráfová and Janák 2011b: 33).

⁹⁴ While these uses were common, *tms* was not limited to negative ideas exclusively, see discussion of various uses of *tms* in Sederholm 2006: 189-203.

caused damage to the body.⁹⁵ The various determinative signs used with *tms* on the Cache # 1.3 inscriptions should also be considered in a discussion of its meaning in the context of embalming. There are four different determinative signs including , , , and . The determinative used with *tms* changes according to the verb with which its paired (Lefebvre 1949: 75, Sederholm 2006: 193). Although it is difficult to know for sure from the brief inscriptions from Cache # 1.3, this could indicate that *tms* held additional meanings besides ‘red linen’ in this embalming cache.⁹⁶

1.6.4 Unguents

Similar to linen, the same unguents were utilized not only in the embalming ritual but also as other funerary offerings and as offerings to gods in temples. For the purpose of this thesis the majority of data on the usage of specific substances in mummification was gathered from the Ritual of Embalming (P. Boulaq 3) and P. Rhind I, with additional insight provided by the Apis Embalming Ritual (P. Vindob 3873).⁹⁷ Archaeological data was gathered primarily from the Late Period embalming caches of Menekhibnekau (Cache # 1.3 in Appendix 1) and Cache #1.32-1.34 (Appendix 1) from Saqqara as these include the most vessels with inscriptions that reference embalming substances. For the late dynastic through Ptolemaic periods, artistic sources were not particularly useful in denoting specific

⁹⁵ Most ancient Egyptian sources that describe mummification (including P. Boulaq 3, P. BM 10507, P. Harkness, P. Rhind 1 and 2) either completely omit or gloss over this aspect of the process. P. Rhind 2 (3.2) provides an indication of the Egyptian sentiment, as the day where the deceased arrives in the embalming

workshop is described as being evil by use of the ‘evil determinative’  following the word ‘day’ (Smith 2009: 342 and note 42). Also see Diodorus (1.91) for a description of ritual harassment that was supposedly inflicted on the embalmer whose job was to make the incision in the corpse.

⁹⁶ Landgráfová and Janák (2011a: 173) suggest that these various determinative signs denote the idea of ‘redness’ in the translation of *tms* in this context.

⁹⁷ For unguents used in mummification of the Apis bull see **Table 3** above.

embalming products. This is because depictions of unguent vessels in scenes relating to embalming are variable and rarely include any texts labeling their contents. Iconography of embalming materials from earlier periods of Egyptian history is discussed in Chapter 2, section 2.3. It is also worth noting that currently there have not been any chemical analyses of human mummies undertaken to provide statistically significant data on the use of various oils and resins for embalming. Such an endeavor might yield intriguing results when compared with the textual and archaeological sources presented here. **Table 10** below presents a list of the types of substances mentioned in the Ritual of Embalming. This table lists only those materials that were specifically directed for use on the corpse in the text. Translations for the names of various substances are based on Töpfer (2015: 384-385) and Smith (2009: 225-244), additional translations for a number of these have been suggested based on Manniche (1999). **Table 11** lists the materials and the context of their usage from P. Rhind I.

Name	Use	P. Boulaq 3
<i>3ntw</i>	Frankincense used to anoint the head.	2.1
<i>škn 10; stj-ḥb; (n)hnm; jbr; ḥt.t n.t š ; ḥt.t n.t m3nw; md.t</i>	An unguent containing the ten sacred oils used also for the “Opening of the Mouth”; mentioned here are: festival oil, (n)hnm-oil, ladanum; best fir oil; best Libyan oil; and balsam. These were combined and used to anoint the entire body (except the head).	2.5-2.15
<i>gs ms.w ḥr</i>	Unguent of the children of Horus used to embalm the internal organs.	2.16
<i>mrḥ.t</i>	Used to coat the back of the corpse; this particular ointment had been used earlier in the embalming process according to the text	2.18-2.19
<i>phrt</i>	Medicaments that filled the abdominal cavity.	2.14
<i>mrḥ.t</i>	An ointment used to anoint the head and all its openings.	4.9, 7.2

<i>jhty</i>	Ox fat used to anoint the head after many rolls and bands of linen were placed on the head (this fat had been previously used in the ritual according to the text).	4.16
<i>ʕntw</i>	Frankincense used to anoint the head.	7.1
<i>wgm n hry; shn n wʕn</i>	Powdered myrrh and juniper resin used to cover the head.	7.2
<i>mrḥ.t; ʕnh jmj</i> , ⁹⁸ <i>mnnn n Gbtw; ḥsmn</i>	A mixture of ointment with <i>ʕnh jmj</i> , bitumen from Coptos, and natron used to coat the left hand.	7.7-7.8
<i>mrḥ.t ḥsk n.tj (j)ḥ.t-ntr; mrḥ.t šps(.t)</i>	Right hand anointed with severing ointment from the god's possessions and left hand anointed with precious ointment.	8.17
<i>ʕnh jmj; mnnn; ḥsmn; mstnw</i>	<i>ʕnh jmj</i> , bitumen and natron placed in right hand, which is then coated in <i>mstnw</i> -liquid.	8.18
<i>ry.t w3d; ʕntw; mw n thw; knj.t; stj; bj.t</i>	Fresh ink, frankincense and juice of <i>thw</i> -plants are used to draw Isis and Nephthys on a fringed cloth to cover the hands. Another fringed cloth for the hands includes a drawing of Re in orpiment and Min in Nubian ochre and honey.	8.18-8.19
<i>mrḥ.t ʕ3.t; mrḥ.t šps.t</i>	The feet, shins and thighs are anointed with the oil of the stone which blackens and with precious ointment.	9.14
<i>ry.t; mw n ʕnt.w</i>	Ink and extract of frankincense are used to draw two jackals on two fringed cloths, one for the right leg and one for the left leg.	9.16
<i>ʕnh jmj; mnnn; ḥsmn; mw n kmy(.t) n hbnj</i>	<i>ʕnh jmj</i> , natron and resin are applied to the knees and then the legs are anointed with juice of the gum of the ebony tree.	9.16-9.17

Table 10: Embalming substances in text directed for use on the corpse from P. Boulaq 3

Name	Use (quoted from text)	P. Rhind I
<i>mrḥ.t</i>	'Two hundred and six <i>hin</i> -measures of unguent will be boiled for you...'	3.6

⁹⁸ There is a difference of opinion as to what this substance might be. Manniche (1999: 19) suggests it is henna, Smith (2009: 237) translates it as 'white lotus', and Töpfer (2015: 156) translates it as a kind of seed. I am of the opinion that this is most likely henna since its use is concentrated on the hands and legs, where the reddish hue of henna may have had religious significance in the restoration of movement in the limbs.

<i>u3t</i> ⁹⁹	‘You will be anointed with oil by Horus...’	3.7
<i>mrḥt hr;</i> <i>suntw;</i> ¹⁰⁰ <i>ur;</i> ¹⁰¹ <i>sft;</i> <i>ꜥd</i>	‘...Anubis fills your 'skull' with Syrian ointment, incense, myrrh, conifer resin and fat.’	3.8
<i>tjšps;</i> <i>sgnn</i>	‘Cinnamon-unguent and <i>sgnn</i> -oil are destined for your flesh to the very end of a costly wrapping...’	3.9

Table 11: Embalming substances from P, Rhind I.

The text of P. Boulaq 3 (as compiled in **Table 10**) makes it clear that many of the substances were utilized multiple times during the embalming ritual. Unfortunately, a number of the unguents are referred to by either generic or very vague names, making it difficult to determine their ingredients. The term *mrḥ.t*, a generic word for an ointment is mentioned frequently. Ideally, this would be paired with a more descriptive word, such as *mrḥ.t hr* (Syrian ointment) from P. Rhind 1 (3.8) noted in **Table 11**. Used alone *mrḥ.t* is no more specific than *mnḥt* linen (discussed above). Other unguents are referred to by vague terms, such as ‘severing ointment from the god’s possessions’ (*mrḥ.t ḥsk n.tj (j)ḥ.t-ntr*) and ‘precious ointment’ (*mrḥ.t šps.t*). These designations likely refer to particular religious attributes held by the substances. One such example that illustrates this concept more clearly is the ‘unguent of the children of Horus’ (*gs ms.w hr*), which is used in the embalming of the internal organs after they have been removed from the body (P. Boulaq 3, 2.16). Although it is not clear what materials comprise this particular ointment, its name does connect it with preservation of the viscera through reference to the deities responsible for them.

As we can see from P. Boulaq 3, P. Rhind 1, and P. Vindob 3873, the materials used most

⁹⁹ Möller (1913: 21) translates this oil as *u3t*. Possibly *tu3t*, one of the ten sacred oils, is the oil that is meant here.

¹⁰⁰ For this term see Möller (1913: 21).

¹⁰¹ For this term see Möller (1913: 21).

frequently during embalming included plant oils and animal fats, gums and tree resins, bitumen, and natron. Certain products such as frankincense, myrrh, and coniferous tree resins had to be imported from outside of Egypt. These imports were luxury items reserved for use by the elite and within the temples as offerings to the gods (Manniche 1999: 10-47 and 61-91). Likewise, the unguents themselves were meticulously prepared and yields were low. Manniche (1999: 33-47) discusses recipes for the seven sacred oils inscribed in the temple of Dendera, which included lengthy preparations and sometimes rare ingredients. She discusses the production of *hknw* oil, which took a full year to make half a liter (1 *hin*) from a combination of 2.5 kg of dry ingredients and 2.20 liters of liquid ingredients. The *tjšps* unguent took 241 days to produce half a liter from 1.865 kg of dry ingredients and 1.227 kg of liquids (Manniche 1999: 37-43). Manniche (1999: 43-45) also describes the production of *md.t*, an unguent made from a base of ox fat (*ꜥd*). The fat was acquired from a specifically selected bull that was prepared a year in advance for slaughter. The animal was well cared for, its cleanliness maintained by daily baths at the temple's sacred lake and palm leaf wrappings to cover its feet. After the bull was slaughtered the fat was stored in the temple another full year before it was used to make a batch of *md.t* unguent. The discussion here serves to emphasize the high quality and intricacy in the production of these precious ointments.

The various substances utilized during embalming held very important symbolic value. The appearance and composition of these products linked them with divinity, in particular, bodily fluids of certain gods. When applied to the deceased, these had regenerative and protective powers. The significance of applying perfumed substances to the deceased during

embalming is emphasized the funerary papyrus of Imuthes, P. MMA 35.9.21 (18.15)¹⁰²: ‘... one will make an embalming chamber in Busiris for you, in order to heal you and make your odour pleasant’. According to this funerary papyrus the embalming ritual had two main objectives: to ‘heal’ the deceased (from their death) and to improve their odor. Application of unguents, such as those listed above in **Tables 10-11**, would have been essential to achieving the latter of these two goals. Thompson (1998: 229-243) outlines the main purposes for anointing the dead, dividing the symbolic function of this act into five categories. These include likening the deceased to the gods by application of the same precious oils and incense offered to the gods themselves, reintegration of the physical body of the deceased, equipping the deceased with the perfumed odor of the gods, providing the deceased with protection, and purification from both physical and moral corruption. The dead were anointed with expensive unguents that, as discussed above, were only available in limited quantity and generally reserved for temple use. The use of these perfumes during the embalming ritual would supply the mummy with the same distinct fragrance of the gods, who were the usual recipients of these precious substances (Thompson 1998: 236-237). Both the act of censuring the deceased in this manner and the luxurious scent of the perfumes that covered the mummy would have signaled that the deceased belonged in the realm of the gods. As Thompson (1998: 234) explains, the pleasing aroma of perfumes and incense was an important characteristic of Egyptian gods. In order for a human to be able to obtain an audience with the gods and remain in their company they needed to share the same divine odor. Thompson (1998: 236-237) notes three ways that the deceased could obtain the odor of the gods: the application of unguents and

¹⁰² This papyrus is discussed further discussed in Chapter 3, section 3.2.4.

resins during the embalming ritual, the anointing of the mummy with oil during the Opening of the Mouth ritual at the funeral, and the continued funerary offerings of precious unguents and incense to the deceased (referred to as the ‘eye of Horus’). Three times P. Boulaq 3 (2.2, 2.3, and 2.7) mentions the use of ointments during embalming to provide the deceased with the odor of the gods.

The desiccation phase of mummification eliminated the natural fats of the body and left it in a dried and shriveled condition. The corpse was then replenished with oil-based perfumes, gum resins and unguents made with animal fat. Blackman (1912: 73-75) explains that, according to Pyramid Texts spells 22-23, this step was crucial to the regeneration and the deceased would only attain eternal life after the bodily fluids were restored. The ointments utilized during mummification would have had a similar appearance and consistency to the natural bodily fluids and fats dissolved by the natron.¹⁰³ These replaced the body’s highly corruptible fluids with stable oils that imparted the fragrance of the gods to the dried corpse. The perfumes would have maintained their scent for a long time and helped to keep the mummy from decomposing. The regenerative power of the oils and resins utilized in embalming was derived from their association with the bodily fluids (sweat, tears, and *rdw*) of the gods, particularly Re, Horus, and Osiris, which were believed to have life-giving, creative powers (Blackman 1912: 73-79; Thompson 1998: 232-234).¹⁰⁴

The perfumed oils applied to the body during mummification were believed to protect the deceased along their travels toward the afterlife. These unguents and incense supplied the

¹⁰³ Many of the unguents utilized in this process were red or reddish-brown in color (Manniche 1999: 10-32). As we have seen in the section above on linen, the color red was highly significant to the embalming ritual.

¹⁰⁴ This concept will be further elaborated in Chapter 5.

deceased with the same odor of the gods themselves, which was thought to repel demons and hostile forces encountered in the Underworld and signify worthiness to enter the afterlife (Thompson 1998: 239). According to Thompson (1998: 238), 'In the embalming ritual, the ability of the ointment to protect the deceased is related to its origin as an exudation from the gods'. This equipped the deceased with the defenses of the gods, particularly the protective fiery uraeus associated with the eye of Horus (which represented the exudations of the gods bestowed upon the deceased) (Thompson 1998: 238). The embalming oils provided refreshment and protection to the deceased, but destruction to enemies wishing to harm them. The protective qualities of unguents and other embalming materials are noted in four lines from the Ritual of Embalming (P. Boulaq 3, 2.7, 2.10-11, 2.13).

CHAPTER 2: EMBALMING IN EGYPTIAN ART

2.1 Introduction

This chapter will examine how aspects of the embalming ritual were depicted in funerary art of the Late through Ptolemaic periods¹⁰⁵ in order to determine how this ritual was portrayed visually and which, if any, specific stages of the ritual can be identified. For this analysis the embalming scenes from a total of 44 coffins and cartonnage of the Late through Ptolemaic periods were examined. The main features and elements of these scenes were documented¹⁰⁶ and will be described in detail below.

The most detailed visual representation of the embalming ritual can be seen on the unparalleled decoration of three late dynastic to early Ptolemaic coffins¹⁰⁷ from el-Hiba. Two of these coffins, those of Mutirdis (Roemer-Pelizaeus Museum 1953, see **Figures 1 & 2**) and Djedbastetiouefankh, (Roemer-Pelizaeus Museum 1954, see **Figures 3-5**) both feature similar scenes. These include the corpse being washed, the unwrapped corpse attended by embalmers, and the finished mummy lying on its funerary bier. The coffin of Paiuenhor (Kunsthistorisches Museum 7497, see **Figures 6 & 7**) only depicts the corpse being purified followed by a scene of the wrapped mummy on its bed.

¹⁰⁵ The approximate range of dates included in this analysis is the 8th to 2nd centuries BC. This range was intentionally selected to allow for comparison of a large number of examples and to detect any development in the depiction of embalming scenes both leading up to and immediately following the Late Period.

¹⁰⁶ See Appendix 2 for full listing of data set.

¹⁰⁷ More precise dating of these coffins is not currently possible; Taylor (2001: 49) dates them to the Late Period (c. 600-300 BC).

2.2 Description and analysis of the decoration on the coffins of Mutirdis, Djedbastetiouefankh, and Paiuenhor

The coffin of Mutirdis has eight registers of scenes placed on the body below a large broad collar. These scenes will be described in descending order below:

Register 1: The deceased god Osiris (gold in color) is lying in a green papyrus boat with the vulture goddess Nekhbet directly above him. The papyrus boat is carried by four small baboons. Three cobras with human heads and upraised arms are positioned in front of the baboons. The boat is being pulled by four jackals (two black and two green) that hold a rope affixed to the boat ending in the head of the cobra goddess Wadjet.

Register 2: The scene is divided by its central element, a large table of food and drink offerings. To the viewer's left a *sem* priest faces towards the central offering table holding a ceremonial adze before a table of equipment for the Opening of the Mouth ritual. Behind this *sem* priest stands a lector priest holding a document to be recited. To the viewer's right the god Anubis faces towards the offering table holding a feather¹⁰⁸ in one hand and a small, round object in the other. Following behind Anubis are three women (two dressed in green and one in white) that display gestures of lament and mourning.

Register 3: On the viewer's left the wrapped mummy of the deceased, Mutirdis, lies upon a lion-headed funerary bier. Under this bier are the four canopic jars topped with the heads of the four sons of Horus. The lion-headed bier and the four canopic jars are facing inward toward the center of the register, while the mummy upon the bier has its head facing out.

The bier is surrounded by hieroglyphic inscription that states the name of the deceased

¹⁰⁸ Capart (1943:196) identifies this object as a brush.

(Mutirdis). Four standard bearers face the funerary bier on the viewer's right. These include the standards of a jackal, falcon, ibis, and emblem of the god Khonsu.

Register 4: The scene is divided by a central offering table. On the viewer's left side of the offering table, a Ptah-Sokar-Osiris figure (facing inward, toward the center of the register) is approached by three women. The closest woman holds a tambourine towards the face of Ptah-Sokar-Osiris. The following two women, who can be identified as Isis and Nephthys,¹⁰⁹ carry papyrus staffs. On the viewer's right side of the central offering table stands a lector priest (facing inward) holding a document to be recited. Following behind this priest are the four sons of Horus: Duamutef, Qebhseneuf, Hapi and Imseti.

Register 5: On the viewer's right of this scene a corpse lies upon a lion-headed funerary bed. The corpse is black in color and has folded arms. It rests upon a headrest, along with reed matting placed on the bed, denoted by a zig-zag pattern.¹¹⁰ In contrast to the normal presentation of the mummy on a bier motif, where the lion-headed funerary bier faces to the viewer's right, the funerary bier in this scene faces in the opposite direction. The head of the bier is approached by Anubis¹¹¹ who holds out small, red pieces of looped cloth in each hand. Following Anubis are four attendant priests.

Register 6: The scene is divided by a central offering table. On the viewer's left of the offering table, a *sem* priest holding an adze over a shrine faces a mummified falcon figure¹¹² that stands upon a plinth. On the viewer's right, a priest who is facing the central offering

¹⁰⁹ For this identification, see Capart 1943: 196

¹¹⁰ The identification of this is discussed in more detail in the analysis below.

¹¹¹ Or possibly a priest dressed as Anubis.

¹¹² Possibly representing the god Sokar.

table, holds out an incense burner in one hand while pouring a libation from a *hs*-vessel.

Following him is a lector priest holding a document to be recited.

Register 7: The blackened corpse is depicted twice, undergoing two different types of water purification. In the scene on the viewer's left, the corpse stands upright in a basin with stepped sides. A priest is depicted standing atop either side of the basin, pouring jars of water over the head of the corpse. In the scene of the viewer's right, the corpse is lying above a pool of water with his head facing outward as in Register 5 above. A priest located at each end of the pool pours a jar of water over the corpse.

Register 8: The scene consists of a large green papyrus boat. Osiris, facing the viewer's right, sits in the center of the boat. He wears a red robe and *atef* crown and holds a crook and flail. The goddesses Isis and Nephthys sit on either side of Osiris. Nephthys sits facing him and behind Osiris is Isis, who wears a horned sun disk headdress and holds a papyrus scepter.

Foot case: The scene on the foot case depicts the goddess Isis with arm raised in a sign of mourning. She is seated over a necklace of gold and flanked by two female attendants.



Figure 1. Coffin of Mutirdis (Roemer-Pelizaeus Museum 1953). Global Egyptian Museum (accessed 2015)
<http://www.globalegyptianmuseum.org/record.aspx?id=10918>

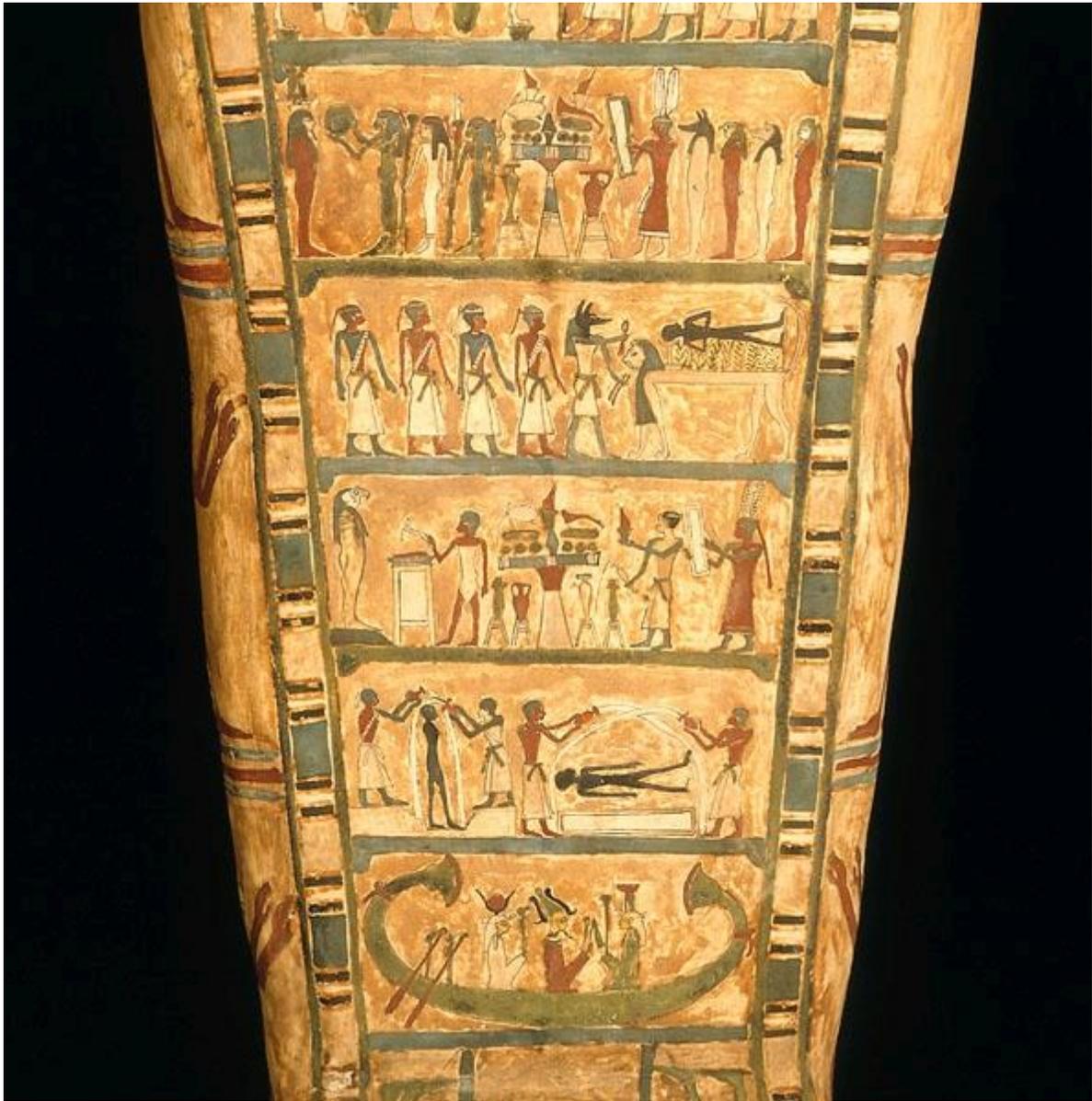


Figure 2. Coffin of Mutirdis, detail of embalmment scenes. Global Egyptian Museum (accessed 2015)
<http://www.globalegyptianmuseum.org/record.aspx?id=10918>

The coffin of Djedbastetiouefankh includes scenes organized into eight registers below a broad collar and winged scarab beetle. These registers will be described from top to bottom:

Register 1: A large central offering table is flanked by the four sons of Horus and winged goddesses. Each of the four sons of Horus holds a large folded cloth.

Register 2: A green papyrus boat carrying a shrine floats on a body of water on the viewer's left side of the scene. On the viewer's right are three standard bearers who face outward. The standards depict an ibis, a falcon, and the emblem of the god Khonsu.

Register 3: A central offering table is flanked by figures on either side. On the viewer's left, a *sem* priest holds an adze over a shrine topped with implements for the Opening of the Mouth ritual. Following the *sem* priest is a lector priest holding a document to be recited. On the viewer's right, a priest holds out two staffs.¹¹³ Following this man is the god Anubis holding a feather in one hand and a small, round object in the other. Behind Anubis are three women who make gestures of mourning.

Register 4: On the viewer's right, Anubis wraps the mummy of the deceased Djedbastetioefankh. The mummy lies on a lion-headed funerary bier, two linen bags are located under the bed. On the viewer's left, the wrapped mummy lies on its lion-headed bier, under which are the four canopic jars topped with the heads of the four sons of Horus. Each of the funerary biers in this register is positioned with its head to the viewer's right.

Register 5: The scene here is very similar to that of Register 5 of the coffin of Mutirdis (see above). On the viewer's right side, a blackened corpse with folded arms lies upon a lion-headed funerary bier. The corpse is supported by a headrest and reed matting placed on the bed. Anubis approaches the head end of the bier, holding a small, red looped cloth in each hand. Anubis is followed by three attendant priests.

¹¹³ According to Capart (1943: 197) this figure makes a gesture with his implements that is indicative of consecrating offerings.

Register 6: The scenes depicted here are almost identical to those of Register 7 of the coffin of Mutirdis (see above), except that the two types of water purification are shown here in reverse order to those of Mutirdis. On the viewer's left side, the corpse lies above a pool of water with a priest at each end pouring a jar of water over the body. On the viewer's right, the corpse stands upright in a basin, where a priest stands upon each of the stepped sides and pours a jar of water over the deceased's head.

Register 7: Four standard bearers face outward, toward the viewer's right, the standards include that of the falcon, emblem of Khonsu, jackal, and ibis. On the viewer's left a mourning woman approaches a mummiform falcon standing on a plinth.

Register 8: A Ptah-Sokar-Osiris figure stands on a plinth with a large offering table placed before it. The figure is approached by the god Anubis, holding a feather in one hand and a small, round object in the other. Following behind Anubis is a lector priest holding a document to be recited, a *sem* priest who holds a small white cloth in one hand and with the other he holds an adze over a shrine topped with Opening of the Mouth implements, and a mourning woman.

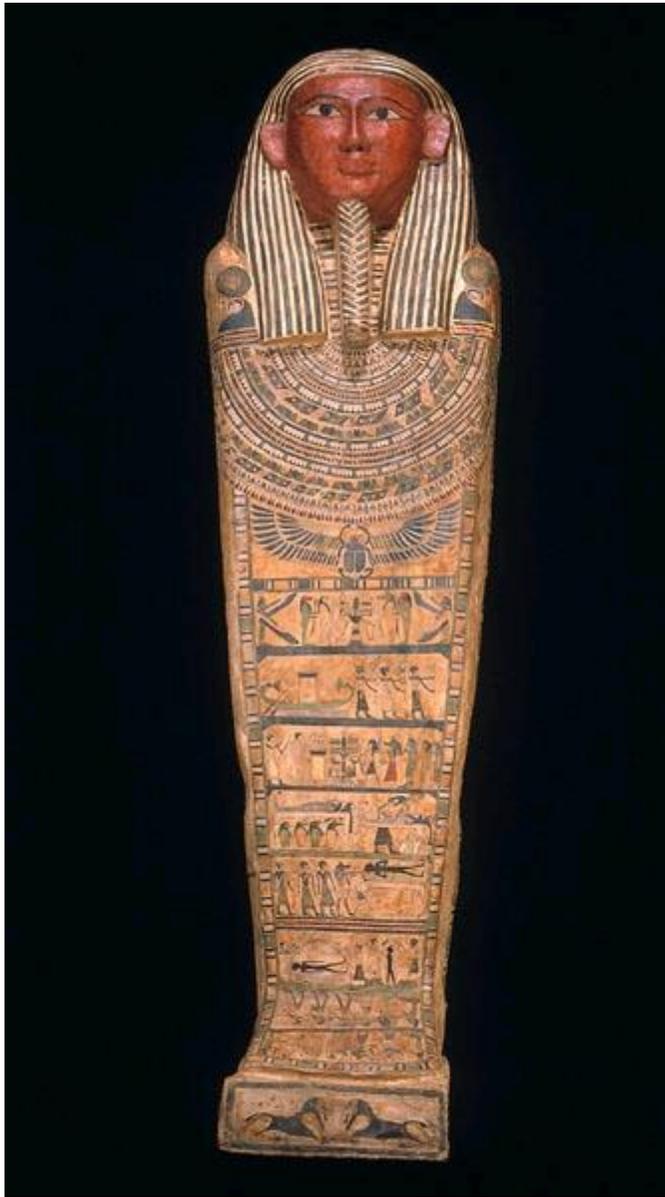


Figure 3. Coffin of Djedbastetioefankh (Roemer-Pelizaeus Museum 1954). Global Egyptian Museum (accessed 2015) <http://www.globalegyptianmuseum.org/record.aspx?id=10919>



Figure 4. Coffin of Djedbastiouefankh, detail of top four registers. Global Egyptian Museum (accessed 2015)
<http://www.globalegyptianmuseum.org/record.aspx?id=10919>



Figure 5. Coffin of Djedbastiouefankh, detail of bottom two registers. Global Egyptian Museum (accessed 2015) <http://www.globalegyptianmuseum.org/record.aspx?id=10919>

The coffin of Paiuenhor includes scenes organized into five registers below a broad collar and winged scarab beetle. These registers will be described from top to bottom:

Register 1: Osiris sits facing the viewer's right inside a large papyrus boat. He wears a green robe and holds a crook and fail. He is flanked by Isis and Nephthys on the left and Horus and Thoth on the right.

Register 2: A large, central offering table is flanked by the four sons of Horus on either side. On the viewer's left are Duamutef, Imseti, and Hapi. On the viewer's right are Qebehsenuf, Imseti, and Duamutef.

Register 3: The wrapped mummy of the deceased Paiuenhor lies upon a lion-headed funerary bier. Under the bier are the four canopic jars topped with the heads of the four sons of Horus. The lion-headed bier and the canopic jars all face outward, towards the viewer's right. The funerary bier is approached by Isis displaying signs of grief. Behind Isis is Anubis, who offers a small, round object. Nephthys stands behind Anubis, making a gesture of mourning.

Register 4: The blackened corpse lies above a pool of water. A priest stands at each end pouring a jar of water over the corpse. Behind these priests stands Isis on the viewer's right and Nephthys on the viewer's left.

Register 5: On the viewer's right, a Ptah-Sokar-Osiris figure stands upon a plinth. The figure faces inward, toward the viewer's left. Located directly in front of the Ptah-Sokar-Osiris is a shrine topped with equipment for the Opening of the Mouth ritual. A *sem* priest holding out an adze stands before the shrine, facing the Ptah-Sokar-Osiris. A lector priest who holds a document to be recited stands behind the *sem* priest. Anubis stands behind the lector priest; he holds a small round object in his hand. Following Anubis is a woman who makes a sign of mourning.

Foot case: The scene on the foot case depicts the goddess Isis with arm raised in a sign of mourning. She is seated over a necklace of gold. Isis is flanked by a female attendant on the viewer's left and a Ptah-Sokar-Osiris figure standing before an offering table on the viewer's right.

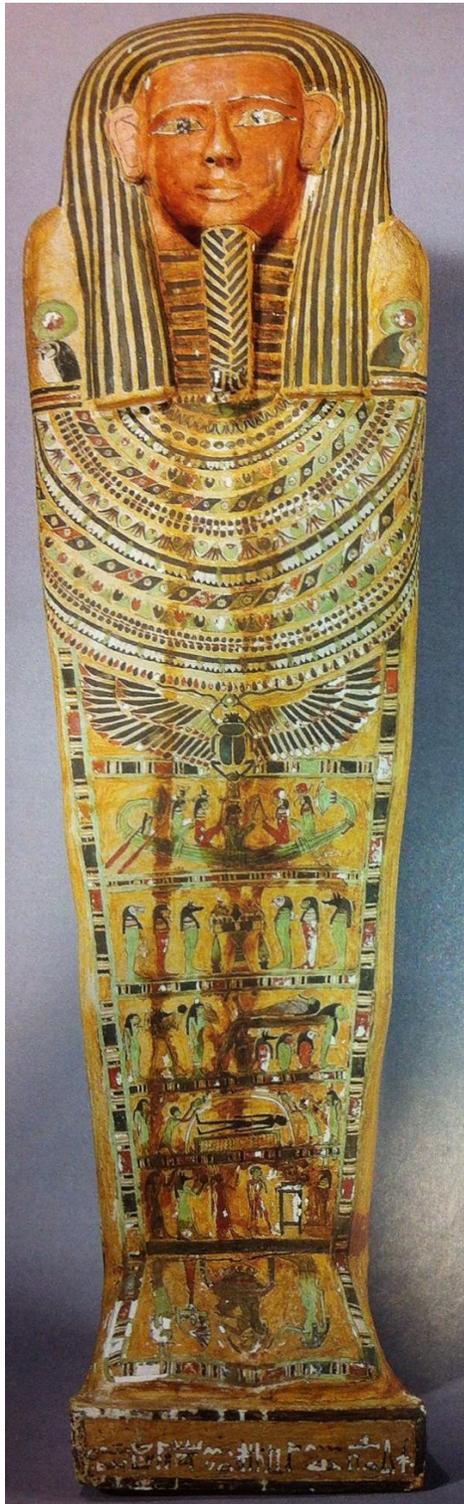


Figure 6. Coffin of Paiuenhor (Kunsthistorisches Museum 7497). *Ägyptische Mumien: Unsterblichkeit im Land der Pharaonen* 2007: 56.

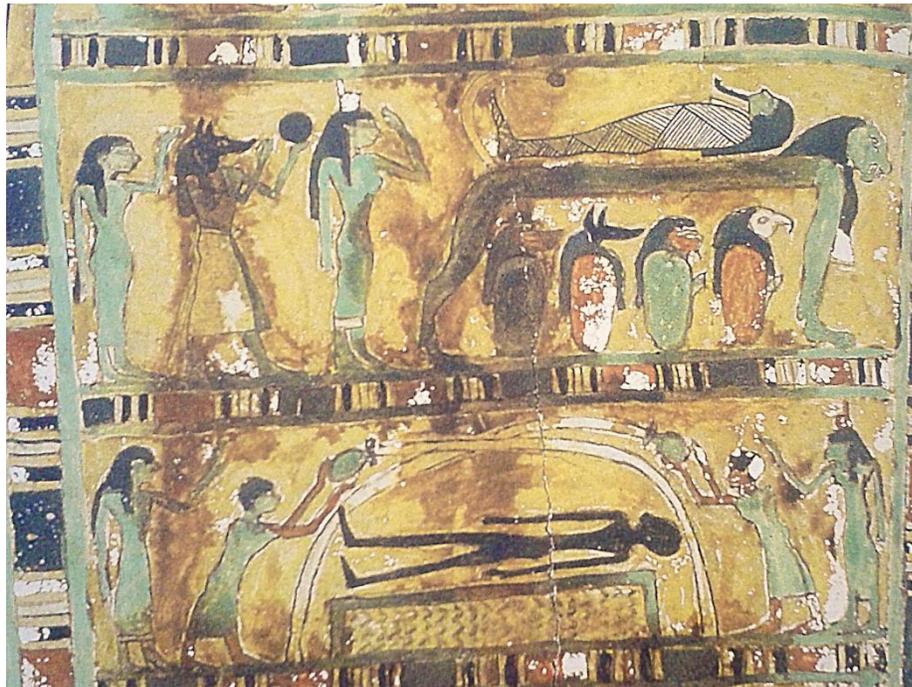


Figure 7. Coffin of Paiuenhor, detail of embalming scenes. *Ägyptische Mumien: Unsterblichkeit im Land der Pharaonen* 2007: 54.

The registers on the coffins of Djedbastetiouefankh and Paiuenhor roughly form a sequence that can be read from bottom to top, where the embalming scenes are located on the lower half of the coffins and registers depicting rites that occurred during the funeral ceremony are positioned on the upper half of the coffin.¹¹⁴ On the coffin of Mutirdis, the embalming scenes are interspersed among the funeral scenes. However, a basic sequence of these embalming scenes is still maintained, where the lowest embalming scene (Register 7) depicts the unwrapped corpse during purification and the upper most embalming scene (Register 3) shows the wrapped mummy on its funerary bed with canopic jars underneath.

All three of these coffins show images of the corpse prior to wrapping. While very rare, other scenes of unwrapped corpses do exist in ancient Egyptian art. The earliest known

¹¹⁴ This excludes the footcases.

example comes from the 18th Dynasty Book of the Dead of Tjenena (Louvre 3074) where the vignette to spell 85 shows the corpse lying on a mat with its *b3* spirit hovering above.¹¹⁵ The corpse image is also included in vignettes to Book of the Dead spells 89¹¹⁶ and 92¹¹⁷, where it can be seen in a number of New Kingdom tombs and Book of the Dead papyri. In these scenes the corpse image is typically referred to as the shadow of the deceased.¹¹⁸ This interpretation is based on the black silhouette form of the figure and the mention of the shadow (*šwt*) in the corresponding text of the spells. I disagree with this explanation¹¹⁹ and instead argue that all of these figures should be viewed as corpses,¹²⁰ especially given their use on the three el-Hiba coffins, which will be explained below.

The use of the corpse image in funerary art is somewhat intensified through the Greco-Roman Period, where it can be found in tomb art,¹²¹ burial shrouds,¹²² coffins and cartonnage,¹²³ as well as three small statuettes.¹²⁴ While the three el-Hiba coffins exhibit the only known examples where the corpses are depicted during mummification rites specifically, many similarities can be observed between the scenes on these coffins and

¹¹⁵ See Dawson 1924: 40; Munro 1988: 286, Tafel XIV; Quirke 2013: 199.

¹¹⁶ See Munro 1988: 275-276, Tafel XIV; Quirke 2013: 205.

¹¹⁷ See Quirke 2013: 210

¹¹⁸ For the shadow of the deceased see George 1970; Schenkel 1984; Milde 1991.

¹¹⁹ Lekov (2010: 44-61) also argues against the interpretation of the silhouette figures as shadows and alternatively suggests they are the *k3* spirit of the deceased. While I agree with many of his main arguments against the interpretation of the figures as shadows, I disagree with his hypothesis that they represent the *k3* spirit. His theory focuses exclusively on scenes from the New Kingdom tombs and does not fully account for the entire time frame of development of this motif, or the various contexts where it appears.

¹²⁰ Dunand and Lichtenberg (2007: 104) identify the figure from BD 92 in Theban tomb 290 as the mummified corpse of the deceased within its tomb.

¹²¹ Examples include House 21, Tuna el-Gebel, on west wall of first room (Riggs 2005: 135; Venit 2016: 123) and the east wall of the anteroom (Riggs 2005: 136; Venit 2016: 124) and Bissing's Tomb, Akhmim, on Wall A-B (Venit 2016: 142).

¹²² Several examples have been documented by Riggs (2005: 170-171, Pl. 7-9, figs. 80 and 82).

¹²³ For another Late Period coffin example, see Ziegler (2013: 123-128 and Phs. 212-219, especially Ph. 215). For the corpse image on cartonnage, see Riggs (2005:146).

¹²⁴ Museum August Kestner Hannover, Inv. Nrs. 1950.179, 1995.153 and Berlin, Ägyptisches Museum, Inv. No. 20472.

other scenes that include corpses. The types of images that include corpse depict liminal or transitory space and represent the transformation of the deceased from their earthly form to an eternal existence. Scenes of purification, such as those on the three el-Hiba coffins and that found near the entranceway (west wall) in the Tuna el-Gebel tomb known as House 21¹²⁵ illustrate this type of passage. The purification rites that occurred at the outset of mummification served to cleanse and purify the deceased in order to prepare the body for the next step in not only in the embalming ritual but in the spiritual journey towards the afterlife.¹²⁶



Figure 8. Purification scene in House 21, Tuna el Gebel. Venit 2016: 123, figure 4.14.

Another motif where the corpse figure can be found is that of the judgment of the dead. An example of the judgment scene vignette from the Late Period coffin of

Payeftshu(em)akhonsu shows the deceased standing before the scales during the weighing of

¹²⁵ In his description of the coffins of Mutirdis and Djedbastetiouefankh, Capart (1943: 198) makes a brief mention of this scene from Tuna el-Gebel at the very end of his article.

¹²⁶ The role of purification within the embalming ritual is discussed in more detail in Chapter 1.

his heart. Standing alongside him is a green human figure¹²⁷ that represents the man's corpse; his *b3* spirit is also present. In another example of a judgment scene from von Bissing's tomb at Akhmim (roughly dated to the Roman Period), a corpse stands with the gods at the scales while two others stand in front of the Devourer, including one that is positioned within a cauldron. Such a representation suggests that the corpse image was used not only to denote instances where the deceased made a safe passage to the afterlife but also the negative consequences that awaited the unworthy dead. Assmann (2005: 75) explains that the concept of judgment of the dead was intertwined with the embalming ritual:

Guilt, accusation, enmity, and so forth are treated as forms of impurity and decay — as, so to say, immaterial but harmful substances — that must be eliminated so as to transpose the deceased into a condition of purity that can withstand decay and dissolution. Vindication was moral mummification. When the embalmer's work on the corpse was done, the priests took over and extended the work of purification and preservation to the entirety of the person. The Egyptian word for 'mummy' *sḥ*, also meant 'worthy' and 'aristocrat'. In this last stage of the mummification process, the deceased experiences the Judgment of the Dead and received the aristocratic status of a follower of Osiris in the Netherworld.

Smith (2009: 6, 26-30) adds to this point, stating that judgment was believe to begin within the embalming chamber, where mummification was viewed as a type of healing and restoration for the righteous but a form of torture to the unrighteous.

¹²⁷ Ziegler (2013: Ph. 215) identifies this figure as the shadow of the deceased.

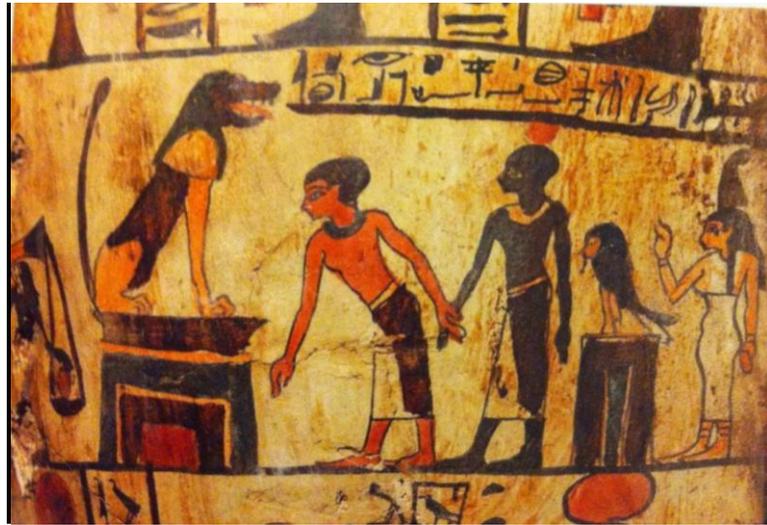


Figure 9. Judgment scene on coffin of Payeftshu(em)akhonsu Ziegler 2013: Ph. 215

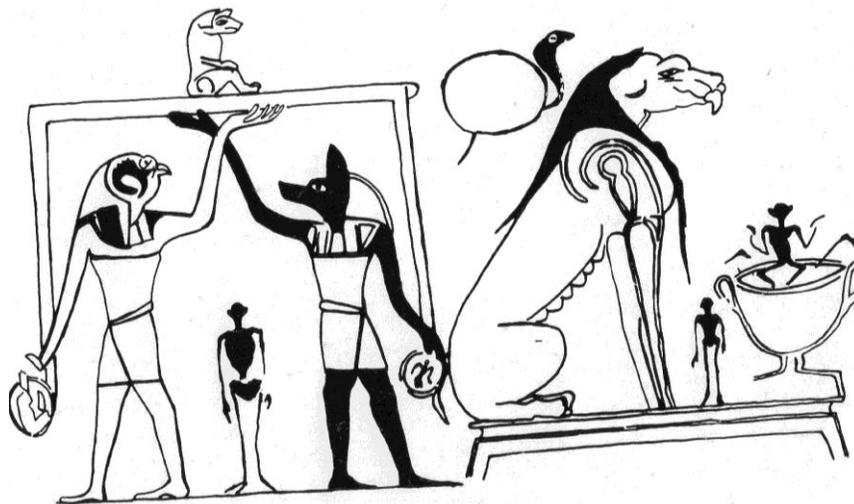


Figure 10. Judgment scene from Bissing's tomb, Ahkmim. Hornung 1990:159.

Before moving on, I will briefly discuss Register 5 of the coffins of Mutirdis and Djedbastetiouefankh. The scene is almost identical on both coffins, with the only differences between them being one less assistant embalmer on the coffin of Djedbastetiouefankh and the colors of the clothing of the funerary workers. This particular image, where Anubis attends the unwrapped body is unique even among the rare depictions of corpses in ancient

Egyptian art. It represents the only known pictorial evidence of the activities that occurred during the portion of the embalming ritual between purification and wrapping.¹²⁸ The question remains of exactly what episode in the embalming process the scene illustrates. Capart (1943: 195) suggested that the image shows a body being desiccated atop a pile of natron, but it seems more likely that the material represented by the zig-zag lines is reed matting that covered the funerary bed.¹²⁹ Dunand and Lichtenberg (2006: 100-101) note that many ancient Egyptian funerary beds have a bed frame made of wickerwork and that zig-zag impressions from this reed matting have been found on the skin of mummies.



Figure 11. Reed mat impression on mummy skin. Dunand and Lichtenberg 2006: 100-101.

Additionally, P. Rhind 1 (2.3-4), P. Rhind 2 (3.1-2) and P. Vindob 3873 (rt.1.1 & 1.3) emphasize the importance of lying the body on reed matting while it was in the embalming workshop. The central figure in this scene, Anubis, that provides the most insight into the nature of the rite depicted. Anubis approaches the body with a piece of looped cloth in each

¹²⁸ For a detailed discussion of the various stages of the embalming ritual, see Chapter 1.

¹²⁹ For this interpretation, see Dunand and Lichtenberg (2006: 100-101).

hand.¹³⁰

The registers depicting scenes of the funeral ceremony will be briefly discussed below with particular emphasis given to their relationship with registers depicting embalming. However, a full analysis of these scenes goes beyond the scope of this thesis. The number and type of funeral scenes present on these three coffins is quite remarkable, as the diversity of rituals depicted is much greater than generally found on Late Period coffins.¹³¹ Additionally, certain aspects of the decor resemble the *Stundenwachen* scenes of Dendara temple. This is particularly well illustrated by the inclusion the mummified falcon figures, which suggest a reference to the annual Khoiak festival. These decorative elements, along with the layout of the coffin design, suggest that these coffins date to the early Ptolemaic period.¹³² Four main types of ritual activities are expressed through the imagery in these registers: nautical voyages, the Opening of the Mouth ritual, blessing of the food offerings, and the offering of food before the deceased or gods. The nautical scenes are located at the top of each of the coffins, where they are on the first register of the coffins of Mutirdis and Paiuenhor and the second register of the coffin of Djedbastetiuefankh. An additional nautical scene is also present on the bottom register of the coffin of Mutirdis. These scenes convey the idea of travel to various locations in Egypt, such as Abydos and Sais, which were considered a traditional part of the funeral ceremony. Such voyages were not likely undertaken in reality but instead may have been alluded to through the use of imagery such as these coffin

¹³⁰ This is best seen on the coffin of Mutirdis where Anubis holds two red pieces of cloth. This portion of the image has suffered slight damage on the coffin of Djedbastetiuefankh. Dunand and Lichtenberg (2006: 100) mistakenly identify the cloth as an embalming tool.

¹³¹ This will be discussed as greater length below. Also see Elias 1993 for a typology of Late Period coffin decoration.

¹³² For this dating see Dundand and Lichtenberg 2006: 99-100.

registers. Additionally, nautical themes are also utilized prominently in reference to the embalming ritual. As Smith (2005: 91) explains, death was viewed a state from which the deceased needed to be rescued and set free. Mummification, especially the final stages of the ritual including wrapping, attaching of amulets, and placement in the coffin were likened to an escape from death by means of a boat. These events are alluded to in both funerary text¹³³ and art by use of nautical terms and imagery.

An important aspect of the funeral scenes on these coffins is the incorporation of festive imagery. This is particularly well illustrated by the inclusion of either the mummified falcon or Ptah-Sokar-Osiris figure as the recipient of the rituals in place of the mummy of the deceased. Another notable element is the goddess playing the tambourine before the mummy in Register 4 of the coffin of Mutirdis. This bears a resemblance to the depiction of both the first hour of the night and the tenth hour of the day in the *Stundenwachen* scenes at Dendara.¹³⁴ While the ‘mummy on a bier’ motif central to the majority of Late Period coffins (discussed in depth in the following sections of this chapter) indicated the nocturnal hours of the *Stundenwachen*, the iconography of these coffins appears to emphasize rituals specific to the hours of the day as well. This arrangement creates a sense of balance in the decorative program and highlights certain dualities such as day and night, the celestial realm and underworld, death and rebirth.¹³⁵ The following table illustrates a comparison of the iconography from each of the three coffins. Comparable scenes are shaded in the same

¹³³ For examples of this usage see P. Harkness, P. Rhind 1 and 2, and P. BM 10507, translated by Smith 2009.

¹³⁴ Pries 2011: ff. 4 and 25.

¹³⁵ Taylor (2003: 95-121) has discussed the extent to which coffins and cartonnage with vertical registers follows a pattern where solar or celestial imagery is positioned at the top half where the bottom portion depicts underworld and Osirian motifs. The majority of his examples date to the Third Intermediate Period, when coffins and cases with registers are prevalent. For a discussion on the reading order of registers on Roman period red-shroud mummies, see Corcoran 1995.

color. Scenes without a counterpart are not shaded.

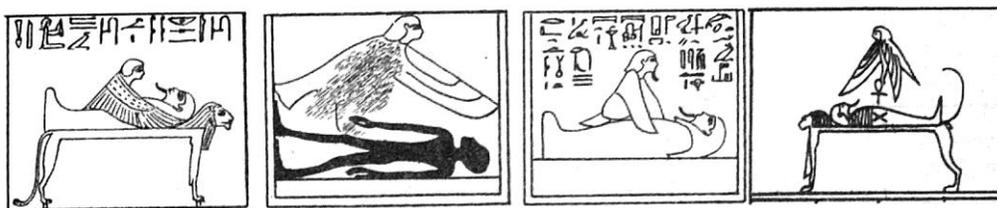
Mutirdis	Djedbastetuefankh	Paiuenhor
Nautical scene: golden Osiris in bark pulled by jackals	Four sons of Horus and offerings	Nautical scene: Osiris seated in boat with Isis, Nephthys, Horus, Thoth
Offerings blessed: lector, sem priests, Anubis, mourning women	Nautical scene: boat shrine and standard bearers	Four sons of Horus and offerings
Wrapped mummy with canopic jars under bier; standard bearers	Offerings blessed: lector, sem priests, Anubis, mourning women	Wrapped mummy with canopic jars under bier; Anubis approaches with incense; Isis and Nephthys follow
Ritual before Ptah-Sokar-Osiris: women play tambourine, offering table, lector priest and Four sons of Horus	Wrapped mummy with canopic jars under bier: Anubis wraps mummy and then restores it to life	Purification
Embalming	Embalming	Opening of mouth (Ptah-Sokar-Osiris): shrine, sem, lector, Anubis, mourner
Opening of mouth (Sokar): shrine, sem, wab, lector	Purification	Foot Case: Isis and Ptah-Sokar-Osiris
Purification	Foot Case: Sokar and standard bearers	
Nautical scene: Osiris seated in boat with Isis and Nephthys	Foot Case: Ritual before Ptah-Sokar-Osiris: offering table, Anubis, lector, sem, woman	
Foot Case: Isis on gold necklace		

Table 1: Comparison of scenes on coffins of Mutirdis, Djedbastetuefankh, and Paiuenhor

2.3 Origins of the ‘mummy on a bier’ motif

Typically, the embalming ritual is represented in Egyptian art only by a single scene of the wrapped mummy lying on a funerary bed, otherwise referred to as the ‘mummy on a bier’ motif. This image depicts portions of the embalming ritual that would have taken place after the wrapping phase had begun (Quirke 2013: 375). It is important to emphasize that the purpose of these scenes was the eternal protection of the deceased, who was likened to Osiris in order to ensure the same effective preservation and security as the god. The images do not reflect the realities of the mummification of individuals but the idealistic version of the ritual from the Osiris myth.

The ‘mummy on a bier’ motif is often incorporated into vignettes that correspond to Book of the Dead Spells 89, 151, and 154. BD 89 is meant for securing the *b3* to the mummy. The vignette depicts the *b3* spirit as a human-headed bird hovering over a mummy lying on the funerary bier (**Figure 12**).



*Nebseny (Eighteenth Dynasty), Iufankh (Ptolemaic Period): ba-soul in form of human-headed bird with outstretched wings, over body on lion-form bed (in Iufankh, ba-soul holds an ankh-hieroglyph)
Sutymes (Third Intermediate Period): ba-soul in form of human-headed bird with outstretched wings, directly on body lying on rectangular plinth*

Figure 12. Vignette to BD 89. Quirke 2013: 205

Book of the Dead Spell 151¹³⁶ is for the protection of the deceased within the embalmer's workshop and guarantees perpetual efficacy of the mummification ritual (Quirke 2013: 375). The vignette depicts the *Stundenwachen*, or Night Vigil, held for Osiris just before his funeral and burial (Lüscher 1998: 58; Willems 1996: 93, 130). The central motif of BD 151 is that of the mummy lying on its funerary bier attended by the embalmer god, Anubis. Nephthys and Isis are positioned at the head and feet of the mummy respectively. The four sons of Horus are present in the corners of the vignette and four magic bricks with amulets are located at the top, bottom, and sides. Also encircling Osiris are *b3* spirits and mummies (Figure 13). The scene depicts the protective environment that would have surrounded Osiris on the night before his funeral. According to Lüscher (1998: 22) no two examples of vignettes from BD 151 are identical.

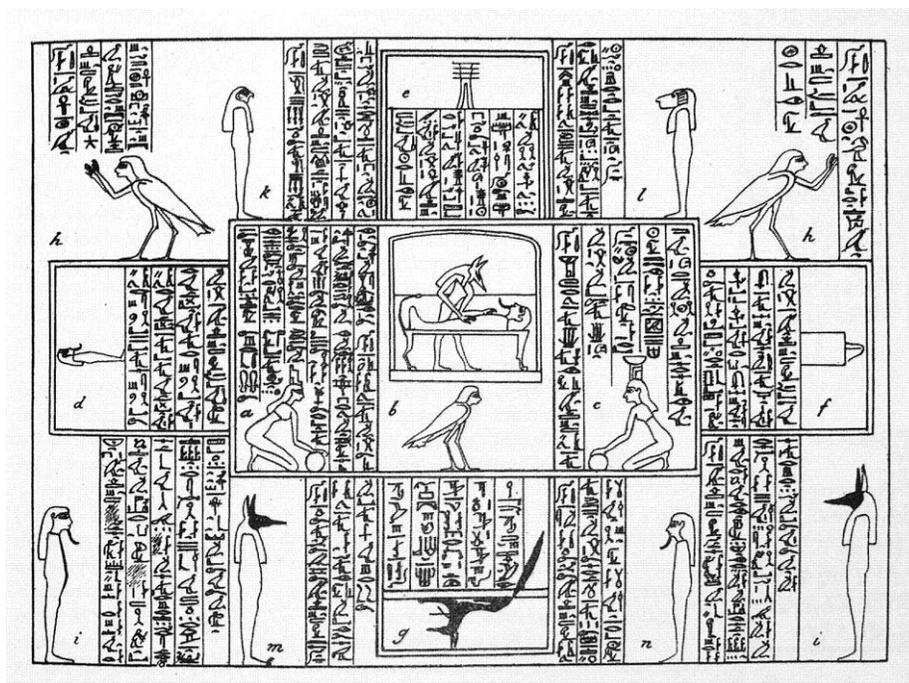


Figure 13. Vignette to BD 151. Quirke 2013: 367

¹³⁶ For a detailed study of BD 151, see Lüscher 1998.

BD 154 describes how Horus arrives in the embalmers' workshop to mummify his father Osiris and details all of the undesirable decay that Osiris will not experience thanks to the aid of his son (Quirke 2013: 384). The vignette to BD 154 depicts a mummy lying on a funerary bier with the sun above. Rays stream down from the sun and touch the mummy's chest (**Figure 14**). Generally no additional deities are present in either BD 89 or 154.

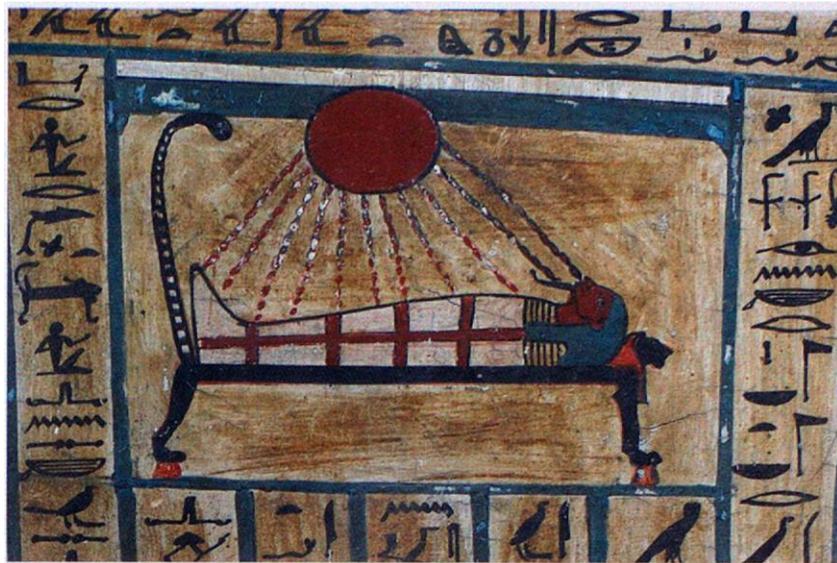


Figure 14. Vignette to BD 154. Taylor 2010: 75

Strictly speaking the motif of mummy on a bier developed during the New Kingdom as vignettes to Book of the Dead spells. In the Late Period the Book of the Dead vignettes were revised into standardized formats that tended to more closely reflect the corresponding text. The vignettes significantly gained popularity during the Late Period where they accompanied most of the Book of the Dead spells (Mosher 1993: 144). As Mosher (2001: 12) explains, the use of standardized Book of the Dead vignettes during the Late Period was

advantageous when one wished to include many more spells on an object¹³⁷ than could be written out completely in text.

However, the development of the motif can be traced back to the Middle Kingdom, where the main elements that would eventually become the ‘mummy on a bier’ scene are depicted on coffins. Both the exterior and interior design and texts of the Middle Kingdom coffin create a three-dimensional version of the ‘mummy on a bier’ motif representing the Night Vigil of Osiris (**figure 15**). The protective deities are named and often depicted in the places they would have occupied in relation to the mummy lying in the embalmers’ workshop during the wake (Willems 1988: 136-147; Willems 1996: 374-387; Taylor 1989: 9). Inside the coffin, small rectangular groups of pictures, called object friezes,¹³⁸ depicted the same types of items that can be found under the funerary bed in the mummy on a bier motif of later times. These include ointment jars, eye paint, linen, royal regalia such as crowns and mirrors, as well as the funerary bed itself (**Figure 16**). According to Willems (1988: 221), these object friezes represented: ‘the material components of the whole complex sequence of funerary rites...After having been presented to the deceased, they rather served his practical purpose in the Beyond’. Such materials would have included those items utilized during the embalming ritual in order to ensure a successful mummification for eternity.

¹³⁷ Mosher (2001) refers to copies of the Book of the Dead on papyri, however this logic also applies to other funerary goods and architecture that were regularly inscribed and decorated with funerary texts.

¹³⁸ For a comprehensive study of the object friezes of Middle Kingdom coffins, see Jéquier 1921.

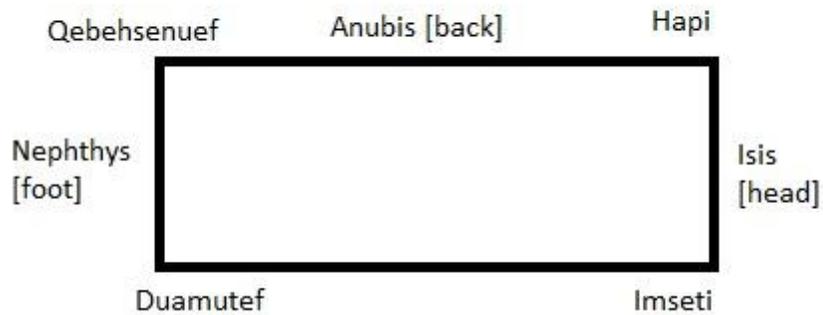


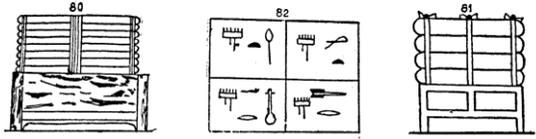
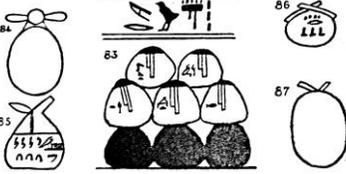
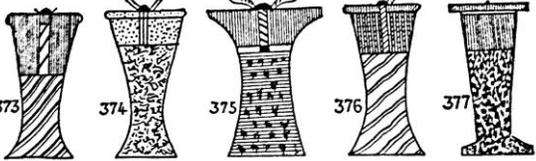
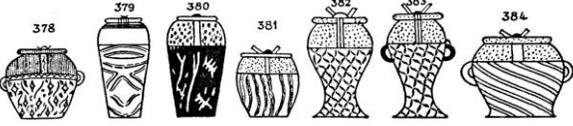
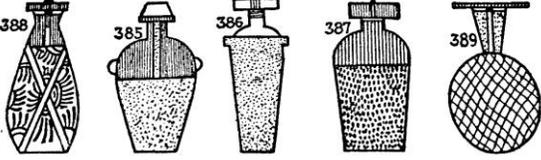
Figure 15. Outline of Middle Kingdom coffin with positions of deities. Drawing based on those of Willems 1988: 137 and Taylor 1989: 9



Figure 16. Object Frieze from the 12th dynasty coffin of Seni (Cairo JE 32868). Global Egyptian Museum (accessed 2015) <http://www.globalegyptianmuseum.org/record.aspx?id=15360>

Representations of items located under the bier in the ‘mummy on a bier’ scene from Late and Ptolemaic coffins and cartonnage are not drawn with the same level of detail and precision as their counterparts in the object friezes of Middle Kingdom coffins. Not only do the Middle Kingdom object friezes include finely detailed drawings of the individual implements, but they often include labels indicating exactly what type of material or substance has been depicted. This information is very useful for understanding more about the individual materials utilized for embalming and allow for better identification of these from the Late and Ptolemaic ‘mummy on a bier’ scenes. The following table details the

vessels, bags, and cloths as documented by Jéquier (1921) and Willems (1996) from Middle Kingdom coffin object friezes that can be related to items found under the bier on later ‘mummy on a bier’ scenes.

Description	Jéquier (1921) Images
Linen cloth (<i>idmi</i>) ¹³⁹	
Bags of cloth (<i>mrw, mrw nw ḥbs, idmi</i>) ¹⁴⁰	
Perfume jar; Jéquier's Type A ¹⁴¹	
Perfume jar; Jéquier's Type B ¹⁴²	
Perfume jar; Jéquier's Type C ¹⁴³	

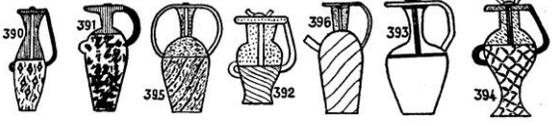
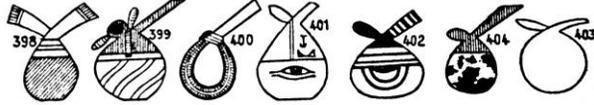
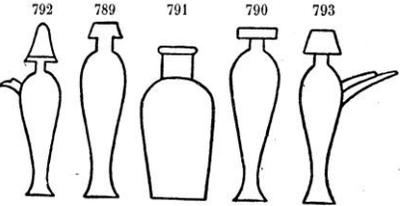
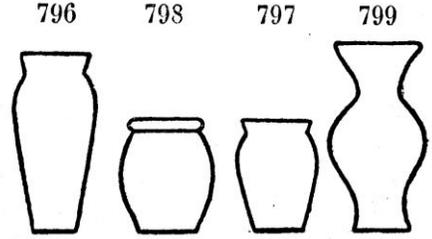
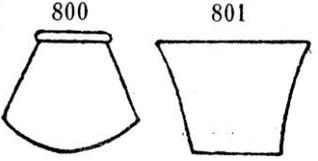
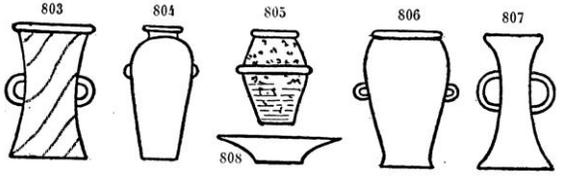
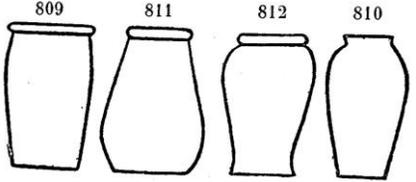
¹³⁹ For this identification see Willems (1996: 65-66).

¹⁴⁰ See Willems (1996: 65-66).

¹⁴¹ This type always used for the unguent *šty ḥb* (Willems 1996: 58; Jéquier 1921: 146) It may also be used for the unguent *sf̄t* (Willems 1996: 60).

¹⁴² According to Willems (1996: 61-62) this type of vessel should be used to store *ḥ3tt nt thnw* (first quality Libyan oil).

¹⁴³ According to Willems (1996: 60) this type can hold the oil *ḥknw*.

Perfume jar; Jéquier's Type D ¹⁴⁴	
Bags of eye paint (<i>ʿfr</i> , <i>wḏw</i>)	
<i>hs</i> vessel	
<i>nmst</i> vessel	
<i>dšrt</i> vessel	
<i>mrg</i> vessel	
<i>snw</i> vessel	

¹⁴⁴ The most common vessel type to hold the oils *ḥknw nḥnm* (Willems 1996: 60-61).

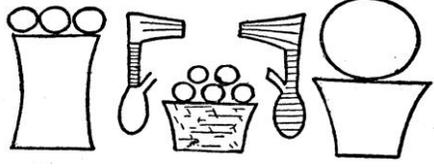
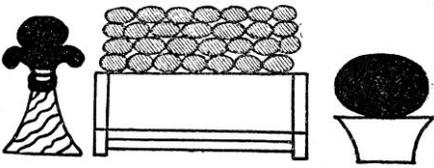
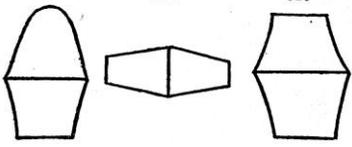
<p>Natron (<i>bd, hsmn</i>)</p>	<p>819 821 818 820 817</p> 
<p>Incense (<i>sntr, pd</i>)</p>	<p>824 822 823</p> 
<p>Covered incense burner (<i>w^c hr snif</i>)</p>	<p>831 830 829</p> 

Table 2: Mummification supplies from object friezes of Middle Kingdom coffins

Each of the seven sacred oils is indicated by its own specific shape of vessel. Pischikova (1994: 63-77) examined the iconography of these vessels. She collected examples of depictions of each vessel form, using the Late Period tombs of Ibi and Basa as well as the New Kingdom temple of Hatshepsut. These are listed in **Figure 17** below.

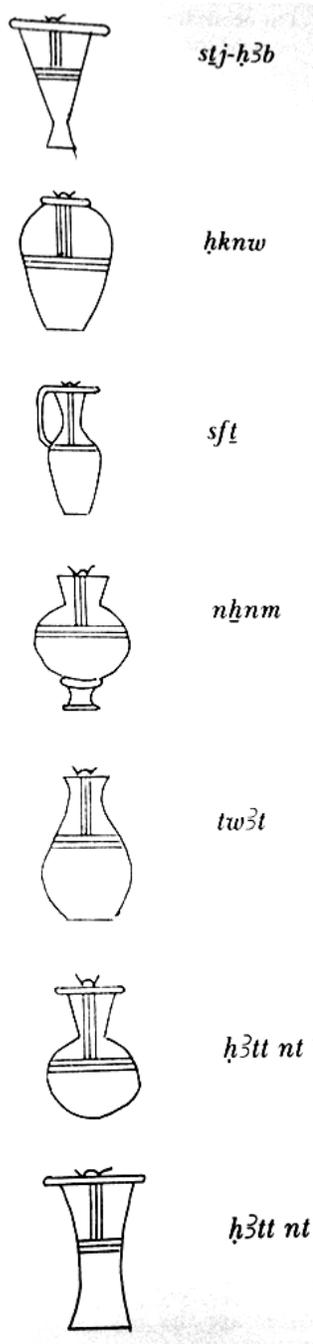


Figure 17. Jars of seven sacred oils. Pischikova 1994: 67, figure 12.

The ‘mummy on a bier’ motif was especially common during the Late and Ptolemaic periods, particularly on coffins and the cartonnage coverings of mummies. It can also be

found on tomb walls (the walls of the burial chamber in particular), funerary stela, and on funerary papyri. For the purpose of this thesis, the mummy on a bier motif was examined exclusively in the context of coffins and cartonnage. These items were selected because they are so numerous, which allows for comparison of a large number of scenes that appear in a similar format and context. The coffins and cartonnages were also chosen specifically for this analysis because the painted scenes on these items are typically executed in a variety of well preserved colors. As the colors of both the material items and deities associated with embalming are highly symbolic, I wanted to utilize artistic sources that include color in the motif.

2.4 Coffins & Cartonnage

The mummy on a bier motif can be found in the region of the abdomen or legs on anthropomorphic wooden outer and inner coffins and cartonnage mummy coverings. There are a number of reasons that could explain how this placement had a ritual function. Since the motif represents Osiris during his nocturnal wake inside the embalming workshop, it would be ideal for this image to be placed in the most central location on the coffin (or cartonnage over a mummy), leaving the perimeter to be decorated with the protective images and texts that ensured his safety. This arrangement on the coffin¹⁴⁵ mirrored a life-sized version of the Night Vigil portrayed through the architecture and decoration of the burial chamber itself.¹⁴⁶ Further symbolism may be seen if we consider that purifying the body cavity through cleansing and removal of the internal organs was of the utmost

¹⁴⁵ For the *Stundenwachen* on Late Period coffins, see Taylor 2003: 95-121 and Elias and Lupton 2014: 125-133.

¹⁴⁶ For the *Stundenwachen* in Late Period tombs, see Assmann 1977: 66-77 and Thomas 1980: 241-275.

importance during the embalming ritual, thus making it an appropriate location for iconography associated with mummification. In his analysis of post-New Kingdom coffin inscription, Elias (1993: 845-849) documented a significant change in the decorative program of the exterior side of the coffin during the 25th dynasty. Elias (1993: 846) refers to coffins of the early 25th dynasty as proto-Saite, which he describes as functioning as a ‘gestating organism’. These coffins exhibit cosmological texts and iconography that convey ideas of spontaneous rebirth of the deceased.¹⁴⁷ In contrast, the textual and decorative programs present on coffins from the late 25th dynasty through the Saite Period reflect an increased focus on the protection of the physical body during the period of time prior to successful regeneration.¹⁴⁸ Through this development the prominence of Book of the Dead spells 89, 151, and 154 is intensified, along with the ‘mummy on a bier’ motifs featured on their corresponding vignettes. Additional texts and images that are frequently included on the exterior of Saite coffins are the Book of the Dead spells 1, 19, and 169, Nut texts and canopic texts,¹⁴⁹ as well as images of protective deities and guardians (Elias 1993: 847-849). Elias (1993: 848-849) hypothesizes the change in surface decoration on Late Period coffins reflects changing perspectives on how rebirth after death was achieved, where the later designs suggest people anticipated a longer, potentially dangerous period of time where the body awaited rejuvenation and perhaps were not necessarily confident in a favorable outcome.

2.5 Elements included in the ‘mummy on a bier’ motif

¹⁴⁷ See Elias 1993: 432-503 for typology.

¹⁴⁸ See Elias 1993: 504-629 for typology.

¹⁴⁹ Many of these texts are specific to the Late Period without equivalents from the Book of the Dead, see Elias 1993: 504-629.

The following includes a list of separate elements documented within the ‘mummy on a bier’ scenes from my corpus of coffins and cartonnage. Each list is divided by where the items were located spatially in relation to the central component, the funerary bier with the mummy.

Over the funerary bier:

- B3* spirit
- Sun disk with rays
- Winged sun disk
- Sun disk with double uraei (no wings)
- Anubis attending mummy
- Horus

Under the funerary bier:¹⁵⁰

- Canopic jars
- Ointment jars
- Bags
- Crowns, scepters, and mirrors
- Boxes
- Weapons

At the ends of the funerary bier:

- Isis and Nephthys as humans
- Isis and Nephthys as kites

¹⁵⁰ An archaeological example of model items of those listed here as commonly found under the funerary bier in the ‘mummy on a bier’ motif were discovered in a wooden box in the Late Period shaft tomb of Tjaenhebu at Saqqara. See Strudwick 2009: 213-238 for a full list of the model items from the box and a discussion of the ritual significance of these items, particularly as they pertain to the Opening of the Mouth rite.

- Four sons of Horus as mummiform figures

2.6 Symbolism of the most common elements

- **Mummy on bier**

The focal element of the motif is the mummified body lying on a leonine funerary bed. In most examples the mummy lies with its head (and the lion-headed end of the bed) at the viewer's right side. The mummy represents the god Osiris lying in the embalming workshop during the *Stundenwachen*. In fact, the mummy lying on its funerary bed serves as the determinative hieroglyph for the word *sdr*, meaning 'to lie' or 'spend all night'.

- **Solar elements over bier**

There are a variety of solar elements that may appear above the mummy. In addition to the sun disk with rays streaming down onto the mummy's chest that is found associated with BD 154, other prevalent forms include sun disks either with wings and / or double uraei. Human arms may also extend from these winged sun disks towards the mummy offering ankhs.

- ***B3* spirit**

The *b3* spirit appears as a human-headed bird hovering above the mummy or alighting on its chest. The *b3* spirit may also offer ankhs or *shen* signs to the mummy. The *b3* spirit is essential to the vignette to BD 89, which serves to ensure the *b3* is able to safely return to its corpse. However from late dynastic times onward, the vignettes to Book of the Dead spells that incorporate the mummy on a bier motif are sometimes combined on coffins and cartonnage, in which case the *b3* spirit may

occur alongside Anubis and / or next to a sun disk (**Figure 18**).

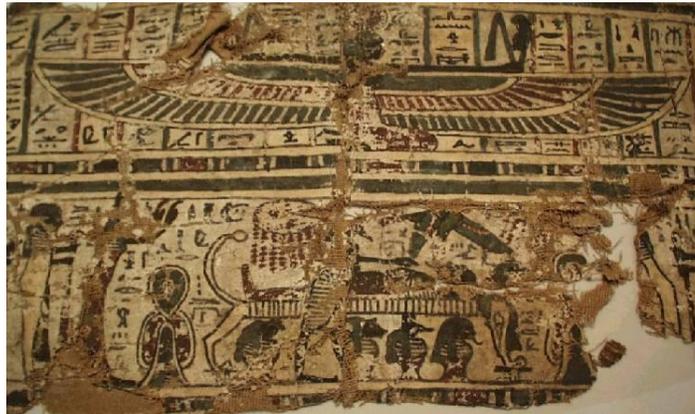


Figure 18. Cartonnage with Anubis (BD 151), *b3* spirit (BD 89), sun disk with rays (BD 154) (National Museums Liverpool 1973.2.432). Global Egyptian Museum (accessed 2015) <http://www.globalegyptianmuseum.org/record.aspx?id=3289>

- **Ointment jars**

Ointment jars can be found under the funerary bed. These jars can be represented either with or without lids. The jars can occur individually or in multiples.¹⁵¹ The ointment jars may be combined with canopic jars or bags of eye paint. Unlike the depictions of similar ointment jars from Middle Kingdom coffins, the jars found in the mummy on a bier motif of the Late and Ptolemaic periods are not accompanied by inscriptions that indicate their contents. It could be assumed that these jars were still used to hold the same varieties of unguents as those labeled from earlier artistic examples. The use of precious oils and substances during funerary rituals was widespread.¹⁵² These were employed both during the embalming ritual and the Opening of the Mouth ceremony on the day of the funeral (Willems 1996: 80-81;

¹⁵¹ A scene from a Late Period coffin (Kestner-Museum Hannover Inv.-Nr. LMH 7849) (Brech 2008: 179 & abb. 8) includes seven jars of ointment; presumably this number of jars was painted into order to fill all available space under the bier. In the majority of scenes where ointment jars are included, they number between one and four.

¹⁵² See Chapter 1, section 1.6.4 for a discussion on the use of unguents in the embalming ritual.

Goyon 1972: 102). Furthermore, these ointments were given as offerings to the deceased among the grave goods placed in the tomb. Examples of such ointment jars have been found in the burial chambers of the Late Period tombs of Iufaa¹⁵³ (Bareš 2008: 222-223, figure 58 & pls. 38a-d) and Menekhibnekau¹⁵⁴ (Bareš 2011: 256-257, figure 313 & pl. 33a-b) at Abusir.

- **Bags**

One or two small bags are sometimes present under the funerary bier either as a single item or in pairs. They typically occur in combination with the ointment jars or the canopic jars. The bags most likely represent green and / or black eye paint, which was employed during the wrapping phase of the embalming ritual.¹⁵⁵ Green and black eye paint was also used during the ritual of the Opening of the Mouth (Willems 1996: 86). As a funerary offering small bags or round jars of green and black eye paint are often included on the object friezes of Middle Kingdom coffins, where they also tend to be labeled (**Figure 19**). Green and black eye paint was also offered to gods as a part of daily temple ritual. According to Cauville (2012: 126), eye paint became a common offering to deities during the Greco-Roman period. Examples can be seen in the temples of Edfu¹⁵⁶ and Dendara.¹⁵⁷ After being purified, fed, and clothed, the god would have been offered eye paint in addition to being anointed

¹⁵³ The faience and pottery ointment jars from Iufaa tomb are inscribed with the names of precious oils.

¹⁵⁴ A small bag shaped alabaster vessel (Bareš 2011: 257, figure 313 & pl. 32b) was found along with the ointment vessels. This round white jar bears a strong resemblance to the bags of eye paint depicted under the bed in the 'mummy on a bier' motif; the context of its discovery, in the burial chamber along with the ointment jars, strengthens this connection.

¹⁵⁵ According to a short inscription on a drop-shaped jar from the embalming cache of Menekhibnekau at Abusir (Cache #1.3 in Appendix 1), green eye paint was used on Day 60 of the embalming ritual, see **Table 4** in Chapter 4.

¹⁵⁶ Located on the west wall of the wabet (Coppens 2007: 204-205).

¹⁵⁷ Located on the west wall of the wabet (Coppens 2007: 205).

with a variety of precious oils and perfumes (Cauville 2012: 115-126).



Figure 19. Eye paint outlined on 12th dynasty coffin of Seni (Cairo Museum JE 32868). Global Egyptian Museum (accessed 2015) <http://www.globalegyptianmuseum.org/record.aspx?id=15360>

- **Canopic vessels**

The four canopic jars are sometimes present under the funerary bed. They are generally presented with their corresponding animal heads (jackal, falcon, baboon, and human). Their position under the bier has been documented in three main ways: the four are lined up under the bier, all facing the head end (typically looking towards the viewer's right side); the four are lined up as described above but one of the jars is placed on the outside of the front legs of the bier (this is most common in scenes that include Anubis tending to the mummy, presumably due to the fact that the god's feet occupy space under the bier); the four jars are placed under the bier with two jars at the head end and two at the foot end of the bier, the pairs face each other. Presence of the canopic jars in the scene does not appear to have any particular relationship with any of the other aspects, they can be present with or without Anubis and other deities nor do they correspond with any of the solar elements or *b3* spirit located above the bier. These canopic jars symbolize the embalmed internal organs of the deceased under the protection of the four sons of Horus.

- **Strips of linen**

Strips of linen are offered to the mummy by the goddesses Isis and Nephthys and the four sons of Horus (**Figure 20**). These deities are lined up at the head and foot of the funerary bed. Each deity holds a long strip of cloth that is folded over once, forming a loop at the top. The linen is most frequently red in color, however, white, blue and green linen strips have also been observed. A variety of forms and colors of linen cloth were crucial to the embalming ritual, both for their practical use in binding the mummy and for their ascribed amuletic functions in providing the deceased with magical protection and healing, as well as the ability to overcome the mummy bindings and regain freedom of movement at the appropriate time after rebirth (Smith 2005: 44-45; Schreiber 2007: 337-340). Funerary rituals that included the use of colored linen cloth included the ‘consecration of the *meret* chests’. This ritual, which developed from the festival of Sokar, involved four linen clothes colored dark red, white, green and red that were stored in four separate chests that were first consecrated and then dragged (Assmann 2002: 365). The same ritual can also be observed from Greco-Roman temples¹⁵⁸ where the four chests of cloth colored red, dark red, white, and green were presented before the gods by the king. The four chests of colored linen symbolized the parts of the corpse of Osiris collected by Isis and Nephthys from across Egypt (Assmann 2002: 365-366; Cauville 2012: 216). Additionally, red linen is frequently recorded on vessels included in Late Period embalming caches (see **Table 4**, Chapter 4). Actual linen remnants are also found

¹⁵⁸ Scenes of linen presented to the gods are found on the rear wall of the wabet in the temples of Dendara and Edfu and in the ‘chamber of linen’ (located north of the ‘seat of the first feast’) at Philae (Coppens 2007: 205).

within the better preserved embalming caches. The frequency of its inclusion¹⁵⁹ in this context indicates the significance of linen, and red colored linen in particular in the embalming ritual of the Late Period.



Figure 20. Four sons of Horus offering linen (National Museums Liverpool 1973.2.456). Global Egyptian Museum (accessed 2015) <http://www.globalegyptianmuseum.org/record.aspx?id=3298>

- **Anubis**

The jackal headed god Anubis acts as the embalmer of Osiris and with only rare exception he stands behind the funerary bed at its mid point. From this position he reaches towards the mummy, generally touching either its face or chest. Anubis applies ointments (sometimes pictured as jars under the bier) for the purpose of reviving the mummy's senses, in particular its ability to breathe. It is worth restating here that Anubis held the role of the lead embalmer, the *hri sst3* or Master of Secrets,

¹⁵⁹ Linen is the most common material found inside embalming caches, see discussion in Chapter 4, section 4.3.2.

who was personally responsible for the portions of the embalming ritual that concerned the head of the deceased.¹⁶⁰ Anubis may also hold a small incense cup above the mummy. In the terms of the Night Vigil, the act of censuring would have been defensive in nature, as the sacred scent served to purify the immediate surrounding area and ward off evil forces (Seth, in the case of the embalming ritual).

- **Isis and Nephthys**

Isis and Nephthys appear at the head and foot of the funerary bier respectively. They can appear as either humans or kites and are each indicated by their names on their heads. They are depicted either in gestures of mourning or offering red linen or *shen* signs to the deceased. The actions of Isis and Nephthys can be read as protective in nature. During the enactment of the *Stundenwachen* Isis and Nephthys lament the death of Osiris through loud cries and lengthy liturgies. Their mourning served the dual purpose of protecting the embalmer's workshop from being compromised by Seth and also to aid the resurrection of Osiris by crying out to him and begging him to return to them (Assmann 2002: 115-118).

- **Four sons of Horus**

The four sons of Horus appear as mummiform figures that stand in pairs behind Isis and Nephthys, facing the funerary bed. There does not appear to be any set ordering of the pairs. These gods often hold linen strips of red, blue or green color. The offering of linen may reference their role as the assistant embalmers to Anubis who were responsible for the internal organs. The role of the four sons of Horus in the

¹⁶⁰ See discussion in Chapter 3.

scene is protective in nature. Their placement at the edges of the scene mimic their positions during the Night Vigil, as they patrolled the perimeter of the embalming workshop in order to prevent Seth from gaining access to the mummy (Reymond 1972: 134; Junker 1910: 4).

CHAPTER 3: EMBALMING IN ANCIENT TEXTS

3.1 Introduction

This chapter will discuss textual sources most useful for studying the Egyptian embalming ritual of the Late through Ptolemaic periods. It will be divided into two main sections. The first half lists sources that provide information about the process of mummification and its associated religious rituals. Although the embalming procedures of the Ritual of Embalming and Apis Embalming Ritual, along with the mythological background and ritual acts of the Osiris Mysteries and accompanying *Stundenwachen* rites were developed much earlier in Egyptian history (their development will also be discussed briefly in the following sections), the best preserved accounts of these date to the Ptolemaic period. The second half of the chapter is devoted to a discussion of the Late through Ptolemaic funerary industry. The sources utilized for this discussion are mainly administrative and legal papyri dating from the Late to Roman periods. For the purpose of this thesis, the structure of the funerary industry at Memphis and Thebes will be the focus of this discussion, since the majority of surviving documents are from these two locations. It also aligns well with the archaeological evidence of Chapter 4, which comes mainly from Memphis and Thebes. Papyri from the Greco-Roman city of Hawara in the Fayum provides additional information the workings of the funerary industry and these will also be utilized when appropriate. While the majority of papyri date to the Ptolemaic period, emphasis will be placed on the documents from the Late Period in order to provide a more direct comparison with the archaeological evidence presented in Chapter 4.

3.2 Textual Sources that describe the embalming ritual

The following section briefly introduces the main textual sources that address the embalming ritual. These are arranged in order of their direct relevance to the subject of embalming. The first two, the Ritual of Embalming and Apis Embalming Ritual, provide the most detail concerning both the technical aspects of mummification and the accompanying religious processes and rites. The next source to be discussed, the accounts of classical authors Herodotus and Diodorus, are primarily useful for examining the initial stages of mummification, as well as the organization of the funerary industry (particularly the interactions with embalmers), and the reaction to death within Egyptian society. Although Herodotus and Diodorus were outside observers not fully understanding the structure of the religious concepts and mythological background of the death and revival of the god Osiris from which Egyptian funeral rites were based, their accounts are intriguing in that they provide a more literal description of the activities that occurred in an Egyptian community following an individual's death. Finally, the Osiris Mysteries of the Khoiak festival and the *Stundenwachen* (Hourly Vigil) will be examined. These are useful for understanding the mythological framework for the embalming ritual. These festivities were celebrated in the temple and were intended to impart the same regenerative force upon the land of Egypt that had revived Osiris in the mythological account. This was accomplished by re-enactment of these life-giving rites of embalming provided to the deceased Osiris by the gods (including Anubis, Horus, Thoth, Isis and Nephthys) and protective force with which he was surrounded in the embalming chamber by numerous funerary genii. Although the Osiris Mysteries do not involve actual mummification, they are crucial for our understanding of

many ceremonies and religious acts that accompanied the embalming process. These religious concepts, more so than the technical aspects of preserving the corpse, were what Egyptians believed made the embalming ritual effective in restoring life to the deceased and the driving force behind its use as part of the funeral preparations.

3.2.1 Ritual of Embalming

The most complete version of the Ritual of Embalming is preserved on P. Boulaq 3, a demotic document dating to the mid first century AD. It describes the human embalming ritual from the point at which the newly desiccated mummy is washed and then wrapped. Unfortunately, the beginning stages of the ritual are missing. Fragments of the Ritual of Embalming have also been identified on other demotic papyri of the first century AD, including P. Louvre 5158, P. Durham 1983.11, and P. St. Petersburg 18128.¹⁶¹ P. Boulaq 3 describes eleven stages of the embalming ritual. Each stage is divided into two parts that include the actions to prepare the physical body and the sacred spells that were to be recited after¹⁶² every step in the mummification process.

The copy of the Ritual of Embalming on P. Boulaq 3 was a funerary text to be placed with the deceased in the grave, much like the afterlife texts used during the Late and Greco-Roman periods such as the Book of the Dead and the Book of Breathing.¹⁶³ Spaces were left in the manuscript for the name of the deceased that were filled in by a different hand for a

¹⁶¹ For the most recent publication of the Ritual of Embalming including translation and commentary for P. Boulaq 3, P. Louvre 5158, P. Durham 1983.11 and P. St. Petersburg 18128, see Töpfer 2015. Also see Smith 2010: 215-244 (P. Boulaq 3 only) and Goyon 2000: 17-84 and Sauneron 1952 (P. Boulaq 3 and P. Louvre 5158).

¹⁶² Smith (2010: 218) suggests that the recitations occurred after and not during the actions since the order of each of the eleven sections of the text introduce a technical direction first followed by the spell along with instructions to recite it after the technical portion had been carried out.

¹⁶³ For the Ritual of Embalming as an afterlife text see Töpfer 2015: 353-370.

certain Theban priest named Hatres, son of Harsiesis and Thaus.¹⁶⁴ Some of the spaces were left blank but each of them are preceded by the title Osiris of the god's father written in the same hand as the main text, which leads Smith (2010: 217) to suggest that use of the Ritual of Embalming as a funerary text was restricted to individuals of priestly rank.

These spaces left for the name of the deceased suggest that, like other funerary papyri, this document was purchased on behalf of Hatres for his burial. However, Smith (2010: 224) suggests P. Boulaq 3 may have served a dual function. The document includes short notations above each column of text that provide a kind of guide to the various stages of the embalming ritual, indicating it could have originally been a sort of instruction manual for officiates¹⁶⁵ before being used as a funerary text for Hatres. Smith (2010: 224) also suggests that since Hatres held the title of Overseer of Mysteries he may have been an embalmer himself and perhaps P. Boulaq 3 had always belonged to him.

3.2.2 Apis Embalming Ritual

The Apis Embalming Ritual has been preserved on P. Vindob 3873,¹⁶⁶ a demotic and hieratic document dating to the second half of second century BC (Vos 1993: 7). This papyrus may be a copy of an earlier document, which would explain the mix of hieratic and demotic writing. Vos (1993: 12) suggests the prototype for P. Vindob 3873 dates to the Saite period (26th dynasty), a time when popularity of the Apis bull cult had intensified. P. Vindob 3873 represents the most complete first-hand documentation of the ancient Egyptian

¹⁶⁴ Titles held by Hatres include god's father, god's servant of Amun-Re king of the gods, god's servant of Bastet who dwells in Thebes, arch-priest on his (appointed) day, overseer of the mystery, and purifier of the god (P. Boulaq 3: 4.3, 9.18-19, 10.20-21; Smith 2010: 216).

¹⁶⁵ Janot (2011: 182) suggests that this document may have been a copy of a much earlier embalmer's handbook such as that mentioned in the Edwin Surgical Papyrus.

¹⁶⁶ See Vos 1993 for a translation and commentary of P. Vindob 3873.

embalming ritual as carried out for the sacred Apis bull located at Memphis. The papyrus details almost the entire ritual period of mummification, from very shortly after the bull's death where the animal was removed from its stall in the temple of Ptah, until the Day 69 when the ritual was very nearly completed. Unfortunately, the text ends before describing the activities of Day 70, the final day of the prescribed ritual period,¹⁶⁷ or the funeral of the Apis bull. Although P. Vindob 3873 describes the mummification of a sacred animal instead of a human, it is critical to our understanding of the human embalming ritual as it reveals more detail than any ancient Egyptian document about the steps prior to wrapping, particularly the time spent in the Tent of Purification and the removal of the internal organs.

3.2.3 Classical authors: Herodotus and Diodorus

Much of our knowledge on the process of embalming in ancient Egypt comes from two Classical sources: Herodotus (approximately 450 BC) and Diodorus Siculus (approximately 60 BC). Book Two of the Histories by Herodotus mentions the process of mummification in Egypt. Herodotus describes how the relatives of the deceased commissioned the work of the embalmers, who offered three different types of mummification that varied in both price and quality of service (Herodotus 2.86-88). He then provides a detailed description of each of these three options from the most elaborate and expensive to the cheapest and lowest quality service. In his account, Herodotus focuses on the technical details of the mummification process and mentions very little of the religious concepts that influenced the embalming ritual. The closest he comes to discussing religious aspects of mummification is his

¹⁶⁷ It is important to note that the same 70 day period as described for human mummification is utilized for the embalming ritual in P. Vindob 3873. This suggests the document emphasizes a re-enactment of rites given to Osiris (Vos 1993: 7, 30-31) over the actual protocol for mummifying a large animal. The timeframe for the embalming ritual has been discussed in detail in Chapter 1.

observation that embalmers kept a wooden model resembling the god Osiris that approximated the highest quality embalming service; Herodotus refers to Osiris as ‘the god whose name it would be sacrilegious of me to mention in this context’(Herodotus 2.86). Diodorus Siculus mentions the embalming ritual in his first book of the *Bibliotheca Historia*. He provides more information on the roles of the embalmers, both in the mummification process and in society, than Herodotus. Unlike Herodotus, Diodorus documents more of the ritual aspects of embalming than the technical details of the process. Diodorus is particularly focused on the reaction to death in Egyptian culture, including a description of acts of grieving displayed by the community immediately followed a person’s death (Diodorus 1.91.1-3), the ritual abuse suffered by the embalmer who made the incision on the corpse for organ removal (Diodorus 1.91.3-4), and the arrangements made for burial following mummification (Diodorus 1.92.1-5). As far as his description of mummification, Diodorus focuses on the treatment of the internal organs (Diodorus 1.91.308-313). Curiously, Diodorus does not discuss the wrapping stages of the embalming ritual at all and Herodotus makes only a brief mention that the body was wrapped in linen (Herodotus 2.86). The following section discusses textual sources that describe religious rites that were based on the mythical account of the god Osiris. The embalming ritual is featured prominently since it was critical to the reanimation of Osiris. For this reason these particular sources provide us with crucial details concerning the religious significance that surrounded the embalming ritual.

3.2.4 Osiris Mysteries of the Khoiak festival

The Osiris Mysteries occurred during the Khoiak festival, a religious celebration held during the month of Khoiak that focused on the gods Osiris (*hnty-imntyw*) and Sokar as well as the 16 dismembered limbs of Osiris (Mikhail 1983: 98). At this time the events of Osiris's death, mummification, funeral, and resurrection were re-enacted. The Osiris Mysteries describe rites provided for the deceased Osiris, which allowed him to return to life after his murder. Accordingly, the activities that occurred in the embalming workshop were central to this event. The embalming ritual for humans imitated the rites given to Osiris in order to liken the deceased to this deity and allow them to achieve the same revivification from the dead. Thus, examining the events that occurred during the Osiris Mysteries of the Khoiak festival will provide greater insight into the mythical aspects of the embalming ritual and aid in our understanding of many of the religious rites that accompanied the physical process of mummification.

Evidence spans from the Middle Kingdom through Greco-Roman period for the Osiris Mysteries that occurred during the Khoiak festival (Mikhail 1983: 51). Centrone (2009: 161) states that its performance and meaning were affected by political, religious and cultural changes in Egypt throughout time. She also suggests there may have been regional variations in the Khoiak festival across Egypt (Centrone 2009: 161). The most thorough documentation of the Khoiak festival is from the Osiris roof chapels of the temple of Hathor at Dendera (for this temple see Cauville 1997). The text details the entire ceremony and it is inscribed on 3 walls in the courtyard of the Osiris chapel, located north east of the terrace of the Hathor temple (Centrone 2009: 162). The texts at Dendera center on the creation of grain

mummies of Osiris and Sokar, but also include background on the death of Osiris by drowning, his dismemberment, and his resurrection (Mikhail 1983: 57).

The Khoiak festival at Dendera began on 12 Khoiak and lasted until the end of the month. On the first day, an Osiris mummy and its separate limbs are made out of sand and grain mixed with water. The grain Osiris is placed in a golden mold that is stored with the limbs inside a stone box. A pink granite basin is placed underneath the box to catch run-off water (Centrone 2009: 162). The grain Osiris was watered and covered with reeds daily until 21 Khoiak, when it was removed from its mold and shaped into a mummiform figure, anointed with myrrh and allowed to dry in the sun. On 22 Khoiak the Osiris mummy was taken in procession to the necropolis, which included a nautical voyage upon the sacred lake of Dendara (Centrone 2009: 163-164). The grain Osiris was buried in a crypt from which the previous year's grain mummy was retrieved. On 30 Khoiak the year-old grain mummy was given a final burial (Centrone 2009: 165).

The Sokar mummy was made on 14 Khoiak. Unlike the Osiris mummy, its main component was not grain. Instead it was from a mixture of soil, dates, resins, incense, fragrant plants, precious metals, and ground gemstones. On 16 Khoiak this mixture was poured into a golden mold and placed on a gold bed within a chamber made from pine wood and lined with reed matting that was called the 'Festive Hall of the Garment'. The Sokar mummy was removed from its mold, anointed, and placed in the sun to dry from 19 to 23 Khoiak (Centrone 2009: 163-164). On 24 Khoiak the Sokar mummy was placed inside a cedar coffin covered with four shrouds and taken for burial in the 'High Chapel'. The previous year's Sokar was removed from this location and given fresh linen wrappings before its final

burial in the ‘Crypt of the Tamarisks’ on the last day of Khoiak (Cnetrone 2009: 164).

A detailed description of the mythical setting of Osiris’s embalming ritual is provided in P. MMA 35.9.21 in a section of the document referred to as ‘The Ceremony of Gloryifying Osiris in the God’s Domain’ (Smith 2009: 135). This text was originally utilized during the Osiris Mysteries but was appropriated by private individuals as part of their funerary texts. P. MMA 35.9.21 was a funerary papyrus copied in hieratic for the priest Imuthes during the early Ptolemaic Period (Smith 2009: 67-68). P. MMA 35.9.21 (18.14-19.4) describes a mythical embalming ritual of the deceased Imuthes, who plays the role of Osiris, and lists the many gods and goddesses that came to his aid to protect him in this vulnerable state and restore him to life. This account is told from the perspective of the goddess Isis. These passages are as follows:

Hail Osiris foremost in the West, Osiris of this Imuthes, justified. In view of that deprivation which occurred on the first occasion, one will make an embalming chamber in Busiris for you, in order to heal you and make your odour pleasant. Anubis will be appointed for you to appear in the precinct of the embalming chamber for his rites, while I and your sister Nephthys light a torch for you at the entrance of the embalming chamber to overcome Seth at night. Anubis comes forth in the precinct of the embalming chamber to cast down your enemies each day. The mourners will act for you, waiting for you, while your son Horus fells the rebels and places fetters upon Seth. The gods stand in mourning at the great injury which befell you. They will send cries forth to the sky until those who are in the horizon hear the goddesses in the act of wailing and moaning when they see what one did to you.

Thoth stands at the entrance of the embalming place chanting from his rituals in order to make your ba live each day.¹⁶⁸

Another source that provides a description of the Khoiak festival is P. Jumilhac (translated by Vandier 1961), which dates from the end of the Ptolemaic period to the early Roman period. It describes the Osiris myth and the Khoiak festival as it occurred in the 18th nome of upper Egypt (Centrone 2009: 171). Focus is placed on the restoration of the dismembered limbs of Osiris from 19 to 30 Khoiak. It also provides us with a little-known mythical account of the events that occurred in the embalming workshop, where Seth sneaks in disguised as Anubis to steal the corpse of Osiris but gets caught and punished. Seth tries again, but Anubis catches him soon after he enters the embalming workshop.

3.2.5 *Stundenwachen* texts (including temple and funerary)

The *Stundenwachen*, or Hourly Vigil, describes the preceding night and day before the funeral.¹⁶⁹ During the twelve hours of the night, the mummification ritual of Osiris is re-enacted within the embalming workshop. At the same time, the mummy is guarded in order to prevent Seth from entering the workshop and stealing the body of Osiris.¹⁷⁰ The protective gods and genii that watched over the body of Osiris during the night (while he was in the embalming workshop) include the four sons of Horus, *hnty niwtj*, *ndhđđ*, *kd k3*, *nn rdi-n-fnbj tf* and *šsmw*, Isis, Nephthys, Tefnut, Nut, *šhmt*, Bastet, Wadjet, Neith, and Serquet (Mikhail 1983: 86). According to Mikhail (1983: 86) '[The *Stundenwachen*] represents the

¹⁶⁸ P. MMA 35.9.21 (18.14-19.4), translated by Smith 2009: 141.

¹⁶⁹ The *Stundenwachen* was available to both royal and non-royal deceased (Smith 1987: 25).

¹⁷⁰ For the dual nature of the *Stundenwachen* incorporating both protective rites and embalming rituals, see Assmann 1972: 127-129; Assmann 1977; Assmann 1979: 58-59; and also Smith 1987: 24-25.

critical moment of the preparation of the resurrection including the fight against Seth'. Aside from its role in funerary rites, the *Stundenwachen* was also adapted for use in the temple context, specifically for the above mentioned Osiris Mysteries during the Khoiak festival.¹⁷¹

Textual and pictorial evidence for the *Stundenwachen* come from a variety of sources of both temple and funerary contexts. The most detailed descriptions of the *Stundenwachen* are found in the Osiris chapels of the temples of Dendara, Edfu, and Philae.¹⁷² The burial chambers of certain Late Period tombs are arranged to mimic the embalming workshop during the *Stundenwachen* (Thomas 1980: 241-269). Another type of visual representation of the protective *Stundenwachen* can be seen on coffins dating from the Late through Ptolemaic periods (Elias 2014: 125-136). A number of papyri also detail the *Stundenwachen*; including P. Jumilhac (mentioned above), P. Rhind 1 and 2 (late Ptolemaic Period), P. BM 10507 (first century BC), and P. Harkness (first century BC).

3.3 The funerary industry of Late through Ptolemaic Memphis and Thebes

The Late Period cemeteries were staffed by communities of necropolis workers that provided various funerary services. These included embalming, funeral arrangements and the continuation of offerings and funerary rites for the deceased after their burial. The surviving documents left by these professionals record property bought and sold by necropolis workers, transactions between themselves and their patrons, the establishment of professional guilds and rules of conduct, as well as any lawsuits or other legal matters filed. From these papyri we gain a better understanding of the workings of the funerary industry

¹⁷¹ For this use of the *Stundenwachen* see Junker 1910; Goyon 1971: 158; Mikhail 1983; Centrone 2009; Pries 2011.

¹⁷² For the *Stundenwachen* scenes and text in these temples, see Junker 1910 and Pries 2011.

during the Late and Ptolemaic periods, including the roles of embalmers both professionally and in society, how embalming services were arranged and managed, and the various stations within the necropolis the deceased were taken to prior to burial.

Certain issues arise in utilizing textual sources in a study of the funerary industry. Most of the surviving documents focus on the various economic and legal matters and unfortunately do not often describe the duties of the funerary profession in detail. Few documents can be dated to the Late Period with confidence, all of which come from the Theban necropolis. The majority of the surviving Late Period records come from the archives of two families of Theban funerary service providers. These include a group of 21 papyri that are now in the Louvre and two papyri currently in the British Museum, which comprise the archive of Djekhy and his son, Iturech (672-533 BC) and 17 papyri from various museum collections that belonged to the female undertaker, Tsenhor and her family (556-487 BC).¹⁷³ In addition, several papyri dating to the Late Period have been published by Malinine (1953) and Cruz-Urbe (1979, 1980, 1985, 2000) that mention the activities of the necropolis workers.

Most of the surviving documents pertaining to the funerary industry and its workforce date to the Ptolemaic Period. Unlike the Late Period material, which originates only from Thebes, there are Ptolemaic family archives of undertakers and embalmers from across Egypt. The bulk of documents come from Memphis, Hawara, and Thebes. Cannata (2009: 2) has divided the archives from Memphis into three groups: the Earliest Archive (305-4

¹⁷³ Donker van Heel (2014: 8) classifies the papers of Tsenhor as a dossier since they were grouped together in modern times based on related content.

BC),¹⁷⁴ the Second Archive (276-256 BC),¹⁷⁵ and the Third Archive (226-65 BC).¹⁷⁶ The Hawara Undertakers Archives (365-30 BC) consist of a group of 81 papyri including 76 documents written in demotic and five in Greek. The papyri belong to four families of necropolis workers from the Fayum village of Hawara.

The Theban family archives include those of Pechutes (334-199 BC), Psenminis (317-217 BC), Teianteus (315-276 BC), Horos and his son Osoroeris (182-98 BC), Pechutes and his son Panas (150-112 BC), Amenothos son of Horos (291-101 BC) and Totoes (189-100 BC). The majority of these archives were kept by men and women that held the position of *w3h mw*, a type of undertaker that will be discussed in detail below. Only the Theban archive of Amenothos son of Horos belonged to a family of embalmers.

Previous research into the funerary industry focused specifically on the Late Period is scarce. Main works include the doctoral thesis of Donker van Heel (1995), a translation and commentary of the abnormal hieratic and early demotic papyri from the Theban archive of Djekhy and his son Iturech. Pestman and Vleeming (1994) published a translation of the papers of Tsenhor, which provides a description of the structure of the Late Period Theban funerary industry. Two volumes based on these Late Period archives, *Djekhy and Son: doing business in ancient Egypt* (Donker van Heel 2012) and *Mrs. Tsenhor: a female entrepreneur* (Donker van Heel 2014) provide additional discussion of the lives of Theban

¹⁷⁴ Includes: P. Louvre 2412 and P. Bib. Nat. 226.

¹⁷⁵ Includes: P. Brussels E 6033 (276-5 BC), P. BM EA 10381 (276-256 BC), P. Leiden I 379 (256 BC).

¹⁷⁶ Includes: P. Leiden 381 (226 BC), P. Leiden I 373b-c (204-3 BC), P. Louvre 2408 (197 BC), P. Louvre E 3266 (197 BC), P. Sallier 3 (185-6 BC), P. Louvre 2409 (184 BC), P. Wien 3874 (149-8 BC), P. Hermitage 1122 (135 BC), P. BM EA 10384 (132 BC), P. Leiden 373a (129 BC), P. Forshall 41 (124 BC), P. BM EA 10398 (119 BC), P. Pavia 1120 (118 BC), P. Forshall 42 (97-6? BC), P. Leiden I 374 I-II (78 BC), P. BM EA 10229 (78 BC), P. Florence 8698 (77-6 BC), P. Innsbruck (P. Wien 9479) (75 BC), P. Louvre 3268 (73 BC), P. Louvre 3264^{ter} (73 BC), P. Louvre 3264 (65 BC), P. Louvre 2411 (65 BC), P. Leiden I 380a-b (65 BC).

necropolis workers during the Late Period.

Scholarship focused on the necropolis workers of Ptolemaic Egypt is also limited. The foremost study of the subject is the doctoral thesis of Cannata (2009a), which focuses primarily on demotic documents relating to funerary industry from Thebes, Memphis, Fayum, Middle Egypt, and Edfu. This work investigates the organization of the necropolises in general and the role of the necropolis workers in the practical matters associated with death and burial, including embalming, funeral, burial, and mortuary cult. Another publication that takes into account sources from across Egypt is a survey by Derda (1991), utilizing Greek sources to identify and describe the various necropolis workers during the Ptolemaic Period.

A number of studies have been published that focus on the Theban Necropolis. For the purpose of my study, the most notable of these are Bataille (1952) and Pestman (1995). Bataille (1952), the most comprehensive study of the Theban necropolis during the Greco-Roman Period to date, provides a socio-economic study of Menmonia (Djeme) in western Thebes that takes account of the Theban funerary industry, with emphasis on the subject of embalming. Pestman (1995) includes translation and commentary of the family archives of Horos and his son Osoroeris (182-98 BC) and Pechutes and his son Panas (150-112 BC). The volume also discusses the social and professional aspects of the lives of the Theban necropolis workers during the 2nd century BC.

Two key publications are dedicated to the Memphite necropolis. Thompson (1988) is a socio-economic study of Ptolemaic Memphis. A chapter of this volume is dedicated to the

funerary industry, which is reconstructed based on the demotic records. Martin (2009) examines a collection of demotic texts from the Memphite necropolis, including discussion of titles and functions of the necropolis worker, the types of payment received for funerary services, and a reconstruction of the topography of the necropolis.

Another notable contribution is that of Uytterhoeven (2009), which is focused on the cemetery of Hawara in the Fayum. The volume is notable in that it brings together both the textual and archaeological sources pertaining to Greco-Roman Hawara in order to provide a more detailed reconstruction of the village and its necropolis than would be possible by relying solely on documents.

3.4 Titles of the necropolis workers of Memphis and Thebes

Embalmers are referred to in Late Period Theban texts as *wjt*¹⁷⁷ (embalmer) or *hrj-ḥb*¹⁷⁸ (lector priest). Originally these two terms were distinguished by their functions in the embalming ritual, where the *wjt* was responsible for the mummification of the corpse and the *hrj-ḥb* read the religious recitations that would have taken place during the embalming ritual. Embalmers were also sometimes called *swnw.w*¹⁷⁹ (doctors) or *ks*¹⁸⁰ (embalmers) in demotic texts of Ptolemaic Thebes (Pestman 1993: 6; Cannata 2009a: 267-294). Ptolemaic documents written in Greek¹⁸¹ use the titles of doctor, lector priest, or embalmer interchangeably to refer to funerary workers and priests involved in carrying out the

¹⁷⁷ Helck 1986: 911-913; P. BM 10113: 1.1; WB I 378.

¹⁷⁸ Otto 1975: 941-943; P. Louvre E 2432: 1.2, 2.10, 2.13;

¹⁷⁹ P. Amherst dem. 50: 3.1 recto where Pestman (1993: 230) suggests the title *swnw* when applied to the brothers Chensthotep and Teos more likely indicates embalmers than doctors. His reasoning is based on P. Leiden 417 = UPZ 177, a Greek translation of the demotic text of P. Berlin 5507, where *swnw* is translated as embalmer (UPZ 177 recto 23); also see Cannata 2009a: 267-268.

¹⁸⁰ For a discussion of the meaning of the term *ks*, see Cannata 2007: 21-42.

¹⁸¹ See Cannata 2009a: 294, Table 10 for a list of these documents and the titles used for embalmers.

embalming ritual (Cannata 2009a: 294). Demotic documents from Memphis dating to the Ptolemaic Period use the title, *htm̄w n̄tr*¹⁸² (god’s sealer), the common designation for necropolis workers of Memphis and the Fayum that incorporated the roles of both embalmer and lector priest; and this title is often rendered *htm̄w n̄tr wjt*¹⁸³ (god’s sealer and embalmer) at Hawara specifically (Martin 2009: 29-31; Uytterhoeven 2009: 363-364, Cannata 2009a: 1-8, 58-60, 64-67). As Uytterhoeven (2009: 364) explains: ‘The accumulation of the title of the lector-priest with the titles referring to the actual embalmment illustrates that the original strict distinction between the various specialists involved in the mummification no longer existed in the Late and Ptolemaic periods and that the different responsibilities were combined now by one and the same person’.

Another type of funerary worker that acted primarily as an undertaker, the duties of which will be described in detail in the following section, was known by a number of different titles. The Egyptian title for this undertaker was *w3ḥ mw* (water pourer), which referenced the job of providing libations to the deceased.¹⁸⁴ The *w3ḥ mw*,¹⁸⁵ which was well-known from abnormal hieratic and demotic documents of Late Period Thebes,¹⁸⁶ was first attested from the New Kingdom (Donker van Heel 2012: 60). The Greek term for the *w3ḥ mw*,

¹⁸² See Cannata 2009a: 3-4, Table 1 and Martin 2009: 33-40, Table 1 for lists of demotic documents that include the title *htm̄w n̄tr*.

¹⁸³ P. O.I. 25259; P. Carlsberg 38a-b.

¹⁸⁴ De Meulenaere 1975b: 957.

¹⁸⁵ P. Louvre 10.935; P. Vindob. KM 3853; BM 10.120A; BM 10.120B; P. Bibl. Nat. 216; P. Bibl. Nat. 217; P. Bibl. Nat. 223; P. Turin 2123; P. Louvre 7128; P. Turin 2124; P. Turin 2125; P. Turin 2126; P. Louvre 3231a; P. Turin 2127; P. Turin 2128; P. Louvre E 3228; P. Berlin 3110; P. Louvre 3228; P. Louvre E 7836; P. Louvre E 2432; P. Turin 248; P. BM 10113; P. Louvre E 7839; P. Louvre 7843; P. Louvre 9204; P. Louvre 7861; P. Louvre 7855; P. Louvre 7848; P. Louvre 7844; P. Louvre 7845a; P. Louvre 7845b; P. Louvre 7847; P. Louvre 7846; P. Louvre 7854; P. Louvre 7840; P. Louvre 7842; P. Louvre 7832; P. Louvre 7835; P. Louvre 7838; P. Louvre 7834; P. Louvre 7836; P. BM 10432

¹⁸⁶ See Cannata 2009a: 161-165, Table 5 for a list of documents mentioning *w3ḥ mw* dating to the Late Period.

‘choachyte’,¹⁸⁷ is often used to denote this profession in the modern literature. In Theban demotic documents of the Ptolemaic period individuals having the occupation of *w3h mw* are more commonly referred to by the title *wn-pr*,¹⁸⁸ (pastophoros in Greek) and the term *w3h mw* is only used to describe them if their role as a funerary priest and libationer was in question (Pestman 1993: 427 & 429). The earliest Ptolemaic records from Memphis use the term *w3h mw* in describing the undertakers (Cannata 2009a: 5-8) and this term was likely employed in Late Period Memphis as well. It seems that in Memphis the term *w3h mw* had been replaced with *hmtmw ntr* by the year 129 BC (Cannata 2009a: 8). As noted above, there seemed to be no clear distinction between the various professionals within the funerary industry at Memphis and Hawara in particular, as the title god’s sealer was used to describe both embalmers and undertakers. For the purpose of this chapter undertakers will be referred to as *w3h mw* from this point forward as this is the title used in the available Late Period sources.

3.5 Roles and professional activities of the necropolis workers

3.5.1 Embalmers

There was a division of labor among the embalmers. The earliest records of this were made by Herodotus (2.86), who describes two processes during mummification as ‘slitting’ (referring to cutting flesh) and ‘pickling’. Diodorus Siculus (1.91.4-5) then repeated the description given by Herodotus when he designated two groups of Egyptian embalmers: the

¹⁸⁷ De Meulenaere 1975b: 957

¹⁸⁸ The full priestly title was *wn-pr n imn-ipy n pr imnt n njw.t*, ‘shrine opener of Amenophis in the West of Thebes’ (Vleeming 1995: 243). Alternatively they could be referred to as *iry-ꜣ imn-ipy pr imnt n njw.t*, ‘doorkeeper of Amenophis in the West of Thebes’ (P. Louvre N. 3263, recto 2 & 11), for a translation of this text see Muhs 2010: 439-455.

paraschites (slitters)¹⁸⁹ and the taricheutai (picklers).¹⁹⁰ However, these Greek terms have no Egyptian counterparts.¹⁹¹ Vleeming (1995: 244) suggests that the sharp distinction in the functions of these two groups of embalmers, as highlighted by Diodorus, is likely artificial and that these terms, meaning ‘slitters’ and ‘picklers’ may be the result of a lack of respect for Egyptian culture on the part of the Greeks. Furthermore, only one source, the bilingual archive of Amenothet son of Horos, refers to the embalmers as paraschites and this is suspected to be a copyist error (Pestman 1981: 8). The most detailed account of a team of embalmers working together is described in the Apis Embalming Ritual (P. Vindob 3873). In this case five embalmers are purified before entering the embalming house to begin work on the Apis bull. The group is led by a man called the Master of Secrets¹⁹² (*hrj sšt3*) and four embalmers referred to as lector priests (*hrj-ḥb.w*) assist him (P. Vindob 3873, recto 1.2). Once inside the embalming house the embalmers prepare all the necessary equipment for the mummification. The Master of Secrets calls for the various materials and implements necessary for the procedure and the four lector priests bring these things before him (recto 1.3-9). Then, together the Master of Secrets and lector priests prepare the various types of cloth that they will require (recto 2.1-4). Once both the materials and the bull are ready, the embalmers begin their work. The four lector priests split into pairs each responsible for a different region of the bull. One pair of them is responsible for mummifying the forelimbs and also the chest and body cavity (1.12-13 verso; 3.1-6 verso). The other pair mummifies

¹⁸⁹ Thissen 1982: 910.

¹⁹⁰ Vittmann 1986: 233-235.

¹⁹¹ Vittmann 1986: 234.

¹⁹² This title has been translated a variety of ways. In his translation of the Apis Embalming Ritual Vos (1993) translates *hrj sšt3* as ‘Overseer of Mystery’. The title itself dates back to the Old Kingdom and can be associated with a variety of religious activities including the embalming ritual. For a study of the title *hrj sšt3*, see Beatty 2000: 59-71 and Balanda 2009: 319-348.

the hind limbs as well as the hindquarters and the tail (3.8-13 recto; 1.4-7 verso). After this work was done, the Master of Secrets embalmed the bull's head. The description of the embalming of the head indicates that this operation included both practical and magical aspects (2.11-25 recto; 3.1-5 recto; 1.16-24 verso; 2a.2-28 verso; 2b.1-23 verso; 3.7-20 verso). The Master of Secrets is assisted in his work, sometimes by one or two of the previously mentioned lector priests and sometimes by two *smr* priests¹⁹³ (recto 3.1). In addition to his role in mummifying the bull's head, the Master of Secrets also applies various ointments to the bull (verso 2b.24-25) and is responsible for carrying out the Opening of the Mouth ritual that was performed in the embalming house¹⁹⁴ (recto 4.22). During these ritual activities, the lector priests prepared the various oils and unguents that were required and brought them before the Master of Secrets (1.14-15 verso). Additionally, the four lector priests would themselves be assisted by a number of *wꜥb* priests (Vos 1993: 37). It is clear from this description in the Apis Embalming Ritual that the lector priests were perfectly capable technicians in this procedure; however, they lacked the authority (and perhaps knowledge) in the ritual aspects of the operation that was held by the Master of Secrets. As Vos (1993: 37) explains: 'the Master of Secrets played the role of the embalmer god, Anubis. It was his job to lead the ritual and take responsibility for embalming the most important parts of the body'.

3.5.2 *wꜥh mw*

The *wꜥh mw* as a profession developed during the New Kingdom (Donker van Heel 1992:

¹⁹³ It is unclear if the *smr* priests were two entirely different individuals than those previously assisting the Master of Secrets, see Vos 1993: 37.

¹⁹⁴ This was separate from the Opening of the Mouth ceremony that would be performed during the funeral.

24-26; 2012: 60-67). Prayers and offerings to the dead, in particular the offering of water for which the professional title *w3ḥ mw* takes its name, existed as an important aspect of Egyptian funerary ritual that dates back to at least the Old Kingdom.¹⁹⁵ These provisions were the responsibility of relatives of the deceased, especially the eldest son,¹⁹⁶ who was traditionally tasked with maintaining the funerary cult of his parents and ancestors (Donker van Heel 1992: 19 & 21-22; 2012: 60-61). The first evidence for professional *w3ḥ mw* is attested during the Ramesside Period of the New Kingdom from a group of texts referred to as the ‘Tomb-robberies Papyri’ and a related document, P. Mayer A (Donker van Heel 1992: 25). These records name three kings and two elite “private” individuals who had professional *w3ḥ mw* that ensured libations and offerings were regularly supplied.¹⁹⁷ Additionally, three of the New Kingdom *w3ḥ mw* mentioned by name also have other occupations listed.¹⁹⁸

Although none of the archives provide a detailed job description, many responsibilities of *w3ḥ mw* are mentioned indirectly in these sources. The *w3ḥ mw* acted on behalf of the deceased’s relatives to make the funeral arrangements. Their duties typically included

¹⁹⁵ This funerary ritual might have occurred even earlier, predating written texts in Egypt. The first definitive evidence comes from the Old Kingdom. For a brief discussion of the history of this practice, see Donker van Heel 2012: 58-61.

¹⁹⁶ In the Old Kingdom certain priests, called *ḥmw k3* (ka-servants), were paid to provide the necessary funerary offerings for the elite. Donker van Heel (1992: 19; 2012 60-61) suggests that the professional *w3ḥ mw* of later times were the successors to the earlier *ḥmw k3*.

¹⁹⁷ The kings include Thutmose I (Abbott Dockets, B, 13), Thutmose IV (P. Amherst, 3.4; P. Leopold II, 2.3; P. BM 10054 Verso 1.7-8), and Ramesses IV (P. BM 10052, 4.26-27). The private individuals are Amenhotep, son of Hapu (P. BM 10053 Recto 6.1 & 6.5) and an unnamed first prophet of Amun (P. BM 10053 Recto 3.4 & 4.7); see Tables II-IV in Donker van Heel 1992.

¹⁹⁸ See Tables III & IV in Donker van Heel 1992; a man named Kerbaal is described as a slave and baker (P. Mayer A 9.9) and also a slave and *w3ḥ mw* (P. Mayer A 12.21), while the title of carpenter is also used to describe Ahauty and Pentahutnakhte, two *w3ḥ mw* attached to the cult of Amenhotep, son of Hapu (P. BM 10053 Verso 4.16; P. BM 10054 Verso 2.5-6). Donker van Heel (1992: 26; 2012: 65) notes that the context of the documents where these individuals are mentioned is the investigation of tomb robberies and each has been accused of criminal activity.

delivering the body to an embalmer¹⁹⁹ and purchase of necessary materials for mummification,²⁰⁰ as well as obtaining a burial place,²⁰¹ and transporting mummies to the tomb.²⁰² After the funeral, the *w3h mw* maintained the cult of the deceased through regular²⁰³ visits to the burial place to provide offering such as water, food, and prayers.²⁰⁴

w3h mw were paid for their services by relatives of the deceased²⁰⁵ and they continued to provide for the mummies until payments stopped (Pestman 1993: 7). The length of time mummies received offerings varied (Pestman 1993:7). The compensation a *w3h mw* received per mummy is not known but it was probably not substantial since *w3h mw* normally cared for many mummies concurrently. Records of the individual mummies and / or tombs that the *w3h mw* looked after are known for both the Late and Ptolemaic periods. Late Period evidence includes five tombs contracted to the *w3h mw* Djekhy and his son Iturech in P. Louvre 7848, P. Louvre 7836, P. Louvre 7843 & P. Louvre 7839.²⁰⁶ Ptolemaic evidence includes the mummy lists belonging to the Theban *w3h mw* Horos and his descendants,²⁰⁷ the previously mentioned Memphite Undertakers Archives,²⁰⁸ and the Hawara Undertakers

¹⁹⁹ For *w3h mw* performing this task in the Ptolemaic Period, see Cannata 2009a: 21, 76-79, 225-227.

²⁰⁰ For discussion on the role of the *w3h mw* in procuring embalming materials for their clients in the Ptolemaic Period, see Cannata 2009a: 22, 80-82, 227-228.

²⁰¹ After leaving the embalming workshop the mummy may have been taken to either its final burial place or a temporary storage place owned by the *w3h mw*. Mummies would remain in storage until arrangements were made for the burial. For the Late Period see: P. Louvre E 7843 line 3; also Pestman 1994: 13 note 2; Donker van Heel 2001: 21 & 199 note III. For Ptolemaic Thebes, see Pestman 1993: 439; Cannata 2009a: 216-224.

²⁰² Donker van Heel 2014: 21-22; This would have also included payment of the tax to enter the necropolis to the Overseer of the Necropolis, see below.

²⁰³ *w3h mw* attended to each mummy at least once a ‘week’ (ten days in ancient Egypt) and possibly on other notable occasions, see Donker van Heel 1992: 26-30 & 2014: 14.

²⁰⁴ For *w3h mw* providing for the deceased in Late Period Thebes see, Pestman 1994: 10-14; Donker van Heel 2001: 21. For Ptolemaic Thebes, see Pestman 1993: 6-7; Vleeming 1995: 248-251; Cannata 2009a: 237-242.

²⁰⁵ Pestman (1993: 7) explains that in the case of ‘blessed’ mummies (called *hsj*) other people may also make payments to the *w3h mw*.

²⁰⁶ For translation and commentary of these texts see Donker van Heel 2001: 93-101, 192-200 & 216-22.

²⁰⁷ See Pestman 1993: 444-456, 475-484.

²⁰⁸ See Cannata 2009a: 2 and Martin 2009: 68-185.

Archives.²⁰⁹ The *w3ḥ mw* would sometimes be granted arable land from families that employed them, however this arrangement is only known from Late Period sources.²¹⁰ Revenue from the land was used to perpetuate the cult of the deceased. Additionally, the *w3ḥ mw* were allowed a salary from these estates (Donker van Heel 2014: 31-32). It was possible for *w3ḥ mw* to share the rights²¹¹ to both individual mummies and whole tombs full of burials (Donker van Heel 2001: 27-28). In this case each *w3ḥ mw* involved was entitled to a fraction of the payment for funerary services for a mummy or tomb.²¹² *w3ḥ mw* could trade or inherit the rights to mummies under their care.²¹³

The *w3ḥ mw* of Thebes were organized into a cult-guild, referred to in the modern literature as the Association of Theban Choachytes. The earliest evidence of this organization comes from the Late Period and survives in a single document, P. Louvre 7840 that dates to 542-538 BC (Donker van Heel 2001: 24). The purpose of the Association was to maintain order and encourage solidarity among the Theban necropolis workers (Donker van Heel 2001: 24). From this document we learn that the Association of Theban Choachytes held regular meetings for its members, which included notable dates such as the birthday of Amenhotep son of Hapu, the patron deity of this cult-guild, and the beginning of the new year (Donker van Heel 2001: 144-168). Meetings included festivities such as drinking beer and banqueting (Donker van Heel 2001: 157-158, col. VII A1-7 verso).

²⁰⁹ See Uytterhoeven 2009: 505-540.

²¹⁰ For examples of land granted to *w3ḥ mw* as endowment for funerary cults see P. Louvre E 10935, P. Louvre E 3231A, P. Louvre 7836, P. Louvre 7839.

²¹¹ Often these sharing partners were relatives, see Donker van Heel 2001: 28-36.

²¹² Late Period examples of shared rights to burials include: P. Louvre 7848, P. Louvre 7843, P. Turin 2127

²¹³ Late Period example: P. Turin 2126

3.5.3 Overseers of the Necropolis

The Overseer of the Necropolis (*mr-h3s.t*)²¹⁴ was an official mainly responsible for maintaining order in the necropolis. He acted as an intermediary between the necropolis workers and the temple (Donker van Heel 1996: 25). The Late Period records of the office Overseer of the Necropolis are exclusively from Thebes, where the Overseer of the Necropolis represented the Domain of Amun (Donker van Heel 1996: 25). This office appears to have been inherited in late dynastic Thebes as all documented Overseers of the Necropolis came from one family (Donker van Heel 1996: 25). During the Ptolemaic Period the office was held by lector-priests for a set amount of time, after which they could name a replacement (Cannata 2009a: 362-363). The main duty recorded for the Overseer of the Necropolis was the collecting of a tax placed on bodies brought in to the necropolis.²¹⁵ This tax is often referred to by *w3h mw* in their archives, as it was their responsibility as undertakers to insure transport of the deceased from the settlement to the necropolis and payment of the toll to the Overseer of the Necropolis.²¹⁶ The amount of the tax is not recorded in the Late Period sources. The tax is simply called, “the commodities which are [customarily] given to the overseer of the necropolis”, (P. Louvre 7850: recto 4-5).²¹⁷ P. Louvre 7850, written in 533 BC, may provide some insight as to the economic value of the tax of the Overseer of the Necropolis during this period, as it details a transaction where

²¹⁴ Late Period examples: P. Bibl. Nat 216 (4 verso); P. Bibl. Nat 217 (4 verso); P. Louvre 7128 (1 recto); P. Louvre 7848 (recto 8); P. Louvre 7847 (recto 9); P. Louvre 7840 (recto 1a.2-3, 2.20, 2a.8, 5.5, 6a.8, 8.13); P. Louvre 7832 (verso 10); P. Louvre 7836 (recto 9); P. Louvre 7839 (recto 12); P. Louvre 7850 (recto 1 & 5).

²¹⁵ This tax is only recorded in documents from Thebes for both the Late and Ptolemaic Periods (Depauw 2000: 64), therefore we cannot be certain if it was applied elsewhere in Egypt and if so, whether the amount was similar to that of Thebes.

²¹⁶ This tax was paid by the choachytes on behalf of the family of the deceased, see P. Louvre 7850 (recto: 3-5) which states the son of the deceased paid the tax for his father ; also see brief discussion in Donker van Heel 2014: 21.

²¹⁷ Donker van Heel 1996: 25 & 223.

Overseer of the Necropolis Peteamon son of Djeho accepted a red bull as payment of this tax for the burial of Petehorpebik (recto: 3-5). Since this bull was considered satisfactory payment of the tax, we can assume the monetary value of the tax must have been comparable to the price of a red bull during the reign of Amasis. In the early Ptolemaic Period this tax was half a kite of silver (Vleeming 1995: 254; Depauw 2000: 64) until it was raised by one obol during the reign of Ptolemy III (Depauw 2000: 64). We know from the archive of Djekhy and Iturech (P. Louvre E 7840 in particular) that the Overseer of the Necropolis also worked as a scribe, often drawing up and witnessing legal contracts on behalf of other necropolis workers (Donker van Heel 1996: 25 no. 9, 51-57; 2014: 134).

3.6 Social aspects of the lives of necropolis workers

Unfortunately we have no written records dating to the Late Period that describe where exactly the embalmers lived. However, a few Ptolemaic documents shed some light on the subject. P. Tor. Amenothos states that the Theban embalmer Amenothos owned a house in Djeme, more precisely in an area called Pakeis. This Pakeis is thought to have been located between the two enclosure walls of Medinet Habu (Pestman 1993: 422-423), however this has yet to be verified. Since we know that a community of *w3ḥ mw* lived in Djeme during the Ptolemaic Period, it seems reasonable to assume that other necropolis workers, such as embalmers made their home there too. It is uncertain whether Amenothos also practiced his trade in Pakeis, although one possible interpretation of this name is ‘place of embalming’²¹⁸ (Pestman 1993: 422). A community of necropolis workers, including both *w3ḥ mw* and embalmers resided in a district of northern Thebes referred to as the ‘House of the Cow’

²¹⁸ For a detailed study on the meaning of the word *ks*, see Cannata 2007: 21-42.

from the late third century BC until 175 BC²¹⁹ at which time this community is believed to have moved to the west bank, most likely to the community at Djeme (Pestman 1993: 7-9). This earlier community in the ‘House of the Cow’ may have dispersed as the result of a decree by a royal physician²²⁰ that ordered embalmers²²¹ to leave the city of Thebes for reasons of public health.

²¹⁹ Depauw (2000: 53) identified ten men and three women that held titles of either choachyte or *wn-pr* ‘*Imn-ipy n pr imnt n nw.t*’ and 8 men who held lector-priest titles from the ‘House of the Cow’ between 330 and 170 BC.

²²⁰ This proclamation is mentioned in papyrus no. 48 of the choachyte’s archive, however this same document also states that the embalmers did not actually obey this demand and remained in Thebes (Cannata 2009a: 304; Pestman 1993: 7-9).

²²¹ According to Pestman (1993: 7) the title used to identify embalmers in this decree is the Greek term *taricheutai*.

CHAPTER 4: ARCHAEOLOGICAL EVIDENCE FOR EMBALMING

4.1 Introduction

The focus of this chapter is on the archaeological evidence associated with the Egyptian embalming industry of the Late through Ptolemaic periods. Architectural and material remains associated with the embalming ritual and the funerary industry will be discussed. In order to carry out this analysis, textual sources will be used to supplement the archaeology where applicable. Primary sources include the written administrative documents kept by members of certain guilds of embalmers and mortuary priests, mainly dating to the Ptolemaic period. Archaeological evidence includes architectural features and embalming caches.

Embalming caches supply a wealth of information about mummification and its associated rituals during the Late Period. Numerous examples of these caches have been documented in archaeological records, allowing for quantitative and qualitative analyses of these materials. Therefore, a significant portion of this chapter is devoted to them. Fortunately, embalming caches have received a great deal of scholarly attention in recent years. This study utilizes the previous research and builds upon it in order to form a more complete picture of the use and deposition of these materials.

This study is focused on remains from Memphis and Thebes. Although we can safely assume the embalming industry thrived in most if not all Egyptian cities of the time, these two locations possess an unparalleled quantity and variety of both textual and archaeological sources documenting the activities within the embalming industry. Therefore, the examination of these two specific locations will provide the most complete picture of

embalming activities during the Late through Ptolemaic periods. The geographic spread between Memphis and Thebes will also allow for a certain perspective on how the embalming industry functioned across Egypt, as the archaeological record tends to demonstrate a degree of variance in the funerary goods and practices between these two sites.

4.2 Architecture: Structures Associated with Embalming

A number of structures were linked to the funerary industry and embalming activities in particular. These include the various workshops and storehouses used by the embalmers and mortuary priests. It is most unfortunate that not one embalming workshop used for human mummification has been definitively identified in the archaeological record. There have been several structures uncovered within the necropoleis of Saqqara and Thebes that are currently suspected to have functioned as workshops for human embalming, however, these claims have yet to be verified. Reference to additional such structures located within the two above mentioned necropoleis can be found in textual sources but have yet to be identified within the archaeological record. For this reason it is useful to include two additional structures within this study: the Apis embalming house of Memphis and the wabet and court feature of Greco-Roman temples. Examination of these structures will serve to enhance an overall understanding of how the ideal embalming workshop might have functioned.

The embalming house of the Apis bull in Memphis currently serves as the only archaeological example of a functioning embalming workshop. Furthermore, texts have survived describing the full Apis bull embalming ritual (P. Vindob 3837), including the condition of the workshop during the procedure (see Chapters 1 and 3 for a more detailed

discussion of this papyrus and the Apis embalming ritual). This offers a unique opportunity to compare the archaeological remains of an embalming workshop with a primary source documenting its use.

The wabet and court feature of Greco-Roman temples, like the Apis embalming house, was used to purify divine beings (in the case of the temples statues of deities were purified). The ritual purification carried out in the wabet and court has notable parallel with the embalming ritual and aimed to achieve an almost identical goal to that of mummification: the revival and renewal of life through rites of purification, anointing, and clothing. It can therefore be used to gain insight into religious aspects of the process, particularly the necessary steps required for the purification that would achieve the ritual's main goal, and also allows for the opportunity to explore how the participants may have engaged with physical space during this ceremonial restoration of divine life-force.

4.2.1 Embalming Workshops

The embalming workshop of the Late Period is referred to by two different designations: *pr-nfr* and *w^cbt*. The word *w^cbt* literally translates as 'a pure place' (*Wörterbuch* I: 284), it can refer to an embalming workshop but can also refer to any general workshop (Shore 1992: 232). The term *w^cbt* is sometimes included in the phrase *ibw n w^cbt*, meaning Tent of Purification²²² (Donohue 1978: 143) or *w^cbt nt wty*, meaning a 'workshop of the embalmer' when referring specifically to a funerary workshop associated with embalming (Shore 1992: 232). The word *pr-nfr* translates as 'good (or beautiful) house', referring to a type of

²²² The Tent of Purification is likely a separate structure associated with a ritual washing of the deceased before the body is taken to the embalming workshop to be mummified; see Chapter 1, section 1.2 for a discussion on this structure. See Blackman 1918: 117-124 for the ritual of washing the dead in ancient Egypt,

funerary workshop (*Wörterbuch* I: 517). It has been put forth by Donohue (1978: 147-148) that a more precise translation of *pr-nfr* is ‘house of rejuvenation’ on the basis that the stem word *nfr* should be defined as referring to a kind of renewal of youthfulness in this context. The term *w^cbt* is the older of the two, where *pr-nfr* is not documented until the end of the Old Kingdom. The *pr-nfr* eventually absorbed the functions of the *w^cbt* (Donohue 1978: 145). Likewise, Shore (1992: 232) claims that the two terms may have been used interchangeably and cites examples where the entire period of the mummification process was spent in either *w^cbt* or *pr-nfr*. He then uses Donohue’s (1978) interpretation of *pr-nfr* as ‘house of rejuvenation’ to suggest that the term may have referred specifically to the portion of the embalming ritual after the body had been thoroughly dried with natron, thus the stages of wrapping and anointing with sacred oils and resins. As such, the body would have spent the first portion of the mummification (washing, evisceration, and drying) in the *w^cbt* and then the second half in the *pr-nfr*, where the two facilities were either separate areas of the same building or two entirely different workshops (Shore 1992: 232). The distinction Shore (1992) makes between two halves of the mummification, one for bodily purification and one for revivification via religious rites in conjunction with the wrapping of the body is most compelling. While the names *w^cbt* and *pr-nfr* suggest this division, as Shore (1992) mentioned, the idea also fits within the dualistic nature of Egyptian religious thought. It seems likely that, as the two terms were used interchangeably in written sources, the *w^cbt* / *pr-nfr* were separate parts of the same building as opposed to being different facilities altogether. From a practical sense, it does not seem likely that bodies would have been transferred between different facilities prior to the completion of embalming. Especially

considering that any given embalmers' guild may have been overseeing the mummification of many individuals at once (see Chapter 3, section 3.5) thus compounding the logistical problems with the transfer of bodies to multiple locations. Presently there is no archaeological evidence to support the use of two or more separate buildings as facilities for embalming.²²³ Furthermore, we have no mention of a transfer between workshops from either Herodotus or Diodorus. If Shore (1992) is correct and the division between the two was predominately ritual in nature it is somewhat surprising that Diodorus did not make mention of it in his account, which was heavily focused on the ritual aspects of the process. Although we do not have any archaeological remains that can be positively identified as embalming workshops, several mud brick buildings are suggested to have served this function. Aston (2003: 153) has discussed three of these buildings. Two of these structures were discovered in the Memphite necropolis. A mud brick building was uncovered amongst the Late Period tombs near the Serapeum at Saqqara. It consists of five interconnecting rooms and associated finds within the building included pottery types often found in embalming caches, as well as amulets and mummies (Basta 1966: 20-21, cited in Aston and Aston 2010: 121). Another building from Saqqara discovered in the New Kingdom cemetery near the tomb of Horemheb has been interpreted as a 'funerary workshop' (Walsem 1999: 20-2, cited in Aston and Aston 2010: 121). Aston and Aston (2010: 121) note that this second structure is less well preserved than the first. In the Theban necropolis a Late Period mud brick building resembling a house (called Grave IX) was unearthed near the Hatshepsut

²²³ Since multiple guilds of embalmers were present in both the cities of Memphis and Thebes, with each guild having their own property including the workshops, use of more than one workshop for embalming would likely make such structures more abundant (and possibly more conspicuous) among the archaeological remains. The only other explanation being that many of the facilities were either temporary structures, such as tents, leaving no trace behind, or they were not dedicated embalming workshops and served this function only when required, but this seems quite doubtful.

temple causeway in the Assasif. The building consists of five interconnected rooms with a mud brick bed built against the wall along one of the inner walls. Finds associated with this building include numerous embalmers' caches found in the surrounding area (Bietak 1972: 28-30; Aston 2003: 159; Budka 2010a: 135-142 and 462-467).

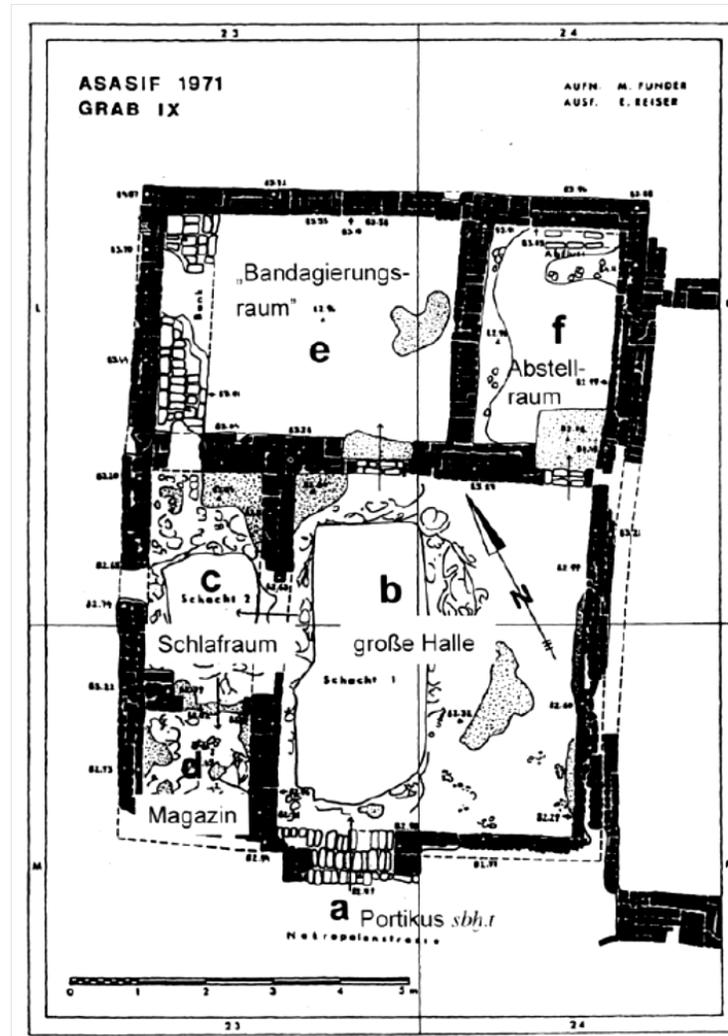


Figure 1. Plan of Grab IX. Budka 2010a: 466, abb.187.

If we are to consider the possibility that these three buildings are embalming workshops, a number of their features may be useful in defining the typical appearance of such a building.

In all three cases the buildings are constructed from mud brick and have the appearance of domestic structures. The building in Assasif and the better preserved building near the Serapeum at Saqqara share a similar layout, where both are comprised of five interconnecting rooms. The mud brick bed built into Theban building may prove to be a key feature, at least for embalming workshops in the Theban necropolis, however additional examples will need to be found in order to assess this idea. It also seems likely that materials connected with embalming are likely to be associated with the embalming workshops, either within the building itself such as the Memphite examples or near the structure as is the case with the Theban building.

It is interesting to note that the Theban building (Grave IX) tentatively identified as a Late Period embalming workshop was reused as a burial place later in the Ptolemaic Period (Budka 2010a: 135-142). This type of reuse, assuming of course that Grave IX was in fact originally an embalming workshop, is quite significant and offers us some insight into social and economic factors associated with structures of the embalming industry. In this case it would seem that a building used for the purpose of embalming was not considered unfit for other functions, at least not those pertaining to the funerary industry. It also suggests that such structures either fell out of use at times or the embalmers were motivated to sell them.

There may also be certain associated features and structures within the necropolis that aid in locating and identifying embalmers' workshops. Aston (2003: 159-160) suggests that an area with a high frequency of embalming caches could indicate the location of an embalming workshop, assuming that the embalmers did not like to travel far in order to dispose of the waste produced in the workshop. Based on this idea, he reasons that an

embalming workshop may have been located on the site of the mortuary temple of Seti I because of the number of embalming caches found in the area (Aston 2003: 160). Likewise, Laemmel (2013: 234) suggests that a Late Period embalming workshop was located near the temple of Hatshepsut at Deir el-Bahari due to the quantity of late dynastic embalming caches there. Although the presence of embalming materials could indeed be useful in determining locations where embalmers were likely to have worked, it would necessitate the ability to identify the nature of deposited embalming materials. Deposits of material discarded by embalmers may indicate a workshop was nearby; alternatively, embalming caches may have been created specifically for religious purposes, such as part of the funeral ceremony. The defined subcategories of embalming caches, which will be detailed further below, could aid in this endeavor. For example, Type B₅ such as the above mentioned embalming caches found around the mortuary temple of Seti I in Thebes (Caches 2.46, 2.47, and 2.48 in Appendix 1) include hundreds of ceramic vessels, and appear as a refuse heap. However, Type B₃ embalming caches of the Saite-Persian cemetery of Abusir (Caches 1.1, 1.2, and 1.3) are incorporated in their own chamber within each of the elite tombs, suggesting they were collected specifically for burial with the deceased.

Another funerary structure called *hr-ḥw*, which is mentioned in P. Cairo 50127 may also shed some light on the location of embalming workshops. The text, a late Ptolemaic letter from the Hawara Necropolis, states that *hr-ḥw* were situated at the *pr-nfr* (P. Cairo 50127, Recto 16, trans. Reymond 1968: 74). These *hr-ḥw* have been interpreted as ‘common graves’ (Reymond 1968: 74, Aston and Aston 2010: 122). Reymond (1968: 74) also offers an alternative interpretation of the text based on a translation of the word *ḥw* to mean

‘ceremonial station’, therefore suggesting that the *hr-ḥw* located outside the *pr-nfr* were temporary storage facilities for bodies during the time after embalming and before the funeral ceremony and burial. The surrounding text is fragmentary, making it difficult to tell from the context which of these interpretations is correct. Although the information from this text has yet to be proven as a method of locating a *pr-nfr*, it is useful in confirming that these workshops were located in the necropolis and indicating that they may have been directly connected to at least one other type of funerary structure.

Furthermore, there are a few embalmers’ workshops known to have existed based on textual evidence but have yet to be identified in the archaeological record. Such is the case with the *pr-nfr* of Irthorru, son of Iben known from P. Louvre 7128, a sales contract from Year 12 in the reign of Darius. The document indicates Irthorru’s *pr-nfr* was located in the Theban Necropolis near the yet undiscovered tomb of Osorkon III (Malinine 1953: 85, Aston 2003: 160). In the Memphite necropolis a number of embalming houses were scattered about and were apparently in operation co-currently. Such facilities were apparently kept separate from the main living area of the embalmers and the rest of the community dwelling within the necropolis (Thompson 1988:168). The Undertaker’s Archive of Memphis makes mention of such facilities, such as in P. Louvre E 3266, dating to 197 BC, which notes three workshops including adjacent sheds which were located in the necropolis (P. Louvre E 3266.I.H-L).

Unfortunately, the text does not specify a more precise location where these could be found.

The embalmers utilized storage facilities for the purpose of storing the materials they used for mummification, funerals, and provisioning for the deceased. As well they were used for storing bodies of individuals awaiting mummification and finished mummies awaiting

burial. The requirements for these stores appear to have been minimal and simply offered the embalmers extra space relatively close to their workshops and were likely in somewhat discreet locations to discourage theft, as the supplies received by embalmers for mummification were costly. Aston also points to two Ptolemaic papyri, P. Leiden I 373b and P. Leiden I 379, which reference storage facilities for embalming equipment, as evidence for such structures in the Memphite necropolis (Aston and Aston 2010: 122). One such structure has been discovered at Memphis. It was originally uncovered by Firth in 1929 and then re-excavated by Lauer in 1946 (Aston and Aston 2010: 122). The facility had the appearance of an unfinished shaft tomb and contained pottery similar to that of the embalming caches. Many of the vessels had demotic inscriptions listing various substances that would have been used for embalming (Aston and Aston 2010: 122, Lauer and Iskander 1955: 176-177). Facilities such as the one excavated by Firth and Lauer would be somewhat difficult to distinguish in the archaeological record. They have a similar appearance to graves but with associated finds comparable to embalming caches.²²⁴ As the embalmers themselves were likely responsible for commissioning construction of the storage facilities as well as the actual graves (P. Phil. Dem. 5), the similarities in the structures are understandable. I would suggest, based on the well-known practice of reuse in Egyptian cemeteries, that if such facilities were repurposed as graves (possibly for the less wealthy) at a later date, their original function may likely go undetected.

In the Theban necropolis the embalmers regularly reused tombs as storage facilities. Items

²²⁴ The embalming caches were generally deposits and were not contained within structures. The embalming caches located near the tombs of high-ranking officials in the Saite-Persian cemetery at Abusir are notable exceptions and will be discussed further in section 2 of this chapter; also see Smoláriková 2006: 263-6; Smoláriková 2009: 58-63.

stored included embalming materials, bodies, items for the funeral and subsequent offerings, and archives of papyri (Donker van Heel 2012: 5). In addition to using tombs, it is known from written sources that the Theban embalmers were in possession of additional storage facilities, including a house on the east bank of Thebes²²⁵ where they were allegedly storing mummified bodies (Pestman 1993: 9). As with the Memphite necropolis, the storage facilities from the Theban necropolis pose certain problems regarding detection in the archaeological record. Undoubtedly, many more tombs would have been utilized at one point or another and the only definitive proof of this use is the discovery of one such tomb still containing the embalmer's supplies or a written document indicating specific known locations.

Additionally, if we are to accept Reymond's proposed translation of *hr-ḥw* (Reymond 1968: 74), then these would have also been storage facilities belonging to the embalmers. Their only mention is from P. Cairo 50127 (Reymond 1968: 73), which pertains to the embalmers working at Hawara specifically and it is unclear whether such structures would have existed in necropoleis elsewhere in Egypt. The text indicates their location was at the *pr-nfr* (P. Cairo 50127 16 recto, trans. Reymond 1968: 74), however no information is given regarding the size or construction of such facilities. From the text we also know that they housed bodies (P. Cairo 50127 10 recto, trans. Reymond 1968: 73) but it does not specify whether the bodies were being kept there temporarily or permanently nor does it provide any additional information regarding other goods that may have been kept there. On the basis that the *hr-ḥw* were in direct association with embalming workshops and stored bodies, it

²²⁵ It is worth noting that a complaint recorded in P. Tur. Gr 2147 suggests that the use of this location by the embalmers was not appreciated by others in the community (Pestman 1993: 409, 439).

does seem likely they were storage buildings owned by the embalmers used in conjunction with their workshops. Even if the *hr-ḥw* were in fact ‘common graves’ it is clear from the text that they were either owned and operated by the embalmers or at least somehow fell under their jurisdiction, thus I feel it is reasonable to include them in the category of structures associated with the embalming industry. Unfortunately no remains of buildings that can be identified as *hr-ḥw* are known from the archaeological record at Hawara.

4.2.2 Embalming house of the Apis bull and other animal cults

The ‘Embalming House of Apis’²²⁶ is the only known structure excavated in Egypt with both textual and material evidence pointing to its function as an embalming facility. It is located in the southwest corner of the Temple of Ptah in Memphis (Marković 2016: 57-70). The stone building has an intriguing layout, consisting of a series of four long rectangular rooms situated parallel to each other that were entered through doors on the east side of the long walls (Jones 1987: 35). The structure was originally excavated by Mustafa el-Amir and Ahmed Badway in 1941 who believed it to be the stall where the living Apis bull was housed within the temple²²⁷ (Jones 1990: 142). In 1955 John Dimick excavated the area, and based on the finds of five stone beds (two made of limestone and three of alabaster) that he perceived as embalming tables, the structure was identified as the ‘Embalming House of Apis’.²²⁸ In 1982 a new excavation and recording of the structure was undertaken by the Apis House Project, which contributes greatly to our understanding of this structure and its immediate surrounding area. Excavations during the 1982-1983 seasons revealed that the

²²⁶ After Dimick 1959.

²²⁷ The notion that Apis was housed in the temple is based on the accounts of Herodotus, Diodorus, and Strabo, along with a number of finds recorded during the excavation that were inscribed for Apis.

²²⁸ For publication of this excavation, see Dimick 1958: 183-189 and Dimick 1959: 75-79.

building sat upon an earlier structure made of mud brick. This earlier version of the Apis House was ornately decorated, as indicated by the numerous decorated stone blocks that were reused in the building of the second building (Jones 1983: 37). Finds including limestone blocks inscribed with the names of Shabaka and Psamtek II suggest this earlier building was in use during the 25th Dynasty (when it may have also been constructed but this is far from certain) and was replaced by the current building sometime after the beginning of the reign of Psamtek II in 595 BC (Jones 1990: 144). The later phase of the building was securely dated to the 4th century BC after the discovery of a hoard of silver coins found under the floor level of the current building, located in the northern wall (Jones 1988: 107, 116). The latest levels indicate that the building was partially dismantled for its stone in the 1st to 2nd centuries AD, based on the scatter of limestone chips and pits containing limestone with pottery dating to this era (Jones 1990: 146). Jones suggests that the current Apis House was commissioned by Nectanebo II during a 30th Dynasty national revival that including the building of many new temples, including new temples for the burial places of Apis and other sacred animals of north Saqqara. He points to a stela dating to the Year 2 of the reign of Nectanebo II, discovered near the Apa Jeremias monastery at Saqqara, that states Nectanebo II built a new 'Place of Apis' that included the 'Place of Living Apis', where the Apis bull would dwell during its lifetime, and the *w^cbt*, where it would be embalmed before being interred in the Serapeum (Jones 1990: 145-146). If this is indeed the case, then the Apis House must be either the 'Place of the Living Apis', the *w^cbt*, or both (Jones 1990: 146).

The interpretation of this building as an embalming house for the Apis bulls is not without its problems. Jones points out that all of the blocks with textual reference to the *w^cbt* of Apis

within the structure are reused and out of their original context (Jones 1990: 143).

Additionally I feel it is worth noting that none of the associated finds hint at the processes of mummification. No embalming caches have been recorded in the vicinity nor have tools or materials associated with embalming been discovered in or around the building.²²⁹ The only physical evidence remains the five stone beds which are all decorated with the motif of a lion bed such as that often used in artistic depictions of mummification. Jones is critical of these and questions their use in the embalming process. He argues that during the first stage of the process where the body was cleaned and dried wooden beds were used not stone,²³⁰ and that if these alabaster beds were indeed used in the mummification of the Apis bulls, they would have had to have been employed during the second phase of the process that was comprised of the wrapping and anointing (Jones 1982: 54). Thus, in his view the drainage channels on the beds and stone vessels situated below were used to collect run-off resins and oils and not bodily fluids (Jones 1982: 54). Jones (1982) bases his assessment on Dawson 1927, an early study of the Egyptian mummification process. However, Dawson's (1927) discussion on human mummification may not reflect the conditions necessary to embalm a large animal, such as the Apis bull. An inscription on one of the stone lion beds mentions that the bed was dedicated by Amasis for the 'House of Gold' of the Apis. The 'House of Gold' was the location designated for the Opening of the Mouth ritual, therefore the inscription may suggest that at least this particular bed was meant to use in this funerary ritual (Meyrat 2014: 252-253). However, the building is referred to in the text as the *w^cbt* and not the *pr-nfr*, the building (or portion of the building) that Shore (1992: 232) suggested

²²⁹ Considering the environment, organic remains may not have been preserved if they were indeed present at one time, however implements made of metal and stone as well as ceramic vessels could have survived.

²³⁰ This assessment is based on Dawson 1927, an early study of the Egyptian mummification process.

was used for the second phase of mummification. Additionally, P. Vindob 3837 does not specify the use of wooden tables.

On a more positive note, there is still a significant amount of evidence, both textual and archaeological, that does give weight to the hypothesis that this structure was an embalming house for Apis bulls. Although the majority of the blocks found around the building are out of context, the number of references to the Apis is unparalleled for the Ptah Temple area (Jones 1990: 143). Additionally, the two alabaster tables associated with the final phase of the building (numbered 4 and 5) are *in situ* and the libation vessel (also *in situ*) joined with table for bears an inscription that reads: *w^cbt [n] hwt-ntr n Hp*, ‘the *wabt* [of] the temple of Apis’ (Jones 1990: 146).

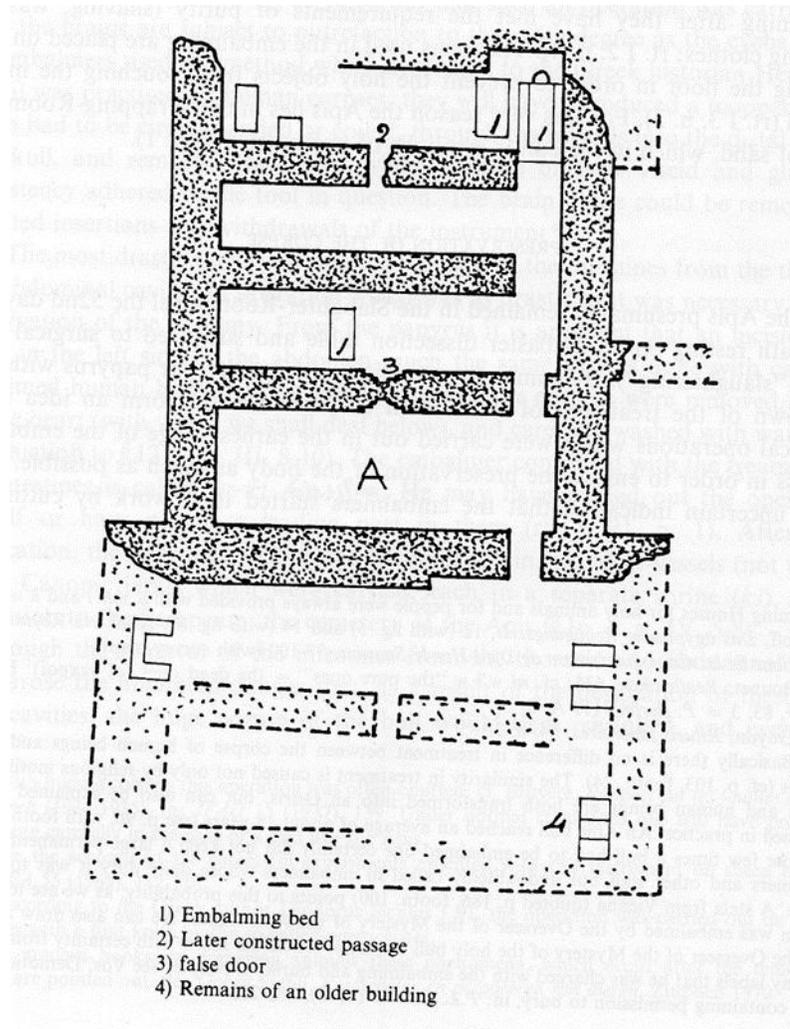


Figure 2. Plan of Apis Embalming House, Memphis. Dimick 1955: 79.

Unfortunately it is not possible to fully reconstruct the layout of the ‘Embalming House of Apis’ and its associated facilities. The archaeological remains of the *w^cbt* do not provide any indication of the identification or function of the four rooms within it and none can be matched to rooms known to have been used in the Apis embalming ritual as described in P. Vindob 3873 (Vos 1993: 33; Meyrat 2014: 258). However, we can infer a basic idea of the topography of the embalming house and its immediate surrounding area based on the textual evidence. A number of rooms with specific functions within the Apis embalming house are

mentioned in P. Vindob 3873. Two rooms within the building are mentioned that were used for the mummification of the Apis bull, including the ‘Slaughter Room’ (*ḥ.t nmʿj.t*) used for eviscerating the bull (P. Vindob 3873 4.23; 6a.11 recto) and another referred to as the ‘Wrapping Room’²³¹ where the desiccated body was wrapped (P. Vindob 3873 1.1 recto). The embalming house is also said to have had a great hall (P. Vindob 3873 4.20 recto) although its function is not described. In addition, a few other facilities are mentioned in P. Vindob 3873 in association with the embalming house. These include the ‘House of Purification’ (P. Vindob 3873 4.10 recto), the sanctuary of Apis (P. Vindob 3873 4.10 recto) that included the stall where the Apis bull was kept when it was alive, the Tent of Purification (P. Vindob 3873 12-14; 19 recto), and a tent set up near the Apis sanctuary (P. Vindob 3873 4.9-10, 21, 24; 5.23 recto). The ‘House of Purification’ and the Apis sanctuary are only mentioned in order to give a point of reference in describing the location of the tent (P. Vindob 3873 4.9-10 recto). The Tent of Purification was built for the purification ritual that proceeded mummification. According to P. Vindob 3873, this Tent of Purification was located on the bank of a sacred lake called the ‘Lake of the western Kings’ (P. Vindob 3873 4.13 recto). The mummified Apis bull was also returned to the Tent of Purification to receive the Opening of the Mouth ritual (P. Vindob 3873 4.19 recto). The other tent described in P. Vindob 3873 was used for an Opening of the Mouth ritual after the mummy had been brought back again from the Tent of Purification and returned to the embalming house (P. Vindob 3873 4.21-22 recto) and to temporarily store the vessels of embalming materials that were collected (P. Vindob 3873 4.5-9 recto).

²³¹ Term used by Vos 1993.

The most recent discussion on the sanctuary of Apis within the temple enclosure of Ptah at Memphis has been presented by Marković (2016: 57-70). This article includes discussion on the arrangement of both the Apis living quarters, consisting of the stall where the Apis lived and the Pavillion of Appearances that made the Apis stall accessible to visitors, and embalming house located in the southwest corner of the temple enclosure. Additional detail on the topography of the Apis embalming house and associated facilities have been provided by Pierre Meyrat (2014), who updates the translation of P. Vindob 3873. He used archaeological data along with P. Vindob 3873 and compared them with the detailed description of the Late Period embalming facility for falcons at Athribis documented on the statue of Djedhor (Cairo JE 46341). Meyrat's (2014: 248-249) translation of P. Vindob 3873 (4.9 recto)²³² reveals that the tent was placed directly outside of the embalming house on its south side. In this way, the tent was positioned between the embalming house and the Apis sanctuary, the 'House of Purification' would have been located to the west of the tent. As for the Tent of Purification, Meyrat (2014: 254-255) translates the lake near which it was situated in P. Vindob 3873 (4.13 recto) as the 'southwestern lake' and suggests that this might have been the 'pool of flowing water' formed by the Memphite canal, which ran west of the enclosure of Ptah. The 'pool of flowing water' would have been located to the south of the enclosure of Ptah, not far from the 'Embalming House of Apis' (Meyrat 2014: 254-255). He also suggests the 'House of Purification' was used for the purification of the embalmers and priests before they entered the embalming house, as was recorded by

²³² Meyrat (2014: 248-249) translates the location outside of which the tent was built as 'southern door' as opposed to the translation of the building provided by Vos 1993, which reads 'Palace of the Kings'. Meyrat (2014: 248-249) also explains that the 'canopy of fir-tree' outside which the tent was positioned (P. Vindob 3873, 4.9 recto) would have been a wooden columned porch located on the southern entrance to the embalming house, as is known from the embalming house described on Cairo JE 46341.

Djedhor (Cairo JE 46341) (Meyrat 2014: 251).

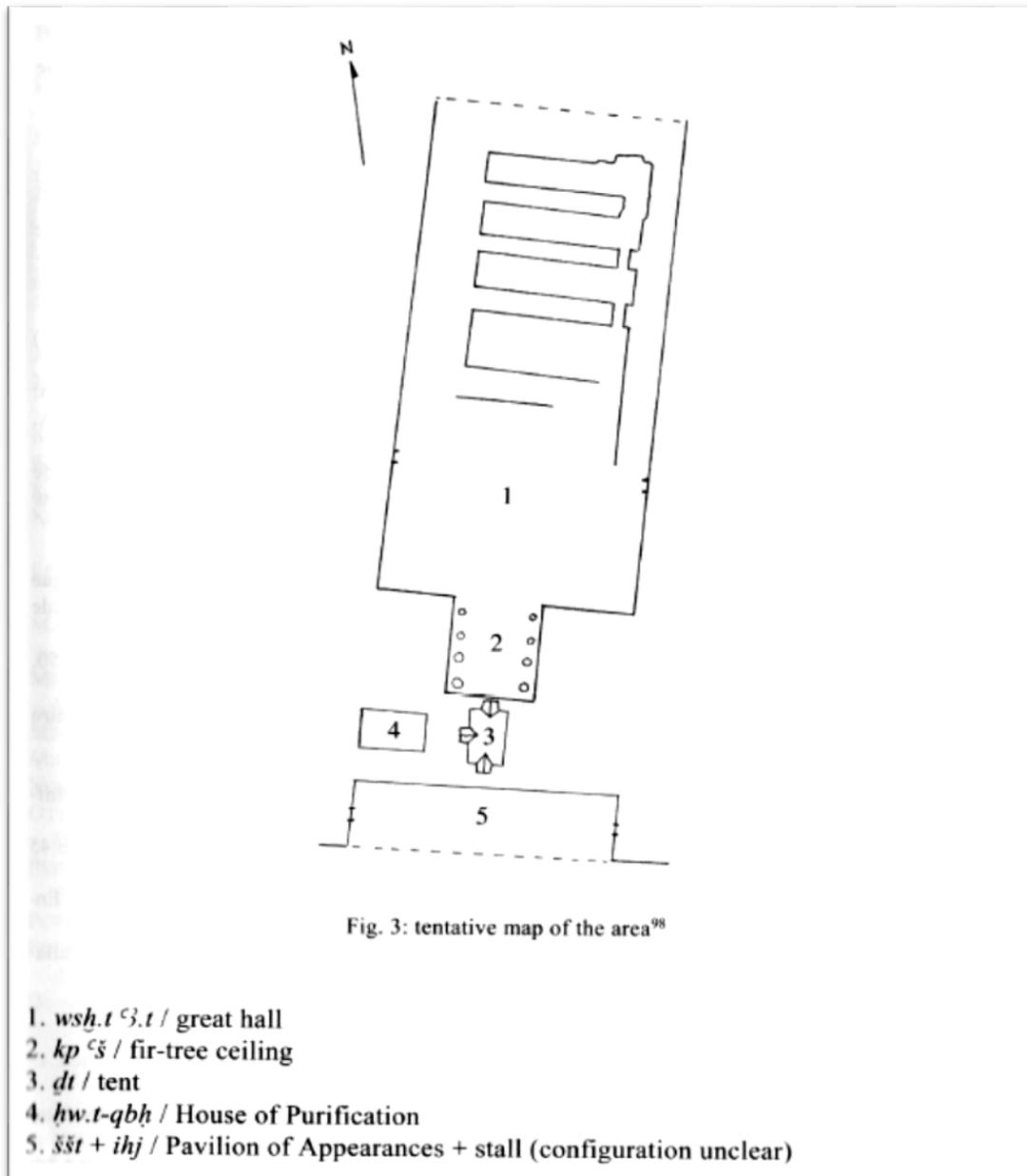


Figure 3. Reconstruction of Apis Embalming Facilities. Meyrat 2014: 259.

While the textual description of the ‘Embalming House of Apis’ can be seen as comparable to the layout of other embalming facilities, in particular that of Djedhor described on Cairo JE 46341, it is interesting that the archaeological remains of the ‘Embalming House of Apis’

are quite different from reconstructions based on the description of the Apis embalming ritual in P. Vindob 3873. Neither can the ‘Embalming House of Apis’ be compared to the wabet and court feature of temples (Coppens 2007: 58) nor the supposed *pr-nfr* of Memphis and Thebes. A number of factors may serve as a reasonable explanation. Since P. Vindob 3873 postdates the archaeological remains it may reflect a later version of the ritual that had undergone various changes over time (Meyrat 2014: 254). This could account for some discrepancy between it and the archaeological remains. This particular *w^cbt* was built for the sole purpose of embalming the Apis bulls. The Apis bull occupied a unique position not dissimilar to the pharaoh in which he was considered a divine being during life.²³³ Since there was only ever one Apis bull alive at any given time and they averaged a life span between 18 and 22 years²³⁴ (Thompson 1988: 198), this embalming facility could not have been utilized very often. This is in stark contrast to any other embalming workshop of the Late Period through Greco-Roman times, whether it be for human or animal. Therefore, while the ‘Embalming House of Apis’ was likely capable of functioning as an embalming workshop, it must have been primarily ceremonial. Perhaps it was used not only to mummify the deceased Apis bull but to also rejuvenate the living Apis much in the same way the wabet and court of temples were used to rejuvenate the statues of the gods.

Evidence for embalming workshops for animal cults other than the Apis bull is quite scarce, and largely based on textual sources. The most detailed account comes from the statue of

²³³ This may explain how the *w^cbt* for Apis came to be located in the temple and not in the necropolis as other embalming facilities such as that mentioned in P. Louvre 7128.

²³⁴ Thompson calculated an average lifespan of 22 years based on the listed Ptolemaic Apis bulls. She notes that Vercoutter calculated the average age of the Apis bull was 18 years based on all Apis bulls listed from the reign of Ramses II onwards (Vercoutter 1958: 340, cited in Thompson 1988).

Djedhor (Cairo JE 46341)²³⁵ which provides a description of the embalming house²³⁶ and associated facilities commissioned for mummifying falcons at Athribis. An additional statue base of Djedhor (Chicago OI 10589)²³⁷ also mentions the construction of this embalming house within the *Iat Mat* temple complex (Chicago OI 10589: B3-B7).

Djedhor was a priest from Athribis who lived during the 30th dynasty and into the reign of Ptolemy I (Sherman 1981: 99) and held the titles Chief Guardian of the Falcon and Chief Doorkeeper of Horus Khenty-Khety (Cairo JE 46341: A7-A8; OI 10589: F8-F9). He also claims to be ‘in charge of those²³⁸ who were in the embalming house’ and it was his responsibility to prepare the burials for the falcons in the necropolis (Cairo JE 46341: A1-A2; Chicago OI 10589: B1-B2). It is unclear whether this description indicates that Djedhor was either an embalmer himself working in the embalming house mummifying falcons or that he was in charge of the embalmers who carried out this task. It is difficult to be certain if Djedhor personally participated in embalming the falcons, however, his description of the mummification process (Cairo JE 46341: C38-C44; OI 10589: B7-B11) and especially his innovative use of a certain ointment²³⁹ in order to improve it (Cairo JE 46341: C38-C44) indicate that he was someone with extensive knowledge of the process.

The information provided by Djedhor’s statues allows us to better understand the layout of an embalming facility for animal mummies and its place in the urban landscape at the very end of the Late Period. The embalming house was constructed to the south of the temple of

²³⁵ See Jelínková-Reymond 1956 for a translation of Cairo JE 46341.

²³⁶ The term *wʿbt* is used to indicate the embalming house on Djedhor’s statues.

²³⁷ See Sherman 1981 for a translation of Chicago OI 10589.

²³⁸ Meaning the deceased falcons.

²³⁹ The word used here to denote this substance is *mrḥt*, generic name for ointment see Chapter 1, section 1.6.2.

Iat Mat (Cairo JE 46341: A15). Both statues give a rough indication of the size of the embalming house, however with slight discrepancy in the dimensions where Cairo JE 46341 mentions a building 68 cubits long and 64 cubits wide (A16-A17) but Chicago OI 10589 mentions an embalming house measuring 80 cubits long and 64 cubits wide (B3). Cairo JE 46341 describes the embalming house as containing six rooms separated by a great hall. Each of the rooms possessed a wooden door with supports made of a high quality limestone (A17-A18). One of the rooms was designated the ‘embalming room’ where the falcons were mummified by the embalmers (Cairo JE 46341: A20), however, the text does not specify which of these rooms served this function nor does it give any indication as to how the other rooms were used. A covered porch with eight columns was constructed over the entrance to the embalming house (Cairo JE 46341: A19).

Sherman (1981: 100) cites several passages from the statues as possibly reflective of a period of conflict at the end of the 30th dynasty where Egypt was under siege by the Persians. These include Djedhor’s mention of preparing the falcon burials in the necropolis ‘hidden from foreigners’ (Chicago OI 10589: B2), Djedhor’s account of removing settled soldiers from the grounds of the embalming house (Cairo JE 46341: A24-A29) and Djedhor’s mention of finding numerous falcons in the ‘chamber of 70’ that had not been mummified (Cairo JE 46341: C42-C43; Chicago OI 10589: B10). Sherman (1981: 100) notes that these references are indicative of the troubled times where normal functions of the temple had been disrupted.

Sherman (1981: 84) suggests that the *Iat Mat* complex was located in the necropolis, because the embalmed sacred falcon that represented the patron deity of the Athribite

necropolis (Osiris, Lord of *Iat Mat*), was stored in its temple. This situates the embalming house for falcons, commissioned by Djedhor as a part of the *Iat Mat* complex, within the necropolis. This would also correlate with what has been inferred regarding the location of embalming houses for sacred animal precincts located at North Saqqara (discussed below).

It appears that a number of facilities within the *Iat Mat* temple complex were used in conjunction with the embalming house. Djedhor mentions having a stone well dug to the south east of the facility (Cairo JE 46341: B30-B31). This well was used for libating the falcons stored there (Cairo JE 46341: B32; Chicago OI 10589: B5) and for watering the plants being cultivated around the area (Cairo JE 46341: B36). Somewhere within the inner enclosure wall surrounding the embalming house a pool was located that was used for purifying the embalmers themselves (Cairo JE 46341: B37-B38). Djedhor also commissioned a garden near the embalming house. Unfortunately, the sources provide conflicting details about its location; according to Cairo JE 46341 was located south east of the embalming house (B32) but Chicago OI 10589 states that it was placed on the west side of the embalming house (B7-B8). The purpose of this garden was to provide fragrant offerings to the falcon mummies (Cairo JE 46341: B33-B34; Chicago OI 10589: B7-B8). JE 46341 specifically mentions the inclusion of sycamore and persea in this garden as well as a variety of fragrant bushes (B33). Djedhor planted additional bushes on the grounds around the embalming house (Cairo JE 46341: B34), which were probably contained within its inner enclosure wall. Also, Djedhor mentions a location called the ‘Chamber of 70’ (Cairo JE 46341: C42-C43; Chicago OI 10589: B10) in which he apparently recovered a number of falcons in need of embalming. According to Vernus (1978: 135-137), the ‘Chamber of 70’

was a small structure, described as a columned kiosk, located within the *Iat Mat* temple complex where mummified falcons were left to rest for 70 days after being embalmed and prior to their burial in the necropolis.

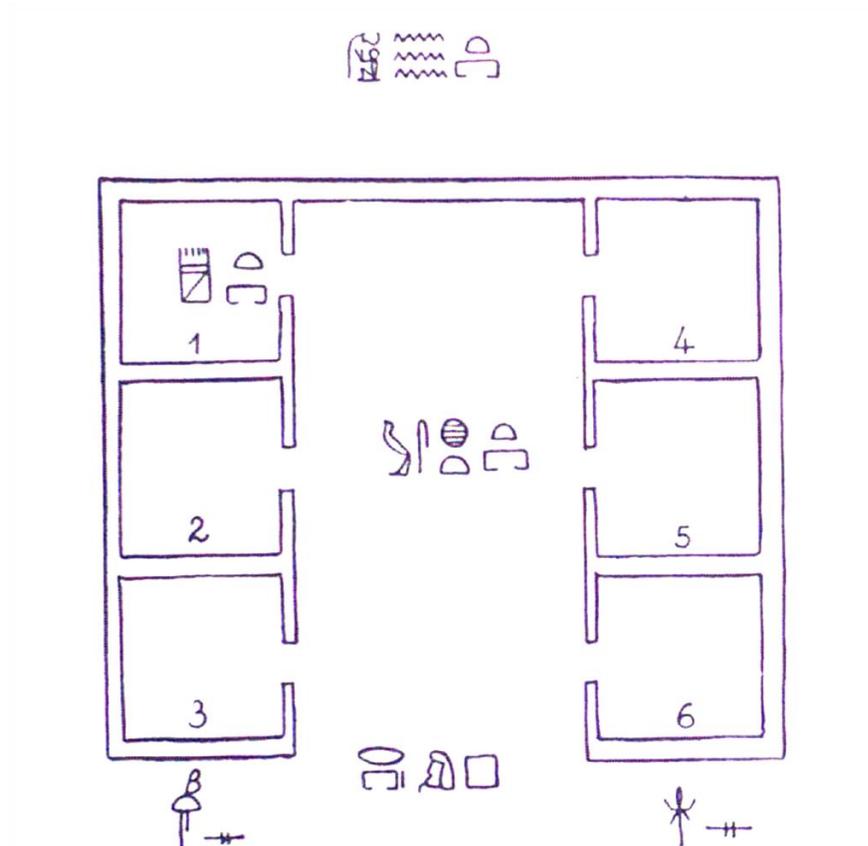


Figure 4. Plan of falcon embalming facility based on Djedhor's description. Jelínková-Reymond 1956: 98.

The archaeological evidence from the catacombs of ibis burials at Tuna el Gebel also provides a glimpse of the embalming ritual associated with animal cult centers. A small chamber located near the entrance to the ibis galleries in the Osiris-Baboon temple was identified as an embalming chamber by Sami Gabra during his excavations of the necropolis at Tuna el Gebel (Gabra 1971: 171-172). The room is small, covering only three by two

meters in area and contained a jar of mummification materials, which included resin and natron (Ikram 2005: 18). Although this room did play a role within the embalming ritual, it is not in fact an embalming chamber used for the purpose of mummifying the sacred ibises of Tuna el Gebel. As Kessler and Nur el-Din (2005: 133-134) explain, the room was used for the Opening of the Mouth ritual that followed mummification, thus explaining the quantity of resin found in the chamber, as this material was necessary to the ritual. Based on experimental work in animal mummification, Ikram (2005: 18, 31) also concludes that the ‘embalming chamber’ of Tuna el Gebel could not have functioned as such. She explains that the size of the room would have been too small to accommodate an embalming workshop and that the room was not properly designed for the process, as desiccation of mummified animals required direct access to sunlight whereas the chamber in question at Tuna el Gebel was completely enclosed. Based on archaeological work within the temple and the ibis galleries in comparison with textual documentation of ibis embalming from the Archive of Hor, a basic sequence of events for ibis embalming at Tuna el Gebel can be postulated. After mummification was completed in the embalming house (the location of which has not yet come to light) the ibis mummies were sent to the ‘house of waiting’ and from there placed in containers and carried to the side branches of the galleries in the necropolis. Afterward, they would have been taken to the room at the entrance to the ibis galleries to receive a second Opening of the Mouth ritual, during which they would have been anointed with sacred oils (Driesch et al 2006: 212). These activities were likely to have been timed precisely, since the Archive of Hor (19.8-9 verso; 21.10-11 verso) states that ibis galleries were only accessed once or twice a year in order to move the ibis mummies into their final resting place²⁴⁰

²⁴⁰ Also see Driesch et al 2006: 205.

Additional information regarding the embalming facilities of sacred animals can be gleaned from the Archive of Hor. Living during the second century BC, Hor was a priest of Thoth who worked at the *w^cbt*²⁴¹ of the ibis temple in the necropolis of north Saqqara (although originally from Sebenytos). The text suggests that this *w^cbt* was located specifically in Hepnebes within the cult center of the ibis (Archive of Hor, 22.10-11 recto). As Ray (1976: 148) suggests, the ibises (as well as falcons) were likely raised and embalmed near the galleries where they were buried and only the Apis bull and possibly the baboons lived in separate enclosures until they were embalmed and buried (in the case of the Apis bull the embalming and burial also took place in separate facilities).

Hor was not only involved in the care of the living ibises within the temple complex but also the reforms that took place in the temple during his tenure. These reforms were directed towards the process of embalming the ibises, and included a set salary for the embalmers as well as imposing a standard to the quality of their work (Archive of Hor, 19-24 & 30). Mummification of the ibises is mentioned in Hor's archive but it is not described in any detail (Archive of Hor, 19.16 verso; 21.2 verso; 21.13 recto; 23.15-16 recto). We also have no evidence that Hor personally took part in embalming the ibises, as the archive mainly documents his role in caring for the live birds.

Aside from the *w^cbt* itself, two additional facilities are mentioned in relation to embalming and burial, these include the 'house of waiting' or *ʿwy-n-ḥrry*²⁴² and the 'house of rest' or

²⁴¹ See Archive of Hor, 1.1; 21.14-15 recto; 22.10-11 recto for use of the term *w^cbt*. Ray (1976: 12, note c to Text 1.1) chose the term 'sanctuary' as a translation for *w^cbt* in order to avoid the association this term typically has with embalming.

²⁴² See Archive of Hor 19.7 verso.

ϣwy-n-ḥtp²⁴³. The ‘house of waiting’ included a number of side galleries where the mummified ibises were stored until their final burial. The ‘house of rest’ included the galleries which were the burial places for the mummies. According to the Archive of Hor (19.8-9 verso; 21.10-11 verso), the ‘house of rest’ was only opened once a year in order to deposit completed ibis mummies that had been stored in the ‘house of waiting’.

Interestingly, it seems that Hor hoped for a burial for himself within the ‘house of rest’ in the Serapeum, according to a dream he records (Archive of Hor, 8.23-24 recto; 6 verso).

This suggests the possibility that a human cemetery exists near the Serapeum and was in use around the time of the second century BC, however such a cemetery has yet to be identified archaeologically (Ray 1976: 147).

4.2.3 Wabet and Open Court of Temples

The latest phase Egyptian temple design with its wabet and court will be examined to gain insight into the religious principles and ritual acts that might have guided the use of space for purification rites comparable to those that took place in embalming workshops. The wabet and open court are architectural features of Egyptian temples of the 30th dynasty through the Ptolemaic and Roman periods.²⁴⁴ The wabet and open court ensemble is only known from Upper Egyptian temples. Due to the poor state of preservation of Delta temples it is unclear if the ensemble existed throughout Egypt. However, it is important to note that no evidence of the wabet and open court has been identified in the well preserved temples of the Fayum, which suggests that the feature was an Upper Egyptian tradition (Coppens 2007:

²⁴³ See Archive of Hor 8.23-24 recto, 6 verso (in reference to humans) & 9. 9 verso (in reference to Apis bulls).

²⁴⁴ This ensemble has been identified in 13 temples from this time period, for a thorough analysis see Coppens: 2007.

48). The ensemble consists of a small elevated chapel connected to a small uncovered court via a short staircase; as Coppens (2007: 52) describes, ‘In the wider ensembles like Edfu and Dendara, the façade of the wabet consisted of three clearly defined components on either side of the small staircase in the middle: a screen wall, attached to the lateral walls of the complex, a column that carries the architrave above the doorway, and a broken door lintel that holds the wooden doors used to separate the complex from the court’. In their most fully developed form in Ptolemaic temples, the wabet and open court were located near the sanctuary and accessed through the ‘hall of the ennead’ and if the size of the temple permitted, the ensemble was positioned near a staircase that led to the roof of the temple (Coppens 2007: 51). As a rule, the ensemble was located to the right of the sanctuary in temples on the west bank and to the left of the sanctuary in temples on the east bank.²⁴⁵ Also in the immediate vicinity of the wabet and open court was access to one or more underground crypts located in the foundation of the temple (Coppens 2007: 52). According to Coppens (2007: 142), ‘The presence of an access to an underground crypt in every single known complex of wabet and court indicates that the entrance to a crypt formed an essential part of this complex’. These crypts were generally undecorated with the exception of the temple at el Qal’a which contains four unique crypts with decorated walls (Traunecker 1997: 170).

The decorative motifs found on the walls of the ensemble are sufficiently preserved for study in only five temples including Philae, Edfu, Dendara, Shanhur, and el-Qal’a. These

²⁴⁵ This standard is not adhered to during the Roman period, for a list of the positions of wabet and open court within the temple complex see Coppens 2007: 49, Table II.

have been thoroughly documented and analyzed by Coppens (2007)²⁴⁶, who describes how the typical decorative program included three types of recurring themes in both the wabet and the open court. In the wabet these scenes include the entrance of the procession, opening of the shrines and revealing of the face of the deity, the purification rites, the presentation of linen and protective amulets and anointing with unguents and ointments. In the open court these scenes include the *ʿ3b.t* (*ʿ3.t*)-offering or ‘great offering’, the journey of the solar bark of Ra and destruction of the enemies of the god, and the appeasement of the distant goddess (Coppens 2007: 198). In addition, three of the temples, including Edfu, Dendara, and el-Qal’a, also include a series of ten texts, which are mostly bandeau inscriptions, located within the wabet. These texts describe the ritual function of the wabet and open court and detail their use in religious ceremonies in the temple (Coppens 2007: 195). Another textual inscription, usually located on the broken lintel of the façade of the wabet, highlights the desired outcome of the rituals that took place in the wabet and open court: rejoicing in Egypt as the statues of the gods unite with the direct sunlight (Coppens 2007: 198). As Coppens (2007: 206-208) explains, inspiration for the decorative program of the wabet and open court was taken from other rituals having the same objective as the rituals performed in the ensemble, principally the transition from death to life or rebirth, which would have been familiar to the priests. The rites from a variety of contexts, particularly temple rites, royal rituals, and funerary rites, were utilized for this reason.

The function of the wabet and open court was a renewal of life force by means of uniting the statue of the god with the direct sunlight. The rites that required the use of the ensemble

²⁴⁶ For a detailed description of the decorative programs and accompanying texts for each of the five temples see chapter 4 in Coppens 2007.

primarily took place around the time of the New Year, particularly during the last five days of the year (known as the five epagomenal days), New Year's Day, and the first month of the New Year. It is highly likely that the ensemble was also utilized in other ceremonies throughout the year for which we have no surviving record (Coppens 2007: 198). In order to restore life to the statue of the god, two rituals were combined: the Opening of the Mouth and union of the statue of the god with the sun disc, called *hnm itn* (Coppens 2002a: 14). The role played specifically by the wabet was preparatory in nature. After being removed from the underground crypt, the statue was brought to the wabet where its shrine was opened revealing the statue within. The statue then underwent ritual purification by means of water (specific vessels were used for this, including nemeset and desheret), incense, ointments, and unguents. The statue was then clothed and provided a variety of linen, as well as given protective amulets. Once this was done, the statue was moved out of the wabet in a procession to the roof of the temple where the revivifying rites would take place²⁴⁷ in order to complete the ritual. After the ritual concluded, the statue was returned to the underground crypt (Coppens 2002b: 309-318; 2007: 202-206).

The underground crypts played an important role in this particular renewal ceremony. The temple crypts were used to store cultic materials such as statues of the gods, linen, incense, and vessels that would only be used during certain times of the year. Being kept in these underground chambers was thought to deprive the cult statues of their life force, thereby requiring them to undergo specific rituals for the purpose of restoring them to life. The

²⁴⁷ Several inscriptions from the temples at Shenhur and el Qal'a suggest the union with the sun took place in the complex of wabet and open court as opposed to the temple roof as indicated from Dendara and Edfu (Coppens 2002a: 23).

underground crypts where the statues of the gods were kept were likened to the underworld, or Duat, where the god of the dead remained in an inert death-like state for the twelve hours that the sun was absent from the realm. Just as the presence of the solar boat passing through the underworld revived its inhabitants, the statues of the gods stored in the temple crypts needed to be revived through periodic unification with the sun (Coppens 2002a: 13-14; 2007: 141-142).

The covered chapel of the ensemble is referred to as a wabet in the temples of Edfu and Dendara specifically²⁴⁸ (Coppens 2007: 55). This designation can refer to any sort of workshop that required a pure environment for the production of its craft, as the term wabet literally means ‘a pure place’ and was applicable to a variety of facilities that crafted statues and funerary goods, as well the embalmer’s workshop where the bodies of the deceased were mummified (Coppens 2007: 57). The term wabet is used in reference to embalmer’s workshops for both humans and animals. However, not unlike the wabet and court ensemble of the Ptolemaic and Roman temples, the wabet used for mummifying animals was also a component of a larger temple complex. In the case of human mummification the term wabet is used to indicate funerary workshops²⁴⁹, along with the term *pr-nfr* which is also used to refer specifically to embalming houses. Presently, it is unclear whether these two terms were used interchangeably or referred to two specific, separate facilities (see above, 4.2.1).

Coppens (2002a: 18-19, 2002b: 316) suggests there may be some structural similarity

²⁴⁸ The covered chapel in the ensemble is alternatively referred to as the ‘Seat of the First Feast’, see Coppens 2002a: 13-26; Coppens 2007: 60-65. At Edfu and Shenhur the wabet is also referred to as *w3dy.t*, or ‘columned edifice’, which originally designated a hall of papyriform columns but by the Greco-Roman period could mean any sort of building with columns (Coppens 2002a: 23-24).

²⁴⁹ According to Coppens (2002a: 19) another term, *h3y.t* which meant ‘place of embalming’ was used interchangeably with wabet in the Late Period, however by the Greco-Roman period the specific reference to embalming was lost and the term *h3y.t* could refer to any type of room within a temple.

between the complex of wabet and open court and Old Kingdom embalming workshops.²⁵⁰

Both include a screen wall, columns and an open court, while the ensemble in temples lacks the anteroom present in the reconstructed embalming facilities. However, if the temple ensemble exhibits archaized features influenced by Old Kingdom models it may not reflect the architectural layout of the functional embalming workshops of later periods, as one would expect the Late Period embalming facility evolved to accommodate changes in the embalming process and the additional volume of customers.

There are parallels between the ritual renewal of the statue of the god in the temple and funerary rites provided to the deceased. These included the events of removal from the place of death, preparation, rejuvenation, and then a return to the resting place (Coppens 2002b: 309-318). In the case of the wabet, both the temple ensemble and the embalmer's workshop functioned as the place where the preparatory rites were carried out before renewal could take place (Coppens 2002b: 317-318). When moved to the wabet of the temple ensemble the statue of the god was clothed, provided with linen, anointed, and given protective amulets. This can be equated to the process that occurred during the wrapping phase of mummification and is the focus of the textual sources on the subject of embalming, including the Ritual of Embalming (P. Boulaq 3), the Apis Embalming Ritual (P. Vindob 3873)²⁵¹, and even the account of classical author Diodorus (1.91). In the case of the wabet in temples, the primary stages of the embalming process that included evisceration and desiccation would have been unnecessary, allowing for a focus specifically on the ritual

²⁵⁰ For a discussion of these Old Kingdom embalming facilities and reconstruction of their layout, see Chapter 1, section 1.2.

²⁵¹ Although this source does describe the mummification process for the Apis bull in its entirety, a great deal of the description focused on the wrapping phase.

aspects of purification and protection that were needed in order for the rite to move forward successfully.

The act of renewal required both a ritual death and revival and these same elements are always present whether the context was temple ritual, embalming, or royal ritual (Coppens and Vymazalová 2010: 97). Similarly, the temple itself was viewed as a microcosm of the ordered universe and thus incorporated the underworld, which was symbolized by the temple's dark innermost regions. Therefore, the temple represented both the place of the death and rebirth of the god (Finnestad 1997: 212). There need not be a distinction between the funerary sphere and that of other cultic rituals, as various aspects of temple, funerary, and royal rituals overlapped and could be used where required to achieve the desired effect (Coppens 2007: 206-208). In this way, very little if any boundary existed between the realms of temple ritual and that of funerary religion²⁵² and separation of these different religious spheres is merely a modern construction that was not recognized as such by the ancient Egyptians (Coppens 2007: 206).

A more deliberate merge between temple and funerary ritual during the Late Period can be observed, so that funerary practices are apparent in the temple and likewise, aspects of temple ritual can be identified within the funerary realm. Certain features of Late Period temple architecture indicate the intrusion of funerary ritual into temple practice. These include the inclusion of funerary literature among the temple inscriptions, a starry ceiling above the ambulatory and around the sanctuary, and a closed off hidden sanctuary which could be likened to a burial chamber (Finnestad 1997: 216). Additionally, the god of the

²⁵² See Cruz-Urbe 1999 for a discussion on the overlap between mortuary ritual and temple ritual.

dead, Osiris, was integrated into temples, where Osiris and Sokar chapels were located in rear rooms or subterranean chambers. It was also customary for Late Period temples to possess an Osiris relic²⁵³ (Finnestad 1997: 215-216).

4.3 Material Evidence: Embalming Caches

Material evidence for embalming from the Egyptian Late Period comes to us mainly in the form of purposely deposited refuse from the mummification process often referred to as embalming caches. These deposits provide a unique opportunity to study the Egyptian embalming process from an archaeological perspective.

The refuse contained within embalming caches primarily consisted of materials used in significant quantity for mummification, mainly including natron, linen, and resins. Other mummification materials consistently found within these deposits include reed matting, chaff, sawdust, papyrus and a variety of plant remains (many of which would have been used to make flower garlands). Traces of human tissue,²⁵⁴ such as hair, skin, dried blood and organ tissue are also regularly present in embalming caches (Janot 2000: 91-118; Budka 2006: 85, 99). Some items typically used as grave goods, such as amulets, small faience vessels, bead-nets, and funerary masks are sometimes present within embalming caches. Additionally, a few caches have included tables or the tools used by the embalmers to mummify the deceased (Winlock 1930: 102-104; Bietak, Reiser-Haslauer 1982: 191; Janot

²⁵³ The role of these Osiris relics in religious festivals and their connection to the embalming ritual will be discussed further in Chapter 5.

²⁵⁴ See Harter et al. 2002: 119-121 for a paleoparasitological study of refuse from an embalming cache in which the eggs of *Taenia saginata* and *Ascaris lumbricoides*, species that specifically infect humans were discovered. This study confirms the biological material within embalming caches is human in origin and that the refuse (in this case linen, natron, and straw) and pottery came into direct contact with human entrails during mummification.

2000: 119-131; Smoláriková 2006: 79-88; Bareš, L. and Smoláriková K. 2011: 81-163). We are most fortunate that a number of short inscriptions, usually in hieratic or demotic, have been identified on ceramics and linen from the context of embalming caches. These are generally either personal names or the names of materials used for embalming that were once contained in the vessels that bear these labels. A more complete discussion of these textual sources, along with a full statistical analysis of the materials and texts associated with embalming caches will follow later in this chapter.

Embalming caches are always located in the necropolis and were deposited by means of a variety of methods including burial just under the surface debris, in specifically dug pits or purpose-built rooms or shafts (sometimes in relation to other architecture), or in large centralized depots (referred to by the German term '*Topfnests*',²⁵⁵). Late Period embalming caches have been found across Egypt,²⁵⁶ however, the majority of the published embalming caches are from the cemeteries of Memphis and Thebes. The bulk of the Memphite embalming caches are located at Saqqara, particularly along the Unas causeway and within the New Kingdom necropolis. Only two published caches can be reliably attributed to Giza. The four published caches from Abusir are all of a specific subtype associated with elite Saite-Persian shaft tombs.²⁵⁷ Most of the Theban embalming caches are located in and around the Late Period cemetery of Asasif (Budka 2010b: 29 & 37). A distinction can be seen in the practice of deposition between Memphis and Thebes, suggesting regional variation in this tradition. This will be further elaborated below in the discussion of

²⁵⁵ For this term see Budka 2006: 85-104.

²⁵⁶ For lists of embalming caches, see Janot 2000: 91-118; Céline 2007: 38-102 (unpublished dissertation); Ikram and López-Grande 2011: 205-228.

²⁵⁷ See Smoláriková 2006: 261-270 and Smoláriková 2009: 58-63.

embalming cache typologies in this chapter.

The practice of depositing embalming materials in cemeteries can be traced back to the Middle Kingdom (Winlock 1942: 98 and Eaton-Krauss 2008: 292).²⁵⁸ Thus far no Old Kingdom embalming caches have been found and their existence remains debatable because it is uncertain that mummification techniques were developed enough to consistently produce the refuse material that is documented from later caches.²⁵⁹ It is also not certain that the ritual aspects of this tradition, which were heavily tied to the preservation of the internal organs of the deceased, were recognized during the Old Kingdom when removal of the viscera was not yet a standard practice. Published examples of New Kingdom embalming caches are known primarily from Thebes²⁶⁰ and typically follow a regular pattern of deposition where ceramic vessels filled with refuse were placed directly outside of the entrance to the tomb (Allen 2003: 23-29). However, some exceptions to this pattern exist. These include Tutankhamun's cache (designated KV 54), which was located in a pit adjacent to the tomb;²⁶¹ the embalming caches of KV 36, KV 46, and TT71, which were found within the burial chambers;²⁶² and that of KV 63, an 18th dynasty deposit located near the tomb of Tutankhamun that has yet to be positively connected to any known burial.²⁶³ The majority of documented embalming caches date to the Late Period (Budka 2006: 85; Ikram and López-Grande 2011: 216). The Late Period is also the time when the most

²⁵⁸ For examples of embalming deposits dated to the Middle Kingdom, see Winlock 1920: 12-32 and Winlock 1922: 34.

²⁵⁹ For further discussion, see Eaton-Krauss 2008: 292; Ikram and López-Grande 2011: 216.

²⁶⁰ For these caches, see Janot 2000: 91-118; Céline 2007: 38-102; Ikram and López-Grande 2011: 205-228. For Tutankhamun's embalming cache, see Winlock 1941.

²⁶¹ See Reeves 1990: 97, 175; Allen 2003: 23-29; Eaton-Krauss 2008: 289.

²⁶² See Eaton-Krauss 2008: 289-290.

²⁶³ See Eaton-Krauss 2008: 291; Schaden 2011: 33-41; Schaden 2007: 16-25.

diversity can be observed in the tradition of depositing this material. Unlike in the preceding periods of Egyptian history, Late Period caches were not characteristically associated with a specific tomb or burial (Ikram and López-Grande 2011: 216). They can be separated into various types and subtypes based on such factors as their method of deposition, the location of the deposit within the necropolis, and volume and type of material included in the deposit. Additionally, a chronology of development in the tradition of depositing embalming material can be observed from the Late Period, which will be further illustrated below. The practice seems to disappear around the early Ptolemaic period, which coincides with the development of the latest form of the canopic box.²⁶⁴ These canopic boxes may in fact represent both the latest known form of embalming caches as well a replacement for the standard canopic jars (Schreiber 2007: 343; Budka, Mekis, and Bruwier 2012: 235-236). The design of the box is fairly standardized; comprised of a tall, narrow wooden box with corvette cornices and a wooden falcon affixed to the top (Budka, Mekis, and Bruwier 2012: 234). However, they vary considerably in contents and can include ceramic sherds, natron, linen, embalming tools, seeds, and sometimes embalmed organs (Budka, Mekis, and Bruwier 2012: 236).

A preliminary typology of Theban embalming caches of the Late Period was developed by David Aston (2003: 138-166), who defined two basic types. These included a Type A cache where embalming materials were placed in roughly made wooden coffins and a Type B cache where embalming materials were deposited in ceramic vessels. This typology was

²⁶⁴ For a typology of these canopic boxes, see Aston 2000: 159-178 and Bruwier 2003: 19-38. For the development of Theban burial assemblages from the 25th dynasty to the Ptolemaic, see Aston 2003: 138-166 and Aston 2009. For canopic boxes within 30th dynasty burials, see Budka, Mekis, and Bruwier 2012: 233-242.

then refined by Budka (2006: 85-103), who divided the Theban cache Types A and B into subtypes that take into account volume of material as well as its location and method of deposition. Budka also took in account the chronological development of the Late Period embalming deposits, which were dated using the ceramics included in the caches. The subtypes of embalming caches in Budka's (2006: 85-103) refined typology are as follows:

Type	Date	Container(s)	Contents	Location within the Necropolis
A	670-575 BC	Poor quality coffin	Embalming waste formed into likeness of a mummy	unspecified
A₁	26 th dynasty	Poor quality coffin	Embalming waste in linen bags or pottery	Tomb superstructure
A₂	ca. 680-650 BC	Poor quality coffin	Embalming waste in linen bags	Outside enclosure of tomb superstructure
B₁	8 th - 7 th centuries BC, particularly 26 th dynasty	Ceramic vessels	Embalming waste in linen bags	Loose in sand (near surface)
B_{2a}	26 th dynasty	Ceramic vessels	Embalming waste in linen bags	Tomb superstructure
B_{2b}	26 th dynasty	Ceramic vessels	Embalming waste in linen bags	Architecture (other than tomb)
B_{2c}	26 th - 30 th dynasty	Ceramic vessels	Embalming waste in linen bags	Enclosure wall of earlier architecture
B₃	7 th – 4 th centuries BC	Ceramic vessels	Embalming waste in linen bags	Specifically constructed chambers or pits
B₄	30 th dynasty	One ceramic vessel	Embalming waste	Burial chamber of tomb, near deceased
B₅	7 th century BC (2 nd half)	Ceramic vessels (large numbers)	Embalming waste	Large centralized deposit (referred to as <i>Topfnests</i>)

Table 1: Typology of embalming caches, after Budka 2006: 99

Aston (2011: 45-79) then built upon Budka’s revised typology to establish a preliminary typology specifically for embalming caches of the Memphite necropolis. Aston (2011) does not document any caches that match Budka’s A subtypes nor Types B₄ or B₅. He recognizes three subtypes of Type B caches, including:

Type	Date	Containers	Contents	Location within the Necropolis
B₁	Late 6 th - early 5 th century BC	Ceramic vessels (usually 5-20)	Embalming waste sometimes in linen bags	Loose in sand, deposit sometimes covered with matting
B₂	5 th century BC	Ceramic vessels	Embalming waste	Purposely built structures, either newly built rooms or pits dug into earlier architecture
B₃	ca. 532-480 BC	Ceramic vessels (usually large numbers)	Embalming waste sometimes in linen bags, often include matting and transport slings	Purposely built shafts or chambers

Table 2: Typology of embalming caches for Memphite necropolis, after Aston 2011: 49-50

4.3.1 Analyses of embalming cache material

The aim of this section is to analyze the materials recorded from Late Period embalming caches to the extent possible. For the purpose of this study only examples from the cemeteries of Memphis and Thebes will be considered. These two sites account for the majority of caches documented in the archaeological record, which will allow for the largest possible sample size. All of the deposits included in this study have come from excavated contexts and a known provenience. The recording methods vary significantly between the various excavations, thus the caches have been reported in varying degrees of detail. Some

records provide a significant amount of detail, giving find spot coordinates as well as detailed analysis of method of deposition and the contents, while others make only brief mention of the discovery of embalming caches without providing additional details.

The analysis of this section is created from the database of Late Period caches that I compiled.²⁶⁵ This database is a unique resource in that it is, thus far, the most inclusive compilation of Late Period embalming cache material. My Late Period embalming cache database is a significant resource for the amount of information gathered on the contents of the individual caches. This resource allows the comparison of cache contents in relation to other categories such as find spot and cache type (or subtype).

The following study utilizes this embalming cache database to analyze the contents of Late Period embalming caches from Memphis and Thebes. I have used my database to find the most common items documented within embalming caches. I conducted a separate analysis for deposits from Memphis and Thebes in order to compare frequency of contents between these two locations and see if there were any discrepancies. After analyzing the most common cache contents I used the database to explore contents that were much less frequently deposited, yet had a significant role in the embalming ritual, such as embalming tools and tables. Study of these items aids in our understanding of how technical procedures of mummification were carried out during the Late Period and they also offer an opportunity to compare archaeological embalming equipment and furniture with those documented in artistic and textual sources on the subject. The embalming cache database also helped me to

²⁶⁵ For a description of how this database was created see Introduction, pages 7 through 9. The entire database is available on CD with this thesis.

better understand the function of the Ptolemaic canopic boxes as a later phase in the tradition of caching embalming refuse. The contents of these canopic boxes can be compared with the contents of Late Period embalming caches, illustrating that the main difference between them in the use of the painted canopic box as a container (as opposed to pottery or coffins) and the greatly reduced volume of embalming materials included.

This study includes 101 Late Period embalming caches where a specific find spot has been recorded. Of these, 39 are from Memphis and 62 are from Thebes. A complete list of the embalming caches used in this study can be found in Appendix 1. All 39 caches from Memphis are Type B while 11 Theban caches are Type A and 51 Theban caches are Type B. Determining the subtypes of these was not always possible given the variation in the published record. However, for Memphis 20 caches can be considered Type B₁, 3 caches Type B₂ and 8 caches considered Type B₃, using Aston's Memphite typology (2011: 45-79). Using Budka's typology (2006: 85-103) 2 caches can be considered Type B₄. 1 Theban Type A cache is subtype A₁ and 2 other caches are subtype A₂. 2 Theban Type A caches were specifically described as having the appearance of a mummy (Lansing 1920: 12; Dabrowska-Smektała 1968: 178). Using Budka's typology (2006: 85-103), the Type B Theban embalmers' caches can be subdivided as follows: 22 caches Type B₁, 2 caches Type B_{2a}, 11 caches Type B_{2b}, 3 caches Type B_{2c}, 2 caches Type B₃, 2 caches Type B₄, and 3 caches Type B₅.

For the purpose of this analysis, 25 embalming caches from Memphis and 31 caches from Thebes where contents were recorded will be considered. No variation in contents could be detected between Type A and B embalming caches. The most common materials recorded in

caches of both sites were linen, natron, resins and embalming residue, straw and sawdust, and reed matting. Individual categories of contents will be discussed below.

4.3.2 Linen

Linen is the most common item found within Late Period embalming caches. It has been recorded in 60% of caches from Memphis and 84% of caches from Thebes. Linen is present in the form of bandages, swabs, and pads. It was also formed into bags and packages, which are often filled with natron. Linen was also used to wrap other contents in the deposits. In the case of Type A caches, a linen sheet may be used to wrap the contents into the form of a mummy, while in Type B caches the contents may be placed in linen bags that are deposited within ceramic vessels (Budka 2006: 99; Aston 2011: 64-65). Linen of differing qualities could be present within a single embalming cache.²⁶⁶ Examination of the linen bandages sometimes reveals that they have been torn from garments and therefore reused for embalming.²⁶⁷ Staining on linen indicates its use in mummification, which was likely to absorb excess resins and other embalming agents from the body.²⁶⁸ An embalming cache found outside the tomb of Djehuty (TT 11) contained rolled linen bandages that Ikram and López-Grande (2011: 214) observed had only been stained on the outside, indicating they were used in their rolled state. Chemical analysis of stained linen from a sample of materials taken from one of the ‘*Topfnests*’ found at the Seti I temple revealed the presence of human blood (Myśliwiec 1987: 54).

²⁶⁶ For observations of varying qualities of linen in the embalming cache above the entrance to the tomb of Hery (TT 12) and in the cache outside the tomb of Djehuty (TT 11), see Ikram and López-Grande 2011: 209 & 214. For a discussion on linen qualities employed in mummification see Chapter 1, section 1.6.1.

²⁶⁷ For an example of this, see Ikram and López-Grande 2011: 214.

²⁶⁸ For stained linen documented from embalming caches, see Lauer and Iskander 1955: 167-194; Janot 2000: 102-13; Aston and Aston 2010: 15-60; Ikram and López-Grande 2011: 209 & 214. For linen impregnated with resin see, Lansing 1920: 12 and Habachi 1958: 335.

4.3.3 Natron

Natron has been recorded in 52% of embalming caches from Memphis and 71% of embalming caches from Thebes. Natron, a salt compound traditionally collected from the area of Wadi Natrun in Egypt, was employed in quantity as a drying agent in mummification of humans and animals (Ikram and Dodson 1998: 112). Natron is found both loose and in small linen bags within the caches. Loose natron would have been spread over a corpse during the drying process while the linen bags of natron were stuffed into the body cavity²⁶⁹ after evisceration to dry the inside of the corpse (Ikram and Dodson 1998: 121; Janot 2000: 63-64). The color and consistency of natron within embalming caches may indicate the extent of its use in mummification. Ikram and and López-Grande (2011: 212 & 214) observe that some natron from inside linen bags was compacted and stained,²⁷⁰ thus more extensively used, while other bags contained white powdery or loose natron. The authors suggest that the condition of the natron in these linen bags may indicate when they had been employed within the drying phase of mummification, where the compacted and stained natron was used earlier in the process and the bags of loose natron were used towards the end when the body would have been mostly dry (Ikram and and López-Grande 2011: 212). Few scientific analyses have been carried out on natron from embalming caches. The most notable is the chemical testing of natron samples from three Late Period embalming caches (Caches 1.32, 1.33, and 1.34 in Appendix 1) found to the south of the Step Pyramid (Lauer and Iskander 1955: 167-194). The test results revealed that the natron was sourced from

²⁶⁹ For a discussion on the efficiency of using natron in linen bags as opposed to loose natron to dry the inside of the body observed from experimental mummification of animals, see Ikram 2005: 35.

²⁷⁰ For additional examples of stained and compacted natron, see Lauer and Iskander 1955: 167-194; Janot and Lapeyrie 2013: 411-416.

Wadi Natrun and El Kab in Egypt. The presence of fats in the sample indicate that the natron had come into contact with a body and suggests it was used its dry state (as opposed to being dissolved in a solution) in order to desiccate the corpse (Lauer and Iskander 1955: 181-188).

4.3.4 Straw and sawdust

The presence of straw or sawdust is recorded in 44% of embalming caches from Memphis and 48% of embalming caches from Thebes. It has been proposed that these materials were used as fillers in the body cavity during mummification (Iskander and Shaheen 1964: 197-208; 1973: 65-78). Scientific analysis of the contents of embalming caches led Iskander to the hypothesis that the corpse was stuffed in a two-part process (Lauer and Iskander 1955: 180-194). First, the body cavity was packed with temporary stuffing materials following evisceration, which would have aided in thoroughly drying out the corpse. The materials used to temporarily stuff the body would have included the drying agent natron, along with absorbent linen and plant materials and fragrant gums and resins to freshen the body. Straw or sawdust would have been added as filler. These would be removed after drying was complete²⁷¹ and then replaced with fresh stuffing materials in order to help the body to maintain a fuller appearance and to prevent collapse of the emptied body cavity. The materials used to stuff the body would have been the same in both phases (Lauer and Iskander 1955: 180-194; Iskander and Shaheen 1964: 197-208; 1973: 65-78). The sawdust in particular may have served a dual purpose as it was sourced from fragrant wood, most notably cedar. In this way, the sawdust would have provided not only a filler to help the

²⁷¹ According to Ikram and Dodson 1998: 121, these materials may have been replaced several times during the drying process if the higher quality of embalming services had been purchased.

body maintain shape but also a pleasant scent to mask the odor of the body (Iskander and Shaheen 1973: 76-78).

4.3.5 Reed matting

Reed matting has been most frequently observed in embalming caches from Memphis, where it has been reported in 36% of the caches in this study. It is often recovered in a decayed and fragmentary condition (Aston and Aston 2010: 15-60). It has been observed that reed matting was used in order to cover embalming caches from Memphis, particularly those of subtype B₁ that were buried loose in the surface soil. Reed matting, along with baskets and transport slings, is also found amongst the pots in subtype B₃ caches of Memphis where it may have been employed in transporting the materials to the pits in which they were deposited (Aston 2011: 64-65). Reed matting has only been specifically recorded in 6% of the Theban embalming caches in this study. However, it is unclear whether the same practice of lining the deposits of subtype B₁ caches with reed matting was particular to Memphis or the presence of reed matting in Theban deposits has been underreported. Given the discrepancy in the records of Late Period embalming caches, the latter possibility seems most likely. Both textual and archaeological evidence indicate that the body and embalming tools were placed upon reed matting in order to prevent them from coming into direct contact with the ground during mummification. Both P. Rhind 1 and 2, which describe the funerary rites for a husband and wife (Hamsouphis and Tanous) who died in 63 BC and 62 BC respectively, mention that the bodies were positioned on a reed mat upon their entry into the embalming workshop. P. Rhind 1 (2.3-4, trans. Smith 2009: 320) describes how Hamsouphis was brought to the embalming workshop: 'Consignment to the embalming

place without interruption of the mummification process, all ceremonies at their proper time, resting upon a mat of fresh reeds, performing the rites of the lector priest of the day for him so that he attacks the enemy of the sound eye on the first day,' P. Rhind 2 (3.1-2, trans. Smith 2009: 342) states: 'You entered the embalming place at the end of your life span which Thoth wrote for you. You lay down on a mat of fresh reeds'. P. Vindob 3873 (1.1 recto) explains that the Apis bull and the embalmers' tools were also placed on a reed mat on the sandy floor of the embalming house to avoid working on the floor directly. Dunand and Lichtenberg (2006: 100-101) have documented zig-zag impressions on the skin of mummies that were created when the corpses were placed on reed matting (see Chapter, section 2.2 for discussion and photo). Presumably, for these impressions in the skin to be preserved the body would have been placed on the matting shortly after death, at the outset of embalming (as indicated by P. Rhind 1 and 2) where it then remained until the skin dried. While P. Vindob 3873 (1.1 recto) states that the Apis bull was placed on a reed mat on the sand-covered floor of the embalming workshop, the coffins of Mutirdis and Djedbastetioefankh (see Chapter 2 for thorough analysis of these coffins) present scenes of embalming that depict the corpses lying on lion-headed embalming tables that were either covered by a reed mat or were constructed with a wooden bed frame that incorporated a wickerwork surface.²⁷²

4.3.6 Resins and 'embalming residue'

The residue left over from the embalming process is often recorded in vague terms based on

²⁷² For a discussion on the possible use of reed matting in human embalming in comparison with the Apis Embalming Ritual, see Céline 2007: 127-128.

visual assessment. For the purpose of this study, the category of ‘embalming residue’ has been created to account for the presence of all oil, resinous, and biological remains from mummification. I have also utilized a separate category for resins noted apart from ‘embalming residue’. Embalming residue has been documented in 32% of the embalming caches from Memphis and 45% of the embalming caches from Thebes. Samples of resin have been recorded specifically in 24% of the caches from Memphis and 42% of the Theban caches. Chemical analyses are seldom conducted on embalming residue and resins from these caches. The scientific study published by Lauer and Iskander (1955: 167-194) is a noteworthy exception. Their tests revealed that the residue or resins, oils and fats, and resinous gums had come into contact with the corpse and that the residues present in the embalming caches were likely placed inside the body cavity temporarily, along with other stuffing materials and drying agents. These substances would have been used primarily for alleviating odor during the drying phase and then employed once again for the same purpose after drying was complete (Lauer and Iskander 1955: 189-194).

4.3.7 Plant remains

Plant remains (aside from reed matting) have also been recorded for many of the embalming caches examined in this study. A variety of different plants were identified; these include papyrus, palm fibers, leaves of persea, willow, and other unidentified plants, cornflowers, acacia pods, and seeds of unidentified species. The remains of persea and willow leaves, cornflowers, and acacia pods from three caches of Dra Abu el Naga in the Theban necropolis (Appendix 1: 2.56, 2.57, 2.58) were described as the remains of funerary garlands (Ikram and López-Grande 2011: 207-216). Similar remains have been also been documented

in the Late Period embalming cache located in the passage way to the entrance of the tomb of Kheruef (TT 192) (Appendix 1: 2.50) in Thebes (Habachi 1958: 331 & 335). The most common plant remains recorded from embalming caches of Memphis is papyrus fiber. One example of papyrus found in a cache near the Akhethotep mastaba in Saqqara (Appendix 1: 1.30) was impregnated with ‘embalming residue’, leading the excavators to suggest it may have been used as a sort of sponge during the embalming process (Janot and Lapeyrie 2013: 411-416).

4.3.8 Embalmers’ tools and tables

Embalming tools²⁷³ have also been recovered in the context of the Late Period caches, however, they are rare finds. The most complete set of embalmers’ tools to be excavated comes from the 30th dynasty burial of Wahibre within the tomb of Anch-Hor (TT 414) in Thebes (Bietak, Reiser-Haslauer 1982: 191). The following table lists the tools documented in the caches included in this study:

Tool	Cache Number in Appendix 1	Reference
Copper knife with handle	2.54	Bietak, Reiser-Haslauer 1982: 191
Copper enema	2.54	Bietak, Reiser-Haslauer 1982: 191
Copper hook	2.54	Bietak, Reiser-Haslauer 1982: 191
Copper scraper	2.54	Bietak, Reiser-Haslauer 1982: 191
Copper tweezers	2.54	Bietak, Reiser-Haslauer 1982: 191
Copper spoon (small)	2.54	Bietak, Reiser-Haslauer 1982: 191
Copper needle and awl (wrapped together in linen)	2.54	Bietak, Reiser-Haslauer 1982: 191

²⁷³ For the most thorough discussion on tools used in the embalming process, see Janot 2000.

Double spouted spoon (small)	2.40	Janot 2000: 102
Copper enema	1.3	Bareš and Smoláriková 2011: 95
Brush (wood and fibers)	1.23	Aston 2011: 15-60
Iron <i>pš-<i>kf</i></i> knife ²⁷⁴	1.35	Drioton and Lauer 1951: 469-490
Wooden needle	2.33	Janot 2000: 129
Wooden probes	unknown	Janot 2000: 129
Swabs (wrapped in linen)	2.43	Janot 2000: 129
Wooden stick and linen rag (oily and incrustrated with natron)	2.37	Janot 2000: 129

Table 3: Tools found within Late Period embalming caches

The caches in this study also include fragments of embalming tables.²⁷⁵ One table of cedar wood, which was able to be partially reconstructed, comes from the elite Saite-Persian shaft tomb of Menekhibnekau at Abusir (Cache 1.3 in Appendix 1). Fragments of other tables in cedar, tamarisk, and acacia wood were also recovered from Menekhibnekau's embalming cache. Table fragments were also documented from Cache # 2.31 (Winlock 1916-1927: 12; Dabrowska-Smektała 1968: 171) and Cache # 2.42 (Janot 2000: 102). A wooden lion head found in Cache # 2.5 (Appendix 1) by the Austrian excavations in Asasif has also been suggested as a fragment of an embalming table (Budka 2006: 90). Results from my study of the contents of Late Period embalming caches suggests that the inclusion of wooden tables was more common than the inclusion of tools. Winlock (1930: 104) noted that he often recovered wooden embalming tables (or mats that served a similar function) in his excavations and suggested that disposal of this item near the tomb of the person for which

²⁷⁴ It is unclear whether this knife should be considered as an embalmer's tool or a ritual implement as it was discovered along with a set of model tools used in the ritual of the Opening of the Mouth, a funerary rite in which the *pš-*kf** knife would have also been used. For the function and significance of the *pš-*kf** knife in the Opening of the Mouth, see Roth 1993.

²⁷⁵ Also referred to as embalming beds, biers or couches.

they had been used was a relatively common practice.



Figure 5. Embalming cache in the tomb of Menekhibnekau at Abusir (Cache 1.3 in Appendix 1). Bareš, L et. al. 2010: 99.



Figure 6. Embalming cache vessel in situ from Austrian excavation in Asasif (Cache 2.3 in Appendix 1).
Budka 2006: 103.



Figure 7. Embalming cache in situ from Austrian excavations in Asasif (Cache 2.2 in Appendix 1). Budka 2006: 102.



Figure 8. Embalming cache jar with linen and natron contents (Cache 2.57 in Appendix 1). Ikram and Lopez-Grande 2011: 227.



Figure 9. Bags of natron from Theban embalming caches. Ikram and Lopez-Grande 2011: 228.

4.3.9 Texts from the context of embalming caches

Occasionally, brief inscriptions pertaining to aspects of the embalming ritual have been found on objects in embalming caches.²⁷⁶ These texts are written in either hieratic or demotic script; they occur most frequently on pottery but have also been found on linen. The inscriptions include references to embalming materials, gods, names of individuals, or even specific days of the ritual. The following table lists the inscriptions documented from the Late Period embalming caches included in this study:

²⁷⁶ Other types of inscriptions have also been documented from the context of embalming caches; these texts include names and titles of the deceased on the wooden coffins of Type A caches (for examples see Lansing 1920: 12; Dabrowska-Smektała 1968: 171) and inscriptions or stamps on storage vessels that indicate a prior use (for examples see Dušek and Mynářová 2011: 179-181). These types of inscriptions will not be discussed at length as the focus of this study is on the material aspects of the embalming ritual.

Inscription (translation)	Object Inscribed	Cache ID	Reference
‘bags, [red linen]’	Amphora CLXIII	1.3	Janák and Landgráfova 2011: 43
‘Bags’	Amphora CIV	1.3	Janák and Landgráfova 2011: 43
‘bags, 36 th day’	Amphora XLVI	1.3	Janák and Landgráfova 2011: 43
‘bags, red linen’	Amphora XVII	1.3	Janák and Landgráfova 2011: 43
‘red linen’	Amphora XCI	1.3	Janák and Landgráfova 2011: 43
‘red linen’	Amphora LXXXV	1.3	Janák and Landgráfova 2011: 43
‘red linen’	Amphora XXXII	1.3	Janák and Landgráfova 2011: 166
‘red linen’	Amphora CLIX ²⁷⁷	1.3	Janák and Landgráfova 2011: 170
‘24 th day, red linen and bags’	Amphora LIII	1.3	Janák and Landgráfova 2011: 43
‘24 th day, red linen and bags’	Amphora LX	1.3	Janák and Landgráfova 2011: 43
‘32 nd day, red linen and bags’	Amphora CCXXV	1.3	Janák and Landgráfova 2011: 43
‘red linen and [bag]s’	Amphora LXII	1.3	Janák and Landgráfova 2011: 43
‘red linen of the children of Horus’	Amphora XXII	1.3	Janák and Landgráfova 2011: 43
‘red linen of the children of Horus’	Amphora XCIII	1.3	Janák and Landgráfova 2011: 43

²⁷⁷ The other side of this amphora bears a demotic inscription that mentions natron (Janák and Landgráfova 2011: 134 & 170).

‘red linen of the children of Horus’	Amphora XVIII	1.3	Janák and Landgráfova 2011: 43
‘natron of the children of Horus’	Amphora LXXXVIII	1.3	Janák and Landgráfova 2011: 43
‘nat[ron ...]’	Amphora CCXVIII	1.3	Janák and Landgráfova 2011: 171
‘nat[ron ...]’	Amphora CCXIX	1.3	Janák and Landgráfova 2011: 43
‘Natron’	Amphora CCLXIV	1.3	Janák and Landgráfova 2011: 43
‘natron, 2 (?)’	Amphora CLXIV	1.3	Janák and Landgráfova 2011: 171
‘beer potion, the first’	Amphora CCLXXXII	1.3	Janák and Landgráfova 2011: 43
‘to spread on the body for 2 days (?)’	Cooking pot (within X)	1.3	Janák and Landgráfova 2011: 43
‘balm. 52 nd day’	Drop-shaped jar (within XCIII)	1.3	Janák and Landgráfova 2011: 43
‘36 th day, to wrap’	Drop-shaped jar (within CLXXIX)	1.3	Töpfer 2011: 113-119
Text A: ‘Wrap in <i>mnḥ.t</i> cloth, 28 th day’ Text B: ‘[... ¼ ...] balm ¼ myrrh ¼, incense ¼’	Drop-shaped jar b (within LXVIII)	1.3	Töpfer 2011: 113-119; Janák and Landgráfova 2011: 43; 2011: 168
‘40 th day, wrap in <i>mnḥ.t</i> cloth’	Cooking pot (within CLI)	1.3	Töpfer 2011: 113-119
‘44 th day, wrap in <i>mnḥ.t</i> cloth’	Drop-shaped jar (within CXXVI)	1.3	Töpfer 2011: 113-119
‘45 th day, wrap in <i>mnḥ.t</i> cloth’	Drop-shaped jar a (within	1.3	Töpfer 2011:113-119

	CXXXV)		
‘Wrap in <i>mnḥ.t</i> cloth, 52 nd day’	Drop-shaped jar (within LXXXVII)	1.3	Töpfer 2011:113-119
‘the first; 32 nd day: to be placed to his flesh to sweeten the smell’	Drop-shaped jar (within CLXIX)	1.3	Janák and Landgráfova 2011: 43
‘natron, 3 hin; cloth ?, 3 hin’	Drop-shaped jar b (within CXXXV)	1.3	Janák and Landgráfova 2011: 43
‘myrrh and cooked resin’	Drop-shaped jar (within XXV)	1.3	Janák and Landgráfova 2011: 43
Text A: ‘resin’ Text B: ‘bandages [...]’	Drop-shaped jar (within XCII)	1.3	Janák and Landgráfova 2011: 43
‘resin’	Cooking pot (within LXVI)	1.3	Janák and Landgráfova 2011: 43
‘resin’	Drop-shaped jar (within CCCII)	1.3	Janák and Landgráfova 2011: 43
‘resin, myrr[h...]	Cooking pot b (within CCCXX)	1.3	Janák and Landgráfova 2011: 43
‘resin, myrrh, 63 rd day’	Drop-shaped jar (within XVIII)	1.3	Janák and Landgráfova 2011: 43
‘resin, fresh myrrh’	Drop-shaped jar a (within CXXXVI)	1.3	Janák and Landgráfova 2011: 170
‘resin, fresh myrrh’	Drop-shaped jar (within CVIII)	1.3	Janák and Landgráfova 2011: 43
‘resin, fresh myrrh’	Drop-shaped jar a (within	1.3	Janák and Landgráfova 2011: 43

	LXVIII)		
‘resin, fresh myrrh’	Drop-shaped jar (within CLXIII)	1.3	Janák and Landgráfova 2011: 43
‘resin, fresh myrrh, 60 th day’	Drop-shaped jar, (within LXXXV)	1.3	Janák and Landgráfova 2011: 43
‘fresh myrrh’	Beaker (within II)	1.3	Janák and Landgráfova 2011: 164
‘natron, myrrh’	Beaker (within XXX)	1.3	Janák and Landgráfova 2011: 43
‘myrrh of (or for) beer’	Cooking pot (within CCCXX)	1.3	Janák and Landgráfova 2011: 43
‘green eye paint, ointment: 60 th day’	Drop-shaped jar (within XXX)	1.3	Janák and Landgráfova 2011: 43
‘prescription cleaning’	Bowl	1.7	D'Auria, Lacovara, Roehrig 1992: 18
‘prescription natron’	Bowl	1.7	D'Auria, Lacovara, Roehrig 1992: 18
‘Hapy’	Bowl (Type 71)	1.12	Aston and Aston 2010: 40
‘Duamutef’	Bowl (Type 69)	1.13	Aston and Aston 2010: 40
‘[Qebah]senuf’	Bowl (Type 72)	1.13	Aston and Aston 2010: 41
Text A: ‘natron of the Wadi Natrun’ Text B: ‘natron of the desert...’	Globular jar (Type 94)	1.14	Aston and Aston 2010: 45
‘Second’	Four-handled jar (Type	1.22	Aston and Aston 2010: 51

	120)		
‘the container of the <i>w^cb</i> priest together with the bandages’	Bowl (Type 127)	1.22	Aston and Aston 2010: 53
‘the material of embalming’	Bowl	out of context (Saqqara, New Kingdom Necropolis)	Aston and Aston 2010: 59
‘resin, 15; <i>shrt</i> (mineral), 16; wax, 16’	Ceramic vessel	1.32, 1.33, or 1.34	Lauer and Iskander 1955: 177-178
‘Best quality cedar oil; fine quality <i>gbty</i> oil; natron, 16’	Ceramic vessel	1.32, 1.33, or 1.34	Lauer and Iskander 1955: 177-178
‘Fresh terebinth, 11; concentrated terebinth (incense), 11; oil of cumin, 10’	Ceramic vessel	1.32, 1.33, or 1.34	Lauer and Iskander 1955: 177-178
‘Oil of Lebanon, 16’	Ceramic vessel	1.32, 1.33, or 1.34	Lauer and Iskander 1955: 177-178
‘By the hand of Psamtik’	Ceramic vessel	1.32, 1.33, or 1.34	Lauer and Iskander 1955: 177-178
‘Workers’ or ‘waste of tissue’	Ceramic sherd	2.46	Mysliwiec 1987: 54
‘red linen [from/of] Thebes. Every protection by a <i>idmit</i> -linen of Amon (?) [to] Padiamennebnestawwy’	linen rag	2.57	Ikram, Lopez-Grande 2011: 214

Table 4: Inscriptions from Late Period embalming caches

4.3.10 Pottery types and uses

The ceramics found in embalming caches have been analyzed by Budka (2006: 85-103) and Aston and Aston (2010: 15-60; 2011: 45-80). For drawings of the vessel types most commonly found within B subtypes of embalming caches refer to Budka (2006: 101, Abb 6) for Theban caches and Aston (2011: 75-79, figures 1-5) for Memphite caches. The two most

common shapes of ceramic vessel found within embalming caches are bottles²⁷⁸ and a type of bowl commonly referred to as goldfish bowls (Budka 2006: 93; Aston 2011: 66). Aston (2011: 66) describes these bowls as having: ‘rolled, everted rims and round to pointed bases, which are normally made of Nile B2 and are red slipped on the outside’.

As we can see from the surviving textual sources describing mummification (such as P. Boulaq 3, P. Rhind 1 and 2 and P. Vindob 3873), as well as the archaeological evidence of embalming caches, pottery would have been used throughout the embalming ritual and a variety of different sizes and shapes of vessels required for various stages of the mummification process and associated rites. Initially, the deceased may have been bathed by attendants pouring water from vessels directly over the corpse. This bath water may have been collected for religious reasons by means of a ceramic jar placed below the body (see Chapter 5, section 5.4.2 for this concept). During the next phases of mummification, the embalmers would have removed the internal organs and filled the body with fragrant substances, absorbent filling materials (such as straw and linen) and bags of natron. All of these materials would have been stored in ceramic vessels until utilized by the embalmers, as indicated from the docketts on embalming cache ceramics listed in **Table 4**. After desiccation, the embalmers would have applied generous amounts of resins, unguents, and bitumen to the body in between layers of linen wrappings. Some of these required heating either to create the necessary spreadable consistency or possibly in the case of certain perfumes, to enhance their fragrant aroma.²⁷⁹ Unfortunately, reference to the use of ceramics in papyri that document the human embalming ritual is minimal. Some useful insights can

²⁷⁸ Aston (2011: 66; figures 1.1-1.4) notes four distinct types of bottles.

²⁷⁹ For the heating of unguents for this purpose see Manniche 1999: 10-47.

be gained from these in comparison with archaeological findings and these will be discussed below. The Apis Embalming Ritual (P. Vindob 3873) provides much more detail regarding the types of ceramics in the inventory of the embalming workshop, and particularly, the use of these vessels for the evisceration of the Apis bull and embalming of the internal organs. The name, dimensions, inventory and a description of main function for each vessel type is noted in P. Vindob 3873. These ceramics are listed in **Table 2** of Chapter 1 and are discussed further there, in the context of Days 4 to 16 of the embalming ritual.

In his study of ceramics excavated from embalming caches of the Memphite necropolis, Raven (2011: 797-798, 800) suggests the goldfish bowls may in fact be the *dšrt* jar, a type of ritual vessel for purification often described in both temple and funerary rites. He bases his assertion on the similar function and appearance of *dšrt* jars and the goldfish bowls. Raven (2011: 798-799) also notes that both *dšrt* jars and goldfish bowls were ritually discarded after use in religious ceremony, where the *dšrt* jars were purposely smashed in a rite known as ‘the breaking of the red pots’²⁸⁰ and the goldfish bowls employed by embalmers were deposited in embalming caches, often in a broken condition. Furthermore, Raven (2011: 795-808) has suggested two possible functions of the goldfish bowls, which include their use in application of both heated and cold resins and unguents and use as temporary canopic vessels for storage of removed organs. Raven (2011: 796) notes that goldfish bowls from embalming caches are usually stained on both the exterior and interior walls, where the exterior is coated with soot and the interior with residue of mainly resins and oils. He

²⁸⁰ This is rite was carried out, particularly after funerary rituals, to ensure that vessels utilized in religious ritual were not repurposed for profane uses, see López-Grande 2013: 257. Also see Ritner 1993: 140-165 for ‘the breaking of the red pots’.

suggests they were used to cook or heat products for embalming²⁸¹ as their shape was ideal for this purpose (Raven 2011: 797). This theory is consistent with P. Rhind 1 (5.2) stating that, ‘two hundred and six hin measures of unguent will be boiled for you...’ in reference to the mummification of Hamsouphis. P. Rhind 2 (4.4) notes that unguents were also boiled for the mummification of Tanous, wife of Hamsouphis. The Apis Embalming Ritual (P. Vindob 3873, Vs. 1.17-23; Vs. 2a.6-8; Vs. 2a.15-27) also refers to heating of embalming products. **Table 4** above shows that a docket from a drop-shaped jar in Cache 1.3 reads ‘myrrh and cooked resin’. Although the inscription does not include a day for its use, Janák and Landgráfova (2011: 39, 43-44, Tables 1-2) have grouped it with other drop-shaped jars and cooking pots from Cache 1.3 that bear inscriptions listing resins and myrrh, some of which includes days near the end of the embalming ritual (Days 52, 60 and 63).²⁸² Janák and Landgráfova (2011: 42-45) compared their findings from Menekhibnekau’s embalming cache (Cache 1.3) with Cannata’s (2009) analysis of Ptolemaic papyri relating to the funerary industry. Based on stela Cairo 31099 Cannata (2009: 345 and Table 15) suggests that Day 52 of the embalming ritual included the cooking of unguents for application to the mummy. Raven (2011: 801-805) also suggests that goldfish bowls were used to temporarily hold the internal organs that would be embalmed separate from the body. He bases this conclusion on the many charcoal dockets found on goldfish bowls that include the names of the four sons of Horus.²⁸³ As Raven (2011: 803) describes, ‘In all cases the inscriptions in charcoal are rather faint and not easily legible. The fact that no ink was used suggests that

²⁸¹ For the use of heated embalming products versus cold preparation, see Janot 2000: 65.

²⁸² For a discussion on this use of these vessels for the cooking of embalming products, see Janák and Landgráfova 2011: 37-45.

²⁸³ For a list of these inscribed bowls found by the Leiden expedition see Raven 2011: 802-803.

the docket in question were of ephemeral importance only, and that these notes only served as an aide-mémoire to the embalmers themselves'. A particularly compelling example from an embalming cache found near the south-west corner of Horemheb's tomb in Saqqara by the Leiden expedition, includes a set of four goldfish bowls that each bear a docket naming one of the four sons of Horus (Raven 2011: 801-802). This argument is reasonable since embalming cache material tends to be associated with the evisceration and desiccation phases of mummification, and also the fact that the four sons of Horus were the deities charged with protecting the organs of the deceased. The Ritual of Embalming (P. Boulaq 3, 2.16-17) does describe the embalming and storage of the internal organs briefly. However, it states that the organs were embalmed within a faience vessel (*b3s n thn.t*) and then stored within some kind of box, no ceramic bowls are mentioned. Although this text is not consistent with Raven's (2011) theory, it is likely that P. Boulaq 3 represents a more ideal than practical version of the embalming ritual since it was used as an afterlife text. As well, there may have been some adaptations in the mummification process in time between the Late Period when the embalming caches were made and the Roman Period when P. Boulaq 3 was written.

4.3.11 Discussion of ritual aspects of embalming caches

Although the study of embalming caches produces many more questions than answers, one thing that is clear is that the collection and subsequent deposition of used embalming material held some significance in funerary ritual of the Late Period. The following section discusses the various aspects of embalming caches that indicate ritual practice. It is important to note that these caches do not reflect the embalming ritual itself but instead the ritual of

caching used embalming materials. However, we can still gain a better understanding of Late Period embalming practices from the study of these remains, especially considering their frequency and diversity at this point in history.

Winlock (1941) published the first interpretation of the purpose of embalming caches, where he stated that materials used during the embalming process that came in direct contact with a corpse were considered too ritually unclean for reuse by embalmers but too sacred to be discarded as ordinary refuse. Thus, all materials that came in contact with the deceased during embalming had to be buried in the necropolis in order to maintain the bodily integrity of the deceased. However, it was deposited in a separate area near the tomb, as the unclean nature of this material precluded it from being buried in the tomb with the mummy (Winlock 1941: 6-7). This theory has since been superseded in light of more recent archaeological finds of embalming caches and research into the practical aspects of mummification.

Although it appears that New Kingdom caches may have typically followed a pattern of deposition near the entrance to tombs in Thebes, examples have been recovered from a variety of locations in the necropolis, including within tombs and even in burial chambers.²⁸⁴

Certainly by the Late Period the ritual of depositing embalming caches had evolved significantly, as numerous Late Period caches cannot even be positively associated with a specific burial.²⁸⁵ The idea that all embalming material that touched the deceased was considered too unclean for reuse is also problematic. As Janot (2000: 115) asserts, the metal tools used by embalmers were most likely costly items that could not be discarded after each

²⁸⁴ For examples of embalming caches found within burial chambers of tombs, see Eaton-Krauss 2008: 289-290.

²⁸⁵ For examples see Budka 2006: 85-103; Aston and Aston 2010: 15-60; Janot and Lapeyrie 2013: 411-416.

mummification. In fact, the inclusion of these tools within embalming caches was rare. Therefore, even though they came into direct contact with corpses, they could not have been considered too unclean for reuse. Experimentation in mummification conducted by Salima Ikram²⁸⁶ indicated that it was feasible, and potentially economical, for embalmers to reuse natron (Ikram 2005: 16-43).

Ikram and Lopez-Grande (2011: 218) note that the majority of caches include far less embalming materials than what is expected to have been used in human mummification. They suggest that only a portion of this waste, possibly from the final stage of desiccation, was collected for a cache. This observation leads the authors to pose a number of questions regarding how and why certain portions of this refuse were selected and who made the selection (Ikram and Lopez-Grande 2011: 218).

It is tempting to look for a link between the size and contents of embalming caches and the social and economic status of the persons for whom they were deposited. In order to make such an assessment we would require a better understanding of the value held by the refuse embalming material and how it was distributed. Evidence that this material held religious value and a role in the funerary ritual is easy to identify; and this idea will be more thoroughly discussed later in this section. The question remains of whether embalming waste held any monetary value and, if so, who was in charge of its distribution. Textual evidence from the Ptolemaic Period, such as P. Berlin 3115 and P. Turin gr. 2154, suggests that it was the responsibility of the family of the deceased to provide the materials needed for mummification (Cannata 2007: 227-228). It is not clear though whether ownership of

²⁸⁶ These experiments were focused on the creation of animal mummies, however the technical processes used would have been nearly identical to that of human mummification.

these materials was retained by the relatives of the deceased or if it became the property of the embalmers, perhaps as a portion of the payment for their services. If embalming materials remained the property of the family of the deceased, perhaps they were inclined to deposit the excess linen, natron, and used ceramics along with any other surplus items in the necropolis with the burial. If retained by the embalmers, there must have been some system within the workshop for managing surplus materials and waste products. As noted above, some materials, such as natron, could have been reused. It is possible that the embalmers regularly disposed of refuse that collected in their workshops²⁸⁷ by burying it nearby (Aston 2003: 159-160; Aston and Aston 2010: 122). However, given the ritual significance of used embalming materials, it seems reasonable to suggest that the embalmers may have benefited from the resale of some of this material back to the family of the deceased in order to deposit in the necropolis as part of the funerary ritual.²⁸⁸

At the current time the evidence is not sufficient to determine exactly how embalmers disposed of the refuse from their workshops or if they were able to reuse or sell any of it. This information would aid our understanding of archaeological finds. At this point, we can only hypothesize that we should expect to see embalming workshops in the vicinity of Late Period embalming caches. Such information would also help account for the pattern of spatial distribution of embalming caches within the necropolis along with the variation in their volume and range of contents.

²⁸⁷ These workshops were likely located in the necropolis; Aston (2003: 159-160; 2010: 122) suggests that the embalmers would likely have disposed of this material in close proximity to their workshop, which could explain many of the smaller Late Period embalmers' caches that do not seem to be associated with any particular burial as well as the very large Type B₅ *Topfnests*.

²⁸⁸ Budka (2010a: 455-456) suggests this as an explanation for the variety in the size and contents of Late Period embalming caches.

There are several aspects of the cache material that signify a ritual practice of depositing embalming refuse. The most prevalent items recorded from the caches, as discussed above, have a strong association with the cleansing of the body cavity. The natron included in embalming caches is frequently wrapped in linen to form packets, which was how natron would have been placed inside the body during desiccation. It has been noted often in excavation reports²⁸⁹ that both linen and natron, the two most common materials recorded in the caches, are stained with blood and other embalming residue suggesting they were used to clean the body cavity between the stages of evisceration and desiccation. The third most common materials, straw and sawdust, were used as temporary stuffing materials inside the body. Unguents, which have been sampled from residue within embalming caches and are also indicated by short inscriptions on some of the cache pottery (see **Table 4**), would have been placed inside the body along with the natron and the other filling materials while the body was drying. Scientific testing on cache materials such as those conducted by Lauer and Iskander (1955: 167-194) and Harter et al. (2002: 119-121), discussed above, revealed traces of human tissues and remains of parasites that specifically infect humans. The presence of these biological remains provides additional evidence that many of these materials were used inside the corpse.

Another interesting factor is the quantity of materials typically found within individual deposits. Excluding the Type B₅ ‘*Topfnests*’ (Budka 2006: 85-103) of Thebes and Type B₃ (Aston 2011: 45-79) caches from Memphis, Late Period embalming caches are somewhat modest in size. The volume of materials in embalming caches does not represent the total

²⁸⁹ Lauer and Iskander 1955: 167-194; Janot 2000: 102-13; Aston and Aston 2010: 15-60; Ikram and López-Grande: 2011: 209-214; Janot and Lapeyrie 2013: 411-416.

amount of waste produced during mummification. This is most apparent in the case of natron. As Ikram and Lopez-Grande (2011: page) observed, the caches contain significantly less natron than would have been left over after mummifying a human body. This suggests a more purposeful and patterned deposition of these materials, where a sample of natron was selected for inclusion in a cache as opposed to the disposal of the entire quantity used to desiccate a body.

The use of anthropomorphic coffins for the storage of embalming materials in Type A caches conveys the idea that this material was connected to human burial and funerary rites. In preparation for a burial, a wooden coffin was a highly desirable, yet costly purchase.²⁹⁰ The inclusion of coffins in embalming caches suggests these were created with care and intention. Coffins hold certain symbolic roles in Egyptian funerary religion. They were likened to the goddess Nut, mother of Osiris, who held the deceased protectively in her womb (Assmann 2005: 165-169, 170-173). This metaphor also linked regenerative properties to coffins (Elias 1993: 845-850). Anthropomorphic coffins also served as an eternal image of the deceased, which would be recognized by its *b3* spirit when it returns to the burial chamber to unite with the mummy (Hornung 1992: 167-171; Cooney 2007: 261-265). It was the coffin that most often represented the mummy in artistic depictions of the embalming ritual (see Chapter 2 for this topic). Thus, use of coffins within embalming caches suggests that the embalming material was in some way linked to the personal components (either physical or spiritual) of the deceased²⁹¹ and that it needed to be protected

²⁹⁰ For an estimate of the cost of wooden coffins (dating to the Ramesside Period) see Cooney 2007: 69-130.

²⁹¹ Budka (2006: 99) notes that in one case the linen deposited in the coffin was formed into a shape resembling a human mummy.

from potential harm, similar to the mummy.

The condition of the ceramics deposited also suggests the practice of caching embalming refuse was guided by religious ritual. Clear evidence shows that some of the smaller vessels in deposits were purposefully broken to fit inside the larger storage jars.²⁹² There are a few implications that can be surmised from this observation. The smaller vessels were still in usable condition until they were buried in the cache. It seems less likely that functional vessels would have been discarded by embalmers without reason. Also, the ritual breaking of vessels is known to occur elsewhere in Egyptian funerary practice. As discussed in section 4.3.10 above, the ritual breaking of ceramic vessels during funerals was done to insure pottery used in religious rites was not later reused for profane purposes (Raven 2011:798-800; López-Grande 2013: 257).

²⁹² For the practice of ritually breaking vessels to fit in storage jars see French 2003: 224; also see Raven 2011: 801 for an example of intentionally broken vessels inside a large storage jar from a Late Period embalming cache excavated by the Leiden expedition.

CHAPTER 5: THE CONCEPT OF *rdw* IN EMBALMING

5.1 Introduction

Chapter 5 presents a discussion of the ritual significance of embalming caches within Egyptian funerary practices and explains their role within the development of Egyptian religious beliefs from the Late through Ptolemaic periods. Janot (2008: 211) suggests the material within embalming caches retained the humors or putrefaction of the mummified body, typically referred to by the ancient Egyptian term *rdw*.²⁹³ This *rdw* needed to be preserved for the body to be made whole again, much in the same way as the internal organs in their canopic jars. The primary materials stored within jars of embalming caches (linen, natron, embalming residue, and straw) were not thought to be *rdw* themselves but were connected with the idea of *rdw* through their function in the embalming process. As these materials were used to cleanse the inside of the corpse after evisceration and temporarily fill the body cavity during desiccation, they soaked in the liquid *rdw* from the body and were thus imbued with these bodily humors.

As will be demonstrated below, embalming caches functioned as a kind of second burial for the deceased,²⁹⁴ created in order to protect the *rdw*. In this arrangement the jars of embalming materials occupy the place of the corpse within the burial. This chapter will detail the nature of *rdw* in order to illustrate the reasons this substance required burial and how embalming caches filled this necessity.

²⁹³ While a number of ancient Egyptian terms are used to denote this kind of putrefaction, the most common is *rdw*, see Zandee 1960: 57 and Kettel 1994: 315-330. For the purpose of this chapter the term *rdw* will be used unless referring to other designations explicitly mentioned in the ancient sources.

²⁹⁴ This interpretation was first suggested by Smoláriková (2009a: 61-62) who draws a parallel between the embalming caches found in southwest chambers of elite tombs of the Saite-Persian cemetery at Abusir and the 'south tomb' of Djoser's burial complex at Saqqara; also see Chapter 4 for a discussion of this idea.

5.2 The Concept of *rdw*

The Egyptian term *rdw*²⁹⁵ is used to describe liquid thought to originate within the flesh²⁹⁶ of both humans and divine beings, particularly Osiris. This liquid *rdw* exuded from the corpse after death (Zandee 1960: 11, 57). The loss of *rdw* from the body of the deceased occurs in reference to the putrefaction of the flesh or as a way of describing the process of evisceration and desiccation during mummification.²⁹⁷ The concept of *rdw* is linked with a number of other terms used to describe bodily fluids associated with decomposition of corpses, including sweat (*fdt*),²⁹⁸ putrefaction (*hw33wt*),²⁹⁹ and corruption (*jwtw*)³⁰⁰ (Zandee 1960: 11, 56-60; Kettel 1994: 318, 321; Nyord 2009: 321-323).

The *rdw*, and related liquids of decomposition, were believed to possess both positive and negative attributes. According to Winkler (2006: 125-139) the qualities attributed to *rdw* are dependent on whether their context is that of the Osirian underworld or the celestial

²⁹⁵ The word *rdw* is typically translated as ‘efflux’. See Winkler 2006: 125 for the etymology and various translations of the term *rdw*. A slightly different interpretation of the term *rdw* is proposed by Kettel (1994: 315-330), who suggests that *rdw* refers specifically to bodily fluids removed from a corpse via the second method of embalming detailed by Herodotus (2.87). I accept this view in principle; however his interpretation, which relies primarily on Greco-Roman texts, fails to take into account the scope of development and places too many limitations on the multifaceted concept of *rdw*.

²⁹⁶ Nyord (2009: 463-466) lists the origin of *rdw* as either the ‘flesh’ (*iwf*): CT II 1b, 7d, 19e, 68d, 71b, 77d-78a, 95a, 101a, 108g; ‘body parts’ (*wt*): CT II 1b or ‘belly’ (*ht*): CT II 105f. Kettel (1994: 315-318) associates *rdw* with the internal organs, which are referred to as the ‘limbs’ (*hw*) or ‘body parts’ (*wt*) in P. Jumilhac (b. 3.1 & 17.18).

²⁹⁷ For *rdw* produced as putrefaction of a corpse, see Zandee 1960: 11 & 57; for *rdw* produced by evisceration see Kettel 1994: 315-330; for production of *rdw* in a two-stage process including first the loss of bodily fluids via decomposition of the flesh followed by desiccation during embalming, see Winkler 2006: 129-130.

²⁹⁸ This type of ‘sweat’ refers specifically to that of corpses (Zandee 1960: 57).

²⁹⁹ *hw3* (singular) is translated as ‘to consume’ by Zandee (1960: 58), which specifically references the decomposition of flesh. The same word (*hw33wt*, plural) is translated as ‘putrefaction’ by Nyord 2009: 321-323.

³⁰⁰ Translated as ‘digestion products’ by Zandee (1960: 73), however, the term is frequently used in texts describing the decomposition of corpses and should be viewed as a type of liquid putrefaction comparable to *rdw*, see Manassa 2007: 51. The term *jwtw* is translated more generally as ‘corruption’ by Nyord 2009: 321-323.

realm.³⁰¹ In the Osirian context, *rdw* is beneficial to the deceased as an essential part of the physical body that must be restored in order to make it whole again. However, once the deceased entered the celestial realm of the gods as a rejuvenated being, *rdw* was associated with death and the decomposition of flesh that must be eliminated. Thus it was necessary for the deceased to have their *rdw* (and other forms of putrefaction) either purged or restored at the appropriate stages of their regeneration. The various positive and negative characteristics of *rdw* will be discussed in the following section.

In order to achieve the primary goal of mummification, the restoration of a body³⁰² to a state of wholeness, the *rdw* that was lost from the corpse had to be returned to it. This act was often accomplished through ritual libation, where water symbolized *rdw* belonging to both the deceased and Osiris simultaneously.³⁰³ Winkler (2006: 128-132) highlights Pyramid Texts Spell 32 (Pyr. 22a-23a) as a primary example of this process. Spell 32 is located in the burial chamber of the pyramids of Unas, Teti, Pepi I, Pepi II, and Merenre (Hays 2012: 81-82, 676). The burial chamber is associated with the realm of Osiris,³⁰⁴ which Winkler (2006: 128) states: ‘is ascribed the qualities of inertia, darkness, concealment’, the theme of this portion of the pyramid being revivification of the deceased. Thus, an offering of *rdw* in this location served to negate inertia and restore life-force to the deceased. In his explanation of the role of *rdw* as a libation to the deceased, Winkler (2006: 130-132) uses Assmann’s

³⁰¹ Winkler’s observations are based on his study of *rdw* in the Pyramid Texts, in particular Spells 32 and 258 in the pyramid of Unas. However, his overall conclusion on the nature of *rdw* can be applied to later bodies of funerary texts as will be demonstrated here.

³⁰² The decay of human bodies was likened to the dismemberment suffered by Osiris. In order for the embalming ritual to be successful all of the separated parts of the body, including the liquids of putrefaction exuded by the corpse, had to be reunited. For the mummification ritual as a means of reconnecting the dismembered body, see Assmann 2005: 23-38.

³⁰³ See Winkler 2006: 128-129.

³⁰⁴ Winkler’s interpretation is based on the pattern devised by Allen 1994:5.

(2005: 356-357) tripartite division of Spell 32, which is as follows:

Part 1: Describes how the act of libation is used to restore the bond severed by death between the deceased and his heir:

This your cool water, Osiris
this your cool water, Oh N,
has come forth with your son,
has come forth with Horus.

Part 2: The offering of the eye of Horus represents a reconstitution of the deceased's body through restoration of the liquid life-force that drained from him upon death:

I have come bringing you the eye of Horus
so your heart may be cool because of it.
I have brought it for you,
(it is) under you, (under) your sandals.

Part 3: The bodily integrity of the deceased is restored as he accepts the offering of his *rdw* from his heir:

Take the efflux, which came forth from you!
Your heart will not be weary because of it.

Figure 1 illustrates the process in which *rdw* was lost and then restored to the deceased:

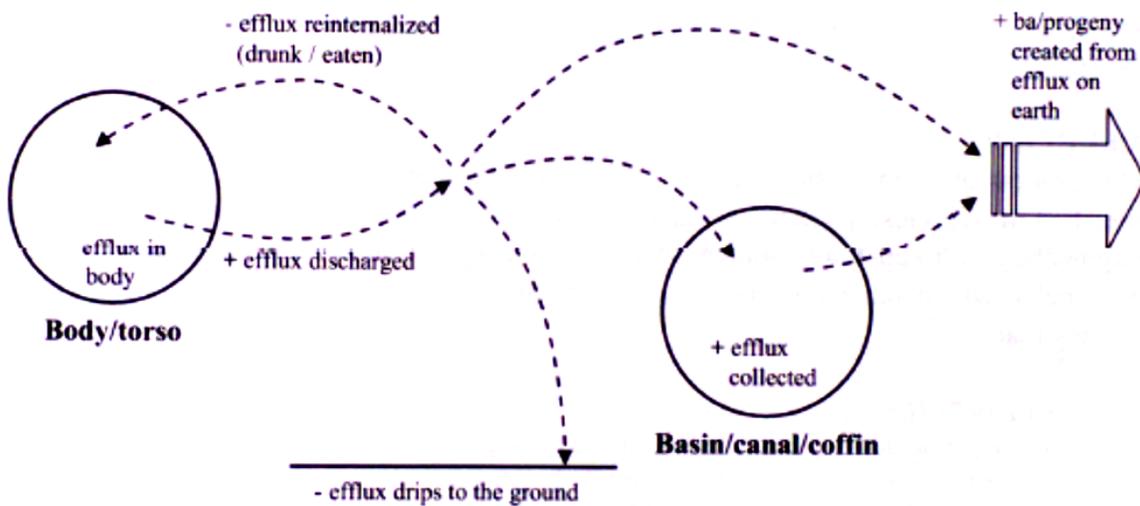


Figure 1. Restoration of the *rdw*. Nyord 2009: 467

The *rdw* was also believed to possess what Nyord (2009: 321 & 465-466) has termed ‘creative potential’ and was strongly associated with freedom of movement, particularly in reference to the *b3* spirit. As Nyord (2009: 321-323) explains, the Coffin Texts state that liquid putrefaction was involved in the creation of both the natural world and the supernatural. The *rdw* and other forms of decay belonging to deities were used to produce the natural environment; such as the creation of the *pṛt* season from the *fdt* (sweat) of Hapi (CT IV 142a) and the use of *rdw* from Shu to create storms (CT II 30e-f). The Nile flood,³⁰⁵ along with the underworld realm of Rosetau, are said to be made from the decay³⁰⁶ of Osiris. Similarly, *rdw* was essential in both the creation of the *b3* spirit and its ability to move freely. This idea can be observed in Coffin Texts spells 94, 96, 99, 101, and 102. The *b3* spirit’s freedom was essential so it could act on behalf of the deceased,³⁰⁷ whose corpse was stuck in the inertia of the underworld (Nyord 2009: 453-458). The *b3* was comparable to the deceased’s heir in that both were responsible for the maintenance of his burial and continued earthly existence and both were created from his body. According to Nyord (2009: 465): ‘That the efflux should be seen here as a means for the creative potential of a deceased person to bridge the gap between generations by procreating is corroborated by a number of expressions from the Shu-spells, where Shu is said to have created the eight *hh*-gods from the efflux of his own body (CT II 1b, 6c, 7d, 19e), just as Osiris was said to have made his own *b3* from his own semen and efflux in CT spells 94-96 (CT II 68b-c, 71b-c, 77d-78b)’. Another example of the beneficial role of *rdw* in regenerating the deceased can be observed

³⁰⁵ The link between the Nile flood and putrefaction (*rdw*) of Osiris will be discussed in detail further below.

³⁰⁶ CT V 373e-374a uses the terms *jwtȳw* and *hw33t* to denote the decay.

³⁰⁷ The ability of the *b3* to be able to eat and procreate was considered particularly significant, see Žabkar 1968; Nyord 2009: 440-442, 453-458.

from the underworld books inscribed on Late Period sarcophagi. In her analysis of sarcophagi of the Nectanebid Period (30th dynasty), Manassa (2007) identifies a distinct decorative scheme on her Type 1 sarcophagi. This program of decoration, which was created through the combination of various funerary texts, represents a previously unidentified underworld book that Manassa (2007: 14-15) calls ‘The Book of Resurrection through Decomposition’. The main theme of this book is: ‘decomposition – of the eye of Horus, of the Osirian corpse, and even of time itself – as a prerequisite to regeneration and resurrection’ (Manassa 2007: 15). Scenes and texts focused on bodily decomposition prior to resurrection occur primarily on Side Two of these sarcophagi (see **figure 2**).

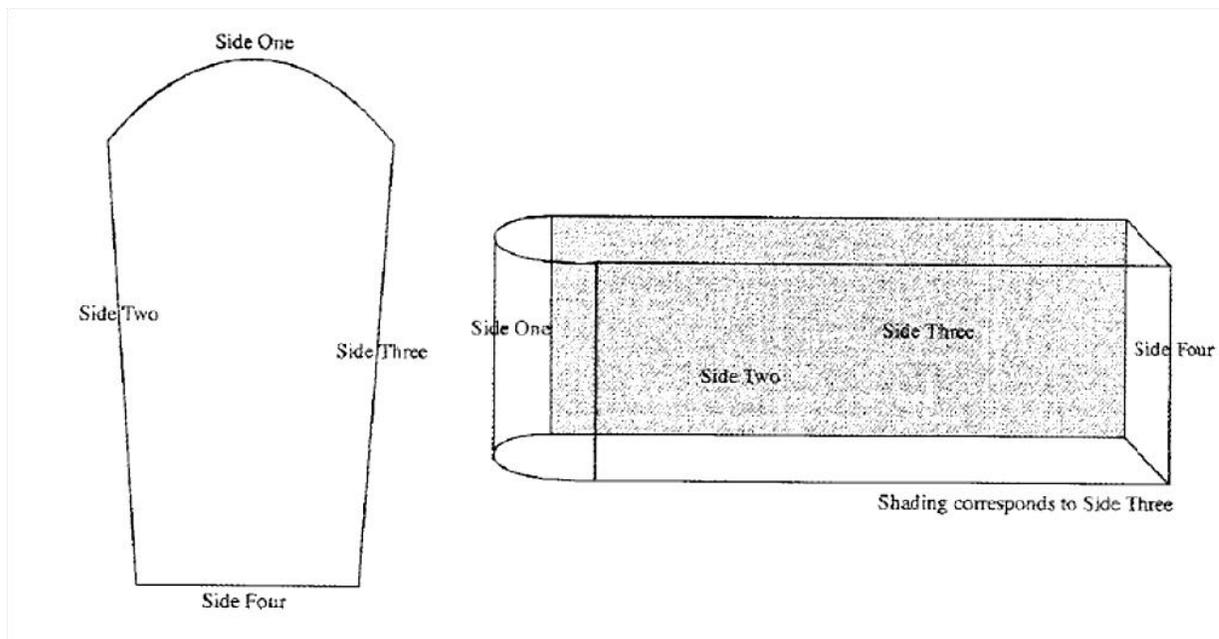


Figure 2. Sarcophagus orientation. Manassa 2007: 11

The setting for this decoration is the underworld where mummies lay surrounded in their own putrefaction, decaying in the company of Osiris. The words used to describe the

decomposition on the sarcophagi include *jwtȳw*, *hwꜣw*, and *ꜣȳw*.³⁰⁸ The *bꜣ* spirits of these rotting mummies act as their protectors and enable them to communicate (Manassa 2007: 51-52). Contrary to its outward appearance, this scenario was actually a desirable one that would lead to resurrection of the deceased and the ability of their *bꜣ* spirits to ascend. Once the union of the *bꜣ* and corpse had successfully taken place, the *bꜣ* ascended to the celestial realm. At this time, the corpse in its entirety was left behind in the underworld. The Pyramid Texts³⁰⁹ and Coffin Texts³¹⁰ both contain spells that describe how the *rdw* must be discarded in order for this transition to occur. The reason for this was not that *rdw* was considered harmful to the deceased, but simply that its appropriate context was that of the Osirian underworld. The *rdw* was vital for the bodily regeneration of the deceased; however, once the body was restored it could no longer contain putrefaction, which was a characteristic of a decaying corpse and not a living being (Zandee 1960: 11 & 57; Winkler 2006: 134-138).

5.3 *rdw*, Osiris and the Nile

The *rdw* of Osiris was equated with the Nile inundation. According to the Pyramid Texts, the death of Osiris occurred either in or near the Nile.³¹¹ Upon his death *rdw* that exuded from the corpse mixed with the water. As Claus (2005: 201-210) explains, this *rdw* of Osiris (physically represented by fertile soil suspended in the floodwater) created an inextricable

³⁰⁸ Manassa (2007: 51) notes that she could not find a parallel for use of the term *ꜣȳw* to denote bodily decay.

³⁰⁹ Spells 29 (Pyr. 20c), 258 (Pyr. 308f), 535 (Pyr. 1283b) and 659 (Pyr. 1865).

³¹⁰ Spells 69 (I 295b), 173 (III 57i, 58e), 204 (III 141e), 665 (VI 292j), 667 (VI 295m), 764 (VI 394o), 766 (VI 396g, 396n), 810 (VII 12o), 1011 (VII 227d), and 1014 (VII 233a).

³¹¹ It is unclear exactly how Osiris was murdered, as none of the Egyptian funerary texts describe this event in detail. The Pyramid Texts state that Osiris was drowned in spells 33, 364, 423 but spells 482 and 532 mention that he was killed by Seth on the bank of the Nile in Nedit (located near Abydos, see Gauthier 1926: 110; Allen 2015: 361). Assmann (2005: 358) suggests that Seth first struck Osiris on the bank of the Nile and then tossed his body into the river.

link between the Nile and the god Osiris. The *rdw* of Osiris was thought to enhance the life-giving properties of the water and increase the productivity of the growing season following the Nile flood. Natural observation of the annual cycle of inundation likely inspired this association between the flood waters and *rdw*. During the season of inundation the Nile waters had a similar appearance to putrefaction. According to Bickel (2005: 191-200), at the point in the year when the Nile was at its lowest levels (from around March through April) the river appeared dark green in color, had a rotten smell, and supported a multitude of insects. Similarly, it was at this time of year when the rate of death, disease and malnutrition were at the highest. This situation was relieved at the arrival of the flood waters, which cleansed both the land and river and allowed life to continue Bickel (2005: 193-194). A slightly different interpretation of these natural events is suggested by Kettel (1994: 325-326), who states that the inundation itself resembled *rdw*, as the flood brought with it decomposing plant material that gave the water its green color and bad odor.

From the Late through Greco-Roman periods, when the cult of Osiris grew and expanded from that of funerary practice to incorporate aspects of daily life, the notion of the corpse of Osiris as the land of Egypt itself³¹² became a focus in religious practice and the connection between *rdw* and agriculture intensified. According to Winkler (2006: 133): ‘...Osiris is a microcosmic reproduction in myth of the most important natural event for the ancient Egyptians, namely the yearly inundation’. In this way, the various nomes of Egypt represented the dismembered corpse of Osiris restored to wholeness through the annual Nile

³¹² For this idea, see Goyon 1988: 34-44.

flood as he was repaired through mummification.³¹³ Thus, the embalming ritual symbolized unification of Egypt itself as well as bodily integrity of Osiris.³¹⁴ Just as embalming a body created a stable mummy, the use of this same ritual in a temple context created a stable and unified Egypt.

5.4 Containing the *rdw*

5.4.1 Reasons for collecting the *rdw*

Since the *rdw* held both positive and negative attributes it was necessary to contain it. This way, the *rdw* was available to the deceased in order to revive him but at the same time prevented it from causing the decomposition of the corpse in its role as putrefaction. There were a number of ways containment of the *rdw* was represented. In the myth of Osiris, a makeshift dam was molded around the body where it lay at the bank of the Nile in order to prevent the *rdw* from escaping and the body from disintegrating.³¹⁵ The sarcophagus or coffin was also viewed as means of containing *rdw*.³¹⁶ The burial chamber of tombs mimicked that of Osiris, whose crypt existed in the underworld region called Rosetau.³¹⁷ The central aspect of this region was the corpse of Osiris, contained in a sarcophagus filled with the liquid putrefaction from his body. This arrangement is depicted in a vignette from P. Salt 825 (**figure 3**). Additionally, the *rdw* could be contained within vessels.³¹⁸ Since the

³¹³ See Goyon 1988: 34-44; Spieser 1997; Winkler 2006: 132.

³¹⁴ Aspects of the embalming ritual were adapted for use in such matters as unity of the state and fertility of the land; see Beinlich 1984; Goyon 1988: 34-44; Assmann 2005: 355-368; Mojsov 2006: 109.

³¹⁵ For this act see Coffin Texts spell 74 (I 307c); this episode clearly conflicts with the version of the myth where Osiris drowns in the Nile.

³¹⁶ Coffin Texts spell 547 (IV 143) mentions that Osiris fills his coffin with *rdw*; also see Manassa 2007: 13-66 for sarcophagi as a container for *rdw* from the Late Period.

³¹⁷ For a discussion on the burial chamber of Late Period tombs as a representation of the burial of Osiris, see Stammers 2009: 26-47.

³¹⁸ The *rdw* is often associated with the *snw* jar in particular, as will be demonstrated below. Also see Willems 1996: 118-119.

embalming caches consist primarily of jars filled with materials representing *rdw*, this method of containment will be discussed at length below.

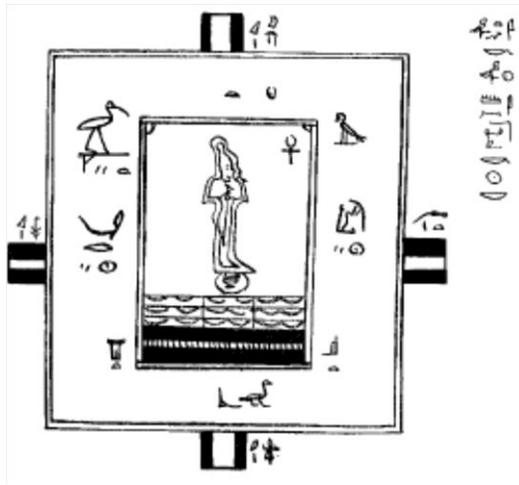


Figure 3. Osiris in his crypt from P. Salt 825. Derchain 1965: 23*

The act of containing the *rdw* within a vessel resembles the well-known form of magic used in ancient Egypt for protection, called encircling.³¹⁹ The object positioned inside the enclosure can be either that which needs the protection or the hostile entity that is being trapped (Ritner 1993: 57-67, 136-180). Both of these aspects of containment were necessary in the case of *rdw*. Containing the *rdw* in a vessel was thought to trap the negative aspects of this substance and prevent them from harming the corpse while the life-giving properties could be poured from the jar and offered back to the deceased. Ritner (1993: 175-176) equates the use of jars in execration rites to a kind of burial and describes these containers as having an active role in the practice of encircling. As he explains: ‘The hostile encirclement (*phr*) thus enacted serves to re-enforce the constrictive nuance of binding and burial. The jar

³¹⁹ Encircling was accomplished in many ways and was a particularly common occurrence in funerary practices. Examples of this include the use of the mummy wrappings (Wendrich 2006: 258-260) and coffins to enclose the body, as well as the events of the *Stundenwachen* where the gods guarding Osiris during the night circle the perimeter of the embalming workshop in order to prevent Seth from entering the building (Reymond 1972: 134; Junker 1910).

itself is the actor, physically “going around about”³²⁰ its victims. Not simply a utilitarian container of magical material, the jar is a direct participant in the execration process’ (Ritner 1993: 176). Examples of the use of jars in execration can be found in the Coffin Texts. A variant to the beginning of spells 907 and 821 identified by Allen (1996: 9)³²¹ state:

You have made inert (*snn.n.k*) this father Osiris N., in your identity of *snw*-jar.

You have set a trap (*grg.n.k*) against this father Osiris N. in your identity of *mrgg*-jar.

Additionally, Ritner (1994: 175) highlights another description of execration rites featuring jars from Coffin Text spell 1016:

Oh you who are hateful...I put my hands on the jar in the bounds of which you sit; it descends before you.

P. Salt 825,³²² a Ptolemaic document that describes the destruction of hostile forces by means of magic, mentions the use of a jar in execration rites.³²³ The jar is represented in a vignette (**figure 4**) that is labeled ‘the male and female enemy in the vile jug’ with instructions to ‘go round about it’ (Derchain 1965: 144-145).

³²⁰ Quoted from P. Salt 825, which describes containing enemies within a jar and then circling the jar four times. For translation of this passage see Derchain 1965: 144.

³²¹ This text was found on three Middle Kingdom coffins from Lisht, see Allen 1996: 6-9.

³²² For a translation, see Derchain 1965.

³²³ For a discussion on this episode from P. Salt 825, see Ritner 1993: 175-177; Forshaw 2014: 24-25.

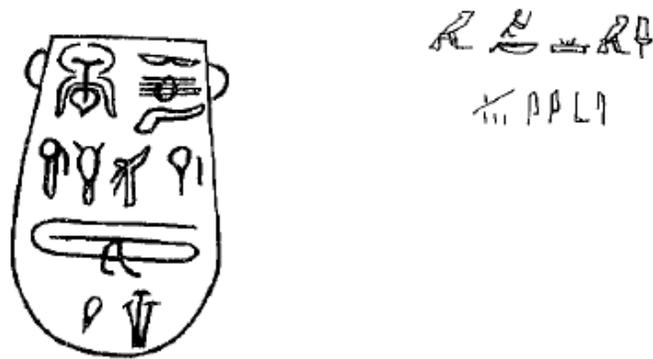


Figure 4. The Nile jug from P. Salt 825. Derchain 1965: 21*

5.4.2 Methods for collecting the *rdw*

During the embalming ritual care was taken to catch and save the *rdw*. There are two points in the ritual where the *rdw* was collected: during the initial purification of the body in the Tent of Purification and after the body was eviscerated. Additionally, *rdw* was collected from the corn Osiris created during the Khoiak festival. Each of these will be described below.

The most detailed description of collecting *rdw* comes from the temple rituals of the Osiris Mysteries carried out during the Khoiak festival.³²⁴ The corn mummy created during the festival, which represented the body of Osiris, was watered on a daily basis during the period of its “mummification”.³²⁵ A *snw* pot was placed underneath the corn mummy’s bed

³²⁴ The most detailed descriptions of the rites concerning the creation of corn mummies during the Khoiak festival are found in the Osiris chapel on the roof of the temple at Dendera (Chassinat 1966-1968; Cauville 1988: 23-36; Cauville 1997), P. Salt 825 (Derchain 1965), and P. Jumilhac (Vandier 1961), all of which date to the Ptolemaic period.

³²⁵ For a description of the rites of the Khoiak festival involving the corn mummies, see Chapter 3, section 3.2.4.

to catch the excess water, which was viewed as the *rdw* of Osiris.³²⁶

During the ceremony in the Tent of Purification, the body received a ritual bath in the form of a four-fold purification. The water used to wash the corpse was symbolic of both the primeval ocean of Nun and the efflux of Osiris.³²⁷ The run-off water from this bath was caught in vessels positioned below the body, as illustrated in the New Kingdom tomb of User (**figure 5**).

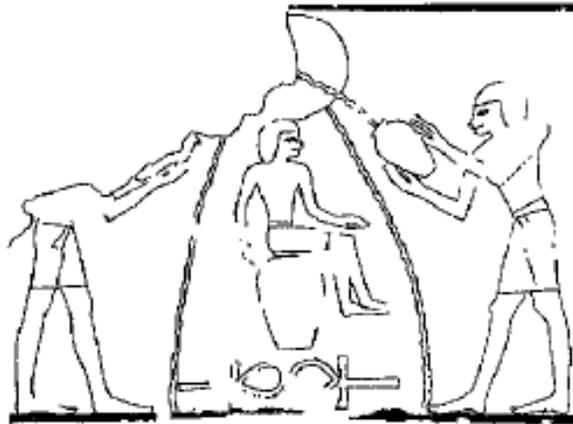


Figure 5. Lustration scene from tomb of User, Thebes. Willems 1997: 370.

According to Willems (1997: 343-372) the arrangement of the ritual lustration that took place in the Tent of Purification can also be observed in the decorative program of a number of Middle Kingdom coffins,³²⁸ where the *hnm.t-wr* sieve³²⁹ is positioned at the head end of the coffin and the *snw* and *mrg* vessels are positioned at the foot end of the coffin, creating

³²⁶ Willems 1996: 119.

³²⁷ For this reason it has been suggested that Nile water was used in this lustration (Blackman 1918: 117-124).

³²⁸ Also see Chapters 1 (section 1.2) and 2 (section 2.3) for a discussion on these particular Middle Kingdom coffins.

³²⁹ The *hnm.t-wr* sieve is also present in the purification scene in figure 5.

a three-dimensional representation of the purification ritual.³³⁰ In this way, *rdw* lost at death is given back to the deceased in the form of a water offering³³¹ and the excess *rdw* from this rite, considered sacred, was saved in the *snw* and *mrg* jars positioned below the corpse. After the corpse was eviscerated³³² the linen, natron, and other stuffing materials used to cleanse the inside of the body cavity were placed inside jars as they were covered in *rdw* of the corpse.³³³ In the case of the Apis bull, these materials were placed in two *hbn.t* jars (P. Vindob 3873 rt 4.5-8) that were then housed with the completed mummy in the tent set up outside the embalming workshop after Day 60 of the embalming ritual (P. Vindob 3873 rt. 4.8-9).³³⁴ It is unclear what happened to these vessels after the embalming ritual, as P. Vindob 3873 does not detail the funeral ceremony of the Apis bull.

The text of the Ritual of Embalming for humans (P. Boulaq 3) prominently features putrefaction (*rdw* and *fdt*) of the gods as an effective agent in revivifying the deceased during mummification. **Table 1** below lists the passages that mention *rdw* and *fdt*:

³³⁰ These coffins typically include Spell 235 of the Coffin Texts in which the magistrates of the divine tribunal return the *rdw* of the deceased to him in order to restore him to life and allow him freedom of movement (CT III 302b-e) (Willems 1996: 118).

³³¹ For the return of *rdw* to the corpse through water purification as depicted on Middle Kingdom coffins, see Willems 1996: 118 and Willems 1997: 343-372; also see Zandee (1975-1976: 40-41) for the symbolic association of *rdw* to water offerings to the deceased.

³³² It is unclear whether this step took place in the Tent of Purification or the embalming workshop for humans. According to the Apis Embalming Ritual, evisceration took place in the 'slaughter room' of the embalming workshop for Apis bulls (P. Vindob 3873 rt. 4.22-25, 5.1-36), see Chapter 1 (section 1.3).

³³³ It is unclear how much of this material needed to be collected. Kettel (1994: 320-321) suggests that liquefied matter from the eviscerated corpse was saved in jars as the *rdw*. Bodily residue is recorded among the contents of some embalming caches (see Chapter 4). It is uncertain whether the jars were originally filled with the liquid which has since dried, or as Janot (2008: 195) suggests, the liquids to be included in the embalming caches were all absorbed using linen, in which case the linen found in these caches may be representative of the liquid *rdw* from the corpse.

³³⁴ It is important to note that neither the word *rdw* nor any associated terms listed above denoting putrefaction are used in the Apis Embalming Ritual. However it is clear from the description of P. Vindob 3873 (rt. 4.5-8) that the materials placed in the two *hbn.t* jars were remains from the process of cleansing the body cavity; see Vos 1993: 35.

Use of terms <i>rdw</i> and <i>fdt</i> ³³⁵	P. Boulaq 3
‘For you is the <i>rdw</i> which has issued forth from Re, in order to beautify [...] in the hall of the two truths [.....] your odor in the hall of the <i>b3</i> ’	2.2
‘The <i>fdt</i> of the deities will enter you’	2.13
‘You will fulfill your wish in the lands [thanks to] the [<i>fd</i>]t of the god which has come forth from Punt’	2.14
‘After this [...]’ ³³⁶ again and place in a vessel of faience in which is the unguent of the children of Horus, letting the unguent of this deity permeate the god's limbs, since the internal organs are regenerated by means of the <i>fdt</i> which has issued from the body of the divinity [...]’	2.16
‘Take for yourself this ointment. Take for yourself this unguent. Take for yourself the vessel of life [...] this [...]. Take for yourself <the exudation > ³³⁷ of the gods, the <i>rdw</i> which has issued from Re, the mysterious liquid which has come forth from Shu, the <i>fdt</i> which has emanated from Geb, the divine limbs which have emerged from Osiris, the regenerating liquid [...]’	2.20-22
‘Re will cloth you with his <i>fdt</i> ’	3.1
‘To you will come (twice), to you will come the plants which have sprouted from the earth, the flax which has come forth from the fields of rushes, the fine vegetables which derive from the fields of jubilation, the best of the <i>rdw</i> which covers the gods when they go forth. It will enter you in the form of a precious bandage’	3.3-4
‘To you will come the outpouring of the gods, the <i>fdt</i> of the goddesses. To you will come the resinous substance which has issued from Coptos, the <i>rdw</i> of the foremost in the West’	3.6
‘...to you will come the clothing which has issued from the eye of Horus, the perfect <i>rdw</i> from Sobek’	3.12
‘The <i>rdw</i> of Re will come in to you, the god's body of Osiris in truth’	3.17
‘...will come the gods in the field of jubilation, depositing their <i>fdt</i> on your mouth’	6.5
‘Your face will live by means of the white and blue lotuses which constitute the <i>fdt</i> of the gods’	6.7
‘To you will come Osiris in Coptos of the two lands, the great god in Coptos, pre-eminent in the mansion of gold. He will bring you the <i>rdw</i> which has issued forth from himself, the resinous substance which came forth from his body’	6.8
‘You will receive <i>ihiti</i> -oil, the exudation of life, you being adorned at the openings of your head with what has issued from Re. Your throat will be filled with the <i>rdw</i> from Shu. You will be given an exudation for your nose more perfect than that which Re himself breathes’	6.22

³³⁵ Translations of P. Boulaq 3 by Smith 2009: 225-244 and Töpfer 2015: 59-212 were used to compile Table 1.

³³⁶ Töpfer (2015: 87 and note a) suggests "der *fdt* aufs Neue".

³³⁷ This word was omitted from the text, Smith (2009: 227, note 49) suggests the missing word was either *rdw* or *fdt* while Töpfer (2015: 89 and note j) uses *mw* in this space.

‘Your fingers will receive the <i>fdt</i> of Horus and the <i>rdw</i> of Isis’	8.2
‘Pull up the roots of the great god towards yourself in Abydos. Your body will be adorned with his <i>rdw</i> ’	8.6
‘What is yours which has emerged from Osiris will come, the <i>rdw</i> which issued from the aru-tree....Your hue will be as golden as pure orpiment, the <i>rdw</i> of Re, forever’	8.14-15

Table 1: Use of the terms *rdw* and *fdt* in the Ritual of Embalming

In the passages listed in Table 1 above, the *rdw* and *fdt* of the gods, mainly Re and Osiris, are equated with the oils, resins, and bandages used to mummify the deceased. In this exchange, *rdw* and *fdt* actually work to halt the decay of the corpse. These passages illustrate that the creative potential held by putrefaction and other bodily fluids (Ritner 1993: 73-110; Nyord 2009: 321-323) was dependent on the source from which it originated. Such a relationship can be seen in the previously discussed Pyramid Text Spell 32, where the *rdw* (also described as the healing eye of Horus and cool water) was offered to Osiris by his son Horus. Thus, the potential of *rdw* as an agent of revivification is realized upon its being offered to the deceased by either an heir or deities.

A certain motif prevalent in Late Period tomb scenes illustrates the offering of vessels of sacred unguents and other natural materials to the deceased. This motif depicts the seated tomb owner with one or more jars placed directly under his chair. Pischikova (1994: 63-68) documented this motif in eleven tombs dating from the late 25th dynasty through the 26th dynasty.³³⁸ The placement of vessels under the chair of the tomb owner may have originated during the New Kingdom where it can be observed multiple times in the 18th dynasty tomb of Sennefer (TT96)³³⁹ and has also been identified by Pischikova (1994: 66) in the tomb of

³³⁸ See Figures 1-10 in Pischikova 1994: 64-64 for images.

³³⁹ Desroches-Noblecourt 1986.

Tati (TT154).³⁴⁰ One example from the 26th dynasty tomb of Thary at Giza includes an inscribed jar³⁴¹ (**figures 6 and 7**) that indicates it contains red pigment.³⁴² The contents of the other Late Period examples may be indicated by vessel shapes, which resemble the jars used for the seven sacred oils (see discussion in Chapter 2, section 2.3). Pischikova (1994: 65) notes that the most prevalent in these tomb scenes are the vessels that would have contained the unguents *ḥknw* and *ḥ3tt nt tḥnw*. These jars represent substances that were used in the embalming ritual (as well as the funeral). The connection between this motif and embalming (and bodily purification particularly) is strengthened by their resemblance to the New Kingdom tombs, such as **figure 5** above, where the deceased is bathed while seated above a large jar. In both these scenes the jar is positioned directly below the deceased as was necessary for the collection of *rdw*. While the contents of the jars from the scenes in Late Period tombs differ from the New Kingdom tomb purification scenes, both can be equated with *rdw* (or *fdt*) of the gods.

³⁴⁰ Davies 1913.

³⁴¹ This is the only documented example of an inscribed jar.

³⁴² I have translated the inscription as ‘red ochre’; see Harris 1961: 123, 150, 160-162, 231-233.

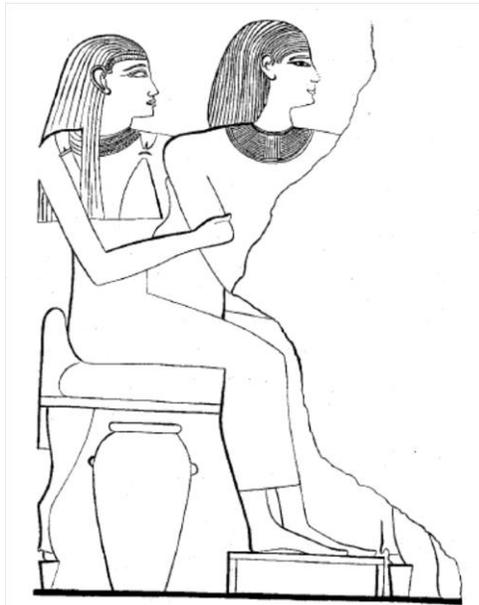


Figure 6. Tomb of Thary, scene on west wall of south chamber. el-Sadeek 1984: 39

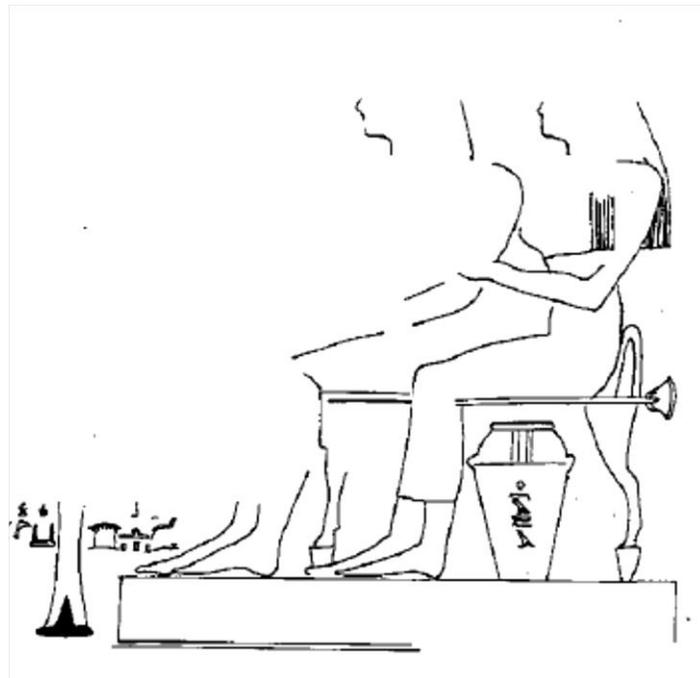


Figure 7. Inscribed jar under chair, Tomb of Thary. el-Sadeek 1984: 36.



Figure 8. Enlargement of inscribed jar under chair, Tomb of Thary. el-Sadeek 1984: 36.

5.5 Archaeological materials associated with *rdw*

Embalming caches represent archaeological evidence for the practice of collecting *rdw*.

Although the practice of creating embalming caches dates back to the Middle Kingdom,³⁴³ this discussion is focused solely on those dating to the Late through Ptolemaic periods. As discussed previously in Chapter 4 (section 4.3.11), the materials and context of these depositions suggest that embalming caches were created intentionally as part of the funerary ritual as opposed to only the discarded remains from embalming workshops. P. Jumilhac³⁴⁴ demonstrates the role of this material as *rdw* and its significance in terms of mummification and burial.³⁴⁵ An event is described where Seth enters the embalming workshop twice during the *Stundenwachen* and attempts to steal the *rdw* of Osiris (P. Jumilhac 2.3; 3.25-4.3; 7.14; 8.3-4; 17.15-18.15). This *rdw* within its *snw* jar is depicted in two vignettes from P. Jumilhac (**figures 9 and 10**). The *rdw*, like the corpse, was required for the resurrection of the deceased and needed to be protected from Seth's destruction. Therefore, it makes sense that the *rdw* would also be buried in the necropolis, where it could be near the deceased and also hidden and protected from potential harm. This is especially evident from the Type B₃

³⁴³ See Chapter 4, section 4.3.

³⁴⁴ For a translation, see Vandier 1961.

³⁴⁵ For further discussion of this topic, see Willems 1996: 119.

caches³⁴⁶ of Abusir and Saqqara, which have been likened to a kind of cenotaph inspired by the South Tomb of Djoser's burial complex at Saqqara (Smoláriková 2009a: 61-62).

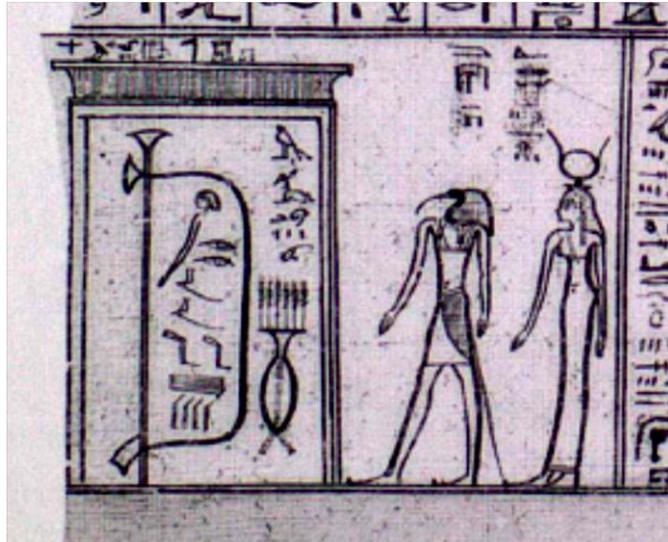


Figure 9. *snw* jar of *rdw* sprouting wheat. Vandier 1961: V

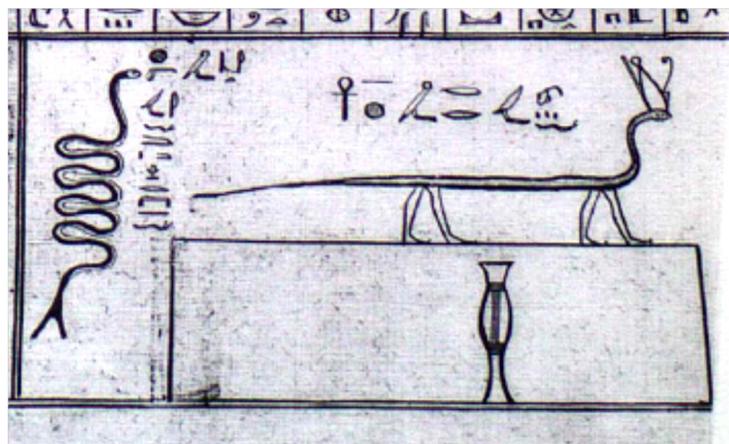


Figure 10. *snw* jar of *rdw* surrounded by guardians. Vandier 1961: IX

Of particular use in illustrating the connection between *rdw* and embalming caches are the canopic boxes, dating from the 30th dynasty through the Roman period.³⁴⁷ These represent

³⁴⁶ Type B₃ embalming caches were buried in purpose-built chambers, see Aston 2011: 45-79.

³⁴⁷ Budka, Mekis and Bruwier 2013: 235.

the final phase of the embalming cache tradition.³⁴⁸ Despite their name, these boxes did not always contain organs of the deceased but sometimes held the same types of materials found in the jars of the Late Period embalming caches. These could include linen, natron, sherds of pottery, and embalming residue or other organic material. Budka, Mekis and Bruwier (2013: 236) explain: ‘All of the materials found in the chests in question are linked to the evisceration and in particular to the human viscera or, at least, their lymph and other bodily fluids (*rdw.w*). These putrescent secretions of the decomposing body are frequently evoked in the Late Period’.

A particularly notable canopic box, excavated from a burial (dating to the late dynastic or early Ptolemaic period) within the mastaba of Akhethotep, also included four small bundles of grain.³⁴⁹ The inclusion of grain in the canopic boxes provides a link between the practice of creating embalming caches and other Osirian rites from the same time period where grain was a main component.³⁵⁰ These rites include the creation of the corn Osiris during the annual Khoiak festival and rites that took place at Dendera involving the Osiris relics³⁵¹ from each of the 42 nomes of Egypt. The grain symbolized the resurrection of Osiris, a concept that can be best illustrated in two scenes from the Osiris chapel on the roof of the temple of Philae. The scene on the south wall depicts Osiris lying on a funerary bier with grain sprouting up from his body while a priest standing at his feet pours water on him. The accompanying text states: ‘This is the form of him whom one may not name, Osiris of the mysteries, who springs from the returning waters’. The scene on the east wall shows a *b3*

³⁴⁸ See Schreiber 2007: 337-356.

³⁴⁹ Janot and Lapeyrie 2013: 422.

³⁵⁰ Compare with vignette V from P. Jumilhac (figure 9).

³⁵¹ These relics were made of a mixture of grain and soil. A thorough study of the Greco-Roman Osiris relics has been published by Beinlich (1984).

bird rising from plants sprouting above an irrigation canal that is watered by a cow-headed deity (Centrone 2005: 355). The water in these depictions is Nile floodwater, which was also the *rdw* of Osiris. Both scenes represent the return of this *rdw* to Osiris, either as a mummy or the cultivable land of Egypt. The sprouting grain symbolizes the *b3* spirit rising from the body after it is successfully regenerated (Centrone 2005: 356).

CONCLUSIONS

The aim of this thesis is to investigate the embalming ritual of Late Period through Ptolemaic Egypt. This is an interdisciplinary study that incorporates textual, artistic, and archaeological sources in order to develop a more complete picture of various aspects of this funerary ritual. The benefit to utilizing these multiple lines of evidence is that they allow for a much more in-depth examination of the embalming ritual, where each genre is able to contribute specific types of information on the practice. Individual examination of each in chapters 2, 3, and 4, highlighted the specific contributions for which these sources were best suited. By bringing together the various sources in chapters 1 and 5, the structure of the ritual and some of its most significant religious underpinnings could be examined in a way that would otherwise not be possible. In particular, this analysis allows for a better understanding of the material culture associated with the embalming ritual and how this rite appears to us through the archaeological record.

The artistic evidence I examined for this study mainly included painted coffins and cartonnage cases dating from the Late through Ptolemaic Periods. Primarily, artistic evidence of the embalming ritual is represented by the ‘mummy on a bier’ scene, painted on the central portion of coffins and cartonnage during the Late through Greco-Roman periods. Examining variations on this scene revealed the religious significance of portions of the embalming ritual, including materials that were necessary for its completion and gods and protective figures that were believed to play roles in successful mummification. Special attention was given to the coffins of Mutirdis (Roemer-Pelizaeus Museum 1953), Djedbastetioefankh, (Roemer-Pelizaeus Museum 1954), and Paiuenhor (Kunsthistorisches Museum 7497). These coffins from el-Hiba include unique scenes of the mummy during initial water purification and in stages of mummification prior to wrapping. They

represent the only documented examples of the corpse figure depicted in the context of the embalming ritual. Other artistic evidence such as tomb and temple scenes and painted papyri were utilized where appropriate. Artistic evidence from earlier periods of Egyptian history was included for scenes related to embalming where Late Period or Ptolemaic examples could not be found, such as the Old Kingdom scenes of embalming workshops. These earlier examples were also utilized when they were able to illustrate an important development of ideas or imagery associated with the embalming ritual, such as the Middle Kingdom coffins.

The textual evidence I examined included funerary papyri, temple inscriptions, legal and administrative papyri, and the works of classical authors Herodotus and Diodorus. The funerary papyri and temple inscriptions provided background on the religious significance of the embalming ritual and the way in which this rite would benefit the deceased. The secondary accounts, as well as the legal and administrative documentation aided in understanding the operation of the funerary industry during the periods in question. In particular, they shed light on the roles of various professionals (and their position in society) involved in mummification and the care of the deceased after burial. Both the religious texts and those pertaining to the funerary industry were insightful in gaining a better understanding of the materials used during embalming and the timing of their use during the ritual.

Archaeological evidence came mainly from the Late Period embalming caches. These included materials that had been utilized in human mummification, such as linen, natron, reed matting, straw, resins and other unspecified embalming residue. The embalming caches also included ceramic vessels used during mummification and sometimes roughly made anthropoid coffins to contain the materials. Occasionally, larger items such as embalming

tables or tools were also included, adding additional insight to our understanding of the process. The embalming caches were deposited in either pits or purpose built chambers within the necropolis. The variation in size, contents, and deposition of these Late Period embalming caches makes them particularly well-suited to studying fluctuations in embalming practices both in terms of regional variations and chronological development. I limited my analysis to material from the context of Memphis and Thebes, as the majority of published embalming caches have been excavated from these two locations. Further archaeological evidence included certain mud brick buildings from the cemeteries of Saqqara and Thebes that have been suggested as Late Period embalming facilities, as well as the architectural features of the Apis embalming house and the wabet and court feature of Greco-Roman temples. Analysis of these remains helps in our understanding of what type of buildings may be associated with embalming and the kinds of architectural features we could anticipate in association with the embalming ritual. The wabet and court, which are the best preserved structures that I studied, are particularly useful in examining the spatial aspects of the embalming ritual and how this type of purification was conducted in three-dimensional space.

This thesis is thus far the only work to analyze the Egyptian embalming ritual of the Late through Ptolemaic Periods by bringing together archaeological, textual and artistic evidence. Examination of these sources has led to a more developed understanding of embalming during this period of Egyptian history and particularly the way this rite is observed through the archaeological record. This study yielded a number of significant findings; the most pertinent of these will be discussed below.

A heightened sense of importance of the preservation of the physical body within funerary religion developed from the Late Period through the Greco-Roman period. This can be seen through archaeological evidence, such as revival of the tradition of depositing used embalming materials in the cemeteries and re-introduction of functional canopic equipment during the Late Period. Artistic examples include the prominence of the 'mummy on a bier' motif on burial goods (coffins in particular) and tomb decoration from the Late through Greco-Roman Periods. In funerary texts of the Greco-Roman period, such as P. Rhind 1 & 2 and the Ritual of Embalming papyri (P. Boulaq 3 in particular), more attention is placed on the preparation of the physical body for the funeral and the offerings provided for mummification of the body to insure its purity. There were a number of reasons for this increased focus on bodily integrity. During the Late Period burials of wealthy individuals were smaller and less elaborate than they had been in the past, where the body would have become a much more prominent feature in the interment. There was also a development in the type of identity created for the deceased in the afterlife. Greco-Roman funerary texts describe a social identity that the deceased acquired in which they are pure and cleansed individuals. They were equipped with clothing, incense, and other offerings belonging to deities, signaling their worthiness to enter the divine realm of the afterlife. The embalming ritual itself functioned as the primary way this new identity of the deceased could be achieved. The focus of the embalming ritual was not the technical aspects of preserving the body through mummification procedures but instead was a purification rite with the main purpose of preparing the deceased to enter into and be accepted in a new state of existence. Through purification of the physical body and halting decay of the corpse, embalming rites

aided in the creation of the identity required for this transition. The body was covered with copious amounts of scented resins and perfumes while incense was burned and protective prayers recited within the embalming workshop. The mummy was wrapped with pure linen, some of which may have come from temples after being offered to cult statues, and equipped with protective amulets. Similar purification rites were utilized in the temple context and included ritual bathing in water, censuring, anointing, and the offering of clean linen clothing and protective amulets. Such rituals were used by priests who entered the temples to attend to the cult statues and, as discussed at length in chapter 4, for certain cult statues themselves when their divine life force needed to be recharged. In each case, both in mummification and the temple practices, this type of purification rite is used in the same ways. It prepares the recipient to engage with divinity and inhabit space under the authority of the gods and it protects the recipient while they are in a transitory state, such as that between death and rebirth.

As a funerary rite, purification via the embalming ritual had an additional significant function. The embalming ritual also signified the beginning of a cycle of renewal that was essential for the continued existence of the deceased. In this way, the deceased was first cleansed of their bodily putrefaction, called *rdw*, that represented both physical and spiritual corruption. The heir of the deceased then offered the desiccated body restorative liquid including pure water, scented resins, and luxurious perfumes. These items were described as *rdw* of the gods throughout P. Boulaq 3. This offering aids the deceased in transitioning to a spiritual existence. However, for this new spiritual ascension to be maintained it was believed that the spirit must regularly re-unite with the corpse and its corporeal *rdw*. In this

way, the corpse and *rdw* continued to be crucial components of the person of the deceased and needed to be kept safe. Although this concept is first documented in the Pyramid Texts, its role in funerary religion is significantly heightened during the Late Period. Embalming materials leftover after the ritual was completed were thought to be imbued with this corporeal *rdw* and were deposited in the necropolis near the mummy's burial to ensure this cycle of renewal could be completed. During the Greco-Roman period the concept of the *rdw* became well integrated into temple rites, where it was the subject of certain annual canopic rituals documented at Dendara, likewise *rdw* was collected from the corn mummies created during the Khoiak festival and Sokar festival.

Important insight on the role of the embalming ritual during the Egyptian Late Period can be observed through the el Hiba coffins of Mutirdis (Roemer-Pelizaeus Museum 1953), Djedbastetiouefankh, (Roemer-Pelizaeus Museum 1954), and Paiuenhor (Kunsthistorisches Museum 7497). These coffins depict scenes of the embalming ritual, from initial purification of the unwrapped corpse to the completion of the wrapped mummy, which are interspersed with registers illustrating episodes of the funeral ceremony. It is not only the embalming scenes that make these coffins extraordinary but the funeral scenes themselves, which seem to have more in common with depictions of the day hours of the *Stundenwachen* as seen at Dendara temple than they do with images of funerals for human beings. This is particularly emphasized by the use of a mummified falcon figure in place of the mummy of the deceased. The decorative program of these coffins illustrates a merging and fluidity of temple and funerary traditions during this time. The coffins indicate that not only could purifying rites associated with mummification be utilized in the temple but temple festival

activities could be imported into funerary practice.

These three coffins from el-Hiba are the only known examples of Egyptian funerary art that depict mummification rites where the corpse is shown unwrapped. While very rare, other scenes of unwrapped corpses do exist in ancient Egyptian art. They first appear in the New Kingdom in the vignettes to Book of the Dead spells 85, 89, and 92 on both papyri and tomb walls. Since the texts of these spells reference the shadow (*šwt*) of the deceased, the black silhouette form in these scenes is typically identified as this shadow. However, I disagree with this explanation and instead argue that all of these figures should be viewed as corpses. Many similarities can be observed between the mummification scenes on the el-Hiba coffins and other scenes that include unwrapped corpses. The types of images that include corpse depict liminal or transitory space, where the deceased moves from their earthly form to an eternal existence. These images focus on activities such as water purification, judgment of the deceased, or movement of the *b3* spirit and corpse of the deceased through a tomb door. The use of the corpse image in funerary art is somewhat intensified through the Greco-Roman period. This reflects the heightened focus on the physical body and prevention of its decomposition in funerary religion of this time period.

The Late Period embalming caches provided an unparalleled level of archaeological data concerning both the embalming ritual of the Late Period specifically and its development into the Greco-Roman period. The analysis of embalming cache contents in chapter 4 revealed that the most common materials deposited included linen, natron, straw, and embalming residues. Although it appears that many Late Period embalming caches represent the remains of the earliest stages of the embalming ritual, before the mummy was fully dried and wrapped, analysis of docketts on certain

ceramic vessels from the caches revealed that portions of the latter half of the rite were also represented. This was especially evident in the exceptionally large embalming cache of Menekhibnekau. In contrast to those of preceding eras, the Late Period embalming caches vary greatly in both size and method of deposition. Certain subtypes, such as those buried in anthropoid coffins (Budka's Type A caches) and the very large *Topfnests* (Budka's subtype B₅) seem to be limited to Thebes. A chronological of development in the tradition of depositing embalming material can be observed, where the final form of the practice appears in the early Ptolemaic period. During the Greco-Roman period both embalming caches and canopic equipment are represented in the form of small, wooden canopic boxes that often contained a small amount of linen, natron, and pottery sherds as well as organic remains from human mummies and various embalming residue. The analysis of embalming cache contents in chapter 4 revealed that the most common materials deposited included linen, natron, and embalming residues. Also found among these was reed matting. It has been noted in chapters 2 and 4 that this reed matting was included in the caches because it had been utilized during the embalming ritual. Multiple lines of evidence, including textual, artistic, and archaeological, indicate that reed mats played a role in embalming, particularly the preliminary stages of the process. P. Rhind 1 (2.3-4), P. Rhind 2 (3.1-2) and P. Vindob 3873 (rt.1.1 & 1.3) mention that the bodies were placed upon a reed mat when brought into the embalming workshop. P. Vindob 3873 (1.1 recto) notes that the embalmers' tools were also placed on a reed mat on the sandy floor of the embalming house to avoid them touching the floor directly. Register 5 of the el-Hiba coffins of Mutirdis and Djedbastetiouefankh depict the portion of the embalming ritual before the mummy was wrapped. The body lies on a typical lion-headed embalming bed,

between the body and the bed is a material represented by the zig-zag lines. This is likely to be reed matting that covered the funerary bed, either the bed consisted of frame and wickerwork or matting was placed atop the embalming table. Additionally, the earliest known depiction of an unwrapped corpse, the vignette to spell 85 on the 18th Dynasty Book of the Dead of Tjenena (Louvre 3074) illustrates the corpse lying on a reed mat. Evidence of the use of reed matting during mummification has been found on the skin of mummies where a similar zig-zag pattern from woven reed matting is sometimes observed (Dunand and Lichtenberg 2006: 100-101). In order for such impressions to be preserved on skin, the body would have been placed on reed matting shortly after death and then remain there until dry. This arrangement correlates with both the artistic and textual evidence discussed above for the use of reed matting in the embalming ritual.

The findings of this thesis will be of use to both Egyptologists and archaeologists. Of particular note is the extensive database of Late Period embalming caches that I have compiled for this project. Thus far, this database is the largest and most complete list of Memphite and Theban Late Period embalming caches and compares data on location, deposition, and typology as well as any available data as to the contents of the individual caches. The embalming cache database provides a visual organization of most common contents documented in archaeological reports, and where possible, additional notes are added to elaborate on the condition or quantity of each material. As well, the database notes more obscure cache contents, such as amulets and papyrus. The database includes a variety of spatial data (where available) such as location of the cemetery, find spot of the cache within the cemetery, and a description of the deposition of the cache. This allows for a

useful comparison between spatial variables and other categories such as cache type and contents. For example, I recorded four canopic boxes that included embalming materials (ceramic sherds, linen, natron, straw, and embalming residue). All of these came from Saqqara and were found in large tombs that included multiple burials dating between the Late and Ptolemaic periods. It is my hope that this embalming cache database can be useful in furthering a spatial analysis of embalming cache subtypes across cemeteries. This seems particularly intriguing given the apparent geographical variation in Late Period cache subtypes between Memphis and Thebes, as discussed above.

This thesis is also useful to archaeologists in particular because it offers an opportunity to examine an aspect of funerary practice rarely accessible to researchers studying mortuary remains, that is the treatment of the corpse and accompanying rituals before the body is interred in its grave. In the recent collected volume *Death Embodied: Archaeological approaches to the treatment of the corpse*, Graham (2015: 4-5) explains: ‘It would be much easier to identify and decipher the decisions that were made at the moment of burial, and in the process which led up to it, if we could see, smell or feel for ourselves the materiality of the body with which past mourners or disposal practitioners were confronted, and around which funerary rites were performed. Unfortunately this happens rarely, and even when it does we are faced ultimately with a body which has been preserved at...usually a moment subsequent to the final act in the mortuary process, once the body had been abandoned to the elements’. In the case of Late Period Egypt we have both human bodies preserved intentionally as part of funerary rites before burial and remains of material goods used to carry out that action. However, it is important to keep in mind that deposition of these

embalming materials was itself a funerary ritual. Therefore, even in this unique case study we are left with the same scenario as that is outlined by Graham (2015: 5), where we are observing the completed mortuary process. The difference here is that the archaeological evidence does allow us to experience the materiality of the body and its preparation for burial. Although in this case we still must: ‘rely on our ability to work backwards, from the end result of completed funerals in order to reconstruct the various stages, treatments, behaviours, emotions and rituals that they involved’, (Weekes 2008, quoted in Graham 2015: 5) the layers of funerary practice we are able to recover are unparalleled. In addition to the archaeological material, we also have both textual and artistic sources that document the funeral ceremony and the rituals that preceded it. This level of primary documentation is quite rare when considering ritual practices within the archaeological record. In the case of the embalming ritual of Late Period Egypt we have a unique opportunity to examine the different ways Egyptians documented this rite through art and writing. We can then compare this to the evidence of its practice as preserved through archaeological material. With this multidisciplinary approach we are able to build a more detailed picture of how the ritual of embalming occurred and its significance in Egyptian religion and society. With the archaeological remains available we can, in a way, reconstruct the environment in which this funerary rite occurred. For example, we know which perfumed oils and resins were applied to the corpse and which kinds of colored linen cloth wrapped the finished mummy. Textual sources explain the religious significance and timing of their use during the ritual, while artistic sources illustrate the usage of the materials in its most idealized setting, the mythological embalming of the god Osiris.

I view this thesis as the starting point into my research of embodied funerary archaeology of Late Period Egypt. Admittedly, studying of the materiality of the human body within funerary practice is a fascinating subject for any period of ancient Egyptian history, however I am particularly interested in this from the Late Period on due to the increased emphasis placed on the preservation of the body in funerary religion at this time. There has been considerable scholarly attention on the subject of “disposal of the dead” in mortuary archaeology recently, including Fahlander and Oestigaard 2008, Borić and Robb 2008, Rebay-Salisbury, Sørensen, and Hughes 2010, Graham and Devlin 2015, and Renfrew, Boyd and Morely 2016. However, this fascinating topic has yet to be addressed within the context of late dynastic Egypt. Certainly, there is already a foundation for such work as a number of significant works on the subject of embodied archaeology of ancient Egypt have been published. These include Stevenson 2007 and Stevenson 2016 on the topic of Predynastic funerary practices and Meskell 1999 and Meskell and Joyce 2003 focusing on New Kingdom Egypt, covering domestic and funerary contexts. There are two concepts within the topic in particular that I would like to address, they are the fragmentation of the body³⁵² and the link between physical decomposition and moral (or spiritual) corruption. The Late Period Egyptian embalming ritual caused a fragmentation of the physical body. The mummification process involved evisceration where the major organs were then stored in separate containers (however usually interred with the body). Embalming also created and residue (*rdw*) that was collected and buried (typically separate from the body) because they were also considered to be essential to the revivification of the deceased. Ironically, the very

³⁵² For the topic of fragmentation of the body in archaeology, see Chapman 2000; Folwer 2008; and Rebay-Salisbury, Sørensen, and Hughes 2010.

process that was utilized to preserve the integrity of the body fragmented it by necessity. Each of the physical components was considered to be an important part of the person of the deceased. Just as the decay or destruction of the corpse could jeopardize eternal existence so too could the loss of the organs or *rdw*. I would like to explore the role of fragmentation in the Late Period Egyptian embalming ritual further and also examine and compare other examples of bodily fragmentation due to embalming practices, such as the separate heart burials of historic France and England³⁵³ and traditions of evisceration among European aristocracy.³⁵⁴

The connection between physical cleanliness and preservation and moral vindication has been addressed within the context of ancient Egyptian culture already within this thesis (chapters 1 and 5 especially), and notably by Blackman 1918 and Assmann 2005. I will continue to examine the ways that purification rites (particularly censuring and coating the body with fragrant resins and oils) during embalming fulfilled this need for an incorruptible physical body in Egyptian funerary tradition. As discussed in this thesis, the precious oils and resins employed in embalming thought to be a type of *rdw* themselves, but of divine origin. It was this act of replacing corruptible *rdw* from the human corpse with eternally fragrant *rdw* of the gods that granted the deceased their identity as “true of voice” or justified in the afterlife. I am particularly interested in examining the specific placement of certain fragrant materials on the body as well as the sequence of their use during embalming and the subsequent funeral ceremony. Interesting cross-cultural comparison on the concept of physical preservation indicating spiritual purity would include the veneration of well-

³⁵³ For this topic see Bradford 1933; Michel 1971:121-139; Dietz 1998; and Weiss-Krejci 2010: 119-134.

³⁵⁴ For this topic see Weiss-Krejci 2005: 155-172 and Weiss-Krejci 2008: 169-190.

preserved bodies of saints in Medieval Europe³⁵⁵ and self-mummification practices of Buddhist monks from Japan.³⁵⁶

I plan to further investigate the iconography of the coffins of Mutirdis, Djedbastetiouefankh, and Paiuenhor. Since all three coffins originate from el-Hiba, I am particularly interested in what, if any, connection there may be between this location and the use of such unusual embalming imagery. Ideally, I would like to be able to utilize the technological developments of infrared imagery and reflectance transformation imaging in order to study the painted surfaces of the coffins. It is my hope that such an investigation could reveal useful information about the creation of these coffins and their relationship to each other, such as whether they were made in the same workshop or by the same artist. Other useful information that could be revealed would be if any of the scenes had originally been edited, replaced, or changed in any way. Since researching the coffins for this project I have learned that not only the embalming scenes but the funeral scenes on these coffins are obscure. My initial search of published Late Period through Ptolemaic coffins and other funerary goods excavated from el-Hiba has not revealed any additional items with similar funerary scenes or depictions of mummification. In completing my analysis of coffin iconography for chapter 2 (also Appendix 2) I noticed that I did not find parallel scenes of funerals depicted on any of the Late Period coffins (from various locations) and only a few similarities on Ptolemaic coffins and cartonnage (also from various locations). The closest comparison I found to the funeral scenes on these three coffins, as discussed in chapter 2, comes from the *Stundenwachen* scenes of the temple of Dendara. In my future research I

³⁵⁵ See Devlin 2015: 63-85.

³⁵⁶ See Morimoto 1993: 381-398 and Sakuri et al 1998: 308-335.

will analyze additional temple iconography from the late dynastic through Greco-Roman periods in order to see if I can find additional parallel scenes and better understand the rites they depict. It is my hope that analysis of these funeral scenes may help to indicate the reason they were balanced with such elaborate scenes of the embalming ritual.

I intend to continue my research into the depiction of corpses in Egyptian art. For the purpose of this project scenes including corpses were examined as they pertained to the early phases of the embalming ritual, which is an extremely rare subject in Egyptian art. However, as focus on the physical body increased in funerary religion so did depictions of corpses in funerary art. During the Greco-Roman period they appear in a variety of scenes, typically those representing the journey between death and eternal existence. I will explore the development of the iconography of the corpse figure itself and document the various types of scenes in which it occurs. I will focus particularly on their use in the Greco-Roman period where they not only become more frequent but are also found on a wider variety of materials. Items include coffins, cartonnage, linen burial shrouds, tomb wall paintings, and certain wooden figurines. This could prove very interesting in comparison with the development of the skeletal figure in Classical art. I will explore the religious context in which these images developed and investigate how and when their depiction became culturally acceptable.

APPENDIX 1: CATALOG OF LATE PERIOD EMBALMING CACHES

The core of this database comes from the extensive list of embalming caches (ranging from the Middle Kingdom through Late Period) published by Ikram and López-Grande 2011: 205-208. I have supplemented this core list with additional Late Period embalming caches that I have located in published archaeological reports.

Table 1: Memphis

Number	Find Spot	References
1.1	Abusir: nearby (4.20 m) southwest corner of enclosure wall of tomb of Udjahorresnet	Bareš 1999; Smoláriková 2009b: 79-88
1.2	Abusir: near tomb of Iufaa	Smoláriková 2009b: 79-88; Bareš and Smoláriková 2008
1.3	Abusir: southwest corner outside tomb of Menekhibnekau (pit S1)	Smoláriková 2009b: 79-88; Bareš and Smoláriková 2011
1.4	Abusir: near lesser anonymous shaft tomb R3	Smoláriková 2009b: 79-88; Coppens and Smoláriková 2009
1.5	Giza: west of rear walls of rooms 3 & 4 of amenhotep II temple near sphinx	Hassan 1953: 39
1.6	Giza: above mastaba of Rekhit-ra	Hassan 1953: 39
1.7	Giza	D'Auria, Lacovara, Roehrig 1992: 18; Céline 2007: 101
1.8	Saqqara	French and Ghaly 1991: 95
1.9	Saqqara: southwest of chapel C of tomb of Horemheb, immediately north and under Late Period wall	Martin 1985: 54
1.10	Saqqara: immediately south of forecourt of tomb of Paser	Martin 1985: 54
1.11	Saqqara: southwest of tomb of Paser and west of tomb of Ra'ia	Martin 1985: 54
1.12	Saqqara: in front of entrance Pylon Tia & Tia	Aston and Aston 2010: 15-60
1.13	Saqqara: between north wall of 1st court of tomb of Tia & Tia and south wall of tomb of Maya	Aston and Aston 2010: 15-60
1.14	Saqqara: southeast quadrant of inner courtyard of tomb of Ramose	Aston and Aston 2010: 15-60
1.15	Saqqara: south of the south wall of Chapel A of tomb of Maya; east of a Late Period structure between tombs of Maya and Tia	Aston and Aston 2010: 15-60

1.16	Saqqara: south of south wall of outer court of tomb of Maya, between tombs of Maya and Tia	Aston and Aston 2010: 15-60
1.17	Saqqara: against south wall of tomb of Maya between tombs of Maya and Tia near Late Period shaft	Aston and Aston 2010: 15-60
1.18	Saqqara: north of north wall of tomb of Maya	Aston and Aston 2010: 15-60
1.19	Saqqara: west of antechapel B of tomb of Tia & Tia	Aston and Aston 2010: 15-60
1.20	Saqqara: beneath poorly constructed wall (Coptic?) built over tomb of Tia & Tia, west of pyramid	Aston and Aston 2010: 15-60
1.21	Saqqara: in wall between Chapel A and statue room of tomb of Horemheb	Aston and Aston 2010: 15-60
1.22	Saqqara: alongside Chapel C of tomb of Horemheb	Aston and Aston 2010: 15-60
1.23	Saqqara: over south wall of outer courtyard of tomb of Horemheb	Aston and Aston 2010: 15-60
1.24	Saqqara: east of tomb of Horemheb	Aston and Aston 2010: 15-60
1.25	Saqqara: west of central Chapel D of tomb of Tia & Tia	Aston and Aston 2010: 15-60
1.26	Saqqara: east of Tia pyramid, tomb of Tia & Tia	Aston and Aston 2010: 15-60
1.27	Saqqara	Aston and Aston 2010: 15-60
1.28	Saqqara: south side of Unas causeway, opposite the mastaba of Neb-Kau-heru	French 2003: 79-89
1.29	Saqqara: near tomb of Akhethotep	Janot and Lapeyrie 2013: 411-416
1.30	Saqqara: in filling of shaft Q1, near tomb of Akhethotep	Janot and Lapeyrie 2013: 411-416
1.31	Saqqara: in gallery Q1A near northern door, near tomb of Akhethotep	Janot and Lapeyrie 2013: 411-416
1.32	Saqqara: south face of the Step Pyramid	Lauer, and Iskander 1955: 167-194
1.33	Saqqara: south face of the Step Pyramid	Lauer and Iskander 1955: 167-194
1.34	Saqqara: south face of the Step Pyramid	Lauer and Iskander 1955: 167-194
1.35	Saqqara: of tomb of Neferibresaneith & Wahibremem	Stammers 2009: 166; Drioton and Lauer 1951: 469-490;
1.36	Saqqara: near southwest corner of tomb of Neferibresaneith & Wahibremem	Firth 1929: 64-70
1.37	Saqqara: south of pyramid of Unas	French 2003: 79-91

1.38	Saqqara: shaft tomb of Padinisis; near Unas pyramid	Stammers 2009: 163; Barsanti 1900: 261
1.39	Saqqara	Quibell 1907: 27

Table 2: Thebes

Number	Find Spot	References
2.1	TT 414/TT 27 area O/29	Budka 2006: 85-103
2.2	TT 414/TT 27 area R/28	Budka 2006: 85-103
2.3	TT 414/TT 27 area L/27	Budka 2006: 85-103
2.4	TT 414/TT 27 area, tomb 9	Budka 2006: 85-103
2.5	TT 414/TT 27 area N/27	Budka 2006: 85-103
2.6	TT 414/TT 27	Budka 2006: 85-103
2.7	TT 414/TT 27 area	Budka 2006: 85-103
2.8	TT 414/TT 27 area	Budka 2006: 85-103
2.9	TT 414/TT 27 area	Budka 2006: 85-103
2.10	TT 414/TT 27 area	Budka 2006: 85-103
2.11	TT 414/TT 27 area	Budka 2006: 85-103
2.12	TT 414/TT 27 area	Budka 2006: 85-103
2.13	TT 414/TT 27 area	Budka 2006: 85-103
2.14	TT 414/TT 27 area	Budka 2006: 85-103
2.15	Thebes	Winlock 1922: 19-48
2.16	Thebes	Winlock 1922: 19-48
2.17	Thebes	Winlock 1922: 19-48
2.18	Asasif, near tomb of Padamenopet	Lansing 1920: 12
2.19	Asasif, near tomb of Padamenopet	Lansing 1920: 12
2.20	Asasif, near tomb of Padamenopet	Lansing 1920: 12
2.21	Asasif, courtyard of the tomb of Intef; near tomb N	Arnold, Settgest, Arnold 1966: 90

2.22	Asasif, tomb of Psamtek (Tomb D2) (grave of Intef); east of staircase leading to the tomb	Arnold, Settgast, Arnold 1966: 80-81
2.23	Deir el Bahari, quarry area	Winlock 1928: 25
2.24	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.25	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.26	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.27	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.28	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.29	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.30	Deir el Bahari, tomb of Senenmut quarry area	Winlock 1928: 25-28; PM 1.2 p. 625
2.31	Deir el Bahari, temple of Thutmose III (chapel area)	Winlock 1916-1927: 12; Dabrowska-Smektala 1968: 171
2.32	east of TT 279	Lansing 1920: 12-14
2.33	east of TT 279	Lansing 1920: 12-14
2.34	east of TT 279	Lansing 1920: 12-14
2.35	east of TT 279	Lansing 1920: 12-14
2.36	east of TT 279	Lansing 1920: 12-14
2.37	east of TT 279	Lansing 1920: 12-14
2.38	TT 79, tomb of Menkheperreseneb	Guksch 1995: 105-111
2.39	palace of Hatshepsut	Compton, Spiegelberg, Newberry 1908
2.40	QV 78	Janot 2000: 102
2.41	Valley of the Queens area	Franco 1985/1986: 30; Janot 2000: 102-104
2.42	Ramesseum (chapel KXIIa)	Janot 2000: 102
2.43	Ramesseum (court VI)	Janot 2000: 102-103; Nelson, Loyrette, Lecuyot 1982: 23

2.44	Ramesseum, tomb of Sehetepibre	Janot 2000: 102; Quibell, Paget, Pirie 1898: 4, 7, pl XII
2.45	Ramesseum (section j)	Nelson, Loyrette, Lecuyot 1982: 23-26
2.46	Seti I temple	Myśliwiec 1987: 54
2.47	Seti I temple	Myśliwiec 1987: 54
2.48	Seti I temple	Myśliwiec 1987: 54
2.49	tomb of Horakhbit	Lansing 1920: 13, fig 5; Janot 2000: 98
2.50	TT 192, tomb of Kheruef	Habachi 1958: 331, 335
2.51	TT 36, tomb of Ibi	Graefe et al 1975: 17; Graefe 1990: 29
2.52	TT 79, tomb of Menkheperreseneb	Guksch 1995: 111
2.53	tomb of Horemakhbit (in usupted tomb of Nakhtmin)	Guksch 1995: 105-108, pl 23, fig 48-51
2.54	TT 414, tomb of Ankh-Hor, shaft of Wahibre	Bietak, Reiser-Haslauer 1982: 191
2.55	tomb B vallee des trois puits	Loyrette 1997: 181-182
2.56	Dra Abu el-Naga: above TT 12, tomb of Hery	Ikram, Lopez-Grande 2011: 207-210
2.57	Dra Abu el-Naga: above TT 12, tomb of Hery	Ikram, Lopez-Grande 2011: 210-212
2.58	Dra Abu el-Naga: TT 11, Tomb of Djehuty in courtyard	Ikram, Lopez-Grande 2011: 212-216
2.59	TT 32, Tomb G in Chamber I	Schreiber 2008: 78
2.60	Deir el Bahari: temple of Thutmose III (chapel area)	Dabrowska-Smektala 1968: 171
2.61	Deir el Bahari: temple of Thutmose III (chapel area)	Dabrowska-Smektala 1968: 171
2.62	Deir el Bahari: temple of Thutmose III (chapel area)	Dabrowska-Smektala 1968: 171

APPENDIX 2: ‘MUMMY ON A BIER’ MOTIF ON SELECT LATE PERIOD – PTOLEMAIC COFFINS AND CARTONNAGE

Object Location Number or ID	Scene Placement	Items Over Bier	Items Under Bier	Gods in Scene
coffin Rijksmuseum Leiden M.30, Inv. AMM 1	abdomen	double uraeus	5 jars	none
coffin National Museum Ireland 1888.23	chest, low ³⁵⁷	ba	4 vessels	none
coffin British Museum London BM 6691	abdomen	winged figure?	3 ointment jars	none
coffin Saqqara, Egypt ³⁵⁸ hA.01a	abdomen	none	4 ointment jars	Anubis (foot end, reaching arms to adjust cloth on mummy's chest); Isis and Nephthys at head and feet)
coffin Saqqara, Egypt ³⁵⁹ h2.05	abdomen	ba (near head)	canopic jars, facing head	Anubis (foot end, reaching arms to adjust cloth on mummy's chest); Isis and Nephthys at head and feet offering red linen; 4 sons of Horus offering linen
coffin Saqqara, Egypt ³⁶⁰ q3.03a	legs ³⁶¹	unclear	2 canopic jars w/ human heads, one at head & one at feet, facing each other	Anubis (in middle reaching to head)
cartonnage Saqqara, Egypt ³⁶² q3.03b	legs	black circle with gold dot over head	2 canopic jars w/ human heads, one at head & one at feet, facing each other	Anubis (in middle reaching to head)
cartonnage Albert Hall Museum Jaipur, India 10742	<u>Scene 1:</u> abdomen <u>Scene 2:</u> legs	<u>Scene 1:</u> winged sun <u>Scene 2:</u> n/a	<u>Scene 1:</u> none <u>Scene 2:</u> five jars, pointed ends: 1 near feet and 4 near head	<u>Scene 1:</u> Isis and Nephthys mourning <u>Scene 2:</u> Anubis in middle reaching to mummy's face and holding incense cup and linen; 4 sons of horus flank mummy

³⁵⁷ Scene is tiny.

³⁵⁸ Current location unknown, excavated at Saqqara, see Ziegler 2013.

³⁵⁹ Current location unknown, excavated at Saqqara, see Ziegler 2013.

³⁶⁰ Current location unknown, excavated at Saqqara, see Ziegler 2013.

³⁶¹ Scene is badly damaged.

³⁶² Current location unknown, excavated at Saqqara, see Ziegler 2013.

coffin of Nesamunendja ³⁶³ Museo Egizio Turin	legs	ba	4 sealed ointment jars and 1 bag	none
coffin of Tapeni ³⁶⁴ Museo Egizio Turin	abdomen	ba, double uraeus, shrine	Crowns and mirror	none
coffin of Renpet-Nofret ³⁶⁵ Museo Egizio Turin	abdomen	double uraeus	none	none
coffin Museo Egizio Turin Cat.2229	abdomen	none	3 ointment jars: near head	Anubis in middle reaching to mummy's face; Isis and Nephthys offering linen
coffin Museo Egizio Turin S.5219	abdomen	ba, double uraeus	4 canopic jars	none
coffin Städtische Museen Freiburg Ae 150	legs	none	4 canopic jars	Anubis at mummy's head
coffin Kunsthistorisches Museum Vienna 218	abdomen	ba?	4 canopic jars, bag: under head	none
coffin Kunsthistorisches Museum Vienna 8902	legs	none	4 sealed ointment jars	Anubis in middle reaching to mummy's face; Isis and Nephthys offering life & four sons of Horus offering linen
coffin Kunsthistorisches Museum Vienna 7497	Both Scenes: legs	none	<u>Scene 1</u> : 4 canopic jars <u>Scene 2</u> : corpse being washed	<u>Scene 1</u> : Isis, Anubis, Nephthys approach feet <u>Scene 2</u> : priest wash corpse Isis and Nephthys behind them
coffin Hungarian National Museum inv. No. 51.2097/1-2	abdomen	winged sundisk	4 jars	Anubis bandages mummy; Isis and Nephthys in mourning
coffin (fragment) Hungarian National Museum Inv. No. 98.5-E	chest, low	none	4 canopic jars	Anubis bandages mummy; Isis and Nephthys in mourning
coffin Ny Carlsberg Glyptotek AE 1522	abdomen	winged double uraeus with ankhs	5 sealed ointment jars	Isis and Nephthys offer red linen and ankhs
cartonnage Michael C. Carlos Museum Atlanta 1921.6	abdomen	none	5 jars: 4 sealed jars, 1 tall vase	Isis and Nephthys mourning, 2 genii
coffin Michael C. Carlos Museum Atlanta 1921.3 A-B	abdomen ³⁶⁶	none	4 canopic jars	none

³⁶³ Museum number not found.

³⁶⁴ Museum number not found.

³⁶⁵ Museum number not found.

³⁶⁶ Scene is damaged.

coffin British Museum London EA2940	chest, low	sun disk	none	none
coffin British Museum London EA29776	abdomen	none	4 canopic jars	Isis and Nephthys mourning
coffin (inner) Fitzwilliam Museum Cambridge E.2.1869	chest, low	none	4 sealed jars	Anubis reaches towards mummy's face
coffin Royal Scottish Museum Edinburgh A.1911.399.2	chest, low	ba bird	4 shallow vessels	none
coffin National Museums Scotland Edinburgh A.1910.97	legs	none	4 canopic jars	Anubis at feet, Horus at head offering loop of red linen
coffin National Museums Scotland Edinburgh A.1907.692 A	abdomen	falcon with sundisk on head	4 canopic jars	Anubis bandages mummy
coffin (inner) British Museum London EA 22814	abdomen	ba bird	4 shallow vessels and bag	none
cartonnage National Archaeological Museum Athens 3340	legs	none	4 jars	Anubis anoints mummy, Isis and Nephthys mourning
cartonnage Museum d'histoire naturelle, Lyon Inv. 90001172	abdomen	none	small gilded vessel	Anubis holding gilded incense cup over mummy, Isis and Nephthys mourning
cartonnage Egyptian Museum Florence Inv. N. 8686	legs	winged sundisk	4 jars	Isis and Nephthys mourning
cartonnage Egyptian Museum Florence Inv. N. 5703 A-B	abdomen	vulture, sun-shade	4 canopic jars	Anubis holding incense cup, Isis and Nephthys mourning, four sons of Horus offer linen
coffin Museum of New Zealand inv.-nr. GH003200	abdomen	none	3 jars	Anubis offers incense and red linen to the mummy, Isis and Nephthys mourn, four sons of Horus offer white linen
coffin Kestner Museum Hannover Inv.-nr. LMH 7849	abdomen	winged sundisk	7 jars	Isis at feet with 6 funerary genii behind her; 5 funerary geni behind head
coffin Ratisches Museum inv.-nr. K 1205	chest, low	ba bird	4 sealed jars	none
coffin Antikenmuseum Basel und Sammlung Ludwig Inv. Nr. K-4443	abdomen	winged sundisk	5 jars	Isis and Nephthys mourning, four sons of Horus offer blue and red linen

coffin Ethnographische Sammlung am Historischen Museum Bern inv. Nr. AE 9	legs	none	8 jars	4 funerary genii
cartonnage Ethnographische Sammlung am Historischen Museum Bern inv. Nr. AE 9	legs	none	6 jars	Isis and Nephthys mourning
coffin Musee d'Yverdon et region Yverdon MY/3775-2	abdomen	ba bird	4 canopic jars, facing head	Isis and Nephthys mourning, 2 genii
cartonnage Musee d'Yverdon et region Yverdon MY/3775-3	abdomen	none	7 jars	Isis and Nephthys mourning

BIBLIOGRAPHY

- Abd el-Aal, S. 2003. 'The Mallawy Papyrus No. 602/1-602/5: a comprehensive study of the document and the professional and administrative titles', in Z. Hawass and L. P. Brock (eds.), *Egyptology at the dawn of the twenty-first century: proceedings of the Eighth International Congress of Egyptologists, Cairo, 2000*. Cairo and New York. 18-22.
- Allen, J. P. 1994. 'Reading a pyramid', in C. Berger, G. Clerc, and N. Grimal (eds.), *Hommages à Jean Leclant 1*. Cairo. 5-28.
- Allen, J. P. 1996. 'Coffin Texts from Lisht', in H. Willems (ed.), *The world of the Coffin Texts: proceedings of the symposium held on the occasion of the 100th birthday of Adriaan de Buck, Leiden, December 17-19, 1992*. *Egyptologische Uitgaven* 9. Leiden. 1-15.
- Allen, J. P. 2015. *The ancient Egyptian Pyramid Texts. Writings from the Ancient World* 38 Atlanta, GA.
- Allen, S. J. 2003. 'Tutankhamun's embalming cache reconsidered', in Z. Hawass and L. P. Brock (eds.), *Egyptology at the dawn of the twenty-first century: proceedings of the Eighth International Congress of Egyptologists, Cairo, 2000*. Cairo and New York, NY. 23-29.
- Allen, T. G. 1960. *The Egyptian Book of the Dead: Documents in the Oriental Institute Museum at the University of Chicago*. Chicago, IL.
- Altenmüller, H. 1971-1972. 'Die Bedeutung der 'Gotteshalle des Anubis' im Begräbnisritual', *Jaarbericht van het Vooraziatisch-Egyptisch Genootschap Ex Oriente Lux* 22, 307-317.
- Andrews, C. 1990. *Catalogue of Demotic papyri in the British Museum Vol. IV. Ptolemaic legal texts from the Theban area*. London.
- Andrews, C. 2004. 'Papyrus BM 10381: an inheritance of the Memphite choachytes', in F. Hoffmann and H. J. Thissen (eds.), *Res severa verum gaudium: Festschrift für Karl-Theodor Zauzich zum 65. Geburtstag am 8. Juni 2004*. Leuven. 27-32.
- Anonymous (ed.). 2007. *Ägyptische Mumien: Unsterblichkeit im Land der Pharaonen*. Mainz.
- Arnold, D. and Settgest, J. 1966. 'Zweiter Vorbericht über die vom Deutschen Archäologischen Institut Kairo im Asasif unternommenen Arbeiten (3. Kampagne)', *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 21, 72-94.

- Assmann, J. 1977. *Grabung im Asasif 1963-1970, 6: Das Grab der Mutirdis. Archäologische Veröffentlichungen, Deutsches Archäologisches Institut, Abteilung Kairo* 13. Mainz.
- Assmann, J. 1990. 'Egyptian mortuary liturgies', in S. Israelit-Groll (ed.), *Studies in Egyptology presented to Miriam Lichtheim, volume 1*. Jerusalem. 1-45.
- Assmann, J. 2002. *Altägyptische Totenliturgien. Band 1: Totenliturgien in den Sargtexten des Mittleren Reiches. Supplemente zu den Schriften der Heidelberger Akademie der Wissenschaften, Philosophisch-Historische Klasse* 14. Heidelberg.
- Assmann, J. 2005. *Death and Salvation in Ancient Egypt*. Ithaca, NY.
- Aston, D. A. 2000. 'Canopic chests from the Twenty-first Dynasty to the Ptolemaic period', *Ägypten und Levante* 10, 159-178.
- Aston, D. A. 2003. 'The Theban West Bank from the Twenty-fifth Dynasty to the Ptolemaic Period', in N. Strudwick and J. H. Taylor (eds.), *The Theban necropolis: past, present and future*. London. 138-166.
- Aston, D. A. 2009. *Burial assemblages of dynasty 21 - 25: chronology - typology - developments*. Vienna.
- Aston, D. A. 2011. 'ḫt phrt wty. The Saqqara embalmers' caches reconsidered: typology and chronology', in D. Aston, B. Bader, C. Gallorini, P. Nicholson, and S. Buckingham (eds), *Under the potter's tree: studies on ancient Egypt presented to Janine Bourriau on the occasion of her 70th birthday*. Leuven. 45-79.
- Aston, D. A. and Aston B. G. 2010. *Late Period pottery from the New Kingdom necropolis at Saqqâra: Egypt Exploration Society, National Museum of Antiquities, Leiden, excavations 1975-1995. Egypt Exploration Society, Excavation Memoir* 92. London and Leiden.
- Baadsgaard, A., Monge, J., Cox, S. and Zettler, R.L. 2011. 'Human sacrifice and intentional corpse preservation in the Royal Cemetery of Ur', *Antiquity* 85(327), 27-42.
- Badawy, A. 1954. *A history of Egyptian architecture*. Cairo.
- Baines, J. 1985. 'Color terminology and color classification: ancient Egyptian color terminology and polychromy', *American Anthropologist* 87, 282-297.
- Balanda, S. Z. 2009. 'The Title ḫry-sšt3 to the end of the New Kingdom', *Journal of the American Research Center in Egypt* 45, 319-348.
- Bataille, A. 1952. *Les Menmonia: Recherches de papyrologie et d'épigraphie grecques sur la nécropole de la Thèbes d'Égypte aux époques hellénistique et romaine*. Cairo.

- Bareš, L. (ed.) 1999. *Abusir IV: The shaft tomb of Udjahorresnet at Abusir*. Prague.
- Bareš, L. 2009. 'The development of the Late Period cemetery at Abusir (in view of the Demotic sources)', in G. Widmer and D. Devauchelle (eds.), *Actes du IXe Congrès International des Études Démotiques: Paris, 31 août - 3 septembre 2005*. Cairo. 51-56.
- Bareš, L. 2011. 'The person and family of Menekhibnekau', in L. Bareš and K. Smoláriková (eds.), *Abusir XXV: The shaft tomb of Menekhibnekau - Volume 1: archaeology*. Prague. 73-80.
- Bareš, L. 2013 'The development of shaft tomb burials in Egypt during the Persian Period', in M. Bárta and H. Küllmer (eds.), *Diachronic trends in ancient Egyptian history: studies dedicated to the memory of Eva Pardey*. Prague. 15-23.
- Bareš, L. and Smoláriková, K. (eds.) 2008. *Abusir XVII: the shaft tomb of Iufuaa - volume I: archaeology*. Prague.
- Bareš, L., Janák J., Landgráfová R. and Smoláriková, K. (eds.) 2010. 'The shaft tomb of Menekhibnekau at Abusir – Season of 2008', *Zeitschrift für ägyptische Sprache und Altertumskunde* 137, 91-100.
- Bareš, L. and K. Smoláriková (eds.) 2011. *Abusir XXV: The shaft tomb of Menekhibnekau - Volume 1: archaeology*. Prague.
- Barsanti, A. and Maspero, G. 1900. 'Fouilles autour de la pyramide d'Ounas (1899-1990)', *Annales du Service des Antiquités de l'Égypte* 1, 230-285.
- Bárta, M., Coppens, F., and Krejčí J. (eds.) 2006. *Abusir and Saqqara in the year 2005: proceedings of the conference held in Prague (June 27 July 5, 2005)*. Prague.
- Bárta, M., Coppens, F., and Krejčí J. (eds.) 2011. *Abusir and Saqqara in the year 2010*. Prague.
- Basta, M. 1966. 'Clearance of Some Tombs of the Late Period near the Serapeum at Saqqara', *Annales du Service des Antiquités de l'Égypte* 59, 15-22.
- Beatty, Mario. 2000. 'The title *ḥry sšꜣ* "Master of Secrets": functional or honorific?', *ANKH: revue d'égyptologie et des civilisations africaines* 8-9, 59-71.
- Beeck, L. O. D. 2007. 'Relating Middle Kingdom pottery vessels to funerary rituals', *Zeitschrift für ägyptische Sprache und Altertumskunde* 134, 157-165.

- Beinlich, H. 1984. *Die "Osirisreliquien": zum Motiv der Körperzergliederung in der altägyptischen Religion*. Ägyptologische Abhandlungen 42. Wiesbaden.
- Bickel, S. 2005. 'Creative and destructive waters', in A. Amenta, M. M. Luiselli, and M. N. Sordi (eds.), *L'acqua nell'antico Egitto: vita, rigenerazione, incantesimo, medicamento; proceedings of the first International conference for young Egyptologists, Italy, Chianciano Terme, October 15-18, 2003*. Rome. 191-200.
- Bietak, M. 1972. *Theben-West (Luqsor). Vorbericht über die ersten vier Grabungskampagnen (1969-1971)*. Vienna.
- Bietak, M. and Reiser-Haslauer, E. 1978-1982. *Das Grab des Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris*. Vienna.
- Blackman, A. M. 1912. 'The significance of incense and libations in funerary and temple ritual', *Zeitschrift für ägyptische Sprache und Altertumskunde* 50, 69-75.
- Blackman, A. M. 1916. 'Libations to the dead in modern Nubia and ancient Egypt', *Journal of Egyptian Archaeology* 3 (1), 31-34.
- Blackman, A. M. 1918. 'Some notes on the ancient Egyptian practice of washing the dead', *Journal of Egyptian Archaeology* 5 (2), 117-124.
- Blackman, A. M. 1918-1919. 'The sequence of the episodes in the Egyptian daily temple liturgy', *Journal of the Manchester Egyptian and Oriental Society* 8, 26-53.
- Blackman, A. M. 1953. *The rock tombs of Meir*. London.
- Bochi, P. A. 1996. 'Of lines, linen, and language: a study of patterned textile and its interweaving with Egyptian beliefs', *Chronique d'Égypte* 71 (142), 221-253.
- Bommas, M. 2005. 'Situlae and the Offering of Water in the Divine Funerary Cult: A New Approach to the Ritual of Djeme', in A. Amenta, M. M. Luiselli, and M. N. Sordi (eds.), *L'acqua nell'antico Egitto: vita, rigenerazione, incantesimo, medicamento; proceedings of the first International conference for young Egyptologists, Italy, Chianciano Terme, October 15-18, 2003*. Rome. 257-272.
- Borić, D. and Robb, J. 2008. *Past Bodies. Body-Centred Research in Archaeology*. Oxford.
- Botti, G. 1967. *L'archivio demotico da Deir el-Medina. Catalogo del Museo Egizio di Torino. Serie Prima – Monumenti e Testi. Volume I*. Florence.
- Bradford, C. A. 1933. *Heart Burial*. London.

- Brech, R. 2008. *Spätägyptische Särge aus Achmim: eine typologische und chronologische Studie. Aegyptiaca Hamburgensia 3*. Gladbeck.
- Bickerstaffe, D. 2007. 'Embalming Caches in the Valley of the Kings', *KMT* 18/2, 46-53.
- Brovarski, E. J. 1977. 'Doors of Heaven', *Orientalia* 46, 107-115.
- Bruwier, M. C. 1998. 'Présence et action d'Anubis sur le coffret d'un prêtre héracléopolitain', in W. Clarysse, A. Schoors, and H. Willems (eds.), *Egyptian religion: the last thousand years. Studies dedicated to the memory of Jan Quaegebeur: part I*. Leuven. 61-79.
- Bruwier, M. C. 2003. 'Les coffrets à reliques funéraires, Anubis et les Enfants D'Horus', *Cahiers de Mariemont* 30-31, 19-38.
- Budka, J. 2006. 'Deponierungen von Balsamierungsmaterial und Topfnester im spätzeitlichen Theben (Ägypten): Befund, Kontext und Versuch einer Deutung', in J. Mylonopoulos and H. Roeder (eds.), *Archäologie und Ritual: auf der Suche nach der rituellen Handlung in den antiken Kulturen Ägyptens und Griechenlands*. Vienna. 85-103.
- Budka, J. 2010a. *Bestattungsbrauchtum und Friedhofsstruktur im Asasif: eine Untersuchung der spätzeitlichen Befunde anhand der Ergebnisse der österreichischen Ausgrabungen in den Jahren 1969-1977*. Vienna.
- Budka, J. 2010b. 'The use of pottery in funerary contexts during the Libyan and Late Period: a view from Thebes and Abydos', in L. Bareš, F. Coppens, and K. Smoláriková (eds.), *Egypt in transition: social and religious development of Egypt in the first millennium BCE. Proceedings of an international conference, Prague, September 1-4, 2009*. Prague. 22-72.
- Budka, J., Mekis T., and Bruwier, M. 2013. 'Reuse of Saite temple tombs in the Asasif during the early Ptolemaic time: the tomb group of Mw.t-Mnw from TT 414', *Ägypten und Levante* 22-23, 209-251.
- Bussi, S. 2013. 'Une nouvelle communauté indigène? Les choachytai de Thèbes à Djême', in O. Mariaud, and F. Delrieux (eds.), *Communautés nouvelles dans l'Antiquité grecque: mouvements, intégrations et représentations*. Chambéry. 105-119.
- Buzo, E. 2005. 'The Role of the Heart in the Purification', in A. Amenta, M. M. Luiselli, and M. N. Sordi (eds.), *L'acqua nell'antico Egitto: vita, rigenerazione, incantesimo, medicamento; proceedings of the first International conference for young Egyptologists, Italy, Chianciano Terme, October 15-18, 2003*. Rome. 273-282.

- Cannata, M. 2006. 'Papyrus BM EA 10075 and papyrus Bodleian MS. Egypt. a. 41(P): two halves of a Ptolemaic contract of sale reunited', *Journal of Egyptian Archaeology* 92, 185-203.
- Cannata, M. 2007. 'Of bodies and soles: the meaning of the root ks and its derivatives in the Ptolemaic period', in M. Cannata and C. Adams (eds.), *Current research in Egyptology 2006: proceedings of the seventh annual symposium which took place at the University of Oxford, April 2006*, Oxford. 21-42.
- Cannata, M. 2009a. *The realia of Egyptian burial practices in the Ptolemaic Period (332-30 BC)*. Oxford.
- Cannata, M. 2009b. 'God's seal-bearers, lector-priests and choachytes: who's who at Memphis and Hawara', in G. Widmer and D. Devauchelle (eds.), *Actes du IXe Congrès International des Études Démotiques: Paris, 31 août - 3 septembre 2005*. Cairo. 51-56.
- Capart, J. 1943. 'À propos du cercueil d'argent du roi Chechonq', *Chronique d'Égypte* 18 (36), 191-198.
- Cauville, S. 1980. 'Une offrande spécifique d'Osiris: le récipient de dattes (*m^cd3 n bnr*)', *Revue d'égyptologie* 32, 47-64.
- Cauville, S. 1983. *La théologie d'Osiris à Edfou. Bibliothèque d'étude 91*. Cairo.
- Cauville, S. 1988. 'Les mystères d'Osiris à Dendera: interprétation des chapelles osiriennes', *Bulletin de la Société Française d'Égyptologie* 112, 23-36.
- Cauville, S. 1997. *Dendara: les chapelles osiriennes*. Cairo.
- Cauville, S. 2012. *Offerings to the gods in Egyptian temples*. Leuven.
- Céline, B. A. 2007. *Balsemingscassettes in het Oude Egypte: Catalogus van alle cassettes, analyse van hun inhoud en hun rol in het mummificatieproces*. Leuven.
- Centrone, M. C. 2005. 'This is the form of [...] Osiris of the mysteries, who springs from the returning waters" (South Wall of the Osiris Room at the Great Temple of Philae)', in A. Amenta, M. M. Luiselli, and M. N. Sordi (eds.), *L'acqua nell'antico Egitto: vita, rigenerazione, incantesimo, medicamento; proceedings of the first International conference for young Egyptologists, Italy, Chianciano Terme, October 15-18, 2003*. Rome. 355-360.
- Centrone, M. C. 2009. *Egyptian corn-mummies: a class of religious artefacts catalogued and systematically analysed*. Swansea.

Chapman, J. C. 2000. *Fragmentation in archaeology: People, places and broken objects in the prehistory of South-eastern Europe*. London.

Chassinat, E. 1966-1968. *Le mystère d'Osiris au mois de Khoiak*. Cairo.

Clarysse, W. 2009. 'An account of the last year of Kleopatra in the Hawara embalmers archive', in G. Widmer and D. Devauchelle (eds.), *Actes du IXe Congrès International des Études Démotiques: Paris, 31 août - 3 septembre 2005*. Cairo. 51-56.

Claus, B. 2005. 'Osiris et Hapi: crue et regeneration en Égypte ancienne', in A. Amenta, M. M. Luiselli, and M. N. Sordi (eds.), *L'acqua nell'antico Egitto: vita, rigenerazione, incantesimo, medicamento; proceedings of the first International conference for young Egyptologists, Italy, Chianciano Terme, October 15-18, 2003*. Rome. 201-211.

Cooney, K. 2007. *The cost of death: the social and economic value of ancient Egyptian funerary art in the Ramesside period*. Leiden.

Compton, W., Spiegelberg, W., and Newberry, P.E. 1908. *Report on some excavations in the Theban necropolis during the winter of 1898-9*. London.

Coppens, F. 1999. 'The wabet and New Year's Court of the temple of Shenhur', *Göttinger Miszellen* 171, 87-92.

Coppens, F. 2002a. 'A variety of designations: some terms for wabet and court in Graeco-Roman temples', *Archív Orientální* 70, 13-26.

Coppens, F. 2002b. 'The wabet: an Old Kingdom mortuary workshop in a Graeco-Roman temple?', *Archív Orientální* 70, 309-318.

Coppens, F. 2006. 'The open court in the Temple of Philae: a complex of wabet and court in the making', in H. Györy (ed.), *Aegyptus et Pannonia III: acta symposii anno 2004*. Budapest. 27-39.

Coppens, F. 2007. *The wabet: tradition and innovation in temples of the Ptolemaic and Roman period*. Prague.

Coppens, F. 2010a. 'Linen, unguents and pectorals: instruments of regeneration in Ptolemaic and Roman temples', in M. Dolińska and H. Beinlich (eds.), *Ägyptologische Tempeltagung: Interconnections between temples, Warschau, 22.-25. September 2008*. Wiesbaden. 39-55.

Coppens, F. 2010b. 'Funerary practices in Ptolemaic and Roman temples: a case-study of the complex of Wabet and court', in H. Györy (ed.), *Aegyptus et Pannonia IV: Acta Symposii anno 2006*. Budapest. 13-37.

- Coppens, F. and Smoláriková K. 2009. *Abusir XX: lesser Late period tombs at Abusir. The tomb of Padihor and the anonymous tomb R3 with a contribution by František Ondráš and Eugen Strouhal*. Prague.
- Coppens, F. and Vymazalová, H. 2010. 'Long live the king! Notes on the renewal of divine kingship in the temple', in L. Bareš, F. Coppens, and K. Smoláriková (eds.), *Egypt in transition: social and religious development of Egypt in the first millennium BCE. Proceedings of an international conference, Prague, September 1-4, 2009*. Prague. 73-102.
- Corcoran, L. 1995. *Portrait mummies from Roman Egypt (I-IV centuries A.D.): with a catalog of portrait mummies in Egyptian museums*. Chicago, IL.
- Cruz-Uribe, E. 1979. 'A transfer of property during the reign of Darius I (P. Bibl. Nat. 216 and 217). *Enchoria* 9, 33-44.
- Cruz-Uribe, E. 1980. 'A sale of inherited property from the reign of Darius I', *Journal of Egyptian Archaeology* 66, 120-126.
- Cruz-Uribe, E. 1985. *Saite and Persian demotic cattle documents*. California, CA.
- Cruz-Uribe, E. 1999. 'Opening the Mouth as temple ritual', in E. Teeter and J. A. Larson (eds.), *Gold of praise: studies on ancient Egypt in honor of Edward F. Wente*. Chicago, IL. 69-73.
- Cruz-Uribe, E. 2000. 'Two early demotic letters from Thebes', *Revue d'Égyptologie* 51, 9-25.
- D'Auria, S., Lacovara, P., and Roehrig, C. H. 1992. *Mummies and magic: the funerary arts of ancient Egypt*. Boston, MA.
- Dabrowska-Smektała, E. 1968. 'Coffins found in the area of the temple of Tuthmosis III at Deir el-Bahari', *Bulletin de l'Institut Français d'Archéologie Orientale* 66, 171-181.
- Davies, N. G. 1913. *Five Theban tombs (being those of Mentuherkhepeshef, User, Daga, Nehemawäy and Tati)*. London.
- Davies, S. and Smith H. S. 1997. 'Sacred animal temples at Saqqara', in S. Quirke (ed.), *The temple in ancient Egypt: new discoveries and recent research*. London. 112-131.
- Dawson, W. R. 1924. 'A rare vignette from the Book of the Dead', *Journal of Egyptian Archaeology* 10, 40.

- Dawson, W. R. 1925. 'A mummy of the Persian period', *Journal of Egyptian Archaeology* 11, 76-77.
- Dawson, W. R. 1927. 'Making a mummy', *Journal of Egyptian Archaeology* 13, 40-49.
- Delia, D. 1992. 'The refreshing water of Osiris', *Journal of the American Research Center in Egypt* 29, 181-190.
- Depauw, M. 2000. *The archive of Teos and Thabis from early Ptolemaic Thebes: P. Brux. Dem. Inv. E. 8252-8256. Brussels.*
- Derchain, P. 1965. *Le Papyrus Salt 825 (B. M. 10051). Rituel pour la conservation de la vie en Égypte.* Brussels.
- Derda, T. 1991. 'Necropolis workers in Greco-Roman Egypt in the light of the Greek papyri', *Journal of Juristic Papyri* XXI, 13-36.
- Desroches-Noblecourt, C. 1986. *Sen-nefer: die Grabkammer des Bürgermeisters von Theben.* Mainz.
- Devlin, Z. 2015. '(Un) touched by decay: Anglo-Saxon encounters with dead bodies', in Z. Devlin and E. J. Graham (eds.), *Death Embodied: Archaeological approaches to the treatment of the corpse.* Oxford. 63-85.
- Devlin, Z. and Graham E. J. 2015. *Death Embodied: Archaeological approaches to the treatment of the corpse.* Oxford.
- Dietz, A. 1998. *Ewige Herzen. Kleine Kulturgeschichte der Herzbestattungen.* Munich.
- Diodorus Siculus, *Bibliotheca historica*, trans. C. H. Oldfather [Loeb Classical Library], 1 (London, 1933).
- Dimick, J. 1958. 'The Embalming House of the Apis Bulls', *Archaeology* 11: 183-189.
- Dimick, J. 1959. 'The embalming house of the Apis bulls', in R. Anthes (ed.), *Mit Rahineh 1955*, Philadelphia, PA. 75-79.
- Dodson, A. and Cross, S. 2016. 'The Valley of the Kings in the reign of Tutankhamun', *Egyptian Archaeology* 48: 3-8.
- Donker van Heel, K. 1992. 'Use and meaning of the Egyptian term *w3ḥ mw*', in R. J. Demarée and A. Egberts (eds.), *Village voices: proceedings of the symposium "Texts from Deir el-Medina and their interpretation," May 31 – June 1, 1991.* Leiden. 19-30.

Donker van Heel, K. 1993. 'Publishing a Choachyte's archive', in Anonymous (ed.), *Sesto Congresso internazionale di egittologia: atti 2*. Turin. 203-206.

Donker van Heel, K. 1995. *Abnormal Hieratic and early Demotic texts collected by the Theban choachytes in the Reign of Amasis: papyri from the Louvre Eisenlohr lot ; an edition of Abnormal hieratic papyri Louvre 7845 B, 7846 - 7848, 7861 and Early demotic papyri Louvre 7832 - 7845 A, 7850, 7854 - 7855*, Leiden.

Donker van Heel, K. 1998a. 'Use of land in the Kushite and Saite periods (Egypt, 747-656 and 664-525 BC)', in B. Haring and R. de Maaier (eds.), *Landless and hungry? access to land in early and traditional societies; proceedings of a seminar held in Leiden, 20 and 21 June, 1996*. Leiden. 90-102.

Donker van Heel, K. 1998b. 'Papyrus Leiden I 379: the inheritance of the Memphite choachyte Imouthes', *Oudheidkundige mededelingen uit het Rijksmuseum van Oudheden* 78, 33-57.

Donker van Heel, K. 2012. *Djekhy & son: doing business in ancient Egypt*. Cairo and New York, NY.

Donker van Heel, K. 2014. *Mrs. Tsenhor: a female entrepreneur in Ancient Egypt*. Cairo.

Donohue, V. A. 1978. 'Pr-nfr', *Journal of Egyptian Archaeology* 64, 143-148.

Driesch, A., Dieter K., Steinmann, F., Berteaux, B., and Peters, J. 2006. 'Mummified, deified and buried at Hermopolis Magna: the sacred birds from Tuna el-Gebel, Middle Egypt', *Ägypten und Levante* 15, 203-244.

Drioton, Ét. and Lauer, J.-P. 1951. 'Fouilles à Saqqarah: les tombes jumelées de Neferibrê-sa-Neith et de Ouahibrê-men', *Annales du Service des Antiquités de l'Égypte* 51, 469-490.

Dunand, F. 2002. 'De la cendre à la myrrhe: les usages du corps mort en Égypte tardive', in F. Labrique (ed.), *Religions méditerranéennes et orientales de l'Antiquité: actes du colloque des 23-24 avril 1999*. Cairo. 101-119.

Dunand, F. and Lichtenberg, R. 2007. *Mummies and death in Egypt*. London and Ithaca, NY.

Eaton, Katherine 2013. *Ancient Egyptian temple ritual: performance, pattern, and practice*. New York, NY.

Eaton-Krauss, M. 2008. 'Embalming caches', *Journal of Egyptian Archaeology* 94, 288-293.

- Eaton-Krauss, M. 2009. 'Einbalsamierungsdepots im Tal der Könige - vor und nach Tutanchamun / Embalming caches in the Valley of the Kings - before and after Tutankhamun', in E. Dziobek, M. Höveler-Müller, and C. E. Loeben (eds.), *Das geheimnisvolle Grab 63 - die neueste Entdeckung im Tal der Könige: Archäologie und Kunst von Susan Osgood*, Leidorf. 66-72.
- Edwards, I. E. S. 1961. *The Pyramids of Egypt* (revised edition). London.
- Egberts, A. 1995. *In quest of meaning: a study of the ancient Egyptian rites of consecrating the Meret-chests and driving the calves*. Leiden.
- Elias, J. P. 1993. *Coffin Inscription in Egypt after the New Kingdom: A Study of the Text Production and Use in Elite Mortuary Preparation*. Ann Arbor, MI.
- Elias, J. P. and Lupton, C. 2014. 'Gods at all hours: Saite Period coffins of the 'eleven-eleven' type', in R. Sousa (ed.), *Body, cosmos and eternity: new research trends in the iconography and symbolism of ancient Egyptian coffins*. Oxford. 125-133.
- el-Sadeek, W. 1984. *Twenty-Sixth Dynasty Necropolis at Gizeh: An Analysis of the Tomb of Thery and Its Place in the Development of Saite Funerary Art and Architecture*. Vienna.
- Erman, A. and Grapow, H. 1926. *Wörterbuch der ägyptischen Sprache*. Leipzig.
- Ertman, E., Wilson, R., and Schaden O. J. 2006. 'Unraveling the mysteries of KV 63', *KMT* 17 (3), 18-27.
- Étienne, M., Janot F., and Lecuyot G. 2003. 'La mission du musée du Louvre à Saqqara: un contexte de rejets d'embaumement', *Bulletin de l'Institut Français d'Archéologie Orientale* 103, 191-201.
- Fahlander, F. and Oestigaard, T. 2008. *The Materiality of Death: Bodies, Burials, Beliefs*. Oxford.
- Fahmy, A., Galán J. M., and Hamdy R. 2010. 'A deposit of floral and vegetative bouquets at Dra Abu el-Naga (TT 11)', *Bulletin de l'Institut Français d'Archéologie Orientale* 110, 73-89.
- Faulkner, R. O. 2004. *The ancient Egyptian coffin texts*. Oxford.
- Finnestad, R. B. 1997. 'Temples of the Ptolemaic and Roman periods: ancient traditions in new contexts', in B. E. Shafer, B. E. (ed.), *Temples of ancient Egypt*. New York, NY and London. 185-237.

- Firth, C. 1929. 'Excavations of the Department of Antiquities at Saqqara (October 1928 to March 1929)', *Annales du Service des Antiquités de l'Égypte* 29, 64-70.
- Fowler, C. 2008. 'Fractal bodies in the past and present', in D. Borić and J. Robb (eds.), *Past Bodies. Body-Centred Research in Archaeology*. Oxford. 47-58.
- Forshaw, R. 2014. *The Role of the Lector in Ancient Egyptian Society*. Oxford.
- Frandsen, P. J. 1992. 'On the root *nfr* and a 'clever' remark on embalming', in J. Osing and E. K. Nielsen (eds.), *The heritage of ancient Egypt: studies in honour of Erik Iversen*. Copenhagen. 49-62.
- French, P. 1988. 'Saqqara (Unas causeway area) (1987. Egyptian Antiquities Organisation)', *Bulletin de liaison du groupe international d'étude de la céramique égyptienne* 13, 31-32.
- French, P. 1988. 'Late Dynastic pottery from the Berlin/Hannover excavations at Saqqara, 1986', *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 44, 79-89.
- French, P. and Ghaly, H. 1991. 'Pottery chiefly of the Late Dynastic Period, from excavations by the Egyptian Antiquities Organisation at Saqqara, 1987', *Cahiers de la céramique égyptienne* 2, 93-124.
- French, P. and Jones M. 1990. 'Memphis. The temple of Apis', *Bulletin de liaison du groupe international d'étude de la céramique égyptienne* 14, 10-11.
- French, P. and Jones M. 1993. 'Memphis. Temple of Apis', *Bulletin de liaison du groupe international d'étude de la céramique égyptienne* 17, 21-23.
- Gabra, S. 1941. *Rapport sur les fouilles d'Hermoupolis Ouest (Touna el-Gebel) par Sami Gabra. Avec la collaboration de Ét. Drioton, P. Perdrizet, W. G. Waddell*. Cairo.
- Gabolde, M. 2016. 'Some Remarks on the Embalming Caches in the Royal Necropoleis at Thebes and Amarna', in J. Van Dijk (ed.), *Another Mouthful of Dust. Orientalia Lovaniensia Analecta* 246. Leuven. 123-129.
- Gardiner, A. H. 1927. *Egyptian grammar: being an introduction to the study of hieroglyphs*. Oxford.
- Gardiner, A. H. 1931. 'Two hieroglyphic signs and the Egyptian words for "alabaster" and "linen", etc.', *Bulletin de l'Institut Français d'Archéologie Orientale* 30, 161-183.
- Gardiner, A. H. 1950. 'The Baptism of Pharaoh', *Journal of Egyptian Archaeology* 36, 3-12.

- Gauthier, H. 1926. *Dictionnaire des noms géographiques contenus dans les textes hiéroglyphiques* 3. Cairo.
- George, B. 1970. *Zu den altägyptischen Vorstellungen vom Schatten als Seele*. Bonn.
- Germer, R. 1992. *Die Textilfärberei und die Verwendung gefärbter Textilien im Alten Ägypten*. *Ägyptologische Abhandlungen* 53. Wiesbaden.
- Giddy, L. 1992. *The Anubieion at Saqqâra II: the Cemeteries*. *Egypt Exploration Society, Excavation Memoir* 56. London.
- Goyon, J. C. 1972. *Rituels funéraires de l'ancienne Égypte. Introduction, traduction et commentaire*, Paris.
- Goyon, J. C. 1988. 'Momification et reconstitution du corps divin: Anubis et les canopes', in J. H. Kamstra, H. Milde, and K. Wagtenonk (eds.), *Funerary symbols and religion: essays dedicated to Professor M. S. H. G. Heerma van Voss on the occasion of his retirement from the Chair of the History of Ancient Religions at the University of Amsterdam*, Kampen. 34-44.
- Goyon, J. C. and Josset, P. 1988. *Un corps pour l'éternité. Autopsie d'une momie*. Paris.
- Graefe, E. 1990. *Das Grab des Ibi, Obervermögensverwalters der Gottesgemahlin des Amun, (Thebanisches Grab Nr.36)*. Brussels.
- Graefe, E. et al 1975. 'Fouilles de l'Assassif: 1970-1975', *Chronique d'Égypte* 50 (99-100), 13-64.
- Grajetski, W. 2003. *Burial customs in ancient Egyptian: life in death for rich and poor*. London.
- Graham, E. J. 2015. 'Introduction: Embodying death in archaeology', in Z. Devlin and E. J. Graham (eds.), *Death Embodied: Archaeological approaches to the treatment of the corpse*. Oxford. 1-17.
- Gray, P. H. K. 1966. 'Embalmer's "restorations"', *Journal of Egyptian Archaeology* 52, 138-140.
- Grdseloff, B. 1951. 'Nouvelles données concernant la tente de purification', *Annales du Service des Antiquités de l'Égypte* 51, 129-140.
- Griffiths, J. G. 1966. *The origins of Osiris*. Berlin.

- Guidotti, M. C., Silvano, F. and Martera, E. 2011. *Reise in die Unsterblichkeit: ägyptische Mumien und das ewige Leben*. Frankfurt and Main.
- Guksch, H. 1995. 'Die Gräber des Nacht-Min und des Men-cheper-Ra-seneb: Theben Nr. 87 und 79', *Deutsches Archäologisches Institut, Abteilung Kairo* 34, 105-111.
- Habachi, L. 1958. 'Clearance of the Tomb of Kheruef at Thebes (1957-1958)', *Annales du Service des Antiquités de l'Égypte* 55 (2), 325-350.
- Hallmann, A. 2015. 'More items of funerary linen from the Deir el-Bahari burial assemblages', *Polish Archaeology in the Mediterranean* 24/2, *Special Studies: Deir el-Bahari Studies*, 113-136.
- Harris, J. R. 1961. *Lexicographical Studies in Ancient Egyptian Minerals*. Berlin.
- Harter S. et al. 2003. 'First paleoparasitological study of an embalming rejects jar found in Saqqara, Egypt', *Memórias do Instituto Oswaldo Cruz* 98 (suppl. 1), 119-121.
- Hassan, S. 1943. *Excavations at Giza IV*. Cairo.
- Hassan, S. 1953. *Excavations at Giza VII*. Cairo.
- Hays, H. M. 2012. *The organization of the Pyramid Texts: typology and disposition, 2 vols.* Leiden and Boston, MA.
- Helck, W. 1986. 'Uto-priest', in W. Helck and E. Otto (eds.), *Lexikon der Ägyptologie*. Band VI. 911-913.
- Herodotus, *The Histories*, trans. R. Waterfield, [Oxford world's classics] (Oxford 1998).
- Herslund, O. 2010: 'Cloths – garments - and keeping secrets: textile classification and cognitive chaining in the ancient Egyptian writing system', in C. Michel and M.-L. Nosch (eds.), *Textile terminologies in the ancient Near East and Mediterranean from the Third to the First Millennia BC*. Oxford and Oakville, CT. 68-80.
- Hoffmeier, J. K. 1981. 'The possible origins of the tent of purification in the Egyptian funerary cult', *Studien zur Altägyptischen Kultur* 9, 167-177.
- Hornung, E. 1990. *Valley of the kings: horizon of eternity*. New York, NY.
- Hornung, E. 1992. *Idea into image: essays on ancient Egyptian thought*. New York, NY.

- Hughes, G. R. and Jasnow R. 1997. *Oriental Institute Hawara Papyri. Demotic and Greek Texts from an Egyptian Family Archive in the Fayum (Fourth to Third Century B.C.)*. Chicago, IL.
- Ikram, S. 2005. 'Manufacturing Divinity: The Technology of Mummification', in S. Ikram (ed.), *Divine creatures: animal mummies in ancient Egypt*. Cairo. 16-43.
- Ikram, S. and Dodson, A. 1998. *The Mummy in Ancient Egypt: Equipping the Dead for Eternity*. London.
- Ikram, S. and López-Grande M. J. 2011. 'Three embalming caches from Dra Abu el-Naga', *Bulletin de l'Institut Français d'Archéologie Orientale* 111, 205-228.
- Iskandar Z. 1944. 'Liquid found in the sarcophagus of Ptah-Sšps Saqqara, 1944', *Annales du Service des Antiquités de l'Égypte* 44, 259-262.
- Iskander, Z. and Shaheen A. 1964. 'Temporary stuffing materials used in the process of Mummification in Ancient Egypt. Part I. - Earthy Stuffing Materials Found at Ard El-Naam Mataria', *Annales du Service des Antiquités de l'Égypte* 58, 197-208.
- Janák J. and Landgráfová R. 2011a. 'Excursus 1: Texts from the embalmer's deposit', in L. Bareš and K. Smoláriková (eds.), *Abusir XXV: The shaft tomb of Menekhibnekau - Volume I: archaeology*. Prague. 164-178.
- Janák J. and Landgráfová R. 2011b. 'New Evidence on the Mummification Process in the Late Period', in M. Bárta, F. Coppens, and J. Krejčí (eds.) 2011. *Abusir and Saqqara in the year 2010*. Prague. 30-45.
- Janot, F. 1996. 'Les instruments et la pratique des prêtres-empaumeurs', *Bulletin de l'Institut Français d'Archéologie Orientale* 96, 245-253.
- Janot, F. 1998-1999. 'Embaumement et pratique chirurgicale en Égypte ancienne', *Revue Roumaine d'Égyptologie*, 2-3, 53-59.
- Janot, F. 2000. *Les instruments d'embaumement de l'Égypte ancienne. Bibliothèque d'étude 125*. Cairo.
- Janot, F. 2008. *The royal mummies: immortality in Ancient Egypt*. Vercelli.
- Janot, F., Pezin, M. and Neveux, A. 1997. 'À la recherche des instruments d'embaumement dans l'Égypte ancienne', *Revue Roumaine d'Égyptologie* 1, 51-59.

- Janot, F. and Lapeyrie, C. 2013. 'Les contextes de matériels et de rejets d'embaumement', in C. Ziegler (ed.), *Les tombes hypogées de Basse Époque: F7, F17, H, j1, Q, n1 1*. Paris. 411-423.
- Janssen, J. J. and Pestman, P. W. 1968. Burial and Inheritance in the Community of the Necropolis Workmen at Thebes (Pap. Bulaq X and O. Petrie 16)', *Journal of the Economic and Social History of the Orient*, 11, 137-170.
- Jasnow, R. 2004. 'The dispute in the Hawara necropolis reopened (P. Cairo 50127)', in F. Hoffmann and H. J. Thissen (eds.), *Res severa verum gaudium: Festschrift für Karl-Theodor Zauzich zum 65. Geburtstag am 8. Juni 2004*. Leuven. 261-281.
- Jeffreys, D. G. and Smith, H. S. 1988. *The Anubieion at Saqqara I: the settlement and the temple precinct. Egypt Exploration Society, Excavation Memoir 54*. London.
- Jelínková-Reymond, E. 1956. *Les inscriptions de la statue guérisseuse de Djed-Her-le-Sauveur*. Cairo.
- Jéquier, M. G. 1921. *Les frises d'objets des sarcophages du Moyen Empire*. Cairo.
- Jones, J. 2010. 'The 'linen list' in Early Dynastic and Old Kingdom Egypt: text and textile reconciled', in C. Michel and M.-L. Nosch (eds.), *Textile terminologies in the ancient Near East and Mediterranean from the Third to the First Millennia BC*. Oxford and Oakville, CT: 81-109.
- Jones, M. 1990. 'The temple of Apis in Memphis', *Journal of Egyptian Archaeology* 76, 141-147.
- Jones, M. and Jones, A. 1982. 'The Apis House Project at Mit Rahinah: first season', *Journal of the American Research Center in Egypt* 19, 51-58.
- Jones, M. and Jones, A. 1983. 'The Apis House Project at Mit Rahinah: preliminary report of the second and third seasons, 1982-1983', *Journal of the American Research Center in Egypt* 20, 33-45.
- Jones, M. and Jones, A. 1985. 'Apis expedition at Mit Rahinah: preliminary report of the fourth season', *Journal of the American Research Center in Egypt* 22, 17-28.
- Jones, A. and Jones, M. 1987a. 'The Apis House, Mit Rahinah', *Bulletin de liaison du groupe international d'étude de la céramique égyptienne* 12, 11-13.
- Jones, M. and Jones, A. 1987b. 'The Apis House Project at Mit Rahinah: preliminary report of the fifth season', *Journal of the American Research Center in Egypt* 24, 35-46.

- Jones, M. and Jones, A. 1988. 'The Apis House Project at Mit Rahinah: preliminary report of the sixth season', *Journal of the American Research Center in Egypt* 25, 105-116.
- Jones, M. and French, P. 1996. 'Memphis: the temple of Apis', *Bulletin de liaison du groupe international d'étude de la céramique égyptienne* 19, 16.
- Junker, H. 1910. *Die Stundenwachen in den Osirismysterien nach den Inschriften von Dendera Edfu und Philae*. DAWW 54. Vienna.
- Katz, D. 2007. 'Sumerian Funerary Rituals in Context', in N. Laneri (ed.), *Performing Death: Social analyses of funerary traditions in the ancient near east and Mediterranean*. Chicago, IL. 167-188.
- Katz, D. 2014. 'His wind released' – The Emergence of the Ghost: Rite of Passage in Mesopotamia', in A. Mouton and J. Patrier (eds.), *Life, Death, and Coming of Age in Antiquity: Individual Rites of Passage in the Ancient Near East and Adjacent Regions*. Leiden. 419-440.
- Kemp, B. J. and Vogelsang-Eastwood, G. 2001. *The ancient textile industry at Amarna*. London.
- Kessler, D and Nur el-Din, A. 2005. 'Tuna el-Gebel: Millions of Ibises and Other Animals', in S. Ikram (ed.), *Divine creatures: animal mummies in ancient Egypt*. Cairo. 120-163.
- Kettel, J. 1994. 'Canopes, *rdw.w* d'Osiris et Osiris-Canope', in C. Berger, G. Clerc, and N. Grimal (eds.), *Hommages à Jean Leclant* 3. Cairo. 315-330.
- Kloth, N. 2001. 'Das Natronhaus *ḥw.t-ḥzm*', *Studien zur Altägyptischen Kultur* 29, 203-216.
- Knoblauch, C. 2016. 'A New Group of Embalming Deposits. Another Look at Pottery Dumps and Repositories for Building Materials in Middle Kingdom Cemeteries', *ÄuL* 26, 329-356.
- Kristensen, W. B. 1992. *Life out of death: studies in the religions of Egypt and of ancient Greece* (translated by H. J. Franken and G. R. H. Wright from the Second Dutch Edition of 1949). Leuven.
- Küffer, A. and Siegmann, R. 2007. *Unter dem Schutz der Himmelsgöttin: ägyptische Särge, Mumien und Masken in der Schweiz*. Zürich.
- Kuraszkiewicz, K. O. 2006. 'The title *ḥtmtj ntr* - god's sealer - in the Old Kingdom', in M. Bárta (ed.), *The Old Kingdom art and archaeology: proceedings of the conference held in Prague, May 31 - June 4, 2004*. Prague. 193-202.

- Laemmel, S. 2013. 'A Pottery Assemblage from the Tomb of Harwa (Western Thebes): Mortuary and Cultic Reuse of a 25th Dynasty Funerary Structure', in B. Bader and M.F. Ownby (eds.), *Functional aspects of Egyptian ceramics in their archaeological context: Proceedings of a Conference held at the McDonald Institute for Archaeological Research, Cambridge, July 24th – July 25th, 2009*. Leuven, Paris, and Walpole, MA. 217-248.
- Lakomy, C. 2011. '„Embalming Caches“ im Tal der Könige. Eine Bestandsaufnahme für die XVIII. Dynastie', *Göttinger Miszellen* 228: 21-32.
- Lansing, A. 1920. 'The Egyptian expedition 1916-1919: excavations in the Asasîf at Thebes, season of 1918-19', *Bulletin of the Metropolitan Museum of Art* 15 (7.2), 11-24.
- Lauer, J. and Iskander, Z. 1955. 'Données nouvelles sur la momification dans l'Égypte ancienne', *Annales du Service des Antiquités de l'Égypte* 53, 167-194.
- Leca, A. P. 1981. *The Egyptian way of death: mummies and the cult of the immortal*. Garden City, NY.
- Lefebvre, G. 1949. 'Rouge et nuances voisines', *Journal of Egyptian Archaeology* 35, 72-76.
- Lekov, T. 2010. 'The shadow of the dead and its representations', *The Journal of Egyptological Studies* 3, 43-61.
- Lichtheim, M. 1980. *Ancient Egyptian literature. Volume III, The Late Period*. Berkeley, CA.
- López-Grande, M. J. 2013. 'Red Vases at Dra Abu el-Naga. Two Funerary Deposits', in B. Bader and M.F. Ownby (eds.), *Functional aspects of Egyptian ceramics in their archaeological context: Proceedings of a Conference held at the McDonald Institute for Archaeological Research, Cambridge, July 24th – July 25th, 2009*. Leuven, Paris, and Walpole, MA. 249-272.
- Loyrette, A-M. 1997. 'Les tombes de la Vallée des Trois Puits, à Thèbes-Ouest', *Memnonia* 8, 177-195.
- Lüscher, B. 1998. *Untersuchungen zu Totenbuch Spruch 151. Studien zum Altägyptischen Totenbuch 2*. Wiesbaden.
- Mairs, R. and Martin, C. J. 2008-2009. 'A bilingual "sale" of liturgies from the archive of Theban choachytes: P. Berlin 5507, P. Berlin 3098 and P. Leiden 413', *Enchoria* 31, 22-67.

- Malinine, M. 1953. *Choix de textes juridiques en hiéroglyphes "anormal" et en démotique*. Paris.
- Manassa, C. 2007. *The late Egyptian underworld : sarcophagi and related texts from the Nectanebid period*. Wiesbaden.
- Manniche, L. 1999. *Sacred luxuries: fragrance, aromatherapy, and cosmetics in ancient Egypt*. New York, NY.
- Manuelian, P. D. 2003. *Slab stelae of the Giza necropolis*. New Haven, CT.
- Martin, C. J. 2009. *Demotic Papyri from the Memphite Necropolis in the collections of the National Museum of Antiquities in Leiden, the British Museum and the Hermitage Museum*. Turnhout.
- Martin G. T. 1985. *The tomb-chapels of Paser and Ra'ia at Saqqâra*. *Egypt Exploration Society, Excavation Memoir 52*. London.
- Merkovic, N. 2016. 'A Look Through His Window. The Sanctuary of the Divine Bull at Memphis', *Journal of Ancient Egyptian Architecture* 1, 57-70.
- Meskel, L. 1999. *Archaeologies of social life: age, sex, class et cetera in ancient Egypt*. Oxford.
- Meskel, L. and Joyce, R. 2003. *Embodied lives: figuring ancient Maya and Egyptian experience*. London.
- De Meulenaere, H. 1975a. 'Balsamierer', in W. Helck and E. Otto (eds.), *Lexikon der Ägyptologie*. Band I. 610.
- De Meulenaere, H. 1975b. 'Choachyt', in W. Helck and E. Otto (eds.), *Lexikon der Ägyptologie*. Band I. 957.
- Meyrat, P. 2014. 'Topography-related problems in the Apis embalming ritual', in J. F. Quack (ed.), *Ägyptische Rituale der griechisch-römischen Zeit*. Tübingen. 247-262.
- Michel, W. 1971. 'Herzbestattungen und der Herzkult des 17. Jahrhunderts', *Archiv für mittelrheinische Kirchengeschichte* 23: 121–139.
- Mikhail, L. B. 1983. *Dramatic aspects of the Osirian Khoiak festival*. Uppsala.
- Milde, H. 1991. *The Vignettes in the Book of the Dead of Neferrenpet*. Leiden.
- Mojsov, B. 2006. *Osiris: death and afterlife of a God*. Oxford.

- Möller, G. 1913. *Die beiden Totenpapyrus Rhind des Museums zu Edinburg*. Leipzig.
- Morimoto, I. 1993. 'Buddhist mummies in Japan', *Kaibogaku zasshi. Journal of anatomy* 68.4, 381-398.
- Mosher, M. 1993. 'Theban and Memphite Book of the Dead Traditions', *Journal of the American Research Center Egypt* 29, 143-172.
- Mosher, M. 2001. *The Papyrus of Hor (BM EA 10479), with Papyrus McGregor: Late Period tradition at Akhmim. Catalogue of the Books of the Dead in the British Museum 2*. London.
- Munro, I. 1988. *Untersuchungen zu den Totenbuch-Papyri der 18. Dynastie: Kriterien ihrer Datierung*. London and New York, NY.
- Muhs, B. 2010. 'Demotic donation contract from early Ptolemaic Thebes (P. Louvre N. 3263)', in Z. Hawass and J. H. Wegner (eds.), *Millions of jubilees: studies in honor of David P. Silverman 1*. Cairo. 439-455.
- Myśliwiec, K. 1987. *Keramik und Kleinfunde aus der Grabung im Tempel Sethos' I in Gurna*. Mainz.
- Myśliwiec, K. 2002. 'The Ptolemaic Period cemetery in west Saqqara', in T. A. Bács (ed.), *A tribute to excellence: studies offered in honor of Ernő Gaál, Ulrich Luft, László Török*. Budapest. 349-359.
- Nedoroscik, J. A. 1997. *The city of the dead: a history of Cairo's cemetery communities*. Westport and London.
- Nelson, M. Loyrette, A-M., and Lecuyot, G. 1982. 'Les dispositions du Ramesseum en bordure des annexes nord, ouest et sud. II: dégagement du secteur K''' situé à l'extérieur de la clôture des annexes ouest du Ramesseum', *Annales du Service des Antiquités de l'Égypte* 68, 9-26.
- Nicholson, P. T. 2005. 'The Sacred Animal Necropolis at North Saqqara: The Cults and their Catacombs', in S. Ikram (ed.), *Divine creatures: animal mummies in ancient Egypt*. Cairo. 44-71.
- Nyord, R. 2009. *Breathing flesh: conceptions of the body in the ancient Egyptian Coffin Texts*. Copenhagen.
- Ogdon, J. R. 1986. 'Dnit: jar of embalming?', *Discussions in Egyptology* 6, 21-32.

- Osgood, S. 2009. 'KV 63/Amenmesse-Projekt / The KV63/Amenmesse project', in E. Dziobek, M. Höveler-Müller, and C. E. Loeben (eds.), *Das geheimnisvolle Grab 63 - die neueste Entdeckung im Tal der Könige: Archäologie und Kunst von Susan Osgood*. Leidorf. 85-116.
- Otto, E. 1975. 'Cheriheb', in W. Helck and E. Otto (eds.), *Lexikon der Ägyptologie*. Band I. 941-943.
- Pasek, S. 2012. *Die wirtschaftlichen Grundlagen der Gottessiegler und Balsamierer zu Hawara. Der ökonomische Hintergrund eines priesterlichen Milieus im ägyptischen Fajum der Spätzeit und der hellenistischen Zeit*. Munich.
- Pestman, P. W. 1963. 'Les documents juridiques des "Chanceliers du Dieu" de Memphis à l'époque ptolémaïque', *Oudheidkundige mededelingen uit het Rijksmuseum van Oudheden* 44, 8-23.
- Pestman, P. W. 1965. 'Der demotische Text der Mumientäfelchen aus Amsterdam', *Oudheidkundige mededelingen uit het Rijksmuseum van Oudheden* 46, 44-51.
- Pestman, P. W. 1981. *L'Archivio di Amenotes, figlio di Horos (P. Tor. Amenotes) : testi demotici e greci relativi ad una famiglia di imbalsamatori del secondo sec. a. C.* Milan.
- Pestman, P. W. 1993. *The archive of the Theban choachytes (second century B.C.): a survey of the Demotic and Greek papyri contained in the archive*. Leuven.
- Pestman, P. W. and Vleeming, S. P. 1994. *Les papyrus démotiques de Tsenhor (P. Tsehnor): les archives privées d'une femme égyptienne du temps de Darius 1er*. Leuven.
- Petrie, W. M. F. 1907. *Gizeh and Rifeh*. Warminster.
- Pischikova, E., Budka J., and Griffin K. (eds.) 2014. *Thebes in the first millennium. BC*. Newcastle.
- Pischikova, E. 1994. 'Representation of Ritual and Symbolic Objects in Late XXVth Dynasty and Saite Private Tombs', *Journal of the American Research Center in Egypt* 31, 63-77.
- Pries, A. H. 2011. *Die Stundenwachen im Osiriskult : eine Studie zu Tradition und späten Rezeption von Ritualen im Alten Ägypten*. Wiesbaden.
- Quibell, J. E. 1907. *Excavations at Saqqara, 1905-1906*. Cairo.

- Quibell, J. E., Paget, R. F. E., and Pirie, A. A. 1898. *The Ramesseum, by J.E. Quibell, with tr. and comments by W. Spiegelberg, and The tomb of Ptah-hetep, copied by R.F.E. Paget and A.A. Pirie, with comments by F.Ll. Griffith.* London.
- Quirke, S. 2013. *Going out into Daylight - prt m hrw: the ancient Egyptian Book of the Dead, translations, sources, meanings; GHP Egyptology 20.* London.
- Raven, M. J. 1984. *Symbols of resurrection: three studies in ancient Egyptian iconography.* Leiden.
- Raven, M. J. 2007. 'Egyptian concepts on the orientation of the human body, in J. C. Goyon and C. Cardin (eds.), *Proceedings of the Ninth International Congress of Egyptologists: Grenoble, 6-12 septembre 2004* Leuven. 1567-1573.
- Raven, M. J. 2011. 'Desheret bowls and canopic jars', in D. Aston, B. Bader, C. Gallorini, P. Nicholson, and S. Buckingham (eds.), *Under the potter's tree: studies on ancient Egypt presented to Janine Bourriau on the occasion of her 70th birthday.* Leuven, Paris, and Walpole. 795-808.
- Raven, M. J. 2012. *Egyptian magic : the quest for Thoth's Book of Secrets.* Cairo.
- Raven, M. J. and Taconis, W.K. 2005. *Egyptian mummies: radiological atlas of the collections in the National Museum of Antiquities at Leiden.* Turnhout.
- Rebay-Salisbury, K., Stig Sørensen, M. L., and Hughes, J. 2010. *Body Parts and Bodies Whole: changing relations and meanings.* Oxford.
- Régen, I. 2010. 'When the Book of the Dead does not match archaeology: the case of the protective magical bricks (BD 151)', *British Museum Studies in Ancient Egypt and Sudan* 15, 267-278.
- Renfrew, C., Boyd, M. J., and Morely, I. 2016. *Death rituals, social order, and the archaeology of immortality in the ancient world: "death shall have no dominion".* New York, NY.
- Reymond, E. A. E. 1968. 'A dispute in the Hawara necropolis', *Chronique d'Égypte* 43 (85), 55-77.
- Reymond, E. A. E. 1972. 'The s^ch "eternal image"', *Zeitschrift für ägyptische Sprache und Altertumskunde* 98, 132-140.

- Reymond, E. A. E. 1973. *Catalogue of Demotic Papyri in the Ashmolean Museum. Volume I. Embalmers' Archives from Hawara. Including Greek Documents and Subscriptions by J. W. B. Barns*, Oxford.
- Reymond, E. A. E. 1976. *From the contents of the libraries of the Suchos temples in the Fayyum, part I: a medical book from Crocodilopolis. P. Vindob. D. 6257. Mitteilungen aus der Papyrussammlung der Österreichischen Nationalbibliothek*. Vienna.
- Reymond, E. A. E. 1977. *From the Contents of the Libraries of the Suchos Temples in the Fayyum. Part II. From Ancient Egyptian Hermetic Writings, Kommission bei Verlag Brüder Hollinek, Mitteilungen aus der Papyrussammlung der Österreichischen Nationalbibliothek*. Vienna.
- Reymond, E. A. E. 1981. *From the Records of a Priestly Family from Memphis I. Ägyptologische Abhandlungen 38*. Wiesbaden.
- Ricke H. 1950. *Bemerkungen zur ägyptischen Baukunst des Alten Reichs*. Cairo.
- Riggs, C. 2005. *The beautiful burial in Roman Egypt: art, identity, and funerary religion*. Oxford.
- Riggs, C. 2014. *Unwrapping ancient Egypt*. London.
- Ritner, R. 1993. *The Mechanics of Ancient Egyptian Magical Practice*. Chicago, IL.
- Ritner, R. 2003. 'The Story of Setne I', in W. K. Simpson and R. Ritner (eds.), *The literature of ancient Egypt: an anthology of stories, instructions, stelae autobiographies, and poetry*. New Haven, CT and London. 453-469.
- Roode, S. 2003. 'Observations on the ibw-tent: preliminary results', *PalArch's Journal of Archaeology of Egypt/Egyptology* 0, 1-6.
- Roth, A. M. 1992. 'The *psš-*kf** and the 'opening of the mouth' ceremony: a ritual of birth and rebirth', *Journal of Egyptian Archaeology* 78, 113-147.
- Roth, A. M. 1993. 'Fingers, stars, and the 'opening of the mouth': the nature and function of the *ntrwj*-blades', *Journal of Egyptian Archaeology* 79, 57-79.
- Rummel, U. 2006. 'Weihrauch, Salböl und Leinen: Balsamierungsmaterialien als Medium der Erneuerung im Sedfest', *Studien zur Altägyptischen Kultur* 34, 381-407.
- Sakurai, K., Ogata, T., Morimoto, I., P. E. N. G. Long-Xiang, and Wu Zhong-Bi. 1998. 'Mummies from Japan and China', in A. Cockburn, E. Cockburn, and T. A. Reyman (eds.), *Mummies, Disease and Ancient Cultures*. Cambridge. 308-335.

- Sauneron, S. 1952. 'Le "Chancelier du dieu" dans son double rôle d'embaumour et de prêtre d'Abidos', *Bulletin de l'Institut Français d'Archéologie Orientale* 51, 137-171.
- Schaden, O. J. 2007. 'KV 63: an update. The final stages of clearance', *KMT* 18 (1), 16-25.
- Schaden, O. J. 2011. 'KV 63 update: the 2011 season', *KMT* 22 (2), 33-41.
- Scheele, K. 2005. *Die Stofflisten des Alten Reiches: Lexikographie, Entwicklung und Gebrauch. Menes 2*. Wiesbaden.
- Schenkel, W. 1984. 'Schatten', in W. Helck and E. Otto (eds.), *Lexikon der Ägyptologie*. Band V. 535-536.
- Schreiber, G. 2007. 'The final acts of embalming: an archaeological note on some rare objects in Theban elite burials of the early Ptolemaic Period', in K. Endreffy and A. Gulyás (eds.), *Proceedings of the Fourth Central European Conference of Young Egyptologists: 31 August - 2 September 2006*. Budapest. 337-356.
- Schreiber, G. 2008. *The mortuary monument of Djehutymes II : finds from the New Kingdom to the Twenty-sixth Dynasty*. Budapest.
- Sederholm, V. H. 2006. *Papyrus British Museum 10808 and its cultural and religious setting*. Boston, MA and Leiden.
- Servajean, F. 2009. 'Le cycle du ba dans le *Rituel de l'Embaumement* P. Boulaq III, 8, 12-8, 16', *Égypte Nilotique et Méditerranéenne* 2, 9-23.
- Sherman, E. J. 1981. 'Djedhor the Saviour statue base OI 10589', *Journal of Egyptian Archaeology* 67, 82-102.
- el-Shohoumi, N. 2002. 'Burying the Dead - Vivifying the Past: Reflections on Ancient Egyptian Funerary Rites and Their Parallels in Modern Egypt', in W. Wendrich and G. van der Kooij (eds.) *Moving Matters. Ethnoarchaeology in the Near East. Proceedings of the International Seminar held at Cairo, 7-10 December 1998*. Leiden. 189-213.
- el-Shohoumi, N. 2004. *Der Tod im Leben eine Vergleichende Analyse Altägyptischer und Rezenten Ägyptischer Totenbräuche*. Vienna.
- Shore, A.F. 1988. Swapping Property at Asyut in the Persian Period, in J. Baines, T.G.H. James, A. Leahy, and A. F. Shore (eds.) *Pyramid studies and other essays presented to I. E. S. Edwards*. London. 200-206.

- Shore, A. F. 1992. 'Human and divine mummification', in A. B. Lloyd (ed.), *Studies in pharaonic religion and society in honour of J. Gwyn Griffiths*. London. 226-235.
- Shore, A. F. and Smith H. S. 1959. 'Two unpublished demotic documents from the Asyūt archive', *Journal of Egyptian Archaeology* 45, 52-60.
- Shore, A. F. and Smith, H. S. 1960. 'A Demotic Embalmers' Agreement (Pap. dem. B.M. 10561)', *Acta Orientalia* 25, 277-294.
- Simpson, W. K. 1976. *The mastabas of Qar and Idu : G 7101 and 7102 / with contributions or drawings by Dows Dunham et al.; based upon the excavations and recording of George Andrew Reisner et al.; in collaboration with the Pennsylvania-Yale Archaeological Expedition to Egypt*. Boston, MA.
- Smith, H. S. and Jeffreys D. G. 1978. 'The north Saqqâra temple-town survey: preliminary report for 1976/77', *Journal of Egyptian Archaeology* 64, 10-21.
- Smith, M. 1987. *The mortuary texts of Papyrus BM 10507. Catalogue of Demotic Papyri in the British Museum* 3. London
- Smith, M. 1993. *The Liturgy of Opening the Mouth for Breathing*. Oxford.
- Smith, M. 2005. *Papyrus Harkness (MMA 31.9.7)*. Oxford.
- Smith, M. 2009. *Traversing eternity: texts for the afterlife from Ptolemaic and Roman Egypt*. Oxford.
- Smith, M. 2012-2013. 'Osiris and the deceased in ancient Egypt: perspectives from four millennia', *Annuaire, École Pratique des Hautes Études: Ve section - sciences religieuses* 121, 88-101.
- Smith, M. 2015. 'Whose ritual? Osirian texts and texts written for the deceased in P. BM EA 10209: a case study', in B. Backes and J. Dieleman (eds.), *Liturgical texts for Osiris and the deceased in Late Period and Greco-Roman Egypt / Liturgische Texte für Osiris und Verstorbene im spätzeitlichen Ägypten: proceedings of the colloquiums at New York (ISAW), 6 May 2011, and Freudenstadt, 18-21 July 2012*. Wiesbaden. 161-177.
- Smith, W. S. 1935. 'The Old Kingdom linen list', *Zeitschrift für ägyptische Sprache und Altertumskunde* 71, 134-149.
- Smoláriková, K. 2006. 'Some remarks on embalmers' caches from the Saite-Persian cemetery at Abusir', in H. Györy (ed.), *Aegyptus et Pannonia III: acta symposii anno 2004*. Budapest. 261-270.

- Smoláriková, K. 2009a. 'The embalmer's cache as an heir of the South Tomb', in P. Charvát, P. Vlčková, J. Mynářová, M. Tomášek (eds.), *My things changed things: social development and cultural exchange in prehistory, antiquity, and the Middle Ages*. Prague. 58-63.
- Smoláriková, K. 2009b. 'Embalmer's deposits of the Saite tombs at Abusir', *Göttinger Miszellen* 223, 79-88.
- Spencer, A. 1982. *Death in Ancient Egypt*. Harmondsworth.
- Spieser, C. 1997. 'L'eau et la régénération des morts d'après les représentations des tombes thébaines du Nouvel Empire', *Chronique d'Égypte* 72 (144), 211-228.
- Stammers, M. 2009. *The Elite Late Period Egyptian Tombs of Memphis*. Oxford.
- Stevenson, A. 2007. 'The aesthetics of Predynastic Egyptian burial: Funerary performances in the fourth millennium BC', *Archaeological Review from Cambridge* 22 (1), 76 – 92 .
- Stevenson, A. 2016. 'Locating a Sense of Immortality in Early Egyptian Cemeteries', in C. Renfrew, M. J. Boyd, and I. Morely (eds.), *Death rituals, social order, and the archaeology of immortality in the ancient world: "death shall have no dominion"*. New York, NY. 371-381.
- Strudwick, N. 2009. 'True Ritual Objects in Egyptian Private Tombs?', in B. Backes, M. Müller-Roth and S. Stohr (eds.), *Ausgestattet mit dem Schriften des Thot. Festschrift für Irmtraut Munro zu Ihrem 65. Geburtstag (SAT 4)*. 213-238.
- Strudwick, N. 2016. *The Tomb of Pharaoh's Chancellor, Senneferi at Thebes, TT 99, I. The New Kingdom*. Oxford.
- Taylor, J. H. 1989. *Egyptian Coffins*. Princes Risborough.
- Taylor, J. H. 2001. *Death and the afterlife in ancient Egypt*. London.
- Taylor, J. H. 2003. 'Theban coffins from the Twenty-second to the Twenty-sixth Dynasty: dating and synthesis of development', in N. Strudwick and J. Taylor (eds.), *The Theban Necropolis: past, present and future*. London. 95-121.
- Taylor, J. H. 2008. 'Changes in funerary religion in the 25-26th Dynasties', in F. Tiradritti (ed.), *Pharaonic renaissance: archaism and the sense of history in ancient Egypt*. Budapest. 91-101.
- Taylor, J. H. 2010. *Journey through the afterlife: ancient Egyptian Book of the Dead*. London.

- Thissen, H. J. 1982. 'Paraschist', in W. Helck and E. Otto (eds.), *Lexikon der Ägyptologie* Band IV. 910.
- Thomas, N. K. 1980. *A typological study of Saite tombs at Thebes*. Los Angeles, CA.
- Thompson, D. J. 1988. *Memphis under the Ptolemies*. Princeton, NJ.
- Thompson, H. 1934. *A family archive from Siut from papyri in the British Museum, including an account of a trial before the laocritae in the year B.C. 170*. Oxford.
- Thompson, S. E. 1998. 'The significance of anointing in ancient Egyptian funerary beliefs', in L. H. Lesko (ed.), *Ancient Egyptian and Mediterranean studies*. Providence, RI. 229-243.
- Töpfer, S. 2011. 'Bemerkungen zu einigen Gefäßaufschriften der saitisch-persischen Zeit', *Göttinger Miszellen* 229. 113-119.
- Töpfer, S. 2015. *Das Balsamierungsritual : eine (Neu-)Edition der Textkomposition Balsamierungsritual (pBoulaq 3, pLouvre 5158, pDurham 1983.11 + pSt. Petersburg 18128)*. Wiesbaden.
- Troy, L. 1993. 'Creating a God: The Mummification Ritual', *The Bulletin of the Australian Centre for Egyptology* 4, 55-82.
- Uytterhoeven, I. 2001. 'Hawara (Fayum): tombs and houses on the surface. A preliminary report of the K.U. Leuven site survey', *Ricerche di egittologia e di antichità copte* 3, 45-83.
- Uytterhoeven, I. 2009. *Hawara in the Graeco-Roman period: life and death in a Fayum village. Orientalia Lovaniensia Analecta 174*. Leuven.
- Vandier, J. 1961. *Le papyrus Jumilhac*. Paris.
- Vartavan, C. and Waanders, I. 2013. *Anubis: bibliography on mummies, mummification and related subjects*. London.
- Venit, M. S. 2016. *Visualizing the afterlife in the tombs of Graeco-Roman Egypt*. Cambridge.
- Vernus, P. 1978. *Athribis: textes et documents relatifs à la géographie, aux cultes et à l'histoire d'une ville du Delta égyptien à l'époque pharaonique. Bibliothèque d'étude 74*. Cairo.
- Vittmann, G. 1986. 'Taricheut', in W. Helck and W. Westendorf (eds.) *Lexikon der Ägyptologie*. Band VI. 233-236.

- Vleeming, S. P. (ed.) 1995. *Hundred-gated Thebes: acts of a colloquium on Thebes and the Theban area in the Graeco-Roman period (P.L. Bat. 27)*. Papyrologica Lugduno-Batava 27. Leiden.
- Vogelsang-Eastwood, G. 1992. *The production of linen in pharaonic Egypt*. Leiden.
- Vogelsang-Eastwood, G. 1993. *Pharaonic Egyptian Clothing*. Leiden, New York, NY, and Köln.
- Vogelsang-Eastwood, G. 2000. 'Textiles', in P. T. Nicholson and I. Shaw (eds.), *Ancient Egyptian materials and technology*. Cambridge. 268-298.
- Vos, R. L. 1993. *The Apis embalming ritual: P. Vindob. 3873. Orientalia Lovaniensia Analecta 50*. Leuven.
- Walsem, R., Martin G. T., Aston B. G., Strouhal E., and Horáčková L. 1999. 'Preliminary report on the Saqqara excavations, season 1999', *Oudheidkundige mededelingen uit het Rijksmuseum van Oudheden* 79, 19-35.
- Weiss-Krejci, E. 2005. 'Excarnation, Evisceration, and Exhumation in Medieval and Post-Medieval Europe', in J. E. B. Gordon, F. M. Rakita, L. A. Beck and S. R. Williams (eds.) *Interacting with the Dead. Perspectives on Mortuary Archaeology for the New Millennium*. Gainesville. 155–172.
- Weiss-Krejci, E. 2008. 'Unusual Life, Unusual Death and the Fate of the Corpse. A Case Study from Dynastic Europe', in E. M. Murphy (ed.) *Deviant Burial in the Archaeological Record*. Oxford. 169–190.
- Weis-Krejci, E. 2010. 'Heart burial in medieval and post-medieval central Europe', in K. Rebay-Salisbury, M. L. Stig Sørensen, and J. Hughes (eds.) *Body Parts and Bodies Whole: changing relations and meanings*. Oxford. 119-134.
- Wendrich, W. 2006. 'Entangled, Connected or Protected? The power of knots and knotting in ancient Egypt', in K. Szpakowska (ed.), *Through a Glass Darkly. Magic, dreams and prophecy in ancient Egypt*. Swansea. 243-269.
- Willems, H. 1988. *Chests of Life: a study of the typology and conceptual development of Middle Kingdom standard class coffins. Mededelingen en Verhandelingen van het Vooraziatisch-Egyptisch Genootschap "Ex Oriente Lux" 25*. Leiden.
- Willems, H. 1996. *Coffin of Heqata (Cairo JdE 36418): a case study of Egyptian funerary culture of the early Middle Kingdom*. Leuven.

- Willems, H. 1997. 'The embalmer embalmed: remarks on the meaning of the decoration of some Middle Kingdom coffins', in J. Dijk (ed.), *Essays on ancient Egypt in honour of Herman te Velde*. Groningen. 343-372.
- Winkler, A. 2006. 'The efflux that issued from Osiris: a study on *rdw* in the Pyramid Texts', *Göttinger Miszellen* 211, 125-139.
- Winlock, H. 1920. 'The Egyptian Expedition 1918-1920: excavations at Thebes 1919-20', *Bulletin of the Metropolitan Museum of Art* 15 (12.2), 12-32.
- Winlock, H. 1920. *Excavations at Thebes 1919-20. The Egyptian expedition 1918-1920*. New York, NY.
- Winlock, H. 1922. 'The Egyptian Expedition 1921-1922: excavations at Thebes', *Bulletin of the Metropolitan Museum of Art* 17 (12.2), 19-49.
- Winlock, H. 1924. 'The Egyptian Expedition 1923-1924: the Museum's excavations at Thebes', *Bulletin of the Metropolitan Museum of Art* 19 (12.2), 5-33.
- Winlock, H. 1928. 'The Egyptian Expedition 1925-1927: the Museum's excavations at Thebes', *Bulletin of the Metropolitan Museum of Art* 23 (2.2), 3-58
- Winlock, H. 1928. 'The Egyptian Expedition 1927-1928: the Museum's excavations at Thebes', *Bulletin of the Metropolitan Museum of Art* 23 (12.2), 3-28.
- Winlock, H. 1930. 'A late dynastic embalmer's table', *Annales du Service des Antiquités de l'Égypte* 30, 102-104.
- Winlock, H. 1941. *Materials used at the embalming of king Tūt-'Ankh-Amūn*. The Metropolitan Museum of Art Papers 10. New York, NY.
- Winlock, H. E. and Arnold, D. 2010. *Tutankhamun's Funeral*. New York, NY.
- Youssef, A. 1981. 'Notes on the purification tent', *Annales du Service des Antiquités de l'Égypte* 64, 155-157.
- Žabkar, L. V. 1968. *A Study of the Ba Concept in Ancient Egyptian Texts*. Chicago, IL.
- Zaghloul, E. H. 1991. 'An agreement for sale from the reign of Ptolemy IX Sôter II in the Museum of Mallawi', *Bulletin de l'Institut Français d'Archéologie Orientale* 91, 255-264.
- Zaki, A. and Iskander Z. 1943. 'Materials and method used for mummifying the body of Amentefnekht, Saqqara 1941', *Annales du Service des Antiquités de l'Égypte* 42, 223-250.

Zandee, J. 1960. *Death as an Enemy according to Ancient Egyptian Conceptions*. Leiden.

Ziegler, C. (ed.) 2013. *Les tombes hypogées de Basse Époque: F7, F17, H, j1, Q, n1. Fouilles du Louvre à Saqqara 2*. Paris.