Modeling the Mechanics of Temple Production in the Middle Kingdom: An Investigation of the Shena of Divine Offerings Adjacent to the Mortuary Temple of Senwosret III at Abydos, Egypt

Vanessa E. Smith
University of Pennsylvania, vesmith@sas.upenn.edu

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Abstract
During the Middle Kingdom, the term Sna or shena, was used by the ancient Egyptians to denote a food
production area, primarily of bread and beer, which was attached to religious institutions. As a production
area, the shena represented a place of pivotal importance in the economic structure of the Egyptian temple as
a producer of divine offerings, wages and pensions for temple personnel, and as a taxpayer to the Egyptian
state. In theory, every temple would have had a shena to provide for its cultic and economic needs. Although
there are thousands of temples identified archaeologically from ancient Egypt, no shena have been fully
investigated or published from and period of Egyptian history. Currently, all of our understanding of the
nature of shena comes from textual and iconographic evidence.

The main focus of this dissertation is a study of the shena of divine offerings adjacent to the mortuary temple
of Senwosret III at south Abydos, Egypt. Excavations in the 2004 clearly showed that the baking of bread and
brewing of beer was the primary function of the shena at south Abydos. However, other activities were also
brought to evident, including meat processing, fish procurement and processing, wine processing, metal-
working, linen production, and pottery production.

Over 5000 seal impressions were recovered from the shena buildings and its midden. These seal impressions
record the names and titles of both individuals and institutions. As a corpus it is possible to discern
interactions between the shena and other religious and non-religious institutions. Further, it is possible to
create a bureaucratic framework of the mortuary complex of Senwosret III at south Abydos which includes
the mortuary temple, a hidden tomb, and a town. The shena attached to the Senwosret III temple provides an
excellent opportunity to better understand non-cultic temple activities and bureaucracy through its
architectural, artifactual, and textual remains.

Degree Type
Dissertation

Degree Name
Doctor of Philosophy (PhD)

Graduate Group
Near Eastern Languages & Civilizations

First Advisor
Josef Wegner

Second Advisor
David P. Silverman

This dissertation is available at ScholarlyCommons: http://repository.upenn.edu/edissertations/190
Third Advisor
Richard Zettler

Keywords
Ancient Egypt, Abydos, Mortuary Temple, Senwosret III, Shena, Food Production

Subject Categories
Islamic World and Near East History | Near Eastern Languages and Societies | Other History of Art, Architecture, and Archaeology

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AN INVESTIGATION OF THE *SHENA* OF DIVINE OFFERINGS ADJACENT TO THE MORTUARY TEMPLE OF SENWOSRET III AT ABYDOS, EGYPT

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For Jeremie
Acknowledgments

There are a myriad of people who helped with the research, editing, and support in the writing of this dissertation.

I would first like to thank my primary dissertation advisor Josef Wegner for allowing me to access to part of his concession at south Abydos, which formed the basis of my work. He recognized my interests early on and helped me to tailor a dissertation that was not only important in Egyptological research, but one that I would enjoy. His many comments and collaborations on excavations, articles, lectures, as well as this dissertation have both improved the quality of my work and helped to disseminate it to others. I am very grateful to David Silverman for his thoughtful comments and mentorship in both writing my thesis and guiding my career. I would also like to thank Richard Zettler who helped me navigate the bureaucracy of graduate school and always fought for me when others might have dismissed me.

The fieldwork in Egypt was completed under the auspices of the University of Pennsylvania/Yale University/Institute of Fine Arts, New York University Expedition to Abydos co-directed by William Kelly Simpson and David O’Connor. I am very grateful for their encouragement and interest in this project.

I am indebted to the American Research Center in Egypt who funded this dissertation research through a US State Department Fellowship. I would especially like to thank Gerry Scott, Director of ARCE, Mrs. Amira Khattab, Deputy Director,
Government Relations, and Mary Sadek, Public Programs Coordinator for all their
guidance, help and friendship during my time in Cairo.

I would also like to thank to the Supreme Council of Antiquities of the Republic
of Egypt for their support during my 2004 field season. I am grateful to Dr. Zahi
Hawass, Director of the SCA, and my inspectors Mr. Mohamad Abd-Ayzid and Mr
Gamal Kamel Abd El-Mageed for their interest and support in this project.

I am very grateful to my field staff during the 2004 season including excavators
Emily Cocke and Rachel Aronin, surveyor Tomasz Herbich, ceramicists Antonio
Morales and Rachael Rodabaugh-Suvorov, epigrapher Tracy Musacchio,
zooarchaeologist Stine Rossel, artist Kristián Vertès, and photographer Benjamin Smith.
Without them, I would not have the marvelous data set that forms the basis of this
dissertation. I would also like to thank the Egyptian staff at Abydos Ries Ibrahim
Mohamed Ali and Nabil Fahmi, under whose direction it was possible to get so much
work done.

I cannot thank Peggy Guinan, Linda Greene, and Diane Moderski of the
Department of Near Eastern Languages and Civilizations of the University of
Pennsylvania enough for their unwavering support, guidance, and friendship in good
times and in moments of panic. Nicholas Picardo and I navigated through graduate
school and our excavations together and he provided friendship and encouragement. I
would also like to thank Leslie Warden who was my constant cheerleader, sounding
board and great friend. Kevin McGeough helped to edit much of this thesis and
encouraged me to keep going.
Finally, I would like to thank my husband Jeremie Peterson, my parents Alexander and Sally Smith, my brother Benjamin Smith for their love and years of patience, support, and encouragement. Without them, I would never have completed this dissertation.
ABSTRACT

MODELING THE MECHANICS OF TEMPLE PRODUCTION IN THE MIDDLE KINGDOM:
AN INVESTIGATION OF THE SHENA OF DIVINE OFFERINGS ADJACENT TO THE MORTUARY TEMPLE OF SENWOSRET III AT ABYDOS, EGYPT

Vanessa Smith

Josef Wegner

During the Middle Kingdom, the term šn or shena, was used by the ancient Egyptians to denote a food production area, primarily of bread and beer, which was attached to religious institutions. As a production area, the shena represented a place of pivotal importance in the economic structure of the Egyptian temple as a producer of divine offerings, wages and pensions for temple personnel, and as a taxpayer to the Egyptian state. In theory, every temple would have had a shena to provide for its cultic and economic needs. Although there are thousands of temples identified archaeologically from ancient Egypt, no shena have been fully investigated or published from and period of Egyptian history. Currently, all of our understanding of the nature of shena comes from textual and iconographic evidence.

The main focus of this dissertation is a study of the shena of divine offerings adjacent to the mortuary temple of Senwosret III at south Abydos, Egypt. Excavations in the 2004 clearly showed that the baking of bread and brewing of beer was the primary function of the shena at south Abydos. However, other activities were also brought to
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Over 5000 seal impressions were recovered from the *shena* buildings and its midden. These seal impressions record the names and titles of both individuals and institutions. As a corpus it is possible to discern interactions between the *shena* and other religious and non-religious institutions. Further, it is possible to create a bureaucratic framework of the mortuary complex of Senwosret III at south Abydos which includes the mortuary temple, a hidden tomb, and a town. The *shena* attached to the Senwosret III temple provides an excellent opportunity to better understand non-cultic temple activities and bureaucracy through its architectural, artifactual, and textual remains.
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Chapter 1: Introduction

This dissertation is an archaeological and textual examination of a particularly important economic institution in dynastic Egypt termed the shena. The shena represented the economic wing of the ancient Egyptian temple. It was a producer of divine offerings, mostly foodstuffs, for use in the temple ritual, as wages for personnel, and taxes to the Egyptian state. Until this investigation, few shenas have been excavated from any period of ancient Egyptian history, despite inscriptive evidence that suggests that most temples would have had one. Those shenas that have been excavated, have not necessarily been identified as such.¹ Wegner identified a shena adjacent to the mortuary temple of Senwosret III at South Abydos.² Stratigraphy, spatial analysis, ceramic, faunal, and sigillographic evidence provide significant data on production, exchange, and consumption practices in this facility. Specifically, these lines of data elucidate the organizational structure of non-cultic temple personnel, provide a basic model of temple economic practices during the Middle Kingdom, clarify the interdependence of the local community and the temple, and explicate the interaction between temple and state. The study of Egyptian temple economic practices has implications in understanding better institutional economies in complex societies, but more fundamentally, the economic relationships between religious institutions and state and local polities.

¹ See section 3.3 for discussion of these other archaeologically identified shenas.
1.1 Abydos

Abydos was a significant religious center from the Predynastic (3500-3000 B.C.) through the Greco-Roman Period (332 B.C.-395 A.D.). Located approximately 450 km south of the modern city of Cairo on the edge of the western desert (see Figure 1), Abydos was the burial place of high status individuals in the predynastic period and of pharaohs of the first and some from the second dynasties. Near the ancient town at the edge of the cultivation there was a temple to the local god Khentiamentiu, “Foremost of the Westerners.”

By the First Intermediate Period, Khentiamentiu and the god Osiris, ruler of the underworld, became syncretized; the Egyptians believed that the early dynastic burial ground (known locally as Umm el-Gaab) was the burial place of the god Abydos.

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king Osiris. Abydos became a major pilgrimage site dedicated to the cult of Osiris from the Middle Kingdom through the pre-Christian era. The cult of Osiris inspired the erection of numerous private and royal monuments, including a pyramid for king Ahmose, and large temples dedicated to Senwosret III, Thutmosis III, Seti I, and Ramses II (see Figure 2).  

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1.2 The Mortuary Complex of Senwosret III

Of central interest to the current study is the state established royal mortuary complex of Senwosret III, which lies on the southern periphery of Abydos. Built to venerate the royal Ka of king Senwosret III (ca. 1878-1841 BCE), the complex consists of three parts: 1) a subterranean tomb under a T-shaped enclosure at the base of the desert cliffs, 2) a mortuary temple situated at the edge of the cultivation, and 3) a town named Wah-sut, located approximately 300 meters southeast of the temple (see Figure 2).
Randall-MacIver, Weigall, and Currelly discovered and partially investigated the complex at the turn of the nineteenth century. Although these early excavations of the

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The subterranean passage of the tomb of Senwosret III measures over 180 meters long – one of the largest subterranean tombs ever constructed in ancient Egypt.
Moreover, Wegner suggests that it was the first hidden royal tomb and represents a developmental bridge between the earlier pyramid tradition and the later underground tombs of the Valley of the Kings. All the burials in the Valley of the Kings were hidden. The placement of the tomb of Senwosret III “imparts the visual impression of a freestanding, natural, pyramid-shaped mountain, the perfect substitute for the traditional built pyramid.” At the Valley of the Kings, a small pyramidal peak called the Qurn, acts as a natural pyramid for the pharaohs buried there.

A town named *Enduring-are-the-Places-of-Khakaure-Maa-Kheru-in-Abydos* (known hereafter as *Wah-Sut*) lies approximately 1 kilometer northeast of the temple (see Figure 5). The name of the town derives from inscriptions on several institutional

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16 Ibid.
17 Ibid., page 9.
19 There is evidence that this shortened name was used in ancient times. See discussion in Wegner, *Temple of Senwosret III*, page 31.
sealings that include this description: \textit{\textipa{wiħ-s(w)t ħ∅k₃wrᵉ m₃-ḥrw m 3bdw}.} \footnote{This translates to \textit{Enduring-Are-the-Places of Khakaure-Maa-Kheru-in-Abydos}. Wegner, Josef. "Excavations at the Town of Enduring-Are-the-Places of Khakaure-Maa-Kheru-in-Abydos: A Preliminary Report on the 1994 and 1997 Seasons." \textit{JARCE} 35 (1998): 41.} Situated on the edge of the low desert, the town may stretch into the modern alluvial plain. \footnote{Ibid., page 7.} \textit{Wah-sut} housed the workforce needed initially to build the tomb the temple and later to run the temple. \footnote{Wegner, Josef. "Echoes of Power: The Mayor's House of Ancient Wah-Sut." \textit{Expedition} 48.2 (2006): 36.} The town includes a palatial mayoral residence which measures 52 by 82 meters (larger than 4 of the town's mansions put together), \footnote{Ibid., page 32.} which served not only as the house of the mayor and his family, but also as the administrative center of the entire mortuary complex. \footnote{Rather like the White House is both the house of the President of the United States, but also the locus of the presidential branch of government.} Adjacent to the mayoral residence are a series of possibly 24

\textbf{Figure 5:} Town of \textit{Wah-sut} with mayor’s residence (far left) and mansions built in blocks of four.
mansions (with an area of 27.5 by 31.5 meters each) that housed the high-ranking citizens of Wah-sut.25 “Lower status houses,” Wegner states, “appear to have been located in the area between these large residences and the cultivation.”26

The mortuary temple of Senwosret III stands 300 meters to the west-northwest of the town, just above the edge of the cultivation in the low desert. The mortuary temple itself has the name $nfr-kh3$, “Beautiful is the Ka.”27 The outer walls of the temple measure 33.6 meters by 53.6 meters (see Figure 6),28 and most of the structure is made of mud brick. At the front of the building is a mud brick pylon with a long ramp that leads into the central cult structure. The temple interior consists of three blocks. The central block is a limestone cult building, which had a columned forecourt that lead back into the central offering hall.29 On the west side of the cult building, a door leads to a hallway off of which sit three “multi-room units,” which held

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28 Ibid., page 51.
29 Ibid., pages 51 and 146-149.
the temple administration and housed the on-duty staff.30 On the east side of the cult structure is another door that leads to a hallway off of which are several rooms that comprise the temple’s storage magazines, which kept goods for use in temple ritual.31 Surrounding these three components, an internal street allowed access to the administrative buildings and the magazines without having to pass through the central limestone cult structure.

The mortuary temple of Senwosret III represents than a monument to the king’s memory. It was also the means for communication between the world of the living and the deceased, preserving maat which is the ancient Egyptian concept of truth, law, and order in the universe.32 Through daily rituals the pharaoh’s ka (spirit) entered the living plane via his statue, received vital nourishment through offerings, and became receptive to prayers and appeals by the living.33

30 Ibid., page 51.
31 Ibid.
1.3 Shena Excavations

The excavation of the shena of divine offerings of the mortuary temple of Senwosret III occurred in the summer of 2004. Previous seasons at the Senwosret III temple indicated that the area to the east of the temple indeed included a shena. However, the team did not know what to expect in terms of architectural organization, scale of the buildings, and the nature of the activity areas, because no one had excavated a shena before. A magnetometer survey, conducted at the beginning of the 2004 season by Tomasz Herbich, did not locate any Middle Kingdom structures, because the dense ceramic debris and an ashy soil matrix interfered with the magnetic resonance. Surface collection revealed a large scatter of ceramic debris approximately 6000m² in area to the east of the temple. Preliminary excavations here in the 1994 and 2000 field seasons uncovered living floors with remnants of bins, ovens, hearths, and dividing walls, which indicate that these were productive facilities consistent with textual descriptions of shena. The ceramic deposits were extremely uniform with only 8 ceramic types comprising 97% of the corpus, and cylindrical bread molds were approximately 65% of the total corpus. The ceramic assemblage was consistent with that found in depictions of bakeries and breweries from ancient Egypt art. Finally, sigillographic evidence

37 Ibid., pages 120-122.
38 See chapter 4.4.1 for discussions about pottery and associations with (bread, beer, wine and evidence of pottery production.
from the temple and town and the *shena* itself uncovered seal impressions with titles of workers from the *shena*, further supporting the physical evidence that the area adjacent to the temple is indeed a *shena*.\(^{39}\)

The excavations in 2004 of the *shena* at South Abydos revealed multiple phases of construction, three of which included entirely new *shena* buildings (see Figure 7).\(^{40}\) Ceramic and sigillographic evidence date the *shena* buildings beginning at the establishment of the temple in the reign of Senwosret III, roughly 1850 BCE, and ending sometime around the late 13\(^{th}\) Dynasty with king Mr-nfr-re Ay in 1700 BCE, which is consistent with the occupation of the temple.\(^{41}\).

1.4 Economy and the *Shena*

The study of the *shena* in ancient Egypt has a direct bearing on understanding the relationship of the temple economy with state economic organization. In the early twentieth century, Egyptologists believed that, like the situation in Mesopotamia, the

\(^{39}\) See below, especially chapter 6.3.5 for production and provisioning staff at the temple.

\(^{40}\) A complete discussion of the evolution of the *shena*, its buildings, construction methods and the function of various rooms is in chapter 4.

Egyptian state and temple were separate from each other, both politically and economically. While it is clear that temples did achieve a high degree of autonomy, textual evidence shows that the temple and state interacted on many levels. Janssen and Kemp both considered the temple “a branch of the government.” For example, pPetersburg documents the temples made the palace of the king. Further, texts demonstrate that temples were an auxiliary part of local state bureaucracy. At Abydos, the mayor (ḥḥty-ꜣ) of the local town Wah-sut also served as the high priest (imy-r ḫm-nṯp) at the mortuary temple of Senwosret III. While these and many other texts demonstrate that there was a large degree of interconnection between state and temple bureaucracies and state and temple economic resources, the exact nature of the relationship is unclear.

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The *shena* represents the point at which the temple and state make their largest intersection, as both institutions sent and received goods from the *shena*.

From texts, it is clear that the *shena* made things for temples, as a facility that utilized labor and capital to produce a finished product, in this case foodstuffs, to circulate in the economy. The goods produced were referred to as offerings (or divine offerings). Temple dedicatory inscriptions indicate that divine offerings included much more than simply bread and beer (i.e. meat, poultry, fish, vegetables, incense, fat, wine, honey, flowers, and sweets).\(^{48}\) These same texts describe the amounts of foodstuffs that were made for the daily offering cult as being enormous. At the mortuary temple of king Ramses III, over 2,000 loaves of bread and 140 jars of beer were made daily.\(^{49}\) Divine offerings saw use multiple times, in the temple cult, in private cults, and subsequently used as payment to temple personnel, local state personnel, other religious institutions, or the state.\(^{50}\)

Chapter 2 discusses various sociological models that allow better understanding of the relationships that the *shena* had with its own parent institution the temple, with the local town, and with other religious institutions. Further, chapter 2 explores the current understanding of the economy of ancient Egypt in order to understand the role of the *shena* within it better.

\(^{48}\) See chapter 5 for the things that the *shena* of the mortuary temple of Senwosret III produced.

\(^{49}\) Haring, *Divine Households*, page 76.

\(^{50}\) See chapter 2.5 and 2.6 for discussion of the temple and *shena* as part of the Egyptian economy.
1.5 Previous Studies Concerning the Shena

There is little research that specifically examines the shena, and those that do base their conclusions largely upon textual evidence - mostly through the appearance of šn in titles as the word rarely appears in narrative text. The shena has received comparatively few focused studies and often discussions does rely on outdated work from the late 19th and early 20th centuries. For example, early studies defined shena as ergastulum and storehouse; despite the fact that recent studies have shown that shena is most likely as a production area, recent studies and lexicographical works still refer to shena using the old definitions.

Chapter 3 examines the previous studies of the shena


in texts in order to comprehend better the misunderstandings surrounding the *shena* and to clarify the real function of that ancient Egyptian institution.

Currently no studies concerning the representation of the *shena* in ancient Egyptian art exist. Chapter 3 briefly surveys depictions of the *shena* and its workers in art in order to understand the activities that went on in the *shena* better.

Although most temples would probably have had a *shena* attached to it, there are no published archaeological studies of any *shena* from ancient Egypt. This situation stems from the fact that, until recently, archaeologists have concentrated excavations on cult structures, not the support buildings of temples. Several temples from ancient Egypt have areas that may be identified as *shena* institutions. Chapter 3 discusses these sites and highlights the need for further archaeological study.

### 1.6 Production at the *shena*

The main function of the *shena* was to make things for the offering ritual at the temple. Production at the *shena* primarily involved foodstuffs, especially bread and beer.\(^{53}\) The excavations of the *shena* adjacent to the mortuary temple of Senwosret III offers an important insight into not only what the *shena* produced, but also the methods of production, and in some instances, their distribution throughout the mortuary complex. The principle component of the offering was food, primarily bread and beer. Chapter 5.1.1 and 5.1.2 explores the techniques involved in making bread and beer and the artifactual evidence at the *shena* of the mortuary temple of Senwosret III for their production.

\(^{53}\) See chapter 5 for the products that the *shena* manufactured.
production. Chapter 5.1.3 and 5.1.5 looks at other foodstuffs that the *shena* processed, including wine and fruits and vegetables. Meat was one major form of protein for both the temple and the town. In chapter 5.1.4, zooarchaeological analysis of bones have helped to determine not only what types of animals were consumed at the complex, but what cuts of meat were preferred. The distribution of specific joints of meat throughout the *shena*, the temple, and the town explicates social hierarchy of not only the overall site, but also within the temple environs.

The *shena* was also responsible for some amount of craft production. Crafts made in the *shena* seem less likely to be destined for the offering table; rather the *shena* pursued metalwork, pottery production and perhaps the weaving in order to facilitate the production of foodstuffs. Chapter 5.2.1 discusses the evidence for metalworking at the site. This activity seems to have been done on a small scale, perhaps on an as needed basis to create tools mostly from wire components, such as needles and fish hooks. The examination of the evidence for pottery production occurring at the *shena* is in chapter 5.2.2. The workers at the *shena* seem to have manufactured a few types of pottery, most specifically cylindrical bread molds. Finally, the *shena* made some amount of linen. Chapter 5.2.3 looks at the evidence of textile production in the artifactual record at the *shena*. 17
1.7 Bureaucracy of the Shena

The shena of the mortuary temple of Senwosret III yielded 3867 seal impressions with interpretable inscriptions. Most of these seal impressions include the names and titles of individuals and institutions that had dealings with the shena. Chapter 6.2 examines those seal impressions that help create a framework of interactions between the shena and other institutions both at the mortuary complex of Senwosret III and outside, such as the Osiris temple at Abydos. Chapter 6.3 looks at those seal impressions involved in the bureaucracy surrounding the shena. Not all seal impression have translatable text, some are simply decorative. Chapter 6.5 creates a typology for these decorative seal impressions and looks at patterns in usage relating to the dating of strata. A series of seal impressions also includes royal names. Chapter 6.4 surveys the various kings who sent goods to the shena; this data helps to determine the site’s terminus ante quem. Seal impressions are usually double sided; they also have an impression of what was being sealed, like a box, a basket, a door, a papyrus document, etc. Chapter 6.1 looks at the “back types” of seal impressions to help elucidate nodes of responsibility, in linking specific people or institutions with types of object.

The shena of the mortuary temple of Senwosret III is one the first of its type to be investigated archaeologically and textually. This study will show that the activities occurring in that institution are consistent with those the ancient Egyptians depicted in

54 Of the identifiable sealings, 1713 were institutional stamp sealings (1483 of these were from the temple foundation stamp seal Nfr-kat), roughly 442 were name and title sealings (of these only 306 had enough text to form a whole title to allow for discussion), and almost 1712 were decorative sealings.
texts and on tomb walls. This study will also demonstrate that the *shena* at Abydos produced the dietary staples bread and beer, as well as meat, fish, metal objects, linen, and ceramics, in order to serve the mortuary temple of Senwosret III and the larger mortuary complex with the adjacent town of *Wah-swt*.
Chapter 2: The Ancient Egyptian Temple and its Place in the Social and Economic Structures of Ancient Egypt

The shena lies at the heart of the temple’s interactions with various different entities within Egyptian society, including other temples, the state, the local government, and the local populace. These relationships were based largely in the exchange of goods. In order to study the shena and its place within ancient Egyptian society, it is necessary to first understand how society was organized along with the various relational possibilities between social structures. Next, because the shena was largely an economic institution, this chapter will outline the current understanding of the ancient Egyptian economy in general. Third, it will look at the role of the temple in the economy of ancient Egypt. Finally, this chapter will look at the economic aspects of the shena within the structure of the Egyptian temple and the wider state and local economies.

2.1 Social Hierarchy in Ancient Egypt

Much of the focus on understanding ancient Egyptian hierarchical structures, both social and economic, centers around the top down approach, i.e. the pharaoh as the head of state ruling over everyone. Lehner points out that “Egyptologists tend to view

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55 Temples interacted with other temples, for example the Osiris temple at Abydos sent goods to the Senwosret III mortuary temple at south Abydos.
56 This includes state, mortuary, local, and cult temples. Not enough is known about the individual temple economic structures to be able to differentiate their economic transactions.
Egypt as one of the earliest examples of a unified nation-state, with a redistributive economy centrally administered over the entirety of the Egyptian Nile Valley.\textsuperscript{57} Further, early twentieth century Egyptologists believed that the state and temple were separate both politically and economically.\textsuperscript{58} While it is clear that temples achieved a high degree of autonomy in terms of resources, textual evidence shows that the temple and state interacted on many levels.\textsuperscript{59} Janssen and Kemp both considered the temple to be “a branch of the government.”\textsuperscript{60} Texts demonstrate that temples were an auxiliary part of local state bureaucracy.\textsuperscript{61} The high priest (imy-\( r\) \( hmntr\)) at the mortuary temple of

Senwosret III at Abydos was also the mayor (ḥ3ty-ꜣ) of the local town Wah-sut. There are many texts that demonstrate the large degree of interconnection between state and temple bureaucracies and state and temple economic resources. Unfortunately, the exact nature of the relationships is unclear, as the texts do not explain the purposes of their transactions, nor do they express the scale or regularity of the interactions.

Societies, by their nature are extremely complex, with seemingly “unpredictable feedback relationships” that “might seem to defy analysis.” Sociological models provide a method of identifying patterns of behavior that can be reapplied across larger social systems. Once established, the patterns can help predict how other institutions would behave. This approach is useful when studying ancient societies where the nature of the available data does not allow a broad and comprehensive look at social systems. Sociological models are especially effective in understanding the relationships between entities within societies. The Patrimonial Household Model will help better interpret the social hierarchy of ancient Egypt in general, and the role of the temple and its shena specifically.

2.2 Patrimonial Household Model

The Patrimonial Household Model (PHM), originated by Weber, and developed and refined by Schloen,\(^{65}\) has been applied by various Egyptologists to help better interpret how the social structures of Ancient Egypt worked.\(^{66}\) Within the rule of society, the social order consists of a hierarchy of nesting households, with each household having overlapping dependents.\(^{67}\) The Patrimonial Household Model stipulates local rules for all social interactions, which then apply on a larger scale. Within the hierarchy of society the most basic household is the familial household, and at each level of society, this most basic household is replicated and applied on a larger scale, until you get to the apex or ruler who acts as patriarch/father to all his subjects/dependents/family. The Patrimonial Household Model has six laws that govern and predict social behavior in ancient societies:

\[\text{\ldots}\]


1. There is no impersonal state or rationalized bureaucracy

In the first precept of the PHM model, bureaucracy is not just the government’s administration, rather it serves to separate the government from its citizens. In addition, Schloen posits that bureaucracy emerges with the formation of “liquid money,” because a bureaucracy depends on monetary compensation. This monetary compensation has to be converted from state revenue into an intermediate form of wealth, thereby enforcing the separation between government assets and the personal property of government officials that is necessary to the functioning of an impersonal rationalized bureaucracy.

It is personal property, and the fact that personnel were not required to invest in the structure of the bureaucracy for their welfare, that makes bureaucracy rationalized and the state impersonal.

2. There is no political or economic distinction between public and private.

Each household took its place within the larger hierarchy of the “state” household, with the king as its head, and because all of these households are linked through personal relationships, not bureaucracy (in Schloen’s sense of the word, see above), there is no such thing as private versus public. To give an Egyptian example, the king owned all the land, therefore all the land was the king’s to use as he saw fit.

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69 Ibid, page 81.
70 Ibid.
71 Ibid., page 140.
72 Ibid, pages 51 and 264.
In order to work the land, the king divvied it out to subordinate households, like the temples, who then rented the land to tenant farmers, who farmed it. Technically, the land is all public, but it is also all owned privately.  

3. **There is no structural or conceptual difference between government fiscal systems and smaller personal exchanges.**  

On an individual/familial household level, the family farmed the land in order to get the produce on which they would live. But on the state level, this subsistence farming took the form of taxation. The government took a share of the crops from its dependents in order to sustain itself and in order to function.  

4. **There is no structural or symbolic difference between rural and urban.**

Schloen explains the similarity of urban and rural thusly:

Political authority and economic dependency are everywhere patterned according to the household model, so that the entire social order is vertically integrated through dyadic relationships that like the ruling elite in the sociocultural “center” to their subordinates in the ‘periphery.”

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75 Ibid, page 140
76 Ibid, page 64, 120, 194
78 Ibid, page 51.
Schloen continues to say that most towns, or urban centers, were self-sufficient for their food supplies, so that they did not have to trade for basic necessities. Therefore, the household (as a town) was both a producer and a consumer. And the town in general consisted of a series of largely agriculturally self-reliant households, once again in a fractal pattern.

5. **There is no structural or symbolic difference to the ruling elite. Authority is structurally similar at all ranks.**

The fractal patterns are a key to Schloen’s Patrimonial Household Model. Every household, regardless of size, has the same or similar structure. This rule applies to ranks within society, where individual initiative can allow for advancement of rank, not just inheritance (although this type of advancement exists as well). In addition, tribes, chiefdoms, and states represent the apex households in each of their nodes, with nesting and subordinate, and fractal households (the same in structure and organization) under their general rule.

6. **There is no fundamental structural difference among tribes, chiefdoms, and states.**

No matter what form of governance an ancient society uses, whether it is tribes with familial ties, or slightly more complex chiefdoms with a ruler in charge of a

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79 In modern towns, the urban center is never completely self-sufficient. It has to trade goods and services for food in order for the populace to survive.
80 Ibid, page 140.
81 Ibid.
82 Ibid, page 65.
83 Ibid, pages 70-71.
population, or states with a vast system of hierarchical rulership, each will follow the previous precepts.

2.3 The Patrimonial Household Model Applied to Ancient Egypt

Weber and Schloen’s Patrimonial Household Model is well suited to help understand ancient Egyptian society better. Patrimonialism seems to have been the predominating mode of understanding power relationships by the ancient Egyptians. For example, their mythology was based on family groupings. In the Heliopolitan cosmogony, Re-Atum creates the brother and sister Shu and Tefnut, from whom spring several generations of brother-sister groups. These familial groups act as interlocking households with a father – mother - children structure. The Hermopolitan creation myth uses four husband/wife – brother/sister groups, each group representing part of the primeval waters. And finally in the Memphite theology, Ptah was the creator god of other gods, and Nun and Naunet were considered aspects of Ptah’s divinity. The Memphite theology does not structure itself into households, but Egyptian religion in general is set up in family units, one of which includes Ptah as the head of household with Sekhmet and Nefertum. Gods can also form triads, for example Osiris – Isis –

87 Ibid., pages 95-96.
Horus, and Amun – Mut – Khonsu. Each divine triad is a family unit, with the father as the head of the household, his wife as mother and protector, and their child.\(^{89}\)

The king, while alive, was identified as Golden Horus, and when dead, he was identified as Osiris and Re.\(^{90}\) In mythic terms the king became the avenger of his father, and the restorer of order to Egypt.\(^{91}\) In the New Kingdom, the king had the title of \(pr\)-\(\text{\textae}\), or pharaoh, which translates as “Great House.”\(^{92}\) This title of pharaoh hints at the fact that “the Egyptian state emerged from, was conceived as, and operated as an extended household-of-households.”\(^{93}\) Applying the Patrimonial Household Model on the state level, the king stood at the apex of all the households – he was the father. Theoretically, he had ultimate power over all the land and people within Egypt. As Schloen states,

> the effective power of the ruler is diluted by his need to exercise authority through subordinates (and their subordinates), whose “household” domains are smaller in scale but similar in structure to his own.\(^{94}\)

This hierarchy can be illustrated best in the king’s role as head of temples in Egypt. In depictions on temple walls, it is the king that acts as high priest officiating over the


\(^{90}\) Silverman, “Divinity and Dieties,” page 68.

\(^{91}\) Ibid., page 70.


\(^{93}\) Goelet, Ogden. "The Nature of the Term \(pr\)-\(\text{\textae}\) During the Old Kingdom." \textit{BES} 10 (1989/90): 77-90.

\(^{94}\) Lehner, "Fractal House." page 280.

\(^{94}\) Schloen, \textit{The House of Father}. Page 65.
temple ritual. Since the king could not conduct the daily ritual in every temple in Egypt, he appointed those loyal to him so that his power was not diluted. At the Senwosret III temple at Abydos, the mayors of Wah-swt also served as the high priest.

In order to keep his power, the king must legitimate his rule. Schloen discusses three methods of legitimation: legal-rational, traditional, and charismatic. The ancient Egyptian king used all three in legitimizing his rule. First, the oldest living male son inherited the throne from his father (although it might also pass to another relative). Second, in syncretizing the king with the god Horus by giving him a Horus and Golden Horus name, the ruler placed himself firmly within a tradition of kings that stretched back to the earliest kings. Finally, the mythology surrounding Horus (the living king) and Seth proves the king’s noble character with his defeat of the evil Seth and the restoration of order to Egypt.

Another part of the king’s legitimation came from the support of his courtiers, for they depended upon the pleasure of the king to retain their positions of power. Directly under the king was the vizierate, which for at least the New Kingdom and perhaps the

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96 Ibid, page 66.
97 This is the legal/rational method of legitimation.
98 This is the traditional method of legitimation.
99 This is the charismatic method of legitimation.
Middle Kingdom was divided in two, corresponding to Upper and Lower Egypt. The Vizier acted as head of state, heading the civil administration and playing the role of chief justice of Egypt. Treasurer of the “White House,” or treasury, was an office that close that of vizier in rank. The Treasurer dealt with the country’s finances, including taxes, precious commodities like gold, silver, and other minerals, and foreign trade. The Treasurer and the Vizier each had a staff, which in turn had their own staffs.

During the Middle Kingdom, kings gave local authority to the mayors of towns. Mayors frequently acted as the high priest of their local temple, served as the local judiciary, and were in charge of organizing their town’s finances for payment of taxes, precious commodities like gold, silver, and other minerals, and foreign trade.

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102 Grajetzki, Court Officials, pages 43-44.
103 Quirke, Titles and Bureaux. Pages 48-49.
105 At the Mortuary Temple of Senwosret III, the mayors have the title imy-r hwt ntr, or overseer of the temple. Wegner, Temple of Senwosret III, pages 335-343. Grajetzki, Court Officials, pages 110-111.
state taxes.\textsuperscript{106} The responsibilities of the mayor mirrored those of a king, but on the local level, in that they both directed civil and religious administration.\textsuperscript{107}

What makes Egyptian administration (both religious and state) so difficult to understand is the fact that one person could hold positions in several different hierarchies, and several positions within the same hierarchy. For example, in the Middle Kingdom Djefahapy was the nomarch of the Thirteenth Nome (modern Assyut), the high priest of the temple of Anubis, and the high priest of the temple of Wepwawet, as well as a wealthy landowner with dependents.\textsuperscript{108} In addition, the elite could gain some titles by appointment, others were inherited, and all were subject to the pleasure of the king.\textsuperscript{109} A bureaucracy, as Schloen defines it, is not run or created through personal relationships. Therefore, Egypt’s system of administration is not a bureaucracy for three reasons. First, the king hires and fires people based upon their personal relationship to him and not necessarily their qualifications for the job, and it is precisely because rank depends upon personal relationships that there is no distinction between public and private spheres.\textsuperscript{110}

\textsuperscript{107} Although the mayors in the Old and Middle Kingdoms had effective civil and religious power, the king delegated his power. Kemp, \textit{Anatomy of a Civilization}, page 185.
\textsuperscript{108} Djefahapy was entitled to land as a nomarch, but he also had considerable holdings, which were inherited from his father. Each of his offices provided income for him and his household, in addition to the income that his private estate earned. Anthony Spalinger, "A Redistributive Pattern at Assiut," \textit{JAOS} 105.1 (1985).
\textsuperscript{110} This is Schloen’s second precept in his Patrimonial Household Model.
Second, family members can inherit positions within the administration. Third, multiple positions can be held by one person within the same department.

Schloen’s Patrimonial Household Model works well when applied to the organization of the ancient Egyptian state. PHM works equally well on a smaller level, that of large estates. Large estates from ancient Egypt function as the best model of Egyptian household structure, primarily because it is more complex than a family unit, but not as complex as the whole administration of Egypt.

Excavated in the 1890’s by Flinders Petrie, the town of Lahun represents the best understood Middle Kingdom settlement.\textsuperscript{111} It was established by Senwosret II as a lodging for the workmen building his nearby pyramid. After the completion of the pyramid, the town serviced the adjacent mortuary temple of Senwosret II. Lahun was a planned community; its structure reflects a government centered on both the household and the private management of an extended family estate. At Lahun there were at least 10 large houses and 220 small houses.\textsuperscript{112} Each large house has roughly the same layout, although the smaller houses show more variation.\textsuperscript{113} The mansions have public reception rooms, private rooms for the family, and a series of workrooms, with bakeries, breweries, an abattoir, and a room for weaving linen.\textsuperscript{114} Although these rooms probably

\begin{itemize}
\item[] \textsuperscript{112} Kemp, \textit{Ancient Egypt}. Page 155. The small houses seem to be single family dwellings consisting of a family unit, often with extended family present, but few to no servants.
\item[] \textsuperscript{113} Ibid.
\item[] \textsuperscript{114} Ibid, page 154.
\end{itemize}

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served of the household, the granaries were too large to service only one house. The granaries from all the mansions each have large granaries that collectively could have fed 5,000 to 9,000 people per year, a figure that suggests that each household could have been responsible for feeding 500 to 1,000 people per year.\textsuperscript{115} Estimates of the total population of Lahun range from nearly 9,000 people to a more reasonable 3,000 people.\textsuperscript{116} Whichever total population figure, the Lahun granaries could sustain the entire town.\textsuperscript{117} The members of a household at a Lahun mansion would have consisted of the immediate family and probably some extended family, as well as a series of servants who saw to the needs of the household (cooks, weavers, etc). The fact that the large Lahun houses were completely self-sufficient, in that owners also had farm lands that produced all the goods they needed (pottery, linen, etc), indicates that no structural or symbolic difference between rural and urban, the fourth of Schloen’s PHM precepts. There were no rural farmers who sold goods and services to the city; the city was full of farmers as well, regardless of status.\textsuperscript{118} One census list from Lahun mentions the household of a priest named Khakaure-Sneferu, who had 2 family members and at least

\textsuperscript{115} It should be noted that this figure is based upon the granaries from 8 of the possible 10 large houses; so it is possible that even more people could have been fed by the large houses (6,000 to 11,000 people). Ibid, page 154. Barry Kemp, "Large Middle Kingdom Granary Buildings and the Archaeology of Administration," \textit{ZAS} 113 (1986). Pages 133-134.


\textsuperscript{117} It should be noted that each of the small houses had its own grain storage facilities, but they are not on the proportional scale of the large houses. The small houses’ granaries would never hold a yearly harvest, but were probably meant for short-term grain storage.

\textsuperscript{118} Schloen, \textit{The House of Father}. Page 315.
18 servants (the end of the document is lost).\textsuperscript{119} A contemporary papyrus from a Theban property dispute lists 95 servants in that official’s household, including 2 cooks, a brewer, a tutor, a sandal-maker, 20 weavers, 2 gardeners, and a hairdresser.\textsuperscript{120} Even though this papyrus omits family members, it comes nowhere close to the 500 to 1,000 members per household that the size of the Lahun granaries suggests. If the ten Lahun households had 95 servants each, at the very most, only one third of the population of Lahun was working directly for the large houses. It is clear from documents that the other citizens of Lahun served the town as temple personnel, soldiers, scribes, singers, and dancers.\textsuperscript{121}

The large Lahun houses represent a system of ancient Egyptian governmental organization based on replication.

We see several manifestations of a tendency to accomplish colossal tasks by replicating modular household structures and operations as many times as needed, rather than to radically reconfigure for mass production (although a tread in that direction can be seen over the long course of ancient Egyptian civilization).\textsuperscript{122}

Instead of having one large state granary at Lahun, the town’s revenue was spread among the high officials of the town; this revenue paid workers that served the household and those that did not. The fact that both governmental and personal revenues would ultimately have been mixed in a large Lahun house proves Schloen’s third PHM

\textsuperscript{119} Kemp, Ancient Egypt, page 156.
\textsuperscript{120} Ibid. William Hayes, A Papyrus of the Late Middle Kingdom in the Brooklyn Museum (pBrooklyn 35.1446) (New York: Brooklyn Museum, 1955). Pages 108 and 127-128.
\textsuperscript{121} Kemp, Ancient Egypt, page 157.
\textsuperscript{122} Lehner, “Fractal House,” page 294.
precept, that there is no structural or conceptual difference between government fiscal systems and smaller personal exchanges. The number of large houses was directly proportional to the overall planned population of Lahun.\textsuperscript{123} A similar replication of households can be found in the Giza workmen’s village, where there are a series of houses that lodged the work gangs building the pyramids.\textsuperscript{124} More recent work has uncovered a series of larger “elite” house units,\textsuperscript{125} making the Giza workmen’s village even more analogous to Lahun, Amarna,\textsuperscript{126} and \textit{Wah-sut} at Abydos.\textsuperscript{127}

The town of \textit{Wah-sut} at Abydos is similar to that of Lahun, in that it was established to serve as a workmen’s lodging while the nearby tomb of Senwosret III was constructed.\textsuperscript{128} Further, \textit{Wah-sut} had a life after the completion of the royal tomb as the service town for the adjacent mortuary temple of Senwosret III.\textsuperscript{129} Consisting of a series of large mansions for the local elite, the town had a much larger house where the mayor

\textsuperscript{123} Of course the population varied throughout the lifetime of the town, but planners designed the town to house a certain number of people. The number of large houses built was in relation to this intended total population figure.


\textsuperscript{128} Ibid., pages 1-8.

\textsuperscript{129} Ibid.
lived and conducted town business. In the mayor’s house was a series of public rooms: a large columned portico, administrative work spaces, and private family living quarters.¹³⁰ Large granaries associated with the mayor’s house provisioned the mayor and his family, his administration, the temple, its administration, and probably most of the town of *Wah-sut*. The associated temple lacks large granaries.¹³¹

It was not just the structure of local government that operated on the household system, the temples operated as households as well. The one of the words for temple in ancient Egyptian is $hwt$, which also has a translation of house;¹³² another word for temple is $pr$, also has a translation of house.¹³³ Temples dedicated to a specific god almost always included shrines and sanctuaries for the other members of their family. Even the architecture of the temple mirrored human houses.¹³⁴ Like large Egyptian houses, temples had high outer walls.¹³⁵ Both houses and temples had a compound within the walls with servants’ (or priests’) quarters, “small shrines, gardens,

¹³¹ There is a small granary situated in the *shena* building, but it was probably for short term storage, perhaps on the order of a day, or at most a week, to bake the bread for the divine offerings and subsequent reversion of offerings to temple workers.
¹³² Hannig, *GHWB*, page 515. *hwt* also has translations of estate, shrine, and palace.
¹³³ Ibid., page 279. Another word for temple is $h$ which also translates as palace. Ibid., page 152. Various words added to *hwt*, *pr*, and $h$ modify them to refer to specific types of temple, mortuary temple, god’s temple, shrine, etc.
¹³⁵ Kemp, *Ancient Egypt*, MK page 151, NK page 296.
workplaces, storage facilities, slaughter yards,” etc.\textsuperscript{136} When one enters a house or a temple there is first a series of public rooms (or courtyards in the case of the temple), which become more and more private as one progresses.\textsuperscript{137} The private rooms of the family in both the human and divine houses were at the farthest reaches of the house, either at the end of a series of courtyards (temple) or winding rooms (house).\textsuperscript{138} Temples also had their own landholdings, with which they cultivated their own crops, and which subsequently went as payment for workers – all of this directly mirrors a family household.\textsuperscript{139}

In essence, the administration of Egypt, in both civil and religious contexts, is fractal in nature. This fractal nature demonstrates Schloen’s fifth PHM precept: that there was no structural or symbolic difference between the ruling elite and others, because authority was structurally similar at all ranks of society. The administration was organized into a series of overlapping hierarchies. Each level of the hierarchy was organized into a household structure, which included a head of the house as ultimate decision-maker, but could include other members with similar effective powers, and a series of members who were responsible for the daily operations within the household.

On the most basic level, this structure took the form of father (decision-maker and power

\begin{enumerate}
\item \textsuperscript{138} Ibid.
\item \textsuperscript{139} This holds for temples throughout pharaonic history. See especially Posener-Krieger, Paule. \textit{Les Archives Du Temple Funerai De Neferirkare-Kakai}. Caire: L'Institut Français d'Archeologie Orientale, 1976. Haring, Divine Households, pages 283-345.
\end{enumerate}
holder alpha), mother (power holder beta), and children (workers). On the highest level, the king served as the father (decision-maker and power holder alpha), the vizier and treasurer held the position of mother (power holder beta), and the rest of the country served as children/workers.

2.4 The Economy of Ancient Egypt

The Patrimonial Household Model is able to accommodate archaeological and textual data sets that can provide glimpses at small points in the overall structure of a society’s economy, the basic building blocks of which are production, distribution, and consumption of goods and services. The economy of ancient Egypt, like many traditional economies, operated on two levels, the subsistence economy or household economy, and the political economy or the economy of institutions.\textsuperscript{140} For the subsistence economy, all three components take place mostly within the household. But the political economy involves numerous institutions, a multitude of individuals, and frequently covers large distances. Production includes the control of land, labor and capital in order to produce the resources (raw or finished goods) that will circulate in the economy. Distribution entails the flow of commodities by exchange or trade.\textsuperscript{141} Patterns of dispersal in raw or processed materials from their point of origin can illuminate these


\textsuperscript{141} Ibid., 191.
networks of exchange or circulation. One of three systems comprises a culture’s structure of distribution: reciprocity, redistribution, or market trade. Mobilization redistribution is key to these early political economies where goods and services are channeled upwards “to socially determined allocative centers (kings or priests), who then redistribute to their subordinates.” Consumption is the use of objects in daily life or special event. Utilization of these microeconomic concepts by compartmentalizing each sphere of activity will result in the creation of a model of the economic system of the shena and, in turn, the temple, which has wider implications in understanding institutional economy in Egypt specifically, and the ancient world in general.

Texts from the New Kingdom provide the bulk of our data on the economy of Egypt. Consequently, many of the numerous studies on the Egyptian economy are

145 Earle, “A Reappraisal of Redistribution.”

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concerned primarily with this period. These studies for the most part agree on a basic model of the Egyptian economy; the agriculturally based economy of ancient Egypt fell into two spheres namely: the local subsistence economy and the state system of

The government was divided into many sections, and while all of them fell under the authority of the king, many retained a level of economic independence.\textsuperscript{148} Middle Kingdom economy, especially that of the temple, received little study; yet evidence from that time period does exist. Unfortunately, Helck’s study of the economy of ancient Egypt, did little to separate the differences between the economics of the Old, Middle, and New Kingdoms.\textsuperscript{149} His study primarily identifies the relevant source material for the Middle Kingdom and provides it with a preliminary structure. The Lahun archives represent a huge cache of texts with abundant economic and redistribution.\textsuperscript{147}  

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administrative material, which remain largely unpublished. Other Middle Kingdom
economic texts include inscriptions from Djefahapy’s tomb, in which the tomb owner
records a series of ten contracts among the priests of the temples of Wepwawet and
Anubis, his tenant farmers to provide offerings for his private mortuary cult, and him.
Papyrus Boulaq 18 records the transfer of goods to and from the royal palace at
Thebes.

With an agriculturally based economy, Egypt depended on the yearly flood and
its subsequent harvest. Taxes were set based on the height of the inundation and how
many fields could be planted, but not on actual yields.\textsuperscript{153} A good harvest meant that the state could sustain the palace economy, pay government officials and workers, pay temple endowments, and start new construction projects. A poor harvest could lead to famine, as farmers, who made up the majority of Egypt’s population, would not be left with enough food to sustain themselves after taxes. Taxation allowed the government not only to stockpile grain against future famine,\textsuperscript{154} but also allowed it to pay for its public works projects, which increased employment and benefited the Egyptian economy.\textsuperscript{155}

The economy of ancient Egypt was non-monetary. This meant that there was no state created or sanctioned currency that might be exchanged for goods or services. There were, however, standardized units of exchange, which came in the form of weights of copper, silver, and gold.\textsuperscript{156} In one text a \textit{khar}, 76.88 liters, of emmer is worth

\textsuperscript{156} Janssen, \textit{Commodity Prices}. Page 455.
one deben, a weight of copper.\textsuperscript{157} Payment was almost never made using metal, but in agricultural goods, objects of necessity, or labor.\textsuperscript{158} Interestingly, wages were almost never expressed using this pricing system, but in amounts of goods (beer, bread, linen, meat, etc.) that were due.\textsuperscript{159} In this way, the Egyptians worked on a system of barter and trade, using objects to obtain the goods that they needed or desired. This arrangement does not allow for the accumulation of wealth as every exchange is based on a trade where the worth of the goods is equal.\textsuperscript{160}

In summary, scholars often refer to the economic system of ancient Egypt’s economy as redistributive. Most exchanges in the Patrimonial Household Model are either redistributive or reciprocal, because they are based on personal relationships.\textsuperscript{161} The king, by virtue of his divinity owned all the lands of Egypt. As a god, the king guaranteed \textit{maat}, or justice, peace, and stability for his people. In return, the people offered the king their labor and their produce in the form of taxes. The palace and its local centers of authority collected taxes, which were then redistributed to other authorities and institutions to maintain the palaces, pay the salaries of all the government employees (palace, state, and military), and fund construction of public works (artificial


\textsuperscript{160} Ibid, page 545.

\textsuperscript{161} Schloen, \textit{House of the Father}, pages 80-81.
lakes, canals, and temples). Huge and complex state administrative systems were created in order to collect and distribute tax revenue more efficiently. The state had facilities all over Egypt that were controlled by a succession of local officials, consisting of nome governors, temples, and, at the most local level, mayors. Most of the tax revenue collected probably stayed in its respective nome, but could be redirected to other places as needed by the state.

The link between state government and local government and subsequently state economy and local economy is not always evident from the textual evidence. It seems that the local government collected state taxes and probably kept most of them locally with the highest local official. The local level relied heavily on mayors to collect and store grain for the state, and distribute it subsequently to state workers or send it to where the state needed it most. For example, the pyramid town of Lahun had no centralized state granary, but used rather the elite within the town as redistributive centers. There are also large granaries in the mayor’s house at Wah-sut. How autonomous local governments were able to be is unknown, but they acted as a buffer between the demands of the state and the needs of the local community.

### 2.5 The Economy of the Temple

The degree to which the temple was wholly a part of or separate from the government economy has been the subject of much debate. In the Old Kingdom Abusir

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163 Kemp, "Middle Kingdom Granaries." Page 134.
papyri, Paule Posener-Krieger noted that a major part of temple goods went for redistribution to the royal Residence, and the revenue was also used for state expenditures. During the 19th Dynasty, the workmen at Deir el Medina, who were state employees, went on strike because they had not been paid by the state. The Vizier ordered that they be paid from the temple stores of Medinet Habu, the mortuary temple of King Ramses III. Temples served as another means of state control over the local economy. Mortuary temples in particular, often with associated towns (Abusir, Hierakonpolis, Lahun, Wah-sut, etc), combined both local civil administration and local religious administration, with the mayor of the town also serving as high priest of the temple. Many temples produced much more than it needed to sustain its workers. The Ramesseum was surrounded by an extensive series of granaries that could feed almost 3,500 families per year. Was the surplus of temple revenue created as a cushion

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against the needs of the state, or was it there solely to meet state demand?\textsuperscript{169} The temple and central government had mutual dependancies; the temple acted as an agent for the government by farming and producing large quantities of agricultural goods, while the government provided economic and social stability through its bureaucracy.\textsuperscript{170} Janssen noted that New Kingdom temples were part of a branch of the civil government whose function was to maintain the good will of the gods.\textsuperscript{171} Goedicke contradicts this idea, suggesting that Old Kingdom cult temples were largely independent from the government.\textsuperscript{172} In fact, he contends that the autonomy of Old Kingdom temples caused the downfall of the monarchy, because, in order to maintain their loyalty, the king signed over more and more land and goods to the temple, thus weakening his authority.\textsuperscript{173} In the latest study of the textual evidence from New Kingdom temple administration and economy, Haring shows that the inclusion or exclusion of the temple from the government is too simplistic.\textsuperscript{174} The temple remained largely autonomous, “but their

\textsuperscript{169} Grain does not have an indefinite shelf life, especially if sprouted to make beer. However, the price of grain in the New Kingdom does not fluctuate seasonally, suggesting that enough grain was retained through the winter to prevent high prices.

\textsuperscript{170} Ibid.

\textsuperscript{171} Janssen, "The Role of the Temple in the Egyptian Economy During the New Kingdom." page 509.


\textsuperscript{173} Ibid.

\textsuperscript{174} Haring, Divine Households.
position as important landholders and producers also brought it public responsibilities" which included service to the state, with both revenue and labor, when called upon.

It must be remembered that temples were founded by the state using tax revenue, which included large landholdings. Temple lands were not necessarily located adjacent to the temple or even in the same region. For example, most Old Kingdom royal cult complexes were concentrated within a fifteen-mile radius of Memphis, but their lands were scattered throughout Egypt.

The state donated lands to the temple, making the temples largely self-sufficient. Such a large initial expenditure and investment legitimized the temple in provincial centers through the implementation of mšr, which was reinforced in the temple ritual daily.

The temple represented a permanent source of jobs within a region, perhaps furthering a king’s popularity.

175 Ibid, page 396.
179 In the Middle Kingdom, the cults of some Old Kingdom kings were revived seemingly without state sponsorship. These temple endowments were supported by locals based on a personal relationship rather than a desire to keep economic stability. Malek, Jaromír. "Old Kingdom Rulers As "Local Saints" In the Memphite Area." Abusir and Saqqara in the Year 2000. Eds. Miroslav Barta and Jaromír Krejčí. Praha: Academy of Sciences of the Czech Republic, Oriental Institute, 2000. Page 257.
Each temple was run like a large estate household, with a patriarch, a family, and servants. The patriarch or high priest made the rules, the family consisted of a series of overseers who controlled various different aspects of temple culture, and the servants comprised the lower priests, farmers, cooks, and other servants who were required to service the temple. The temple’s staff was made up of many more people than the priests, it also could include “officials, scribes, artists, sculptors, artisans, metalworkers, butchers, bakers, brewers, weavers, herders, fowlers, sailors, beekeepers, and large numbers of serfs growing food for them on the landholdings.” But a temple’s landholdings could be reassigned by the king or taken over by another more prominent temple. The loss of land caused a loss of income, which doomed many temples (especially mortuary temples) to abandonment.

On the surface, the temple’s primary goal was serving the deity housed within, and the elaborate daily ritual involved with it: waking, bathing, clothing, and perhaps most importantly, feeding the god. The ritual was part of maintaining mAat, or order in the universe.

From the few preserved daily offering lists, the amount of goods produced each day was staggering. Temples like Medinet Habu needed millions of liters of grain per year.

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181 Haring, Divine Households, pages 273-278.
According to list 6 [from Medinet Habu], the quantity of grain required for the
daily offerings was 30 1/2 sacks, or about 2,345 litres. This was used for the
production of over 2,222 loaves of various types, 144 jars of beer, and 50 other
items. Many other products were required as well: 30 birds of various species
(\textit{Apd aSA}) – cattle was used for festival offerings only – some jars of wine, 10
baskets of fruit, 100 bundles of vegetables, 20 bulbs of onions, 8 2/3 \textit{hin} (or 4
litres) of honey, about 1 1/2 litres of fat (for \textit{Sh}-cakes), and many more items.\textsuperscript{184}

The amount of bread and beer alone could not have been placed in the sanctuary, and
that does not include all other food products that also made up the food offerings. On
festival days, when the amount of food presented to the god could almost double, the
food was given to pilgrims and locals as well.\textsuperscript{185} Janssen calculated that Medinet Habu
could feed 3,600-4,000 people daily, but on a festival day the temple might feed
1,500-5,000 additional people.\textsuperscript{186} Although everything that the temple produced was
called “offerings,” some of these goods probably went directly as payment to the staff, in
what is referred to as “reversion of offerings.”\textsuperscript{187} There does not seem to be a textual
distinction between offerings and wages in temple economic texts.\textsuperscript{188}

While it is clear that many temples were financially independent, their personal
landholdings were not their only source of income. Individuals could will lands to the
temple in return for the temple maintaining their private mortuary cults (most notably


\textsuperscript{186} Janssen, “State and Temple Economy,” pages 511-513, especially note 19.

\textsuperscript{187} Haring, Divine Households, page 256. Kemp, Ancient Egypt, page 193

Djefahapy). The temple also might receive goods from the king on a yearly basis, as evidence of his piety and devotion. The king often sent foreign prisoners of war to work in the shena at the temple. In the New Kingdom, the temples of Thebes seems to have pooled some of their resources.

The Eighteenth Dynasty tomb scenes of Ineni and Puyemre show how the incense for the temples of Thebes, including the royal temples on the west bank, were weighed out in the treasury of the Karnak temple, which thus seems to have functioned as a central point of distribution for royal supplies (in.w).

It is likely that smaller temples fell under the domains of the large cult centers (Amun at Thebes, Osiris at Abydos, Ptah at Memphis, etc). At the mortuary temple of Senwosret III, a number of institutional sealings from the Osiris temple have been discovered, including: the stables of divine offerings at Abydos, the storehouse of divine offerings of Abydos, and the great granary of divine offerings of Abydos. All of these

190 Haring, Divine Households, pages 205-207.
192 Haring, Divine Households, page 208.
193 Ibid.
sealings deal with economic structures within the Osiris temple, not religious administration, suggesting that the two temples primary interaction was economic. Although none of the sealings mention the god Osiris by name, that they refer to the temple of Osiris is clear because this was the main temple of Abydos and a further indication that there was a pooling of certain resources under the auspices of the local cult center, here centered at Abydos.

2.6 The Shena as an Economic Institution

The *shena* represents the point at which the temple and state make their largest intersection; both state and temple sent and received goods from the *shena*. From texts, it is clear that the *shena* was involved in production for temples, as a facility that utilized labor and capital to produce a finished product, in this case foodstuffs, to circulate in the economy. The goods produced were referred to as offerings (or divine offerings). Temple dedicatory inscriptions describe divine offerings as including much more than simply bread and beer (i.e. meat, poultry, fish, vegetables, incense, fat, wine, honey, flowers, and sweets). These same texts describe the amounts of foodstuffs that were made for the daily offering cult as being enormous. At the mortuary temple of king Ramses III, over 2,000 loaves of bread and 140 jars of beer were made daily.\(^{194}\) Divine offerings were used multiple times, in the temple cult, in private cults, and subsequently as payment to temple personnel, local state personnel, other religious institutions, or the state.

\(^{194}\) Haring, *Divine Households*, page 76.
When attached to the temple, the *shena* interacted with the local and peasant economies by providing work (both in the *shena* and on farms, etc), producing wages, pensions, and private mortuary cult endowments, and paying for raw materials (grain and meat, etc.). But the *shena* was not an independent institution. Although it processed all the temple income, it did so under the direction of the temple. Chapter 5 will investigate exactly what items the *shena* produced and processed. These items included the ubiquitous bread (section 5.1.1), beer and wine (sections 5.1.2 and 5.1.3), as well as, meat, fish (section 5.1.4), metalworking (section 5.2.1), pottery production (section 5.2.2), and linen weaving (section 5.2.3). Chapter 6 will look at the sigillographic evidence from the *shena* at Abydos and generate a model of the administration of that institution (section 6.3) and help elucidate with what other institutions the *shena* interacted (section 6.2).
Chapter 3: Previous Studies of the *Shena* in Texts, Art and Archaeology

From the more than one hundred years of Egyptological study, there are only three investigations of the *shena* as an institution associated with temple food and craft production, and none of them do so with archaeological evidence.¹⁹⁵ There are several reasons for the dearth of study in such an important institution. First, lexicographers continue to define *shena* incorrectly as either a storehouse or an *ergastulum*, a workhouse for prisoners.¹⁹⁶ Second, there are few artistic representations of the *shena*, all of which come from tomb scenes. These representations linked the *shena* with private acts of daily life, rather than temple estates. Third, studies concerning science of daily life have focused on the mechanics of the representations (i.e. the steps involved in baking a loaf of bread), rather than on the wider organization of the personnel, the

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relationships between activities, or the larger organization of the scenes. Finally, archaeologists have largely ignored non-cultic temple buildings. This may be partly due to poor preservation of these buildings and perhaps a lack of interest in the “mundane” architecture. In theory, every ancient Egyptian temple would have had its own shena attached to it to produce the necessary goods for the daily offering rituals. However, the lack of emphasis on the more mundane temple buildings means that an integral part of temple architecture has gone under reported and un-investigated. All of these things have conspired to leave the shena an obscure misunderstood entity from ancient Egypt.

This chapter will examine the miscellany of previous studies of the shena in order to lay a groundwork for an in depth investigation of the shena, its purpose and its place in wider Egyptian society. The first part of this chapter will look at the evolution of both the orthography and lexicography and paleography of the word shena. The second part

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198 Every temple certainly required offerings for the ritual, but without a lot of investigation of the non-cultic structures attached to temples, it is impossible to truly determine whether every temple actually had its own shena.
of this chapter will investigate representations of the *shena* in ancient Egyptian art. The final part of this chapter will consider the few sites that have identified archaeological remains as *shena*.

### 3.1 Textual Evidence of the *Shena*

In general, the study of literate ancient societies such as Mesopotamia, Egypt, and Syro-Palestine are heavily reliant on the textual record. Texts provide data on dates, personnel, amounts of commodities, delivery destinations, personal disputes, bureaucratic processes, etc. Even though texts are important sources of evidence about systems in the past, critical issues remain about the function of texts, textual bias, and intended audience. It is essential, therefore, to look at textual evidence with an understanding of their shortcomings. Egyptian non-ritual texts such as administrative documents, state records, and private letters tended to be written on perishable materials such as papyrus. As a result, non-ritual texts are vastly underrepresented in the overall textual record from ancient Egypt because they have decomposed. Texts from ritual

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200 Specifically, this refers to emic data, where the writing was meant only for persons of that culture, locale, and time period. For a modern example, the phrase “neutral territory” sounds to most like it refers to an area where two warring factions or gangs have agreed that no fighting will take place. But in New Orleans, “neutral territory” refers to the median of a road - that grassy strip between two opposing lanes of traffic. Every ancient text, therefore, must be evaluated with the understanding that there are certain things that a modern reader cannot access or understand.
contexts, such as temple wall inscriptions, tomb wall inscriptions, etc, predominate because they tended to be inscribed in places and on materials that endure the ravages of time. Those texts and depictions that occur in ritual contexts (burials, cenotaphs, temples, etc.) represent an idealized and restricted view of life, even if they relate to non-ritual activities (i.e. scenes of daily life).\textsuperscript{201}

To date the study of the \textit{shena} has relied solely upon textual and iconographic evidence.\textsuperscript{202} However, evidence recorded by texts is largely emic in nature. In other words, texts are written for a specific audience who understand the systems of behavior described by the author.\textsuperscript{203} Because of the author’s and his audience’s shared culture, many things in the text remain unexpressed. For example, texts of \textit{shena} expenditures were written for people who were familiar with the \textit{shena}'s character, so no explication of its bureaucracy, duties of its personnel, or activities was required. This is not to say that there are not some texts that explain duties, rules, expectations, etc., just that texts are embedded with cultural data that is not explicitly expressed. This applies to all texts, ancient and modern. For this reason, one cannot rely upon texts to recount an institution’s complete nature.

\textsuperscript{202} These are discussed in full below.
While texts have provided significant evidence about the nature of the *shena*, there are many questions remain. The utilization of archaeological evidence complement the emic textual perspectives, and furnish lines of etic data that could not be perceived from texts. One can make observations about systems of behavior through the patterns of deposition of material culture. Concentrating upon material culture alone also has drawbacks, as cultural meaning imbues each material good, which may not be readily apparent to the archaeologist.  

For the historical archaeologist, it is necessary to understand the benefits and limitations to both textual and archaeological data. When combined and understood in their cultural contexts a comprehensive cultural reconstruction is achievable. The following discussion about the *shena* in textual sources shows how difficult it is to understand the nature of that institution utilizing textual data alone.

### 3.1.1 Orthographic Troubles concerning the Transliteration of *shena*

Discussions regarding *shena* date back to 1867 when Heinrich Brugsch began work on his *Hieroglyphisch-Demotisches Wörterbuch*. At that time, the mastery of

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hieroglyphs was still in its infancy, both in terms of translation and orthography. The understanding of shena proved difficult in these early years primarily because the word shena usually appears with only its determinative $\text{rw}$, allowing for no direct transliteration. Brugsch’s Wörterbuch, however, translates $\text{M[t]}$ as $\text{r}$, based on the writing of $\text{M[t]}$, which he believed to be a variant of $\text{rwyt}$ or gate.\(^{207}\) Several factors lead to this mistaken transliteration. First, the lion found in the word gate has a transliteration of $\text{rw}$.\(^{208}\) Occasionally, the word for gate is spelled using the hieroglyph of the plow instead of the lion, which Brugsch believed had a similar transliteration. In addition, the recumbent lion (E23) and the plow (U13) are indistinguishable when written in hieratic script.\(^{209}\) Finally, a statuette in the Boulaq Museum, excavated at Abydos and dating to the 13th Dynasty, bears the inscription $[\text{imy-r }]$, which confirmed for Brugsch the correlation between plow and lion hieroglyphs and their association with the word $\text{rryt}$.\(^{210}\) The plow, therefore, should be given the phonetic


\(^{209}\) Unfortunately for Brugsch, the interchangeable nature of the plow $\text{M[t]}$ and lion $\text{M[t]}$ in hieratic (each sign is an example of old, middle, and late hieratic) is due to the penmanship of scribes rather than any real equality in orthographic value. Möller, Georg. Hieratische Paläographie: Die Aegyptische Buchschrift in Ihrer Entwicklung Von Der Fünften Dynastie Bis Der Römischen Kaiserzeit. Three Volumes Osnabrück: Otto Zeller, 1909-1936. Lion is # 125, the plow is #468.

value of ṅr. In 1893, Percy Newberry translated ⲍ ⲑ, as ṅr-ᵣ, noting that the final arm should be expressed in the transliteration. However, Adolf Erman suggested that the final arm appears only as an archaic remnant after a syllabic hieroglyph, and therefore the final arm should remain un-transcribed.

Max Müller had anticipated these orthographic problems as early as 1888, when he stated that ṅrryt was feminine, but ⲍ ⲑ and ⲍ ⲑ never appear in a feminine format. Therefore, ⲍ ⲑ could not be a variant of ṅrryt, which is always feminine. Furthermore, ⲍ ⲑ probably represented a variant of ⲍ ⲑ and not the other way around as others previously argued. Finally, he noted that if the phonetic spelling of ⲍ ⲑ was indeed ṅr, the archaic spelling utilizing the final arm would not continue to be used all the way through to the New Kingdom.

The multitude of problems with the phonetic spelling of ⲍ ⲑ as ṅr, drove scholars to search for other alternatives. As early as 1881, Brugsch had transcribed ⲍ ⲑ as ḫb⁻ᵣ, but gave no explanation as to his reasoning. Karl Piehl, in 1898, looked at the other possible syllabic values of the plow ⲍ ⲑ, and found that it was used in

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214 Ibid.
215 Ibid., page 92.
216 Brugsch, Wörterbuch, Vol. IV (1881). Page 749. Indeed, the word for plow is spelled ḫb and ⲍ ⲑ is used as that phoneme.

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all the words involving the syllable hb. This included the words hb “plow,” hbi “to tread,” hb “to humiliate,” and hbhb “to drive out.” The recumbent lion never appears in these words. He postulated that because the interchange between plow and lion hieroglyphs does not take place until the New Kingdom, and because the plow and lion appear the same way in hieratic, that their exchange was initially a mistake, which became codified only in the New Kingdom. So, it was the recumbent lion that replaced the plow, not the other way round. Therefore, it is the plow which holds the key to the phonetic value of the word or . And, since there are many words employing the plow with the syllabic value hb, the phonetic value of must be hb, not r or r-.

In 1902, Pierre Lacau did a review of the orthographic work to date on the word . Like Piehl, he concluded that can never be a variant of rryt, and that the lion was confused in the hieratic with the plow. He stated that the final arm was neither an initial consonant of the ideogram (r), nor was it a consonant added to a biliteral syllable (r or hb ), but rather the expression of the final consonant of a triliteral syllable, in this case sn, or shena. For examples, he turned to several inscriptions that actually display all the radicals of the word. From Meidum, the tombs

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218 Ibid.
220 Ibid., 94.
221 Ibid.
of Rahotep and Neferet have scenes with offering bearers from different cities (see Figure 8), one of whose inscriptions is \([\ddot{s}, n, \ddot{c}, \text{plow sign (U14)}, t, \text{city sign (O49)})\]. Additionally, the Leiden Stele V. 88 dating to the 12th Dynasty bears the title \textit{imy-r \~sn\~w}, where \textit{shena} is spelled \([\ddot{s}n, n, \ddot{c}, w, \text{plow (U13)}, \text{walking legs (D54)}]\) or \textit{\textbullet\textbullet}\textit{\textbullet\textbullet}. Furthermore, the plow (U13) can be found in other words using the syllable \(\dot{s}n\ddot{c}\) which include “to turn back, to repulse, the police, or a storm-cloud,” where each word uses a different determinative. In 1908, Alan Gardiner and F. Vogelsang published the story of the Eloquent Peasant, which included multiple references to \textit{shena}, all of which were spelled out phonetically, thereby establishing that the word \textit{\textbullet\textbullet\textbullet\textbullet} was to be transliterated as \textit{shena}. These different spellings whose phonetic values are the same confirm that the plow has the triliteral syllabic value of \(\dot{s}n\ddot{c}\) or \textit{shena}.

3.1.2 Lexicographical Problems concerning \textit{Shena}

While the debate continued about the proper transliteration of \textit{shena}, its lexicographical study took place more quietly. In 1882, Erman translated \textit{shena} as

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224 Lacau, 1902, Ibid., page 94.
granary or storehouse, although there was some confusion as to its equivalency with the translation of palace, which stemmed from the misidentification of *shena* as a variant of *ḥrryt.*\(^{226}\) Around the same time, Brugsch put forward an alternate translation of *shena* as a workhouse in conjunction with temples and a magazine in conjunction with tombs.\(^{227}\) Percy Newberry, in 1893, translated *shena* as a warehouse.\(^{228}\)

After Lacau clarified the reading of the *shena* in 1902, scholars began to question their original translations of the word. In 1912, Raymond Weill noted that “slaves” and prisoners of war were sent to the *shena*.\(^{229}\) Subsequently, he proposed the translation of *shena* as *ergastulum*. An *ergastulum* is Latin for a prison to house slaves where the slaves do hard labor.\(^{230}\) Gardiner explained the logic behind the translation of *šn* as *ergastulum* in 1947. The stem *šn* is translated as “restrain,” other words using that stem include “to turn back, to repulse, to enclose, and to hide.”\(^{231}\) Gardiner argued that when


the house determinative  was present, shena could be translated literally as “the place of restraint,” or ergastulum.232

Gunn rebutted by arguing that the primary meaning of shena was warehouse “in which wares are prepared as well as stored,” and its use as a prison in the New Kingdom when large numbers of “foreign slaves were drafted” into the system was “incidental.”233 Gardiner countered by claiming that ergastulum must have been the original connotation of shena, based on the meaning of its stem and because there are other words in Egyptian for storehouse.234 However, in 2005, Hratch Papazian argued that the connotation of enclosure, restraint, and concealment implied by the stem šnÊ should be applied to things and not people.235 Therefore, according to Papazian, proper translation of shena should be storehouse, not prison.

In 1952, Abd el Mohsen Bakir published a study on slavery in ancient Egypt that included a large section regarding the shena, in which he promoted the definition of shena as ergastulum.236 Using textual evidence from the Old, Middle and New Kingdoms, Bakir suggested that the definition of the shena changed over time. In the Old Kingdom, textual references indicate that the shena was a depository for slaves and should be defined as an ergastulum,237 stemming from the fact that mrt and hmw were

232 Ibid.
234 Gardiner, AE Onomastica II, page 210, #430.
237 Ibid., page 44.
working there. These terms were translated as slaves, but are now best translated as servants. In the Middle Kingdom, according to Bakir, *shena* is only mentioned in contexts where it functioned as a storehouse. In the New Kingdom, the *shena’s* function as an *ergastulum* was revived and it retained the role of storehouse. There were several faults with Bakir’s study, not the least of which was his misunderstanding of the word *mr* as “slave”, which is better translated as “servant.” While Bakir rightly states that in the New Kingdom foreign prisoners were routinely sent to work in the *shena*, there is no evidence that prisoners were sent there in earlier periods. Despite these problems, Bakir’s study on slavery became the most popular source for any discussion about the translation of *shena* for decades and perpetuated its definition as an *ergastulum*.

In 1960, Juri Perepelkin studied the *shena* in Old Kingdom iconography and literature hoping to gain insight about the nature of that institution. He concluded that the *shena* always appears in conjunction with the production of foodstuffs or their storage. The foodstuffs mainly constituted bread and beer and frequently were part of

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238 Hannig still gives the primary translation of *hmw* as “Sklave” or slave, he also states that it can mean “Diener” servant and “Leibeigener” serf. GHWB, page 561. Faulkner, AE Dictionary, page 111, mr = servants, page 169 *hmw = servant*. WB, page 106 mr = serfs, subjects, page 88 *hmw = servants.*

239 Bakir, Abd el Mohsen. *Slavery in Pharaonic Egypt*. Page 44.

240 Ibid.


At no point, he argues, can shena be considered an ergastulum. Unfortunately, because it was published in Russian, Perepelkin’s study received little notice from the wider Egyptological community.

It was thirty years before there was another inquiry concerning the shena. In the intervening years, scholars translated shena as ergastulum, storehouse, granary, bakery, warehouse, labour establishment, and various other permutations on these ideas (see especially Faulkner, who translates shena as “storehouse or labour establishment”). The publication of reference materials like Hannig’s Ägyptisches Wörterbuch, Faulkner’s Concise Dictionary of Middle Egyptian and Helck and Otto’s Lexikon der Ägyptologie solidified and continue to perpetuate these interpretations of shena.

In 1990, Daniel Polz conducted a study of the overseers of the shena during the Eighteenth and Nineteenth Dynasties using Theban tombs as his primary evidence. In the course of his excavations of the tomb of Hui and Kel, he noted that one of the titles of Kel was poorly understood. Kel’s title could not be placed within the basic social...

243 Ibid.
244 Ibid., page 142.
classifications of various professions, and thus necessitated a study of the term *shena*.\textsuperscript{248} He observed that *shena* was not related to the clergy, but rather to “economic enterprise within these temples.”\textsuperscript{249} From referencing tomb inscriptions as well as various temple dedicatory texts (Nauri Decree, pPetersburg 1116a verso), he found that the *shena* was in charge of producing and distributing supplies for temples, and as such represented the economic wing of the temple.\textsuperscript{250} He was also able to discern a difference in the titles *imy-r śn* (overseer of the *shena*) and *hry-śn* (chief of the *shena*), and follow their evolution in status. The title overseer of the *shena* became increasingly a title of administrative status, while chief of the *shena* became increasingly a title of middle management (ie. actual work) within the *shena*.\textsuperscript{251}

In 1993, Petra Andrassy undertook the most comprehensive study to date on the *shena*. Concerned primarily with the Old Kingdom, it also addressed many of the previous arguments concerning the definition of *shena*. The *shena*, she argued, was an organization linked with the processing of agricultural goods (storage, processing, and distribution).\textsuperscript{252} Using evidence as early as the Second Dynasty, Andrassy argues that the *shena* was part of the development of the bureaucracy in ancient Egypt as it was the economic wing of any Old Kingdom institution with which it was linked.\textsuperscript{253} Indeed, titles associate the *shena* with the king’s house (pr-nswt), goods for royal donation,

\textsuperscript{248} Ibid., pages 43-44.
\textsuperscript{249} Ibid., pages 44-45.
\textsuperscript{250} Ibid., pages 45-46.
\textsuperscript{251} Ibid., pages 48-52.
\textsuperscript{253} Ibid.
mortuary temples, sun temples, and gods’ temples.\textsuperscript{254} The operations and hierarchies of the \textit{shena} were so complex that it often had many different departments within the it (for example, a \textit{shena} of a specific product – \textit{\textit{lnkt}}-beer or \textit{\textit{psn}}-bread).\textsuperscript{255} Interestingly, she notes that while many records of requests for goods, raw materials, or labor made to the \textit{shena} exist, no requests made directly by the \textit{shena} exist.\textsuperscript{256} This situation arises, she postulates, since the \textit{shena} was not independent and that one or more branches of government controlled it.\textsuperscript{257} By the Sixth Dynasty, the \textit{shena} received direct allocations of land, which meant that the \textit{shena} could operate without relying on external allocations of goods.\textsuperscript{258} Here again, the \textit{shena} was not able to distribute goods independently, as the palace pre-assigned the goods in the land grant decrees.\textsuperscript{259} Andrassy’s study went a long way in establishing the import of the \textit{shena} within Old Kingdom government; however, it falls short of explicating its function as part of the infrastructure of the government, which was out of the scope of her short analysis.

From all this debate, it becomes clear that the \textit{shena} is an enigmatic institution and that finding a precise definition for it is difficult. This is primarily due to the emic nature in which \textit{shena} is used in texts. The Egyptians understood what a \textit{shena} was and did not consider it necessary to give a detailed explanation of its role.\textsuperscript{260} It is only in the

\begin{itemize}
\item \textsuperscript{254} Ibid., page 24.
\item \textsuperscript{255} Ibid.
\item \textsuperscript{256} Ibid., page 27.
\item \textsuperscript{257} Ibid.
\item \textsuperscript{258} Ibid., page 28.
\item \textsuperscript{259} Ibid.
\item \textsuperscript{260} It could be an accident of archaeology that there is no textual or iconographic evidence that clearly explicates the responsibilities of the \textit{shena}.
\end{itemize}

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1990’s that studies by Polz and Andrassy attempted to ascertain the nature and function of the *shena* within ancient Egyptian society from the textual evidence. Egyptologists accomplished this goal mostly through the study of titular material, which encompassed many periods and many localities. They created a basic outline of the role of the *shena* in temples and government, and served to underscore the import of the *shena* as an institution and highlighted the need for more intensive study.

3.2 Artistic Representations of the *Shena*

While scenes of food production are relatively common in ancient Egyptian art, depictions of *shena* are rare. Moreover, while there have been many studies concerning the mechanics of baking and brewing representations, few have studied the personnel, the organization of the scenes, and the relationships between the activities depicted there. One of the major problems in studying systems such as the *shena* iconographically is that daily life scenes often do not include labels as to where these activities are taking place, either on a private estate, in a *shena*, or elsewhere. The presence of workers with *shena* titles in a scene of food production may suggest that the scene is in fact a *shena*, but that conclusion may not always fit with the full evidence.

Perepelkin undertook the only study to date concerning the iconography of the *shena*, concentrating upon tombs of the Old Kingdom. The tombs of Ti, Ii-n-nfret, Ankhma-kher, Khentka-Ikhekhti, and Tep-m-ankh all depict people with titles of overseers or workers of the *shena* in scenes of baking bread, brewing beer, preparing fowl,
slaughtering cattle, weaving, or conducting other domestic chores. Further, he was the first to conclude that the *shena* was a major economic institution within Egyptian society, since it received raw materials, stored them, produced finished goods, and subsequently distributed these goods. The tombs of li-n-nfrt, Ankh-ma-kher, Khentka-Ikheki and Tep-m-ankh do not label their production scenes specifically as *shena*, although workers carrying the identification of *shena* do appear. Perepelkin goes so far as to argue that any scene depicting the baking of bread and brewing of beer probably represented activities as taking place in a *shena* even if the workers labeled with *shena* are absent. He continues by noting that weaving and other “craft-making” scenes, as well as scenes of agriculture have their own designations and never have associations with *shena*.

Only a handful of food production scenes include workers labeled *shena*, all of which are from tomb contexts. Of these only three give enough information to allow for the positive identification of the scenes as taking place in a *shena*. The first is the tomb of Niankhkhnum and dates to the late Fifth Dynasty from Saqqara. The pertinent scene appears in six registers that show the progressive steps of making bread and beer (see

262 Ibid., page 142.
265 Ibid., page 141. There is an exception with pottery production, which can be found in *shena* scenes, such as that of Ti.
Figure 9). The top register shows the granary where “Grain is received by the overseer of the shena.” The second register illustrates the pounding of grain to separate the chaff and the subsequent grinding of grain into flour. Bakers heat and fill bread molds in the third register. In the fourth register, brewers strain and ferment beer. In the fifth register, workers knead bread dough and pour beer into storage jars. Finally, the sixth register depicts overseers of the shena presenting bread to a scribe of the Niuserre sun temple with a caption that states: “Receiving the baked goods from the hand of the overseer of the shena every single day 1000 things.”

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Niankhkhnum shows a progression of a single day, from the receiving of raw materials (grain) by the shena overseer to the delivery of the finished product to the sun temple of Niuserre.

The tomb of Ti from the Sixth Dynasty is similar to that of Niankhkhnum and Khnumhotep in its depiction of bread and beer preparation except that the baking and brewing processes are separated into different registers (see Figure 10). The timeline goes in two directions at once with register 4 serving as the counterpoint. This is an

Figure 10: Shena from the tomb of Ti, Wild, Le Tombeau de Ti, fasc. 1, plate 66.


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unusual arrangement; usually the action begins at the top and progress down a wall and very occasionally it progresses up the wall. The beginning of the timeline is at register four with the granaries, labeled “granaries which are in the house of shena.”

The fact that the granaries are labeled as located within the shena indicates that this baking and brewing scene is taking place in a shena. The fourth register also shows the pounding and grinding of grain into flour. The timeline proceeds in two directions from register four: up the wall with registers three and two depicting the brewing of beer, and down the wall with registers five, six, and seven. Register three shows the making of beer mash, while register two shows the straining of that mash into storage vessels for fermentation, and the sealing of full jars of beer. Registers five and six depict the process of baking bread. The grinding of grain and sifting of flour is depicted in register five. Register six shows the heating of bread molds and the baking of bread. The bottom register on the wall shows the shena overseer and several scribes overseeing the administration of the shena. Finally at the very top of the wall, register one depicts the making of ceramic storage jars with a mud brick kiln, a man turning a pot, and storage jars being left to dry. The addition of a pottery production scene to the possible activities occurring within the shena is interesting as there is no textual evidence that this was one of its functions. Here we see evidence of the problems endemic in the textual evidence, or emic data, as the ancient Egyptians never discussed pottery production as one of the


shena’s possible duties. However, it is clear from the iconographic evidence and well as the archaeological evidence, as we shall see later, that the functions of the shena went well beyond merely producing bread and beer.

Although there are no depictions of a shena from the Middle Kingdom, there are two from the New Kingdom, both of which come from the east hall wall of the 18th Dynasty tomb of the vizier Rekhmire (see Figure 11).

Although poorly preserved, one scene depicts a row of offering bearers processing towards Rekhmire. One of these offering bearers is Rekhmire’s son Mery who has the title “overseer of the shena.” The text above Mery states: “Overseer of the shena of Amun, administrator of altars in Karnak, the mayor and vizier Rekhmire, bringing the offerings of the god to the temple

![Figure 11: Offering bearers, including Rekhmire's son, Mery, overseer of the shena. Davies, Rekhmire, plate 38.](image)

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There are plenty of baking scenes that date to the Middle Kingdom, but not one includes a worker with a shena title or a label that references the shena. Klebs, Luise. Die Reliefs Und Malereien Des Mittleren Reiches (VII - XVII Dynastie, ca 2475-1580 v. Chr.). Heidelberg: Material zur ägyptischen Kulturgeschichte, 1922. Pages 119-120. Davies, Norman de Garis. Tomb of Rekh-mi-re at Thebes. Vol. II. New York: Metropolitan Museum of Art, 1943. Pages 36-39 and plate 38.
of Amun.”

The next register is a baking scene with bakers filling conical bread molds, grinding flour, and heating a bread tray. Underneath is a register in poor condition (not pictured) with people sieving mash, in a possible scene of brewing beer. Another scene in the tomb shows Rekhmire overseeing the production of foodstuffs (see Figure 12) including bread, beer, wine, meat, and other dishes (there is also a scene including the weaving of linen), with the caption that Rekhmire is watching over these goods that will go into the “treasury of the temple in…[the text breaks off].” While the text breaks before it mentions the shena, it is clear, that the goods being produced are designated for temple use, which is the responsibility of the shena. Similar to the tomb of Niankhkhnum and Khnumhotep, the tomb of Rekhmire shows the manufacture of goods, as well as the presentation of food offerings from the...

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\textit{shena} to the vizier Rekhmire for distribution to the Karnak temple. It is this formula that allows the baking and brewing scenes in Rekhmire’s tomb to be identified as activities in a \textit{shena}.

There have been numerous studies that deal with the iconography of baking and brewing, which include reliefs, paintings, and statuary. These studies are useful primarily in deciphering different elements within a scene and equating them with archaeological elements. They concern themselves mainly with the mechanics of the process and not the interaction of the people within a depiction, their identities, the number and type of different activities, and their possible inclusion in the understanding of \textit{shena}. The few scenes that clearly present \textit{shenas} and those depictions that include \textit{shena} titleholders, link the institution of the \textit{shena} with food production, especially baking bread and brewing beer, and also craft production such as pottery making and the weaving of linen.

3.3 The \textit{Shena} in Archaeological Contexts

The philological and iconographic studies suggest that the \textit{shena} was a place of production of foodstuffs. Currently, the positive identification of a \textit{shena} from archaeological contexts relies not only on the architectural and material remains, but also


its classification as such through textual sources. While a number of sites have places of production, they lack enough horizontal exposure and/or the sites have not been published to be able to identify them as shena.$^{277}$ In a couple of cases, texts mention the exact location of the shena on the ground, but destruction at those sites prevent further investigation.$^{278}$ It is only at the mortuary temple of Senwosret III at Abydos that both archaeological and textual materials confirm the presence of a shena.

Archaeologists have identified few places of production from ancient Egypt, due perhaps to a lack of interest by prior generations of archaeologists and a lack of preservation of “mundane” buildings. The situation at temple of Karnak is a case in point. The temple proper has had careful and extensive study, which has allowed its partial reconstruction, but its surrounding support buildings such as the priests’ houses, magazines, stables, etc. have only recently received

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure13.png}
\caption{Karnak shena with sacred lake in the background}
\end{figure}

\footnotesize
\begin{itemize}
\item The temple of Mut in Luxor has a food production area that is almost certainly a shena, but is not yet published. It is currently under investigation by Betsy Bryan see http://www.jhu.edu/egypttoday/2002/pages/12102.html, http://www.jhu.edu/egypttoday/2003/pages/12103.html for mentions of ovens and grain storage bins.
\item The temples of Karnak and the mortuary temple of Ramses II at Abydos for example.
\end{itemize}


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\end{document}
At Karnak, there is a structure to the immediate south of the sacred lake that is almost certainly a *shena*. It consists of several storerooms whose stone doorjambs have texts noting the *shena* ... (see Figures 13 and 14) that remain unpublished, although the area appears to have had excavation.

Another problem is that of preservation, for while monumental structures such as temples were built entirely or partially of stone, the outbuildings were built of mudbrick. The latter were subject not only to the effects of the environment and to the ancient reuse of brick, as well as the modern Egyptian practice of using the ancient mudbrick as fertilizer for crops. Further, those places of large-scale production at best have received only preliminarily excavation or publication.

Archaeologists identified two possible production areas dating to the Old Kingdom. Conard and Lehner fully excavated the “workmen’s barracks” building west of the pyramid of Khafre at Giza. The “barracks” date to the reigns of Khafre and

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Menkaure. These structures were cleaned out thoroughly in ancient times. However, the excavators postulate that although the Egyptians constructed them for the storage of food or manufactured goods, they used them also as a craft shop for sculpting and stonework. This site revealed a few hearths as well as bread molds, indicating small-scale food productive activity. The “workmen’s barracks” lack the larger-scale productive activities associated usually with the shena. For this reason, it is unlikely that the “workmen’s barracks” functioned as a shena.

Mark Lehner is currently excavating the workmen’s town, dating to the Fifth Dynasty, on the Giza plateau (see Figure 15). Preliminary publications report a large-scale fish drying operation. He has also excavated houses whose baking capacity far exceeds their possible occupation. Lehner initially posited that these “galleries” may represent evidence of a shena, but has subsequently backed away from this view. Recent excavations of the “galleries” show that they were more likely represent workmen’s barracks. Lehner says: “The fact that each gallery has rear chambers of cooking, roasting, or baking, might indicate a degree of self-sufficient production within a system of provisioning.” He has identified a royal administrative building (see red outline in Figure 15) to the south east of the “galleries” that includes massive granaries. The royal administrative building probably distributed grain and other provisions to the

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Excavations of the Giza pyramid city do show signs of production on a large scale, but these areas seem, for the most part, to represent small kitchens serving a set group (like a household), rather than *shena* facilities. The most likely place for such a facility is within the royal administrative building, but modern occupation prevents its further excavation. While evidence of craft production exists within the royal administrative building (copper working, alabaster working, and weaving), activity does not yet extend to bread and beer production, which are key components in activities of the *shena*.

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285 Ibid., page 6.
286 Ibid., page 7.
The Lahun temple archives, a series of papyri dating to the reign of Senwosret III in the Middle Kingdom, describe a *shena* adjacent to the valley temple of Senwosret II just outside the town of Lahun. In his excavations at the turn of the 20th century, Petrie identified only the foundations of the valley temple, which served as a quarry for stone in the modern era and shows much destruction. Unfortunately, further excavation of the temple and its *shena* are unfeasible as this area of the site since modern cultivation has destroyed this area of the site.

Stephen Harvey identified an early 18th Dynasty (1552-1514 B.C.) baking facility south of the Ahmose pyramid temple at Abydos. Although enough horizontal exposure has not survived to allow positive classification of this area as a *shena*, its ceramic corpus and placement seem consistent with other *shena* facilities.

At the Great Aten Temple and the Small Aten Temple at Akhetaten, dating to the Amarna period (1352-1327 B.C.), surface collection, aerial photography, and preliminary excavation produced evidence of two large-scale baking facilities. The excavators uncovered ovens, quern stones, meat labels, and huge numbers of cylindrical
bread molds from these areas (see Figure 16).

Some of the meat labels, which are found in concentration in building Q41.9, have inscriptions stating that they are from the *shena*. Although there is a slaughter court inside the Great Aten Temple, it seems that the meat was processed (butchered and/or preserved in jars) in the southwest section of building Q41.9 (see Figure 17). The bakeries are situated on the north side of building

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291 The slaughter court seems to have been largely symbolic as there are no tools, tethering stones, or bones found there. These items are, however, abundant in the meat processing area. Ibid.
Q41.9. Consisting of 110 chambers, each had a bank of ovens along its back wall. Kemp calculated that with 5 bakings per day, the bakeries in Q41.9 could churn out around 20,000 loaves of bread, enough to feed thousands of people. The excavators uncovered over 700 quern stones in a surface survey in building Q41.10, to the immediate east of the bakery, leaving little doubt that this area was the grindery for turning grain into flour for bread. Kemp is convinced, and rightly so, that the bakery complexes adjacent to the Great and Small Aten Temples is a shena. Perhaps most exciting of all, these shena buildings are not fully excavated and given that the shena next to the Great Aten Temple is roughly 250 meters wide by 325 meters long, it alone represents a rich, yet untapped, source of archaeological material about the shena.

Betsy Bryan is currently excavating the temple of Mut, adjacent to the Karnak temple, which dates to the Second Intermediate Period and early Eighteenth Dynasty. Recent excavations behind the sacred lake, but within the Mut precinct, have unearthed

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292 Ibid., page 147.
293 Ibid., pages 148-149.
294 Ibid., page 149.
hearth as well as a ceramic assemblage with large amounts of cylindrical bread molds, all of which are indicators of a bakery facility. Its position within the precinct and its ceramic corpus suggests to me that it should be considered a shena, but positive identification is contingent upon further horizontal exposure.

In 1994, excavations adjacent to the mortuary temple of Senwosret III at Abydos revealed several hearth areas and a substantial amount of ceramics. Continuing excavation in 1999 and a detailed study of the ceramic corpus from this locale indicated that this was a food production area. Further, the excavations uncovered a scarab seal and seal impressions with shena-related titles during the 1999 excavations of the temple and town. The scarab had the title overseer of the shena (see Figure 18). The sealing was inscribed with the title scribe of the chief of the shena, followed by either the name of the titleholder or the name of the temple. The inscriptional and archaeological evidence suggest that the production area was a shena of divine offerings. The archaeological evidence from

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298 Ibid., page 117.
the shena is the focus of chapter 5. The sigillographic evidence from shena at south Abydos is the focus of chapter 6.

Textual evidence suggests that almost every temple would have had its own shena facilities to provide offerings and wages. Given the number of excavated temples within Egypt, it seems surprising that archaeologists have not investigated any shenas until now and underscores the huge gaps that still exist in our knowledge of such an intensely studied civilization such as ancient Egypt. The excavation of the shena at the mortuary temple of Senwosret III will set the benchmarks for the identification of other shenas, and perhaps its investigation will spark further study of this important economic institution.

299 Haring, Divine Households, page 394.
Chapter 4: The Archaeological Evidence of the Shena adjacent to the Mortuary Temple of Senwosret III at south Abydos

Textual sources suggest that preponderance of temples had facilities to produce offerings. At the mortuary temple of Senwosret III, excavation within the temple temenos walls uncovered a cult structure, priests houses, and storage facilities, but no evidence of industrial food production. This chapter begins with the identification of the shena of divine offerings of Senwosret III. Next, the chapter discusses the extensive refuse deposits on the eastern side of the temple. Portions of these deposits can be linked with the shena almost exclusively, while others are mixtures of temple and shena waste. The chapter then discusses the shena buildings themselves. There are several phases of construction, three of which involve entirely new structures. Finally, the chapter looks at the artifactual assemblage, which is very uniform, distinct from the temple deposits, and dominated by certain key artifact types. This includes a typology of the ceramic corpus with an examination of the function of some ceramic types and their significance in understanding the activities that took place at the shena. Details of other artifacts, small objects, and sealings are dealt with in chapters 5 and 6.

4.1 Identification of the *Shena* Complex at south Abydos

As part of the re-examination of the mortuary temple of Senwosret III in 1994, Josef Wegner undertook a surface survey of the area between the temple and the modern school house to the east.\(^{301}\) The survey revealed a dense ceramic debris field approximately 6000 m\(^2\); the ceramic debris consisted of “high frequencies of cylindrical bread molds as well as rough-ware jar and beaker fragments,” indicating that “this area was devoted to productive activities connected with the temple.”\(^{302}\) Wegner opened seven units as part of this initial examination: four just outside the rear eastern temple doorway and three more about forty meters from the temple along the edge of the desert plateau.\(^{303}\) The four units closest to the temple revealed a Middle Kingdom rectilinear structure cut through by a vaulted mud-brick late period tomb and a hardened path leading towards the town.\(^{304}\) The three other units possessed the highly “eroded remnants of structures contemporary with the temple,”\(^{305}\) and a series of fire pits or ovens.\(^{306}\) These last units seemed to designate the “eastern periphery of the production zone, since there is a marked decrease in the density of ceramic debris.”\(^{307}\) In 1999,

\(^{301}\) This project falls under the auspices of the University of Pennsylvania/Yale University/Institute of Fine Arts, NYU Expedition to Abydos under the directorship of William Kelly Simpson and David O’Connor.


\(^{303}\) Ibid., pages 115-116.

\(^{304}\) Units N5330/E9100, N5330/E9110, N5340/E9100, N5340/E9110. There are at least 19 late period tombs that cluster to the southeast of the temple. Wegner, *Temple of Senwosret III*, pages 287 and 295.


\(^{306}\) Ibid.

\(^{307}\) Ibid.
Wegner opened two 5 x 10 meter units creating a 20 meter long exposure just to the east-southeast of the temple pylon. The units revealed little in the way of architecture; there was a very eroded rectilinear mud brick structure in one unit and several mud surfaces, some with hearths. The rectilinear structure was oriented on a similar orientation to the temple and sat perpendicular to the eastern temenos wall roughly 20 meters south of the pylon. The ceramic deposits from these two units were extremely uniform with only 8 ceramic types comprising 97% of the corpus, and cylindrical bread molds were approximately 65% of the total corpus. The ceramic assemblage was consistent with bread and beer production. Finally, seal impressions from the temple and town and the shena itself uncovered with titles of workers that produced foodstuffs, titles that contained references to offerings htpw-nfr and šnfr. The nature of the ceramics, in conjunction with the sigillographic evidence convinced Wegner that this area was a production zone and could be identified as a šnfr htpw-nfr, a shena of divine offerings.

At the beginning of the 2004 season, Tomasz Herbich conducted a magnetometer survey of the area to the east of the temple in order to establish the location of the core structures of the shena. Modern settlement and large amounts of modern refuse, which hinder magnetic resonance, bounded Herbich on the north side of the temple.

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308 This was done, in part, to test the viability of this dissertation. Units N5360/E9100 and N5360/E9110. Wegner, “Organization of The Temple of Nfr-K3,” page 116.
310 Ibid., 119-122.
312 Ibid.
313 This is due to the metal present in modern refuse and to burnt debris, such as ash, charcoal, burned ceramics, fired mud bricks, etc.
Consequently, the survey concentrated on the eastern rear temple door, where Wegner believed the core structures of the *shena* were located. In previous seasons, Herbich conducted magnetometry surveys at the town and tomb of the Senwosret III complex and achieved excellent results. He believed that the architecture and hearths would have similarly good magnetic resonance in this area. Unfortunately, the large amount of ceramic debris and ashy soil matrix were very magnetically resonant, and the architecture of the *shena* could not be mapped. The survey did show a significant ceramic debris field on the edge of the low desert plateau running away from the temple, which represents the refuse created by the *shena* (see Figure 19).

![Figure 19: Magnetometer survey results of the area to the east of the temple with plan of the shena overlain and the late period tomb](image)

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315 The ceramic debris shows up as the darkest and lightest spots on the survey results.
Although Middle Kingdom architecture remained elusive on the magnetometer survey, Wegner and I believed that the *shena* stood just outside the rear temple door.\textsuperscript{316} There were several reasons for this supposition. First, the rear temple door gave the most direct access, via the internal street, to the temple’s magazines, where offerings and other temple supplies were stored and ritually prepared for use in cult activity. The *shena*, which made all the offerings for the temple, should have been situated as close as possible to its storage facilities. Second, in 1994, the remnants of a corner of a Middle Kingdom rectilinear building appeared near the rear temple door; we hoped that there would be more structures adjacent to it.\textsuperscript{317} Third, the prevailing winds at Abydos come from the northwest; the placement of the *shena* at the southeast corner of the temple would cause the smoke from the cooking fires and kilns to be blown away from the temple.\textsuperscript{318} Finally, the *shenas* at Ezbet Rushdi,\textsuperscript{319} the Ahmose pyramid temple,\textsuperscript{320} and the great and small Aten temples at Amarna are all situated on the southern or eastern sides of their respective temples.\textsuperscript{321} The *shena* at the Senwosret III temple should stand in a similar location to those that pre-date and post-date it.

\textsuperscript{316} Wegner, “The Organization of Nfr-K3,” page 117.
\textsuperscript{318} Ibid.
4.2 The *Shena* Refuse Deposits

In 2004, an initial series of twelve 10 x 10 meter units were opened to the east of the temple in search of the architectural remains of the *shena*. They revealed little architecture, and none that could be definitely associated with food production. They did, however, expose a number of refuse deposits to the east of the temple and to the south of the eventually discovered *shena* structures. The twelve units represented at least three distinct zones of dumping. This section will explore those zones and the differences between them.

In an effort to pick up the Middle Kingdom rectilinear building (shown in orange) just outside the rear temple door and part of the pathway between this door and the town, three units were opened to directly to the east (labeled 120, 121, 124 see Figure 20: First units opened in 2004 season - 120, 121, 124, situated due east from the Middle Kingdom rectilinear structure (in orange).
Units 120 and 124 were conspicuous in their lack of architecture or artifactual remains. The unit next to the mayoral road (Op 120) yielded a small rectangular mud brick bin about 1 meter square placed in clean loose sand. For the most part, the soil matrix was relatively clean yellow sand with some crumbled mud brick. Ceramics from this unit were sparse and consisted solely of hemispherical cups, water/beer jars, and marl zirs. Unit 124 also had a relatively clean yellow sandy matrix with some pulverized mud brick. This unit displayed no architectural features or living floors and delivered a couple of pottery sherds and two Nfr-kA sealings. The lack of architectural and artifactual remains in these units suggests that this is the southeastern limit of the production zone.

Just to the north and west of the boundary units, unit 121 revealed a mud plaster surface (see Figure 21). The surface contained not only several depressions showing repeated burning activity, but also post-holes. Unfortunately, the post-holes did not convey enough of a pattern to be able to discern a structural layout. However, the post-holes may have been part of some...
sort of temporary shelter like an awning or sunshade. On the eastern edge of the floor was a single row of six mud bricks set on edge. They sat upon clean yellow sand. This row of bricks is oriented in exactly the same direction as the eroded Middle Kingdom rectilinear building to the west. The wall remnants in unit 121 are more ephemeral than the Middle Kingdom structure to the west. It is unclear whether these two walls were part the same much larger structure. If so, it was completely dismantled and left no traces in the surrounding units or on the magnetometer survey. To the north of the mud floor, the deposits had a denser consistency with more mud brick crumble and a lot more ceramics. The pottery from this area consisted of nothing but hemispherical cups, wine jars, large water/beer jars, and a large number of mud jar stoppers. These ceramic forms are common in the rest of the shena deposits, however, the absence of certain ceramics like cylindrical bread molds makes this deposit unique. A total of 12 cylindrical bread mold sherds were found in these units (120 and 121), which is less than 1 percent of all the ceramics; cylindrical bread molds comprise nearly 40 percent of the ceramic corpus in most other units excavated at the shena. The focus on large beverage containers and hemispherical drinking cups in this unit suggests that the plaster surface may have been some sort of beverage processing area.

Units 125 and 126 were opened to the north and northwest of unit 121 in order follow the beginning of the dense ceramic debris in the northwest corner of unit 121 (see Figure 22).\textsuperscript{324} The character of these units is very dense ceramic deposits mixed with a

\textsuperscript{324} Unit 125: N5350/E9120, 126: N5350/E9110.
dark brown/gray ashy, mud crumble matrix with a lot of broken mud bricks mixed in. On the western edge of unit 126, the deposits were about a meter in depth; this decreased to about half a meter on the eastern edge of unit 125. Both units revealed several living mud floors that were covered in deep layers of ash with lots of charcoal. One floor, in unit 125, had tiny footprints (about 8 cm long) embedded in it where a child stepped in the wet mud plaster. There were also several reddened areas on the mud floor, all of which suggests that these areas was subject to repeated fires. No structures of any kind were found in these units. The south-easternmost corner of the Phase II shena building extends about 20 cm into unit 125 about along the northern edge of the unit; unfortunately, the baulk with dense soil matrix and many broken brick inclusions hid the corner of the shena building. These units sit against the south wall of the Phase II shena structure. The deposits from these units probably are largely from the shena structures themselves.

Artifacts from units 125 and 126 included bone, shell, some copper slag, mud jar stoppers, 419 seal impressions,\textsuperscript{325} and thousands of diagnostic ceramic sherds. In this area the most common types, in decreasing order, are beer beakers (32.9%), votive cups/

\textsuperscript{325} 266 decorative, 137 institutional (including the granaries, storehouse, and cattle stalls of Abydos and 89 $Nfr-k$), and 16 name and title sealings (including 3 royal sealings).
lids (27%), cylindrical bread molds (21%), beer/water jars (5.5%), hemispherical cups (5%), wine jars (4%), bread trays (2.2%), jar stands (1%), and large marl storage jars (less than 1%). These types are characteristic the production and consumption of bread and beer and wine. This is the only area in the denser refuse deposits to the east of the temple where beer beakers outnumbered cylindrical bread molds. Just 10 meters the east of this area, in unit 149, cylindrical bread molds are 60 percent of the ceramic corpus. Units 125 and 126 likely represents an area associated more with beer production than bread production.

The magnetometry survey, conducted by Herbich, revealed what appeared to be a corner of a building just outside the rear temple gateway (see Figure 23, structure outlined in red). The rectilinear structure in the magnetometer survey was about 5 meters from the temenos wall and its southwestern corner lined was attached to the rear temple doorway. Preliminary excavations in 1999 revealed the badly eroded foundations of a rectilinear structure near the temenos wall about 15 meters north of the line on the magnetometer map. It was not unreasonable to

326 All other types of ceramics are under 20 sherds per particular type.
hope that this might be the location of the *shena* buildings. Four units, 130, 131, 137, and 143, were opened to follow the temenos wall in hope that *shena* buildings might be placed up against it.\textsuperscript{327}

In due course, the corner from the magnetometry survey turned out to be a trench from the 1899 excavations of David Randall-McIver. In his excavations of the temple, Randall-McIver had quickly discovered that there was very little superstructure remaining, so instead of clearing the entire temple, he dug a series of trenches close to the walls in order to make a map of the temple.\textsuperscript{328} The trench had fewer ceramics in it and therefore resonated differently from the surrounding densely packed, undisturbed sand, mud crumble, and ceramic matrix.

Units 130 and 131, just outside the rear temple door, had a composition that was quite disturbed. Randall-MacIver’s excavations notwithstanding, both units were riddled with human bones that were severely disarticulated confirming the disturbed nature of the area. The matrix of these units was generally sandy in nature with some mud crumble and ceramics in small pieces. There were no structures or living floors in units 130 or 131, however, directly outside the rear temple door, in unit 131, there were the remains of three circular hearths under about 75 cm of ash and burnt ceramics (see Figure 24). Each hearth was associated with a cluster of severely burned mud bricks.

\textsuperscript{327} Unit 130: N5340/E9090, 131: N5330/E9090, 137: N5350/E9090, and 143: N5450/E9100.

The bricks were the standard temple size 11.5-12 cm x 19-20 cm x 38-39 cm. Whether these bricks formed the walls of ovens is impossible to tell from the disturbed context of the bricks. All three hearths feature concentrations of cylindrical bread molds and bread trays. The congregation of the deep ash deposits, bricks, and bread pottery suggests that these hearths were used to bake bread over a period of time. The hearths are difficult to date, but based upon the presence of the mayoral sealing of Sehetepib, the last known mayor of Wah-sut and complex decorative sealing types, they may date to the mid- to later 13th Dynasty. If the hearths formed part of shena, it shows that activity areas related to the shena at the Senwosret III temple could be quite ephemeral.

Unit 130, just to the north of unit 131 along the temple temenos wall, is similar in nature to 131 in terms of deposition; unit 130 has no extant structures or hearths. Along the very eastern edge of the unit was a surface composed of a compacted white powder.

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331 See section 6.5.2 for full discussion of diachronic changes in decorative seal impressions.
It is unclear what the powder is made of: either dry marl clay or gypsum. This surface extended into units 143 and 151.\footnote{See discussion of units 143 and 151 for discussion of the white surface.}

There were three burials along the temple wall in this unit, all of which were in plain wood rectilinear coffins and were buried on the same rough orientation as the temple (Figure 24, above, burials appear in blue). Dating these burials has proven problematic, as none had any grave goods, but given the nearby Late Period tombs and intrusive Late Period burials within the temple walls,\footnote{Wegner, Temple of Senwosret III, pages 293-296 and figure 46.} it is not unreasonable to suppose that these date to the same period.

The deposits from units 130 and 131 generally comprised of yellow sand with some pulverized mud pieces. Aside from the hearths in unit 131, the deposits were not dense with ceramics or artifacts. The artifactual remains from units 130 and 131 seem to relate to both the temple and the \textit{shena}. There are a number of decorated limestone fragments from the remnants of the cult structure within the temple; these do not appear in the deposits closer to the \textit{shena} buildings. As noted earlier, there were a lot of human bones mixed in with the soil from disturbed burials and the wood and faience beads found in the unit are most likely associated with those.

There were 903 seal impressions from these units: 505 decorative sealings, 236 institutional sealings (all but two were \textit{Nfr-k3} sealings), and there were 162 name and title sealings (including 63 \textit{imy-r c\textit{hnwty n imy-r htm wr n ntrw “overseer of the audience}}
chamber of the overseer of the great seal of the god” and two mayors Pa(en)hapy and Sehetepib).

The ceramics from units 130 and 131 were overwhelmingly related to bread production and consumption of beer. Cylindrical bread molds represented 56% and bread trays were 6.5% of the corpus in these units; beer beakers represented another 18.6%. Other vessels, which usually appear in larger percentages in the production debris, like hemispherical cups, large storage vessels like wine jars, water/beer jars, and marl zirs were all under 2%. This is significantly different than the nearby deposits at the rear of the temple, which Wegner termed the East Block refuse deposits. These deposits had far more hemispherical cups (East Block =11.5%), and far fewer bread related ceramics (bread trays=4%, bread molds=11%), while the relative percentage of beer beakers was about the same. The difference between these two deposits supports Wegner’s theory that much of the temple’s east block refuse was thrown from the top of the rear enclosure wall. For this reason, the deposits from 130 and 131 probably stem mostly from the flow of goods between the shena and the temple and the یررت at the mayor’s residence and the temple, rather than from the temple east block.

Unit 137, sits just north of units 130 and 131; the temple temenos wall bisects it. Roughly thirteen meters from the rear temple door along the eastern temenos wall

335 Ibid., figure 120.
336 Ibid., page 101.
337 137: N5350/E9090
338 Once the temenos wall was reached, we did not excavate inside the ambulatory, only the outside of the wall.
was a white plastered mudbrick stairway (see Figure 25). The staircase has three steps, but may have continued down for a couple more steps; each step has a one brick run (39–40 cm) and a rise of 6 cm. It is entirely unclear what the stairway led to, for it leads almost up to the temenos wall, but there is no door at this point. The stairway terminates too close to the wall (50 cm) to have lead to a path. It is surrounded by a mud floor that was covered in white gypsum plaster, although most of the plaster was gone. The floor slopes away from the temple wall at roughly the same angle as the staircase, which seems to date to the foundation of the temple.

The deposits in unit 137 were not very dense - mostly loose sand with some pulverized mud brick, limestone chips, and some ceramics. Artifacts included animal and human bone, quite a bit of charcoal, copper slag, sealings and ceramics. There were 431 sealings in unit 137; 250 were decorative sealings (mostly types 6, 7, and 8),

Figure 25: Staircase and plaster floor leading from the eastern temple temenos wall

339 Interestingly there were almost no jar stoppers.
141 institutional (all but 3 were Nfr-k3), and 40 name and title sealings, which included mayor Amenyseneb and a sealing of king Neferhotep I. The ceramics were related to food production, predictably, with 40% of the corpus cylindrical bread molds, and 31% beer beakers.\textsuperscript{340}

Units 143 and 151 were opened in an effort to follow the white plastered floor,\textsuperscript{341} and to re-examine the Middle Kingdom rectilinear structure, which Wegner first examined in 1994.\textsuperscript{342} Unfortunately, a Late Period tomb almost entirely destroyed the rectilinear building. We were unable to determine what its function might have been. The building, however, sits on several layers of white powdery surfaces, which were not exposed in 1994 (see Figure 26). Combined, the surfaces total approximately 80 m\textsuperscript{2}. It is unclear what the white powder is; suggestions include dry marl clay or dry gypsum powder. The surfaces range from 3 cm to less than 1 cm in thickness, and 2 to 10 cm of clean sand separate the layers. It is clear from the pattern of cracking on the surface that at one time they were wet and were allowed to dry naturally. The function of these surfaces is also unknown. The white powder is so friable that it is unlikely that they were floors. Perhaps the

\begin{itemize}
  \item Hemispherical cups = 2%, votive cups/lids = 11%, bread trays = 7.4%, wine jars = 5.5%, water/beer jars = 1.7%, marl zirs = 3.1%, all other forms represent less than .5% per type.
  \item 143: N 5340/E9100, 151: N5330/E9100
  \item Wegner investigated both units in 1994.
\end{itemize}

\textsuperscript{340} Hemispherical cups= 2\%, votive cups/lids = 11\%, bread trays = 7.4\%, wine jars = 5.5\%, water/beer jars = 1.7\%, marl zirs = 3.1\%, all other forms represent less than .5\% per type.
\textsuperscript{341} 143: N 5340/E9100, 151: N5330/E9100
\textsuperscript{342} Wegner investigated both units in 1994.
surfaces are remnants of large shipments of gypsum for the original plastering of the temple. It could also be evidence of marl pottery making. If the substance is marl clay for use in making ceramics one would expect a pit with marl not a spread out, thin surface of marl.

Wegner investigated both units in 1994 and much of the soil was infill from those excavations. However, just above the white surfaces, the deposits remained intact; the deposits in units 143 and 151 were largely clean yellow sand, with few artifactual remains. The last meter or so of deposits on the north side of unit 143 had more organic material, crumbled mud, and was more densely packed with artifacts; most of the artifacts recovered from this area come from this one meter strip. This represents the southern limit of dense production deposits slightly to the north. The artifacts from the undisturbed contexts in units 143 and 151 consisted of some animal bone, shell, copper slag, sealings and ceramics. There were 477 sealings in these two units; the majority were decorative sealings (265) and institutional sealings (176 of which 168 were Nfr-kA), and only 36 name and title sealings (one of which was from the mayor Neferher dating the 12th Dynasty). The ceramics from units 143 and 151 were sparse in comparison to other areas excavated in 2004, but the corpus is exactly the same in terms of relative percentages as units 130 and 131 from just outside the rear temple door. Cylindrical bread molds predominate with 58.8% of the corpus, beer beakers are 12.5%, votive cups/lids are 11% and hemispherical cups, wine jars, and water/beer jars are each around 2%, while every other type is .5% of the corpus or less.
Unit 142 contains the foundations of a rectilinear structure, excavated in 1999.\textsuperscript{343} The structure sits just under the modern surface and was once built against the eastern temple wall, though the connection was broken by Randall-MacIver’s trench to map the extent of the temple (see Figure 27). The construction technique and the brick size is the same as the phase III \textit{shena} building, which consists of bricks placed on a mud plaster surface, whereas the phase II and phase III \textit{shena} buildings foundation course sits directly on the sand.\textsuperscript{344}

Despite the fact that unit 142 sits between the phase II \textit{shena} building and the the path to both the temple pylon ramp and the rear temple door, the deposits here were not very dense. This suggests that there was little refuse deposited between the eastern wall of the temple and the western wall of the Phase II \textit{shena} building. Those deposits that do exist in unit 142 are all in the southern half of the unit and are roughly 70 cm deep. The matrix is mostly yellow sand with some organic matter, pulverized mud brick and a few ceramics. There were a two-thirds fewer ceramics recovered from this unit than in unit 137, which sits kitty-corner along the temenos wall. The ceramic corpus remains solidly productive in nature with cylindrical bread molds (39\%), beer beakers (55\%), votive

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure27.png}
\caption{Unit 142 with foundation wall (in purple) and outline of extent of dense ceramic deposits.}
\end{figure}

\textsuperscript{343} 142: N5380/E9100
\textsuperscript{344} See below for description of the different phases of construction in the \textit{shena} buildings. Unit 142 bricks are 28-30 by 15-16 by 8-9 cm as are the phase III \textit{shena} building bricks.
cups/lids (29%), wine jars (5.7%), and water jars (3%). Other artifacts recovered from this unit included quite a bit of charcoal (not associated with any ashy deposits or hearths), copper slag, animal bone, and seal impressions. There were 181 sealings in unit 142; 143 were decorative (mostly type 7), 23 institutional sealings (all were Nfr-k3), and 15 name and title sealings.

Unit 149 represents the transition between the refuse deposits largely from the shena buildings in units 125 and 126, and the mixed temple/shena deposits in units 130 and 131. The deposits in this unit were over a meter deep. Unit 149 also seems to be part of a dump for ash and other organic matter, which left the soil matrix dark grey/brown. There were no surfaces or other architectural features found in this unit; neither the powdery marl/gypsum surface from unit 130, nor the mud surface from 126 extended into unit 149. Artifacts found in unit 149 included copper slag, shell, animal bone, worked flint, jar stoppers, ceramics, and a huge number of seal impressions. Unit 149 revealed 2260 seal impressions, which is just over 40% of all the sealings recovered from the shena area. Of these sealings, 1223 were decorative (mostly types 1, 4, and 7), 891 institutional (45 were not Nfr-k3, these were mostly the cattle stalls or storehouse of Abydos sealings), and 146 name and titles sealings (one of which was the mayor Khentykhety). While an extraordinary amount of pottery was recovered from this unit, it consisted largely of very small pieces, many of which were non-diagnostic. The ceramic corpus from unit 142 was mostly made up of cylindrical bread molds (60%). The eight other types that indicate food production and processing were all present, but in much

345 149 N5360/E9110
lower ratios than elsewhere. Indeed, the midden in unit 149 is much closer in profile to unit 131 with the hearths using in baking bread, than the adjacent units of 125 and 126. The large amount of ash from this unit in combination with the preponderance of cylindrical bread molds suggests that there were bread baking facilities nearby.

The twelve units described above, 120, 121, 125, 126, 130, 131, 137, 142, 149, and 151 rest to the east-southeast of the temple and to the south of the shena buildings. There were few architectural features in this area. Some, like the staircase obviously belong to the temple, rather than any productive facilities. Others, like the Middle Kingdom rectilinear structure were too destroyed to classify. The hearths directly outside the rear temple door are the only definitive productive features in this area. The abundance of cylindrical bread molds in this unit and associated directly with the hearths suggests that they were for baking bread.

4.2.1 Associating the Refuse Deposits with their Sources

There are four areas with distinctly different deposits in the refuse field based upon their ceramic corpora (see Figure 28). The beverage processing deposit sits in units 120 and 121; it had ceramics that were almost exclusively associated with liquid storage and processing, particularly beer and wine.

Refuse deposit A, comprised of units 125 and 126, just south of the shena buildings, have a ceramic corpus that emphasizes beer production. The denser organic and ashy matrix and the depth of the deposits suggests a garbage dump that was used

346 In this case, by a large Late Period Tomb.
longer term. Its proximity to the phase II shena building recommends that it was largely
attached to the shena rather than the temple.

Refuse deposit B is concentrated in unit 149, although it spreads into units 137, 142 and 143. This deposit probably is a long term dump of ash from baking fires within
the shena building, based on the copious cylindrical bread molds in relation to all other
types of ceramics, thick ashy soil matrix, and large amounts charcoal. There is a separation of 3 meters of
mostly clean sand between the temple/shena deposit in 130 and the southern limit of this deposit. This
suggests that the bakery deposit in unit 149 was largely associated with the shena although one cannot
preclude some temple debris being dumped here.

Refuse deposit C is made up of units 130 and 131 and sits just outside the rear
temple door. Refuse deposit C is completely different in nature from those deposits at
the rear of the temple, which Wegner associates with the east block (see Figure 28).\footnote{Wegner, Temple of Senwisret III, page 101.}
The deposits here were rich in ceramics associate with bread production, which is
probably associated with the hearths in unit 131. Despite the productive nature of the

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig28}
\caption{Shena refuse deposits (in blue rectangles) and southern limits of refuse field (black line)}
\end{figure}
ceramics, this area cannot be considered solely a *shena* refuse deposit based on its proximity to the temple door.

The twelve units also helped to delineate the southern and eastern extent of the refuse deposits. They sit no more than 10 meters from the buildings with which they are largely associated. The exception to this is the beverage processing deposit in units 125 and 126 which were much sparser than any of the other deposits and may indicate more ephemeral activity in this area.

### 4.2.2 Temporal Aspects of the Refuse Deposits

The use of the various refuse deposits seems to have shifted over the life of the *shena*. Dating the refuse deposits is done largely through the presence of sealing impressions, specifically those of mayors and royal names. Refuse deposit A, nearest the *shena* buildings has mayoral sealings only of Khentykhety, the second known mayor of *Wah-sut*. Wegner believes he dates to the late 12th Dynasty.\(^{348}\) Royal sealings from this unit include the 13th Dynasty king Antef V and the early 17th Dynasty king Sobekemsaf.\(^{349}\) This suggests that refuse deposit A has a lifespan that mirrors the use of the *shena* itself, though it is not as deep as refuse deposit B.

Refuse deposit B, though the deepest at over a meter in depth, does not provide evidence of quite as long use as refuse deposit A. Refuse deposit B has sealings dating it from between mayor Khentykhety in the late 12th Dynasty, to king Neferhotep I, in the

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\(^{349}\) See section 6.4 royal name sealings for full discussion of these kings.
late 13th Dynasty. This does not necessarily mean that refuse deposit B wasn’t in use until the 17th Dynasty, but that there are no royal sealings to help confirm it.\textsuperscript{350} It is interesting to note that although both refuse deposits A and B seem to be operational for the entire life of the temple, there are no mayoral sealings other than that of Khentykhety, a relatively early mayor in the progression of mayors, and one who seems to date solidly to the late 12th Dynasty.\textsuperscript{351}

There is a definite temporal shift in refuse deposit use with refuse deposit C. This deposit has no royal sealings, but does have sealings of the last two mayors of \textit{Wah-sut}, Pa(en)hapy and Sehetepib. The presence of these two sealings suggests that refuse deposit C started later than the other \textit{shena} related refuse deposits - in the mid to late 13th Dynasty.\textsuperscript{352} It’s position, just outside the rear temple doorway, and the presence of hearths for baking bread, may be related to a pattern of informal activity areas related to the \textit{shena} and food production.

4.2.3 Activities Associated with the Refuse Deposits

Despite the fact that the refuse deposits, as suggested by their monikers, were places where the \textit{shena} discarded its waste, there is clear evidence that some activities took place in the area between the \textit{shena} buildings and the temple. The food and craft producing activities that the \textit{shena} undertook did not require formal structures, like

\textsuperscript{350} The Neferhotep I sealing was recovered in locus 1 lot 3 - relatively close to the surface, but not part of the initial surface sweep during excavation.

\textsuperscript{351} Wegner, \textit{Temple of Senwosret III}, see fig. 153.

\textsuperscript{352} Wegner associates the sealing of Sehetepib with the reign of king Neferhotep I. Ibid., page 340.
dedicated ovens, slaughter yards, metalworking furnaces, or grain grinding facilities. For example, bread baking necessitated only an open fire to heat a pile of cylindrical bread molds. There is evidence of open fires in every refuse deposit unit in the form of red burned patches on mud floors. These could be baking fires, but they could also be incidental fires to produce heat and light. There are three hearths just outside the rear temple door in refuse area C, which used brick to give them more structure. These hearths are almost certainly baking fires as cylindrical bread molds cluster near the hearths, but are not so numerous in the rest of that refuse deposit. The liquid-focused nature of the ceramic deposits in unit 121, suggests that this area was associated with beer production or wine processing. Post-holes from the beverage processing area indicate that temporary shelters were built in the area between the shena and the temple. It is clear from the numerous activity areas that the shena worked both indoors and outside. The outdoor spaces do not seem to be set up in any formal way, but the activity areas there were largely ephemeral and informal. The ephemeral nature of the hearths and structures, their placement within the refuse deposits, and the closeness of their deposition makes it virtually impossible to associate them with specific activities.

4.3 Architecture of the Shena of Divine Offerings

The excavations of the shena buildings at South Abydos revealed multiple phases of construction, three of which included entirely new structures (see Figure 29). Each new building marks the beginning of a new phase. The earliest building is Phase I, the middle is Phase II, and the latest building is Phase III. The buildings undergo a series of
modifications, which are represented by lettered divisions Phase Ia - the initial Phase I building, through Phase Ic, the latest discernible alteration to the building. Ceramic and sigillographic evidence date the *shena* buildings beginning from the establishment of the temple in the reign of Senwosret III roughly 1850 BC and ending sometime around the
early 17th Dynasty with king Sobekensaf circa 1560 BC, which is consistent with the occupation of the temple.\textsuperscript{355}

4.3.1 Planned Nature of the Shena Buildings

The architecture of the \textit{shena} at the Senwosret III temple is consistent with what one would expect from a Middle Kingdom buildings established by the government; the buildings show forethought in the quality of construction, the trueness of their walls and the symmetry of room layout. This is epitomized in the Phase II structure where the rooms are nearly identical in size and shape. The same seems to be true for the Phase I \textit{shena} building, but further exposure is required to confirm this. Each \textit{shena} is organized in the same way, with a series of rooms (at least 3 in Phase I, and at least 4 in Phase II) situated off a corridor or gallery. This corridor/gallery both organizes the work into a central location and restricts access to the various work rooms. In the Phase I \textit{shena}, the corridor runs roughly north south, while the Phase II \textit{shena} is oriented roughly east west.

The adjacent temple utilizes the cubit measure in its layout (see Figure 30).\textsuperscript{354} The rooms, wall thicknesses, corridors, and overall measurements of the temple are all in

\begin{itemize}
\item Wegner, \textit{Temple of Senwosret III}, pages 35-39 and 40-43. Ryholt, page 410. See section 6.4 for discussion of royal name sealings from the \textit{shena}.
\item Wegner, \textit{Temple of Senwosret III}, page 54.
\end{itemize}
multiples of royal cubits - .525 meters.\textsuperscript{355} "The adherence to the cubit system clearly demonstrates that the architects were operating with a cohesive predesigned blueprint of the temple."\textsuperscript{356} The shena buildings adhere to both the cubit and palm system. Phases I and III have little horizontal exposure, but all the internal measurements are cubit based. For example, in Phase I, rooms 1 and 2 are 3.5 cubits wide and corridor 4 is 2 cubits wide. In Phase III, there are 4 cubits between walls. The Phase II shena building has the most horizontal exposure. The internal dimensions of the Phase IIa structure are all very strict cubit measures. Inside rooms 6, 7, and 8 equal 4 by 10 cubits, which makes them very similar in dimension to the storerooms and some of the rooms in the priest houses at the temple (they are 4 by 11 cubits).\textsuperscript{357} Room 11 measures 6 by 18 cubits.

The thickness of the walls use palm measures. The walls of the Phase II shena building are one brick length thick 29 to 30 cm, which is equivalent to 4 palms; a palm measures 7.5cm.\textsuperscript{358} This means that the builders were using two systems of measurement simultaneously; rather like using meters for the room dimensions and feet for the wall thicknesses. So the overall dimensions of the Phase IIa shena building is not 19.33 cubits by 17.8 cubits, but 18 cubits and 8 palms by 16 cubits and 12 palms.


\textsuperscript{356} Wegner, Temple of Senwosret III, page 54.

\textsuperscript{357} Ibid., figure 22.

The expansion of the structure in Phase IIb shifts to an external measurement of the building that is cubit based: 24 cubits wide by 21.5 high. In order to accommodate this, the internal measures use both cubit and palm measures. Room 12 is 3 by 4 cubits, room 13 is 3 by 13 cubits and 3 palms, and room 14 is 4 by 20 cubits and 2 palms. The combined use of the cubit and palm measurements systems shows that the architects planned the *shena* buildings.

Unlike the adjacent temple which is relatively architecturally static throughout its lifetime,\(^\text{359}\) the architecture of the *shena* underwent a series of major renovations, at least three of which involve entirely new structures. The modifications within each phase are

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\(^{359}\) The major exception to this is a modification to the doorway from the ambulatory into the hallway off the temple’s magazines.
more organic in nature and made subtle changes to the organization of the rooms: changing traffic flow by moving doorways, dividing rooms, and adding structures within rooms. The renovations within the structures are generally of poor quality using found materials and resulting in irregular walls. This suggests that they were undertaken from within the *shena* itself in order to better accommodate the work going on in those rooms.

### 4.3.2 The Orientation of the Shena Buildings

Located at the northeastern edge of the temple, the *shena* buildings were situated in the perfect position to receive goods from the temple magazines through the eastern temple door and also send goods ready for ritual use through the processional way at the front of the temple (see Figure 31). The *shena*’s placement outside the temple temenos walls was perhaps partially a precaution against a major fire from bread ovens and other cooking facilities that might have damaged the cult structure. Circumstantial evidence of the danger posed by these temple kitchens comes from Phase II of the *shena* that was constructed using recycled brick from a building that had burned down. Additionally, the prevailing winds at Abydos come from the northwest, which would blow the smoke from cooking fires and kilns away from the temple. As noted above, the *shenas* at Amarna, Ezbet Rushdi, and the Ahmose pyramid temple are situated on the southern or eastern side of the temples - as is this *shena*. The *shenas* at the Great and Small Aten temples at Amarna are adjacent to the pylons of those temples, as are all the
Figure 31: Plan of the Mortuary Temple of Senwosret III with the adjacent shena facilities to the east

shena buildings at the Senwosret III temple. However, with so few shenas identified from ancient Egypt, it unclear whether the pattern of orientation in relation to parent temple holds throughout Egypt.

The Phase I and Phase II buildings sit at a slightly different angle than the temple; the temple is -25° 54’ from north, while the shena is -16° 43’ from north. The adjacent town of Wah-sut, over 300 meters away sits on the same orientation as the shena. Why the builders chose a different orientation for the shena buildings associated

360 The Ezbet Rushdi and Ahmose pyramid temple shenas are set back somewhat from the pylon. The Ramses II temple at Abydos describes its shena as being “behind” the temple.
361 Wegner, Temple of Senwosret III, page 21
more with the temple than those of the town is not clear. Wegner suggests that the corresponding *shena* and town orientation indicates that the *shena* was incorporated as part of the planning of the entire complex.\(^{362}\) Wegner continues:

> The relative positions of the mayoral residence, mortuary temple and the productive-economic zone with the *pr-šnfr snwsrt* on the east side of the temple all appear thus to have formed logically integrated components of a comprehensive planned royal mortuary foundation which is a manifestation of Middle Kingdom state planning at its height.\(^{363}\)

The activities in and around the excavated *shena* buildings seem to be largely restricted to bread and beer production with some evidence of short term grain storage and pottery production. As noted above, there may be many more activity areas waiting to be revealed. These are likely to be located somewhere between the known *shena* buildings and the known western edge of the town, at the mayor’s residence. The magnetic resonance survey conducted by Herbich shows that there are no structures or deposits due east of the temple. The most promising areas for future research sit on the edge of the desert plateau and the modern cultivation to the east-northeast of the temple.

### 4.3.3 The Scale of the *Shena* of Senwosret III in Comparison to other *Shenas*: the Possibility of Future Work

In order to better understand the *shena* of divine offerings of Senwosret III at south Abydos it is useful to compare it to other *shena* facilities at their cult structures. Unfortunately, there are few comparanda as no *shenas* have been excavated completely. Perhaps the best understood architecturally are those at Ezbet Rushdi and the Great and

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\(^{362}\) Ibid., page 291.

\(^{363}\) Ibid., page 293.
Small Aten temples. These shenas have been surveyed to reveal most of the extent of their architecture. The scale of these contemporary and later shenas is interesting to compare in relation to the temple of Senwosret III. The size of the shena at the Great Aten temple is a ratio of approximately 2.6 to 1. The small Aten temple is similar at 2.94 to 1. The full extent of the shena at Ezbet Rushdi is not known, but Bietak has mapped most of it. The ratio between the known shena and the temple at Ezbet Rushdi is 2.95 to 1. All of the shenas at these temples include granaries, which in the case of Amarna are rather extensive. The delineation between work space and storage space within these structures is not entirely understood because they have not been excavated.

The best understood shena building at the temple of Senwosret III in south Abydos belongs to Phase II. It measures 10.1 meters by 9.35 meters. The temple is 51 by 64 meters; this gives a ratio of 1 to 94.56. This ratio is vastly different than the Amarna or Ezbet Rushdi examples. Of course the temple structures are very different in all of the examples: Ezbet Rushdi, and the Great and Small Aten temples have no

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364 Bietak, Manfred, and Josef Dorner. "Der Tempel und die Siedlung der Mittleren Rieches Bei 'Ezbet Ruschdi'." 
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magazines or priests houses within their temenos walls like the Senwosret III temple. The Aten temples have huge plazas filled with offering tables, which the Ezbet Rushdi and Senwosret III temple lacks. However, if the Ezbet Rushdi and Amarna *shena* ratio of around 3 to 1 holds for south Abydos, then 994 m² of *shena* buildings are missing; this would equal a building roughly 30 by 33 meters (see Figure 32). The difference in relative sizes of the Senwosret III *shena* and others suggests that more buildings, such as granaries, animal pens, abattoirs, potteries, and the like have yet to be discovered.

\[\text{Figure 32: Box showing possible extent of *shena* still to be uncovered at south Abydos}\]
4.3.4 Phase I Building

The earliest known phase of the *shena* is Phase I (see Figure 33, shown in bright blue); it consists of three rooms running NNE to SSW sitting off a long corridor. Each room of the Phase I building measures 1.85 meters wide by at least 3 meters long, although their full length is unknown. There is a long corridor to the east that has a southern entrance. The Phase I *shena* was meticulously constructed of mud brick with fine white plastered walls and rounded corners, and white plaster floors (see Figure 34).

The preservation of the Phase I building is variable; there are Phase II and Phase III *shena* structures directly above it. The site generally slopes down towards the north as it heads towards the cultivation and modern housing. The maximum height of the walls of the southern room is 57 cm and the minimum height of the walls in the northern room is 22 cm. The walls of rooms 1 and 2 were 46
The bricks in throughout the Phase I shena building measure 30-32 x 14-16 x 8-9.5 cm. There are no extant doors onto the corridor from these two rooms. The walls of room 3 were 30 cm thick on the eastern side, and 14-16 cm thick (one brick thick) on the southern side. The wall of the corridor (labeled room 4) is also 14-16 cm thick. The difference in wall thickness may suggest that room 3 was part of an addition, perhaps in conjunction with the corridor. The excavation has yet to uncover a point where rooms 2 and 3 join with one another.

There was some amount of surface preserved in all the rooms. These floors consisted of a layer of mud plaster about 2-3 cm thick over clean sand. In room 1, the floor was still present in the southern half of the room. It had burned patches all along the eastern wall, with a concentrated area in the southeastern corner. Room 2 had only a little floor remaining in the northwestern corner. This was heavily encrusted with a hardened layer of ash. Room 3 retained most of its mud plaster floor. It had about 10 cm of compacted ash sitting above the floor, upon which one of the oven walls was built.

Each room has significant reddening of the wall faces, though this was most pronounced in room 3. Repeated burning created these reddened areas against the walls. Room 1 shows evidence of fires in the northeastern corner of the rooms. Room 2 has fire damage on the eastern wall and soot on the top preserved courses. Room 3 had the most intense fire damage in the southeast corner.

Room 2, interestingly, had cylindrical bread molds built into the sides of the walls. The bread molds are positioned with the rim facing the room and the base situated well inside the wall. While the purpose of placing cylindrical bread molds into
the wall is unclear, it is not unprecedented at the site. Building E, a high status house in the townsite also had bread molds built into the walls of the corridor outside the bakery rooms.

As stated above, room 3 and corridor may be an addition to the initial shena as part of Phase Ib, but further exposure is needed to confirm this. Room 3 itself includes several modifications, shown in navy blue on the plan of the shena (see Figure 35). The remodeling included the bricking up of the eastern doorway and the creation of a new door was in the southern wall (see Figure X). The threshold of the southern doorway was 25 centimeters above the original floor in the room; this height accommodated the ash accumulation within the room and the higher level of the floor outside.

In the southeast corner of room 3 from Phase I of the shena building is a box oven (see Figure 36 for plan of Phase I of the shena). It is integrated into the architecture of the Phase I building; two of the oven’s sides are the walls of the room and the third wall is composed of a spur wall. Although the shena building is relatively true, the spur wall and its later reinforcing wall are neither parallel with the room’s south wall nor perpendicular to the room’s east wall. The fourth side of the oven is open to the room. All surfaces of the walls facing into the oven show significant evidence burning.

368 Nicholas Picardo, personal communication.
with all the brick fired to a bright red color and the burned portions of the bricks are somewhat crumbly. The spur wall is composed of a single layer of bricks forming a running bond pattern. It is 110 centimeters in length and sits parallel to the southernmost wall creating an alcove about 75 centimeters wide. The spur wall sits on a bed of ash 12 centimeters thick, which also covered the rest of the room over the original plaster floor (see Figure 37 for photo of spur wall). The thick ash layer suggests that this room was being used as a place to heat up bread molds before the wall was built. The heat from the oven made the inner face of the spur wall friable and it was later reinforced with another layer of brick. This reduced the internal size of the oven to about 60 centimeters. The reinforcing wall, also constructed in a running bond pattern, sits atop 25 centimeters of ash. At the mouth of the oven are there is evidence of a half brick turned inwards to form a sort of door. The inside of the oven was filled with ash and cylindrical bread molds confirming that this oven was used to heat cylindrical bread molds (with or without bread baking inside).
Phase Ic of the *shena*, shown in dark green on the plan of the *shena* (see Figure 38 above), consisted of the addition of a room (room 5) to the south of Phase I construction. The construction techniques used in room 5 are similar to those of Phase I, in that the additional room is beautifully white plastered and the corners are all rounded. Phase Ic is situated on a slightly higher level than Phase I, and at the same level as the raised threshold in the southern room in Phase Ib. The Phase II *shena* building demolished most of the Phase Ic structure leaving the walls preserved to a maximum height of 15 centimeters. The small Phase Ic addition served as an antechamber for the new entrance into the southernmost Phase I room with the rectangular oven, perhaps in an attempt to control and/or restrict access to the bakery.

The excavation in 2004 did not reveal the full extent of the Phase I *shena*; it uncovered only the southeastern corner. It certainly continues to the north and to the west. The low desert edge drops off sharply about 5-10 meters north of the north room; whether this sharp drop existed in antiquity is unclear, but there is likely little more of the Phase I building to expose in the north. The Phase II *shena* steps down towards the escarpment, as does the townsite; rooms on the north side of the Phase I *shena* may also be terraced. The western extent of the Phase I *shena* building sits 14 meters from

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369 See below Phase II *shena*.
370 Josef Wegner, personal communication.
the temple pylon. Preservation is likely good here as the rest of the Phase I building was covered by the Phase III building. If the Phase I building was of a similar size to the Phase II original building, then one might expect one more room on the north (about 1.5 meters extra) and at least 1.5 meters to the west.

The soil matrix in the three rooms was almost entirely ash, in some cases up to 30 centimeters thick - almost up to the existing height of the walls. As evidenced by the construction of the oven in room 3, the occupants of the shena allowed significant ash build up on the floors. The soil in the hallway was much sandier in nature with some ash. The large ash deposits in these chambers and the burnt walls suggests that they were used for cooking. There were few artifacts associated with the rooms - a small amount of bone and shell, a few sealings, and a lot of charcoal. Cylindrical bread molds formed the bulk of the ceramics recovered from the rooms; in room 1 they were 58% of the corpus, 83% in room 2 and 89% in the southern room. The relative percentage of cylindrical bread molds from room 1 may seem low, but most of the other ceramics recovered were bread trays (23%). The rest of the corpora in these rooms consisted of small vessels hemispherical cups, beer beakers, small bowls and bottles. The concentration of bread production vessels and clear evidence of cooking suggests that these rooms were used for the baking of bread.

4.3.5 Phase II Building

The Phase II shena, shown in red on the plan of the shena (see Figure 39), consists of a whole new building. Located just to the south, and on the same orientation
as the earlier Phase I building, this new building had at least four 5.2 meter long rooms, which were all situated off a much larger chamber that ran the whole length of the building. Wall preservation in the Phase II building ranged from 56 cm high in the east to only 12 cm high in the west. The walls are one brick length, 29-30 cm, in thickness. The bricks in this building are the same size as in the Phase I building: 30-32 x 14-16 x 8-9.5 cm. The building steps down slightly towards the north, following the gentle slope of the desert, so that the foundation courses in the south are roughly 30 cm higher than those in the north.

Figure 39: Phase II of the *shena* building, shown in red with additions shown in maroon and yellow
The western portion of the building was not excavated in 2004. The westernmost corner of the building is located 10 meters from the temple wall. The three other long galleries are uniform in size at 2.1 meters wide; this leaves enough space for a maximum of 3 more rooms, not including room 1, which is partially excavated. However, there was no evidence of the Phase II building in unit 142 (see Figure 40). This means that room 1 probably represents the western extent of the building - about 3 meters beyond the baulk in the south and 1 meter in the north.

The construction techniques used in the Phase II building are not as finely wrought as Phases I, Ib, and Ic. Corners were not neatly rounded and no traces of the plaster remain. However, the Phase II shena was clearly a planned design with the rooms regularly laid out in uniform sizes. Interestingly, this new building was made of re-used mud brick. There are burned mud bricks scattered throughout the walls in random patterns, with the more severely burned and friable faces frequently being placed on the inside the wall (see Figure 41). It is clear that these mud bricks were not intentionally fired, as each brick displays a different amount of damage, some on only one face, or one end, others are entirely burnt.

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The burned faces of the brick are more friable, hence the tendency to place that face on the inside of the wall where it was less likely to incur damage.
The burned brick brings up another notion as to why the *shena* was placed outside the temple proper. Many activities at the *shena* used fires, and in order to prevent a catastrophic fire within the temple, the kitchens were situated away from the cult structure. It possible then, that the reused burnt bricks are from part of the earlier *shena* that burnt to the ground, although a building destroyed in such a manner has yet to be found. Many of the faces of the walls in the Phase I building showed burning on their surfaces as part of their bread baking duties. It is more likely that the the Phase I building was partially dismantled in order to build the Phase II building and that those Phase I bricks went into the new construction. Another possibility is that brick ovens and/or kilns certainly produced bricks with burnt faces, which could be reusable in new construction.\textsuperscript{372}

A large transverse chamber (room 11) runs generally east-west along the entire width of the original Phase II *shena* building. It measures at least 7.5 meters long by 3.2 meters wide. The inner side of the south wall is buttressed with a series of three brick columns that measure a single brick width (14-16 cm). These sit at random intervals along the wall. There was little floor surface remaining in room 11; a small section in the northeast corner and a patch 1.5 cm by 1.1 cm in front of the door of room 3. Both surfaces were mud plaster, roughly 2 - 4 cm thick. They sit on beds of relatively clean sand. The matrix in this room was loose and ashy, without much organic matter. Rooms

\textsuperscript{372} The bricks in the Phase II kiln (see below and in pottery production in chapter 5.2.2), were of a larger format than those in any of the *shena* buildings. The bread baking hearths near the rear temple door also used much larger format bricks. This does not mean that ovens and kilns in other parts of the *shena* used different sized bricks.
7, 8, and 10 all have doors onto the transverse room; room 6 probably does as well, but this part of the building remains unexcavated. There is no clear door from room 11 leading outside; most likely, it sits in the unrevealed western corner of the building.

The excavation in 2004 uncovered little of room 6. Much of it remained covered in baulk, so little can be said beyond its eastern dimensions. A total of 13 diagnostic pottery sherds and no artifacts were present within the walls; the ceramics were all part of the main 8 types of ceramics typical of the *shena*.

Room 7 is the second room from the west and measures 2.15 meters wide and 5.2 meters long. The walls were preserved to a height of 4 courses in the south and only a single course on the west. There is a door 80 cm wide centered on the southern wall, which opens onto the transverse room. Room 7 had a very poorly preserved surface in the northern two-thirds of the chamber. The floor was encrusted with broken burnt bricks and two large broken limestone blocks, each roughly 40 x 20 x 10 cm. The surface sits 15 cm below the threshold of the door - this may be the foundation mud on which a mud brick floor was set. Along the eastern wall was a row of 6 very worn bricks, which are probably the remnants of the mud brick floor. Artifacts from this room included pottery, animal bone, charcoal, and a granite grinding stone. The ceramic from room 7 follows the standard *shena* corpus with cylindrical bread molds predominating (43.8%), beer beakers (29.1%), and votive cups/lids (14 %).\(^{373}\)

Room 8 is almost identical to room 7 in size and layout: it measures 2.15 meters wide and 5.2 meters long and has a door centered on the southern wall. The walls of

\(^{373}\) The main 8 types are all present in this room.
room 8 are preserved to a height of 2 courses in the south, up to 4 courses in the center and 2 courses again in the north. This stepping follows the natural slope of the desert at this point (see Figure 42). There are two partial rows of brick at the northern end of room 8 which represent the floor. At the same level in the south is a mud surface. It may be that the floor on the northern end of the rooms was mud brick to account for the hollow in the slope, while in the southern end it was just mud plaster (see Figure 42). The artifacts recovered from this chamber were limited to animal bone, charcoal, ceramics, and a few sealings. There were 18 sealings from this room: 10 decorative (mostly types 4 and 7), 1 nfr-kA sealing, and 7 name and title sealings, including the mayor Sehetep-ib. The ceramics were again restricted to the main types typical of all shena deposits: cylindrical bread molds (40.4%), beer beakers (27.9%), votive cups/lids (18%), and a minimal number of bread trays, hemispherical cups, wine jars, water/beer jars, marl storage jars.

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374 The same may have been true in room 2 as well.
The next room to the east was originally the same size and layout as rooms 7 and 8. At some point a wall was built to divide it roughly in half creating two rooms: room 9 to the north and room 10 to the south (see Figure 43). The changes made to this room are part of building Phase IIc. Chamber 10 had its southern doorway blocked up and access to the two rooms was made off a new corridor to the north.

Room 9 measures 2.15 meters wide and 2.45 meters long. A new door was cut through the north wall as part of the Phase IIc modifications. Room 9 is preserved to a height of 5 courses of brick on the east and 2 courses on the west. There are remnants of a mud surface in the northwest and the southwest corners of the room. A t-shaped wall sits in the northeast corner. It is constructed of bricks placed on their long edge (see Figure 44). The t-wall measures 1.3 meters in length and the cross wall is 70 centimeters long. The long wall is between 45 and 49 centimeters from the opposite wall and the cross wall is 55 centimeters from the parallel wall. Interestingly, the t-wall is made of two different bricks; the long wall is made of the standard Phase II bricks that measure 28 by 14 by 8. The cross wall is made up of larger format bricks measuring 34 by 16 by 10 centimeters, which do not appear anywhere else in the shena.
or the temple.\textsuperscript{375} This suggests that the t-wall was an addition to the Phase II \textit{shena},
rather than part of the original construction. Directly across from the perpendicular
junction, the eastern wall of room 4 is worn away; the worn area is 60 cm long and cuts
20 cm deep into the wall at the deepest point. The surface of the wall in the hollow is
quite smooth.

One possibility to consider is that this t-shaped wall may be part of a box quern
emplacement. Quern emplacements have been discovered at the Amarna and Deir el
Medina. These are boxes made of mud brick and filled with rubble and sand.\textsuperscript{376} The
boxes were set slightly at a distance from the wall and the top was sloped down and
away from this space. The distance between the wall and the quern emplacement gave
the grinder extra leverage to more easily grind the grain as he pushed against the wall
with his feet.\textsuperscript{377} In some cases there was a bin built into the floor to catch the resulting
flour.\textsuperscript{378}

Admittedly, the t-shaped wall is not the same as the box quern emplacements
from Amarna. The eroded nature of the architecture in general at the \textit{shena} does not
preclude the fact that it might have had other walls to create a box shape. The grinders
desired only to create a slightly raised and sloped platform to facilitate the grinding

\textsuperscript{375} See Wegner, \textit{Temple of Senwosret III}, page 61 for the brick size at the temple.
\textsuperscript{376} Samuel, Delwen. "Their Staff of Life: Initial Investigations on Ancient Bread
Baking." \textit{Amarna Reports V}, Ed. Barry Kemp. London: Egypt Exploration Society,
\textsuperscript{377} Samuel, “Their Staff of Life,” page 263.
\textsuperscript{378} Particularly house P46.33 at Amarna main city. Kemp, Barry, Delwen Samuel, and
Rosemary Luff. "Food for an Egyptian City: Tell El-Amarna." \textit{Whither Environmental
process. The worn area in the east wall may have been where the grinder braced their feet in order to get better leverage.

Room 9 had few artifacts associated with it; there was the ubiquitous animal bone, charcoal, and ceramics. This chamber also had 3 granite grinding stones used for grinding grain. There were a total of 13 grinding stones recovered from the entire shena excavation. These three were the only ones associated with the shena buildings, and the others were found singly. This concentration of stones may support the idea that room 4 was used for a grain grinding facility. The ceramics from this room include cylindrical bread molds (60.5%), beer beakers (17.3%), and votive cups/lids (10.2%), as well as the other usual productive forms.

The room 10 sits just to the south of room 9 and makes up the second half of the original chamber. It measures 2.15 meters wide and 2.45 meters long. The walls sit 2 courses high at all points. As part of the phase IIc modifications the doorway centered on the south wall was bricked up and access was made through the new dividing wall off room 10. A mud surface survives in the southern portion of the room. The deposits that could be identified with this room were quite shallow; the soil matrix was sandy with some ash, which is typical of the entire Phase II shena. There were not very many artifacts associated with room 10: animal bone, charcoal, and ceramics. Though few ceramics came from this room, the corpus was probably one of the most diverse within the shena building. Cylindrical bread molds (35.5%) and beer beakers (33.6%) were present, as were all the other productive ceramics, but there were also a larger proportion of various small open bowls and cups.
At some point, two rooms running the entire length of the building were added on the north and the east (see Figure 45, additions shown in yellow). The additions are part of Phase IIb. It is clear that this is an addition because an integral north-south wall that crosses the new room is not bonded to the original Phase II building, as would have been the case if they were constructed at the same time. The walls of the new addition were built of the same size brick as the rest of the Phase II shena building. The preservation of the walls is quite variable, from a single course in the northwest corner, to a 5 courses in the southwest corner. In the northwest corner there is a small chamber (room 12) which is 1.1 meters wide and estimated to be 2.15 meters long. The entrance to these long rooms is presumably in the unexcavated western portion of the small room. When the addition was originally built the north and the east galleries were connected. As part of phase IIc construction a wall as built to divide the galleries into two distinct rooms. The north gallery (room 13) is 1.15 meters wide and 7.05 meters long. The east gallery (room 14) is 2.1 meters wide and 10.7 meters long.

The gallery 13 had almost the entirety of its area covered in a mud plaster surface. However, this surface seems to have belonged to the Phase Ic. The walls of the antechamber of the Phase I southern room had been cut down to a height of 3 cm and the Phase IIb gallery walls were built over it. There are traces of white gypsum plaster on the walls of the Phase Ic that also spread over the surface in the Phase IIb gallery. The
soil matrix in gallery 13 was loose and sandy with few artifactual remains. Accordingly, there was animal bone, a couple of flint edges, charcoal, 10 sealings, and a few ceramics. The sealings included 9 decorative sealings (mostly type 6) and one Nfr-kA3 sealing. The ceramics in the eastern gallery contained the lowest proportion of cylindrical bread molds of any portion of the site (excepting the “beverage processing area”), at just 7.8%. There was a larger concentration of beer jars (32.9%) and votive cups/lids (22.3%) and hemispherical cups (15%).

There was almost no floor extant in gallery 14. The soil matrix within the eastern gallery was largely loose and sandy. There were 41 sealings pulled from this chamber: 38 decorative (mostly types 1 and 7), and 3 Nfr-kA3 sealings. Artifacts included animal bone, charcoal, jar stoppers and ceramics. Cylindrical bread molds appear in low proportion in gallery 14 as well (24.4%), with beer beakers (30%), votive cups/lids (16.4%), hemispherical cups (4.2%), wine jars (5.7%), water/beer jars (3.2%), and a number of small bowls and cups.

Part of the Phase II building program includes two structures situated outside its walls. A circular kiln about 1.5 meters in diameter is positioned to the east of the Phase II shena building. The bricks used in the kiln are much larger (37 by 17 by 12 cm) than those mud bricks used in the shena are (28 by 14 by 8 cm) and are slightly smaller than those of the temple. They are more similar in size to the bricks used in the temple (38.5 by 19.5 by 12 cm). There are two possibilities for this size difference. First, the bricks used in the kiln were not made using the same molds for the temple. Second, the bricks

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high temperatures of the oven caused the brick to shrink by two centimeters in length and width.\textsuperscript{380} If the additional shrinkage happened in situ due to extra firing, one might expect the mortar joints between the bricks to have opened up or to be larger, and such is not the case.\textsuperscript{381} The kiln floor is a simple mud/ash plaster surface and measures 80 cm in diameter. The first course of bricks are set on end. Each brick shows narrowing at its base, and range from 10 cm to 3 cm in width. This taper allows for the kiln to flare out towards the top and the first course of running brick. This on-end course of brick forms the firebox of the kiln and flares out to meet the first running course of brick with an inner diameter of 110 cm. Three struts sit inside the firebox and served as rests for the bottom of the oven (see Figure 46). The struts are situated every three on end bricks and jut out into the firebox approximately 12 cm (or the height of a brick). Each strut consists of two bricks, cut in half lengthways and placed on end. Upon the two bricks are placed two more bricks placed lengthways. On top of the firebox course the running bond courses begin. The first ring is two bricks deep with the innermost bricks seated directly atop the firebox course. The outermost ring is seated upon a thin layer of mud mortar, which is placed on


\textsuperscript{381} Mortar joints between bricks are no more than 1 cm in width, whereas with extra shrinkage one might expect joints as much as 4 cm in width. Clearly the bricks were dry when the oven was constructed.
sandy surface soil. This gives the kiln a maximum diameter at the soil’s surface of 168 cm. This outermost ring braced the firebox bricks to prevent them flaring out more and thus causing the oven to collapse. The outer ring represents the only course of double brick thickness as the rest of the kiln was constructed with a single layer of running bond brick. Unfortunately, the rest of the kiln is destroyed, and only one partial upper course of brick remains. The maximum diameter of the second course of brick is 146 cm. On the eastern side of the kiln, three firebox bricks show significant signs of wear on their upper edges and the first course of running bricks are gone (see Figure 47). This wear pattern suggests that this is where the firebox door was and where the which the fire was stoked. Because of the poor preservation of the upper portion of the oven it is difficult to predict what form the superstructure took.

There are no objects associated with the firing of the cylindrical kiln; the soil matrix only consisted of ash and charcoal. There was some debris found within the kiln, but the lack burning on any of the objects suggests that it was used as a garbage receptacle at the end of its working life. The same pattern holds at Amarna where bread molds are found bread ovens at the Amarna Workmen’s Village, but no pottery

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382 The fill inside the large circular oven contained very little pottery, and the types of vessels involved reflect the general ceramic corpus of the shena: three bread trays, six wine jar rims, a water jar rim, 2 votive cups, 2 cylindrical bread molds, and 5 beer beakers. In addition to pottery there was also some bone and shell, which were unfired.
comes from within the kilns in the town of Amarna. The walls of the circular oven were baked to a very red color suggesting very high temperature fires. The faces of the bricks closest to the fire were also friable and worn. The faces of the bricks from the bread oven were fired red, but not to the same degree and were not crumbly nor as worn as those from the kiln, suggesting lower oven temperatures. The debris from immediately around the kiln included the typical shena corpus of ceramics both in terms of types and frequencies, whereas the ceramic corpus from the areas immediately surrounding the bread ovens consisted exclusively of cylindrical bread molds. The differences in architecture, firebox debris, oven temperatures, and associated ceramics suggest that the circular structure was not used to bake bread, but to fire pottery.

The shena at the temple of Senwosret III has a small circular granary structure situated directly above the Phase I shena building (see Figure 48). Only about one third of the circumference survives and is roughly 2.5 meters in outer diameter. It was built with a running bond pattern of a single width of bricks. Although it is preserved to a maximum of 4 courses high, it is clear that the walls bow inward slightly as though the final shape of the structure was domed. The structure was definitely not an oven as there is no sign of burning on the interior faces of the walls.

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The granary probably belongs to the Phase II shena building based upon the brick size. Bricks from Phase I and Phase II buildings are 28 by 14 by 8 centimeters (see Figure 49). The bricks in the Phase III building, however, are slightly larger (30 x 16 x 8 cm) and much more irregular than those of either the Phase I or Phase II buildings.

The Phase II building does not show the definitive baking facilities that the Phase I building did. This may partly be due to the fact that the walls were not preserved as high and very little floor survived from within any of the Phase II rooms.

4.3.6 Phase III Building

The final phase of construction at the shena is Phase III, shown in light purple on the plan of the shena (see Figure 50), which consists of two entirely new buildings built on top of the Phase I buildings. The larger of the two buildings sits directly on top of the Phase I shena building, while the smaller building is located just to the east of it. The Phase III buildings sit on a different orientation to the other shena buildings. The new orientation is similar to that of the temple, but turned slightly to the east. Unfortunately, these buildings were very poorly preserved, most walls were only one course of brick
high, and were located only 10 centimeters under the soil’s surface. The brick sizes of these buildings varied widely from 36 x 16 x 10 cm, 30 x 22 x 8 cm, 32 x 18 x 5 cm to the size used in the rest of the shena 28-30 x 12-14 cm 28 to 36 x 8-9 cm. Most of the walls were one brick length thick (~30 cm). Some of the brick floor was preserved in the eastern section of the building over the Phase I building, but the plaster that would have covered it was gone.

Interestingly, the Middle Kingdom rectilinear structure that was largely destroyed by the Late Period tomb uses the same bricks as the Phase III shena building (32 x 19 x 5 cm). The buildings also sit a similar elevation, the Phase III building being 15 higher. This suggests that they were built at the same time. The similarities end, however, at the brick size and elevation. The rectilinear structure has much thicker walls, which are 2.5 bricks thick (80 cm), whereas the Phase III building is one brick length (32 cm). Perhaps most significantly, the orientations of the buildings are very different. The rectilinear structure is oriented almost exactly north-south (0°) and the Phase III buildings are -30° (the temple is -25° 54’ and Phases I and II are -16° 43’). The large
difference in orientation is enough evidence to demonstrate that these two buildings, although possibly contemporaneous, were not both part of the shena complex.

Little can be said about the function of the Phase III buildings; as most of the walls are just foundational courses. The consistency of the ceramics and its location next to the temple and above or near the other shena buildings, does suggest that this latest phase was still a shena building. The artifacts from this area were rather generic, consisting of animal bone, charcoal, some sealings, and ceramics. The ceramics are all production related with roughly equal numbers of cylindrical bread molds and beer beekers (34% each), votive cups/lids (10%), and wine jars (9%). There were also 46 sealings recovered from this building: 37 decorative (mostly types 1 and 7), 6 Nfr-kA sealings, and 3 name and title sealings. However, with the entire deposit so close to the surface, all the artifacts recovered from this area must be considered to be from highly disturbed contexts and their association with the Phase III building is impossible to determine.

There was no architectural feature that might be classified as an oven from the initial stages of the Phase I building, and there are none from the Phase II building. However, all the inner walls of the Phase I building and several spots in the new eastern gallery of the Phase IIb building show evidence of repeated burning and/or fire pits. The lack of permanent cooking structures, like ovens, in an industrial baking complex like the shena makes the identification of these institutions more difficult than they already are. It is possible that many buildings near temples that have been labeled as magazines, are in fact shena facilities; more careful excavation and correlation with artifact and
textual evidence is essential. Structures like ovens and kilns may have existed on the plateau near the shena buildings. Their lifespan was probably ephemeral and their vestiges are evidenced only by burned patches amongst the refuse deposits. When subjected to repeated high temperature firing, the south Abydos mud brick becomes friable.\textsupERScript{384} The oven would literally crumble away from the bottom as it aged. In an industrial baking facility, like the shena, ovens may have been torn down and replaced regularly during a single phase of occupancy. Bricks that were still viable were then recycled, as in the Phase II shena.

4.4 Artifacts Recovered from the Shena of Divine Offerings

The types of artifacts recovered from both the shena buildings and the refuse deposits are surprisingly uniform, especially given the depth and density of said deposits. Ceramics make up the majority of the material recovered from the shena areas. Variations in frequencies of the main ceramic vessel forms aided in distinguishing distinct activity areas and identifying those activities within the refuse deposits.\textsupERScript{385} A typology of the ceramics found at the shena appears below. Sealings are another common item found at the shena. These help to date specific levels and areas. Chapter 6 examines the sealing evidence in order to create a framework for the administration of the institution of the shena at south Abydos.

\textsupERScript{384} This is evidenced by both the kiln and the recycled mud brick in the Phase II shena building.

\textsupERScript{385} Descriptions of each discrete area includes those relative ceramic frequencies.
Although the *shena* and its refuse deposits were teeming with ceramics, sealings, and, to a smaller extent, mud jar stoppers, there were relatively few other small objects. These included small mud animal figurines, clay balls, clay senet pieces (in the shapes of cones and discs), ceramic whorls, copper needles, copper fishhooks, clay loom weights, stone net weights, granite grinding stones, flint blades, faience beads, and fragments of small stone vessels (see Figure 51). The personal items, such as the faience beads and clay senet pieces, can be found throughout the temple deposits. Most of these objects either aid in the procurement (fishhooks) or production (grinding stones) of foodstuffs and crafts. Specific groups of items are discussed in the following chapter in relation to their specific sphere of activity.

There were also some votive objects found in the *shena* debris, including some fragments of small human stone figurines and two limestone offering tables, one of which was inscribed (see Figure 51). Wegner suggests that most of this dedicatory material might have been installed in and around the cult building or it “could derive also from nearby private tombs and associated mortuary installations.”

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387 For grinding stones, see section 5.1.1b, section 5.1.4e for fishhooks and net weights, and section 5.2.3 for loom weights, whorls, and copper needles.
388 Ibid., pages 283-285.
Figure 51: Small finds from *shena* including incense balls, two types of senet pieces, a bone earring, a stone amulet, copper tweezers, two flint knives, a clay animal figurine, a stylized clay human head, a limestone torso, a limestone head of a woman.
4.4.1 The Ceramic Assemblage from the Shena Area

The ceramic assemblage from the shena area is typical of the late 12th Dynasty through the 13th Dynasty. Although there is some evidence from seal impressions that the shena operated into the first half of the 17th Dynasty, there are no ceramics that can be dated to this dynasty. Bourriau states that there is no abrupt change ceramic forms between Middle Kingdom and the Second Intermediate Period. Evolutionary changes in some ceramic forms between the 13th and 17th Dynasties may not yet be

389 See section 6.4 Royal Name Sealings.
391 Significant changes do not occur until the beginning of Dynasty 18, which may correspond with the re-establishment of ateliers in Thebes after the Hyksos period. Bourriau, “Beyond Avaris,” page 164.
well recognized. Parallels to almost all of the ceramic types exist in corpora from Tell el-Dab’a, Dahshur, Lisht, and Elephantine.\(^{392}\)

The excavations both within and adjacent to the *shena* of divine offerings yielded an extraordinary amount of ceramic material. The density of the ceramics was such that only diagnostic sherds (rims, bases, and sherds bearing other distinguishing features) were kept for analysis. Even with these limiting measures, we found and recorded over 49,000 diagnostic sherds. The corpus consists of 159 different vessel types. However, only nine types comprise 95.5% of the ceramics recovered. These nine types are consistent with a large scale food producing operation, such as the *shena*, and include large storage vessels, such as wine jars (3.7%), water/beer jars (3.9%), and marl zirs (0.6%), storage aids, such as lids (17.6%) and jar stands (1.1%), vessels to bake bread, such as cylindrical bread molds (35.6%) and bread trays (3.4%), and personal drinking and/or eating vessels, such as hemispherical cups (4.2%) and beer beakers (25.4%).

The following is a typology of the statistically dominant ceramic forms - those forms that are 0.1% or more of the overall corpus, or are chronologically and archaeologically significant forms. The forms described by this typology represent 96.2% of the entire ceramic assemblage from the shena area. There are 142 ceramic types not included in this corpus, but each is represented by fewer than 50 sherds and have little relevance to the current discussion of the shena.\textsuperscript{393} Fabric classifications follow the Vienna system.\textsuperscript{394} Pottery fabrics from the shena area are generally “roughware;” Nile B2 and C and Marl C. The ceramics included in this typology are sorted from open bowls to closed forms.

\textsuperscript{393} These forms will be published in a future monograph concerning the shena of divine offerings adjacent to the mortuary temple of Senwosret III at south Abydos.
Hemispherical cups

Hemispherical cups are the most common bowl type found in the shena deposits and represent 4.2 percent of the entire ceramic corpus (see Figure 53). They are, as the moniker connotes, roughly hemispherical in shape with a round base. Hemispherical cups have a fabric of Nile B1. This form is frequently decorated with a red painted rim; 71.7% of the hemispherical cups from the shena deposits have a painted rim. This
ceramic form appears at most Middle Kingdom sites. Dorothea Arnold has shown that the vessel index (height in relation maximum body diameter) of hemispherical cups is chronologically significant. The wider and squatter vessels date to the late Middle Kingdom, while narrower and taller vessels date to the 13th Dynasty. Very few vessels with a complete height appeared in the shena deposits. Rim diameters varied from 8 cm to 14 cm, however most cups measured 12 cm in diameter, which conforms to a late Middle Kingdom date. About 8% of the cups had a rim diameter 10 cm or less, which suggests the 13th Dynasty.

Figure 53: Hemispherical Cup

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Flat-Based Bowls with a Ledge-Rim

This bowl has a flat, string-cut base with a flat, “ledge” rim (see Figure 54). Many of the rims are painted white. The vessel has a fabric of Nile B2. This vessel type represents 0.48% of the entire ceramic corpus from the shena deposits. Rim diameters have a range of 10-13 cm and heights between 6-8 cm. There are shallower versions of this bowl, but they are uncommon in the shena deposits.

Small Flat Based Dish or the so-called “Votive Cups” or Lids

The walls of the dish are slightly offset from the bottom of the base and flare out at a very sharp angle, often almost horizontal, although the angles of the sides are quite variant (see Figure 55). This dish usually has a string-cut, crudely formed flat base. The bottom interior of the dish sometimes has a raised or rough central spiral of clay, that the potter neglected to smooth out. The walls of the dish are slightly offset from the bottom of the base and flare out at a very sharp angle, often almost horizontal. They range in maximum diameter from 4-10 cm with a median diameter between 8-9 cm. Bases range in diameter between 3.5 and 5 cm. The height varies between 2-4 cm. They are made from Nile B2 or C. The crudity with which these

397 See Wegner, Temple of Senwosret III, page 236, type 7 and fig 98.
vessels are formed suggests that they are very quickly produced. Votive cups/lids represent 17.6% of the entire ceramic corpus from the *shena* deposits making them the third most common vessel type behind cylindrical bread molds and beer beakers. Despite their ubiquity, the purpose of the vessel is largely unclear. Wegner points that there is an indentation inner rim of wine jars, and that this forms an ideal shelf to receive the dish as a lid. A mud jar stopper placed on top of the lid then sealed the contents of the jar. They may also have been used as lids for beer beakers.

**Open bowl with folded incurved rim**

The sides of this bowl flare out sharply from the base to create an open form (see Figure 56). The rim is folded inward to form a lip on the interior of the vessel. There are no complete profiles of this form, so it is unclear whether the base is rounded or flat.

This open bowl is made of Nile B2 fabric. The rim diameter ranges from 12-20 cm,

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400 The lids are the correct diameter to fit the beer beakers; the short restricted neck prevents the lids from falling in. Additionally, they were found large numbers in conjunction with beer beakers in the cult building refuse deposit at the base of the eastern pylon of the temple of Senwosret III. See Wegner, *Egypt and Levant* 10, page 111.
though the median is 14 cm. This vessel form represents 0.1% of the overall ceramic corpus from the *shena* deposits. These incurve rimmed bowls can be found at Tell el-Dab’a in strata dating to the late Middle Kingdom. The Tell el-Dab’a examples are also Nile B2 fabric and measure between 14 and 29 cm in diameter. Those bowls from the temple forecourt at Tell el-Dab’a have ring bases.

**Basins (Cooking Pots) with Modeled Rims**

The most common large bowl from the *shena* area was a basin or cooking pot (see Figure 57). The basin has generally straight walls that thicken and round to a base. No complete profiles remain, but similar examples from Tell el-Dab’a, Dahshur, and Askut

![Figure 57: Basins (Cooking Pots) with Modeled Rims](image)

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have round bases. The basins have a large range of rim diameters: from 23 to 42 cm in diameter, although the majority fall between 25 and 34 cm. The rim is modeled - folded back over itself towards the outside. There is often an impression of a small rope on the upper third of the outer walls of the vessels. The rope aids the potter in stabilizing the walls during throwing and initial drying of the pot. The fabric is quite rough Nile C. About 10% of the vessels have a red slip on the outside. Quite a number of the vessels have black soot on the outside suggesting that they were exposed to a fire, although not placed directly in it (as this would make the fabric a redder color). There were 242 basin sherds found at the shena area, which represents 0.5% of the overall corpus.

Pan-Grave Bowl

Pan-Grave bowls are relatively rare at the temple of Senwosret III. They are also found at Middle Kingdom sites, such as at Elephantine. All but one of the bowls have a band of incised lines in a criss-cross pattern under the simple rim; the band

404 Basins of this same type from the elsewhere in the temple are made of Nile E - with inclusions of sand, rather than the more usual chaff. Basis of composed of Nile E fabric were not present in the shena area.
406 von Pilgrim, Elephantine XVIII, abb. 146, # n-o.
begins roughly one centimeter under the edge of the rim (see Figure 58). One example has an incised x pattern on the rim. The walls of the bowls taper in slightly, are very straight, or in the incised rim example flare somewhat. Pan-Grave ceramic is typically Nile D fabric, which is highly vitrified and takes on a blackened appearance. Seven sherds representing five bowls were recovered from the shena area; rim diameters range from 12 cm to 28 cm. Wegner suggests that pan-grave pottery may be an indicator of either a Nubian population living at south Abydos, or of trade with Nubia. Interestingly, the pan-grave sherds at the shena come from the middens specifically affiliated with the shena refuse. Two sherds came from the oven room in the Phase I shena. This, along with the blackening of the fabric, suggests that the pan-grave ceramics at the shena are associated with cooking.

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Spinning Bowls

These are flat open bowls with walls that curve out sharply from the flat base and then slope sharply up again near the modeled rim (see Figure 59). Inside the bowls are two loops of clay to which thread is attached. The bowl acts as an anchor to pull the thread taught as it is spun.408 Spinning bowls are usually made of Marl A or C. Identification of these bowls is made largely by the presence of the central thread loops; there are 12 examples from the shena area, all of which are extremely fragmentary. Spinning bowls are found in small numbers at many Middle Kingdom sites: Tell el-Dab’a,409 Ezbet Rushdi,410 Abu Ghalib,411 Lahun,412 Memphis,413 Karnak North,414 as well as the temple areas of the Senwosret III temple at south Abydos.415

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409 von Pilgrim, Tell el-Dab’a XII, page 166.
410 Unpublished vessel cited by von Pilgrim, Tell el-Dab’a XII, page 166 ff.
412 Petrie, Kahun, Gurob, and Hawara, page 25, pl. xiii, #58.
413 Bader, Tell el-Dab’a XIII, page 94, #141.
Small flat bottomed bowl with bulbous walls

This vessel is squat with convex walls; they flare out from the base and return to create a restricted mouth with a simple rim (see Figure 60). The bowl features a flat string-cut. The bowl is made from Nile B2 and there is one example. The bowls are fairly uniform in size with a rim diameter between 3 and 6 cm (the mean is 4 cm), the base diameter between 4 and 5 cm, a maximum diameter between 6 and 9 cm (most are 8.5 cm), and a height of between 4.5 and 6 cm (with most about 5.5 cm). Their small stature and sturdy construction meant that a majority of the bulbous vessels recovered from the shena area were whole or largely so. There were 290 examples, which represents 0.5% of the overall ceramic corpus. Wegner postulates that its unique form “may have been intended for some specific commodity stored in small containers but in high volume,” such as honey.416 This vessel is also found at Hargeh,417 Lahun,418 Riqqeh,419 and Elephantine.420

420 The Tell el-Dab’a version is slightly more squat. See Aston, Tell el-Dab’a XII, vol. 1, page 257 #1176, vol. 2, plate 309.
Cylindrical Bread Molds

Around 17,490 cylindrical bread molds were recovered from the shena, making them by far the most frequent ceramic type at 35.6 percent of the ceramic corpus. The molds are made of Nile B2 to C clay, with a lot of organic inclusions. Cylindrical bread molds have a simple flattened rim which tapers down towards the base at an angle of 85 to 87 degrees. Despite the fact that so many cylindrical bread mold diagnostic sherds were recovered from the shena, none of the vessels were complete. This makes determining the final height of cylindrical bread molds almost impossible. One complete vessel from the temple has a height of only 17 centimeters. This vessel seems to be an outlier, as even broken, most of the recovered cylindrical bread molds are taller than 17 centimeters. Most cylindrical bread molds were preserved to a height of 30 centimeters, suggesting that most were taller than this (if only slightly). The largest vessel was preserved to a height of 86 centimeters.421 This gives a huge range of cylindrical bread mold heights from a minimum of 17 centimeters to almost a meter.

Cylindrical bread molds were made by pinching clay around a patrix, which is a wooden stick that is the shape of the inside of the vessel.422 The use of a patrix is particularly important because it ensures that the internal dimensions of the bread molds are extremely uniform. Bread was used as payment, so it was very important that it could be measured easily - in this case one unit is one loaf - rather than resorting to

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421 The large bread mold had a aperture diameter of 7 centimeters.
weighing each loaf, and having to use portions of a loaf to make up a ration. By ensuring that each loaf was the same, both temple bureaucrats and wage earners were assured that proper wages were issued. Despite the fact that the internal size of the cylindrical bread mold was very important, there is variability in sizes of the vessels, as evidenced by the diameter of the rims. The rim diameters range from 4 cm to a whopping 12 centimeters. The bread molds cluster in three sizes: rims between 4-6 cm in diameter, rims between 7 and 9 centimeters in diameter, and rims around 11 centimeters in diameter.423 The medium sized bread molds (7-9 cm) are by far the most common (see Figure 61).

In an effort to aid in determining final heights in vessels that were usually broken, Jacquet-Gordon studied a series of published cylindrical bread molds from the Middle Kingdom. She posited that cylindrical bread molds generally have a width to height ratio of 1 to 5.424 The widest point on cylindrical bread molds is always at the rim. Unfortunately, Jacquet-Gordon’s ratio is not reliable at south Abydos. As an example, one vessel had a rim diameter of 7 centimeters. Following Jacquet-Gordon’s

423 There are 1212 examples of the small size of cylindrical bread mold, there are 5,784 examples of the medium mold, and 847 examples of the large mold.
424 There are cylindrical bread molds that have a ratio of 1:3, but these are early Middle Kingdom. They are characterized a steeper taper to the vessel walls of between 78 to 79 degrees and are much shorter. There are no examples of these bread molds from the shena at south Abydos. Jacquet-Gordon, Helen. "A Tentative Typology of Egyptian Bread Moulds." Studien Zur Altagyptischen Keramik. Ed. Dorothea Arnold. Mainz am Rhein: Philipp von Zabern, 1981. Page 16.
ratio one would expect the final height of this vessel to be 35 centimeters, but it was over 86 - more than double the expected height. This is a ratio of 1 to 12.25. Further, Jacquet-Gordon’s published examples of Middle Kingdom cylindrical bread molds actually have a width to height ratio of 1 to 4.425 It is clear from the cylindrical bread mold corpus at the shena that the rim diameter is not directly correlated with vessel height as one might expect (ie. the tallest vessels have the largest rim diameter, and vice versa); the tallest cylindrical bread mold recovered from the shena had a rim diameter of 7 centimeters. To complicate matters further, rim diameter cannot be linked with any particular base type because all the cylindrical bread mold bases have the same rim structure. There are three cylindrical bread mold base types: flat, rounded, and holed. These types seem to have gradually larger base sizes; flat bases are generally 3.5 to 4.5 centimeters in diameter, rounded bases are 4 to 5 centimeters in diameter, and holed bases are 5 to 6 centimeters in diameter. However, like rim diameters, base diameter seems to vary independently of vessel height. Without complete vessels it is almost impossible to estimate final cylindrical bread mold height based on either rim or base diameters.

Cylindrical bread molds often have a red powdery residue on the inside of the vessel that flakes away when touched. First noticed by Larsen, this residue is believed to be the result of a fine slip of Nile clay poured on the inside of the bread mold before

425 Only 1 of Jacquet-Gordon’s examples fit the 1:5 ratio, example 9 from Quban, figure 4.
firing. In an experiment, Nicholson used a slip on the inside of homemade cylindrical bread molds. After firing, the slip was powdery. Larsen, Nicholson, and Wilson suggest that the slip helped prevent the bread from sticking to the side of the vessel. At the shena, the bread molds frequently have several concentric layers of this residue, sometimes built up to 0.5 centimeters in thickness. It seems unlikely that the molds were re-slipped and re-fired between uses. It may be that the pre-heating of the bread molds was enough to harden the slip. I put forward that this residue is in fact accretion layers of melted lard and flour, which turned red after thousands of years in a Nile clay vessel. Wilson suggests that cylindrical bread molds underwent a process of tempering, where each mold was greased and heated several times before used in baking to help prevent sticking. Regardless of whether the red powdery layers are from a slip or layers of grease, the accretions change the inside diameter of the bread mold. This means that the finished loaf is smaller in comparison to a loaf from a new cylindrical bread mold, which is crucial for determining equal rations between recipients.

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428 Ibid.  
Cylindrical bread molds have three different base types: flat, rounded, and holed. As its moniker suggests, the flat based type has a flat base (see Figure 62). Bases from the flat based type range from 3 to 8 centimeters in diameter, but more than half of flat bases are 3 to 3.5 centimeters in diameter, while another 25 percent are between 3.5 and 4.5 centimeters. The flat based type is well documented from other Middle Kingdom sites, like Harageh, Sedment, Gurob, Armant, Illahun, Semna, and Tel el-Dabaa. Despite the fact that the flat based type seems to have been the normative cylindrical bread mold at other sites, it represents only 10.6 percent of the cylindrical bread mold types at the shena at south Abydos.

The second type of cylindrical bread molds have a rounded base. Unlike the flat based cylindrical molds, round based bread molds typically feature a constriction just above the base as though the potter has taken their thumb and forefinger and squeezed (see Figure 63, a holed cylindrical bread mold that retains the impression of a thumb and forefinger wrapped around the vessel, just above the base). The rounded base is sharply

430 Ibid., Figure 4.
angled where it meets the vessel walls. The round appears as either uniformly rounded over or as a bulge from what was a flat base (see Figure 64). The bulge is formed when the *patrix* is pushed farther into the wet clay and deforms the flat base. The round based bread molds are by far the most common from the *shena* and represent 80 percent of the cylindrical bread mold corpus. Despite the fact that the round base type is the most common at the *shena*, it does not appear at other Middle Kingdom sites as regularly.432 The rounded base cylindrical bread molds have an average of one centimeter larger base diameters than flat based type bread molds. Base diameter ranges from 2.5 centimeters to 7 centimeters, but 72 percent of the corpus falls between 4 and 5 centimeters and 96 percent of the corpus falling between 3.5 and 5.5 centimeters in diameter.

The third type of cylindrical bread molds have holes in the base. These bases are either very flat or a slightly rounded shape (see Figure 65). Base diameter ranges between 3 and 7 centimeters, although 72 percent fall between 5 and 6 centimeters. The holes range in size between .43 and 2.8 centimeters, 432 The round based type does not appear in a survey of Middle Kingdom ceramic forms. See Wodzinska, Anna. *A Manual of Egyptian Pottery*. Vol. 2: Naqada III to Middle Kingdom. Boston: Ancient Egypt Research Associates, Inc., 2009. Pages 214-215. Nor in von Pilgrim, *Tell el-Dab’a XII*. Page 172.
with the average being 1.45 centimeters in diameter. The holes generally were poked through the base from inside the vessel as evidenced by a lip of clay material around the hole on the base.

Almost every discussion concerning cylindrical bread molds points out that the molds frequently had to be broken in order to extract the bread.\footnote{Jacquet-Gordon, “Bread Molds,” page 23. Bourriau and Quirke, “Late Middle Kingdom Ceramic Repertoire,” page 71. Smith, Vanessa. "Characteristics of Deposits and Ceramic Assemblage of the Production Zone." \textit{Egypt and Levant} 10 (2000): 118-122.} This is based primarily on the fact that cylindrical bread molds are found in such large quantities and are almost never whole. Samuel wonders whether cylindrical bread molds had only a single use, but decides that it would be too costly in time and materials.\footnote{Samuel, “Their Staff of Life,” page 257.} In an effort to keep bread molds usable for longer periods, the Egyptians put holes in the bottom so that they could push the bread out (see Figure 65).

The major impediment in removing the bread from the molds was not its size, but sticking to the vessel walls; neither pushing nor pulling would help unstick the loaf. Depending on moisture content of the bread, the loaf would either crumble apart, or break in half, leaving the other half stuck at the base or the stuck piece would be left against the side of the vessel. If this development in technology had worked, one might expect that the majority of cylindrical bread molds would have holes in their bases, but New

\textbf{Figure 65:} Holed cylindrical bread molds with flat and rounded bases.
Kingdom cylindrical bread molds almost never have these holes. Indeed, at the shena holed cylindrical bread molds represent only 9.5 percent of the cylindrical bread mold corpus. Rather than being an invention of a frustrated baker, it may be that a particular type of bread was reserved for the cylindrical bread molds with holed bases.

**Bread Trays**

Bread trays are a common ceramic type at the shena of south Abydos (see Figure 66). There were 1701 bread tray sherds recovered from the shena, most in very large pieces (over 20 cm of rim circumference). This represents 3.4% of the entire ceramic corpus from the shena area. Bread trays are generally associated with the production of large flat round loaves of bread, either t-kfn or psn, or "prt." They are very large round platters made of Nile C fabric. Bread trays are characterized with a relatively smooth inner surface and a very rough almost craggy base. They range from 50 to 80 centimeters in diameter, although there are small versions which range from 10 to 25 centimeters in diameter. Rim thickness is between 2 and 3 centimeters. Height ranges between 5 and 10 centimeters. Bread trays can have several different profiles, but none of these seem to effect the overall size or function of the vessel, as the morphological

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changes do not impact the inner surface (see Figure 65 for examples of different bread tray profiles). Most bread trays have a base that projects beyond the maximum diameter of the rim of the vessel. The projected base can is generally rounded and plain, but it can
have some decoration, either from thumb impressions, rather like a modern pie crust, or black or red paint. One form has sloped slides that meets directly with the base.

Bread trays are found throughout Egyptian history, beginning in the Naqada III period, through the Archaic period, the Old Kingdom, and into the New Kingdom. Bread trays are found at virtually every Middle Kingdom site, such as Elephantine, Dahshur, and Tell el-Dab’a. The bread trays from south Abydos seem unusually large (50-80 cm) in comparison to examples from Elephantine (around 30 cm in diameter) and Tell el-Dab’a (around 55 cm in diameter).

Various functions have been ascribed to bread trays: oven lid, oven floor, a place for dough to rise, and a baking platter. Larsen suggests, followed by Samuel, that bread trays were actually used as lids for ovens. The bread “ovens” that Larsen describes

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440 von Pilgrim, Elephantine XVIII, abb. 145 f & g, abb. 153h.
443 Pilgrim, Elephantine XVIII, abb. 145 f & g, abb. 153h.
from Merimda were more like pits, without any clear architecture.\textsuperscript{445} Bread ovens in the Middle Kingdom tend to be box-shaped ovens, which would not accommodate a round lid. Although, as we have seen at the \textit{shena} at south Abydos, an industrial baking complex can bake primarily using baking pits, like those at Merimda. Cylindrical ovens were used for baking bread in the New Kingdom.\textsuperscript{446} These were either brick with a ceramic liner or the clay liner all by itself.\textsuperscript{447} Another suggestion is that cylindrical bread trays were used as the floors of cylindrical ovens.\textsuperscript{448} At Amarna, Peet found a bread tray inside a cylindrical oven.\textsuperscript{449} Samuel rejects the idea that bread trays were used as the floor of cylindrical ovens as it would be impossible to remove the hot bread tray from the oven once the baking was finished; if the baker waited until the tray was cool enough to handle, the bread would be burned.\textsuperscript{450} It is not impossible that bread trays were used as oven lids or floors in the New Kingdom. However, these arguments ascribing an architectural purpose to bread trays in the New Kingdom ignore the development in the pre-Dynastic and relative commonality in domestic contexts where there were no cylindrical ovens.

\begin{table}[h]
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\begin{tabular}{|c|c|}
\hline
\textbf{Reference} & \textbf{Page/Section} \\
\hline
Larsen, "On Baking in Egypt," & pages 51-52. \\
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Ibid. & \\
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Ibid. & \\
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Samuel, “Brewing and Baking,” & page 568. \\
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\end{tabular}
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Bread trays from sites other than south Abydos often show no signs of burning. The trays, some posit, were used as platters to allow the bread dough to rise.\textsuperscript{451} Samuel points out that bread dough made from emmer, which seems to have been the predominate bread grain, does not rise, as emmer does not have much gluten.\textsuperscript{452} The bases at south Abydos often have chunks of charcoal embedded in them and are usually covered in ash, as if the base was set upon an open smoldering charcoal fire. The south Abydene vessels do not show any signs of being placed in an intense fire, which would cause the fabric to turn bright red.\textsuperscript{453} Still the constant application of low heat makes the base friable and relatively delicate, especially in relation to the general robustness of the overall vessel. The tomb of Antefoker has a depiction of the baker placing a bread tray face down over a fire, where another bread tray is already heating (see Figure 67).\textsuperscript{454} Other Middle Kingdom models show piles of bread trays being heated over a fire. It is clear that bread baked in cylindrical bread molds was baked by first


\textsuperscript{452} Samuel, "Brewing and Baking," pages 558 and 568.

\textsuperscript{453} This is often the case with cylindrical bread molds.

heating the molds. It does not seem odd that the same method would be employed to bake large flat loaves. Further, the projection of the base beyond the vessel walls may have aided in handling a hot bread tray, in giving a relatively cool ledge to be able to pick up and turn over the tray (see above Figure 66 for bread tray profiles). The thumbprints in the base projection would also help in gaining a good grip on the hot bread tray.

**Bread Mold with Raised Central Hump**

This form is cylindrical, with a flat base and relatively straight sides and is composed of Nile C fabric (see Figure 68). The walls are very thick at 3.7 cm. Inside the cylinder is a dome of clay 15 cm high. The overall vessel gives the impression of a very large juicer. There is one example, which comes from inside the room 8 of the Phase II *shena* building. Only the central hump remains from this example, although a largely complete specimen was found in the temple. The temple example is 16 cm high and 29 cm in diameter.455 Similar vessels are found at Elephantine, though they are about half the size and their central humps are very short (~2 cm high).456 The Elephantine vessels are linked with straight-sided bread

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trays (backformen), such as those at Dahshur.\textsuperscript{457} Wegner suggests that these were used as molds in order to create ring-shaped bread loaves.\textsuperscript{458}

**Beer Beakers**

Beer beakers appear with great frequency from all the temple refuse deposits.\textsuperscript{459} Beer beakers are the second most common ceramic type at the *shena* and represent 25.4 percent of the ceramic corpus, with almost 12,500 beer beaker sherds, many of them almost complete vessels. They have a simple rim that tapers to a high shoulder which then tapers down to a flat string-cut base (see Figure 69). The mass produced nature of the beer beaker creates some variation in profile, but they are very consistent in size and volume. While such vessels could be used to hold any liquid, their association with beer is fitting for several reasons. First, beer was one of the most common drinks from ancient Egypt.\textsuperscript{460} It is likely that the most common drinking vessel would be associated with beer. Second, the beakers are very uniform in size, with an average height of 12 to 14 centimeters, and a rim diameter of 9 to 10 centimeters with a volume of about half a liter. Because beer formed part of the wages of temple personnel, uniformity of vessel

\textsuperscript{457} Arnold, *MDAIK* 38 (1981), abb. 8 #16.
\textsuperscript{460} Probably even more popular than water given that it was safer to drink than water. Samuel, “Brewing and Baking,” page 537.
size is essential when apportioning the beer; this way everyone is assured that they have received an equal measure and what they are due. Third, beer beakers make up 40 percent of the cult building refuse deposit at the temple.\textsuperscript{461} This deposit is composed of the material from the offering ritual within the cult building, of which beer was a major part.\textsuperscript{462} Wegner points out that many of these vessels are recovered whole, and that they “seem to have been used for a limited period of time or even for single events of offering presentation.”\textsuperscript{463} Beer beakers also appear with great frequency within the shena building and at the town of Wah-sut, suggesting that they are not restricted to use in the offering ritual. This exact form is not found at other Middle Kingdom sites,\textsuperscript{464} however, vessels of similar size and shape appear at Lahun, Elephantine and Tell el-Dab’a.\textsuperscript{465} The beer beaker at south Abydos may represent local production and thus a form unique to this area.

\textsuperscript{461} Wegner, \textit{Temple of Senwosret III}, page 256, figure 108.
\textsuperscript{462} Ibid.
\textsuperscript{464} Ibid.
Marl Globular Shaped Jar with Rolled Rim

These globular jars have a rolled rim, no neck, and a shoulder sitting below the halfway point on the body (see Figure 70). They probably have round bases,\textsuperscript{466} though there are no complete examples from the \textit{shena} area. The fabric is generally Marl A, although there are occasional examples made from Nile B2. These globular Jars come in two sizes: small, with rim diameters between 8 and 12 cm (most are around 10 cm), and large, with rim diameters between 15 and 24 cm (most are around 17 cm).\textsuperscript{467} These globular jars represent 0.1\% of the overall ceramic corpus from the \textit{shena} area.

Water or Beer Jars or Simple Necked Storage Bottles

This large storage bottle features a simple rim with a short neck (see Figure 71). Rim diameter varies quite a bit - between 4 and 12 cm in diameter, but with most falling between 7 and 9 cm in diameter. The neck of the bottle is either straight, or flares slightly at the rim. Most neck heights are between 4 and 5 cm. The shoulder of the vessel sits at about the mid-point of the body or slightly below. The fabric is Nile C. Like the wine jars, these vessels are almost never found with a complete profile.

\textsuperscript{466} See reconstructed example Wegner, \textit{Temple of Senwosret III}, fig. 104, #64.
\textsuperscript{467} The small type is #64 and the large type is #65 in Wegner, \textit{Temple of Senwosret III}, page 247, fig. 104.
Reconstructions indicate that they are slightly smaller than wine jars, between 35 and 45 cm. Beer Jars occur in similar numbers to wine jars, representing 3.9% of the overall ceramic corpus. This makes it the fourth most common ceramic type from the shena area. While not as common throughout Egypt as wine jars, these bottles are found at Elephantine and Riqqeh. The bottle’s exact usage is unclear. Beer tended to be stored only for short times; modern, unpasteurized beers should be drunk within 30 days of brewing, and light and heat may shorten its shelf life further. Wine, on the other hand, has a longer shelf life of months or even years if stored correctly. Mud jar stoppers from the shena area tend to have aperture impressions from the water/beer jars which are significantly narrower and whose rims are thinner than the wine jars.

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468 von Pilgrim, Elephantine XIII, abb. 155a. Engelbach, Riqqeh and Memphis VI, pl. 30 q-v, see type 40.
471 See discussion below, “Jar Stoppers.”
Wine Jars

Wine jars are large liquid storage vessels. They are sometimes referred to as “beer jars.” There were almost 1800 wine jar sherds recovered from the shena area, which represents 3.7% of the ceramic corpus. They have rolled rims with long necks, which range in height between 5 and 10 cm (see Figure 72). The necks sometimes sport red or black painted lines. The rims are typically between 10 and 12 cm in diameter, but can get as large as 16 cm in diameter. The shoulder generally sits in the upper half of the body. They are almost never found with a complete profile, which makes determining the height of the vessels difficult, but reconstructed heights are roughly 45-55 cm. The fabric is usually Nile C. Wine jars are found throughout Egypt, such as at Harageh, Lisht, Dahshur, Riqqeh, Kahun and Tell el-Dab’a. Several studies have shown that

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472 For example, see Aston, Tell el-Dab’a XII, pages 82.
473 Engelbach, Harageh, pl. 37, type 41M.
476 Engelbach, Riqqeh and Memphis, pl. 30, #41 o & v.
477 Petrie, Kahun, Gurob, Hawara, pl. 12, #40.
478 Aston, Tell el-Dab’a XII, pages 82-87.
the aperture type and width are a possible criteria for dating.\textsuperscript{479} Necks go from funnel shaped in the 12th Dynasty to straight-sided and elongated in the late 13th Dynasty. Rim shapes change from modeled in the 12th Dynasty to a kettle mouth in the 13th Dynasty. Most of the wine jars from the \textit{shena} area seem to date from the late 12th to early 13th Dynasty based on the neck lengths and rim shapes. The kettle rims with “the indented inner neck profile... makes it well suited to receive the small flat based lids or dishes,”\textsuperscript{480} also termed votive cups.

\textbf{Jar Stands}

There are series of jar stands such as ring stands, larger jar stands, and tall tube stands (see Figure 73). The variety of jar stands represent 1.1 percent of the ceramic corpus from the \textit{shena} area. The ring stands are typically Nile B2 in fabric and range in diameter between 7 to 10 cm in diameter and 3 to 6 cm in height. They were probably used for smaller round bottomed

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{jar_stands.png}
\caption{Jar Stands}
\end{figure}

\textsuperscript{480} Wegner, \textit{Temple of Senwosret III}, page 245.
vessels such as hemispherical cups and small bottles. The larger jar stands have diameters between 20 and 30 cm and heights between 7 and 9 cm. The fabrics used in the larger jar stands are made from a variety of fabrics from Nile B2 to Nile C. The tall tube stands of two sizes: narrow diameter between 10 and 12 cm, and larger diameter between 15-18. This diameter does not seem to have any relation the heights of the tube stands, which range between 40 and 80 cm. Wegner suggests that the white wash “ has been observed in other vessel types associated with ritual contexts and probably used as cult furniture.”

Decoration on jar stands includes white washes, red slips outside, red slips on the inside, and red painted rims and bases.

**Large Marl Storage Jars or Zirs**

These jars are some of the largest storage vessels at the site (see Figure 74). There are no examples of a complete profile, probably due, in part, to their size. The zirs feature a model rim (Bader types 3 and 4), which ranges in diameter from 10 cm to 35 cm, though most are 22 to 26 cm in diameter. There is also a version that has a model rim which flares out, similar to Bader rim types 5 and 6. These flare rimmed zirs are

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482 Ibid. See also Aston, *Tell el-Dab'a XII*, pages 178-179 and pls. 192-193 (“Group 177, tall stands”).
484 Ibid.
slightly larger with rim diameters between 25 and 40 cm, with most around 28 cm. These different rim types seem to be chronologically significant, at least at Lisht and Tell el-Dab’a. Rim types 3 and 4 date to the late Middle Kingdom or early 13th Dynasty.485 Type 6 dates from well into the 13th Dynasty.486 They are made typically of Nile C fabric. The zirs with type 3 or 4 rims (late 12/early 13th Dynasty) are 0.6% of the overall ceramic corpus, while zirs with type 6 rims (13th Dyn.) are 0.1% of the corpus.

4.4.2 Jar Stoppers

Mud jar stoppers are one of the most frequently found artifacts from the shena area. They are found almost exclusively in the shena related refuse deposits (units 125 and 126, as well as 149) and within the shena buildings themselves.487 This is particularly interesting given the fact that the largest concentrations of jar stoppers associated with the temple occur in the East Block refuse deposit, just south of the rear

485 Aston, Tell el-Dab’a XII, page 100. Bietak, BASOR 281 (1991), page 37, fig 9.
486 Ibid.
487 Less than 10% of the jar stoppers come from the mixed temple deposits outside the rear temple door (unit 130).
temenos wall. Since the East Block is associated with the *htm inw htpw-ntr*, “storehouse of incoming goods of divine offerings,” one might expect a large amount of jar stoppers near the rear temple door as the result of the unsealing of liquid storage containers for use by the temple. That this is not the case further emphasizes the fact that the East Block refuse deposit and that just outside the rear temple door are completely different in nature.

Jar stoppers are composed of levigated Nile mud that is formed into a cone or domed shape and placed on top of a jar in order to seal the contents inside.

It nearly always has on one side a concave groove that permitted passage of cord or other material over the jar rim and beneath the jar-stopper. This groove appears to be finger-made at the time the stopper was fashioned and is not the impression of any other object. The probable function of the groove was to allow passage of rope or cord from the neck interior to the vessel exterior. This cord may have been attached inside to a blocking that closed the jar’s neck and which could then be dislodged with the cord. Pulling the cord would remove the blocking and push the stopper from the jar neck.

Part of the sealing process may also include a particular type of pottery that are termed lids or votive cups. These small dishes would fit inside the mouth of the jar, yet be supported at the point where the neck flares out to the rim. Given the average diameter of the lids, they are most likely associated with so-called wine jars, which also often feature kettle mouths, with a special ledge just inside the rim.

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489 See above section 4.2: The *shena* refuse deposits.
491 See Ibid., page 236 and page 252, fig. 106.
492 Ibid., page 245.
Roughly 500 jar stoppers were recovered from the shena area. They are classifiable into twelve types. About 75% of the jar stoppers can be placed into a specific category, the rest were too broken. By far the most common type is the domed type, which features a rounded top that tapers out to a flat base and is roughly 9 cm tall (see Figure 75, type 7); they represent 48% of the corpus. Small cones are the second most common type with 23% of the corpus (see Figure 75, Type 6); they are cone-shaped and are also roughly 9 cm tall. All the other types are under 10% of the corpus; these include roughly spherical stoppers and measure about 10 cm in diameter (type 1), cylindrical stoppers about 7 cm tall (type 3), and tall conical stoppers that taper very sharply to its apex and are between 12 and 14 cm tall. The shape of the jar stopper, however, does not seem to have any correlation with its size or the size of the jar that it sealed.

All of the jar stoppers have impressions of the vessel rim to which they were originally attached. The rim impressions vary between 3 and 12 cm in diameter. Of these, 31% had jar rim diameters of 5.5 cm or less, 47% were between 8 and 10.5 cm, and 12% were 11 cm or above. Jars with rim diameters of 5.5 cm or less are very uncommon in the ceramic corpus from the shena area. Vessels with rim diameters measuring between 8 and 10.5 cm are quite common and include both water/beer jars and wine jars. However, the rims of wine jars tend to be slightly wider, between 11 and 12 cm, while water/beer jars have rim diameters most commonly between 9 and 10 cm. This suggests that the majority of the jar stoppers from the shena are associated with water/beer jars. This is not the case with the jar stoppers from the East Block refuse.
deposit, where the majority of vessel diameters between 10 and 13 cm, which corresponds more closely with wine jars.

**Figure 75:** Most common types of jar stoppers from the *shena*
Chapter 5: Food and Craft Production in the Shena of Divine Offerings at the Senwosret III Mortuary Temple at Abydos

The shena at the mortuary temple of Senwosret III at south Abydos was an institution dedicated to industries that produced foodstuffs and materials and commodities for use in the mortuary cult of Senwosret III or for wages for temple staff and possibly for the townspeople of the neighboring town of Wah-sut. The shena at the temple of Senwosret III, as presently understood, consists of three separate buildings constructed through the life of the temple. It is probable, however, that these buildings represent only a small portion of a much larger productive, industrial and agricultural complex situated to the east of the temple. Despite the fact that the full extent of the shena remains unknown, the various shena buildings and the refuse deposits that surround it yielded evidence of significant and manifold industries. This chapter examines the activities undertaken by the shena of divine offerings of the mortuary temple of Senwsoret III by comparing the artifactual and architectural evidence to the artistic record and physical evidence from other sites.

493 See the previous chapter for a discussion of the architecture relating to the shena at south Abydos.
494 See section 4.3.3 for a discussion of the scale of the shena in relation to other known shenas from pharaonic Egypt.
5.1 Food Production at the Shena

The main responsibility of the shena was to produce the divine offerings. The items that the shena produced, therefore, should be the same or similar to a temple offering list. Temple offering lists dating to the Middle Kingdom are very fragmentary,\textsuperscript{495} however, contemporary private offering lists request bread, beer, wine, milk, fruits, pigeon, goose, beef, incense, sweets, anointing oil, perfumes, and clothes.\textsuperscript{496} The shena at the temple of Senwosret III yielded evidence of the production or processing of most of the above food items. The most commonly solicited items on the lists are bread and beer.\textsuperscript{497} Texts and artistic representations featuring the shena make it clear that the shena’s main products were bread and beer.\textsuperscript{498} The primary nature of bread and beer production at the shena at south Abydos is evidenced by the fact that almost 65 percent of the ceramics recovered are directly related to bread and beer production.\textsuperscript{499} The shena produced other commodities from the offering lists. Archaeological evidence from the shena at south Abydos indicates that it may have processed wine. Numerous animal bones aids in the identification of the types of animals processed at the shena as

\textsuperscript{496} This is a synthesized list of offering goods from several private offering various Middle Kingdom offering tables, and inscriptions on stelae, tombs and coffins. No single private offering list requests all the above items. Barta, Winifried. Aufbau und Bedeutung Der Altägyptischen Opferformel. Ägyptologie Forschungen 24. Ed. Alexander Scharff. Glückstadt J.J. Augustin, 1968. Pages 57-59.
\textsuperscript{497} Ibid.
\textsuperscript{498} See chapter 3 for a survey of these texts and representations.
\textsuperscript{499} This includes bread trays, cylindrical bread molds, and beer beakers. See section 4.4.1 on the ceramic assemblage from south Abydos.
well as discerning patterns of consumption throughout the mortuary complex. This section looks at the various foodstuffs created by the shena at the temple of Senwosret III including bread, beer, wine, meat, and fruits and vegetables. Each section examines the ancient Egyptian artistic and archaeological records for what artifacts and architectural features might be expected at the shena and compares them to those present at the site.

5.1.1 Bread

Bread was the staple foodstuff of ancient Egypt; it appeared on the tables of the living, the gods, and the dead. Bread was part of every Egyptian’s daily meal and it was also part of the daily offering ritual in temples and the funerary ritual. Bread and grain rations were the prime ingredient in wages for temple personnel. The shena, as the producer of the offerings for the gods and wages for the personnel, made all the bread the temple required and bread was its primary product. The industrial scale of bread production required by the temples probably led to the creation of the shena as an institution. The temple was responsible for paying (i.e. feeding) the temple’s on duty staff and their families, as is evidenced by papyrus pBerlin 10005 from Lahun. The papyrus lists an account for a day of bread and beer rations and their distribution to the priests, scribes and doorkeepers at the valley temple of Senwosret II at Lahun. That

temple made 390 loaves of bread, and received 20 loaves of bread from the Sobek temple at Crocodilopolis, for a total of 410 loaves of bread on that day. In some instances the temple was also responsible for paying state workers like the tomb builders living at Deir el Medina.\(^{502}\) This extra responsibility may account for the huge quantity of bread, 30.5 sacks or over 2,200 loaves, that the \textit{shena} made daily at Medinet Habu.\(^{503}\) Regardless of whether the temple of Senwosret III was feeding only on duty temple staff, or additional dependents such as those building the tomb of Senwosret III, bread baking was done on an industrial level at the \textit{shena}.

Most of what we know about baking bread in ancient Egypt comes from artistic depictions on tomb walls and wooden tomb models (the tomb of Ti and the model of Meketre are especially detailed). According to these sources there were 5 steps in the baking process: dehusk the grain in a mortar, grind the grain into flour, make the dough, heat the bread molds, and finally put dough into the bread molds to bake using the mold’s residual heat. The \textit{shena} at south Abydos yielded significant evidence for most of the bread production steps. This section will look at grain storage, grain processing, ovens, and bread molds in an effort to better understand the baking process at the \textit{shena} of the temple of Senwosret III.

\textit{a. Grain storage at the shena}

There were two types of granaries in domestic architecture in the Middle Kingdom. The first type consisted of several adjoining rectilinear rooms that were part

\(^{502}\) See Chapter 2 for a more extensive discussion.  
\(^{503}\) Haring, \textit{Divine Households}, page 76.
of a larger structure. The second type was a free standing circular beehive shaped structure.\textsuperscript{504} Large Middle Kingdom granaries, such as those in the Kahun mansions, at Shakfik, Uronarti, Kumma, Mirgissa, Semna, and Askut, tended to be long term grain storage for state purposes.\textsuperscript{505} Smaller, freestanding silo structures are found in the small Kahun houses;\textsuperscript{506} these were meant for short term grain storage for individual families.\textsuperscript{507} Both the beehive and the multi-room granaries appear at the mayor’s house in \textit{Wah-sut}, though they were probably not in use concurrently.\textsuperscript{508}

There is no evidence of long term grain storage within the temple or the \textit{shena}. This is surprising considering the fact that intensive bread baking and beer brewing at the \textit{shena} necessitated a large quantity of grain daily. The \textit{shena} at the Senwosret III temple had short term grain storage in the form of a small beehive granary structure. It


\textsuperscript{505} Kemp, Barry. "Large Middle Kingdom Granary Buildings and the Archaeology of Administration." \textit{ZAS} 113 (1986): 120-36.

\textsuperscript{507} Kemp, Ancient Egypt, 2nd edition, pages 217-218.

sits directly above the Phase I shena building and is probably associated with Phase II shena construction (see Figure 76). Only about two thirds of the circumference survives and is roughly 2.5 meters in diameter. Similar small granaries are depicted in the tomb of Ti with the caption “granaries which are in the shena.” This method of short term grain storage within the shena streamlined the baking process; it prevented the bakers from constantly having to run back and forth between the main granaries servicing the temple and the shena to fetch the grain required for a batch of bread. The shena granary was certainly not large enough to store grain for the whole temple and its dependents for a year or even for a month.

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509 See section 4.3.5 for a discussion of the granary structure.
A very rough estimate on the potential volume of the shena granary is 10,640 liters.\footnote{The equation for a beehive structure is $\pi r^2(h) - \frac{\pi}{3}(r^3-h^3/3)$. This assumes that the granary was three meters tall. This is a maximum potential volume and assumes that the granary is full. It is unlikely that the granary was packed to the very top.} This represents 221 sacks of grain.\footnote{One sack of grain in the Middle Kingdom is 48.05 liters. Helck, Wolfgang. "Maße Und Gewichte (Pharaonische Zt.)." Lexikon Der Ägyptologie 3. Eds. Wolfgang Helck and Eberhard Otto. Wiesbaden: Otto Harrassowitz, 1980. 1199-209.} One sack of grain produces 73 loaves of bread.\footnote{This is based on New Kingdom loaves of bread, which were probably different in volume from Middle Kingdom ones. Haring, Divine Households, page 76.} The shena granary, therefore, had the potential of producing 16,164 loaves before it needed to be refilled. If the south Abydos shena made the same number of loaves that the Lahun shena made (390),\footnote{Borchardt, Ludwig. "Besoldungsverhältnisse von Priestern im Mittleren Reich." ZAS 40 (1902/1903): 113-17.} the granary could hold 41 days worth of grain.

Instead, grain destined for temple use may have been stored at the mayor’s house (and possibly at the other mansions) in the neighboring town of Wah-sut. This method of grain storage is also found at the mortuary complex of Senwosret II at Lahun.\footnote{Kemp, Barry. ZAS 113 (1986): 134. Kemp, Ancient Egypt, 1st Ed., 149-157.} The Wah-sut mayor’s house had a large granary block with ten square rooms measuring 4.2 by 3.7 meters each.\footnote{Wegner, MDAIK 57 (2001): 290-291.} The mayoral granaries have a maximum potential volume of 466,200 liters of grain, or 9,702 sacks.\footnote{This translates to 708,274 loaves of bread.} If the mayor’s house supplied the temple with 390 loaves of bread a day (without taking any for itself), the grain would last for 5 years. However, the large granary at the mayor’s house was converted to private apartments.
sometime in the late 12th or early 13th Dynasties.\textsuperscript{518} At this time three beehive granaries were built in the courtyard of the house.\textsuperscript{519} Each beehive granary measured 3.2 meters in diameter.\textsuperscript{520} The beehive granaries have a maximum potential volume of 60,330 liters of grain, which is six times that of the \textit{shena}, but one 13th the potential of the previous storage granaries.\textsuperscript{521} It is possible that large granaries for the temple and the town are located in the floodplain at the front of the temple and have yet to be uncovered.

\textbf{b. Grain Processing at the \textit{shena}}

Grain in ancient Egypt was stored with the husk still on; the husk protected the grain from insects, fungus, and mold.\textsuperscript{522} The husk is indigestible and must be removed prior to using the grain in either bread or beer.\textsuperscript{523} If the grain was ground into flour with its husk still attached, the chaff pieces would be too small to remove.\textsuperscript{524} The grain was pounded in a stone mortar with a wooden pestle. The pounding action separates the chaff, but keeps the grain berry whole; the separated chaff was then light enough to

\textsuperscript{520} Ibid., page 31.
\textsuperscript{521} This represents 235 days of grain, if the mayor’s house supplied 390 loaves to the temple daily.
\textsuperscript{523} Ibid.
blow away in the wind using a process called winnowing.\textsuperscript{525} At Deir el Medina and Amarna, mortars were discovered plastered into the floors of houses.\textsuperscript{526} Presumably, embedding the mortars in the floor helped to stabilize the bowl during the repeated pounding action. There were no mortars or mortar emplacements found at the \textit{shena} at south Abydos. It may be that the mortars in the \textit{shena} at south Abydos were not permanently set into the floor, but were more portable. Mortars depicted in Middle Kingdom tomb scenes often sit above ground and are quite tall - reaching above the knees of the miller.\textsuperscript{527} The same is true of Middle Kingdom tomb models.\textsuperscript{528} It is also very possible that the grain mill was located in a section of the \textit{shena} that has not been excavated yet.

The ancient Egyptians ground their grain into flour using a saddle quern and a grinding stone both made of granite. Amarna and Deir el Medina yielded quern emplacements made of mud brick and filled with rubble and sand.\textsuperscript{529} The emplacements sit a short distance from the wall to give the grinder more leverage to grind the grain as

\textsuperscript{525} Ibid., page 562.
\textsuperscript{528} Kroenke, Karin. "The Provincial Cemeteries of Naga Ed Dier: A Comprehensive Study of Tomb Models Dating from the Late Old Kingdom to the Late Middle Kingdom." University of California, 2010. Appendix J.

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he pushed against the wall with his feet. There was a bin at the base of the emplacement to catch the resulting flour. There is a possible quern emplacement at the *shena* in room 9 of the Phase II, however, it is not well preserved enough to make a positive identification. Much like the mortar emplacements, *shena* facilities with quern emplacements may yet be undiscovered.

Grinding grain did occur in the vicinity of the excavated *shena* buildings as evidenced by nineteen large granite grinding stones (see Figure 77). They all came from refuse deposit A (just south of the Phase II building) and from within the Phase II building. These stones featured a worn flat surface where the grinding stone met the quern.

Grain processing activities were likely situated together at the *shena*. At the Amarna Workmen’s village mortar emplacements and quern emplacements are usually in the same room. However, if both types of emplacements were ephemeral at the *shena*, it may be impossible to

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530 Samuel, “Their Staff of Life,” page 263.
532 See section 4.3.5 for a discussion of this architectural feature.
absolutely identify grain processing facilities. It may be that the Phase II shena building was the mill, given its lack of ovens. Further exposure is required to better understand the probably functions of various buildings and rooms of the shena.

c. Baking at the Shena

The shena engaged in baking on an industrial scale. At the shena of the temple of Senwosret III, bread was overwhelmingly produced in the form of bread sticks, which were baked in cylindrical bread molds. Roughly 17,490 cylindrical bread mold sherds came from the shena buildings and its refuse deposits, which represents 35.6% of the ceramic corpus. These bread molds are associated with the bd3 ceramics from artistic representations. Artistic depictions are fairly clear concerning the use of cylindrical bread molds (see Figure 78). They were preheated either in a box oven or over an open charcoal fueled pit and then dough was

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placed inside where the heated vessel baked the bread (see Figure 79 from tomb of Antefoker).535

Bread trays were another form of ceramic associated with baking, and comprise 3.4% of the entire ceramic corpus recovered from the *shena*. These are equated with the ‘prt plate, which produced a large round loaf of bread.536 This formed a *psn* loaf.537 As noted in the previous chapter, Egyptologists have not always agreed on the purpose of the bread tray.538 It is likely that bread trays were used in the same manner as cylindrical bread molds; heating them up over a fire and allowing the bread to bake using the residual heat in the ceramic.539 Tomb depictions, such as that in the tomb of Antefoker, show bakers heating bread trays over fires.540

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538 See “bread trays” in chapter 4.4.1 for discussion.
The three *shena* buildings yielded only one oven: a box oven from room 3 of the Phase I building (see Figure 80).\(^{541}\) The oven was not original to the building, but added later with a spur wall in the corner of the room. It measures 110 cm long and was initially 75 cm wide, but was reduced to 60 cm wide when the spur wall was reinforced. The spur wall was preserved to 45 cm in height.

Despite its small size, this box oven was capable of producing a significant amount of bread. Given the configuration of the oven as excavated, it could hold between 24 and 35 cylindrical bread molds at a time. The tomb of Amenemhat at Beni Hasan shows 32 cylindrical bread molds stacked inside the oven (see Figure 81).\(^{542}\) This assumes that the baker stacked the molds on their sides so that he might remove them by placing a stick inside.\(^{543}\) The baker heated the molds and then placed the dough inside to bake using the residual heat from the mold.

\(^{541}\) For a discussion of the box oven see chapter 4.3.4, Phase I *shena* building.
\(^{542}\) Newberry, *Beni Hasan I*, plate XII.
Experimental archaeological data on baking in ancient Egypt shows that cylindrical bread molds take anywhere from “a few minutes” to half an hour to heat to an appropriate temperature.\textsuperscript{544} Assuming a nine hour work day, the box oven in room 3 could conservatively heat between 432-630 cylindrical bread molds in a day. This is close to the number (390 loaves) that the Lahun valley temple produced per day.\textsuperscript{545}

The amounts of ash in the two other Phase I shena rooms suggest that there was significant baking activity there as well. Neither room 1 or room 2 were excavated completely, and ovens may be located in the western portions of those rooms. Three box ovens could triple the amount of bread baked per day to 1,296-1,890 loaves at the Phase I shena building, whose upper limit is close the amount (2,222 loaves) that Medinet Habu produced daily.\textsuperscript{546}

An inscription in the Wadi Hammamat from the reign of Senwosret I lists the numbers of loaves that workers received on the expedition.\textsuperscript{547} A basic laborer earned 10 loaves, a hunter received 15 loaves, and a craftsman got 20 loaves.\textsuperscript{548} Corresponding

\textsuperscript{544} The larger figure of 30 minutes is based on modern ceramic bread loaf molds. Ibid.
this with the output of the known oven, the *shena* supported between 21 and 63 people per day.\(^{549}\) If there were three ovens at the Phase I *shena*, then it could have supports between 64 and 189 workers daily.

There was no evidence of ovens in the Phase II *shena*, but there are areas of burning in refuse deposit A and the “beverage processing area,” as well as three hearths in refuse deposit C. Ovens are not required to efficiently bake bread using cylindrical bread molds or bread trays. Open fires, which are seemingly ephemeral in the archaeological record, have the ability to create a huge output of bread using the heated bread mold method. Further, with open fires, the bakers are not limited by architecture - only area, the number of workers they can muster, and fuel. For example, on a festival day when the temple required much more bread for the offering,\(^{550}\) the bakers simply needed to set an extra fire.

The fact that there is only one dedicated oven is rather troubling on the surface, but it is clear that that single oven was capable of producing the same amount of bread that the Lahun Valley temple made daily. If there were ovens in the other Phase I rooms, the *shena* would have had a similar output to Medinet Habu. An industrial baking facility, like that at the *shena* of Senwosret III, need not have banks of ovens to bake enough bread for the offering and wages and provide for festival days.

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\(^{549}\) The exact ratio of low status workers, to higher status administrators at the temple of Senwosret III is unknown, hence the large range of possible numbers of staff. The lower number assumes that all the wage earners were laborers, which is clearly not the case at the temple, and the higher number assumes that all the wage earners were craftsmen, which was also not the case.

5.1.2 Beer

Beer was the drink of choice in ancient Egypt and represented the second largest commodity at the temple of Senwosret III. It was probably drunk at every meal.\textsuperscript{551} Beer had a couple of advantages over water. First, it was nutritious; providing carbohydrates that the body needs for energy.\textsuperscript{552} Second, the alcohol created by the process of fermentation killed bacteria in water, thus making beer safer to drink than water.\textsuperscript{553}

Beer also formed a major part of the offering ritual. At the roughly contemporaneous valley temple at Lahun, one daily offering account lists 63 $sd$ jugs and 172 $hpnw$ jugs of beer.\textsuperscript{554} It is unclear what volumes the $sd$ and $hpnw$ jugs represent. At south Abydos, there are two vessel types commonly associated with beer: the beer jar which has a volume of roughly 11.5 liters and a beer beaker which has a volume of roughly half a liter. If the $sd$ jugs are beer jars $hpnw$ jugs are beer beakers, then Lahun produced 811 liters of beer on that day. If they are reversed and $hpnw$ jugs equal beer jars, then Lahun produced 2,010 liters of beer on that day. Either way, the Lahun valley temple produced a lot of beer. A better idea of volume can be attained from the daily offering lists of Medinet Habu. It is unlikely that the mortuary temple of Senwosret III produced beer on the same scale as Medinet Habu, but daily offering lists from the temple of Medinet Habu give us an idea of the vast quantities of beer that temples

\textsuperscript{551} Samuel, “Brewing and Baking,” page 537.
\textsuperscript{553} Ibid.
required; 204 jars of beer were presented daily to the gods.\textsuperscript{555} This is roughly 2336 liters or 617 gallons of beer.\textsuperscript{556} Further, the south Abydos beer beaker, the vessel from which beer was drunk and/or the vessel used in the ritual to present the beer has a volume of about half a liter. This means that Medinet Habu produced 4937 servings of beer on a daily basis. On the Festival of Opet 385 jars or 9,300 servings of beer were made, and on the Feast of Soker 905 jars or almost 22,000 servings of beer were made at the temple of Medinet Habu.\textsuperscript{557}

Only three ingredients are required in order to make beer: a cereal, yeast and water. These basic commodities were readily available to all ancient Egyptians. An individual could grow their own grain, or receive it as wages from their employer; grain was the most basic monetary unit in a moneyless society.\textsuperscript{558} In places like Lahun and perhaps also at \textit{Wah-sut}, the mansions in these state built towns had overlarge granaries and they provided grain to smaller households as part of a system of redistribution.\textsuperscript{559} At Deir el-Medina the inhabitants generally received their rations in the form of grain, rather than finished products, i.e. bread and beer.\textsuperscript{560} Further, the workmen got different

\textsuperscript{556} Admittedly, this figure is based on the volume of a Middle Kingdom beer jar, which holds 11.453 liters or 3.02 gallons.
\textsuperscript{557} Ibid., page 270.
proportions of the two cereals: barley and emmer. They got roughly 36.5 percent more emmer than barley. The differing proportions of emmer and barley can be explained by the fact that more grain is required to make bread (emmer) as opposed to beer (barley). Further, beer grist can be used for more than one batch of beer, whereas grain can only be used for bread once. While both grains can be used in either beer or bread, each grain seems to have been used for different purposes. Analysis of surviving bread loaves shows that most are made of emmer, whereas the majority of beer residues included barley. It must be noted that the discrete uses of barley and emmer are seen in the New Kingdom, and mostly from tomb contexts. This preference for a particular type of grain may be different in the Middle Kingdom, in temple or household contexts, change between sites, or may depend on agricultural yields for a particular year. It might be possible to determine which grains were in use at the shena from residue analysis of cylindrical bread molds and beer beakers.

Most of our knowledge about the brewing of beer in ancient Egypt comes from artistic representations. Tomb paintings and models seem to feature step by step pictorial guides on brewing (see Figure 82, the tomb of Ti). In these scenes, brewers are shown grinding grain, sieving mash, heating vessels, filling vessels, and in some instances standing in large vats of beer. Despite the artistic evidence, it is difficult to determine the actual methods used to brew beer. Scenes of brewing of beer often appear

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561 Ibid., pages 13-14.
563 Ibid.
side by side with scenes of baking bread. In some brewing scenes, what appears to be a loaf of bread is depicted at the sieving station.\textsuperscript{564} For this reason, Egyptologists have generally considered the ancient Egyptian method of brewing beer to be the same or similar to that of the modern Egyptian practice of making bouza.

![Figure 82: Brewing scene from the tomb of Ti, after Wild, Le Tombeau de Ti, fasc. 1, plate 66](image)

In modern Egypt, the lower socio-economic sector brews a type of beer called bouza.\textsuperscript{565} Bouza is made with wheat, some of which is mixed with water, kneaded into a dough and very lightly baked into bread. The remaining wheat is malted and then coarsely ground. The resulting grist and bread are crumbled into a vat of water and left to ferment for twenty-four hours.\textsuperscript{566} The beer is strained to remove most of the solids. The ensuing beer is pale yellow and thick, frequently with remnants of dough floating on

\textsuperscript{564} It is not, in fact, a loaf of bread, but the remnants of chaff from the malting process.
\textsuperscript{566} Ibid.
the top. The alcohol content was roughly 4 percent by volume, which is less than a can of Budweiser beer. Brewing bouza and baking bread involve the same initial steps; therefore, it makes sense that these two activities appear together in ancient Egyptian art.

Recent residue analysis using scanning electron microscopy by Delwen Samuel, however, shows that the ancient Egyptians did not use the bouza method to brew their beer. The beer residues in her analysis all contain chaff. If the brewer made the beer with lightly baked bread, there would be no chaff as the brewers remove it to make flour that went into the bread dough. When the bread is baked, the starches fuse and the yeasts die off. The starches then cannot release their sugars and the yeasts cannot begin the process of fermentation. Even if the bread is baked lightly enough to prevent the fusion of the starch, the starch granules in bread are elongated and twisted due to the kneading done to form the dough; starch granules from ancient Egyptian beer residue do not show this twisting or elongation, indicating that they were never part of bread.

The ancient Egyptian brewers used malted grain to make beer, as indicated by residue analysis. The starch granules in beer show “pitting and channeling [that] matches precisely the pattern observed in modern malt and malt-based foods.” In

567 Ibid., 1158.
568 Large commercial beers like Budweiser have an alcohol content of around 5 percent, while their “Light” counterparts have about 4 percent, similar to bouza.
570 Ibid., page 555
571 Ibid., page 551
572 Ibid.
order to create a malt, the brewers encourage kernels of grain to germinate. The process of germination breaks down some of the starch molecules into sugars. The sugars are essential for yeast growth and subsequent fermentation. Germination only occurs in live, undamaged kernels of grain - those which retain their chaff. As noted above, analyzed beer residues contain chaff. Samuel notes that “malt is best produced in shallow layers with good airflow,” which can be done on mats or in wide shallow vessels. In many brewing scenes, beer jars are shown laying on their sides with an attendant monitoring them (see Figure 83 with tipped jars form tomb of Ti). Wild suggests that the malting was done in these tipped jars. Being tipped on their sides would allow more surface area for the grain. The nature of the ceramic insures an even temperature inside the vessel, which is important for inducing the grain to sprout. When the grain sprouted sufficiently, the jars could be turned upright, and water added to begin the brewing process. A large industrial brewery, like one might expect in a shena, would require a large area for malting all the grain. However, if malting occurred directly in the beer jars or on large mats, malting

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573 Ibid., page 550.
574 Ibid., page 551.
575 Ibid., page 552.
578 Samuel, Brewing and Baking, page 553
579 Ibid.
activity areas might not be visible in the archaeological record. It is possible that bread trays were used for malting grain. They average about 60 centimeters in diameter and their smooth inner surface would provide an ideal surface to spread grain and allow it to germinate.

Once the malt is ready, the brewers ground it coarsely to produce grist. The grinding allows water to have access to the starch and various sugars and enzymes, previously locked within the jacket of the chaff. Some grist was then set aside, while the brewers heated the rest to a thick porridge. Then the cooked and uncooked grists were recombined. The cooked grist releases even more starch particles (i.e. nutrition), while the uncooked grist retains the sugars for fermentation. Next, the brewers sieved the mixed grists using water. The water carried away most of the starches and sugars, while the chaff remained in the sieve. The ancient Egyptians termed the chaffy residue smrt. It could be re-rinsed to make a weaker beer. It seems that smrt was a commodity; an Amarna jar label has the inscription “good smrt of the queen.” It is this lump of chaff that scholars mistake for bread loaves in the sieves of tomb models and paintings.

Yeast is essential for the fermentation process; it eats the sugars and converts them into alcohol. Yeast is a living microbe that is borne in the air. Leaving a vat of warm water and grain open will encourage yeast growth. Once a brew is made, the brewer can reuse an unwashed vessel (i.e. leftover yeast), add a bit of the last batch of

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580 Ibid.
581 Ibid., page 554.
583 Samuel, “Baking and Brewing,” page 556.
beer to the new, or add an ingredient that is naturally rich in yeasts, such as the skin of a fruit.\textsuperscript{584}

The tomb of Antefoker, vizier for Amenemhat I and Senwosret I, depicts what sort of equipment the brewers used in the production of beer (see Figure 84). The Antefoker brewing scene depicts beer brewing in large vats, which reach up to a man’s thighs.\textsuperscript{585} In the depictions the vats are characterized with a wide aperture and a high shoulder that tapers down to a wide flat base. The depictions suggest a height of around 60 centimeters and an aperture of around 40 centimeters.\textsuperscript{586} There is one example of a vessel of this size in the published material on Middle Kingdom ceramics from the site of Tell el-Daba.\textsuperscript{587} The vessel is made of marl clay with a

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{beer_brewing.png}
\caption{Brewing beer from tomb of Antefoker, after Davies, plate XII.}
\end{figure}

\textsuperscript{584} Ibid.

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flat base and is exactly 60 centimeters tall and 40 centimeters wide.\textsuperscript{588} Although there are a lot of large, wide mouthed vessels from the \textit{shena}, none definitively have this form. This does not preclude other forms from being used as beer vats; one form in particular from the \textit{shena} is large mouthed (an average of 30 cm in diameter) with a very high shoulder, and has soot on the outside.\textsuperscript{589} Unfortunately, this vessel type is never preserved more than 15 cm in height, so it is unclear if this was a very tall vessel, like a beer vat, or more like a large bowl. Due to the huge volume of pottery found at the \textit{shena} at south Abydos, body sherds were discarded, the true height of some of these large storage vessels may be obscured.

From the tomb of Antefoker, there is a brewer decanting beer from a tall vat into a beer or water jar,\textsuperscript{590} a type that is fairly common at the \textit{shena} (see Figure 85). There were 1200 water/beer jar rims recovered from the \textit{shena}, which makes it the seventh most common ceramic form. The water/beer jar has a simple rim with a short neck. The shoulder sits a third to half way down the body of the vessel and has a round base. This necked vessel, unlike the wide mouthed vats, is perfect for the storage of beer because the mouth can be stoppered with mud, which arrests fermentation and allows the vessels to be transported without spillage.

\textsuperscript{588} Ibid. \\
\textsuperscript{589} The soot is key, because some of the grist is heated into a thick porridge. \\
\textsuperscript{590} Ibid., plate 9.
There are dozens of sealings of a beermaker named Amenemhat from the temple magazines but, it occurs only four times in the *shena* refuse deposit.\textsuperscript{591} The fact that the Amenemhat’s sealings were recovered from the temple magazines indicates that beer was stored there for some period of time before it was used in the ritual or given to personnel. One might expect Amenemhat’s seal to appear on the stoppers that graced the tops of the beer jars, but no jar stoppers at south Abydos have any seal impressions. However, the mud jar stoppers from south Abydos, have rim impressions that are mostly similar in size to water/beer jars.\textsuperscript{592} Amenemhat’s sealings most often have a peg back type, indicating that he sealed either a box or a door. It seems unlikely that Amenemhat sealed boxes that contained beer jars, as the boxes would need to be rather large; beer jars are roughly 40 cm in height and about 25 cm in width at the shoulder. If Amenemhat was sealing a temple magazine door, it advocates the notion that he was part of the bureaucracy of the temple.

There is no architectural evidence of beer brewing at the *shena*, even though the sheer volume of beer demanded on a daily basis by temple for ritual and wages supports the idea that the *shena* produced beer in house. Industrial brewing facilities have been excavated at predynastic Hierakonpolis and Abydos, but archaeologist have identified none from the pharaonic period.\textsuperscript{593} The Hierakonpolis brewery includes rows of vats set

\begin{itemize}
  \item \textsuperscript{591} See section 6.3.5c for a complete discussion of this sealing.
  \item \textsuperscript{592} The aperture of water/beer jars is around 8 cm, while wine jars is around 12 cm. Additionally the rims of wine jars are double the thickness of water/beer jar rims. See section on Jar stoppers in previous chapter.
\end{itemize}
into a platform with evidence of fires set between the vats.\textsuperscript{594} Given the ubiquity of beer in ancient Egypt, it seems odd that no brewing facilities exist from the pharaonic period; especially at large industrial sites like Amarna, where there are so many identifiable disparate activity areas. This suggests that brewing, unlike some other activities, did not require specific architecture or artifacts for its production. Brewing requires a large area for the malting of grain, querns to mill the malt into grist, papyrus sieves to filter out solids, a fire to heat water and to cook some of the ingredients, and jars of various shapes and sizes to contain the beer in its initial form, while it is fermenting, to decant it, to store it, and finally to consume it. The vessels associated with beer production can easily be repurposed for other activities, which may make their primary and other functions less overt.

5.1.3 Wine

Wine was not used for daily domestic consumption in ancient Egypt, but for special occasions. When wine is mentioned in New Kingdom tomb scenes the captions indicate that it was part of a holiday celebration.\textsuperscript{595} Wine was also given to soldiers as a

\textsuperscript{594} Ibid., page 142.
celebration of victories. Janssen points out that wine was five to ten times more expensive than beer based upon Deir el-Medineh lists. Temples had more access to high status commodity items such as wine than a domestic household. At the temple of Ramses III, the offering called for 2 jars of wine, but 144 jars of beer daily. That would put the total amount of wine (not including festival days) at 730 jars per year. Wine from festival days accounts for 70% more wine, for a total of 1,775 jars of wine per year at the temple.

Wine was undoubtedly an important beverage at the temple of Senwosret III as 3,000 diagnostic sherds of wine jars were recovered from the shena. Wine jars are the most frequent of the large liquid storage containers.

Figure 86: Offering bearer carrying wine jars in nets on a yoke, after Davies Antefoker, plate VII.

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598 Haring, Divine Households, page 408 and page 76.

599 Ibid., page 208.

600 A wine jar is characterized by a tall neck with a rolled rim and occasionally has horizontal stripes painted on the neck. See Chapter 4.4 ceramic typology for description of wine jars.
containers from the ceramic assemblage of the shena. The association of the long necked Nile storage jars with wine jars is based upon the similarity between these and depictions of wine jars in Middle Kingdom art (see Figure 86). Further, the necks of these jars often feature an indentation upon which a small dish can sit for ease of “corking” the jar (see Figure 87). Of course, these large liquid storage jars could have been used to hold anything - beer, water, or wine, and their association with wine in particular is not certain.

There were also about a thousand mud jar stoppers recovered from the shena - about 12% of which fit the diameter of the wine jar rim. Because the wine travelled long distances, it was sealed using a large lump of Nile mud, which was then formed into various shapes. The jar stoppers

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601 There were only 1200 diagnostic water/beer jar sherds. It may be that the water/beer jars were used multiple times, where as wine jars were used once. The fabric of both water and wine jars (Nile C) is porous and allows for evaporation of some of the liquid. One method of preventing this was to coat the inside of the jar with a thin layer of mud. However, the coating flaked off into the liquid if used again. See Faltings, Dina. Die Keramik Der Lebensmittelproduktion Im Alten Reich, Studien Zur Archäologie Und Geschichte Atlägyptens 14. Heidelberg: Heidelberger Orientverlag, 1998. Pages 204-5.


604 See chapter 4.4.2 for discussion of jar stoppers from the shena.
prevented spillage while en route from the vineyard. Jar stoppers also arrested fermentation inside the vessel, preventing the wine from turning into vinegar.\textsuperscript{605}

There is no evidence that wine was produced at the \textit{shena} of the mortuary temple of Senwosret III. There is little understanding concerning the archaeological remnants of vintage from ancient Egypt. Perhaps the only architectural remains would be the vats or troughs used for pressing grapes.\textsuperscript{606} Temples clearly owned vineyards and would produce wine for their own consumption; the Theban temples during the reign of Ramses III collectively owned 433 vineyards.\textsuperscript{607} For climatic reasons, most of the vineyards in ancient Egypt were located in the Nile Delta or in the Fayum.\textsuperscript{608} Middle Kingdom tombs at Beni Hasan and Bershah in Middle Egypt and Thebes depict vineyards.\textsuperscript{609} It is unclear exactly where the vineyards were located, but if they were local, i.e. part of the estates of the tomb owners, then these site bracket Abydos. If the ancient Egyptians were growing wine grapes in middle Egypt and southern Egypt, then there is no reason why they could not also have been growing grapes at Abydos. However, there is no evidence in the form of stelae, tomb scenes, papyrii, inscription or

\begin{thebibliography}{99}
\bibitem{605} Murray, \textit{Viticulture}, pages 594-596.
\bibitem{609} Klebs, \textit{Die Reliefs und Malereien des mittleren Reiches}, pages 79-80.
\end{thebibliography}
wine label that mentions wine of Abydos. While it is possible that the temple of Senwosret III at Abydos had a local vineyard and made wine in the adjacent shena, it is much more likely that finished wine was shipped from estates in the north. The wine would then have been stored in the temple magazines until it was needed in the temple ritual.610

5.1.4 Meat Production and Processing in the Shena

One of the major food sources produced by the shena for temple was meat. Meat served as offerings and wages. Remnants of food are extremely rare in the archaeological record as they decay quickly. The consumption of meat, however, leaves animal bones behind. These can help to determine the genus of the animal, its gender and its age, which helps in the understanding of resource abundance and its management. As part of her doctoral dissertation, zooarchaeologist Stine Rossel analyzed the bones recovered from the temple and town of the mortuary complex of Senwosret III.611 She was able to identify some patterns in animal usage at the site.

At the mortuary temple of Senwosret III at Abydos, beef was the staple meat and sheep, goat, pig, poultry and fish seem to have largely supplemental. There are three main bone recovery areas from the temple. First is the west block refuse deposit

associated with the priests’ houses on the west side of the temple. Second, the east block refuse deposit resulted from the detritus of the temple magazines and temple ritual. And finally, the shena deposits are associated with the shena buildings and its midden. These deposits do show some variation between one another, which results from differential usage within the temple. However, these deposits can also be considered parts of a whole as they all went through the shena, which processed and distributed the meat products to other areas of the mortuary complex. This section will look at the distribution of cattle, sheep and goat, pig, poultry, and fish at the mortuary complex and what it tells us about the role of the shena in meat procurement and processing and the status of shena workers at the mortuary complex.

a. Cattle

Beef was the staple meat at the temple of Senwosret III. Cattle remains comprised 79% of all domestic mammalian remains and 65% of all animal remains. Cattle was a luxury meat because it is the most expensive to produce. The raising of cattle requires a lot of land, a lot of feed, and it takes much longer for calves to reach maturity than other animals. Despite the initial investment of resources in the live

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animal, one cow could feed a thousand people.\textsuperscript{614} With Egypt’s hot climate and lack of refrigeration, meat had to be either consumed within a day or preserved, usually by drying or salting.\textsuperscript{615} Regardless of how the meat was processed, beef probably represents both too ample and too expensive a meat for domestic household use.\textsuperscript{616} The next largest domestic mammals - sheep and goats - can only feed 150 people per carcass.\textsuperscript{617} This means that the temple needed six sheep/goats to equal the amount of meat in one cow. Although the amount of forage required for 6 sheep and 1 cow is about equal,\textsuperscript{618} the amount of time it takes for a sheep to reach maturity is 2/3 that of cows. A temple with hundreds, if not thousands of dependents would find the economic cost of cattle offset by the fact that fewer animals were needed to sate its employees.

The beef consumed at the temple came from relatively young cows. About half of the cows reached the skeletal maturity of 48 months, and 20 percent were killed before reaching 10 months old and another 10 percent before they were 18 months old.\textsuperscript{619} The slaughter of an animal before it reaches maturity suggests that the herd population is stable and/or growing and that the human population is not feeling

\textsuperscript{615} Ikram, \textit{Choice Cuts}, 199.
\textsuperscript{616} Most households would not be able to consume 1000 portions of meat before it went bad.
\textsuperscript{617} This assumes that each sheep/goat weighs 75 lbs. at maturity.
\textsuperscript{618} Sheep require 4 lbs of hay per day, whereas cows require 20 to 30 lbs per day. Goats require almost half the amount of forage of sheep and will eat many more varieties of plant.\textsuperscript{619} Rossel, \textit{The Development of Productive Subsistence Economies}, page 179.
environmentally pressured to keep the animals to ward against famine. Killing immature animals means that any animals that they may have engendered are also lost. In a famine situation, the oldest animals are killed first because their reproductive and supplemental product (milk, blood, dung for fuel) capabilities are lowest. A bull and/or steer is much less valuable than a cow because proportionally a herd requires a high ratio of females to males. Each bull can produce thousands of offspring and a steer can not produce any, whereas a cow bears calves and produces milk. As Ikram points out, artistic representations of cattle slaughter from ancient Egypt almost always show either castrated steers or bulls. Following this logic, one would expect a much larger number of males among the cattle remains found at Abydos. However, the numbers of males and females killed is equal. The slaughter of relatively young animals and a high percentage of female animals suggests that the cattle used at the temple was being raised specifically for their meat rather than for use as draft animals or kept to grow herds to accumulate wealth. The herd had to be large to allow for the replacement of breedable animals; those animals that were young and female at slaughter.

The distribution of various parts of the cattle throughout the temple and the town shows that certain cuts of meat were reserved for certain areas of the mortuary complex. Overall, the temple received the head and the upper hindlimb of the cow whereas the

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620 A steer is a bull that has been castrated, which makes it much less aggressive and therefore much easier for humans to handle.

621 Ikram, Choice Cuts, page 10.


623 Ibid., page 227.
town got the neck, the forelimb and the lower hindlimb. The differences in meat cuts from various areas suggests that the same animals were used to feed both the temple and the town. This supports the notion that the temple offerings were used throughout the mortuary complex as reversion of offerings. In the reversion of offerings the goods presented to the god, in this case the deceased king Senwosret III, were subsequently given to the temple staff as wages. The town of Wah-sut, as part of the mortuary complex, was a beneficiary of the reverted offerings. However, it seems that the best cuts of meat, the head and the upper hindlimb, were reserved for the temple.

The upper hindlimb contains the modern cuts known as the “round.” It is from here that we get most of the roast cuts, and it represents the largest contiguous meat area on the cow. In other words, the temple staff kept the largest portion of the cow for themselves. At the palace complex of Amenhotep III of Malkata, the palace has a much larger proportion of upper hindlimbs than other lower status areas of the site. This similar consumption pattern suggests that the ancient Egyptians reserved the upper hindlimb for the elite.

In modern Western society, the head of the cow is not considered a palatable cut of meat. In ancient Egypt, however, the head seems to have been reserved for the elite. Crania were found in the highest concentrations in the temple west block at the shena (42% and 47% respectively) and at the mayor’s house (22%). The same pattern

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624 Ibid., page 178.
625 Ikram, Choice Cuts, page 134, figure 44.
626 The exception to this is tongue, which widely used in Europe.
appears at Malkata, area E, where there is a significantly higher percentage of crania bones than other areas of the site, such as the workmen’s barracks and associated townsite.\textsuperscript{628} While there is little muscle tissue on a head, the tongue and brain represent significant cuts of meat; the tongue weighs 3-4 lbs, while the brain weighs about a pound. The large amount of fat in each affords a high caloric value in a small portion size. In addition, these two cuts, as viscera with high water content, required quick consumption to prevent spoilage. Ikram suggests that the head was particularly important for the temple offering ritual, in which the head was placed on the offering table as a representative part of the whole cow.\textsuperscript{629} As the head has the least amount of meat, it is also the most economical to present as a burnt offering as little nutritional value is lost.\textsuperscript{630}

It is clear that the mortuary temple of Senwosret III was confident in its supply of cattle, as it was able to slaughter both female and young animals. It is certain that temples kept herds of cattle. Lahun papyrus UC32179, an account of cattle herds, links cattle herds with a temples of Sobek and Sobek-Shedti.\textsuperscript{631} The papyrus Harris states that together all the Theban temples owned 421,362 head of cattle.\textsuperscript{632} The temples had

\begin{footnotes}
\footnote{Ikram, Choice Cuts, pages 118 and 213.}
\footnote{Ibid., page 221.}
\footnote{Ikram, Choice Cuts, page 118.}
\end{footnotes}
pasture lands and ships to transport live cattle from their ranches. If all the Theban temples pooled their cattle herds as suggested by pHarris herd numbers, it is not unlikely that the same pattern holds true for the various temples at Abydos including the Osiris temple. Regardless of whether the mortuary temple of Senwosret III had its own cattle herds or had joint ownership with other Abydene temples, the Senwosret III temple definitely received meat from the temple of Osiris at Abydos. Several institutional stamp seals were recovered from the shena with the title “cattle stalls of divine offerings of Abydos.” These sealings all have wickerwork back types which indicates that the Osiris temple sent cuts of meat in baskets rather than live cattle to the mortuary temple of Senwosret III. If the Osiris temple sent the Senwosret III temple all of its meat offerings in this manner, the cattle remains from the temple and town would be skewed towards particular cuts of meat. The presence of joints from the entire animal indicates that the Senwosret III temple acquired most of its meat from live animals that were slaughtered on premises. The distribution of the Osiris temple sealings suggests that the Osiris temple sent goods over for festival days, rather than part of the daily ritual.

A sealing recovered from the temple of Senwosret III and the shena has the title “overseer of the cattle stalls, Ameny.” Ameny was in charge of the cattle between the

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633 Ibid. pAnastasi IV 6, 11 and 7, 1 and 6 mentions the cattle transports of the temple of Seti II.
634 See Chapter 6.2.2c for a detailed discussion of the “cattle stalls of Abydos” sealings.
635 See chapter 6.2.2.
time they reached the temple and just before their slaughter. The Meketre models contain a “fattening stable” of two rooms (just wide enough for a cow to stand) with troughs built into one long wall. This was an area where the cattle came for the last week(s) of its life to fatten it up for slaughter. Several “slaughter areas/abattoirs/ fattening stables” have been identified at other ancient Egyptian temples: the temple of Neferirkare, Pyramid temple of Niuserre, funerary temple of Raneferef, the Great and Small Aten temples, and temple of Seti I at Abydos. The only distinguishing factor in these rooms was the presence of tethering stones and the presence of stone basins for water. Currently, there is no archaeological evidence of cattle stalls at the temple or shena at Abydos either in room function or with tethering stones. It is likely that the cattle stalls of the temple lay in areas that have not yet been excavated.

b. Sheep/Goat

Sheep and goat represent 15 percent of all mammal remains consumed at the temple of Senwosret III, whereas at the town is between 30 and 40 percent. Sheep and goat have very similar bone structures and it is very difficult to distinguish between them.

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637 There is no back type information on these sealings. Obviously, a cow cannot be sealed. The shape is not reminiscent of papyrus sealings, but rather something small like a bag or box.


640 Ibid.

them.\textsuperscript{642} As a result, they are generally discussed together.\textsuperscript{643} The town consumed sheep/goat almost double the rate of the temple and the rate of consumption in different areas around town was roughly the same. The large amount of ovicaprid remains from the ritual deposits of the temple suggest that sheep/goat was part of the daily offering ritual at the temple.\textsuperscript{644} There was very little sheep/goat from the temple’s West Block refuse deposit associated with on-duty temple staff intimating that they considered sheep/goat an inferior quality meat.\textsuperscript{645} The priests would probably have the right of first refusal for goods used in the offering, and show a preference for other meats like beef and Nile perch. The high rates of sheep/goat consumption at the town may not solely reflect reversion of temple offerings, like the cattle. Sheep/goat remains from the town may indicate domestic agricultural production as opposed to state or temple production.\textsuperscript{646}

In some instances it was possible to distinguish between sheep and goat remains at the mortuary complex; goats outnumbered sheep at a ratio of about 3 to 1. Goats are much easier to raise than sheep because they will eat most types of vegetation, they


\textsuperscript{643} Ibid.

\textsuperscript{644} Rossel, \textit{The Development of Productive Subsistence Economies}, page 183.

\textsuperscript{645} Ibid.

\textsuperscript{646} Ibid., page 229.
tolerate much harsher conditions, and require less water than sheep.\footnote{Rossel, \textit{The Development of Productive Subsistence Economies}, page 230.} The preference of goats may be due to the environment becoming more arid in the Middle Kingdom.\footnote{Ibid.}

c. Pig

Some pig remains were recovered from the town and the temple. In the town pig represents about 9 percent of the animal remains and 1.5 percent at the temple.\footnote{Ibid., pages 191 and 230.} Egyptologists generally have considered pork to have been taboo in ancient Egypt due to an account by Herodotus.\footnote{Herodotus. \textit{The Histories} Book II, 47. Sélincourt, Aubrey de. \textit{Herodotus: The Histories}, 3rd ed. London: Penguin, 2003. Page 115.} There also is a dearth of artistic representations of pigs.\footnote{Ikram, \textit{Choice Cuts}, page 30.} When pigs do appear in art they are shown “in a positive light as participating in daily activities that helped rather than hindered the tomb owner.”\footnote{Ibid.} In addition to providing meat, pigs will eat most anything and thus provide an excellent means of getting rid of household organic waste and providing manure to fertilize crops.\footnote{Miller, 1990, page 137.} The pig was part of the offering ritual at Medinet Habu and the temple of Ptah at Memphis and the temple of Seti I at Abydos.\footnote{Nelson, Harold. \textit{Medinet Habu III: The Calendar, The "Slaughter House, and Minor Records of Ramses III}, OIP 23. Chicago: University of Chicago, 1934. List 45, page 59. Morkot, Robert. ""Nb-M:\"t-R"" United with Ptah." \textit{INESS} 49 (1990): 331. Epstein, Hellmut. \textit{The Origin of the Domestic Animals of Africa}, Vol. 2. New York: Africana Publishing Corporation, 1971. Page 341.} Pig remains are fairly common at various sites from ancient Egypt such as Merimda, Kom el-Hisn, Hierakonpolis, Giza, Tell el-Daba, Armant, Malkata and
Amarna. Transactions involving pigs from economic documents never include the temple or state, suggesting that pigs were strictly a function of home animal husbandry. This pattern perfectly echoes that at the mortuary complex of Senwosret III, where 93 percent of the pig remains come from the town.

d. Poultry

There were very few bird remains recovered from the mortuary complex of Senwosret III - a total of 86 identifiable remains. Birds were a major part of the offering ritual; the Medinet Habu list 6 requested 30 birds of various species daily. Although one would expect a huge amount of bird remains at the mortuary complex of Senwosret

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658 Haring, Divine Households, page 76. Beef was reserved for festival days at Medinet Habu- but those occurred about once a week.
bird bones are hollow, which allows for their more rapid decomposition and allows them to be edible by both humans and scavengers. Little can be said concerning patterns of poultry consumption at the mortuary complex because so few bird remains survive. Fowl represents the most easily available source of meat to the ancient Egyptian; they are easily kept in relatively small areas, they do not require much food, and they reproduce rapidly and in multiples. Duck, goose and pigeon were the most common domestic species of fowl in ancient Egypt. Several different species of geese, duck, and pigeons were identified from the temple and the town. Other bird types included cranes, storks, herons, and a cormorant. Cranes, in particular, were kept domestically, and are seen in tomb scenes being force fed.

e. Fish

Fish were a major part of the ancient Egyptian diet and were plentiful in both the Nile and irrigation canals. Fish remains figure prominently in the faunal assemblage at the mortuary complex of Senwosret III. The town ate much more fish than the temple; 83 percent of the fish bones came from the town and the temple had the remaining 17 percent. The town also had the most different types of fish represented with at least

659 Over the 150 year life of the temple, with at least 30 birds a day for the ritual (there was probably more on festival days), there would be 1.6 million bird carcasses so we might expect a minimum of 200 million bird bones. Only 130 were recovered.
661 Ikram, Choice Cuts, page 24.
26 different species. The most common type of fish was catfish, which can survive in the irrigation canals as well as in the Nile. At the temple there was variable distribution of different types of fish across the three activity areas. In the West Block, or priest’s houses, they ate Nile perch, *Lates Niloticus*, almost exclusively. Further, the Nile perch that they consumed were large - most over 80 cm in length and at least one individual was 2 meters in length. The *shena* and East Block contain few Nile perch remains suggesting that this was a fish reserved for the elite.

Boessneck, in describing the various fish eaten at Elephantine, considers the taste of Nile perch to be “perfect,” especially in comparison to catfish. At the *shena*, 96 percent or the fish remains were various different species of catfish, the balance consisting of Nile perch and tilapia. The pattern of worker status re-emerges in the fish consumption with the priests receiving almost all the higher status Nile Perch, while the *shena* staff got catfish. The lack of species variety at the temple as compared to the town suggests that the temple was either holding back specific fish (certain species of catfish and Nile perch) for its own consumption and giving the “poorer” quality fish to the town or that the temple and town fished independently from one another. Although two specific species of catfish,

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665 Ibid., page 198.
666 Ibid.
668 Ibid., page 232.
Bagrus and Synodontis, live in the main channel of the Nile,\textsuperscript{671} in general, catfish prefer shallow, stagnant water.\textsuperscript{672} This, in combination with the Nile perch, indicates that the temple fished both the Nile, about 10 km away, and in more local canals.

Rossel suggests that fishing was a “seasonal addition to the diet at South Abydos.”\textsuperscript{673} During the inundation catfish and tilapia swim into the flooded fields to spawn.\textsuperscript{674} At this time, large amounts of fish were available almost directly outside the temple walls. However, the numerous non-seasonal fish bones from Nile perch at the temple, suggests that the temple procured fish year round.

The shena yielded some fishing gear, including copper fish hooks and limestone net weights. Fishing in ancient Egypt was accomplished using four methods: fish hooks, nets, spears, and baskets.\textsuperscript{675} In most archaeological contexts, the line, basketry, and nets rotted away completely. The presence of fishing gear at the shena is particularly interesting given that some of the fishing grounds were 10 kilometers away. The transport of fish requires neither the fish hooks nor the fish nets. These items could indicate that the fishermen were based at the shena.

\textsuperscript{673} Ibid.
\textsuperscript{674} Rossel, The Development of Productive Subsistence Economies, page 232.
There were four fish hooks recovered from the *shena*, three complete and one broken. Three came from the Phase II *shena* building (one from the long transverse room, one from room 2, and one from the southern part of room 4) and one from the *shena* midden (see Figure 88 for the exact findspots). The fish hooks are all made of copper wire and weigh between .5 and 1.3 grams (see Figure 89 for photos of 2 of the fish hooks). The thickness of the wire varies from 2 mm to 3 mm. All the fish hooks are roughly 3 centimeters in height. One end of the fish hooks features a loop of wire that has been hammered flat and looped until it either just reaches the shaft of the hook or doubles over completely. The “hook end” consist of either a simple point or a barb. The barb is constructed by cutting into the wire rather than folding the wire back on itself. The barb came into use during the 12th Dynasty.\(^{676}\) These fish hooks are very similar in size and construction to those recovered from other Middle Kingdom sites such as those at Lahun.

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\(^{676}\) Brewer and Friedman, *Fish and Fishing in AE*, page 28.
and Harageh,\textsuperscript{677} and Buhen.\textsuperscript{678} In tomb depictions, catfish are the most common victims of the fish hook.\textsuperscript{679}

Fishing nets were an efficient way of catching large amounts and different varieties of fish in a single cast. The ancient Egyptians most commonly used seine nets, which require multiple men to haul them up.\textsuperscript{680} It consisted of two lines, one weighted and one with floaters, with a net in between.\textsuperscript{681} The nets used to catch the fish have long since rotted away, but there is a fishing weight from the shena midden (see Figure 90). The sinker is made of limestone and has four grooves running down its length, which gives it the appearance of a green pepper. These grooves housed the cord that attached the weight to the net. There are similar net weights from the Middle Kingdom from Lahun\textsuperscript{682} and Buhen.\textsuperscript{683}

The presence of the copper fish hooks in the shena buildings can also be explained by the fact that the shena undertook some amount of metalworking.\textsuperscript{684} It may be that the shena made or repaired fish hooks or used old ones as scrap metal. If the fish

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{limestone_fishing_weight.png}
\caption{Limestone fishing net weight.}
\end{figure}

\textsuperscript{677} Petrie Museum UC34518, UC34519, UC38817, UC63380, UC63387, UC6924, UC7251, UC7252, UC7253, UC7254.
\textsuperscript{679} Brewer and Friedman, \textit{Fish and Fishing in AE}, page 30.
\textsuperscript{680} Ibid., page 42.
\textsuperscript{681} Ibid., page 42-44.
\textsuperscript{682} Petrie Museum UC16752,
\textsuperscript{683} Emery, \textit{Buhen}, pages 112-115, plate 41.
\textsuperscript{684} See section 5.2.1 on metalworking below.
hooks from the shena represent scrap metal, it nullifies the idea that the shena was responsible for procuring fish. However, if the shena produced copper fish hooks, it was most likely doing so for its own use or for use by the temple. This brings up two interesting possibilities concerning procurement of raw materials by the shena. Either the shena had fishermen on staff to supply its needs or the fisherman worked for the temple, but outside direct shena authority. If the fishermen were contracted by the temple, the shena may have provided and/or repaired some fishing gear.

### 5.1.5 Fruits and Vegetables

Fruits and vegetables were a major component of the offering ritual and of wages. At Medinet Habu, the statue of Ramses III was offered 10 baskets of fruit, 100 bundles of vegetables, and 20 bulbs of onion daily.\(^{685}\) Unfortunately, fruits and vegetables are usually consumed whole, their remnants easily rot away completely or are subject to scavengers. This means that there is rarely any archaeological evidence of the presence of fruit and vegetables. There were some date pits recovered from the shena. Other seeds and floral remains can be recovered using flotation of soil samples. During excavation, soil samples were taken for this specific purpose, however, the material has not been processed yet because we cannot take any material out of the country and there is no archaeobotanist on staff to analyze any seeds that flotation yields. It is hoped that

\(^{685}\) Haring, Divine Households, page 76.
the soil samples will eventually afford seeds or other material to help us discern any plants that were processed in the shena.

5.2 Craft/Commodities Production at the Shena

The shena at the mortuary temple of Senwosret III was involved in a certain amount of craft production. These activities included metalworking, pottery production, and textile production. Some craft products were likely destined for offerings or wages, especially linen. Other crafts at the shena helped to sustain the mandate of both the shena and the temple by manufacturing the tools required by the various trades. Metal tools and cylindrical bread molds were probably not destined for the offering table, but they were integral in the production of foodstuffs and other commodities. Craft production also allowed the temple to generate wealth by creating commodities that accrued value in their final form, such as linen or recycling scrap metal into finished products. Unlike food items which must be consumed, commodities like textiles and metal can be stockpiled indefinitely and traded over long distances with little fear of spoilage or damage.

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687 Cylindrical bread molds made bread and copper needles helped sew cloth.
At city sites like Tell el-Dab’a and Amarna industries like metalworking and pottery production seem to have commanded disparate workshops.\textsuperscript{688} Thus, the perception is that craft production in ancient Egypt should appear as separate and distinct activity areas. However, in the tomb of Khnumhotep III at Beni Hasan, scenes of bread production, beer brewing, and weaving are located together with an overseer of the \textit{shena} managing the work.\textsuperscript{689} The tomb of Amenemhat at Beni Hasan depicts pottery production alongside metalworking, which are on the same wall as bread and beer production.\textsuperscript{690} This suggests that craft production and food production occurred side by side in the Middle Kingdom. Since craft production at the \textit{shena} is generally ancillary, it is not surprising to find it intermingled with food production.

It may be that the general lack of understanding of the processes involved in some of the craft industries stems from the fact that the ancient Egyptians undertook them under ephemeral circumstances. Evidence for craft production at the \textit{shena} is based largely on the artifactual evidence like tools and industrial waste rather than architectural features (although there is a pottery kiln). This section looks at the evidence yielded by the \textit{shena} and compares it to both artistic representations of crafts


\textsuperscript{690} Ibid., plates XI and XII.
and analogous evidence from other sites and other periods in order to evaluate the presence of the metalworking, ceramic, and textile industries.

5.2.1 Metalworking at the Shena

The ancient Egyptians used many different types of tools made out of metal, commonly copper. Metal tools found at the shena site included sewing needles, fish hooks, chisels, kohl sticks, and tweezers. Small tools from various trades were some of the expected finds among the shena’s refuse. Despite the fact that these tools were relatively common, copper was a valuable commodity. In fact, the ancient Egyptians used the weight of copper, or deben, to calculate the relative value of objects. The deben system established a standardization of prices without the use of currency. Copper, like other metals, is also highly re-useable. If broken, a needle could be added to other copper scrap to be melted and formed into new tools.

The most conclusive line of evidence that there was metalworking at the shena comes from copper slag. Almost every unit had slag present (see shaded units in Figure 91). Metalworking produces very little slag. The copper slag from the shena is roughly round in shape, no more than 1.5 cm in diameter, verdigris and dark grey colored, with extensive surface pitting. Each piece of slag weighs about one tenth of a

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692 This is in stark apposition to cylindrical bread molds, which when broken, were basically useless.
gram; there were about 1000 slag pellets recovered from the *shena*, for a total of 105 grams. This amount of copper slag does not suggest large scale metalworking. There is also a piece of slag that has a copper needle melted into it, suggesting that the *shena* utilized scrap metal rather than copper ingots.  

Two units exhibited much larger amounts of copper slag than any of the others; first, was unit 130 just to the northeast of the rear temple door, and second was unit 125 situated to the south of the Phase II *shena* building.  

Neither unit had any architectural remains that suggested a forge. Tylecote notes that “for the purposes of melting scraps of metal in crucibles, a ring of stones, a pile of hot charcoal, and a clay tuyère connected to bellows is all that would have been required.”  

There is an example of this process depicted in Rekhmire’s tomb, in which there is a central

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694 Tag number 32489, Unit 165, Locus 5, Lot 4, weighing 0.4 grams.
695 Unit 130 had 34 grams of slag.
696 Unit 125 had 28 grams of slag.
mound of charcoal which emits flames (see Figure 92). The fire is being tended by a man with a stick. Either side of the fire stands a man stoking the flames with pot bellows. This simple pit fire easily produced the 1100°C heat needed to melt copper.

Owing to the fact that metal working did not require permanent emplacements and because copper slag is easily missed, there are almost no known metalworking “facilities” from ancient Egypt. Only one large scale metalworking site is known from dynastic Egypt; that of Piramesse-Qantir. Dating to the late 18th and 19th Dynasties, the metalworking factory at Piramesse was 30,000 m² and had a large cross furnace.

Davies, The Tomb of Rekh-mi-re, plate LII.

It is only in recent years that Egyptologists have screened the fill and soil from their excavations.


There are several sites that relate to the processing of copper, known as smelting. Smelting removes the impurities from the natural copper ore and results in large amounts (often tons) of a waste product called slag. The presence of this smelting slag is a marker for copper purification enterprises, which are generally near the copper mines. Some sites include Wadi Dara, Buhen, Qubban, and Timna. Much of our current understanding about metal working in ancient Egypt comes from these smelting operations.

It was not necessary to have a large installation to basic metalwork, due to the pliability of copper. A metalworking can hammer copper into shape without heating. Copper also has a relatively low melting point, around 1100° C, which is achievable with a simple charcoal fire. Metalworking in ancient Egypt, therefore, did not require permanent architecture, like ovens or kilns. In most cases, the sole evidence of metalworking at a site stems from the artifacts not architecture. This is the case at the shena at Abydos.

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Metalworkers required several items to produce molten copper. The first is a crucible to contain the copper during firing. Second, in order to create enough heat to melt copper, metalworkers employed bellows to stoke the fire. Finally, metalworkers used tuyères, or clay tubes, which had one end inserted into the fire and the other end attached to the bellows to stoke the fire. The shena of divine offerings at south Abydos yielded all of these implements.

There is almost no literature on ancient Egyptian crucibles. A crucible is a vessel holds metal while it is melted over a fire. The vessel not only contained the molten metal, but also allowed the metalworker to move the copper in order cast it. After the metal achieved a molten state, metalworkers pushed the charcoal aside. They placed two long sticks on either side of the vessel. The ends of the sticks were squeezed together to wedge the vessel firmly in place. The metalworkers then could move the crucible at will. Although a copper melting fire reached a temperature of 1100° C, the outside of a ceramic vessel remained relatively cool, only a few hundred degrees.\footnote{Rehren, Thilo. "High Temperature Industries in the Late Bronze Age Capital of Piramesse - (Qantir)." Proceedings of the First International Conference on Ancient Egyptian Mining and Metallurgy and Conservation of Metallic Artifacts, Cairo, Egypt, 10-12 April 1995. Ed. Feisal Esmael. Cairo: Supreme Council of Antiquities, 1995. Page 103.}  

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{metalworkers.png}
\caption{Sticks used to manipulate crucibles in Rekhmire’s tomb, after Davies, Tomb of Rekhmi-re, plate LII.}
\end{figure}
temperature differential meant that the ceramic crucible, whatever form it took, could be handled with wooden sticks without setting them alight. Scenes from Rekhmire’s tomb depict metalworkers removing a crucible out of the fire with two sticks and then pouring the molten metal into molds (see Figure 93).

There seems to be no consistency in shape to copper crucibles from ancient Egypt. They are, however, easily identifiable by the remnants of copper left on the inside. Some crucibles are hemispherical with tall sides, others are low-sided with a flat bottom, yet others have a spout (see Figure 93 from the tomb of Rekmire). Old Kingdom artistic depictions show crucibles as rhyton shaped (see Figure 94 from the tomb of Mereruka).

However, not one of the extant rhyta have copper in them. Jacquet-Gordon notes that there is also some evidence that cylindrical bread molds were used as crucibles. Cylindrical bread molds were used as crucibles at the

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706 Davies, Tomb of Rekh-mi-re, plate LII.
709 This includes the 7 labeled Middle Kingdom crucibles from the Petrie Museum excavated at Tell el Retabeh in the Wadi Tumilat.
New Kingdom site of El-Markha Plain (site 346). This suggests that the metalworkers re-purposed any suitable vessel that they had on hand. A cylindrical bread mold was used as a crucible at the *shena* at Abydos (see Figure 95). Only the rim fragment remains of the bread mold cum crucible. It has about a layer of copper melted into it, the thickness of which varies from 1 mm to 6 mm. Their thick walls and robust construction made cylindrical bread molds perfect for use in the intense fires of a pit forge. Additionally, with literally thousand of these vessels laying around the *shena* they were readily available and easily disposable if one broke.

An integral part of the pit forge was a tuyère. A tuyère is a nozzle inserted into the heart of the furnace that directs air from bellows or blow pipes in order to intensify the heat of the fire. Tuyères were ceramic in order to withstand the severe temperatures of the forge. The other end of the tuyère attached to a hollow reed, in the form of a blow pipe or attached to bellows, and through which air flowed to stoke the flames. There are no studies of tuyères from ancient Egypt. Their appearance in the literature is limited to an acknowledgement of their existence and perhaps a brief description in site reports.

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There is an example of a possible blow pipe tuyère from the *shena* from unit 130, the area with the largest copper slag deposits (see Figure 96). The tuyère is made from Nile B2 and shows evidence of significant burning with heavy deposits of ash and an intensification of the red color of the fabric. The end that attaches to the reed pipe is broken, but it gradually tapers out towards the shoulder where it angles sharply towards a point. The opening of the tuyère where it junctions with the reed pipe is 1.4 centimeters in diameter. The hole of the fire end is .3 centimeters. The whole tuyère is 2.5 cm in diameter at the shoulder and has a preserved length of 5.4 cm. The vessel is certainly not a cylindrical bread mold; the inner diameter is too narrow, the base is too pointed, the hole in the base is too small (holes in cylindrical bread molds are a minimum of .5 cm in diameter), and there is no flour and oil residue on the inside despite its obvious and repeated use. There are no other published physical examples of blow pipe tuyères from ancient Egypt.

Figure 96: Blow pipe tuyère from the *shena*
There are at least thirty of depictions of blowpipe tuyères in scenes of metalworking from tomb paintings (see Figure 97 from the tomb of Puyemre).\textsuperscript{712} The blow pipes and tuyères are always shown as one piece, rather than a distinct wood pipe with a ceramic tip. In the drawings the tuyères are rhomboid in shape with the pointed tip hovering just above or to the side of the charcoal fire. This is very similar to the tuyère recovered from the \textit{shena}. There are no other known excavated examples of blow pipe tuyères.

From Qantir, Timna, Buhen, and Arabeh in the New Kingdom, tuyères seem to take two basic forms. The short tuyère that is almost hemispherical in shape and about


6-7 cm in diameter.\textsuperscript{713} The long tuyère is a ceramic tube 16 or more centimeters long with an angled whole at one end to direct the air down into the fire.\textsuperscript{714} There is another long tuyère type from the Seti I temple at Thebes.\textsuperscript{715} These slightly flare towards the shoulder. The “base” is flat and angled and pierced with a small hole (see Figure 98). They seem like a hybrid between the blow pipe tuyère from Abydos and the long tuyères from Qantir. None of these forms appears at the Abydos \textit{shena}.

Jacquet-Gordon suggests that cylindrical bread molds may have been used as tuyères.\textsuperscript{716} There is a type of cylindrical bread mold that has a hole in its base (see Figure 99). Roughly 15\% of cylindrical bread molds from the \textit{shena} midden at Abydos


\textsuperscript{714} Ibid. Emery, \textit{Buhen}, type 185, page 175, plate 69: object 760, page 95 has copper remnants on it.


have a hole in their base (see section 4.4.1 for a complete discussion of cylindrical bread molds). Cylindrical bread molds are similar in size and shape to the dedicated tuyères from Qantir, Arabeh, and the Seti I temple at Thebes. Even if metalworkers used cylindrical bread molds as tuyères at a site, it may be impossible to distinguish daily use from re-use in forges. 717 Both tasks subject the bread molds to repeated exposure to fire. Cylindrical bread molds may have been used as truyères at the shena at south Abydos, but there is no definitive evidence that they were.

The final piece of equipment needed to create a fire hot enough to melt copper are bellows. In ancient Egypt, bellows consisted of ceramic vessels with wide mouths and a sturdy rim to support a leather covering and a hole near the base to attach to the air-pipe and subsequently the tuyère (see Figure 100). 718 During the Middle and New Kingdoms an unusual shaped vessel was used as a pot bellows. The vessel has two large legs on one side and a knob on the other. There

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is usually a hole or two on the knob side at roughly ground level. It was into these holes that the metalworker placed the air-pipe. The bellows always has a rolled rim to allow for the attachment of skin to the mouth of the vessel. The earliest examples come from the Middle Kingdom.\textsuperscript{719} In fact at Buhen, Emery notes that “apart from beads, these form the largest group of objects found.”\textsuperscript{720} He found 347 examples. Many were unfired, or were partially fired due to proximity to the forge fire.\textsuperscript{721} The Senwosret III temple yielded two of these vessels; the first from the refuse deposit to the south of the temple wall and the other from the \textit{shena} midden (refuse deposit B) (see Figure 101).\textsuperscript{722}

This type of vessel has alternately been termed a firedog,\textsuperscript{723} or a pot stand, or crucible.\textsuperscript{724} Nibbi rejects the notion that their main role was as pot stands because the ceramic repertoire from ancient Egypt has a clear and abundant form for this purpose.\textsuperscript{725} Despite wide variation in width and height, pot stands are tubes that flare at the rim and

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{bellows.png}
\caption{Bellows/ “Firedog” from the south temple refuse deposit, after Wegner, Temple of Senwosret III, fig. 127.}
\end{figure}

\textsuperscript{720} Emery, \textit{Buhen}, page 123.
\textsuperscript{721} Ibid.
\textsuperscript{722} Wegner, \textit{Temple of Senwosret III}, page 249 and fig. 105 (76).
\textsuperscript{725} Nibbi, “Pot Bellows and Pot Stants,” page 71.
base. Frequently, these bellow vessels show no signs of burning on them,\textsuperscript{726} as is the case with the Abydos examples. This negates the suggestion that they could have been used as crucibles or as firedogs, which necessitate the placement of the vessel directly in the fire. If the pipe between the bellows and the furnace was long enough, the bellows need not show any signs of burning. Conversely, some of the bellows from Buhen had black soot on the inside of the vessel. Emery surmised that the vessel was placed over a fire to act as a hob.\textsuperscript{727} The soot can be explained by a backdraft; as the worker pulled air into the bellows, soot and ash was pulled from the furnace into the bellow chamber.

There was small-scale metalworking at the \textit{shena} at Abydos, it is unclear what types of items metalworkers made. No molds were found at the site, though this does not preclude their use. Copper wire of various thicknesses could create a large variety of implements. All the metal tools and tool fragments recovered from the \textit{shena} were made of copper wire; these include needles, tweezers, fish hooks, kohl sticks and chisels. There were several ways to produce wire, most of which begin by cutting strips from a sheet of copper.\textsuperscript{728} Wire objects were some of the easiest for a metalworker to craft because copper can be worked cold.

In summary, the \textit{shena} at south Abydos evinced no architectural features linked to metalworking. Such features could be located in an unexcavated section of the

\textsuperscript{726} Ibid.
\textsuperscript{727} Emery, \textit{Buhen}, page 123.
production area. However, given the lack of architectural features from other ancient Egyptian sites,\textsuperscript{729} it may be that there are none to be found. Evidence for metalworking at the \textit{shena} primarily comes from copper slag, which was scattered throughout the site. Further, there were tools used in metal manufacture, including a cylindrical bread mold crucible, a ceramic blow pipe tip, and ceramic bellows. A copper needle melted into a piece of slag suggests that the smiths used scrap metal as a source of copper. The scale of metalworking at the \textit{shena} is impossible to determine because it cannot be attached to any specific area of the site. The fact the \textit{shena} did not yield any stone molds for making larger implements probably indicates that metalworking was an incidental activity there. Metalworking at the \textit{shena} was probably done to order, to make and modify the small implements integral to the crafts done at the \textit{shena} and the rituals performed at the temple.

### 5.2.2 Evidence of Pottery Production

The primary function of the \textit{shena} was to produce foodstuffs for the temple ritual and its staff. The main foodstuff was breadsticks baked in cylindrical bread molds. Empirical evidence, based on the 17,000 diagnostic cylindrical bread mold sherds, suggests that it was very difficult to get the breadsticks out of their molds - many were

\textsuperscript{729} The exception is the forges at Piramese-Qantir.
broken in the process. The large amount of breakage necessitated a constant replacement supply of cylindrical bread molds. It was practical, therefore, to produce these bread molds on site.

A circular structure about 1.5 meters in diameter sits to the east of the Phase II shena building. Burning patterns show that the structure was either an oven or a kiln. Inside the feature are three struts that once supported a floor. This created two separate areas inside the structure: the fire-box where the worker set the fire and the section where the worker placed things to be fired. There is wear on the bricks on the eastern side of the oven/kiln which is indicative of a stoke hole.

The first use one must consider for a large structure built for cooking near a facility whose principal product is bread the shena, is that of bread oven. The two-part organization of the oven/kiln (a firebox under heating zone), is immediately reminiscent of forn ovens still used in rural areas in Egypt, used primarily to bake bread (see Figure 102). This kind of baking structure does not appear in dynastic Egypt. Room 3 in the

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731 For a complete description of the shena kiln see section 4.3.5.
Phase I shena structure had a box bread oven. It contained copious amounts of ash as well as broken cylindrical bread molds, some of which showed evidence of repeated firings. There are no objects associated with the firing of the cylindrical kiln; the soil matrix only consisted of ash and charcoal. There was some debris found within the kiln, but the lack burning on any of the objects suggests that the oven was used as a garbage receptacle at the end of its working life. This pattern of bread ovens with bread molds in the fill and kilns being empty of debris appears at Amarna, and suggests that the circular structure at south Abydos was not used as a bread oven. The temperatures achieved by the bread oven in the Phase I structure and the circular kiln are different. The walls of the circular kiln were baked to a very red color suggesting very high temperature fires. The faces of the bricks closest to the fire were also friable and worn.

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[732] The cylindrical bread molds from the first shena oven fill were baked to a very red color and the fabric of the vessels had become very friable.
[733] The fill inside the large circular oven contained very little pottery, and the types of vessels involved reflect the general ceramic corpus of the shena: three bread trays, six wine jar rims, a water jar rim, 2 votive cups, 2 cylindrical bread molds, and 5 beer beakers. In addition to pottery there was also some bone and shell, which were unfired.
The faces of the bricks from the bread oven were fired red, but not to the same degree and were not crumbly nor as worn as those from the circular oven, suggesting lower oven temperatures. The debris from immediately around the circular kiln included large amounts of beer jars, large liquid storage vessels as well as bread molds, whereas the ceramic corpus from the areas immediately surrounding the bread oven consisted exclusively of cylindrical bread molds. The differences in architecture, firebox debris, oven temperatures, and associated ceramics demonstrates that the circular kiln was not used to bake bread.

The high temperatures used in the circular *shena* structure could be associated with faience production. Faience requires temperatures of 1000 °C for 12 hours to fire properly. Unfortunately, little is known about faience firing structures in the dynastic period. In the Old Kingdom, there is one faience kiln from Abydos, which consists of a brick rubble lined pit with no superstructure. There are no certainly identifiable kilns from the Middle or New Kingdoms, even at sites with confirmed faience production areas. There are several known Greco-Roman faience kilns from Memphis and Buto; they are all rectangular in shape. The Old Kingdom and Greco-Roman faience kilns are not at all similar to the firing structure at the *shena*. Many faience production areas

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736 Ibid., page 180.

737 Ibid., pages 181-184.

have been recognized from artifactual detritus alone.\textsuperscript{739} Items used in faience production include clay molds, kiln firing supports, lumps of coloring matter, crucibles, and unfired faience paste. None of these artifacts appear at the \textit{shena} or in its refuse deposits. The only faience artifacts recovered from the \textit{shena} were beads, none of which came from around the circular structure. The beads are most likely associated with the disturbed human burials near the rear temple door. With no clear structural parallels and no artifacts common to other faience production areas, the circular structure at the \textit{shena} is unlikely to be a faience kiln.

The distinctive method of construction of the circular \textit{shena} feature, with a brick lined pit and a silo superstructure, has parallels throughout dynastic history and all of them are pottery kilns. One of the best published pottery production areas is that of Ayn Asil in Dakhla Oasis, a site dating from Pepi II through the First Intermediate Period.\textsuperscript{740} Ayn Asil has at least 24 kilns all of which have the same basic construction technique. Their fireboxes are pits lined with bricks on end, while their superstructures are running


bond - exactly like the *shena* structure at south Abydos. The internal supports for the kiln floor, however, vary quite a bit, and include pillars, walls, and buttresses. Kilns from Ayn Asil are divided into five types based the organization of their internal structures. Type 4 kilns (especially #623 and 353) have almost exactly the same layout as the Abydene structure. Type 4 kilns are small in comparison to the rest of the corpus there, with an internal measurement of less than a meter (see Figure 103). The internal diameter of the *shena* structure is 110 cm. Soukiassian suggests that the buttresses, or struts, in the kilns at Ayn Asil were corbelled, or stepped, to support the floor of the kiln. While the struts on kiln 623 clearly corbel, those in kiln 353 do not. The struts in kiln 353 consist of stacked bricks. Type 4 kilns were the only ones that did not have oven floors made of loose bricks, which could support the pottery to be fired, but left holes in order to allow the heat from the firebox to radiate upwards (see figure 104). Type 4 kilns had some sort of “plate” that rested on the struts. The plate must have been made of ceramic, as wood would have burned in the

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741 Ibid., pages 49-66.
742 Ibid., page 58.
743 Ibid., plate 9.2.
744 Ibid., page 58, from the French “sole.”

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intense fires of the kiln and metal (copper) would not have the
tensile strength to support the many pots within the kiln or the
heat for the long duration of the firing.\textsuperscript{745} Bread trays from the
*shena* at Abydos have an average diameter of 58 cm, but there
were several bread trays as large as 85 cm in diameter, which
would have been large enough to straddle the struts in the
*shena* oven. It is not clear that the Abydos feature used bread
trays as the floor of the superstructure, however, extant
ceramics prove that something similar to bread trays, if not
bread trays themselves, could serve as floors.

At Amarna there are several kilns, all of which exhibit the same construction (see
Figure 105). The kilns are built with a pit lined with bricks on end and have a super
structure with a running bond pattern.\textsuperscript{746} The kiln floor is supported by bricks in
the first running bond course that jut out
over the pit. Although at least one kiln
[2984] did have a central pillar for
support of a floor.\textsuperscript{747} As Nicholson points
out, a central pillar or internal support

\textsuperscript{745} Ibid.
\textsuperscript{747} Ibid., page 72.
structures make stoking the fire and cleaning out the ash much more difficult. Therefore, it was best to have no supports within the firebox if possible, but kilns over a meter required extra engineering to hold up the floors.

The best preserved kiln comes from the New Kingdom site on the Way of Horus, A-345, situated between modern el Arish and Rafah on the Mediterranean coast (see Figure 106). The basic construction mimics the kilns from Ayn Asil, and Amarna, with a pit lined in brick, and a running bond superstructure. The A-345 kiln was preserved to a height of 1.5 meters and shows that its walls were domed. The kiln had no supporting structures in the firebox, and the kiln floor was preserved. The floor was made of brick and covered in plaster and was pierced with several holes about 10 cm in diameter. Oren states: the floor “did no rest on a central column, rather its convex shape distributed its weight evenly down the walls.”

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748 Ibid.
750 Ibid., page 100.
751 Ibid.
752 Ibid.
There are several kilns from Mirgissa dating to the Middle Kingdom (see Figure 107). These kilns are almost identical to the structure at the Abydos *shena*. They range in size from just under a meter to almost 2 meters in diameter. All have pit fireboxes lined with on-end bricks and superstructures with running bond bricks. All have 3 internal buttresses made of stacked bricks. The largest oven had a very deep firebox that included some of the running bond part of the wall below surface level. Also, the three struts were simple stacked bricks leaning against the firebox wall.

The homogeneous construction of pottery kilns throughout Egyptian dynastic history makes it very clear that the circular structure at Abydos must be a kiln. The circular *shena* feature is similar in size, construction, and has similar internal configurations to better preserved pottery kilns at several other dynastic sites.

Other than the kiln, the only evidence found at the *shena* of pottery production was a single unfired cylindrical bread mold (see Figure 108). At Amarna and Ayn Asil pottery production areas there were potter’s wheel remnants, wasters, and quantities of unfired ceramics. Despite the fact that there is

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754 Ibid., plan de la ville M I.
only one artifact associated with pottery production, it is still possible that there was intensive pottery production at the *shena*.

The lack of these potter’s wheels and wasters suggest that there was no wheel thrown pottery fired at the Abydos kiln. Tools used in the production of cylindrical bread molds would not survive at Abydos.\textsuperscript{755} Cylindrical bread molds were pinched over a wooden stick, called a *patrix*, of uniform size\textsuperscript{756} - no potters wheel was required. This meant that there was little chance for pots to deform, as they might with wide-mouthed wheel thrown vessels, and thus little chance for unfired wasters. Because cylindrical bread molds were made of Nile silt, the *shena* employees could just go down to the cultivation and dig up some soil.\textsuperscript{757} The Nile clay did need some levigation, but this did not require special tools. In fact, cylindrical bread molds are all rough-ware, Nile C 1 or 2, with straw and sand inclusions.\textsuperscript{758} Finally, fired cylindrical bread mold wasters would not look all that different than regular broken bread molds. The kiln at the Abydos *shena* primarily made cylindrical bread molds, whose production required no special tools (like potter’s wheels) or materials (like marl clay). And the cylindrical bread mold’s life cycle of constant oven use made it indistinguishable from those broken in the kiln. All of this means that there is little or no obvious evidence of pottery production despite the fact that it was a part of the *shena*’s duties.

\textsuperscript{755} Almost no wood or other organic material survived at the *shena*.
\textsuperscript{756} This then created a uniform breadstick, which was essential given that the breadsticks were used as payment. This insured that each breadstick was the same and everyone was getting the same pay.
\textsuperscript{757} As apposed to marl clays, which required special expeditions to acquire.
\textsuperscript{758} Basically, they just took out the big rocks and straw bits.
5.2.3 Textile Production

It is interesting that so much craft production occurred at the *shena*. The few sources that we have mention only food production, but food was not the only component in the daily offering to the statues of the gods. They were daily bathed and anointed with oils and clothed in fresh linen. A description of this ritual from the Seti I temple at Abydos notes that priests dressed the statue daily in linen of red, green and white.

Linen was a relatively easy way for a temple to increase its wealth, because it could be manufactured with easily accessible resources. Further, linen had an unlimited shelf life, unlike food, which made up so much of the spendable or liquid wealth of the temple. The linen produced by the temple could be stored, or banked, for the future, when the temple might need “cash” to trade for resources. In the New Kingdom tomb of Rekhmire at Thebes (TT100), the town of *Wah-sut*, established by Senwosret III for his mortuary temple, but by this time associated with the pyramid of Ahmose and the temple of Tetisheri, paid its taxes in linen garments and lengths of cloth. Linen also went as wages for temple personnel, and would have represented a

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761 This is in contrast to metals, which had to be mined often from locales that were outside the Nile Valley, and then refined.
762 See chapter 2 for discussion of role of food in the economy of ancient Egypt
wage earner in the higher echelons of the temple’s administration.\textsuperscript{765} Since linen was a commodity that was integral to the daily offering ritual and was an item that the temple used as specie, one might expect linen production to occur at the shena of divine offerings.

Linen production involves two key steps: spinning the flax fibers into yarn and weaving the yarn into cloth. There is evidence of spinning from the shena area from ceramic whorls and spinning bowls.

The production of linen was an intensive process that involved several steps including the harvesting and processing of the flax plant, spinning the flax fibers into yarn, and weaving the yarn into cloth. It began with the cultivation and harvest of the flax plant (\textit{Linum usitatissimum})\textsuperscript{766} The processor then dries, beats, and combs the flax with a wooden comb to separate the fibers.\textsuperscript{767} All the tools used in processing flax are wooden; no wood items survive from the shena. There may have been flax processing occurring at the shena, but evidence of it is unlikely to have survived.

There are indications of spinning from the shena adjacent to the Senwosret III temple. The spinner uses a spindle, or a stick, with a weight attached, called a whorl.

\textsuperscript{767} Ibid.
Spindles are made of wood and rarely survive archaeologically. Whorls from the Old and Middle Kingdoms are generally disc-shaped, while those from the late Middle Kingdom and New Kingdoms have a dome shape. Ancient Egyptian whorls were composed of a number of materials, including stone, wood, shell, faience, and ceramic. At the Amarna workmen’s village, where wood objects are relatively well preserved, wood whorls outnumber stone and ceramic whorls by a ratio of 30 to 1. This suggests that whorls are underrepresented at many sites. Most whorls fall range in size between 1.8 and 8.1 cm in diameter, though most are between 2 and 4 cm. Further, spinners use smaller whorls to create finer thread. The shena at Abydos provided four ceramic whorls all of which were around 2 cm in diameter (see Figure 109). These seem to be composed of old and/or broken pot sherds which were shaped into a round and had a hole drilled through the center, which is typical of ceramic whorls from

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771 Ibid., page 267.  
772 Ibid.  
774 The smaller weight creates less momentum and therefore the centripetal force only allows for the creation of finer thread. Kemp, Vogelsang-Eastwood. The Ancient Textile Industry at Amarna. Page 280.
ancient Egypt. The whorls from the *shena* may have been responsible for making fine thread, given the link between whorl diameter and thickness of thread. Kemp and Vogelsang-Eastwood note that ceramic artifacts that look like whorls may have also been used in other capacities, such as net weights, beads, etc. It is possible that the ceramic whorls recovered from the *shena* are not whorls at all, but belong to some other industry. However, the uniformity of their size and similarity to whorls from other sites recommends the identification of whorls.

Once the spinner finished making the thread, he wound it around a spool. Spools from ancient Egypt are roughly disc-shaped, with a convex top and a flat bottom, and a groove running around the edge. Spools were made of ceramic, wood, limestone, or faience. There is a possible ceramic spool from the *shena*. The example from the *shena* is 4 cm in diameter (see Figure 110). This is slightly larger than those from the Petrie collection which range in diameter from 2.1 to 3 cm. Ceramic spools and whorls alone are not enough to confirm the presence of textile production at a site, because they could be used in other industries.

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775 Ibid., page 277.
777 Ibid., page 306.
779 Petrie collection, UC21236-21239, and UC43101A-E
Vogelsang-Eastwood suggests that spinning bowls are the most reliable indicator of textile production at a given site.\textsuperscript{780} Spinning bowls assisted in the splicing of two or more threads to create a thicker and sturdier yarn.\textsuperscript{781} Spinning bowls are ceramic open bowls with a loop (sometimes two loops) of ceramic inside the bottom (see Figure 111).\textsuperscript{782} Wetting the material and adding an adhesive (such as flour) eased the splicing process.\textsuperscript{783} The loops in the bowls provided the required tension in the threads, and the bowl shape acted as receptacles for the water and/or adhesive mixture.\textsuperscript{784} Over a dozen fragments of spinning bowls were recovered from the shena and its midden, many from room 9 within the Phase II shena building.

Once the spinners finished making the thread to the appropriate thickness, the weavers made it into cloth. Ancient Egyptian linen came in a variety of textures: from burlap, with a thick loose weave, to the finest diaphanous cloth that is depicted on the nobles of the tomb chambers.\textsuperscript{785} All of these types of cloth were woven on looms. There were two basic kinds of loom used in ancient Egypt. The horizontal loom was

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure111}
\caption{Almost complete spinning bowl from temple east block deposit, after Wegner, Temple of Senwosret III, fig. 127.}
\end{figure}

\textsuperscript{780} Kemp, Vogelsang-Eastwood. The Ancient Textile Industry at Amarna. Page 295.
\textsuperscript{782} Vogelsang-Eastwood, Gillian. "Textiles." Pages 273-274.
\textsuperscript{783} Kemp, Vogelsang-Eastwood. The Ancient Textile Industry at Amarna. Page 295.
\textsuperscript{784} Ibid.
\textsuperscript{785} Vogelsang-Eastwood, Gillian. "Textiles." Pages 286-291.

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parallel to the ground and had two beams to support the weft and was held in place by pegs driven into the ground (see Figure 112).\textsuperscript{786} The tomb of Khnumhotep at Beni Hasan depicts a ground loom with two pegs holding a cross bar at the top to which the warp threads attach.\textsuperscript{787} Ground looms required a minimum area of 2 by 3.5 meters,\textsuperscript{788} which is feasible in the Phase II \textit{shena} building, but not the Phase I building.\textsuperscript{789} The extant floors in the Phase II building showed no signs of post holes that might support a ground loom. The vertical loom also had two beams, but one beam sat at the top of a wall and the bottom beam of the vertical loom rested in a groove in a raised limestone block on the floor.\textsuperscript{790}

A limestone block with a square groove came out of room 9 in the Phase II \textit{shena} (see Figure 113), which also held the whorls. However, it is unlikely that this limestone block was associated with a vertical loom, as there are no depictions

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{Figure_112.png}
\caption{Loom and weavers from tomb of Khnumhotep III at Beni Hasan, after Newberry, \textit{Beni Hasan I}, pl. XXIX}
\end{figure}

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{Figure_113.png}
\caption{Limestone block from inside \textit{shena} with square hole}
\end{figure}

\textsuperscript{786} Vogelsang-Eastwood, Gillian. "Textiles." Pages 276-277.
\textsuperscript{788} Kemp, Vogelsang-Eastwood. \textit{The Ancient Textile Industry at Amarna}. Page 333.
\textsuperscript{789} All the sewing items recovered from the \textit{shena} building are associated with Phase II construction.
\textsuperscript{790} Vogelsang-Eastwood, Gillian. "Textiles." Pages 277-278.
of vertical looms before the late 18th Dynasty.\footnote{Kemp, Vogelsang-Eastwood. \textit{The Ancient Textile Industry at Amarna}. Page 333.}

Ancient Egyptian weavers used weights to help keep tension on the cloth while it was in the loom.\footnote{Ibid., page 392.} Loom weights were made of stone or ceramic.\footnote{Ibid.} Four loom weights appeared in the excavations of the \textit{shena} refuse deposits, three are ceramic with a lunate shape (see Figure 114), and one is limestone with several grooves carved into it.\footnote{Ibid.} There are many items identified by archaeologists as loom weights from various ancient Egyptian sites.\footnote{Ibid.} Vogelsang-Eastwood suggests that while these may indeed be loom weights, such items could be used for so many other purposes (i.e. net weights) that their presence is not proof of weaving.\footnote{Ibid., 393.}

Except for the limestone blocks used in vertical looms and possibly loom weights, the looms themselves and their accoutrements (warp spacers, heddle supports, shed sticks, weaving sticks/sword beaters) are all wood.\footnote{Ibid., pages 335-357.} The tomb of Khnumhotep shows the weavers holding a weaving stick/sword beater between them (see Figure 112 above). The weaver on the left holds a heddle. This means that even if weaving was an industry undertaken by the \textit{shena} at south Abydos, it is unlikely that it left any traces archaeologically because of the lack of wood preservation at the site.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{possible_ceramic_loom_weight.png}
\caption{Possible ceramic loom weight from \textit{shena}}\end{figure}
There were nine copper needles recovered from the *shena*; three found within the *shena* buildings (see Figure 115). They are all about 8 to 9 centimeters long with a small eye and a point at the other end. In regards to modern sewing needles, these are enormous and would be best suited to needlepoint or use in heavy fabrics like canvas or leather. However, this seems to be a standard size for ancient Egyptian sewing needles. The Petrie Museum collection holds 19 copper needles, and the majority measure around 8 to 9 centimeters, like those at south Abydos. The Metropolitan Museum has 2 copper needles from Lisht, one 10 cm and the other 15 cm. The Museum of Fine Arts Boston has several predynastic needles ranging from 5 cm to 8 cm and one Middle Kingdom needle measuring 7.4 cm. Given the relative softness of copper, this longer length and thickness adds strength and stability to the needles. Smaller needles may also be absent from the archaeological record because they corroded completely away or were broken more easily.

The *shena* yielded all the types of tools utilized in spinning linen yarn that are not made exclusively out of wood. This included spinning bowls, and ceramic objects that are possibly whorls and spools. This strongly suggests that the *shena* engaged in the

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797 Modern sewing needles are about 3 centimeters in length.
798 They are from Tarkhan, Ballas, Lahun and Buhen. See Petrie Museum UC17121, UC19747, UC5064, UC5278, UC5429, UC63596, UC7255-62, UC7377
799 Metropolitan Museum of Art, MMA11.151.743, MMA11.151.89
spinning of thread. There is no evidence to support the presence of weaving at the shena, though this does not rule it out entirely. Almost all of the items involved in weaving were made of wood, which is not preserved at south Abydos. If there truly was no weaving at the shena, perhaps shena workers could have used the newly spun thread to repair or sew garments, bags, awning, etc. from cloth given to the temple. The shena at south Abydos was clearly involved in textile crafts, but it is impossible to discern the scale of activity there.
Chapter 6: The Administration of the Temple Economic Sector: The Sigillographic Evidence

Seal impressions are one of the most important finds from the shena. Seal impressions, or sealings, were made placing a wet lump of finely levigated mud over a key point in the closure of an item, like a box, basket, lock of a door, etc. A seal with a design carved into it was then pushed into the mud to create an impression. When the closure was opened, the now dried lump of mud had to be broken, leaving a sealing. The practice of sealing insured the security of the items inside and established a system of accountability for the person who sealed those items in. Sealings provide the names and titles of various institutions and people who worked there or who associated with the shena institution. They also allow for the dating of different strata based on the presence of a particular sealing. The correlation of the stamp with what it sealed; either a door, papyrus, bag, or box, etc., provides clues as to who was responsible for what types of commodities.

As a corpus, the seal impressions of the shena area allow for the modeling of administrative systems at the shena and the temple. Sealings are classifiable into three major categories: Institutional, name and title, and decorative. Institutional stamp sealings provide a glimpse at the temple’s interaction with other institutions, not only those within the mortuary complex of Senwosret III, but Abydos as a whole, and in one particular case, the country. Name and title sealings supply a list of what jobs took place at the temple and in its shena. Their find-spots allow for some reconstruction as to
where people undertook specific jobs. Name and title sealings also indicate a succession of people in a particular position, especially mayors, and helps in dating strata, building modifications, and other seal impressions. Scarab sealings with royal names are the least common among different types of seal impressions found at the temple; however they provide more precise dates as to when the temple was in operation as well as dating strata, other seal impressions, etc. Decorative scarab sealings impart no specific information about the individual owner of the seal, but do present patterns in usage of a particular seal. In some cases, the patterns on the decorative sealings can aid in dating strata.

Sealings are not just one-sided; their reverse side offers an impression of what the sealing originally adhered. Although the contents of the containers, doors, or papyri remain a mystery, back types suggest the connection of a seal to a sealer with a function/responsibility. For example, one might conclude whether the sealer has responsibility for the contents of a room (door sealing), a letter (papyrus sealing), or sent/stored goods (peg, basket, fabric, and wickerwork sealings).

The area to the east of the temple relinquished over 5583 seal impressions, approximately 3867 of which have some identifiable decoration or hieroglyphic elements. This is a remarkable sum when compared to the nearly 6500 sealings uncovered from the entire mortuary temple. The relative abundance of sealings from the shena area is likely due to two factors: a) the shena area was largely midden, whereas

801 Of the 1799 sealings that do not have an interpretable inscription, they are recognizable as sealings due to their back types.
the temple had pockets of debris deposits, and b) the screeners were better trained after several seasons of work at the site. Of the identifiable sealings, 1713 were institutional stamp sealings, roughly 442 were name and title sealings, and almost 1712 were decorative sealings (see Figure 116).

This chapter presents both individual sealings and their significance as well as modeling the system of administration of the temple economic sector and how the temple of Senwosret III interacted with other institutions through the shena. This chapter will begin with an overview of the different items that could be sealed by looking at the back types. Next, it will examine the patterns in seal usage that back types can impart. Section 6.2 will survey the different institutional sealings recovered from the shena and analyze how the shena interacted with other institutions at the mortuary complex of Senwosret III and other institutions in Abydos and throughout Egypt. In section 6.3, we will review the various name and title sealings recovered from the shena. The name and title sealings help to create a system of organization of work within the

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802 Sealings are densest in garbage deposits rather than living spaces.
803 Sealings are, in general, the same color as the excavated soil and are extremely hard to differentiate from that soil. Each year of excavation, the number of recovered sealings has grown exponentially.

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Section 6.4, this chapter will examine the royal sealings recovered from the shena and discuss their importance in dating various parts of the shena as well as the lifespan of the temple of Senwosret III. Finally, in section 6.5, we will look at the decorative sealings, create a basic typology, and look at their usage at the shena.

6.1 Back Types of Seal Impressions

Sealings were a method of accountability for the contents of a room, box, satchel, or other container. A sealer placed a lump of mud over the closure so that it had to be broken in order to be opened. This method ensured that the contents remained unmolested for a period of time or while it traveled from point A to point B. The obverse of the mud was impressed with the seal of the responsible party - either an institution or an individual. Serendipitously, the reverse of the mud received an impression of the closure itself. The back type impression data allow for the correlation of people or institutions with specific objects. Further, this can help to determine patterns of usage of a particular seal, and patterns of responsibility for a specific person. A number of scholars have discussed back types and their importance in broadening the
scope of understanding about sealing practice in Ancient Egypt. However, until recently very few studies have used this information to look at sealing practices from an entire site.

There are a total of 1282 sealings that can be classified into different back types. This may seem like an extraordinarily low number given that the shena yielded 5583 sealings. Just over half, or 2866, have no back surface left to classify. The rest, or 1435, have some sort of back surface remaining, like wood or cord, but as these appear in several different closure methods, they are impossible to classify more specifically. Both doorbolts and pegs, which closed both doors and wood boxes, have a wooden surface that might leave an impression on the back of a sealing. Cord is used to wrap around peg closures, wicker closures, and papyrus closures. There are several basic types of closure impression that recur in the south Abydos corpus and a brief description of each is below.

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805 There are 958 wood impressions.

806 There are 158 cord impressions.
6.1.1 Wickerwork Box Impressions

Wickerwork box impressions consist of horizontal rows of cane, each measuring roughly .5-.75 centimeters in diameter (see Figure 117). In some instances, a cord impression is preserved, running vertically and overlapping the canes, indicating how the canes wove together. There are also bracing canes that run perpendicular to the rest of the cane-work and which are affixed with twine.

There is no literature about wickerwork boxes, their uses, or their construction beyond descriptions in conjunction with a statue or painting. Wickerwork containers appear in Middle Kingdom art, usually being carried by a female offering bearer. Among the Meketre models some examples of female offerings bearers carry wickerwork boxes atop their heads. Artistic representations of wickerwork baskets are homogeneous in size and shape in proportion to the figures carrying them despite their appearance in varied contexts and time periods. On the coffin of Djehuty-nakht there are wicker baskets on the offering

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810 See Klebs, Die Reliefs und Malereien des mittleren Reiches, pages 73, 74, 82, 105.
The boxes are roughly square, with sides that slope outwards towards the rim. Their size in comparison to accompanying figures is uniform, suggesting that in real life they would measure about half a meter high and half a meter square at the rim. Wickerwork baskets held a number of food items in depictions including wine jars, meat and bread. It is apparent from these artistic representations that there is a close affinity between wickerwork boxes and offerings in the Middle Kingdom, whether offerings for the divine or a deceased individual. It may be that wickerwork boxes were a form of container that institutions used specifically for the transport of offerings.

Wickerwork back types appear most commonly on institutional stamp sealings (71% of wicker back types are from institutional sealings). The “Abydos Series” of institutional sealings represents the all but one of wicker back types (see section 6.2.2). They derive from various institutions of “divine offerings of Abydos,” probably associated with the Osiris temple. Wickerwork boxes seem to be largely related to inter-institutional transactions at Abydos. Although wickerwork boxes with name and title sealings are comparatively rare, they certainly appeared within the temple of Senwosret III.

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813 Only a couple of these personal sealings can be traced back to the mortuary complex of Senwosret III: The Mayor Sehetepib and the follower Amenemkhat.
6.1.2 Peg Impressions

Peg impressions form part of a system of closure that appears on both boxes and doors. The closure consists of two knobs or pegs sticking perpendicularly out from the sides of the box or door. In the case of the door, one peg is on the door and the corresponding peg is attached to the wall (see Figure 118). The box closure is composed of one peg on the lid and the other on the fixed surface of the box. In order to secure the closure of either the door or box, the sealer winds string between each peg and places a lump of sealing mud against one of the pegs to ensure the string remains taut and thus the contents unmolested. Peg back impressions invariably show part of the peg and the string that wound around it, but sometimes the flat wooden surface of a door or box appears. Unfortunately, it is not possible to distinguish between peg closures from doors and peg closures from boxes,\(^{814}\) because of the small linear progression of peg sizes from 1 to 1.5 cm in diameter.\(^{815}\)

Peg impressions represent the largest back type group with 712 examples from the \textit{shena}, which is about 61\% of the identifiable back type corpus and is a similar percentage to the rest of the temple sealing corpus. Of those, the overwhelming amount derive from decorative sealings (about 57\%), while there are equal smaller amounts from institutional and name and title sealings (roughly 21\% each). The preponderance of

\(^{815}\) Ibid.
decorative sealings on peg back types suggests that individuals were responsible for the sealed items enclosed behind doors or in boxes. In contrast, 97% of door-bolt sealings have institutional seals, suggesting that, at least for the *shena*, responsibility for rooms was charged to the institution rather than directly to an individual. Therefore, because the majority of peg back sealings are decorative, which individuals hold, those from the *shena* area probably derive from boxes. This correlation between sealed small object and the individual extends to fabric sealings from cloth bags.\(^{816}\) It is probable that some peg impressions actually come from doors, but it is clear that the accounting and sealing practices for door peg sealings are quite different from those for door-bolt sealing practices. The question arises as to where are these doors that use the peg-type closure system? Perhaps they are from the temple’s East Block that housed the storerooms. An institutional seal linked to the East Block has both peg and door-bolt back types.\(^{817}\) The magazines evidently had some doors that utilized the door-bolt system. Wegner suggests that “all the major doors in the temple were equipped with the same basic locking mechanism,” that of the sliding door-bolt.\(^{818}\) If this is indeed the case, peg sealings originating from the temple likely have affiliations with boxes instead of doors.

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\(^{816}\) Wickerwork boxes are also small sealed objects, but they seem to fall into a special class of long distance transport vessels (as opposed to intra-institutional transport). Wickerwork boxes are largely the back type of institutional sealings (86%).


### 6.1.3 Door-Bolt Impressions

Impressions of door-bolts are the second most common sealing back type from the shena area. Door-bolt sealings, according to Wegner, are “unattested or remain unidentified at other late Middle Kingdom sites.” Wegner points out that Reisner described a similar mechanism of closure, but does not connect it with a door-bolt. The door bolt consists of a sliding horizontal bar that is kept in place with two or more loops of metal or wood that are mounted to the door. Double doors have a corresponding loop fixed to the opposing door into which the bolt slides. The bar on an entry on a single door slides into the millwork or wall of the doorjamb.

### 6.1.4 Papyrus Impressions

Papyrus back impressions are comparatively rare, with only 40 examples or 3 percent of the classifiable back types. However, they are usually well preserved (see Figure 119). Papyrus sealings are generally oblong and sat over a piece of string that wound around the papyrus document to prevent premature entry. These sealings have a

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shallow crisscross pattern representing the papyrus surface and a deep impression of the cord through the longitudinal axis of the sealing. At the shena, papyrus sealings are overwhelmingly sealed with decorative seals (77.5 percent), while name and title seals represent 17.5 percent of the corpus and institutional seals constitute 5 percent. Usually it was an individual sending a document that required sealing. There are 2 institutional papyrus sealings; the first only has a wavy border pattern remaining. The second sealing is from a storehouse (w3d3). Although the rest of the sealing is lost, it presumably comes from another religious institution at Abydos (see section 6.2.1b for more complete discussion of this sealing). It is tantalizing to imagine what sort of document this storehouse sent to the shena - perhaps a request for goods, or an inventory of goods that institution sent to the Senwosret III shena.\textsuperscript{821}

6.1.5 Fabric Impressions

Fabric sealings are characterized by a rows of tiny oval indentations representing the alternate rising of the weft threads of woven cloth. It is similar in coarseness to a

\textsuperscript{821} The storehouse sealing comes from just outside the Phase II shena building. Since the storehouse was on the chain of delivery between the shena and its use in the offering, requests for goods the may have been sent directly to the shena to fulfill.
fine burlap (see Figure 120). The fabric is often quite wrinkled and there is also frequently a cord impression. These wrinkles and cord represent the point where cord wrapped around the fabric to tie a bag closed. The mud sealing amounts to a sort of lock. Fabric sealings may also come from bolts of neatly folded fabric tied with string or jar covers. There are 83 fabric sealings from the shena area; of these 81 percent were from decorative seals, 12 percent from institutional seals, and the remaining 7 percent from name and title seals.

6.1.6 Back Types and Nodes of Accountability

The various back types from the sealings in the shena area can help to determine sealing practices at south Abydos. Seals are divided generally into three categories: institutional, which have no affiliation with an individual, name and title seals, which associate with a specific person and a specific profession, and decorative seals, which could be associated with an individual, but whose name and title, known at the time, are now lost. The chart (see Figure 121) shows the relative frequencies of the various back types in conjunction with the three categories of seals.
Institutional seals sealed wicker boxes at a rate of 3.5 times more than name and title or decorative seals, suggesting that wicker boxes were mainly reserved for inter-institutional transactions, such as the goods in baskets from the Osiris temple at Abydos or the Senwosret I ka chapel (see section 6.2.2 for discussion of the “Abydos series” of sealings and section 6.2.3 for discussion of Senwosret I ka chapel sealings).

Door sealings are also overwhelmingly associated with institutional seals; they are 29 percent of the institutional seal back types, 3 percent of the name and title back types, and there are no door sealings from decorative seals. Further, all but one of the institutional seals used to seal doors were the $Nfr-k3$ seal, which is the name of the temple of Senwosret III (see discussion section 6.2.1a). This discrepancy shows that the
responsibility for sealing doors lay less with a specific individual and more with the institution.

Peg sealings represent the majority of sealings from every type of seal: institutional, name and title, and decorative. The peg closure system was used on boxes and on doors, and are in most cases indistinguishable. Name and title and decorative types sealed peg closures at 89 and 85 percent respectively of the overall back type corpus, while institutional types sealed peg closures 57.5 percent of the time. Within the peg sealings, find-spot tells a great deal about where the peg was, whether from a door or box. Institutional seals on peg closures come mostly from just outside the temple door (shena deposit C), and only 3 percent come from within the shena buildings. The high percentage from shena refuse deposit C suggests that institutional seals closing boxes or doors, were relatively restricted to the temple itself. Decorative and name and title seals, on the other hand are more common towards the shena and within the shena buildings. The findspots of these sealings suggest decorative and name and title seals closed boxes and minor doors. Further, name and title seals from within the shena buildings were restricted to the earlier phases of construction (phases I and II) whereas decorative seals appeared in the later phases (Phases IIb and III) of the shena. The deposition pattern of sealings with peg impressions may indicate a shift in usage, and not a change in sealing protocol, from name and title seals towards decorative seals at the beginning of the 13th Dynasty.

Papyrus and fabric sealings were fairly rare in the overall shena corpus. Amongst the back types from institutional seals; they are less than 1 percent. For name
and title seals, papyrus and fabric are each 2 percent of the corpus. For decorative seals, papyrus is 3 percent and fabric is 5 percent. Documents were generally sealed by individuals, not institutions, thus accounting for the relative paucity of institutional papyrus sealings. Fabric, either bolts of fabric or bags, are also more closely associated with individuals rather than institutions.

In general, institutional seals secured doors within the temple and items that traveled between institutions. In both of these cases, the institutional responsibility supersedes that of the individual. Small items that stayed within the mortuary complex were sealed by individuals using name and title and decorative seals. Here institutional affiliation is not enough of an attribution of accountability. With further excavation and the recovery of more sealings, it may be possible to link certain individuals to specific types of items that fell under their purview.

6.2 Institutional Stamp Sealings

Institutional stamp sealings represent the transactions of an institution rather than an individual. Stamp sealings from within the temple and its environs illustrate how the institution governed its buildings and stores. In addition, they provide a rare glimpse at the interactions between institutions. A series of institutional stamp sealings, termed the “Abydos series,” demonstrate that other institutions at Abydos sent goods to the mortuary temple of Senwosret III at south Abydos. Without these sealings, there is no other direct archaeological evidence of the interactions between various temple
Institutions at Abydos. Institutional stamp seals and their sealings are an important window into the wider administrative structures at the Senwosret III temple, the entire mortuary complex, and the greater Abydene area.

Institutional stamp seals from the Middle Kingdom are generally shield shaped: a rectangle with a rounded top or bottom. The actual seal was usually a statuette of Horus as a child, naked with a side-lock of hair and his finger in his mouth, or an official in the form of a block statue, squatting with knees in front and arms crossed over the knees (see Figure 122). The supposition that the stamp seal with a child is a depiction of the Horus child comes from the similarity between these seals and a statue of Pepi II as the Horus child.

Figure 122: "Block statue" seal and Horus child, after Martin, plates 47B and 47C.

822 There may, of course, be textual references to institutional interaction from account papyri, stele, and temple dedicatory texts.

child.\textsuperscript{824} The seal could be made out of a variety of materials including bronze, ivory, limestone, wood, etc.\textsuperscript{825} Sadly, there is no extant literature that focuses on figural stamp seals, their origins, duration of use, or significance of the figures from these types of seals.

6.2.1 Stamp Seals of the Mortuary Complex of Senwosret III

There are several institutional stamp seals that appear internally at the mortuary complex of Senwosret III. The complex itself consists of three main parts: the town, the temple, and the tomb – each of which had its own seal. Within these three major components however, there were sub-institutions that warranted their own seals such as gatehouses and storehouses. Tomb sealings are absent from the area to the east of the temple, but most other known institutional seals are there.

6.2.1.a The Temple of Senwosret III

The mortuary temple of Senwosret III was named \textit{Nfr-kA}, or “beautiful is the ka.”\textsuperscript{826} The \textit{Nfr-kA} sealings are by far the most common sealing recovered from both the \textit{shena} and the temple.\textsuperscript{827} Wegner suggests that \textit{Nfr-kA} is associated with the central cult


\textsuperscript{825} Martin, \textit{Egyptian Administrative and Private Name Seals}. See seals 329, 391, 567, 806, 1117A, 1241, and 1842.

\textsuperscript{826} Josef Wegner, \textit{Temple of Senwosret III}, pages 34 and 317.

\textsuperscript{827} Ibid.
block, which “could possibly have formed an extended designation for the mortuary temple as a whole.”

The seal itself is characteristically shield shaped with an s-scroll border typical of Middle Kingdom seals. The hieroglyphs appear in a vertical column, with the nfr sign (F35) nestled between the two upraised arms of the k3 sign that sits atop a divine standard (D29). The combination of the k3 arms and the divine standard indicate that this k3 is of divine nature. The name is consistent with the function of the temple itself: a place for the worship of king Senwosret III who was the embodiment of the god Osiris (ruler of the underworld) and to sustain the royal k3 (one of the six aspects of the being), by providing offerings of food and clothing to the k3 statue of the king in the sanctuary.

There were at least three different Nfr-k3 seals in use at the temple: two large format seals (the hieroglyphs of one are more tightly bunched than the other two)

Figure 123: Large and small Nfr-k3 sealings and their reconstructions (37023.1 and 31203.2)

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829 Gardiner’s D29 is a combination of D28, the k3 arms, and R12, the divine standard.
and one slightly smaller version (see Figure 123). *Nfr-k3* seals appear throughout the life of the temple, for different sealing purposes, or were assigned to different people and used concomitantly.

The deposits to the east of the temple, including the *shena* buildings, provided 337 *Nfr-k3* sealing fragments with discernible hieroglyphs. There were an additional 1146 fragments that retained only the s-scroll border. At the temple, only two institutional seals used the s-scroll border (as opposed to the wavy border), the *Nfr-k3* seal and a seal with the inscription *htm inw htpw-ntr n (Hr*-k3w-Rc)*.832 The latter seal translates: “the storeroom of the delivered goods and divine offerings of Khakaure (Senwosret III).”833 There is only one example of the storeroom institutional sealing from the *shena* deposits. It is likely, therefore, that most if not all the 1146 s-scroll border fragments belong to *Nfr-k3* sealings, which would be a total of almost 1500 sealings or 86.5 percent of all the institutional sealings and 25.5 percent of all the sealings found at the *shena*.

Back types from *Nfr-k3* sealings show a remarkable amount of homogeneity, the majority of which belong to doors within the temple. The vast numbers of *Nfr-k3* sealings can be attributed to the 

ongoing daily cycle of sealing and opening doorways and shrines in the cult building. They were regularly discarded with other ritual debris from the temple interior.834

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832 The transliteration of this sealing is slightly in doubt, see section 6.2.1b. Wegner, "Institutions and Officials at South Abydos." Page 87.
833 This is the preferred translation although there are several possibilities, see section 6.2.1b. Wegner, *Temple of Senwosret III*, page 323.
834 Ibid., page 86.

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Indeed, the Nfr-k3 sealings from temple deposits show that as much as ninety-six percent of sealings were from doors.\textsuperscript{835} The Nfr-k3 door back types illustrate that several different doors were sealed, from the different sizes of the bolt, to different door surfaces (raw wood and gilt or metal covered).\textsuperscript{836} At the very least, the daily offering ritual involved unsealing and opening the doors to the shrine on a daily basis.\textsuperscript{837} Other doors within the temple may have been sealed with the Nfr-k3 seal, such as the main axial doorways leading into the forecourt, the doors from the east and west blocks in the forecourt, the doors from the east and west blocks into the perimeter corridor, the doors to the storerooms in the East Block, and the external eastern and western doors.\textsuperscript{838} These doors probably represent administrative sealing practices and were less likely to be included in ritualistic sealing, like those in the sanctuary. As a result, the sealing and opening of other doors in the temple most likely was on an inconsistent basis.

The Nfr-k3 sealings from the shena deposits, however, demonstrate a slightly different pattern of sealing techniques. Only seventy-two percent of the Nfr-k3 sealings from the shena deposits came from doors. This figure is significantly lower than that for the rest of the temple deposits. Of the remaining Nfr-k3 sealings twenty-five percent had peg impressions, two percent come from wicker boxes, and one percent from fabric. A peg closure was found on both boxes and doors, and the two are indistinguishable, using

\begin{itemize}
\item \textsuperscript{835} Wegner, *Temple of Senwosret III*, page 204.
\item \textsuperscript{836} Ibid.
\item \textsuperscript{837} Ibid.
\item \textsuperscript{838} Ibid.
\end{itemize}
Those Nfr-k3 sealings with peg back types most likely came from boxes. The higher percentage of peg Nfr-k3 sealings with the addition of those from wicker boxes and fabric have associations with the shena. The majority of the Nfr-k3 sealings come from refuse deposit B, whose deposits are largely comprised of shena debris. If the Nfr-k3 sealing was restricted to the cult building, there would not be such a large percentage of these sealings in the shena debris.

The shena and the East Block temple storerooms form a unit that had the responsibility for preparing offerings. Finished goods from the shena moved through the East Block on the way to the sanctuary, and unprocessed items moved from the storerooms to the shena for preparation. The East Block has a seal that corresponds to it, “the storehouse of incoming deliveries.” Due to the close link between the shena and the storerooms, one might expect that the “storehouse” sealing would be common amongst the shena deposits - it is not. It is possible that the Nfr-k3 seal was used throughout the temple including within the East Block storerooms and on goods sent from the temple.

6.2.1.b. The Storehouse of Divine Offerings of Senwosret III

The East Block of the temple of Senwosret III consists of a series of five units off a corridor. The corridor accesses both the temple’s columned forecourt and the

840 See section 4.2.1 for discussion on the different shena refuse deposits.
ambulatory that runs around the rear of the temple. The door from the access corridor to the ambulatory allowed for quick delivery of goods via the temple’s rear door from the nearby shena. The southern three units were magazine rooms used for the storage of high volumes of goods for the offering ritual, such as bread and beer.\textsuperscript{841} The northern two units were unroofed and were preparation rooms.\textsuperscript{842} Preparations included decanting beer and wine and the preparation, arrangement, and purification of the offering meal before its presentation to the statue.\textsuperscript{843}

A shield-shaped institutional stamp seal with an s-scroll border represents the East Block (see Figure 124). The text appears in one horizontal line over two vertical lines. The first sign is the ideogram htm (essaging, S20), and is translatable as “the seal,” “the sealed item,” or “the storehouse.”\textsuperscript{844} As Wegner notes, several of the recovered sealings have door-bolt back types.\textsuperscript{845} They probably sealed the doors of the East Block magazines. Although one would expect htm to have a house determinative (nung, O1), a lack of space on the seal may have caused the carver to eliminate it.\textsuperscript{846} Sealing back types and architectural evidence identifies the East Block as the “storehouse” present in the

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{figure124.png}
\caption{Reconstruction of the seal of the Storehouse of the temple of Senwosret after Wegner, Temple of Senwosret III, fig 145.}
\end{figure}

\textsuperscript{841} Wegner, Temple of Senwosret III, page 103.
\textsuperscript{842} Ibid, page 104.
\textsuperscript{843} Ibid.
\textsuperscript{846} Wegner, Temple of Senwosret III, page 304.
\textsuperscript{846} Ibid, page 103.
In addition, Von Pilgrim identifies a contemporary structure (building H84) from Elephantine as a “storehouse” building with both storage facilities and administrative facilities.\(^{848}\)

The upper right hand portion of the recovered sealings is poorly preserved in every example, leaving several possible readings and translations of the first line (see chart below).\(^{849}\)

<table>
<thead>
<tr>
<th>Hieroglyphs</th>
<th>Transliteration</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Hieroglyph" /></td>
<td>(htm) (int-\text{nfh})</td>
<td>The storehouse of the bringing of life</td>
</tr>
<tr>
<td><img src="image" alt="Hieroglyph" /></td>
<td>(htm) (inw)</td>
<td>The storehouse of incoming deliveries</td>
</tr>
<tr>
<td><img src="image" alt="Hieroglyph" /></td>
<td>(htm) (int)</td>
<td>The storehouse of the delivery of bread</td>
</tr>
</tbody>
</table>

Wegner asserts the preferable translation is the second, “the storehouse of incoming deliveries,” as the use of \(inw\) represents an abstract conceptual notion out of keeping with the rest of the text, and the “delivery of bread” falls within the purview of the rest of the text.\(^{850}\) The second two lines of text run vertically and from left to right.

\(^{847}\) Ibid., pages 304 and page 102. Additionally, only one other stamp seal found at south Abydos designates something other than an institution or an individual (as in the case of mayors and a phyle-director). For partial stamp sealing with the inscription “sealed item of the granary.” See full explanation in chapter 5, section 1.1a – the granaries of Abydos.

\(^{848}\) Von Pilgrim, Elephantine 18. Pages 85-97, 231-234 and 270-274. See also Wegner, Temple of Senwosret III, page 103.

\(^{849}\) These signs were very shallowly carved on the seal and the resulting sealings from both the temple and the shena area are worn.

\(^{850}\) Moreover, the writing suggests simply a nominalized passive participle (the extra \(t\) is the word for bread). Wegner, Temple of Senwosret III, page 323.
The text reads \textit{ntr-htpw n(w) H\textsuperscript{3}-k\textsuperscript{3}w-r\textsuperscript{5}}. The translation of the entire text would be: “The storehouse of incoming deliveries and divine offerings of Senwosret III.\textsuperscript{851}

Despite the fact that the \textit{shena} and the temple magazines are integrally linked in a chain of production, storage and distribution, only one example of this sealing appeared the \textit{shena} deposits (see Figure 125). The storehouse sealing is not found with frequency from any part of the site.\textsuperscript{852} Wegner points out that most storehouse sealings from the temple have a door bolt back type,\textsuperscript{853} and therefore would be found close to the door that it sealed. This conclusion confirms that the temple East Block was a magazine (\textit{htm}). Further, the almost complete absence of the storeroom stamp from the \textit{shena} suggests that the temple storerooms and the \textit{shena} were separate institutional entities and that the temple’s magazines were not part of the \textit{shena} (or vice versa), as many philologists have argued (see chapter 3.1.2 for complete discussion of the \textit{shena translated as storehouse}). The plethora of \textit{Nfr-k\textsuperscript{3}} sealings from the \textit{shena} that had sealed goods, indicates that goods sent to the \textit{shena} were sealed under the temple’s authority, not its magazines.

\textsuperscript{851} Although a genitive is possible also: Incoming deliveries of divine offerings. Wegner, \textit{Temple of Senwosret III}, page 324.\textsuperscript{852} Ibid, page 323.\textsuperscript{853} Ibid., page 324.
6.2.1.c. **The Mortuary Foundation of Senwosret III**

The name of the whole mortuary complex of Senwosret III is \( w3h-sw \) \( H^r-3w-r^c \) \( m3^r-hrw \) \( m3dhw \) or “Enduring are the Places of Senwosret III, true of voice, in Abydos.” The corresponding institutional stamp seal is shield-shaped with no border (see Figure 126). Most of the sealings with this stamp come from the mayor’s house and its administrative gatehouse (\( Trryt \)), which lies to the east of the temple of Senwosret III in the town built to house the workers of the mortuary complex.\(^{854}\) Wegner contends that the mayor of the town, who also bore the title of “overseer of the temple,” administered the mortuary complex of Senwosret III from the house of the mayor.\(^{855}\)

There are four mortuary complex sealings from the *shena* deposits and a few more from the west block refuse deposit (see Figure 127). Back types from the *shena* sealings include three peg and one wicker. The *shena* was in constant receipt of goods from the town, as the mayor’s residence may have stored at least some of the grain for the entire complex. However, the mayor sent very few goods to the *shena* under foundational authority. Goods within the

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\(^{855}\) Ibid

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The mortuary complex were likely transferred under individual sealing authority, whereas the mortuary complex’s seal was usually reserved for use when goods were sent to other sites, such as the Osiris Temple.

6.2.1.d. The Administrative Gatehouse of the Mayor

Situated behind the residence of the Mayor is the administrative gatehouse or ʕrryt, consisting of three multi-roomed structures that housed the local administration.856 The administrative gatehouse has its own institutional seal whose text reads: ʕrryt nyt pr h3ty- быть W3h-sw _release k3w-r 63- hrw m 3bdw or “the administrative gatehouse of the residence of the mayor of ‘Enduring are the Places of Senwosret, true of voice, in Abydos.” Like all other institutional stamps seals discovered at south Abydos, it is shield-shaped (see Figure 128). A refuse mound outside the rear mayor’s house door yielded a dense deposit of these sealings;857 this mound was the only place in the town where institutional sealings have been found.858 This furthers the notion that the rear area of the mayor’s house had an administrative function.

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858 Ibid, page 34.
Only four 'rryt sealings come from the shena area and two from the west block temple deposit.\textsuperscript{859} All four sealings recovered at the shena have impressions of wood boxes on their backs (see Figure 129). The lack of 'rryt sealings at the shena is somewhat surprising, as it was the 'rryt, or the mayor’s house, where there is the only evidence of long term grain storage from the mortuary complex. The shena may have gotten some its supplies of grain from the 'rryt or mayor’s house on a daily basis. Few 'rryt sealings, despite daily transactions, suggests that individuals, not institutions, sent sealed goods to the shena. Perhaps the relative proximity of the two buildings and the constant stream of goods sent to the shena did not require a strict sealing protocol. Only special goods - that, in this case, were transported in wooden boxes - necessitated sealing oversight.

\textbf{6.2.2 The “Abydos Series” of Institutional Sealings}

Throughout the pharaonic period Abydos was the cult center of the god Osiris-Khentiamentiu, a major god in the ancient egyptian pantheon.\textsuperscript{860} The Osiris temple, located in north Abydos along the floodplain (see Figure 130), was the focus for most

\textsuperscript{859} There are two others from the West Block refuse deposit, for a total of six from the entire temple area.

\textsuperscript{860} See chapter 1 for a discussion of Osiris at Abydos.

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worship at Abydos. As such it was also the center of religious administration of Abydos, although other temples were largely autonomous with endowments of their own. When a king died he transitioned from the embodiment of Horus, ruler of the earth, to the deceased god Osiris, ruler of the underworld. As a result, Osiris was an important god not only in terms of the afterlife, but also for perpetuating the myth and legitimization of kingship. Many kings had building programs at Abydos to venerate themselves in Osirid form. From the Middle Kingdom, there is evidence of the following kings: Nebhepetre Mentuhotep, Sankhare Mentuhotep, Senwosret I, Senwosret III. The Second Intermediate Period has evidence of building regimes by the following kings: Khendjer, Neferhotep I, Khaneferre Sobekhotep IV, Kay, Khahetepre Sobekhotep VI, Ibiaw, Kha’ankhre Sobekhotep II, Nebukheperre Intef VII, Sobekemsaf

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862 See chapter 2 for discussion of the economy and the ancient Egyptian temple.
II. Finally, in the New Kingdom, there are architectural remnants from the following kings: Ahmose, Amenhotep I, Thutmose I, Thutmose III, Thutmose IV, Amenhotep III, Ramses I, Seti I, Ramses II, Merneptah, Ramses III, Ramses IV, and Amasis. The temple of Senwosret III was just a part of a larger community of religious institutions worshiping the god Osiris at Abydos.

A series of three sealing types found at the shena indicates that the temple of Senwosret III interacted with other religious institutions at Abydos. These sealings refer to various storage institutions of divine offerings of Abydos, including the granary, the stables and the storehouse. The reference to divine offerings connotes that their associated institutions are attached to a temple. The Osiris temple was the main temple at Abydos, despite the fact that there were several temples operating concurrently.

Many stelae mention a “temple of Abydos,” two of which are those of Nebipusenwosret (BM101) and Amenyseneb (Louvre C11). It is clear from the complete texts that they are describing the temple of Osiris. It is likely, therefore, that “Abydos series” seals refer specifically to the Osiris temple. The “Abydos series” of sealings appear almost exclusively in the shena deposits or in the eastern block temple debris to the south of the

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temple temenos wall. Further, almost all of these sealings have wickerwork back types; the Osiris temple sent goods to the Senwosret III temple, either directly to its magazines or to the shena.

### 6.2.2.a The Storehouse of Divine Offerings of Abydos

The seal for the *Storehouse of Divine Offerings of Abydos* has a shield shape with the lunette at the top and a wavy patterned border (see Figure 131). The text has three horizontal lines, with one hieratic sign among hieroglyphs.

1. **wdj n, Storehouse of:** *w* chick (𓊒, G43), *ḏ* (hieratic Möller #391, Gardiner’s U 28 𓊒).868 *pr* house (𓊒, O1) above hieratic *n* (𓊒𓊒𓊒, Möller #331).

2. **nṯr htp n, Divine offerings of:** *nṯr* flag (𓊒, R8), *htp* (𓊒𓊒𓊒, R4) above hieratic *n* (𓊒𓊒𓊒, Möller #331)

3. **ḏbw, Abydos:** *ḏ* (Möller #485, U23 𓊒), *b* foot (𓊒, D58), *ḏw* horizon (𓊒, N26)

Figure 131: Reconstruction of Storehouse of Divine Offerings of Abydos Wegner Temple of Senwosret III, fig 146

The eastern area of the temple yielded twenty-one *Storehouse of Abydos* sealings, most from the shena midden area (see Figure 132). The midden generated four groups of these sealings containing about four sealings each. This clustering suggests that there was not a steady stream of goods from the storehouse of divine offerings of Abydos, but

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rather that goods came in occasional bursts, perhaps related to festival days or processions. All the sealings of the Storehouse of Divine Offerings of Abydos have a back impression from wickerwork, indicating that the Osiris temple sent goods, rather than correspondence, to the temple of Senwosret III at South Abydos.

Two other storehouse institutional sealings emerged from the area east of the temple. In both cases, the sealings are very fragmented with only the first line of text extant: \textit{wd}$\beta$ or storehouse. The first has no trace of the border remaining and its signs are double the size of the "Storehouse of Divine Offerings of Abydos" seal (see Figure 133, left). Its identity as an institutional seal is assured mainly because of the large size of the hieroglyphs. The text consists of two hieroglyphs: the \textit{w} chick (\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure132}
\caption{Storehouse of Divine Offerings of Abydos sealing with wicker back from the \textit{shena} (31178.1)}
\end{figure}) and the \textit{d}$\beta$ fire drill (\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure133}
\caption{Two other storehouse institutional sealings (35537.2 & 33928.1)}
\end{figure}). Because the text is incomplete, it is unclear where this storehouse was located, or if it was associated with a religious institution. Like the Osiris storehouse sealings, it sealed a wicker basket.

The second storehouse sealing is remarkably similar to the “Storehouse of Divine Offerings of Abydos” sealing, but the waves in its border travel in the opposite direction. It has three signs, \textit{w d}$\beta$ and a house determinative. The \textit{d}$\beta$ sign is a vertical line over a
rectangle, which is different than the “Abydos series” storehouse sealing. The $dB$ sign is still hieratic (as is the Abydos storehouse sealing), but instead of being more like a $mB$ with an elongated neck, it resembles a $wg^r$ sign ($\hat{\text{d}}$, Aa 21) This it is not inconsistent with a hieratic writing for $dB$ (Möller #391) the fire drill $\downarrow$ (Gardiner U28). In addition, the house sign is squished into the wavy border and there is no genitival $n$ under the house determinative (see Figure 132, right). It is entirely unclear whether this sealing is another version of the Abydos storehouse seal, or from an entirely different locale. However, unlike all the other Abydos storehouse sealings, it secured a papyrus document. It is the only institutional sealing from the shena area that has a back impression of papyrus. Why would the storehouse be sending a sealed papyrus document to the shena of the temple of Senwosret III? Perhaps it was an inventory sent with goods to south Abydos. Perhaps it was a request for offerings from the Senwosret III shena. Regardless, it indicates that the shena of divine offerings at the temple of Senwosret III was corresponding with institutions outside the Senwosret III mortuary complex.

6.2.2.b The Granaries of Divine Offerings of Abydos

There are five sealing fragments representing the seal of the granary of Abydos. This sealing is found exclusively in the shena midden. The seal has a wavy border with the lunette at the bottom. Due to their fragmentary nature, the top of the sealings are broken, and the first line of text is probably missing, assuming that the seal is roughly
the same size as other institutional stamp seals from Abydos. The hieroglyphs and the wavy border are of a similar scale to those on other stamp seals found at south Abydos, suggesting that the original Granary of Abydos seal would have had four lines. The transliteration of the text is slightly problematic due to both the worn nature of the sealings and the fact that the incised lines were rather shallow. (see Figure 134).

1. [line is missing]
2. $\text{snwt hry(t)}/\text{htm(t)}$, Granary $\text{?}$, granary sign ($\text{[ ]}$, O51) with a $t$ inside, either a frontal face ($\text{[ ]}$, D2) or a seal with necklace strings (Ω, S20)
3. $n(t)$, of (hieratic $\text{[ ]}$, N35)
4. $\text{ntr htp 3bdw}$, divine offerings of Abydos divine flag (†, R8), offering loaf on mat (←, R4), chisel (↑, U23), horizon (←, N26).

The third and fourth lines pose no problems in translation: “…of divine offerings of Abydos.” In the second line, the sign for $\text{snwt}$, the granary ($\text{[ ]}$, O51), is unambiguous. The second sign in line two could be either a $hr$ face ($\text{[ ]}$, D2), or the bottom half of a $htm$ seal (Ω, S20). Possible translations are: 1. “…primary (central) granary of divine offerings of Abydos,” or 2. “…sealed granary of divine offerings of Abydos.”

It seems very clear that the $\text{snwt}$ sign appears with a $t$ loaf of bread (☉, X1) in its center $\text{[ ]}$. The second and modifying hieroglyph is most likely the $hr$ face (♀, D2).

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869 For these two transliterations and translations see Josef Wegner, Temple of Senwosret III, page 325.
Wegner rightly points to several stamp seals from other locations that show *hr* and *ḥy* modifying either a storehouse or a granary. At Uronarti and Lahun there were storehouses and granaries that had names including the moniker “primary.” There is no precedence for the use of *ḥtm* as a modifier for granary and/or storehouse (as in sealed granary/storehouse). Contemporary textual evidence suggests that the modifier in this Abydos seal is *hr* or “primary.”

Paleographically, the second hieroglyph can only be a *hr* face. The head is light-bulb shaped with donkey-like ears. There is a clear parallel for the shape of this hieroglyph in the stamp from Uronarti mentioned above. The sign in question is not angular enough to be the sign for the *ḥtm* seal.

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872 Hannig, AW II, 1731.

873 Martin, *Egyptian Administrative and Private Name Seals*, no. 1889 (plate 44[9]). Dunham, *Uronarti, Shalfak, and Mirgissa*, page 163 (plate 9[7]).
As noted above, the first line of the text of the seal is missing due to the fragmentary nature of the recovered sealings. Because this is an institutional stamp, there are few things that could precede the “primary granary of divine offerings of Abydos.” The most likely possibility is *htm n*, “seal of…” (see Figure 136). This suggestion would result in a translation “seal of the primary granary of divine offerings of Abydos.”

Regardless of the final translation, the sealings of the “granary of divine offerings of Abydos” signify that the shena of divine offerings of Senwosret III received grain from an institution not directly associated with it. Interestingly, all the examples of the Abydos granary sealing sealed wicker baskets, suggesting that grain was transported in baskets. Grain sent directly to the shena of Senwosret III at south Abydos from the Osiris temple would have to be used shortly after its receipt, because the shena did not have the storage facilities. The shena had only a small granary for short term storage of grain. Further, textual evidence from Lahun and various Theban temples suggests that grain arrived “just in time” for specific days. A temple day account from Lahun, for

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874 There would be no names, as they appear at the end of a seal. A few titles, however, appear on institutional stamp seals. The most common of these is *ḥty-n3* or mayor. For example see the sealing of Neferher below.

875 This is Josef Wegner’s suggestion, *Temple of Senwosret III*, page 325. For parallels see: Martin, *Egyptian Administrative and Private Name Seals*. No. 1862 (pl. 43[6]), 1863 (pl. 43[7]), 1869 (pl. 43[9]), 1843 (pl. 43[12]), 1882 (pl. 43[15]), 1860 (pl. 43[19]), 1897 (pl. 44[3]), 1891 (pl. 44[7]), 1889, (pl. 44[9]), 1857 (pl. 44[13]), 1874 (pl. 45 [13]), 1881 (pl. 45[16]), 1840 (pl. 45[21]), 1842 (p. 46[8]).
example, mentions that the temple of Sobek at Crocodilopolis sent 20 loaves of bread that day. Temple personnel almost immediately received the loaves as wages. The temple of Medinet Habu acquired grain from various religious and royal institutions around Thebes on specific days. The implication is that the grain was to be used immediately for that day’s festivities.

6.2.2c  The Cattle-Stalls of Divine Offerings of Abydos

The last in the Abydos series of sealings is that of the “cattle-stalls of divine offerings of Abydos” (see Figure 137). Like the rest of the series, the seal has a wavy border and is shield-shaped, although the lunette is at the bottom. The text has three horizontal lines.

1. mḏt nṯr, (𓏀, V19), (𓏀 R8),
   Cattle stalls (of) divine
2. hḥp, (𓃃, R4), offerings (of)
3. 3b ḏw, (𓃃, U23), (𓃃, N26),
   Abydos.

Although the translation of most of the text seems clear, the ultimate translation of the first sign (V19) is somewhat challenging. The hobble hieroglyph appears

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877 See chapter 2 for discussion of the temple in the ancient Egyptian economy.
878 Haring, Divine Households, table 1, pages 399-404.
879 nṯr hḥp 3ḏḏw appears on all of the Abydos series of sealings.
generally as an ideogram preceding phonetic complements.\textsuperscript{880} The context of the text and the phonetic complements usually help to determine a proper translation. In this case, however, it has no phonetic complements and little in the way of context. For that reason, three different readings seem possible. The first possibility is to transliterate \( \text{tm}\) as \( \text{tm}\) “cadastre,” which is a unit of land.\textsuperscript{881} Unfortunately, this ideogram always uses further determinatives such as the irrigation canal hieroglyph \( \text{N} \) (N 23), even when there are no phonetic complements.\textsuperscript{882}

The second possibility is \( \text{hfr} \) or “a sack,”\textsuperscript{883} for a complete translation of the sealing as “sack of divine offerings of Abydos.” Wegner points out that the \( \text{(V19)} \) is a determinative in all sorts of words pertaining to a woven container: \( \text{sfr} \), “basket”; \( \text{mnfr} \), “basket”; and \( \text{stfr} \), “crate.”\textsuperscript{884} All the back types of the sealings in question are from wickerwork containers, which matches nicely with a translation of “sack/container.” The use of the \( \text{hfr} \) as an ideogram for “sack” without any phonetic complements is rare, occurring mainly in account papyri. This transliteration renders the text a label instead of an institutional sealing.

\textsuperscript{882} Ibid.
\textsuperscript{884} Wegner, \textit{Temple of Senwosret III}, 325f. A few of the words Wegner includes actually use a different hieroglyph that has a similar appearance (\( \text{\textdegree} \), \text{Aa}19). Gardiner says that it is not a derivative of \( \text{V19} \), although it is used in some words that relate to fabric containers and cordage.
The third possible reading of is mdt, “cattle-stalls/ stables,” with a complete translation of the text as “cattle-stalls of divine offerings of Abydos.” Ward notes two titles imy-r mḏwt and imy-r st mḏt and translates mḏt as “cattle pens.” In his examples the appears without any phonetic complements. The mortuary temple of Ramses II at Abydos has a mḏt attached to it, specifically for meat offerings. Haring points out that in the New Kingdom, mortuary temples had a department for meat-offerings separate from other provisioning departments like the shena. Contemporary evidence from a Lahun papyrus UC32179, an account of cattle herds, lists the “cattle-stalls of divine offerings of Sobek” – a god’s temple. Another entry from the same papyrus mentions the “cattle-stalls of divine offerings of Sobek-Shedti.” Two other Lahun papyri, pBerlin 10203 and 10245b mention that other estates sent cattle to the Senwosret II, one being the aforementioned temple of Sobek-

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886 Ward, Titles of the Middle Kingdom, 216, 217, and 321.
887 Ibid.
891 Ibid, page 46.
Shedti, the other being Hery-shef, Lord of Hierakonpolis. These departments were primarily for housing the animals just before slaughter. A temple the size of the Osiris temple at Abydos, with a constant need for meat offerings as part of its ritual program, must have had cattle-stalls to meet its requirements. With contemporary evidence of an institution called “the cattle-stalls of divine offerings,” and later evidence that such an institution existed at Abydos, it is clear that this particular seal should be translated as “the cattle-stalls of divine offerings of Abydos.

All the “cattle-stalls” sealings have wickerwork back types indicating that the Osiris temple was not sending live cattle to the shena at south Abydos (see Figure 136). Most likely, the Osiris temple slaughtered and butchered the cattle at the cattle stalls, and subsequently sent specific cuts to south Abydos inside sealed wicker baskets. Most of the recovered sealings came from two deposits, one with eleven sealings (in refuse deposit A, nearest the shena building) and the other with four (from refuse deposit B). This pattern of deposition suggests that, like the storehouse sealings, goods from the Osiris temple arrived periodically and in bulk, most likely for festival days.

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893 For comparison, Medinet Habu, required the slaughter of 119 cattle, 16 gazelle, 1 pig, 1 goat, and 13, 476 fowl per year for offerings. See Table 3, Haring, Divine Households.
894 If the Osiris temple was sending regular shipments of meat offerings to the Senwosret III temple, one would expect this sealing to appear mixed throughout the strata of the shena and its midden.
6.2.3 Other Institutions at Abydos

The Osiris temple at Abydos was not the only institution that sent goods to the mortuary temple of Senwosret III at south Abydos. Two sealings from the *shena* midden have a large institutional stamp impression of a building belonging to Senwosret the First. The seal is shield-shaped with the lunette at the bottom and a straight-line border following the edge of the seal. None of the extant sealings preserves the right side of the seal, but it is clear that only a few signs are missing (see Figure 138). The seal has shallow carving and the hieroglyphs that are poorly rendered. Interestingly, it is the only institutional sealing from south Abydos where the text is oriented from right to left.

![Figure 138: Senwosret I sealing with wicker back (31793.2)](image)

The text has three horizontal lines:

1. ... *(R° hpr k3)*, (☉, N5), (𓊝, L1), (𓊞, D28). The throne name of Senwosret I

2. ... *Ir-st Wnn-nfr*, (𓊞, D4) (𓊝, Q1), (𓊝, A40), (𓊝, E34, but rendered in hieratic Möller #132) (𓊝, N35), the nfr sign (𓊝, F35), (𓊝, A43). Osiris, Wen-en-nefer.

895 This determinative is also used as the ideogram for the god Osiris, Wnn-nfr being another of his names. Hannig, AW II, 3031-3032. Wegner, personal comment suggests that the sign before *Ir-st* be restored to *mry*, or “beloved” to make the translation beloved of Osiris-Wenen-nefer.
3. ...ḥtm nṯr sš, (♀, S20), (𓇋, R8), (𓊂, Y3, poorly carved and lacking the reed holder). ...Sealer, scribe of the god.

Architectural remains from within the Kom es-Sultan, the Osiris temple precinct, show that Senwosret I had a significant building program at Abydos. He completely rebuilt the Osiris temple during his reign. The stela of Amenyseneb mentions that he restored and cleaned the temple of Osiris “that Senwosret I made.” Senwosret I may also have had a mortuary temple or a ka chapel or both at Abydos. Remains of a colossal statue, a foundation deposit, and lintels and doorjambs from Kom es-Sultan, some with the title “beloved of Osiris-Khentiamentiu,” suggest the presence of a ka chapel of Senwosret I. The stela of Mery (Louvre C3) mentions the “seat of eternity” of Senwosret I – a reference to a building dedicated to that king outside of the Osiris temple precinct. With the right side of the Senwosret I sealing missing, it is unclear to

897 Amenyseneb wrote during the reign of the 13th dynasty king Khendjer. Sethe, Lesestücke. Page 76, lines 9-11.
898 Wegner, ”The Mortuary Complex of Senwosret III.” Pages 102-105.
899 Ibid, pages 103 and 136.
which building it refers. However, the presence of two of the names of Osiris strongly suggests that the institution could be a ka chapel.\footnote{On the suggestion of Dr. Josef Wegner.}

The two sealings recovered from the \textit{shena} at south Abydos have wicker back types, demonstrating that, like the “Abydos series” sealings, they were attached to baskets. This suggestion indicates that the institutions of Abydos had a standardized method of sending goods to other local institutions using wickerwork baskets. One of the sealings came from within the Phase II \textit{shena} building, while the other came from the \textit{shena} midden (see chapter 4.3.5 for complete discussion of the Phase II architecture).\footnote{It is possible that these two sealings are part of the same event/shipment, but were deposited in different places.}

A third Ka chapel of Senwosret I sealing comes from Umm el-Qa'\textsuperscript{a}ab, the early dynastic cemetery at the mouth of the wadi leading onto the Abydene plateau. Throughout the dynastic period, people left offerings at Umm el-Qa'\textsuperscript{a}ab, believing it to be the burial place of Osiris. Recently, excavators from the German Archaeological Institute reexamined the spoil heaps from earlier excavations. Just outside the tomb of king Semerkhet (tomb U) of the first dynasty, they recovered the same sealing of Senwosret I that we found at the \textit{shena} at south Abydos.\footnote{Vera Müller, "The Chronological Implications of Seal Impressions: Further Evidence for Cultic Activity in the Middle Kingdom in the Early Dynastic Royal Necropolis at Umm El-Qa'ab/Abydos," \textit{Scarabs of the Second Millenium BC from Egypt, Nubia, Crete and the Levant: Chronological and Historical Implications}, eds. Manfred Bietak and Ernst Czerny, Denkshriften Der Gesamtakademie 35 (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2004). See Figure 2, page 143 for findspot, and page 147.} The sealing was quite
broken, with only the cartouche and the tops of the signs in the second line remaining (see Figure 139, right). Unfortunately, its fragmentary and worn nature caused Müller to misinterpret the text of the sealing, transliterating: $hpr-k\beta-r\cdots bity hrp? \ htm\?\ or “Senwosret I ...of Lower Egypt, Controller of the treasury.” Since the Umm el-Qa‘ab sealing preserves the upper left hand corner of the sealing, it confirms that the cartouche of Senwosret I is part of the first line of the text.

Interestingly, the Umm el-Qa‘ab sealing has a smooth back, which “might derive from very well polished wood or ivory,” most probably a box. Müller believes that Senwosret I also cleared and restored the tombs of Umm el-Qa‘ab and that the sealing was a part of a new deposit for Osiris’ tomb. This conclusion signals that while the ka chapel of Senwosret I sent goods to both the Senwosret III temple and the mythical burial place of Osiris, it dispatched different items; the tomb of Osiris at Umm el-Qa‘ab

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904 Ibid, Figure 5, page 147.
905 Ibid., page 148.”
906 Ibid.
907 Ibid, page 149.
908 Ibid, page 156.
garnered finished ritual goods. The foundation of Senwosret I clearly had a lasting and generous endowment, as it was able to donate goods to other royal foundations at Abydos through the end of the Middle Kingdom. Further, the Senwosret I sealings illustrate that the various religious institutions at Abydos, whether they were god’s temples or mortuary temples, or ka chapels, interacted with one another, sending and receiving goods as part of their offering rituals.

6.2.4 Sealing Possibly of the Third Nome of Lower Egypt

The final institutional sealing discovered in the shena area has no direct link to Abydos. Only the lower right hand corner of the sealing remains, but it has a linear border and appears to be rectangular in shape (see Figure 140).\(^\text{909}\) The hieroglyphs are massive in comparison to those on all the other sealings recovered from south Abydos, the largest of which is 1.5 cm tall.\(^\text{910}\) The identification of this sealing as belonging to the institutional group hinges on its large size and its apparent rectilinear shape. However, the missing text may include the title of an official.\(^\text{911}\)

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\(^\text{909}\) It could be shield shaped, but any evidence of a lunette is missing.

\(^\text{910}\) By comparison, the reed hieroglyph (M17) \(\text{rryt}\) from the \(\text{rryt}\) sealing is only .6 cm tall.

\(^\text{911}\) Wegner, Josef. Personal comment. Some mayors use shield shaped seals (see the sealing of Neferher below) and the title mayor is frequently linked with toponyms and nome designations (see especially Ward, Middle Kingdom Titles, # 869, 870.)
One line of horizontal text remains on the sealing and reads from left to right. The first sign has a low rectangular shape, of which only the right end remains. There are a number of hieroglyphs that this sign could represent, for example: [N37], [S32], [R4], or [Y1]. Unfortunately, there is not enough information to hazard a guess as to which hieroglyph it might be.

The second sign is a standard emerging from [N24]. It is written in a cursive form, but is almost certainly a Horus falcon on a standard [G7], Möller’s number 188. In hieratic, this appears as two lines running diagonally (the Horus bird) across a vertical line (the stake) with a third line jutting out (the standard) from that vertical line. The third sign is the hieroglyphic [H6] atop a vertical line with a down-turned tick coming out of it (hieratic), perhaps hieratic sign for imnt [R14], with the šw written hieroglyphically and the vertical line and down-turned tick as the standard upon which the feather sits. Lastly, the text has three ticks, one horizontal – most probably [X1], and two vertical ticks. In combination with the imnt sign, this would cause the t to be a phonetic complement, while the two vertical ticks indicate that the t’s are dual, to form the word imntt or “the West,” the name of the third nome of Lower Egypt.\footnote{There are no other hieratic signs from the Middle Kingdom that have three slanted lines atop a vertical line.}

Perhaps the combination of the Horus standard and the west sign is a writing for Imntt, the third nome of Lower Egypt, centered on the town of Imu (modern Kom el-Hisn) in the western Delta. Traditionally the symbol for this nome is a $sw$ feather and a Horus falcon seated on a standard atop the nome sign $\text{Egyptian hieroglyph}$ (G264).\textsuperscript{914} In this case, the ideogram for the Third Nome of Lower Egypt sits before its phonetic complements. The paleography and orthography of seals has a tendency to be very free form at the best of times. This sealing appeared in the same strata as a sealing with the name of King Antef V who reigned the latter part of the 13th Dynasty. The worsening political situation may explain the strange spelling and hieratic writing on this institutional sealing.

The back of the Third Nome of Lower Egypt sealing has an impression of fabric. It is not clear whether this is from a bag or a bolt of cloth,\textsuperscript{915} so it is impossible to say what type of good they sent to the shena of Senwosret III.\textsuperscript{916} However, if this reading is correct it does show that the mortuary temple of Senwosret III had relations with institutions outside the immediate environs of Abydos.

\subsection*{6.2.5 Conclusions}

The institutional stamp sealings recovered from the shena provide a glimpse at the institutions that interacted with the shena of divine offerings at the mortuary temple

\textsuperscript{914} Hannig AW II, page 2936. Hannig, GHWB, page 1435.
\textsuperscript{915} It is clearly not from a jar lid. See von Pilgrim, Elephantine 18. Pages 237-238 and plate 93e. Also Wegner, Temple of Senwosret III, page 300-302.
\textsuperscript{916} This sealing was found in the refuse deposit A outside the southeastern corner of the shena II building.
of Senwosret III. This includes stamp seals relating to the temple itself, Nfr-k3, and the East Block of the temple, the htm inw htpw-ntr n (Hfrk3wr3), “storehouse of delivered goods and divine offerings.” There are also stamp sealings relating to the town of Wah-sut, including that of the frryt nt pr h3ty-c “the administrative gatehouse of the mayor.” It makes sense that the shena had close relations with the institutions; the shena was, after all, a part of the temple and therefore fell under the overarching sealing authority that the Nfr-k3 afforded. As the producer of goods for the temple, it is also logical that the shena had a close relationship with the East Block storage magazines where all the divine offerings went before being put to use in the offering ritual. Further, since the mayor also served as the overseer of the temple, it was unsurprising that the shena had relations with the mayoral residence. What is interesting is the extent to which the mayor’s residence stored the raw materials, in the form of grain, that the shena needed to make the offerings, rather than either the shena having long term storage facilities, or grain being stored within the storehouse of the temple itself.917

The shena had interactions with other religious institutions at Abydos, specifically the temple of Osiris, seat of religious activity at Abydos, and the ka chapel of Senwosret I. The abundance of these sealings, suggests that these institutions were in relatively constant contact.918 Further, the “Abydos series” of sealings lists the names of the institutions at the Osiris temple that were sending goods: the storehouse, the granary, and the cattle stalls. Since most of the “Abydos series” sealings were affixed to wicker

917 A discussion of grain storage can be found in section 4.2.1.
918 This contact may have been on festival days rather than daily exchanges of goods, but it was likely not isolated, random interactions.
baskets, it is easy to postulate that they were sending goods, most likely bread, cuts of meat, and other foodstuffs that could fit into a basket.

Without these institutional stamp sealings there would be little evidence of an interaction between the mayor’s residence and the shena and there would be no evidence of one between other religious institutions at Abydos. Further, we know that some of these exchanges are reciprocal; the temple sent meat to the town, but the ḫrryt sealings suggest that the mayor’s house sent grain to the shena.

### 6.3 Name and Title Sealings

Stamp sealings provide an institutional framework at the mortuary temple of Senwosret III, and name and title sealings impart the organizational structure within temple and shena administration. Institutional sealings were used over the lifetime of the temple. There is evidence, however of a few new versions of institutional seals coming into circulation, but it is unclear if their use was concurrent or in succession. Institutional sealings, therefore, are unhelpful in dating strata. The anonymity of decorative sealings does not allow tracing individuals or positions through time and space, as individuals may change seals completely with the onset of a new position or

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919 Distribution of faunal evidence throughout the mortuary complex has helped to establish exchanges of meat from the temple to the town.


921 There is a smaller version of the ḫfr-k3 sealing and three different versions of the storehouse of divine offerings of Abydos sealing. See above, sections 2.1a and 2.2a.
other such event. Tracking individuals through changes in their careers or tracking personnel changes within a particular post can provide several different types of information. It gives the historian insight into the “corporate ladder” of ancient Egyptian mortuary complexes and trace the hierarchical system of administration. Finally, because these positions change over time, the time frame of their use allows relative dating of strata, buildings, etc. through the presence or absence of these positions.

Individuals carried scarab seals, which bore their name and title(s). The impression left by a scarab seal is oval in shape and varies widely in size from under 1 centimeter to around 3 centimeters (most being around 2-2.25 cm in length). The top of the seal was carved either in the shape of a scarab beetle or of a some other animal, such as a cowrie shell or human heads. Seals, by their very nature, prove a sealer’s accountability. Seals were nontransferable forms of identification, analogous to a security swipe card in modern society. It is unsurprising then, that seals are an uncommon artifact found at the mortuary temple of Senwosret III.

Funerary epithets including nb im₃jw (possessor of veneration), m₃f-hrw (true of voice), and whm ḫnh (repeater of life) sometimes appear after the name of individuals,

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922 See below for theories about decorative seal distribution section 6.5
923 This has been done most successfully with the mayors, see below section 6.3.1.
Ben-Tor suggests that seals with these epithets were created specifically for funerary settings and later plundered and reused (see Figure 141). This conclusion implies that sealers used seals that have funerary epithets in a decorative manner, without any relation to the actual name and the function of the title appearing on the seal. If such were the case, prosopographical information could not be assembled from name and title sealings. Wegner has shown that there is “a close correspondence between the actual seal and official administrative activities of the seal owner.” Although some seals could have been plundered and utilized as decorative seals at other sites or at other times, it is clear that the situation at the Senwosret III mortuary complex does not include reused funerary scarabs. Further, Wegner suggests that “the [funerary] epithets might have an honorific connotation, possibly marking an official who had achieved a certain age and social position.” The relative profusion of scarab seals from tomb contexts (rather than temples, houses, middens, etc) may reflect the individual’s retention of these seals after their retirement. The inclusion of these seals in burials not only protects the user from

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928 Ibid., page 97.
“identity theft,” but also confirms and reiterates his station(s) in life beyond biographical
texts.

Name and title sealings bear combinations of the names of individuals and the
titles that they held. There were 442 name and title sealings recovered from the shena
area, of which 306 sealings have translatable text. The remaining 136 had enough text to
permit the classification of name and title sealings, but not enough to yield whole
words. These titles fall into several genres such as mayors, temple cult
personnel, official sealers, scribes, and most relevant here, temple production and
support staff. Most of the name and title sealings uncovered from east of the temple
relate to the administration of the temple, which is hardly surprising, since these people
were responsible for the oversight of shena production and transference of goods from
the shena to the temple and from the temple to workers as wages.

This dissertation does not discuss every title from the shena sealing corpus; this
represents 163 sealings in total. The titles found on the omitted sealings include military
titles: Imy- r ḫw “overseer of ships,”930 ṣmsw “follower,”931 and domestic administration,
imy- r pr “overseer of the house,”932 nbt pr, “lady of the house,”933 those that have partial
titles like sš scribe, and those that have names only. Also not discussed here is a group
of 66 sealings that contain the title Imy- r ḫnwty n Imy- r ḥmt Wr-n-trw “interior-

929 This is based on the placement of signs as well as the fact that certain signs or words
rarely, if ever appear in decorative seals.
930 Ward, William. Index of Egyptian Administrative and Religious Titles of the Middle
931 Ward, Middle Kingdom Titles, no. 1517.
932 Ward, Middle Kingdom Titles, no. 132.
933 Ward, Middle Kingdom Titles, no. 823.
overseer to the treasurer Werennetjerw."\textsuperscript{934}  Despite being the most common sealing from the 2004 excavation, all were found in the operation just to the south of the rear temple doorway. This deposit is best considered part of the “east block rear doorway deposit,” which contains the refuse from the temple magazines rather than the shena.\textsuperscript{935}

### 6.3.1 Mayors of Wah-sut

The highest office at the mortuary temple of Senwosret III was overseer of the temple, \textit{imy-r hwt-nTr}.\textsuperscript{936} This title was held in conjunction with the office of the mayor of the adjacent town of \textit{Wah-sut}. The mayor had control over the entire mortuary complex, including both the civil and religious administration.\textsuperscript{937} Most mayoral sealings employ a secondary title, usually relating to his temple duties, alongside his mayoral title (\textit{h3ty-f}). In addition, most of the mayors have multiple seals, as many as four, each with different titles and/or filial relationships.

It was possible to establish a succession of mayors for the mortuary complex of Senwosret III. The western temple refuse deposit\textsuperscript{938} (just to the north of the western temple exit) presents a depositional sequence of mayoral sealings with the lowest layers


\textsuperscript{935} Wegner, \textit{Mortuary Temple of Senwosret III}, pages 281-282.


\textsuperscript{937} Ibid.

\textsuperscript{938} Units 63 (5400/9030), 68 (5400/9040), and especially 72 (5410/9040).
corresponding to the earliest temporal periods (see Figure 142). Wegner has correlated their mayorships with the reigns of various kings through the presence of royal sealings (especially mayor Sehetep-ib and king Khasekhemre Neferhotep I). Some mayors have multiple different sealings, with various different titles and filiations. All the known mayors of Wah-sut are present in the shena deposits, although there are not necessarily examples of each mayor’s different seals.

<table>
<thead>
<tr>
<th>Mayors</th>
<th>Corresponding King</th>
<th>Subordinate Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nakht (Sobekhotep’s son)</td>
<td>Senwosret III</td>
<td>1. ḫtmt ntr wr mdw šm’vew God’s Sealer Great one of Tens</td>
</tr>
<tr>
<td></td>
<td>Amenemhat III</td>
<td>2. ḯmr šsr hwt-ntr Overseer of the temple linen?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. ḯmr hm-ntr Overseer of God’s Servants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. šmsw ns wt King’s Follower</td>
</tr>
<tr>
<td>Khentykhety (Nakht’s son)</td>
<td></td>
<td>1. ḯmr hm-ntr Overseer of God’s Servants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. ḯmr hwt-ntr Overseer of the temple</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. ḫtmt ntr God’s Sealer</td>
</tr>
<tr>
<td>Neferher</td>
<td>1. ḥmr hm-ntr Overseer of God’s Servants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. ḥmr hwt-ntr Overseer of the temple</td>
<td></td>
</tr>
<tr>
<td>Amenyseneb</td>
<td></td>
<td>1. ḱy-r ḥmr-hwt-ntr Overseer of the temple</td>
</tr>
<tr>
<td>Pahapy</td>
<td>2. ḱy-r ḥmr-ntr Overseer of the temple</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ʰṛp nst Controller of the two thrones</td>
<td></td>
</tr>
<tr>
<td>Sehetepib</td>
<td>313</td>
<td>1. ḫtmt ntr God’s sealer</td>
</tr>
<tr>
<td></td>
<td>Khasekhemre-Neferhogeth I thru</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Merneferre Ay</td>
<td></td>
</tr>
</tbody>
</table>

939 Josef Wegner presents a full discussion of the excavation of the West Block refuse deposit and the difficulties associated with the seriation of the deposition of the soils. Wegner, Temple of Senwosret III, pages 340-343.
940 See Wegner, Temple of Senwosret III, page 341, fig. 152, for complete discussion of levels containing particular mayors and royal sealings.
Nakht was probably the first mayor of Wah-sut. There are three sealings from the shena deposits with Nakht as mayor.\footnote{There are no examples from the shena of Nakht’s two other sealings that include the titles imy-r $hm$-$ntr$ “Overseer of God’s Servants” and “$s$m$s$w n$swt$.”} The first has the text of $h$t$ty$-$n$tr wr m$dw $s$m$w$ sbk-$htp s3 n$h$t “Mayor, god’s sealer, great one of tens, Sobekhotep’s son, Nakht.”\footnote{Ward, 1840 and 721.} There are two examples of an intriguing sealing with the text $h$t$ty$-$n$tr imy-r s$s$r $hw$t-$ntr$ n$h$t “Mayor, overseer of the temple linen, Nakht” (see Figure 143). Wegner proposes that the sign to the right of $h$wt is $\check{y}$ (V6), which has a phonetic value of $ss$.\footnote{Wegner, Temple of Senwosret III, page 336.} This reading would give a transliteration of $imy$-$r$ $hwt$-$ntr$ $ss$ “Overseer of temple alabaster.” He states that the use of alabaster in the title “appears to designate the mayor as the titular administrator of the temple’s ritual equipment (perhaps including the temple statuary).”\footnote{Wegner, Temple of Senwosret III, page 338.} Troublingly, the word $ss$ alabaster does not appear in any title from the Middle Kingdom.\footnote{Ward, Middle Kingdom Titles. Quirke, Titles and Bureaux. Fischer, Henry. Egyptian Titles of the Middle Kingdom: A Supplement to Wm. Ward’s Index. New York: Metropolitan Museum of Art, 1985. Jones, Dilwyn. An Index of Ancient Egyptian Titles, Epithets and Phrases of the Old Kingdom. BAR International Series ; 866. 2 vols. Oxford, Eng.: Archaeopress, 2000. Grajetzki, Wolfram. Die Höchsten Beamten Der Ägyptischen Zentralverwaltung Zur Zeit Des Mittleren Reiches : Prosoprographie, Titel Und Titelreihen. Berlin: Achet-Verlag, 2000.} Indeed, in Gardiner’s discussion concerning the confusion between alabaster and linen, almost all of his alabaster referents come from offering lists, whereas
many of his linen referents are from titles.\textsuperscript{946} It is more likely that what looks like the looped rope sign is in fact $\odot$ (V33). Gardiner notes that “in the Middle Kingdom hieratic is indistinguishable from $\odot$ V6” and “in hieroglyphic the two are very often confused.”\textsuperscript{947} The sign V33 has the phonetic value $s\,s\,r$, which is translated as linen, and the word $s\,s\,r$ usually has phonetic complements or a book roll determinative.\textsuperscript{948} However, Ward notes that when used in titles V33 can be written “abnormally” using $\odot$ alone.\textsuperscript{949} Ward does have a title $imy\,-\,r\, s\,s\,r$ “overseer of the linen,” and other titles that involve $s\,s\,r$ “linen.”\textsuperscript{950} Nakht’s title, therefore, should be read $imy\,-\,r\, s\,s\,r\, hwt\,-\,nt\,r\, Nht$ “overseer of the temple linen.” It is interesting that the one seal of Nakht’s that relates specifically to temple commodities occurs in the $shena$ deposits, especially since there is significant evidence that the $shena$ manufactured linen (see chapter 5.2.3 for discussion about linen production). In his analysis of titles used at the palace during the Middle Kingdom, Quirke notes that linen was the “most expensive daily commodity,” and that it “required particular care.”\textsuperscript{951} Through his title Nakht’s emphasizes of his oversight of

\begin{thebibliography}{9}
\bibitem{948} Hannig AW II, 2359. Hannig, GHWB, 833.
\bibitem{949} Ibid. Ward, \textit{Middle Kingdom Titles}, #360.
\bibitem{950} Ward, \textit{Middle Kingdom Titles}, #360, 360a, 1460, 1461. Martin, \textit{Egyptian Administrative and Private Name Seals}, no. 749. Quirke, \textit{Titles and Bureaux}, page 74.
\bibitem{951} Quirke, \textit{Titles and Bureaux}, page 72. In the palace, the department of linen had a much larger bureaucracy than any of the other provisioning departments, emphasizing its relative importance.
\end{thebibliography}
precious linen and signifies his control over the commodity practices of the temple as a whole.

The second mayor, Khentykhety is represented by four sealings in the shena deposits. Three come from the earliest levels of refuse deposit B, situated midway between the Phase II shena building and the rear eastern temple door. Of these one sealing reads $h^3t^y\text{-}^r$ $im\text{-}r$ $hw^t\text{-}n^r$ $Hntyhty$ $nb$ $im^3hw$ “mayor, overseer of the temple, Khentykhety, possessor of veneration.” The other two sealings read $h^3t^y\text{-}^r$ $im\text{-}r$ $hm\text{-}n^r$ $Hntyhty$ $nb$ $im^3hw$ “mayor, overseer of the hem priests, Khentykhety, possessor of veneration” (see Figure 144). The fourth is from just outside the Phase II shena building and overseals a $Nfr\text{-}k^3$ door sealing. This sealing reads $h^3t^y\text{-}^r$ $im\text{-}y\text{-}r$ $htmty\text{-}n^r$ $Nh^t$ $s^3$ $Hntyhty$ $m^3\text{-}hrw$ “mayor, god’s sealer, Nakht’s son, Khentykhety.” Very few $Nfr\text{-}k^3$ sealings come from this area. In general, the paucity of door sealings of any kind from the shena emphasizes the working nature of the buildings.

There were three Neferher sealings recovered from the shena (see Figure 145). It is interesting to note that one of his seals is actually in the form of a stamp seal, with a shield shape and the lunette on top. Nakht and an unnamed mayor also have stamp seals as does the phyle director Pepyankh. It is very
unusual at south Abydos for an individual to have a stamp seal rather than a scarab seal. Two of Neferher’s sealings came from inside the Phase II shena buildings. These sealings read ḫḥty-ꜣ imy-r ḫmwt-nṯr Nfr-ḥr “Mayor, Overseer of god’s servants, Neferher.” The presence of this sealing allows us to date the Phase II shena structure from the end of the 12th Dynasty to the beginning of the 13th Dynasty. This span corresponds with the decorative sealing corpus, and suggests that building Phases I and II of the shena took place in relatively quick succession, while Phases IIb and III occurred well into the 13th Dynasty (see section 6.5.2 for a complete discussion of dating using decorative sealings). The third sealing is from a scarab seal and reads ḫḥty-ꜣ imy-r ḫmwt-nṯr Nfr-ḥr nb im3hw “Mayor, overseer of the temple, Neferher, possessor of veneration.”

There was only one sealing from mayor Amenyseneb recovered from the shena area (see Figure 146). It reads ḫḥty-ꜣ imy-r ḫwt-nṯr Imny-snḥ nb im3hw “mayor, overseer of the temple, Amenyseneb, possessor of veneration.” This individual also appears on a single sealing from within the temple west block deposits. The scarcity of Amenyseneb sealings may indicate his particularly short term in office.

Figure 146: Sealing of Mayor, Overseer of the Temple Amenyseneb (34345.1) with reconstruction from Wegner, Temple of Senwosret III, 337.
There were three Pahapy mayoral sealings clustered together in refuse deposit C near the rear eastern temple doorway (see Figure 147). The mayor Pahapy has only one seal attributed to him. The text reads $h\text{ty}^{-5} \ hrp \ nsty \ P\text{hpy} \ m\text{t}^{-5} \ hrw$ “mayor, controller of the two thrones, Pahapy, justified.”

The last known mayor of Wah-sut was Sehetepib (see Figure 148). There were four Sehetepib sealings recovered from the shena area, all of which bear the same design. The text reads $h\text{ty}^{-5} \ h\text{nty-nfr} \ S\text{hpt-ib}$ “mayor, god’s sealer, Sehetepib. One of these sealings came from inside the Phase II shena building. As the last known mayor and overseer of the temple, his tenure was sometime during the reigns of Khasekhemre-Neferhotep I and Merneferre Ay.\textsuperscript{952} This date suggests that the late Phase II and Phase III shena buildings were operating simultaneously.

There were at least six mayors at Wah-sut over the 150-year life of the temple, all of whom are present in the shena deposits (see figure 142).\textsuperscript{953} Mayoral careers, therefore, lasted an average of 25 years. On the surface, this duration seems

\textsuperscript{952} Wegner, Temple of Senwosret III, page 342.

\textsuperscript{953} There is a possible seventh mayor – Sobekhotep – mentioned by Nakht, who may have served at the foundation of the mortuary complex. Wegner, Temple of Senwosret III, page 338.
extraordinary given that the average lifespan of an ancient Egyptian was about 25 years.\textsuperscript{954} In addition, most of the mayors of \textit{Wah-sut} governed during the 13\textsuperscript{th} Dynasty, a time period during which at least 57 kings ruled in 154 years (averaging less than 3 years).\textsuperscript{955} As Wegner rightly point out,

\begin{quote}
the preliminary picture is thus one that appears to emphasize the inherent stability of the administrative structure of late Middle Kingdom institutions, even within the context of the rapid successions and short reigns evinced in contemporary kingship of the late Middle Kingdom.\textsuperscript{956}
\end{quote}

This stability may suggest that the office of mayor at the mortuary complex of Senwosret III was hereditary rather than politically appointed. If the office of mayor were the latter, one would expect a more rapid turnover of mayors in parallel with the rapid succession of kings.

Filial succession is apparent from the mayoral sealings at south Abydos with Nakht and his son Khenty-khety.\textsuperscript{957} This line may originate with Nakht’s father, Sobekhotep, for whom there is no sealing as yet, but who may have been the original mayor of the Senwosret III mortuary complex. There are other Sobekhoteps attested at south Abydos, \textit{hry-hbt n W3ḥ-s(w)t Sbkḥtp} “the lector priest of Wah-Sut,” \textit{wr mḏw šmʾw Sbk-ḥtp} “The Great one of Tens of Upper Egypt” (of which there are 2 versions), and ‘nh ṣhw „3y 319

\textsuperscript{954} Wegner, \textit{Temple of Senwosret III}, 343.
\textsuperscript{956} Ibid.
\textsuperscript{957} Wegner, \textit{Temple of Senwosret III}, page 338.
n ḫr ḫk Sbk-ḥtp s Mntw-ḥtp “the administrator of the crew of the ruler, Montuhotep son of Sobekhotep.” However, all of these sealings appear much later in the stratigraphic record of the temple than one would expect for a founding mayor. One of Nakht’s sealings includes the title “The Great One of Tens of Upper Egypt,” as well as his father’s name: Sobekhotep (see Figure 149, left). The sealing could be read ḫnty-ḥ tmy-ntr Sbk-ḥtp s wr mdw šmʿw Nḥt - “Mayor, god’s sealer, Sobekhotep’s son, great one of tens of Upper Egypt, Nakht.” The Sobekhotep of Nakht’s sealing, therefore, could be the same Sobekhotep, “Great one of Tens of Upper Egypt,” found on sealings from both the town and the temple (see Figure 149, center and right). Quirke notes that this title “designates the staff of the vizier, or officials in his bureau,” and he relates it to priestly supervision. Wegner places this title, however, in the military sphere. Regardless of its classification, Sobekhotep worked on a national scale to organize work, most likely under the authority of the vizier. This title, “Great one of Tens of Upper Egypt,” therefore, probably refers to the organization of workers

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959 Lector Priest Op. 6-Δ-3, Great one of Tens Ops. 151-Δ-1 and 149-Δ-7, and Administrator of Crew.
960 Quirke, *Titles and Bureaux*, page 87.
and/or temple personnel for the construction of the mortuary complex of Senwosret III – the temple, town, and tomb.

All but one of the mayors of Wah-sut have titles pertaining to the oversight of the temple or priests in addition to the title of mayor on their seals. The pairing of titles emphasizes the mayor’s dual role as administrator of the civil local government and as administrator of the local religious institution. This combination occurs at other mortuary complexes like Lahun and Lisht, where the town was an integral part of the religious establishment. Religious titles also accompany mayoral titles at towns like Memphis, Heliopolis, Anniba, Qau el-Kebir, Mergissa and Elephantine, whose towns were independent of temple formation.

The most frequent religious titles associated with mayors are imy-r hmn-Tr or “Overseer of the god’s servants,” imy-r hwt-nTr or “Overseer of the temple,” and Htmty-nTr “God’s Sealer.” Each of these titles gives the mayor overarching control of the


temple, including its bureaucracy, supply, production and distribution of goods, building maintenance, etc.

Pahapy is the only mayor who has a title seemingly unconnected with his religious duties. His secondary title, hrp nsty “controller of the two thrones,” is enigmatic in meaning. During the Middle Kingdom this title does not appear without the title of mayor. Further, if it appears in conjunction with the title mayor and another title, it is always imy-r hmw-nTr “overseer of god’s servants.” During the Old Kingdom, “controller of the two thrones” does appear independently of other titles and may give a clue as to its sphere of activity. From Meidum there is a title of “Controller of the two thrones in the Mansion of life.” Gardiner suggests that this title is connected with the throne on which the king sat while eating and that the two thrones refer to either the thrones of the king and the queen, or the dual throne of Upper and Lower Egypt.

The relative frequency with which a mayoral office is paired with a religious title suggests that local civil administration and local religious administration are not

965 Martin, Egyptian Administrative and Private Name Seals, nos. 406, 1773, and 1774.
separate. Quirke, however, notes that high religious titles become increasingly disengaged from other officials with national rank, such as royal sons or royal sealbearers, and may be another indication of the reason mayorships remained so stable with the rapid succession of 13th Dynasty kings. The disengagement of high ranking personages and their religious duties may be true of nationally titled individuals like those listed previously, but on a local level the mayors kept a firm grip on their influence over the temples regardless of their association with a king or deity. Quirke reminds us that there was no clergy in the ancient Egyptian temple. However, that fact does not mean that there were not permanent members of the temple staff.

6.3.2 Other Mayors found at the Shena

There are ten other mayoral sealings that appear in the shena deposits. Some of these mayoral names also appear in the temple deposits, and others are single examples. They may represent ephemeral mayors of Wah-sut or mayors of other towns that sent goods to the shena. All of these ancillary mayoral sealings had been fastened to either wood or pegs and most probably were box sealings. We know that other institutions at Abydos sent goods to the shena at the Senwosret III temple (see the “Abydos Series” section 6.2.2). These donating institutions seem to have been religious. The duality of

971 Quirke, Titles and Bureaux, page 120.
973 Three had a wood impression, three had a peg impression, and 2 were too degraded to categorize.
mayoral duties with both local civil and local religious responsibilities makes it likely that goods being sent from another temple went through the mayoral office or the 'rryt.

The goods, therefore, were under mayoral oversight and authority and would have been sealed using the mayoral seal.

Five of the mayoral sealings were complete enough to render the names (see Figure 150). Another three sealings included supplimentary titles, while the remaining two had only the title of mayor $h\text{t}y^{-c}$. One sealing bears the title $h\text{t}y^{-c} \text{ imy-r hnty Snt-wsr}$ “mayor, overseer of the 2 god’s servants, Senwosret.” The title “overseer of god’s
“servants,” is a relatively common title. However, the use of the dual (2 god’s servants) is unique. It is unlikely that there is a *hm* missing to make the plural as there is not enough room for 3 *hm’s* in the row. There is an 18th Dynasty title *hmw-ntr snw*, “second god’s servant,” but it never appears in combination with overseer.

### 6.3.3 Royal Officials

There is evidence of interaction between the *shena* and the larger central government. The *shena* yielded one sealing mentioning the vizierate and a series of sealings that have titles associated with the central treasury.

#### a. Viziers

The *shena* and the temple did not bear any sealings directly from the vizier. The vizier was in charge of the general administration of the kingdom (ie. its people and lands, whereas the treasurers were in charge of its material wealth, see below). The duties of the vizier are well known from a composition from several sources, the best preserved of which is from the tomb chapel of Rekhmire, vizier of Tuthmosis III.

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975 The third *hm* could be placed on the line below, but that would be a very unusual orthographic writing.


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Although the best known versions date to the New Kingdom, Quirke believes that its origins are in the late Middle Kingdom, and therefore, remains applicable to the understanding of the central bureaucracy during the lifetime of the mortuary complex of Senwosret III.

There is one official from the vizierate present in the shena area: ss n ḫty “secretary (lit. scribe) of the vizier” named Amenyseneb (see Figure 151). There is another record for an Amenyseneb of this title from a list of pBrooklyn 35.1446, recto column f. Whether the two are the same individual is not open to question. It is unclear exactly what the duties of a “secretary of the vizier” entailed, however, Quirke points to a 13th Dynasty stela from Abydos where the “secretary of the vizier” is sent as an envoy to summon a local official to the vizier for a “mission.” The Amenyseneb sealings from the shena were not letters of summons, but rather affixed to a wicker basket suggesting that the vizierate sent goods to the temple via the shena. That the Osiris temple at Abydos sent both grain and meat in wicker baskets seems certain (see section 6.2.2 for “Abydos Series” and 5.1.1a. for grain and 5.1.4 for meat). Although the vizierate was

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979 Quirke, *Titles and Bureaux*, page 88.

980 Ibid., Louvre C11

981 There are two 35358.2 142-▲-3 and 37072.7 149-▲-7.
not in charge of commodities in ancient Egypt during the Middle Kingdom, it clearly had enough resources to send goods to temples. These goods were probably not part of an endowment for the temple from the central government, as the royal treasurer would over see that (see below). Perhaps these goods represent an offering made on the current king’s behalf, the vizier’s behalf, or even Amenyseneb’s behalf.

b. Treasury

It is unsurprising that most of the evidence for interaction between the temple of Senwosret III and the central government comes from the treasury. Treasurers were in charge of the economic sphere of the ancient Egyptian government. As such, the vizier and the treasurer conferred before meeting with the king to report on the status of the nation. Treasurers were as powerful as viziers during the late Middle Kingdom and “were responsible for the management of the economic base of royal government.”

There are several individuals represented in sealings at south Abydos who had national careers and likely operated directly within the palace. These individuals bear the titles htm ty bity imy-r htm tyw “royal sealbearer, treasurer.” The title htm ty bity

982 Quirke, Titles and Bureaux, page 88.
983 Quirke, Titles and Bureaux, page 19 – translation of Rekhmire’s Duties of the Vizier lines 5-8.
denotes that the titleholder has national office. There are two “royal sealbearers” from the shena area: Senbihetep and Senebsumay (see Figure 152). Senebsumay is well attested from a number of scarabs and stele found throughout Egypt and he dates to the mid-13th Dynasty, before the reign of Neferhotep I. His sealing reads: $\text{htmty bity smr-w'ty imy-r htm Snb-sw-m}$ “royal sealbearer, sole friend, overseer of the seal, Senebsumay.” Senbihetep is previously unknown. His sealing reads $\text{htmty bity imy-r htm Snb-htp}$ “royal sealbearer, overseer of the seal, Senbihetep.”

Wegner contends that scarab seals bearing the names and titles of these treasury officials were used locally, but by a representative of said official, not the official himself. A study by Sophie Desplacques who shows that there are multiples (over 100 in one case) of a scarab seal bearing the title “overseer of the seal” with the same name supports Wegner’s thesis. Since one individual clearly did not require over 100

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986 Grajetzki, Wolfram. *Two Treasurers of the Late Middle Kingdom*. Bar International Series; 1007. Oxford: Archaeopress, 2001. Pages 12-25. Wegner, *Temple of Senwosret III*, page 348. There are 20 examples of Senebsumay’s scarabs in Martin’s *Administrative Scarabs*, nos. 1512-1541a. Unfortunately, most of the scarabs are unprovenanced, but there is one from tomb 405 at Lisht, and another from Lahun. He also has several stela; see Grajetzki, *Two Treasurers*, for concordance.
988 Ibid.
scarabs with the same inscription, subordinates, must use the seal under the authority of the official named on the seal. The employment of subordinate sealers greatly complicates matters for understanding sealing practices, title hierarchy, and prosopography in ancient Egypt. It is unlikely that treasury officials lived and worked at Wah-Sut, as they outrank the mayor and he is clearly the highest official ensconced at the mortuary complex.990

There are two individuals at the shena with royal sealbearer titles that may have been stationed locally, Res, who is a frequent sealer, and Ti, who appears once (see Figure 153). Both Res and Ti use one of the most frequent subordinate titles associated with the upper echelons of the central government: _imy-r pr wr_ “high steward” (lit. _overseer of the great house_).991 There is a high steward named Res known from other monuments, who dates roughly to the reigns of Neferhotep I and Sobekhotep IV.992 It is unclear whether these are the same individual.

The high steward was directly under the treasurer and was responsible for “all agricultural matters outside the palace.”993 In the late Middle Kingdom, there were

990 Wegner, _Temple of Senwosret III_, page 351.
991 As designated by their other title _ḥmt y bty_. See discussion Grajetzki, _Höchsten Beamten_, 79-115. Ward, _Middle Kingdom Titles_, no. 141.
993 Ibid., page 70.
several high stewards working concurrently.\footnote{Ibid.} This conclusion is confirmed by some “high steward” titles that include the place names to which they were assigned: “high steward of Thebes” and “high steward of Bahariya Oasis.”\footnote{Ward, Middle Kingdom Titles, nos. 143 and 145. Also Martin, Administrative Titles, 1372 and 566.} The *shena*, as the economic wing of the temple, would have had interactions with these officials to receive goods from the state and perhaps to send taxes owed by the temple.

\textbf{6.3.4 Temple Priests and Ritual Staff}

The overseer of the temple of Senwosret III was the mayor, whose dual civil and religious roles emphasize the nature and purpose of the Senwosret III mortuary complex at south Abydos (see section 6.3.1). Of the six known mayors of *Wah-sut*, three carry the title “overseer of the temple” and three do not. It should be pointed out that many of these mayors had multiple scarab seals, each with their mayoral title (*hnty-r*) and at least one subordinate designation.\footnote{Nakht had 4 subordinate titles, Khenty-khety had 3, Neferher had 2, and Amenyseneb (who has the title overseer of the temple) Pahapy and Sehetepib (who do not) each have one.} It is likely that these mayors also had scarab seals with the title “overseer of the temple,” but that such examples have not yet been discovered.

There are several titles that indicate the mayor’s position as head of the temple: *imy-r hwt-ntr*, “overseer of the temple,” *imy-r hmw-ntr*, “overseer of god’s servants,” and *htmty-ntr*, “god’s sealer.” These titles were not honorific. Sealings from all the *Wah-sut* mayors as well as some outside mayors are found at the temple (see section 6.3.2).
majority of these sealing come from the West Block refuse deposit outside the temple’s administrative sector. On some level, the mayor managed the temple’s personnel and operations of the temple. The Lahun temple business letters show this trend at other royal mortuary complex sites.997

The shena deposits also feature examples of all the mayor’s sealings, a situation that suggests that the mayor was also involved in the supply of the temple. If the mayor’s house and its accompanying ʿrryt (administrative gatehouse) and magazines were the entry point for a majority of the complex’s goods, then it would fall under the direct purview of the mayor.

Interestingly, there is one individual who holds the title imy-r ḫwt-nṯr “overseer of the temple” but is not a mayor: Iref-seneb (see Figure 154).998 Wegner suggests that he was a subordinate of the mayor who managed temple operations and reported directly to the mayor.999 There is a possibility that Iref-seneb was not part of the Nfr-k3 staff, that he was the overseer of another temple, and that he sent goods to the Senwosret III temple. It should not be forgotten that Abydos had numerous temples in operation concurrently with Senwosret

998 There are complete sealings from this seal without the ḫḥḏn-tsetter so the mayor title is not missing.
III’s temple, and, as we have seen from the institutional sealings, these temples did not operate in isolation. The mayoral sealings from *Wah-sut* rarely include the toponym to which they belong, and it is possible that Iref-seneb was the overseer of another temple at Abydos or elsewhere.

a. Priests

There are a series of sealings from *mty n s3* “phyle directors” at the *shena* area that represent two individuals: Ibdjaref\(^{1000}\) and Pepyankh (see Figures 155 and 156).\(^ {1001}\) These individuals were in charge of the temple’s personnel during their monthly rotation on duty in the there. The Lahun temple papyri list multiple “phyle directors” for each of the four watches, suggesting that there was a pool of candidates from which to draw in any given month.\(^ {1002}\) Wegner suggests that because the title appears on scarabs and other monuments, it was

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\(^{1002}\) Quirke, *Titles and Bureaux*, page 119. For each on-duty register, there is only one “phyle director” listed, indicating that only one of the directors was tapped to work in any given rotation.
a permanent office.\textsuperscript{1003} He furthers this idea by suggesting that there were standing “phyle directors” as well as substitutes (which would account for the extra names on the Lahun temple papyri).\textsuperscript{1004} Regardless of rotation, “phyle directors” at the Senwosret III temple clearly oversaw more than just personnel. One sealing has a wicker basket impression on its reverse, of the type which typically held cuts of meat or grain.\textsuperscript{1005}

There are two other types of priestly sealings extant in the shena deposits: $hmntr$ “god’s servant” and $\textit{wfb}$ “pure-priest.”\textsuperscript{1006} There is only one example of a “god’s servant” named Montu, son of Amenemhat. The relative lack of $hmntr$ “god’s servants” within the shena and its refuse deposits (especially in comparison to pure-priests) suggests that the hem-priests have little to do with production of offerings or their preparation for the daily ritual and festivals. There are numerous examples of “pure-priests” from the shena deposits, including: Nehry, Khentykhety, Wepnawet, Wepwawethetep, and Weserankhetnefer.\textsuperscript{1007}

The hieroglyph for $\textit{wfb}$ is the pot on a leg pouring out water, [A6], which translates as either an adjective “pure” or a transitive verb “cleanse, purify” or a noun.

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\textsuperscript{1003} Wegner, \textit{Temple of Senwosret III}, page 356-357. The individual probably would have held other titles in addition to “phyle director.”
\textsuperscript{1004} Ibid., pages 294-295.
\textsuperscript{1005} Phyle director, Pepyankh, possessor of veneration 33939.1 126-5-3.
\textsuperscript{1006} Ward, \textit{Middle Kingdom Titles}, # 897 and 639.
\textsuperscript{1007} These individuals have no other titles with their sealings.
“purification.”\textsuperscript{1008} We might then interpret a $w^h$ priest as “one who cleanses or purifies,” which would include all the offerings that were presented in the ritual.\textsuperscript{1009} The pure-priests’ domain was in the hall of the magazines where the goods required for the ritual underwent their final preparations. In the case of solid objects like fruits, vegetables, and meats, this presumably is the physical washing of the items in water. How liquids such as beer and wine were purified is unclear. Perhaps the priests ritually washed the vessels and purified those un-washable items by incense or reciting a spell. The pure-priests may have acted as liaisons between the cult areas and the shena, transporting goods from the shena to the East Block in preparation for use in the ritual.

\textbf{b. Keepers of the Seal}

The sealing corpus provides no data about administrators at the temple of Senwosret III at south Abydos. Although the mayor was in charge of running the temple, it is unlikely that he was able to manage everything without help. At the temple of Senwosret II at Lahun, the scribe of the temple “was the practical daily manager of the temple economic affairs.”\textsuperscript{1010} Whereas the phyle directors oversaw the cult personnel, the scribes were in charge of regulating the offerings.\textsuperscript{1011} However, no sealing with the title “scribe of the temple” has been found at south Abydos.\textsuperscript{1012} There

\begin{thebibliography}{99}
\bibitem{1010} Quirke, \textit{Titles and Bureaux}, page 121.
\bibitem{1011} Ibid.
\bibitem{1012} Wegner, \textit{Temple of Senwosret III}, page 356.
\end{thebibliography}
are two individuals with the title idnw n imy-r htmty ntr “deputy of the overseer of god’s treasury,” belonging to men named Senwosret-Sankh and Rwiw (see Figure 157). The title “overseer of god’s treasury” appears in multiple contexts in ancient Egypt. The first is from graffiti in the eastern desert where the holders appear to be the leaders of the expeditions. Second, in temple contexts htmty ntr “sealbearer of the god” is used to indicate a priest who performed the ritual, reciting incantations and libations. It is unlikely that an expedition leader would be based at the temple of Senwosret III as there is no evidence of contact between the temple and the eastern desert areas. It is equally unlikely that a senior embalmer was at the temple, as there is no evidence of embalming activities occurring within or near the temple.

There is a ntr htmty, storehouse, at the temple of Senwosret III in the form of the magazines in the East Block. It should be noted that ntr htmty is different from pr-hd which is also translated as treasury, but seem to be separate entities. A better translation may be “deputy of the overseer of god’s storehouse.” As such, Senwosret-Sankh and Rwiw would have helped to run the East Block. In this capacity, they probably had oversight many of the economic aspects of the temple including all the

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1014 Quirke, Titles and Bureaux, page 78.
goods coming into and leaving the temple, their storage, and their upkeep. This means that the “deputy of the overseer of god’s storehouse” would have had strong ties to the activities at the shena, which produced most of the goods destined initially for the East Block.

6.3.5 Production and Provisioning Staff at the Temple

Forty-one percent of the name and title sealings from the shena that could be classified are part of the production and provisioning staff. No other single genre of sealing (mayors, military, nobles, priests, or royal sealings) is above 16 percent. These statistics mean that at the mortuary complex of Senwosret III, a large portion of sealings from a given area relate to the physical area in which they were found. Sealings from doors are unlikely to travel far - most likely to the closest garbage pile. However, sealings on boxes, papyrus, and other small goods can travel long distances. The representative nature of a particular sealing corpus can be questioned on this basis. However, the sealing corpus from the shena shows that the largest portion relates directly to the staff who worked there.

The staff at the shena of the mortuary temple of Senwosret III seems to have had its own hierarchical structure. The shena, however, was not an independent entity and would have interacted on a variety of levels with the staffs of the temple and the mayor. The shena received grain (some, perhaps, from the mayor’s residence) to make bread and beer and then sent the finished goods to the temple for use in the ritual and for
payment. What follows is a discussion of the posts that made up the *shena*, from its administrators, to foremen who oversaw baking and brewing, to their lowly assistants.

a. **Staff with Shena Titles**

Despite the excavation of a large portion of several different phases of the *shena*, sealings that refer directly to that institution directly are rare from within the *shena* itself and its debris. There are only two individuals whose titles include the *shena*; their sealings came from within the temple, not the *shena* deposits. However, one of the scarabs that created these sealings came from within the *shena* debris.

The first individual is *imy-r pr-šn³ Snwsrt Hkw ms³ hrw* or *overseer of the shena (of) Senwosret, Heku, justified.*¹⁰¹⁷ Heku is represented not only by sealings, but also by a steatite scarab (see Figure 158). The scarab comes from just outside the Phase II *shena* building - represented by the star in map (see Figure 159). The layout of the building includes 4 galleries opening onto one long transverse room. The entrance to the second *shena* building lies presumably at the southwestern corner of the building. There are extant no thresholds to indicate an exit from the building on the north, east, or three-quarters of the southern sides. It seems logical for the entrance to open into the transverse room, rather than into any of the

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¹⁰¹⁷ Ward, *Middle Kingdom Titles*, #489. Ward refers to *shena* as “storehouse.” Hannig, *GHBW*, 896, also has this title, but translates it as “overseer of the workhouse.” For problems with translation of *šn³* see discussion chapter 3, section 1.2.
galleries. Moreover, an entrance there provides the fastest route between the rear temple door at the *shena*. An overseer of the *shena*, as well as his administrative staff, would be located primarily in this transverse room in order to supervise the workings of the production area, to receive incoming raw materials, inventory outgoing goods to the temple, and to assign duties to *shena* staff.

The scarab and its sealings are unambiguous in terms of the translation of the title, but the name associated with the title is open for interpretation. Previously Wegner translated the scarab as *overseer of the shena, Senwosret-seheku, justified*. This transliteration of the sealing reduplicates the “s” in *snwsrt* and places in front of Heku. However, the name on the scarab seal is more likely *hkw* Heku, not Seheku. A name that appears on several Middle Kingdom stele and scarabs. It is likely that the *Senwosret* on the Abydos scarab refers to a specific building. Institutional sealings give the name of the temple as “beautiful is the ka,” without the name of Senwosret, and that the name of the town also includes Khakaure rather than Senwosret. Therefore, pr-

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1021 See section 5.2.1a.
1022 See section 5.2.1c.
*șn* Snwsrt or production area of Senwosret may be the name of the *shena* institution attached to the mortuary temple.

The second individual that has a *shena* title has the sealing 1. *sš n šn* Hri ... 2. *H'-kzw-r° (mšr'-hrw?)* ... 1. 2. or scribe of the production area, Heri...Khakaure, (justified?).... Unfortunately, the lowest row of hieroglyphs is missing in all of the examples (see Figure 160).\(^\text{1023}\) This absence and the abbreviated nature of inscriptions on scarabs allows for a few different translations. The first, given above, is *scribe of the production area, Heri, Khakaure*. Wegner, however, treats *hry* as part of the title, and translates of “scribe of the chief of the production area, Khakaure.”\(^\text{1024}\) However, one would expect then that the word order would be *sš n hry šn*\(^\text{1025}\). Moreover, in titles *hry* does not appear with a seated man determinative on

\(^{1023}\) It is unlikely that there are any more hieroglyphs after the seated man in the first column, given the curvature of the rope border. Also, there are two tall signs under the double ka arms in the second column which are more than likely the funerary epithet *mšr*-hrw. Again, the curvature of the border would not allow for any more signs, and the fragments pretty clearly show the tops of two tall signs with “looped” tops, for which provide the best fit.

\(^{1024}\) Wegner, *Organization of the Temple*, pages 96 and 98.

\(^{1025}\) There is a chief of the *shena* (*hry šn*šw) in the Eloquent Peasant (line 173), Gardiner, Alan. "The Eloquent Peasant." *JEA* 9.1/2 (1923): 14. See also Ward, *Titles*, #1045. Strange word orders are not entirely rare on scarab inscriptions and are usually the result of mashing together columns of text. The columns of text in this particular scarab are very clearly delineated from one another.
scarabs, although Faulkner does cite one New Kingdom example. Further, titles on scarabs usually appear in their most abbreviated forms due to lack of space. Wegner suggests that Khakaure is either part of a compound personal name or part of the name of the production facility. The spelling of Heri using the sky sign N1 is slightly problematic. Heri is a fairly common name throughout pharaonic history, but it is usually spelled with the the Horus falcon or with the frontal face, especially if it is not used in a compound name. The use of the sky hieroglyph in names appears primarily in the New Kingdom or later and then only very rarely, and it always appears with phonetic complements (Ranke lists one MK example). Further, the non-compound use of the name hry using the N1 sky sign is also rare, and it also always uses phonetic complements and dates to the 18th Dynasty. It is unlikely, therefore, that Hery is a name, compound or not.

1026 Martin, Administrative Sealings, #16, 102, 103, 236, 317b, 420, 474, 590a, 702, 837, 838, 839, 861, 1098, 1111, 1119, 1166, 1257, 1446a, 1507, 1545, 1570, 1580, 1666, 1696, 1720, 1726, 1766c, 1813, 1814.
1028 Faulkner, Dictionary, page 174, and in Urk IV 405,5 from stela of Seneret (Berlin 2296), dating to the reign of Hatshepsut. Faulkner’s citation is slightly incorrect, in that hry is plural. In addition, the sole usage of hry with a seated man determinative comes from the 18th Dynasty, much later than our usage of “chief.” See also the Wörterbuch, page 133, where there are no examples of this title used with a seated man. Hannig AW II, page 1733. Hannig, GHWB, page 586, does show hry with a seated man determinative. He does note that hry can be abbreviated with just the sky N1 glyph.
1029 Wegner, Mortuary Temple of Senwasret III, page 354, note 64.
1030 Ranke, Personennamen I, pages 245-253.
1031 Ibid., page 253.
1032 Ibid., page 253, #4, from the 18th Dynasty Theban tomb #12.
If the name *Hery* and the title *hry* do not work in this context, then perhaps the N1 sign should actually be read as a table [ Newspaper Article ] HSZ246. Although the “legs” of the table are slanted in Hannig’s version and vertical on the sealing, all same the elements are there. This sign has the phonetic value [ Newspaper Article ] tt and translates as “table.” Further, the table sign is used in conjunction with a man determinative and plural strokes [ Newspaper Article ] to spell [ Newspaper Article ] tt “staff.” The sealing in question breaks at the lower edge of the seated man, and there is room for plural strokes underneath. The title is well attested in the Middle Kingdom, usually in conjunction with [ Newspaper Article ] mk3 the “ruler.” Interestingly, Quirke, drawing from Berlev, suggests that [ Newspaper Article ] tt is best translated “crew,” as in crew of a ship, rather than the more general staff. But as Berlev points out, [ Newspaper Article ] tt, is used in a number of other contexts where it cannot refer to a ship’s crew. Berlev insists that these are metaphorical usages; for example, the staff of the house of life was the “crew” of Re, traveling with him in his solar bark. Hannig’s more general translation of “staff” is clearly better and more inclusive. This would give the sealing a transliteration of [ Newspaper Article ] s* n ⲩ tt ⲳ-k₃w-r₃...for a translation of “scribe of the shena staff, Khakaure.” Wegner suggests that

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1033 Hannig, GHWB, page 1408.
1034 There are two crossbars forming the top of the table and two vertical lines forming the legs in both versions of the sign.
1037 Quirke, Titles and Bureaux, page 99. Ward, Middle Kingdom Titles, #13. Ward actually gives a translation of “attendant of the ruler’s table,” but it is more likely crew as Quirke asserts.
1039 Ibid. 5-8.
1040 Ibid., pages 8-9.
Khakaure might be considered the name of the shena at the Senwosret III mortuary temple or the name of the individual scribe. Given the new transliteration and translation, this area would be a perfect place for the individual’s name. There is room for an additional element after Khakaure, perhaps indicating a compound name, such as Khakaure-Seneb or Khakaure-Ankh.

This scribe of the shena sealing is only found in the temple itself, not in the shena. This situation is not terribly troubling as a scribe working in the Nfr-k3 shena would be sealing things to be sent into the temple’s magazines, or correspondences to the administrative wing of the temple (the west block), not necessarily to keep within the shena itself. Goods sent from a scribe at another shena might just as easily end up in the temple magazines for storage or direct use in the ritual as the shena of Senwosret III.

The scribe of the shena sealing shows that the shena had its own personnel in charge of staff, inventory and goods transfers separate from the mayoral administration and the temple administration - particularly the staff in charge of the temple’s magazines (see section 6.3.4b). At the beginning of the offering production chain (with bread being the major product), the mayor stored the grain at the mayoral residence and at the end of the chain, the temple magazine stored goods. An intermediary scribe seems redundant, as the scribe at either end would know the specific amount of grain in order produce a specific number of loaves of bread or jars of beer. However, if offerings were given in

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1041 Wegner, Mortuary Temple of Senwosret III, page 354, note 64
1043 Josef Wegner, personal communication.
payment directly from the shena a scribe would be needed to monitor how much product the temple received, how much product was given directly to staff, and who was eligible.

b. Overseers of Specific Rooms within the Shena

Subordinate to the shena overseer and his administrative staff were those individuals who oversaw specific activities within the shena: the “keepers of the chamber,” “hall keepers,” “superintendents.” The superintendents oversaw rooms in which commodities the shena were produced.\textsuperscript{1044} At the shena of Senwosret III, there were general superintendents, cupbearers of the bread room, superintendents of the brewer and the overseer of the cattle stalls.

One of the major commodities made by the shena was bread. Tens of thousands of cylindrical bread molds attest to its importance at the mortuary temple of Senwosret III.\textsuperscript{1045} From within the shena itself there are bread ovens and evidence of baking activities. Such a massive baking operation required oversight. While there are no sealings for “bakers,” rthy, there is a sealing with the title: wdpw n r t nhw “Cupbearer of the bread room, Ankhw.” (see Figure 161 with reconstruction). The title cupbearer is alternately translated as “waiter” or “butler.”\textsuperscript{1046} Two of these bread room sealings were recovered in the shena midden area. One of the back types was from a peg, which may have sealed a door or a box.

\textsuperscript{1044} Quirke, \textit{Titles and Bureaux}, page 66. Grajetzki, \textit{Two Treasurers}, pages 52-54.
\textsuperscript{1045} See section 4.2.1 for discussion of bread molds at the shena and 5.1.1 for discussion of bread.
The cupbearer of the room of bread was a subordinate not only of the shena administration, but also of the superintendents. In his capacity, the superintendent of the room of bread oversaw the preparation of the grain, grinding it into flour, the baking of the bread and the subsequent removal of the bread to the temple for distribution. Quirke describes the duties of cupbearer as someone who “would have brought the food from the preparation room to the place of eating.” At the mortuary temple of Senwosret III, this responsibility probably entailed transferring the bread from the shena to the temple magazines.

A parallel sealing to the cupbearer of the room of bread is that of the room of beer. The sealing is the ird-t n ird-thw, Nfr or the superintendent of the room of lautering, Nefer (see Figure 162). There are three examples of this sealing all of which come from the shena midden. There is some confusion concerning both the transliteration and the translation of this title. There is a very similar title in spelling and appearance. Wegner published the text as ird-t n irdpw, hnm-nfr “Hall-keeper of the chamber of provisions Khnum-nefer.” The first

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1047 Quirke, Titles and Bureaux, page 66.
1048 Ibid.
part of the title *iry-ḥt* is well understood as “hall-keeper,” although it is also translated as the more literal “chamber-keeper,” and as the generic “superintendent.” The phrase is followed by a genitival *n*, the word for room, *ḥt*, and then the problematic word, which has been alternately transcribed as *ḥpw*, or *ḥnkt*. The initial few signs are quite clear on the sealing impressions, with an *ḥ*, a *t*, another arm (which may hold a bread loaf), below which is a *t*, and plural strokes (see Figure 163 for photograph of the sealing and above Figure 162 for reconstruction). The next two hieroglyphs are significantly more difficult to read. A tiny rectilinear sign could be either □ or □, or, ◦. It is nestled into the crook of an arm that either holds a flail ▼ or some sort of pot. Henri Gauthier pulled together all the comparable titles to show that during the Middle Kingdom, *ḥnkt* appears without its phonetic complements △ or △ and which is translated as offerings. Since his initial publication in 1918, others have tried to narrow down the definition of *ḥnkt* to something more specific, however, the

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1051 Quirke, Titles and Bureaux, 65-67.
trouble lies in the fact that it mostly appears in titles devoid of a context that might explain the meaning.\textsuperscript{1054}

Berlev translates $\textit{hnkt}$ as linen, noting that a title using this word appears in an offering scene at Beni Hasan where the woman presents linen in a box, and that it might be a root for the word for $\textit{hnkyt}$ (bed), which uses the linen determinative, $\begin{array}{c}
\text{\textcircled{1}}
\end{array}$.\textsuperscript{1055} However, $\textit{hnkt}$ used in a titular context never appears with a linen determinative and, therefore, its translation as such seems unlikely.\textsuperscript{1056}

Ward prefers to translate $\textit{hnkt}$ as “kitchen.”\textsuperscript{1057} This is based upon the Decree of Horemheb, where the ‘$\textit{t hnkt}$ of the palace receives goods/dues/taxes from the people ($\textit{nmHy}$).\textsuperscript{1058} He also refers to a Middle Kingdom stela of Kmhw, where there is a title $\textit{try}$

\begin{footnotes}
\item[1054] Especially since there was already a term for offerings. The word is $\textit{htp}$ sometimes also used in conjunction with $\textit{nt}$, to mean divine offerings. It is the only other word used in titles to mean offerings. See Ward, \textit{Middle Kingdom Titles}, #169,170,171,172, 173, 491, 506, 1406, 1407. See also Quirke, \textit{Titles and Bureaux}, page 121-123.
\end{footnotes}
‘ḏ n ‘t ḫnkt or “keeper of the fat of the henket.” 1059 He goes on to say ‘t is used with a variety of foodstuffs to mean a store room or work room of that commodity (iwf meat, ‘ḏ fat, bnrw dates, mw water, nmtt nmtt-fish, rmw fish, ḥḤm catch of fish or fowl, ḫnkt beer, stpt choice food, and t bread). 1060 He concludes that since ‘t ḫnkt has the largest and most diverse number of titles associated with it (scribe, overseer, etc.); thus that it is a center of activity, and therefore, must be a kitchen. 1061 Ward, however, includes nothing in his argument to indicate that when raw goods came in, they were processed into finished goods in the ‘t ḫnkt, and left that room for somewhere else. Although he accepts the translation of ḫnkt when used alone as “presentation offerings,” he rejects the simple translation of “room of presentation offerings” when combined with ‘t meaning room or pantry. 1062 Quirke prefers the translation of “incoming goods,” based upon the root word ḫnk to present, or offer. 1063 This root, in conjunction with the Decree of Horemheb, which mentions the gift of goods to the ‘t ḫnkt of the palace five times, provides the best indication that the most appropriate translation is “chamber of incoming goods.”

A transliteration of ḫnkt presupposes that the small hieroglyph nestled between the last two arms is ꝏ. Wegner prefers that this sign is a p ꝏ and thus the transliteration

1061 Ibid., 196.
1062 Ibid.
1063 Quirke, Titles and Bureaux, pages 70 and 72-73. Quirke states that ḫnkwt probably comes from the word ḫnk “to offer,” and thus ḫnkwt would be a “term covering all material arriving at the palace,” (lit. goods being offered).
is atpw. However, he keeps the translation of “incoming goods.” Perhaps, the sign in question is rather $h \circ$. This reading would then result in $\text{\textbackslash n}$ or $t \ thw \ Nfr$ room of the lauterer, Nefer. The word for brewer is $thw$ and is spelled $Nfr$ Brewer, $thw$, accounts for all the hieroglyphs, without having to create new transliterations for words or creating entirely new words. All of these elements appear in this seal with all the phonetic complements: $t \wedge$, $t \circ$, plural strokes, $h \circ$, an arm with a flagellum which has the phonetic value of $hw \ w$, a quail chick $w$, and a beer jar (W22) $\text{\textbackslash n}$ as a determinative. This result is a transliteration of $iry \ t \ n \ thw, Nfr$, and a translation of superintendent of the room of brewing. There is no other instance where the word in question is written with an $h \circ$, but there is another more common word for brewer - $fty$ (see discussion section 6.3.5c).

Although $thw$ seems to be a rare title, this is probably due to the mis-transliteration of the word as $hnkt$ in Ward and Martin, because it is almost never written with phonetic

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1064 Wegner, Mortuary Temple of Senwosret III, page 354. There is no attested word atpw.
1066 Ibid. The fact that the plural $w$ is placed after the determinative is slightly troubling. However, the curvature of the edge of the sealing made it necessary for the tall sign (the quail) to be more centered. The placement of the beer jar determinative below the beak of the quail chick may indicate that these signs are meant to be read vertically not horizontally, $\text{\textbackslash n}$.
1067 Ward, Middle Kingdom Titles, no. 595.
complements and the two words have been conflated by modern scholars.\textsuperscript{1068} Brewer, \( \epsilon \theta w \), does appear as early as the Middle Kingdom, and becomes most popular during the 18th Dynasty.\textsuperscript{1069} Perhaps, \( \epsilon \theta w \) is not a generic beer-brewer, but specifically someone who strains the mash. The root for \( \epsilon \theta w \) is \( \epsilon \theta \) which is a verb that means to strain, principally beer mash.\textsuperscript{1070} This straining process is called lautering, where the mash has imparted its flavor and yeast cultures to the water, and the resulting beer is strained off. After lautering, the beer can be drunk, flavors can be added, or the beer can be allowed to sit to facilitate fermentation so that the beer becomes more alcoholic. The key to this process is knowing when the mash has transmitted its flavor and nutrients without getting too strong and, in turn, bitter. Perhaps a better translation for \( \epsilon \theta w \) would be “lauterer.”

The title \textit{superintendent of the room of lautering} probably refers to one of the oversight of the brewing process within the temple’s \textit{shena}. Interestingly, one of the most frequent individual sealings from the temple and the \textit{shena} was that of the beer brewer (\( \epsilon \chi y \)) named Amenemhat. The superintendent was probably superior to Amenemhat in that the superintendent was also responsible for the procurement of raw materials (grain from the mayor’s residence) and the transfer of finished beer to the temple for distribution.

\textsuperscript{1068} This title does not appear in Ward, \textit{Middle Kingdom Titles}.
There are a series of ten sealings with the generic title *iry ḏt* or superintendent.\(^{1071}\) Four of these sealings are too broken to list any subsequent titles. One comes from an individual named Sehetep, another from a Sehetep ib, and one from Nakht. The remaining three sealings belong to individual named Inen who also bears the title *wdpw* or “cupbearer” (see Figure 165). It is interesting that Inen has both the titles superintendent and cupbearer. The title cupbearer is thought to be subordinate to superintendent.\(^{1072}\) This combination is not unknown and may indicate the streamlining of positions within the *shena*.\(^{1073}\)

As briefly discussed above, the superintendents were in charge of specific activities at the *shena*. The best translation into English in this case might be foreman. He directs all stages of work in an activity. As we saw with the superintendent of the brewers, in some cases the activity is listed on the seal and in others it is not. The main activity of the *shena* was baking. Perhaps the general title of *iry ḏt* or superintendent was specific enough at the temple of Senwosret III to connote that they were associated with the bakery.

An interesting sealing comes from the temple, but has no examples derived from the *shena*. This sealing has the title *ihms ḏt ḏtw Ḥtp-wr-nfr* with a translation of “assistant of the chamber of lautering, Hetep-her-nefer (see Figure 166).” Wegner

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\(^{1071}\) Ward, *Middle Kingdom Titles*, no. 452. Ward translates this as “hall-keeper.”

\(^{1072}\) Quirke, *Titles and Bureaux*, page 66.

\(^{1073}\) Ibid.
transliterates and translates this title as *ihms ʿt hnkɾ Htp-wr-nfr* or “assistant of the chamber of incoming goods, Hetep-wer-nefer.” Here the whole word ːhnkt is represented by the hieroglyph of an arm holding a pot. My preference for the transliteration of ʿthw over ʰnkɾ is based on the preceding title of *superintendent of the room of lautering* which creates an orderly chain of bureaucracy at the shena. It is also based on the parallel writing of ʿthw in the superintendent sealing with the hieroglyph of an arm holding a pot. The title of *ihms ʿt* or assistant of the chamber is subordinate to the superintendent and the cupbearer. According to Quirke, assistants were at the “lower end of the chain of officials” and just above the manual laborers.

It is clear from the large amount of cattle bone from the temple, its shena, and the rest of the townsite that beef was fairly plentiful at the mortuary complex of Senwosret III (see chapter 5.1.4.a for larger discussion about cattle at the shena). A sealing of the *imy-r mdwt Imny “overseer of the cattle stalls,”* belongs a man named Ameny (see Figure 167). Two sealings of the overseer of the cattle stalls were found at the shena. Both were rather poorly preserved with just the lower left portions of the sealing remaining; it included part of his name.

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1075 Quirke, Titles and Bureaux, page 66.
and the scroll border. The benefit of the intricate carving from scarab seals is that one only needs a small portion of a sealing in order to make a positive identification.

Ancient Egyptian temples had their own herds of cattle that were situated throughout the country. Cattle would have arrived at the mortuary temple of Senwosret III alive and housed for days or weeks to fatten them up before their final slaughter. The Meketre models and various slaughter rooms from other temples suggest that the cattle stalls and abattoirs were very closely linked. Therefore Ameny probably was also in charge of the slaughter of animals and perhaps their jointing. There is, as yet, no archaeological evidence of stables for cattle at south Abydos. Such facilities were likely separate from the shena buildings, perhaps located in the cultivation closer to sources of water and fodder. If this is the case, the shena at south Abydos may constitute a much larger area than first supposed, including multiple buildings to house multiple activity areas in order to provide goods for the temple of Senwosret III.

c. Beer Brewer

The sealing ‘fty ‘lmn-m-h3t represents the stamp of the local beer-brewer named Amenemhat (see Figure 168). The word for beer-brewer ‘fty frequently appears as just an ideogram, without any phonetic compliments. In the Old Kingdom and

Figure 168: Sealing of beer brewer Amenemhat after Wegner, Temple of Senwosret III, fig 156.

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early Middle Kingdom, the ideogram \( \text{\textcircled{G}} \) (A36) depicts a man leaning over a large beer vat with a basketry sieve resting on top (see Figure 169).\(^{1078}\) He is straining beer mash through a sieve into the vat (see above chapter 5.1.2 for a more complete description of the beer brewing process). By the late Middle Kingdom, another ideogram becomes more common. Gardiner’s A37 \( \text{\textcircled{H}} \) is a standing man who appears to be jumping rope, but who is standing inside a vat of beer macerating mash in the water (see Figure 170). Variants of this hieroglyph depict the vat more clearly \( \text{\textcircled{B}} \) or \( \text{\textcircled{C}} \).\(^{1079}\) It should be noted that Gardiner’s A37 \( \text{\textcircled{H}} \) looks remarkably similar to A38 \( \text{\textcircled{I}} \), where a man is standing holding the “necks of two emblematic animals with panther heads” and is an ideogram for the city of Cusae (modern El-Kusiyah), but the context

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\(^{1079}\) There is another variant where the man holds a shallow vat in front of him \( \text{\textcircled{F}} \). Hannig, GHWB, A36 page 1326,
of this sealing argues against a translation of “Cusae-ite”.\textsuperscript{1080}

The title \textit{beer brewer} is subordinate to the title \textit{superintendent of the room of the brewer} (see above section 6.3.5b). He was most likely in charge of making sure that the beer reached the proper maturity before he shipped it off to the temple. Whereas the \textit{superintendent} was also in charge of procuring the ingredients and all the people who processed the grain and malted the grain before it went to the brewer.\textsuperscript{1081}

The sealing of “the beer brewer Amenemhat” is one of the most frequent sealings recovered from the temple’s East Block or storage magazines, with dozens of examples. His sealing frequency far outstrips that of the \textit{superintendent of the room of the brewer}. However, we found only four \textit{beer brewer} sealings in area east of temple and most of these come from just outside the temple door. The presentation of beer to the statues of Senwosret III and other gods within the temple was staple principle goods in the offering ritual as well as being a major part of the payment to temple workers. The lack of \textit{beer brewer} sealings from within the production area refuse deposits and from within the \textit{shena} building is troubling on its surface. When one considers the brewing process, from beginning to its finish at the presentation or payment, but one would conclude that workers did not break the seal of beer jars within the confines of the \textit{shena}, but rather,

\textsuperscript{1080} Gardiner, \textit{Grammar}, page 446. Hannig, \textit{GHWB}, 1326. This sign has an alternate which is a fuller depiction in A 39 where a man stands on the backs of two panthers with extremely long necks. El-Kusiyah, or Qis is located south of Mallawi in the modern province of Asyut, and was the capital of the 14th nome of Upper Egypt.\textsuperscript{1081} Quirke, \textit{Titles and Bureaux}, page 66.
they broke it just before it was needed in the ritual. Unsealed beer will continue to ferment and turn to vinegar.

It is clear that the East Block of the temple was used as storage for *htpw-ntr* (divine offerings), based on archaeological and sigillographic evidence from within the temple and its rubbish mounds. The whole of the Eastern Block of the temple had the designation *Him inw htpw-ntr n (Hr-k3w-r3)* or Sealed storehouse of Incoming goods and Divine Offerings of Khakaure. Wegner specifically locates the storage center in rooms F, G and H, while he lists rooms D and E as a final staging and preparation area for goods to go into the temple for the ritual (see Figure 171). The cycle of beer production included the brewing and bottling into large storage vessels at the *shena*

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1084 Room E is the most poorly preserved of the rooms from the eastern block, with no remnants of a floor or internal walls. The drainage system of the temple suggests that rooms F, G, and H were roofed and funneled water from their presumably barreled roofs (there is some concave plaster-work rubble and if one looks at similar storage facilities at the Ramesseum and Seti I temple) to the stone channels in the paving of the temple. Rooms D and E, however, show no such connection to the overall system of rain runoff control, suggesting that they were unroofed, and therefore not used as storage but for other activities. Ibid., pages 96-97 and 103.

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complex.\textsuperscript{1085} Amenemhat, or someone under his authority, sealed the large beer jars and sent them to the East Block for storage. Scribes kept tallies of precise measurements of water, grain, and other ingredients for a particular run of beer to insure that no ingredients or portion thereof was wasted or stolen. They calculated from these measurements how much finished beer came from said brew cycle. Once brewed, the brew master sealed the jars to help arrest fermentation, to prevent spillage for transport, and to prevent anyone from stealing a sip or two when out of his watchful gaze. Beer, it must be remembered, was a commodity and the ancient Egyptians treated it as such. The addition of Amenemhat’s sealing, as the beer-brewer for the temple of Senwosret III, indicates the high level of control that the temple kept over its raw goods and finished products.

Interestingly, Amenemhat’s sealing does not appear on mud jar stoppers,\textsuperscript{1086} but rather on pegs and cord - all of which suggests the sealing of either a box or a door.\textsuperscript{1087} Mud jar stoppers never have seal impressions on them in the Middle Kingdom, unlike the Early Dynastic Period and the New Kingdoms.\textsuperscript{1088} Although there is not much evidence that large jars of beer were stored in boxes, some evidence exists for smaller


\textsuperscript{1086} The expedition recovered thousands of mud jar stoppers from both the temple and from the shena refuse deposits and not one of them has a seal impression. This situation suggests that the jars were sealed while under supervision and sent in large groups with an associated inventory that a scribe could check later.

\textsuperscript{1087} Not one ‘fty \textit{Imn-m-hzt} sealing has a wicker back impression. Middle Kingdom depictions of people carrying goods usually show the goods in wicker baskets - not wood - as in the Meketre figures. See section 6.1.1 However, Abydene baskets may have been different.

\textsuperscript{1088} Josef Wegner, personal communication.
jars in batches inside a box. Middle Kingdom tomb offering statues show the transport of goods in baskets with sealed jars inside. Depictions show that these baskets sometimes have lids, but more frequently do not. Further, there is little need for the beer brewer to appear at the temple to seal his finished product into a room for short term storage. The sealed boxes, like the sealed jars themselves, added a level of security and accountability to the food produced and distributed by the temple. In this way, the beer brewer sent x number of boxes of jars of beer to the temple, the temple staff broke the seals of the boxes to ensure that x numbers of boxes of jars of beer were received without tampering.

d. Cereal Related Titles

One sealing that has a title involved in both beer and bread production is imy-r pr ḫṣb it or "Estate overseer, accountant of grain" (see Figure 172). It is unclear what follows imy-r pr ḫṣb it.

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1089 The ancient Egyptian equivalent of a six-pack, with several individual servings.
1090 This may be an artistic license, in an attempt to show the goods inside of the basket, so that the benefactor of the deliveries might know what they are getting.
1091 Like bread, beer has a limited shelf life. It was not put in storage for weeks or months, but had to be drunk within a matter of days. While modern bottling methods are vastly better than those of the ancient Egyptians, maximum shelf life for a commercially produced beer is still only four months, although its peak drinkability is a matter of days.
because of the break in the sealing. The presence of the vertical column of oval grain berries (M33) to the left of ḫsb ◊ precludes other possible transliterations that begin Ḣmr pr ḫsb, including Ḣmr pr ḫsb ḫw “overseer of reckoning of cattle,” Ḣmr ḫsb ḫw “overseer of reckoning of ships,” Ḣmr pr ḫsb rmj “overseer of reckoning people,” and Ḣmr pr ḫsb ṣšm “overseer of reckoning expenditures.” Quirke and Hannig note that Ḣmr pr and ḫsb it are, in fact, separate titles. Quirke notes that in the late Middle Kingdom “estate overseer” and “accountant of X” are often found together. The bottom of the sealing is broken and thus the name is lost, but there is more than enough room for the name based on the curvature of the sealing’s edge. The title overseer of reckoning barley is often used in conjunction with places such as Upper Egypt, Lower Egypt, place names such as Memphis, and with types of grain such as course or fine.

Quirke adds an interesting nuance to the idea of “accountants of grain,” saying that accountants of “course grain” seems “to refer to an early stage in grain preparation,

1093 Ward, Middle Kingdom Titles, #161-168.  
1095 Quirke, Titles and Bureaux, page 61.  
1096 Ibid., #161, 163, 164.  “Steward of reckoning barley of Lower Egypt” “Steward of reckoning barley of Lower Egypt in Memphis”  
1097 Ibid.  
1098 Quirke, Titles and Bureaux, page 62.  Unfortunately, Quirke does not give any references for his translation of ṣḥw as “coarse” not “Lower Egypt,” or ṣmfw as “fine” instead of “Upper Egypt.” Hannig, GHWB, does translate ṣmfw as “fine,” page 887. See also Hannig, AW II, 2453. The definition of ṣḥw as “coarse” is a little more problematic, as no one gives this exact denotation, although it does mean “full,” which, could possibly mean a full ear of corn, or ripe ear of corn.
closer to harvest.” Whereas “fine grain” refers to grain “after initial preparation in
the food-production area.” There are only a few steps between grain and flour:
threshing (to remove the grain berry from the stalk), winnowing (to remove light husk
from the berry), sieving (to remove any remaining detritus), whereupon the grain can be
stored. The grain is then pounded to remove the outer husk or hull and then ground to
create flour. It may be that the “course grain” refers to grain that has yet to be de-husked
and “fine grain” refers to the husking and grinding process. Regardless, these actions
would require the “accountant” to account for amounts of grain to be placed in storage in
the one instance and to be removed from storage in the other. The sizes of loaves of
bread were so regularized that the Egyptians knew exactly how much raw grain went
into each loaf of bread. Almost every kernel of grain was accounted for. If Quirke is
correct in his designations of specific “accountants of grain,” the titles emphasize the
Egyptian bureaucratic control of commodities in Ancient Egypt.

Whether the Abydos “accountant of grain” calculated the amounts of grain to be
produced, inventoried the amount of grain to be stored, or calculated the amount of flour
created from raw kernels of grain is unclear. The absence of a recognizable back type is
also frustrating: accountants usually worked on papyrus. The general shape of the
sealing suggests that it was not attached to a papyrus document. Certainly, a grain

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1099 Quirke, Titles and Bureaux, page 62.
1000 Ibid.
101 Samuel, Delwen. "Cereal Food Processing in Ancient Egypt, a Case Study of
Integration." Whither Environmental Archaeology, Eds. Rosemary Luff and Peter
102 Papyrus sealings are usually long thin mud shapes of very finely levigated mud,
which this sealing is not (see section 5.1.4 for a description of papyrus sealings).

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“tax accountant” would work almost exclusively with papyrus. While a papyrus sealing cannot be precluded, it most likely sealed another sort of item, such as a box, a door, a pot, or a bag. An “accountant” responsible for the storage and rationing of grain would need to seal the doors of the granary, or a bag or pot to send grain to the production area from the granary. It is most likely that the “accountant of grain” was in charge of rationing the *shena* with its daily/weekly/bi-monthly shipment of grain, based on number of loaves of bread and jars of beer it had to produce, which, in turn, was based on the temple’s endowment, the number of personnel it had to pay, and the festival schedule.

Although bread was the main product of the *shena*, there are no sealings for bakers at the Senwosret III temple. The title of baker *rḥty* is well attested in the Middle Kingdom. The lack textual and sigillographic evidence of bakers at south Abydos is troubling given the extensive baking facilities at the site. However, the title of baker appears only on scenes of bread baking and undoubtedly acts as a label rather than an official title. There are no scarabs that include the title “baker,”

1103 Ward, *Middle Kingdom Titles*, #860.
1105 See Ward, *Middle Kingdom Titles*, #860. It is not in Martin, *Egyptian Administrative and Private Name Seals.*
suggesting that the title baker was not part of the sealing bureaucracy. Rather, the bureaucratic hierarchy in the shena was centered on a series of department heads linked with specific commodities. This hierarchical structure was \textit{iry-\textsuperscript{t} n \textsuperscript{t} X} “superintendent of the room of X,” \textit{wdpw n \textsuperscript{t} X} “cupbearer of the room of X,” \textit{i\textscript{h}ms \textsuperscript{t} X} “assistant of the room of X,” and the laborers. At the shena there currently is no evidence of the \textit{iry-\textsuperscript{t} n \textsuperscript{t} t} “superintendent of the room of bread.” However, there is evidence of his subordinate: \textit{wdpw n \textsuperscript{t} t \textsuperscript{n}hw} “cupbearer of the bread room, Ankhw.” Because bread was made fresh daily and there was only short-term storage of grain at the shena, there was probably little necessity for sealing either rooms or containers. This may explain the lack of titles associated with bread production from the mortuary complex of Senwosret III.

Moreover, unlike other commodities, which were stored in their finished form, bread was stored in its raw form: grain. Bakers were not responsible for the grain itself. There are dozens of titles that relate to granaries in ancient Egypt, from those on a national level, nomes, towns, temples, and private estates. Although offerings lists record numbers of loaves of bread that went into the daily offerings, scribes knew

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\textsuperscript{1106} It is unlikely that this is an accident of archaeology.
\textsuperscript{1107} See section 6.3.6 for fuller explanation of this hierarchy.
\textsuperscript{1108} See section 5.3.5b for complete discussion of the cupbearer Ankhw.
\textsuperscript{1109} See section 4.2.1 for discussion of grain storage at the shena.
\textsuperscript{1110} There is ample evidence that beer was stored in great quantities in the temple magazines at the Senwosret III temple, with the large numbers of beerbrewer sealings in the temple magazines, its hallway, and at the door that leads from the inner temple street into the magazine hallway.
exactly what weight of grain was required to make that number of loaves of bread. Scribal accounts dealt in weights of grain, not in whole loaves.

If granary officials had a key role in the baking operations at the shena, they should have left a number of sealings recording said granary officials at the shena or the mayor’s residence, but none have turned up in either the temple or the shena facilities. The only granary mentioned in the sigillographic record at the mortuary complex of Senwosret III comes from the Osiris temple. We know that grain was stored long term at the mayoral residence, and that the shena had a small short term storage granary. It may be that the granaries from Wah-sut did not have their own official because they were already under mayoral sealing authority as the civil and religious resources were pooled at Wah-sut, especially in terms of grain.

6.3.6 Conclusions

Mayors at the town of Wah-sut were also the managers at the temple. In conjunction with the ḫrryt, his economic wing, the mayor oversaw all the raw materials that came into the complex, including the storage of grain at his house, the production of foodstuffs and various crafts at the shena, their use in temple ritual, and their ultimate distribution to mortuary complex employees. Due to this intimate interaction, every mayor from Wah-sut is represented by sealings in the shena.

Ritual staff also had daily contact with the shena. Even though the main job of phyle directors was to oversee ritual personnel, their responsibilities clearly included presiding over some commodities. Sealings with the title god’s servants were rare in
shena deposits, and therefore, such priests probably had little to do with commodities. However, sealings with the title wab priest or pure-priest are more common, perhaps because they prepared the offerings for the ritual. The wab priests acted as liaisons between the sacred realm and the profane. On the administrative side of the temple, the Deputy of the Overseer of the God’s Storehouse probably oversaw most of the day to day operations concerning the goods and commodities that came into and were distributed by the temple.

There is also evidence from name and title sealings that the shena had interactions with the wider central government. This conclusion comes from sealings of the scribe of the vizier and several treasury officials. The interaction suggests that some of the goods from the temple of Senwosret III came from beyond the temple’s own endowment, but still from the central government. These interactions are in addition to receiving goods from other religious institutions at Abydos, as born out by the “Abydos series” of institutional sealings.

The artifactual evidence from the shena demonstrates that bread, beer and meat were the main products of that establishment. This is corroborated by the sealing evidence mentioning baking, beer brewing, and the raising of cattle. Other commodities produced or processed at the shena like wine, poultry, sheep and goat, fishing, fruits and vegetables, pottery, metalworking, and linen do not appear in the sealing record. One must remember, that many of these sealings have only two or three exemplars. Perhaps those titles attached to other products have not survived or await discovery. Indeed, as
we shall see, there is clear evidence for a chain of command at the *shena*, but some of the expected titles are absent. This does not mean that they were not present.

The *shena* was managed by a general administration (see Figure 173), whose head was the *overseer of the shena*, and whose subordinate was a scribe. Underneath the overseer of the *shena* were a series of department heads, *iry-ꜣt*. Some of these department heads have links with specific activities, such as baking bread, brewing beer, or overseeing cattle. The department heads did not participate in their assigned activity, but rather made sure that it was properly supplied with raw materials, staff, and that everything ran smoothly. Underneath the department heads were cupbearers, *wdpw*, who transported the finished goods to the temple magazines for distribution. In point of fact, the cupbearers are more likely to have overseen transport of goods, rather than performed any physical labor, as they were rather high up in the chain of command. Next there were the assistants who seem to have done pretty much anything that administrators required of them. Finally, there were the laborers, who actually made the commodities. These workers have no extant titled sealings at the *shena* and were probably too low status to warrant owning a seal.
Figure 173: Diagram of the suggested hierarchical administration of the shena of the mortuary temple of Senwosret III (areas shaded in gray indicate that there is no sealing for this title at the shena but there is enough evidence to place it within the hierarchy)
6.4 Royal Name Sealings

Royal name sealings provide a chronological marker for a terminus quo of the life of the temple. The kings and queen represented here date from after the reign of Sobekhotep III.\textsuperscript{1111} Prior to the reign of Sobekhotep III, the 26\textsuperscript{th} king of the Thirteenth Dynasty, royal scarab seals were uncommon.\textsuperscript{1112} However, between Sobekhotep III and king Aya, the 33\textsuperscript{rd} king of the Thirteenth Dynasty, royal scarab seals became widespread.\textsuperscript{1113} Wegner contends that these royal seals are local in use (ie. Abydos).\textsuperscript{1114} The only types of royal name sealings from the \textit{shena} area come from scarab seals of Thirteenth Dynasty kings. Cylinder seals and royal document seals appear at the temple and at the mayoral residence, but not at the \textit{shena}.\textsuperscript{1115}

Scarab sealings with the name of Neferhotep I appear often at the mortuary temple of Senwosret III, especially in the West Block deposit.\textsuperscript{1116} There are only two extant sealings from the \textit{shena} area (see Figures 174 and 175). However, these sealings appear to be the same with the nomen of Neferhotep in a double-walled cartouche. Although different in form than Neferhotep scarab sealings

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{seal.png}
\caption{Sealing of Son of Re, Neferhotep I, born of the king’s mother, Kemi (35475.1) and reconstruction from Wegner, \textit{Temple of Senwosret III}, fig 144.}
\end{figure}

\begin{footnotesize}
\begin{enumerate}
\item Ibid, page 34.
\item Ibid.
\item Wegner, \textit{Temple of Senwosret III}, page 315.
\item Ibid, page 313.
\item Ibid, page 315. There are nearly 100 examples.
\end{enumerate}
\end{footnotesize}
found throughout the rest of the temple, it appears to be the same text as “seal version 1” from Wegner’s Temple of Senwosret III. The text reads $s^3 R^c (nfr-htp)], ms.n mwt nswt Kmi, or “Son of Ra Neferhotep, born of the king’s mother Kemi.” This text is not rare, as scarabs with the same inscription from Tell el Yahudiya and Harageh, and three other unprovenanced scarabs attest. Two scarabs with this king’s name in Olga Tufnell’s Studies on Scarabs have double-walled cartouches, but the provenance is undisclosed.

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1117 Ibid, figure 314.
1118 Ibid, page 313.
1121 Tufnell, Martin and Ward, Studies on Scarab Seals. Plate 54, nos. 3121 (Brussels E. 5003) and 3124 (OxAsh. 1933.93 (vii)). The Ashmolean scarab was bought by A. Sayce and no provenance is known. Helen Whitehouse, keeper of Egyptian Antiquities at the Ashmolean Museum, personal communication. The Brussels scarab also has no provenance and was bought in Cairo in 1914. Luc Limme, Chef de la section Egypte, Proche-Orient et Iran, Musées Royaux d’Art et d’Histoire, Brussels, personal communication.
Sobekhotep VI, like his predecessor, has few known attestations of his name—all of which, except the Turin King-list and Karnak Offering-list, appear on small objects like statuettes and seals. Among the scarab seals, however, there is a small repertoire of inscriptions. The sealing recovered from the shena area fits nicely into this catalog, complemented by other examples from the rest of the mortuary temple (see Figure 176). The sealing reads “Good God, Khahetepre, Son of Re, Sobekhotep.” It is written with both Sobekhotep’s birth name and throne name, however, only the throne name is in a cartouche. Tufnell published further examples of scarabs with this inscription. According to Ryholt, Sobekhotep’s throne name appears always within a cartouche, while his birth name rarely is. Ryholt does not

Figure 176: Sealing of the Good God, Khahetepre, son of re, Sobekhotep VI (33790.1) with reconstruction from Wegner, Temple of Senwosret III, fig 144.


1123 See Ryholt, The Political Situation in Egypt. Page 233 and 353 (for a list of his monuments).


1125 Tufnell, Martin and Ward, Studies on Scarab Seals. Plate 15, nos. 3163 (Louvre E. 6348) and 3167 (Chicago 18449).

know the reason for the practice of writing the throne name without a cartouche, but he does not believe that it is because the king was of non-royal origin.\textsuperscript{1127}

There is a royal scarab inscribed for an unknown Queen Maat-n-?-Re named (see Figure 177). Her titles include “great royal wife,” and “she who is united with the white crown”\textsuperscript{1128} Of these titles, the second helps to date the Queen quite precisely. The title \textit{hnmt nfr hdt} first came into use in the Middle Kingdom, but as part of a queen’s name not a title.\textsuperscript{1129} It was not until the reign of Senwosret III that it became a title, and its use discontinued after the 17\textsuperscript{th} Dynasty.\textsuperscript{1130} The title could only be applied to two living people: the chief queen and the chief daughter of the king, meaning that it had a very limited use.\textsuperscript{1131} Further, the title appears on scarabs beginning with the reign of Sobekhotep III of the 13\textsuperscript{th} Dynasty.\textsuperscript{1132} The queen’s sealing, therefore, has a date between the reign of Sobekhotep III and the beginning of the 18\textsuperscript{th} Dynasty. Most of the rest of the royal

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure177.png}
\caption{Sealing of the Great Royal Wife, She who is united with the White Crown, Maat-n-?-Re (33782.4), Queen of 13th Dyn. after Sobekhotep III}
\end{figure}

\textsuperscript{1127} Ibid, pages 37 and 233.
\textsuperscript{1129} Vivienne Callender, "A Note on the Title \textit{hnmt nfr hdt}," \textit{SAK} 22 (1995): 44.
\textsuperscript{1130} Ibid.
\textsuperscript{1131}Lisa Sabbahy, "Comments on the Title \textit{hnmt nfr hdt}," \textit{SAK} 23 (1996): 351.
\textsuperscript{1132} Ryholt, \textit{The Political Situation in Egypt}. Pages 38-40.
sealing corpus from the mortuary temple of Senwsoret III falls within the 13th Dynasty, so it is likely that Queen Maat-n-?-Re is an unattested Queen of that Dynasty.\footnote{Ryholt, The Political Situation in Egypt. Pages 222-248.}

There is a scarab sealing that either bears the name of Sihathor, a king of the 13th Dynasty, or a king of the 14th Dynasty (see Figure 178). The sealing is broken and bears only the first two signs within the cartouche: $R^5-mn$. The prenomen of Sihathor is $Mn-w\dot{\ddot{d}}-r\dot{c}$\footnote{Ryholt, The Political Situation in Egypt, page 348.}. He is currently unattested at Abydos.\footnote{Ibid.} The other king is attested from the Turin king list and dates to the late 14th Dynasty. Much like the south Abydos sealing, his name is broken and only two signs appear $Mn-r\dot{c}$\footnote{Ryholt, The Political Situation in Egypt, page 380.}.\footnote{Ibid, pages 359-360 and 363-364, 365} Attestations of 14th Dynasty kings, who ruled out of Avaris, are extremely rare at Abydos; there are a total 11 known pieces from Abydos with the names of 14th Dynasty kings. All of them are scarabs; there are no architectural remnants. All of them come from the beginning of the 14th Dynasty. The pieces include a scarab seal of the first 14th Dynasty king Yakbim, a scarab seal of the third king Qareh, a scarab seal of the fourth king “Ammu, and 8 seals of the fifth king Sheshi.\footnote{Ibid, pages 345 and 349.} Although Sihathor does not have any known artifactual remains from Abydos, both his predecessor Neferhotep I and his successor, Sobekhotep IV have statues, architectural remnants, and scarab seals there. It is most likely, therefore, that the sealing with the

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{Figure_178.png}
\caption{Sealing of Sihathor? (Re, mn, wadj?) (33794.1)}
\end{figure}

\begin{quote}
\footnotesize
\textbf{Figure 178: Sealing of Sihathor? (Re, mn, wadj?) (33794.1)}
\end{quote}
cartouche bearing the name Mn-r³... is that of Sihathor, the 28th king of the 13th Dynasty according to the Turin king list.¹¹³⁹

If these two sealings are indeed those of Sihathor, then they represent the only scarab seals with his cartouche yet known for this king.¹¹⁴⁰ One of the Sihathor sealings came from inside the shena building, specifically phase IIb, or the addition on the second shena building. The presence of these sealings in the shena deposits corroborates the decorative sealing dating and the mayoral sealing dating of the Phase IIb shena to the late 13th Dynasty.

There is scarab sealing for king Sobekemsaf, the 6th king of the 17th Dynasty whose two ladies name is ḫȝ-ḥprw (see Figure 179).¹¹⁴¹ Interestingly, Sobekemsaf also has texts on architectural elements associated with several Senwosret III at the temple at Medamud.¹¹⁴² Sobekemsaf represents the latest attested king at the mortuary complex of Senwosret III. Prior to this sealing, there are two others from disturbed contexts that have the name of Sewadjenre Nebiriau I, the sixth king of Dynasty 16.¹¹⁴³

Finally, there are several royal scarab sealings for unknown kings, which were found together with king Sobekemsaf’s sealing. One has the cartouche ḥtp-k3-ř³...(see Figure 180), which perhaps could be the 13th Dynasty king Antef V whose prenomen is

¹¹³⁹ Ibid., page 348.
¹¹⁴⁰ Ibid, page 348.
¹¹⁴¹ Ibid., page 395.
¹¹⁴² Ibid., pages 395-396.
¹¹⁴³ Wegner, Temple of Senwosret III, page 315
Another sealing bears a cartouche with name ...k3-t-nb?... (see Figure 181). There are no known kings of the Second Intermediate Period who have the word k3 as the first or middle word of their names with the exception of Kamose. The hieroglyphs after the k3 in the shena sealing are certainly not ms. Therefore the king featured in the south Abydos sealing is unknown.

Finally there is a sealing with cartouche that has the name Rc-c-hc (see Figure 182). It is possible that the second sign is mn, which would make this king Snaaib whose prenomen was Mn-hc-rc, and who was one of the Abydos kings. The Abydos Dynasty was a very ephemeral dynasty that came to power at the end of the 13th Dynasty and lasted about 20 years. King Snaaib is known only from a single stela at Abydos, and does not appear in the Turin king list.

The royal sealings from the shena area provide strong evidence that ample activity continued there through the end of the 13th Dynasty, especially with a cluster of kings from Antef V to Sobekhotep VI (~1759 to 1712

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1144 Ryholt, page 342.
1145 Ryholt, page 392.
1146 Ibid., page 191.
1148 Ryholt, pages 163-164.
Sealings from the *shena* area also push back the terminus ante quem of the temple to the 17th Dynasty king Sobekemsaf (1566-1559).1150

### 6.5 Decorative Sealings

A total of 3407 decorative sealings were recovered from the area to the east of the temple. Of these, 1797 sealings were identified as decorative, but could not be assigned to a particular type because not enough design remains, leaving 1610 classifiable decorative sealings.1151 The employees of the *shena* and its collaborating institutions used decorative seals at a ratio of 8 to 1 over name and title seals, making decorative seals the dominant form of individual accountability at the *shena*. George Frazer suggests that “very likely a pattern was more difficult to forge or imitate than a name, so that possibly even people of importance used pattern scarabs.”

Although he also suggests the use of decorative seals may have been related to the high rate of illiteracy among the Egyptian population. However, Wegner noted that papyrus was stamped with decorative seals 96% of the time, suggesting that literacy was not a factor in determining what type of seal a single individual would own. Regardless, each seal, like their name and title counterparts, represented one individual who used the seal to

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1149 Ibid., page 408.
1150 Ibid., page 410.
1151 These indeterminate decorative sealings have been left out of the following statistical analyses.

373
designate his responsibility for a sealed item. Each decorative seal, therefore, had to be traceable back to an individual. In 1930, George Reisner and Noel Wheeler proposed a solution.

At present in Egypt, where the majority of men have seals inscribed with their name and the date of cutting, a register is kept by the seal cutters licensed by the provincial governments (the *Mudierias*). We suggest, therefore, that in ancient Egypt a similar register was kept in the capital of each province. In that case even if the same name or the same design was used on two different seals in two different localities, variations in size, in the craftsmanship, and in minor details would make the two seals distinguishable.¹¹⁵⁴

Unfortunately, no one has yet found a register of seals from ancient Egypt. By 2000, Cornelius von Pilgrim still agreed with Reisner and Wheeler suggesting that decorative seals were “meant to be used within a specific area or even in one institution only.”¹¹⁵⁵ If decorative seals were used only on a very local basis, there may have been no need for a register. For with a smaller group of people and smaller pool of seals, those in charge would automatically be familiar with the seals of the locals.

The typology of decorative sealings from the area to east of the temple, including the shena and its midden, naturally follows that of the temple. The decorative sealing corpus of the temple and the shena parallels other sites in Egypt including Elephantine, Kahun, Kerma, Uronarti, Askut, and Abu Ghâlib.¹¹⁵⁶ The consistency of decorative scarab designs from all over Egypt suggests that there were centralized workshops that

¹¹⁵⁶ See footnote 13.
manufactured scarabs on a massive scale, one of which is located at Tell el-Dab'a.\textsuperscript{1157} Wegner points out that with a limited number of scarab workshops, an individual could not simply go and pick out a seal.\textsuperscript{1158} Most likely, seals were bought and distributed by the local administration (the mayor in the case of the Senwosret III mortuary complex) as part of its system of accounting.\textsuperscript{1159}

### 6.5.1 Decorative Sealing Typology

The corpus of decorative sealings from the area east of the temple is typical of that from the late 12\textsuperscript{th} and early 13\textsuperscript{th} Dynasties. There are nine basic types of decorative sealings from the \textit{shena} area. These range from meandering scrolls to densely packed amuletic hieroglyphs. Sealings with a linked s-scroll pattern (type 1) and simple groups of amuletic hieroglyphs (type 7) make up 79\% of decorative sealings found in the area east of the temple. These two types epitomize decorative sealings from the Middle Kingdom (see Figure 183).\textsuperscript{1160} All the other types (2- scrolls with hieroglyphs within the design, 3- cord design, 4- central hieroglyph(s) with a scroll border, 5- cross pattern, 6- \textit{sema tawy} design, 8- complex groupings of amuletic hieroglyphs, and 9- geometric

\begin{itemize}
\item \textsuperscript{1158} Wegner, Josef. Temple of Senwosret III, page 304.
\item \textsuperscript{1159} Ibid.
\item \textsuperscript{1160} von Pilgrim, Elephantine 18. Page 249.
\end{itemize}
pattern) total only 21% of the classifiable decorative sealings. The following is a typology of the decorative sealings from the *shena* at south Abydos.\textsuperscript{1161}

![Figure 183: Decorative Sealing Type Totals](image)

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{decorative_sealing_typeTotals.png}
\caption{Decorative Sealing Type Totals}
\end{figure}

\textsuperscript{1161} This typology follows Josef Wegner’s principal decorative categories from the temple with a few new ones that may be chronologically significant. See Wegner, Josef. *Temple of Senwosret III*, pages 304-313 and figures 137-143 (chapter 20.3).
1. Linked S-scroll patterns.

This type consists of a series of S’s, or simple swirls, that are linked to form a pattern. The multiplication and orientation of this simple motif allows for an endless variety of patterns. Some of these include s-scrolls linked to form a repeating triangle motif, horizontal rows of s-scrolls each oriented vertically, vertical rows of s-scrolls, a vertical row of s-scrolls each oriented horizontally, and various combinations therein. The linked s-scroll pattern is the most common from the shena area with 652 examples. The s-scroll pattern is characteristic of a Middle Kingdom date.1162

2. Amuletic Hieroglyphs within a Scroll Design.

This type is almost identical to type one, but includes a hieroglyph inside the scrolling patterns. The hieroglyphs fill spaces or gaps in the scroll motif. The most common signs are nfr (𓋕, F35), dd (𓋕, R11), and t (𓋕, X1). This type is relatively rare with 3 examples.

1162 von Pilgrim, Elephantine 18. Page 249

Two parallel lines create a cord that is subsequently twisted into various patterns. The intertwining cord often also includes a plant motif, such as lotus blossoms, or amuletic hieroglyphs, inserted into negative spaces in the design. There are 22 examples of this type.

4. Central Hieroglyph(s) in a Scroll Border.

This type features one or more hieroglyphs enclosed in a border of linking s-scrolls or interlocking c’s. The most common single hieroglyphs are nfr (𓊀, F35), the dd pillar (𓊃, R11), and ṣnh (𓊇, S34). This scroll border is also often found on name and title sealings. Multiple hieroglyphs on a sealing are arranged vertically in a single row. There are 148 examples of this type.

5. Cross patterns employing cord or scrollwork.

This pattern consists of a central circle from which radiates four petals to create a cross. The cross includes a series of scrolls or cords also radiating out from the central circle from between each of the petals. The overall effect is that of a simple daisy reminiscent of the hieroglyph wn (𓊡, M42). There are 36 examples of this motif.
6. Variations on the *Sema-tawy* motif.

This type has *sm† t³wy* as its central motif. The *sema-tawy* logogram may appear alone in this type or in combination with scrollwork or other hieroglyphs. There are 69 examples of the *sema-tawy* motif.

7. Simple groups of amuletic hieroglyphs

This type has two or more different signs in various combinations. This usually entails the mirroring of hieroglyphs in order to create a symmetrical design. The signs may be oriented either vertically or horizontally, but never exceed three rows in either direction. This is the second most common type from the *shena* with 618 examples.

8. Complex groupings of amuletic hieroglyphs

This type may have four or more different hieroglyphs used in various combinations. This commonly involves the mirroring of two vertical columns with a central column of hieroglyphs in between. These complex sealings are always oriented vertically with the hieroglyphs following the spine of the scarab. There are 43 examples of this type.
9. Geometric Pattern

This type consists of either hatching or concentric boxes or some other angular pattern. This can include hieroglyphs to fill the negative spaces. There are 13 examples of this type.

6.5.2 Decorative Sealing Frequencies East of the Temple

Basic trends in decorative sealing use are discernible when the area excavated east of the temple is broken into four component parts corresponding to different activity areas (see Figure 193). These areas include the shena buildings, the shena midden (refuse deposit B), the beverage processing area, and the rear temple door area (refuse deposit C). While types 1 (s-scroll patterns) and 2 (simple groups of amuletic hieroglyphs) continue to predominate, and most of the rest of the sealing corpus remains proportionally comparable throughout the site, there are two types that occur only in the area just outside the rear temple door: type 8, complex groupings of amuletic hieroglyphs, and type 9, sealings with a geometric pattern. The rear temple door area (refuse deposit C) is
of slightly later deposition (13th Dynasty) than the rest of the deposits associated with the shena.\textsuperscript{1163}

The geometric pattern sealings (type 9) are generally characteristic of the First Intermediate Period.\textsuperscript{1164} There are no areas of First Intermediate Period activity known from South Abydos.\textsuperscript{1165} The discrepancy in chronology is initially troubling, however, there are geometric sealings from the later 12th and early 13th Dynasties present at Elephantine.\textsuperscript{1166} Middle Kingdom sealing practices do not show the reuse of seals from earlier periods.\textsuperscript{1167} It is unlikely, therefore, that the geometric sealings found in the rear temple door area are a sign of the recycling of older seals. The most probable

\begin{footnotesize}
\textsuperscript{1163} This is based on the presence of the later mayors and the presence of sealings of the kings Sihathor and Sobekhotep V (see sections 5.3.1 for mayors and 5.4 for royal sealings).
\end{footnotesize}
explanation for the re-appearance of seals with a geometric pattern is that they represent a new type dating to well within the 13th Dynasty.\textsuperscript{1168}

Sealing type 8, the complex groupings of amuletic hieroglyphs, does not appear within the *shena* building or the midden (refuse deposit B) (see Figure 193). These areas date to the late 12\textsuperscript{th} and early 13\textsuperscript{th} Dynasties. Seals with groups of amuletic hieroglyphs are present from the 12\textsuperscript{th} though the late 15\textsuperscript{th} Dynasties.\textsuperscript{1169} Olga Tufnell shows that amuletic seals from Kahun and Uronarti favor certain hieroglyphs in the Middle Kingdom such as red crowns on the *nb* sign (\(\text{\textcircled{\(\text{n}\)}}, \text{\text{s4}}\)), the forepart of a lion (\(\text{\textcircled{\(\text{l}\)}}, \text{\text{f4}}\)), the *nb* sign (\(\text{\textcircled{\(\text{n}\)}}, \text{\text{v30}}\)), eyes of Horus (\(\text{\textcircled{\(\text{e}\)}}, \text{\text{d10}}\)), *sw* plants (\(\text{\textcircled{\(\text{w}\)}}, \text{\text{m23}}\)), and more uncommonly the cobra (\(\text{\textcircled{\(\text{c}\)}}, \text{\text{i12}}\)) who often sits on *nb* (\(\text{\textcircled{\(\text{n}\)}}, \text{\text{i13}}\)).\textsuperscript{1170} Complex amuletic seals with combinations of these signs and others, like \(\gamma\text{nh} (\text{\textcircled{\(\text{n}\)}}, \text{\text{s34}}), \text{hfr} (\text{\textcircled{\(\text{f}\)}}, \text{\text{f35}}), \text{dd} (\text{\textcircled{\(\text{d}\)}}, \text{\text{r11}}), \text{htp} (\text{\textcircled{\(\text{h}\)}}, \text{\text{r4}}), \text{k3} (\text{\textcircled{\(\text{k}\})}, \text{\text{d28}}), \text{dw} (\text{\textcircled{\(\text{d}\)}}, \text{\text{n28}}), \text{nbw} (\text{\textcircled{\(\text{n}\)}}, \text{\text{s12}}), \text{hpr} (\text{\textcircled{\(\text{h}\)}}, \text{l1}), \text{and w3d} (\text{\textcircled{\(\text{w}\)}}, \text{\text{m13}}), only appear in later levels at the rear temple door area (refuse deposit C) dating to the 13\textsuperscript{th} Dynasty. Although simple amuletic seals (type 7) still predominate in this area, the addition of complex amuletic seals is chronologically significant at South Abydos as a marker of 13\textsuperscript{th} Dynasty levels. The difference between complex and simple amuletic seals remains unidentified at other Middle Kingdom sites.

\textsuperscript{1168} It is unclear if this is unique to south Abydos.
\textsuperscript{1170} Tufnell, "Seal Impressions."
The beverage processing center yielded only 5 sealings, two scroll patterns (type 1), and one each of a central hieroglyph with a scroll pattern (type 4), a cross pattern (type 5), and a *sma-tawy* motif (type 6). While the number of sealings is too few to allow a chronological or frequency comparison with the other areas east of the temple, it is noteworthy that all but one of the sealings were affixed to doors. This area lacks evidence of a permanent brick structure, but does have a series of post holes that suggest the presence of a wooden building. Further, this area is exclusively associated with the processing of liquids, either wine or beer (see Chapter 5.1.2 and 5.1.3). If wine, a relatively precious commodity, was stored here, it was in the temple’s best interest to regulate access to it. Using a seal to lock the door would accomplish not only limiting access, but also help insure against theft.

Inside the *shena* building it is possible to track the frequencies of different sealings in correlation to the different phases of construction of the various *shena* buildings (see figure 194 and see Chapter 4.3 for discussion of various phases of construction). Phases Ib, Ic, and IIc contained very few to no decorative sealings. These phases of the shena building are transitional (the closure of doorways and addition of walls) and have little in the way of associated strata and artifacts in general. With the intermediate phases largely discounted, phases I (the first building), II (the second building), IIb (the large addition to the second building), and III (the third building) have a discernible evolution in the usage of different types of decorative sealings. The usage in type 1 (s-scroll patterned) sealings hovers around 15% in phases I and II, but trebles to 383
around 50% in phases IIb and III. Phases I and II employ a similar amount of type 3 (cord design) sealings, but these disappear in phases IIb and III. Type 4 sealings (a central amuletic hieroglyph with a scroll border) are common in phases I and II at around 25%, but this figure declines to below 10% in phases IIb and III. Simple groupings of amuletic sealings (type 7) make up over 50% of the corpus in phases I and II, however this amount drops to 32% in phase IIb and 28% in phase III. Sealings with a sema-tawy motif (type 6) appear in phases IIb and III, although in low numbers and do not appear in phases I and II. It should be noted that one type 6 sealing comes from inside the oven in phase Ib and in general these sealings tend to date to the later phases of the shena building. Finally, there are several geometric sealings (type 9) from phase

Figure 194: Relative frequencies of different decorative sealing types in each phase of shena construction. Note: Amuletic Hieroglyphs with a scroll border (type 2) and Complex Amuletic (type 8) types were too rare to register on a relative scale so have been excluded.
III. This type of sealing appears only in the latest strata, just outside the rear temple door and suggests that this last shena building is contemporary with the final days of operation of the Senwosret III mortuary temple.

The charting of the relative frequencies of decorative sealings from within the shena building clearly shows that phase I is closest to II and phase IIb is closest to III. This is slightly surprising given that phases I and II represent new buildings, while IIb is an expansion of building III.\textsuperscript{1171} The clustering of phases I and II suggests that the phase I shena building had a relatively short span of usage before the phase II building was constructed. This phase II building, then operated for a long time before it was expanded in phase IIb. There was then a relatively short period of time before the phase III building was built.

Assuming that each seal is assigned to an individual and his rate of sealing is constant, the differences in phases I and II versus phases IIb and III are due either to changes in personnel and/or changes in fashion. Even if, the local institution/local government recorded all decorative seals as a means of accountability,\textsuperscript{1172} this does not preclude their transference to another person. If the transfer of seals was common, the data should show a continuation in seal type usage, but this is absent. Instead, when an employee required a new seal, he chose based upon the fashion of the day. Additionally, with systems of accounting and accountability, it is easier for an individual with one

\textsuperscript{1171} So, one might expect that phases A and G would stand alone, while phases D and E were linked.

\textsuperscript{1172} Reisner and Wheeler, "The Art of Seal Carving in Egypt in the Middle Kingdom." Page 51.
decorative seal to retain that seal for the duration of his employment in a certain position. It is unlikely that decorative sealings would operate differently from name and title sealings.
Chapter 7: Conclusion

There were numerous temples operating during the Middle Kingdom in Egypt. Some were built to worship gods, while others venerated deceased kings. Religious ceremonies took place in and around a sanctuary with a representation of the god or deceased king. Services in the temple focused on the offering ritual where the priest or priests presented the statue with various items.\(^{1173}\) As Meeks puts it, “The divine offering contained a precise message, a proposition that had to satisfy the one receiving it and solicit his benefaction in return.”\(^{1174}\) The offering meal gave the god or deceased king the sustenance he required.\(^{1175}\) However, the food provided more than a meal, it was a metaphor for \textit{Maat}.\(^{1176}\) \textit{Maat} is the abstract concept of “order, balance and harmony.”\(^{1177}\) “[I]n the ritual \textit{Maat} flows back from the king [who is offering] through his pious actions to the gods.”\(^{1178}\) In offering the god a meal, the priests helped to perpetuate order, balance, and harmony in the universe.

\(^{1174}\) Ibid.
\(^{1175}\) Much like members of the mortal realm, gods required food. Ibid., page 63.
The *ḥtp-di-nswt* formula appears in private tombs and private monuments throughout the pharaonic period. The opening phrase *ḥtp-di-nswt* translates to “an offering that the king gives.” The actual exchange of goods occurred in the temple, but the god magically passes these offerings to any number of individuals in their private memorials. The offering formula assured the memorial owner that offerings would be available in perpetuity even if actual food offerings stopped. Further, the offering formula emphasized the “role of the king as intermediary between the gods and mankind.” In this way, the offerings that the king gave in the temple benefitted the entire Egyptian society.

A special wing in the temple called the *shena* produced the offering meal. It is likely that most temples in ancient Egypt had a *shena* to make this meal. However, the *shena* made more than the offerings; it provided the temple with all the provisions it needed to operate, which also included wages for temple personnel, taxes, goods to be sent to other institutions, etc. It is only in the last 20 years that both the productive and

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1181 Ibid., pages 171-172.

economic nature of the *shena* has been understood by Egyptologists.\textsuperscript{1183} Misunderstandings surrounding the *shena* as being an *ergastulum* or storage magazines are perpetuated in current dictionaries.\textsuperscript{1184}

This doctoral dissertation sought to better understand the nature of the *shena*, its function, its interaction with the temple, its interaction with the surrounding community, and with the world at large. The excavations at the mortuary temple of Senwosret III at south Abydos represent one of the first full investigations of a *shena* from the Middle Kingdom. This work provided architectural, artifactual and textual evidence, which allowed the study to look at problems from multiple different angles and gave a more complete picture than any single line of evidence could afford.

7.1 Function of *shena* of divine offerings of Abydos

The purpose of the *shena* was to produce and distribute supplies for the temple, regardless of what type of temple it was (sun, god, mortuary).\textsuperscript{1185} Iconographic and inscriptive evidence suggests that this mainly involved the production of bread and beer.\textsuperscript{1186} However, offering lists from various temples indicate that there was much more

\textsuperscript{1183} See discussion of the previous understanding of the nature of the *shena* in section 3.1.


\textsuperscript{1186} See Chapter 3, sections 3.1.2 and 3.2.
to the offering corpus than bread and beer.\textsuperscript{1187} Other foodstuffs included several varieties of wine, beef, fowl of various kinds (wild and domesticated), sheep, goat, various wild mammals, fruit, vegetables, greens milk, honey, oils, salt, and fat.\textsuperscript{1188} These lists were extremely specific, often including the specific genus of plant or animal, or the type of cake or shape of bread and the amounts of each that the god demanded.\textsuperscript{1189} At the \textit{shena} of divine offerings of the mortuary temple of Senwosret III at south Abydos, there was abundant evidence, both architectural and artifactual, of the types of foods that this institution produced to satisfy the needs of the deceased king and his living servants. Not surprisingly, the offering meal at the mortuary temple of Senwosret III that can be reconstructed from this evidence is similar to those of the later Theban mortuary temples discussed by Haring.

Bread was the staple beer of the ancient Egyptian diet and that of the gods and deceased kings. In the “Contendings of Horus and Seth,” Seth and the Ennead are seen eating bread and later the Universal Lord says, “it was I (alone) who could create barley and emmer in order to sustain the gods as well as the cattle following the gods.”\textsuperscript{1190} It is clear from this text that the gods not only ate bread, but also considered it essential to life. Bread was, with out a doubt, the item that the \textit{shena} of the mortuary temple of Senwosret III produced most abundantly.

\textsuperscript{1187} Haring has a survey of what was offered in Theban memorial temples during the New Kingdom. Haring, Divine Households. See especially page 76.
\textsuperscript{1188} Ibid., pages 406-409.
\textsuperscript{1189} Ibid.
Evidence of bread production at the *shena* of Senwosret III comes from a very large number of cylindrical bread molds, a circular granary associated with the Phase II *shena*, and one box oven in the Phase I *shena* building. Given the industrial nature of the baking necessitated by the adjacent temple, on the surface, evidence of baking at the *shena* seems ephemeral. Further baking facilities may yet lay unexcavated in the western portions of the Phase I building and other *shena* structures thought to be located slightly to the north and east. However, the known box oven and the granary alone had the ability to provide for the temple’s daily needs (based on daily requirements from the Lahun valley temple).

The single bread oven was capable of baking between 430 and 630 loaves of bread a day. Meanwhile, the beehive granary had a possible maximum capacity of 41 days worth of grain. There are some other features, however, that suggest that baking at the *shena* might have taken place on the plateau between the temple and the *shena* buildings. There are a series of hearths in refuse deposit C and patches of burning throughout the rest of the refuse areas near the *shena*. These could represent either dismantled ovens or open fires, both of which are sufficient to heat bread molds for baking bread. These hearths and open fires were capable of a huge output of bread because they were not limited to architecture, only area, bakers, and fuel. Unfortunately, the seemingly temporary nature of ovens and features associated with baking at the *shena* makes it exceedingly difficult to locate disparate activity areas.

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1192 See section 5.1.1c for discussion of oven capacity at the *shena*.
1193 See section 5.1.1a for discussion of the capacity of the granary at the *shena*.
within the *shena* complex, but enough evidence remains to conclude that this was a facility whose primary function was to produce bread.

Beer was the second largest commodity produced at the *shena* of divine offerings at south Abydos.\textsuperscript{1194} Offering lists and temple accounts show that beer was the main form of drink given to the gods and used as payment for workers.\textsuperscript{1195} There is both textual and artifactual evidence of beer production at the *shena* of divine offerings at south Abydos. One of the most common sealings from the temple is that of the beer brewer named Amenemhat.\textsuperscript{1196} This official was in charge of the production of beer at the temple. There are also a couple of titles present at the *shena* that have to do with the process of sieving the mash, called *lautering*: 1. *iry ʿt n ʿthw*, “superintendent of the room of lautering” and 2. *ihms ʿt ʿthw htp-wr-nfr* “assistant of the chamber of lautering.”\textsuperscript{1197} The presence of all of these positions at the *shena* emphasize that beer was an important commodity produced there. Beer, unlike bread, had a production time of several days to allow for the malting of grain and the fermentation of yeasts in the beer. With multiple batches of beer in various stages of completion, there was more of a need to seal rooms as part of the general accounting practices of the temple.\textsuperscript{1198}

\textsuperscript{1194} See section 5.1.2 for a complete discussion of beer, production methods, and artifactual evidence from south Abydos.
\textsuperscript{1196} See section 6.3.5c for complete discussion of Amenemhat the beer brewer.
\textsuperscript{1197} See section 6.3.5b for a complete discussion of these titles.
\textsuperscript{1198} The grist (the milled malted grain) and the unfermented beer were both commodities in themselves. Rooms required sealing to ensure the security of the commodities stored therein.
The artifactual evidence for beer comes from the ceramics. Grist and water were mixed in wide mouthed vats to make the base of the beer. There is no evidence of vats at the shena, but this may be due to the manner in which the wide mouthed vessels were broken, concealing their true height. The liquid was then decanted into storage vessels called beer jars or water jars where it could ferment. There were 1200 water/beer jar sherds recovered from the shena area; they have a volume of roughly 11.5 liters. The second most common ceramic form found at the shena is beer beakers; almost 12,500 in total were recovered. These vessels have a volume of roughly half a liter and were most likely meant as individual servings. Beer beakers are found in large quantities all over the mortuary complex and form a very important part of the cult refuse deposit, which consists of the remnants of the presentation of the offering within the temple.1199

There is no evidence that wine was produced at the shena of divine offerings at south Abydos.1200 There are no sealings at the shena or the temple that have titles directly related to wine. However, it is apparent that wine was an important part of the offering ritual at the shena.1201 There were 3000 wine jar fragments recovered from the shena, most of which come from the rim and neck. As a comparatively expensive and an imported commodity, wine required stricter oversight than many other foodstuffs at the temple.1202 It was most likely stored in the temple magazines where access was very

1200 See section 5.1.3 for a complete discussion of wine.
1201 Most temple offering lists include wine. See Haring, Divine Households, tables 2,3,4,7.
limited. But the consumption of wine was not restricted to the temple environs. The abundance of wine jars and mud jar stoppers in the *shena* area rather as well as in the temple magazine deposits suggests that the *shena* may have been at least responsible for distributing wine.\(^{1203}\)

Meat, including cattle, sheep, goat, pigs, poultry, and fish were major sources of protein produced and processed by the temple for the offering and wages. The presence of these commodities is represented by their bones in the archaeological record. Bones impart the identification of the specific animal, its size, its age, and in some cases its gender. All of this helps to establish patterns of usage of both different types of animals at the mortuary complex and preferences for specific cuts of meat.

Beef was the predominate meat available at the temple.\(^{1204}\) The high proportion of young female animals suggests that the temple of Senwosret III was culling from a very stable and sustainable herd.\(^{1205}\) The difference in distribution of meat cuts from various areas suggests that the same animals were used to feed both the temple and the town. This means that temple offerings were distributed throughout the mortuary complex, not just to the temple on duty staff, as part of reversion of offerings. The presence of the entire cow, rather than a few cuts of meat also suggests that the cattle were slaughtered on the premises. There are no structures at the *shena* that might be interpreted as a slaughterhouse or cattle stalls. However, there is a sealing with the title

\(^{1203}\) See section 4.2.3 for discussion of the beverage processing area.

\(^{1204}\) See section 5.1.4a for a discussion of the usage of cattle at south Abydos.

"imy-r mdt “overseer of the cattle stalls.”“1206 Perhaps the cattle stalls are located closer to the cultivation where there is easier access to water and fodder. The *shena* probably received some of its beef provisions from the Osiris temple, specifically from an institution called *mdt nfr htp bsdw* “the cattle stalls of divine offerings of Abydos.”1207 The name of the cattle stalls of Abydos comes from a series of sealings that were affixed to wicker baskets. The impressions of wicker on the sealings suggests that the cattle stalls of Abydos sent cuts of meat to the Senwosret III temple, rather than live animals.1208

Sheep and goat as a group represent the second most common meat at the temple of Senwosret III, although it is the most common meat consumed at the town.1209 The higher percentage of sheep/goat remains from the town, as as opposed to the rate of consumption of sheep/goat at the temple, may indicate domestic agricultural production at the town. This suggests that the town was not dependent upon the temple for its meat supply.

Although birds were also a major component of the offering meal, there were very few bird remains recovered from the mortuary complex of Senwosret III.1210 Because bird bones are hollow, they decay much more easily than mammalian bone and

1206 See discussion in section 6.3.5b.
1207 See complete discussion in section 6.2.2c
1208 These joints were probably sent for festival days. They certainly did not form the core of the beef offerings at the Senwosret III temple.
1209 Rossel, *The Development of Productive Subsistence Economies*, page 183. See section 5.1.4b above for a complete discussion of sheep and goat at the mortuary complex of Senwosret III.
1210 See discussion of poultry in section 5.1.4d.
are much more susceptible to scavengers. Fowl represents the most easily available source of meat to the ancient Egyptian; they are easily kept in relatively small areas, they do not require much food, and they reproduce rapidly and in multiples. Domestic and wild fowl were found at the temple of Senwosret III, suggesting that they raised and hunted for birds. There are no structures in the shena that suggest the keeping of poultry, although they may have been situated on upper levels of buildings or in buildings not yet excavated. There are also no sealings with titles related to the hunting or raising of fowl. Birds do not necessarily require sealing oversight to maintain flocks, nor to they require permanent structures to raise them. Although fowling activities probably occurred at the shena, these activities have not transmitted through to the archaeological record.

Fish was a relatively inexpensive source of food for the ancient Egyptians, as they required little outlay in resources, unlike livestock. Copper fish hooks and ceramic and limestone net weights recovered from the shena buildings. The presence of these tools, as well as fish bone, inside the shena buildings reinforces the notion that the shena was responsible processing fish for the temple, if not procuring it as well. There are no fish or fishing related titleholders among the seal impressions recovered from the mortuary temple or the shena area. Fishermen were unlikely to be part of the sealing bureaucracy as it is unlikely that their catch would have been stored for long periods.

1211 See section 5.1.3e for a discussion on fish and fishing at the temple of Senwosret III. 1212 Fish could be salted and dried to preserve them. The presence of Nile perch and catfish suggest that the temple fished both the Nile (about 10 km away) and in more local canals. This would require transport, but it is unlikely that the temple had a scribe stationed at the Nile or at the canal to count what was being caught. What is more likely is that the fisherman were paid based upon what reached the shena - this type of accounting practice required no sealing insurance.
The town ate fish at a rate 5 times that of the temple. The fish that were eaten at the temple emphasized a hierarchy in the status of various personnel working that the temple. The priests, housed in the West Block of the temple, ate Nile perch, *Lates Niloticus*, almost exclusively, which was considered a food for the elite. Elsewhere in the complex (like the town and the *shena*) people ate mostly catfish, which was available in local canals as well as Nile fish. The differential in fish consumption between the town and the temple and within the temple itself accentuates that the temple received premium quality food - above even the elite houses of the town and the mayor’s household (who was the head of the whole mortuary complex).

Fruits and vegetables were a major component of the offering ritual and of wages. Unfortunately, fruits and vegetables are usually consumed whole or their remnants easily rot away completely or are subject to scavengers. Fruits and vegetables also do not require specialized tools or ceramics to process them, which means that they are largely invisible in the archaeological record. There are no sealings from the *shena* or the temple that mention either the farming or the processing of fruits and vegetables. Despite the lack of both archaeological and textual evidence of fruits and vegetables at the *shena* and the wider mortuary temple of Senwosret III, they were undoubtedly a part of the offering ritual and of wages.

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1214 Ibid., and page 232.
1216 See section 5.1.5 for a discussion of fruits and vegetables at south Abydos.
1217 Temple offering lists, such as the New Kingdom Theban mortuary temples and wage accounts of Deir el Medina include vegetables and fruits.
Although the primary activities of the *shena* involved food production, procurement, and processing, it also did a certain amount of craft production. The craft production seems to have been less about creating offerings for the gods, than about sustaining the mandate of both the *shena* and the temple by manufacturing tools required by the various trades for the production of those offerings. There are traces of three crafts at the *shena* of Senwosret III: metalworking, pottery production, and textile production. The evidence of craft production at the *shena* comes largely from artifactual evidence rather than archaeological features. This suggests that much of the craft production at the *shena* not only used methods that are mostly invisible in the archaeological record, but also occurred alongside food production in that they did not have distinct activity areas.

The *shena* yielded 105 grams of copper slag, which endorses the melting of that metal for use by metalworkers. There were also a number of specialized metalworking tools recovered from the *shena*, including a cylindrical bread mold sherd that was used as a crucible, a ceramic blowpipe used to stoke the fire, and an unusual shaped vessel with two legs that was used as a bellows. It is unclear how much metalwork was undertaken at the *shena*. Copper is pliable enough to be worked cold and its melting point is achievable with a simple charcoal fire,\(^{1218}\) which means that even large metalworking facilities would not require permanent forge emplacements. Although the

copper slag suggests that metalworkers were melting copper, there are molds that would definitively show what they were making or on what scale they were doing it. It is most likely that metalworking at the shena was done on an as needed basis, making, modifying, and fixing tools and other metal items that were integral to the mission of the shena (like fish hooks and sewing needles) and the temple (like ritual objects).

A kiln just to the east of the Phase II shena building indicates that there was some pottery production at the shena of divine offerings of the mortuary temple of Senwosret III. However, unlike other ancient Egyptian sites with evidence of pottery production, there were no potter’s wheel remnants, wasters, or an abundance of unfired ceramics. Without these items, the identification of a potter at the shena becomes more tenuous. It may be that the kiln was set apart from a workshop, which is located elsewhere. However, a distinct workshop would not fit the pattern found with all the other industries at the shena existing side by side. The kiln was not used for another high temperature industry like glass or faience production. The key to the seeming lack of artifacts associated with ceramic production may lie with a single unfired cylindrical bread mold. The massive quantity of cylindrical bread molds (around 17,500 sherds) recovered from the shena and its midden shows that cylindrical bread molds

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1219 See section 5.2.2 for a discussion of the kiln and its similarity to other kilns from ancient Egypt including one at Amarna and a contemporaneous one from Mirgissa.
1220 Personal comment Betsy Bryan
1221 There are no molds or faience or glass slag, and no frit.
were broken with great regularity. The temple was in constant need of resupply. The techniques used in the production of cylindrical bread molds left none of the typical pottery production evidence noted above. This specialized form was essential to the operation of the *shena* and the temple. The ability to produce cylindrical bread molds in house and on demand would have proven invaluable.

Part of the offering ritual in temples included the daily bathing and anointing the statues and clothing them in fresh linen. Linen was also used as a commodity in wages and other forms of payment. There is evidence of spinning at the *shena* from ceramic whorls and spinning bowls. Once the flax (the plant used to make linen) was spun into thread, the thread was woven into lengths of fabric. Much of the weaving process was done using looms and tools that were made of wood; there are no wood tools of any kind from the *shena* at south Abydos. This is to say that there is no direct


1223 Cylindrical bread molds are pinch formed over a patrix (no potter’s wheel needed), they don’t need a special material like marl clay, they didn’t need special skills like throwing a pot. Further, cylindrical bread molds are never found in tact. They spend much of their time in ashy ovens being heated for dough, they would look the same as cylindrical bread mold wasters. I can’t account for the lack of unfired cylindrical bread molds.


evidence of weaving at the *shena*, but the fact that they were spinning strongly suggests that there was also weaving. There is evidence of sewing at the *shena* from copper needles. Because linen was a high status commodity, the production of linen was a relatively easy way for a temple to increase its wealth as long as it had the appropriate agricultural resources.

The *shena* of divine offerings of the mortuary temple of Senwosret III engaged in food procurement and preparation. Although bread and beer were the staple foods at the *shena*, as they were in the rest of ancient Egyptian society, the *shena* also had access to a marvelous variety of foods, including wine, fruits and vegetables, and meat, like beef, sheep, goat, pig, various varieties of wild and domesticated fowl, and various species of Nile and canal fish. Many of these foods were accessible only to high status individuals in the rest of the society, like beef, wine, and Nile perch.

The *shena* also engaged in craft production in order to fulfill its mandate to make the offerings for the temple. This included metalworking to make, alter, and mend copper tools used by the temple and the *shena*. There was also some pottery production at the *shena* to produce cylindrical bread molds, the vessel used to create the primary product of the *shena*, bread sticks, which were used in both the offering and as wages. Finally, there is evidence of linen production to make the cloth used in the daily ritual and which also was a commodity on the open market. Craft production at the mortuary temple of Senwosret III was largely an incidental activity the *shena*. 

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7.2 The Bureaucracy of the Temple of Senwosret III and the Relationship between the Shena and the Temple

The shena was an institution in ancient Egypt that was subordinate to its parent institution, in this case the mortuary temple of Senwosret III. There were no shena that operated independently in ancient Egypt. As such, Quirke’s definition of shena as “provisioning sector” may be the most accurate.\textsuperscript{1227} It was but one part that made up the temple. Without the shena, the temple could not have functioned; it needed the goods made by the shena for the liturgy and to pay its staff. In order to better understand the role of the shena in the temple, it is important to look at the bureaucracy that surrounded it. This helps define the shena’s sphere of influence within the temple.

Personnel at the temple included more than priests; there were also administrative staff, staff that looked after the temple’s assets through the storehouse, and most relevant to this study, the provisioning staff.\textsuperscript{1228} As is well established, the mayors of the local town, Wah-sut, were in charge of the general oversight of the temple.\textsuperscript{1229} To what extent the mayor undertook direct oversight or was largely absent from the temple is unknown.\textsuperscript{1230} It is probable that the shena, at least, had direct contact with the mayoral residence by way of deliveries of goods from the granaries and the

\textsuperscript{1227} Quirke, Titles and Bureaux, pages 64-66.
\textsuperscript{1228} This is probably a slight oversimplification of the way that the temple bureaucracy worked. There were surely overlaps in function.
\textsuperscript{1229} See section 6.3.1 for discussion of mayors.
\textsuperscript{1230} Wegner, Temple of Senwosret III, page 360. It is my impression that the mayor would mostly have worked from the mayoral residence and not within the temple. But this absenteeism does not mean neglect. What it does show is that the maintenance of the cult of Senwosret III occurred in several buildings at once. The mayor’s house cannot be viewed and the center of “civil administration” and the temple as the center of “religious” administration.
There are few sealing from ritual staff (w rb and hm priests and mty n s3 “phyle directors”) from the shena area suggesting that they took little part in the sealing of commodities. Although the priests were an integral part in the chain of use of goods, as many were responsible for employing these items in the ritual. Predictably, there is much more evidence of interaction between the shena and the storehouse staff, housed in the East Block of the temple. Finished goods were sent from the shena through the East Block to be used in the ritual, stored in the East Block, and perhaps distributed as wages. The location of the shena of divine offerings on the east side of the temple emphasizes the extent of the cooperation and dependence of the two sectors of the temple.

The shena itself seems to have had a relatively complex bureaucracy that mirrored its parent institution, the temple, and invokes the patrimonial household model. This bureaucratic structure was also mirrored in other sectors of the temple, especially the storehouse, htm inw htpw-ntr n (hkt wRt). The shena was managed by a general administration, including an overseer of the shena and a scribe of the shena. Underneath were a series of department heads, iry-rt, that are linked to specific activities.

See section 5.1.1a for discussion of grain storage at the mortuary complex and section 6.2.1 for a discussion of the ḫryt.

There are a total of 12 sealing from w rb and hm priests combined out of 442 or 2.7%, there are 5 mty n s3 sealings.

It is not entirely clear whether goods produced by the shena that were part of personnel wages were first sent to the East Block, as a measure of accounting, or if they were distributed directly from the shena. It may have been a combination of both.

For a discussion of this cooperation see Wegner, Temple of Senwosret III, page 103.

See section 6.3.6 for a complete discussion of the bureaucratic hierarchy of the shena.

Senwosret III, see Wegner, Temple of Senwosret III, pages 359-361.
such as baking bread, brewing beer, or overseeing cattle. Within each of these departments were a series of managers and workers who undertook the tasks, which was designated to their department.

7.3 Interactions between the Shena and Local/Regional and Long-distance Entities

The town of Wah-sut was an integral part of the operation of the mortuary temple of Senwosret III, and by default the shena. As Wegner states, “[t]his town served principally to house the population involved in the ritual and administrative maintenance of the Senwosret III mortuary temple and its foundation.”\textsuperscript{1237} The overseer of the temple was the mayor, who lived in the mayoral residence at Wah-sut.\textsuperscript{1238} The priests, temple administrators, and the staff of the shena all probably lived in the adjacent town.

One source of the townsfolk’s income came from the temple in a system of reversion of offerings.\textsuperscript{1239} Although there are no account papyri from south Abydos that enumerate the distribution of wages paid by the temple of Senwosret III, it is clear that the town received goods directly from the temple. The shena slaughtered cows and the resultant beef was part of the offering ritual in the temple. The entire cow was consumed, but not solely at the temple complex. The temple retained specific cuts of beef (the upper hind limb and the head), while other cuts were sent to the town (the

\textsuperscript{1238} All of the mayors also have religious titles. Wegner, \textit{Temple of Senwosret III}, pages 335-340.
\textsuperscript{1239} The townsfolk could also have farmed to get extra income (see below for further discussion). See also section 2.5 for discussion of reversion of offerings.
forelimb, the neck and the lower hind limb).\textsuperscript{1240} We know that it was the temple that was responsible for the distribution of the beef, and not the town sending beef to the temple, for two reasons. There was significantly more cattle bone in the temple refuse than at the town, suggesting that the temple had more access to it.\textsuperscript{1241} Second, the “best” cuts of meat, particularly the upper hind limb, with the largest portions of meat, were kept at the temple, while the smaller and poorer quality joints were sent to the town. Whether the \textit{shena} sent joints of meat to the town directly, or whether the meat went to the temple for distribution is not entirely clear, but it was the \textit{shena} that was responsible for the butchering and cooking of the meat.\textsuperscript{1242}

The \textit{shena} had interactions with institutions outside the mortuary complex of Senwosret III, including other temples and provisioning centers. The indications for this contact comes from the form of sigillographic evidence and faunal evidence. A series of institutional sealings name the storehouse, the granary and the cattle stalls of divine offerings of Abydos.\textsuperscript{1243} Most likely these were attached to the Osiris temple, the main religious institution at Abydos.\textsuperscript{1244} All of these sealings were attached to wicker baskets, suggesting that they were sending goods.\textsuperscript{1245} The three names of the institutions hint at what goods were being sent to the \textit{shena}. The granary sent grain, the cattle-stalls send

\footnotesize{\textsuperscript{1240} See section 5.1.4a for discussion of beef distribution. Rossel, \textit{The Development of Productive Subsistence Economies}, page 178.  
\textsuperscript{1241} Cattle bone was 47.3\% of bone in the town and 79\% in the temple. Rossel, \textit{The Development of Productive Subsistence Economies}, pages 172-173.  
\textsuperscript{1242} The \textit{shena} may not have sent cooked meat to the town, but it certainly was responsible for the cooking for the temple.  
\textsuperscript{1243} See section 6.2.2 for discussion of these Abydene institutions.  
\textsuperscript{1244} Wegner, \textit{Temple of Senwosret III}, page 330.  
\textsuperscript{1245} See section 6.2.2 and Wegner, \textit{Temple of Senwosret III}, pages 324-325.}
cuts of meat, and the storehouse could have sent any number of goods small enough to 
fit into a basket roughly 50 centimeters high.\textsuperscript{1246} It is unclear on what sort of schedule 
the Osiris temple sent goods to the temple via the \textit{shena}, whether it was daily, on festival 
days, or only occasionally over the lifetime of the temple. However, from various 
temple account papyri and temple endowments show that interactions between temples 
were commonplace throughout ancient Egyptian history.\textsuperscript{1247} It is likely, therefore, that 
the Osiris temple sent goods to the temple of Senwosret III on a regular basis. It is not 
clear whether or not the \textit{shena} and the temple of Senwosret III reciprocated by sending 
goods to the Osiris temple in a system of reciprocal gift giving or as part of the many 
festivals that took place at Abydos temples.

There are also institutional sealings of the ka chapel of Senwosret I at Abydos 
that were recovered from the \textit{shena}.\textsuperscript{1248} Like the “Abydos series” of sealings, the ka 
chapel of Senwosret I sealings were affixed to wicker baskets, suggesting that they were 
sending goods, most likely foodstuffs, directly to the \textit{shena} for use in the offering ritual 
at the Senwosret III mortuary temple.

The mortuary temple of Senwosret III had to have agricultural lands to grow the 
grain, graze the cattle, and raise all the other crops necessary to make the temple offering 
and sustain the cult. These lands may have been adjacent to the temple or located 
elsewhere in Egypt. We do know that some of the provisions at the temple had to have

\textsuperscript{1246} See section 6.1.1 for discussion of wicker baskets in ancient Egypt. 
\textsuperscript{1247} Haring, \textit{Divine Households}, page 208. See section 2.5 above for a discussion of 
temple economics and their interactions. 
\textsuperscript{1248} See section 6.2.3 for discussion of the ka Chapel of Senwosret I at Abydos.
come from much farther a field. A single sealing recovered from the shena has an
inscription probably mentioning the Third Nome of Lower Egypt: Imntt. Imntt was
renowned for its cattle production in ancient Egypt and these animals were sent all over
Egypt. It is tantalizing to imagine that the mortuary temple of Senwosret III had a
herd of cattle in Imntt.

Fish bone recovered from the shena and the rest of the temple shows that the
temple got some of its fish from the Nile, almost 10 km away. Much of the fish eaten
at the temple and the town came from species that were also readily available in the
more local canal systems. Although the shena yielded some fishing tools, it remains
uncertain whether the shena employed fishermen or traded for fish.

7.4 The Place of the Shena in Understanding the Economy of Ancient Egypt

This study of the shena has shown that the mortuary temple did not labor in
isolation; it had complex economic relationships with the local population, with other
religious institutions, and with the central government. It was by means of the goods
that the shena produced that the mortuary temple of Senwosret III made exchanges with
other institutions and other individuals not directly affiliated with it. The interactions
between the shena and the town and the wider religious community at Abydos

1249 See section 6.2.4 for complete discussion of this sealing.
1250 Cagle, Anthony. "The Spatial Structure of Kom El-Hisn: An Old Kingdom Town in
the Western Nile Delta, Egypt." University of Washington, 2001. Section 6.3.3.
1252 There is evidence of a canal near the Osiris Temple, 3 km away, and there may have
been a canal closer to the mortuary complex than that.
(specifically the Osiris temple and the ka chapel of Senwosret I) were all economic in nature, although they had religious implications.

It is because of these exchanges and because of the function of the institution of shena itself that the shena represents the economic wing of the temple. The shena gathered raw materials from various places in order to produce a finished product that was subsequently distributed to the temple for the ritual, to the staff as wages, sent to other temples for their ritual, and perhaps given as pensions, sent to private mortuary endowments, and in trade for other goods and services.

The study of the shena of divine offerings of the mortuary temple of Senwosret III at south Abydos in itself does not offer a panacea in better understanding the role of the temple in the ancient Egyptian economy. However, it does emphasize the importance of studying this institution. Most of what Egyptologists know about the ancient Egyptian economy comes from textual sources that discuss economic transactions. The shena as an institution represents an important line of evidence that allows the Egyptologist to study the economy from both a textual and an archaeological perspective.
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_imy-r ṛḥwty n imy-r ḫmt Interior-oversee to the treasurer 311-312

_imy-r pr Oversee of the house 311

_imy-r pr wr High steward 329-330

_imy-r pr ḫsb ḫrw overseer of reckoning of cattle 358

_imy-r pr ḫsb ḫtm Estate overseer, accountant of grain 357-358

_imy-r pr ḫsb rmt Oversee of reckoning people 358

_imy-r pr ḫsb śmrw Oversee of reckoning expenditures 358

_imy-r pr ṣḥc Oversee of the shena 67, 71, 74, 84, 227, 337-338, 364, 365

_imy-r mdwt Oversee of the cattle stalls 215, 343, 351, 395

_imy-r ḫwt-ḥmr Oversee of the temple 285, 307, 312-318, 321, 324, 330, 331, 404

_imy-r ḫm-ḥmr Oversee of God’s Servants 314, 316, 317, 321, 324, 330, 335, 336

_imy-r ḫmty Oversee of the 2 God’s Servants 324

_imy-r ḫsb ṛḥw Oversee of reckoning of ships 358

_imy-r śmr ḫwt-ḥmr Oversee of the temple linen? 313, 314-315

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_īry-ḏt Superintendent 343-352

_īry-ḏt n ṣḥw Superintendent of the room of lautering 344, 349, 365, 392

_iḥms ṣḥw Assistant of the chamber of lautering 350-351, 392

_idnw n imy-r ṣḥmr ḫmt Deputy of the overseer of god’s treasury 335-336

_ḥty Beer brewer 348, 349, 365

_ḥṃ n ṣḥ ḫkḥ Administrator of the crew of the rule 320

_ḥrryt nyt pr ḫty-ḥc n Ṣḥw-swt ṛḥc-ḵw-ṛc ṭḥw ṭḥw m ṣbdw Administrative gatehouse of the residence of the mayor of ‘Enduring are the Places of Senwosret, true of voice, in Abydos 99, 284-286, 307, 308, 331, 362, 402

ẃḥ-swt ṛḥc-ḵw-ṛc ṭḥw ṭḥw m ṣbdw Enduring are the Places of
Senwosret III, true of voice, in Abydos 7, 8, 35, 284-285

wꜜb Pure-priest 333-334, 363, 403

whm ꜜnh repeater of life 309

wdfw nꜜt t Cupbearer of the bread room, 343-344, 361, 365

wdꜜt Storehouse 177, 281-284, 307, 335, 355, 402, 403

wdꜜt n ntrḥtpnꜜt bdbw Storehouse of divine offerings of Abydos 104, 290-292, 299, 405

hꜜty-ꜜr Mayor 13, 22, 286, 312-325, 330, 331

ḫmrw-ntr God’s servant 317, 321-323, 333

ḥpr nst ḫẖpy mꜜt-hrw Controller of the two thrones 313, 318, 322

ḥ mrw ḫtpw-ntr n (Hꜜr-kꜜsw-Rꜜr) Storeroom of the incoming deliveries and divine offerings of Khakaure 112, 269, 279, 280, 281, 284

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ḥtmtw-ntr wr mdw ṣmꜜsww God’s Sealer Great one of Tens 313, 314, 319, 320

ḥry-hbt n Ṣẖ-wꜜt Lector priest of Wah-Sut 319-320

mꜜt-hrw true of voice 285, 286, 309

mty n sꜜs Phyle director 316, 332-334, 362, 403

mḥt ntr ḫtpnꜜt bdbw Cattle-stalls of divine offerings of Abydos 104, 296-299, 307, 395, 405

nb imꜜhbw possessor of veneration 309, 316, 317, 331, 333

nbt pr Lady of the house 311

nfr-kꜜr Beautiful-is-the-Ka 9, 92, 98, 101, 102, 104, 129, 133, 140, 273, 277-281, 307, 308, 316, 331, 342

...(Rꜜr ḫpr kꜜr) ...Tr-st Wnn-nfr ...ḥmrw ntr ṣḥ Senwosret Iꜜst ...Osiris, Wenenefer ...Sealer, scribe of the god 273, 300-304, 307, 406, 408

ṛḥty Baker 343, 360

smṛt chaff 201

ṣḥ n ṣḥꜜt Scribe of the shena staff 341

ṣḥ n ṣḥty Secretary (lit. scribe) of the vizier 325

šmsw Follower 311

šmsw nswt King’s Follower 313

šmsw nswt Scribe of the shena staff 341

št ḫḥ(t) n(t) ntr ḫtpnꜜt bdbw Primary granary of divine offerings of Abydos 51, 292-296, 307, 405

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Lmny-snḥ Amenyseneb, mayor 101, 313, 317-318
Imny-snb Amenyseneb, scribe of the vizier 326-327

Ijn Inen 350

Irf-snb Iref-seneb 331-332

*nhw Anchw 343-344, 361

*nh-m³⁻hr Anch-ma-kher 69, 70

*s⁻ hprw Sobekemsaf, king 107, 111, 288, 371, 373

Wp-n-w⁻wt Wepnwawet 333

Wp-n-w⁻wt-htp Wepwawethetep 333

Wr-n-n(trw Werenetjerw 334

Wsr⁻nht⁻nfr Weserankhetnefer 333

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