A Lasting Impression? A Study of Middle Kingdom Seal Impressions from Elephantine Island

Katherine Margaret Consola
A LASTING IMPRESSION? A STUDY OF MIDDLE KINGDOM SEAL IMPRESSIONS FROM ELEPHANTINE ISLAND

by

Katherine Margaret Consola

A Thesis
Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Arts

Major: Art History

The University of Memphis
May 2021
For Poppa
ACKNOWLEDGEMENTS

This thesis would not have been possible without the hard work and support of many individuals, all of whom continued to work at full speed despite the global pandemic. First, I would like to offer my sincerest thanks to my advisor, Dr. Joshua Roberson, for his mentorship, guidance, invaluable expertise, and patience throughout this process. His advice and encouragement are immensely valuable to me, and I feel lucky to have been his mentee. Next, I would like to thank Dr. Patricia Podzorski and Dr. Esra Ozdenerol for offering their expertise and support to this project as members of my thesis committee. I am grateful to Dr. Ozdenerol for answering my GIS questions and for advocating on my behalf to gain access to invaluable software such as Drone2Map. Next, I must offer my sincere gratitude to Dr. diss. Johanna Sigl, co-director of the Realities of Life project with the German Archaeological Institute. I am immensely grateful to her and her team for generously allowing me to use their data, published and unpublished, as the focus of this work, for kindly and enthusiastically answering all of my questions, and for providing detailed feedback on the archaeological discussion in Chapter 4. Any errors that remain are exclusively my own. I would like to thank my undergraduate mentors, Dr. Erin Averett, Dr. Simon Appleford, and Mr. David Crawford. Their enthusiasm, warmth, guidance, and patience during my undergraduate career at Creighton University made it possible to get where I am today, and for that, I am eternally grateful. Finally, I would like to thank my friends and family for their unwavering support. To my parents, Ralph and Colleen, for encouraging my love of ancient history from a young age and helping me make a lifelong dream a reality. To my friends, who have kept me sane and honest over the years. To Drew, whose constant care and support throughout this entire process and otherwise is immensely appreciated.
ABSTRACT

Sealing as a practice in ancient Egypt has been attested by thousands of exemplars recovered from archaeological sites. Seals have been found in cemeteries, settlements, and military forts, which suggests they had multifaceted use as administrative tools and religious amulets. Preserved mud sealings are equally informative, since complete sealings hold the negative impression of the seal inscription and the surface they were adhered to, such as fabric, wood, or papyrus. The present study analyzes a corpus of 423 seal impressions from a Middle Kingdom settlement site on Elephantine Island excavated by the Realities of Life project from the German Archaeological Institute. I use GIS software for spatial analysis, identify sealing types within established typologies, review the objects’ proveniences, and put the corpus in its historical and cultural context for the purpose of clarifying the meaning, function, and context of seal impressions found at Elephantine.
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<td>Ä&amp;L</td>
<td>Ägypten und Levante, Zeitschrift für ägyptische Archäologie und deren Nachbargebiete, Wien</td>
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<td>AAE</td>
<td>Arabian Archaeology and Epigraphy, Blackwell Publishing, Copenhagen</td>
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<td>AiÄ</td>
<td>Archäologie in Ägypten: Magazin des Deutschen Archäologischen Instituts Kairo, German Archaeological Institute, Cairo</td>
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<td>AJA</td>
<td>American Journal of Archaeology, Archaeological Institute of America, Boston</td>
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<td>Archaeology</td>
<td>Archaeology. A Magazine Dealing with the Antiquity of the World, Archaeological Institute of America, New York</td>
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<td>BA</td>
<td>The Biblical Archaeologist, American Schools of Oriental Research, New Haven</td>
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<td>BASOR</td>
<td>Bulletin of the American Schools of Oriental Research, American Schools of Oriental Research, New Haven</td>
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<td>B(d)CE</td>
<td>Bulletin de liaison de la céramique égyptienne, Institut français d'archéologie orientale du Caire, Cairo</td>
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<td>BM</td>
<td>Bibliotheca Mesopotamica, Undena Publications, Malibu</td>
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<td>CRIPEL</td>
<td>Cahier de recherches de l'institut de papyrologie et d'égyptologie de Lille, Université Charles de Gaulle – Lille III, Lille</td>
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<tr>
<td>DAI(K)</td>
<td>Deutsches Archäologisches Institut (Kairo)</td>
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<td>Dyn(s).</td>
<td>Dynasty(/ies)</td>
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<td>GIS</td>
<td>Geographic Information Systems</td>
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<tr>
<td>H--</td>
<td>House number (according to the Realities of Life project’s label)</td>
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<tr>
<td>HdO</td>
<td>Handbuch der Orientalistik, Brill, Leiden</td>
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<tr>
<td>IEJ</td>
<td>Israel Exploration Journal, Israel Exploration Society, Jerusalem</td>
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<td>Code</td>
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<tr>
<td>IMJ</td>
<td><em>The Israel Museum Journal</em>, The Israel Museum, Jerusalem</td>
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<td>JARCE</td>
<td><em>Journal of the American Research Center in Egypt</em>, American Research Center in Egypt, Princeton</td>
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<tr>
<td>JEA</td>
<td><em>Journal of Egyptian Archaeology</em>, Egypt Exploration Society, London</td>
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<td>JNES</td>
<td><em>Journal of Near Eastern Studies</em>, University of Chicago Press, Chicago</td>
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<td>JESHO</td>
<td><em>Journal of the Economic and Social History of the Orient</em>, Brill, Leiden</td>
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<td><em>Journal of The Society for the Study of Egyptian Antiquities</em>, Society for the Study of Egyptian Antiquities, Toronto</td>
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<td>NEA</td>
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<td>OBO (Ser. Arc.)</td>
<td>Orbis Biblicus et Orientalis (Series Archaeologica), Academic Press, Fribourg</td>
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<td>Paléorient</td>
<td><em>Paléorient</em>, CNRS, Paris</td>
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<td>R--</td>
<td>Room number (according to the Realities of Life project’s label)</td>
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<tr>
<td>RoL</td>
<td>Realities of Life (project)</td>
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<tr>
<td>SASAE</td>
<td>Supplément aux annales du service des antiquités de l'Égypte, Institut français d'archéologie orientale, Cairo</td>
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Syria

Syria. Revue d'art oriental et d'archéologie, Geuthner, Paris

WZKM

Wiener Zeitschrift für die Kunde des Morgenlandes, Instituts für Orientalistik der Universität Wien, Wien

ZDMG

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Harrassowitz Verlag, Wiesbaden
Overview of Seals and Sealing Practice

Seals were an ancient class of artifacts that appear first in the ancient Near East from the sixth millennium BCE, although one can still observe their use today in various forms.¹ Seals are small, portable objects, inscribed with a text- or image-based design that could be impressed into a soft material such as clay (i.e., “sealing”), leaving a lasting imprint known as the seal impression, or “front type.” In addition, the reverse side of the sealing mud frequently retains an impression of the object to which it was affixed, the so-called “back type,” which can provide insight into the sorts of artifacts and goods being sealed. Seals themselves might be worn as jewelry or as amulets, dedicated as votive offerings, or used as a means of identification.² Their impressions, by their very nature, must have carried a commonly understood meaning, recognizable by anyone within a given community.³ This thesis will examine sealing practices from the Egyptian Middle Kingdom (Dyns. 11–13, ca. 1980–1630 BCE),⁴ focusing on a

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³ Thus, Pittman, “Seals and Sealing in the Sumerian World,” 320: seals “were engraved on their surface not simply as reflections of local styles and fashion but rather as carriers of culturally salient meaning.” See also Jane A. Hill, “Cylinder Seal Glyptic in Predynastic Egypt and Neighboring Regions” (MA thesis, Memphis, University of Memphis, 2001), 149–51.

previously unpublished seal impression corpus excavated from the island of Elephantine by the German Archaeological Institute project “Realities of Life” (Lebenswirklichkeiten).\(^5\) My analysis will focus on the iconography and texts of the seal impressions themselves, as potential dating criteria, and on diagnostic back types, where available, as a record of objects sealed on site and their change over time.

The focus and methodology of Egyptological approaches to the study of seals and seal impressions has shifted significantly over the past century. Earlier publications placed much emphasis on seals bearing the names of kings and private officials.\(^6\) However, such examples constitute only a minority of attested seals, leaving the vast majority, which were inscribed with abstract geometrical designs or decorative (i.e. non-grammatical) hieroglyphic inscriptions, largely uncategorized.\(^7\) In addition to the analysis of seal bases and the corresponding front types of seal impressions, William Flinders Petrie introduced seriation—a technique he had developed originally for the dating of pottery—to the study of these objects, as a means of tracking diachronic change.\(^8\) In the 1950’s, George Reisner introduced a typology for the classification of seal impression back types (i.e. the negative impression in the mud sealing of the surface it sealed), which permitted inferences to be drawn with regard to the sorts of goods and objects

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\(^5\) I would like to express gratitude to project co-director, Dr. diss. Johanna Sigl, and by the project’s seal impression analyst, Dr. Joshua A. Roberson, for permission to discuss this material.


being sealed. This study also marked the first time that mud sealings were recognized as important sources of data, in and of themselves, as opposed to serving merely as a proxy for the seal that produced them. In a seminal study from the 1970s, William Ward observed that earlier approaches to the typology of scarab seals had focused almost exclusively on the base designs (i.e. the sealing surface itself), and that these approaches were neither consistent nor thorough in their approach. Ward asserted that a more accurate typology, and thus a more reliable series of dating criteria, must take into consideration all aspects of the seal’s form, rather than just the design on the base. Ward’s scarab typology and Reisner’s typology of seal impression back types would form the basis for subsequent, modern approaches to the study of administrative seals and sealing, as outlined later in this chapter.

**Middle Kingdom Sealing Practice on the Island of Elephantine**

Elephantine Island has yielded one of the largest corpora of seal impressions from ancient Egypt, with many thousands of individual objects documented in numerous publications of the Swiss and German excavations to the site. The present thesis will analyze a discrete corpus of seal impressions, previously unpublished, which were excavated by the Realities of Life (RoL) project. The project was co-directed by Prof. Dr. Stephan Seidlmeyer and Dr. diss.

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9 This aspect of seal impression analysis was outlined first in George Andrew Reisner, “Clay Sealings of Dynasty XIII from Uronarti Fort,” *Kash* 3 (1955): 27–29.


Johanna Sigl and was actively excavating from 2013 to 2018. Marie-Kristin Schröder currently oversees the study of previously excavated materials.\textsuperscript{13} This project is part of a larger archaeological study on Elephantine Island at Aswan, where the German Archaeological Institute (DAI) has worked since 1969.\textsuperscript{14} The goal of RoL has been to combine traditional Egyptological inquiry and methods with experts and methodologies from the sciences, in order to identify and analyze the details of daily life for the settlement at Elephantine Island, with emphasis on three specific topics: nutrition, daily work, and living environment.\textsuperscript{15} Their excavations focus on settlement remains at the site, where they have found, among other things, seals and seal impressions.\textsuperscript{16}

The sealing corpus, which is the focus of the present study, consists of 423 seal impressions, excavated from a residential area on Elephantine Island, between 2013 to 2018. These objects, which have been subjected to preliminary study by Dr. Joshua A. Roberson, chief sigillographer for the RoL project remain unpublished, apart from brief summaries in excavation reports.\textsuperscript{17} Permission to conduct further analysis of these objects, for the purpose of my thesis

\textsuperscript{13} Sigl and Kopp, “Elephantine, Ägypten: Projekt Lebenswirklichkeiten (Realities of Life),” 42–47.

\textsuperscript{14} Sigl and Kopp, “Elephantine, Ägypten: Projekt Lebenswirklichkeiten (Realities of Life),” 42.

\textsuperscript{15} Sigl and Kopp, “Elephantine, Ägypten: Projekt Lebenswirklichkeiten (Realities of Life),” 44.


research, was requested on my behalf by Dr. Roberson and granted by excavation co-director Dr. diss. Johanna Sigl in February of 2020.

**Formal and Functional Evolution of Egyptian Seals to the end of the Middle Kingdom**

The earliest known examples of seals come from Neolithic sites in northern Mesopotamia, dating to the sixth millennium BCE. Mesopotamian seals assume the form of inscribed cylinders, which could be rolled across a mud surface to produce a linear, repeating impression. These artifacts made their way to Egypt probably indirectly, through trade with Syro-Palestine, and begin to appear in Egyptian contexts, as natively produced objects, from ca. 3600 BCE. The earliest seals found in Egypt were overwhelmingly cylinder-shaped, and their decorative motifs focused primarily upon depictions of animals in a similar fashion to Mesopotamian motifs. However, Jane Hill points out that there are notable differences between the two that suggests the Egyptian seals are inspired by, but not copied from Mesopotamian cylinder seals. By the Early Dynastic Period (ca. 2900-2545 BCE), Egyptian-produced

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20 There are rare instances of stamp seals found in Predynastic Egypt; one noted in Hill, “Cylinder Seal Glyptic,” 42–43 and fig. 6. It was found in Abydos Tomb U-134 which was dated to the Naqada IId period. Another instance is known from Naga-ed-Der; see Patricia Podzorski, “Predynastic Egyptian Seals of Known Provenience in the R. H. Lowie Museum of Anthropology,” *JNES* 47, no. 4 (1988): 259.

21 Hill states “the Mesopotamian examples seem to deal almost wholly with domesticated animals, while in the Egyptian examples non-domesticated creatures, particularly those of the desert predominate.” She also notes the difference in filler shapes used by Egyptians and Mesopotamians, which she suggests are culturally inspired, such as the use of triangle rows versus the Mesopotamian “three-loded symbol”. Even if these are not significant differences, they do seem to indicate intentional choices on the part of the Egyptians. See Hill, “Cylinder Seal Glyptic,” 56–59.

cylinder seals had become thoroughly Egyptianized – that is to say, the inscriptions on the cylinders, or their impressions, exhibited only native Egyptian motifs and figural styles.\(^{23}\) Hieroglyphic texts do not occur on Egyptian seals until the Early Dynastic period, even though hieroglyphs were developing alongside the adoption of seals and sealing practice already in the Predynastic period.\(^{24}\) Once writing began to appear on seals in the early Old Kingdom, it was mainly in the form of royal names or the names and titles of high officials.\(^{25}\) The occurrence of names and titles on seals and seal impressions is presumed usually to correlate with the seals’ use by, or on behalf of, the individuals so named, although the retention of seals as heirlooms complicates the picture considerably.\(^{26}\) Typical objects bearing seal impressions in this Early Dynastic period and early Old Kingdom include boxes, bags, doors, papyrus documents, and stoppers for large jars of wine.\(^{27}\)

Cylinder seals remained the dominant seal type in Egypt until the end of the Old Kingdom (Dyn. 8, ca. 2150 BCE).\(^{28}\) However, from the later Old Kingdom (late Dyn. 5–Dyn. 6, ca. 2305–2118 BCE), a natively produced, “button”-shaped type of stamp seal was introduced in

\(^{23}\) As Hill reviews Predynastic into Early Dynastic cylinder seals impressions, the finds exhibit diachronic change that become more and more demonstrably related to Early Dynastic and Old Kingdom art attested on contemporary pottery. See Hill’s discussion of Naqada IId seal impressions: Hill, “Cylinder Seal Glyptic,” 38–45. See Hill’s discussion of Naqada IIIa2 seal impressions: Hill, “Cylinder Seal Glyptic,” 46–52.


\(^{25}\) Hill, “Cylinder Seal Glyptic,” 151.

\(^{26}\) Daphna Ben-Tor, Scarabs, Chronology, and Interconnections: Egypt and Palestine in the Second Intermediate Period, OBO Ser. Arch. 27 (Fribourg: Academic Press, 2007), 1–2, 7, 45–46, with additional references.


parallel to the Mesopotamian cylinder form. From the First Intermediate Period, the use of cylinder seals declined sharply, disappearing eventually, in favor of the native stamp seals, including a newly introduced form designed to resemble the Egyptian scarab beetle. The shift away from cylinder seals to native design types is possibly one aspect of the shift away from foreign influences on natively produced artifacts, which took place over the course of the Early Dynastic Period and Old Kingdom. However, it is also possible that the shift to an exclusively stamp-shaped sealing technology was motivated to some extent by practical considerations: Stamp seals required less space on the sealing mud and could be impressed more quickly, with a single vertical motion, as opposed to cylinder seals, which required sufficient space for at least one repetition of the seal’s design, executed by means of a horizontal rolling motion.

Ward has suggested that the First Intermediate Period and Middle Kingdom objects identified usually as functional “seals” likely served primarily or even exclusively as funerary amulets. Ward argued that earliest “button seals” might be describe more accurately as “design-amulets,” since there is little evidence for sealing, i.e. seal impressions, made by these amulets

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prior to the late Eleventh and early Twelfth Dynasties. The earliest “button-seals” had pyramid-shaped backs and have been recovered overwhelmingly from the graves of women and children, which suggests a link between the class of design amulets and their presumed religious, specifically mortuary, function as amulets or talismans.

By the First Intermediate Period, scarabs were established firmly in Egyptian mythology as the representatives of Khepri, the god who creates himself every morning as the reborn sun. With these regenerative powers, Khepri was associated with rebirth after death – owing to the Egyptian conception of the sun “dying” every evening and being “reborn” every morning – and thus provided the dead with hopes of rising again. It is likely for this reason that a scarab amulets achieved such popularity as mortuary objects from the end of the First Intermediate Period. Additionally, most scarab-shaped “seals” include decorative, i.e., non-grammatical, hieroglyphic inscriptions on the base, which frequently feature signs with protective or regenerative connotations (e.g., $zA$ and $nR$ signs, plant motifs, et al.). This further supports the theory that seals could have been employed as amulets, either as their primary function or in addition to their use as administrative tools during the Middle Kingdom.


35 Scholars such as Holly Pittman have noted that in contemporary Near Eastern cultures such as Mesopotamia, seals were used as personal items in addition to tools of an administrative system. In her article, “Seals and Sealing in the Sumerian World,” Pittman notes that seals “carried magical or amuletic meaning, they served as jewelry or markers of status, and they were frequently deposited in sacred spaces as votive objects” (p. 320). Considering both the
The Growth of Administrative Sealing Practice in the Middle Kingdom

The Middle Kingdom (Dyns. 11–13, ca. 1980–1760 BCE) saw a significant expansion of the administrative sealing system. Josef Wegner and others have noted that the rise and fall of seal use correlates directly with the waxing and waning power of the centralized state. Accordingly, the use of seals in administrative functions sharply increased in Dynasty 12, when there was also a significant increase in centralized royal power. Seals were used more frequently and distributed more widely. Unlike in the Old Kingdom, there is evidence that lower level administrators in the late Middle Kingdom owned scarab seals bearing their own names and titles, which included occupations such as “doorkeeper” or “store-room manager.” These changes can be attributed to Senwosret III, during whose reign in late Dynasty 12 (ca. 1837–1819 BCE) the most dramatic shifts in seal use and design occurred. Administrative sealing practices peaked in late Dynasty 12 and into Dynasty 13, decreasing but never quite

influences from Mesopotamia that led to seal use in predynastic Egypt and the ornamental appearance of these intricate objects, it seems extremely likely that they served a comparable purpose in ancient Egypt. Egypt was no stranger to the creation of purely votive objects that otherwise could have served a more mundane function (i.e., staffs, swords, etc.), and so it seems rather unlikely that seals would be an exception. For sealing practices in ancient Mesopotamia, see Pittman, “Seals and Sealing in the Sumerian World,” 319–42.


37 Ben-Tor, “Administrative Use,” 293.

38 Daphna Ben-Tor states in “Administrative Use” that the use of scarab seals “had become a distinctive administrative practice of the late Middle Kingdom,” and extensive amounts of scarab seals had been found in Kahun, South Abydos, Edfu, Elephantine, Askut, and Uronarti. See Ben-Tor, “Administrative Use,” 293; Wegner, “Evolution,” 238.


40 Ben-Tor, “Administrative Use,” 293.
disappearing from the Second Intermediate Period and later, through the end of Pharaonic era.\textsuperscript{41} Notably, scarabs with private names and titles fell out of use following the end of the Middle Kingdom.\textsuperscript{42} Wegner suggests that this trend underscores the link between expanded use of name and title scarabs in the late Middle Kingdom and contemporary changes in the administrative structure of the Egyptian state.\textsuperscript{43}

\textbf{Literature Review}

Egyptian sealing practices first became a topic of study in the late nineteenth century, when W.J. Loftie and Sir W.M. Flinders Petrie published separate catalogues focusing on scarab seals.\textsuperscript{44} A slew of publications followed over the next quarter century, largely following the format laid out by Petrie of line drawings accompanying transliterations and translations of the names and titles found on select scarab seals.\textsuperscript{45} While these works were important for establishing a solid groundwork for the study of Egyptian sealing practices and for publishing lengthy catalogues of the artifacts, their limited scope did not allow for exhaustive analysis.\textsuperscript{46}

\begin{footnotesize}
\begin{enumerate}
\item Ben-Tor, “Administrative Use,” 293–99.
\item W.J. Loftie, \textit{An Essay of Scarabs} (London: Field and Tuer, 1884); Petrie, \textit{Historical Scarabs}.
\item Most of these publications limited themselves to analyzing cylinder and scarab seals with text-based inscriptions, preventing a fuller understanding of the use of seals in ancient Egypt. Text-based seals are the minority at find sites,
\end{enumerate}
\end{footnotesize}
George Reisner’s 1955 article, “Clay Sealings of Dynasty XIII from Uronarti Fort,” provided the first thorough study of seals and seal impressions found at a single site. Reisner created classifications for what we now identify as “back types” and “front types” of seal impressions. His work was largely forgotten until Stuart Tyson Smith brought it to the forefront in a 1990 publication and advocated for use of Reisner’s techniques in lieu of the contemporary practice of providing “illustrations and a list…of the seals represented, without drawing any but the most basic conclusions about administration.” Smith’s article sparked interest in analyzing seal impressions and underlined why they are an equally important object of study for understanding Egyptian sealing practices. Smith’s subsequent publications have brought more attention to vastly outnumbered by their more abstract, design-based peers, meaning that scholars at the time were restricting their understanding to the few artifacts that they could more immediately make sense of. Their work is important in the larger discussion, but their lack of attention to more “uninteresting” specimens limited their conclusions.

47 Hall’s 1913 publication *Catalogue of Egyptian Scarabs* was the first publication with a dedicated section for seal impressions (pp. 286-292), and Newberry’s 1908 publication *Scarabs* was the first attempt at identifying and understanding what we now know as “back types” (pp. 12-28), but Reisner’s work is noteworthy in its inclusion of both of these elements, in addition to his singular focus on the site at Uronarti, and his more concise and effective identification of “back types” which are so foundational to the study of Egyptian sealing practices. See Reisner, “Uronarti Fort.”


49 Not every publication on sealing practices following Smith’s focused on or even included seal impressions, but several significant publications did follow with a much greater emphasis on seal impressions than had ever been paid to them before, including von Pilgrim, *Elephantine XVIII*; Emily Teeter, *Scarabs, Scaraboids, Seals, and Seal Impressions from Medinet Habu*, Oriental Institute Publications, vol. 118 (Chicago: The Oriental Institute of the University of Chicago, 2003); Ben-Tor, *Scarabs, Chronology, and Interconnections*; Josef Wegner, *The Mortuary Temple of Senwosret III at Abydos* (New Haven: Peabody Museum of Natural History, 2007). Of course, I cannot claim to know that Smith’s article inspired them, but it is a correlation worth noting.
cross-cultural exchange in sealing practices between Egypt and Nubia by way of Upper Egyptian forts.  

Erik Hornung and Elisabeth Staehelin published the first modern catalogue of a large seal corpus in 1976. It is noteworthy not only for its size, but also for its effective summation of previous literature and its thorough analysis of the content of the seals, which included both design and text-based inscriptions.

William Ward and Olga Tufnell collaborated on several works regarding seals and seal impressions, but their most important contribution to the discourse was the publication of Studies on Scarab Seals volumes 1 and 2, published in 1978 and 1984 respectively. The volumes contain definitive classifications for front, back, and impression types, and catalogue every Egyptian and Canaanite scarab seal known prior to the volumes’ creation. Their typology is presently the standard for classifying Egyptian seals. However, Studies on Scarab Seals was


54 Nearly every work on scarab seals published since Studies on Scarab Seals vols. 1 and 2 cites Ward and Tufnell’s volumes, even if only to disagree with their conclusions on dates. The fact that these two volumes are held to be standard is stated more plainly in the following works: Ben-Tor, Scarabs, Chronology, and Interconnections, 4; Steven Blake Shubert, “Dating by Design: Seal Impressions from East Karnak” (PhD Thesis, Toronto, University of Toronto, 1998), 45.
controversial for its chronology, and was challenged by several contemporary scholars, including Manfred Bietak, Erik Hornung, Rolf Krauss, David O’Connor, and James Weinstein. Ward published an article in 1987 titled “Scarab Typology and Archaeological Contexts” and a book by the same name in 1994 — the third volume in the *Studies on Scarab Seals* series, in collaboration with William Dever — in response to his critics and to amend his chronology from earlier works.

Josef Wegner and Cornelius von Pilgrim separately published several works beginning in the 1990’s based on their excavations in Abydos and Elephantine, respectively. Their work shed light on the administrative workings of each site, and further solidified the contemporary understanding of seal impressions, especially back types. Their comprehensive discussions and analyses of these two, exceptionally robust seal and sealing corpora (6000+ impressions in each case) provide a significant source of comparative material for roughly contemporary (esp. Middle Kingdom–Second Intermediate Period) assemblages.

Daphna Ben-Tor has published extensively from the late 1980’s to present about historical and political implications of scarab seals found in Palestine and their contemporaries in

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Egypt.\textsuperscript{59} Her most significant work was a monograph published in 2007 entitled \textit{Scarabs, Chronology, and Interconnections}. This work amends Ward and Tufnell’s typology, which by 2007 was almost thirty years old. It also presents another large corpus with thorough analysis and reinvigorated the conversation about seals as magical amulets in addition to administrative tools.\textsuperscript{60}

\textbf{Methodology}

The present work seeks to classify the impressions regarding their front and back types, to identify — if and where possible — the objects’ provenience, date, and function, and to analyze the corpus’ place in the broader geographic and cultural context of sealing practices in Middle Kingdom Egypt. In Chapter 2, I discuss my use of GIS software to conduct spatial analysis on the site using drone images and other data gathered between 2013 and 2018 by the RoL project. Chapter 3 focuses on the classification of seal front and back types, analysis of these types, and discussion on impressions with legible text displaying names and titles. Chapter 4 discusses the archaeological context of the site at Elephantine and the find context of the seal impressions from the present corpus. Chapter 5 presents my conclusions regarding the significance of the seal impression designs and their typological, chronological, and spatial distribution from the Elephantine corpus, and present suggestions for future research.

\textsuperscript{59} Daphna Ben-Tor has published many articles on this topic, too many to include here. The most important to note are the following: Daphna Ben-Tor, “The Historical Implications of Middle Kingdom Scarabs Found in Palestine Bearing Private Names and Titles of Officials,” \textit{BASOR} 294 (1994): 7–22; Daphna Ben-Tor, “The Relations between Egypt and Palestine in the Middle Kingdom as Reflected by Contemporary Canaanite Scarabs,” \textit{IEJ} 47, no. 3/4 (1997): 162–89; Daphna Ben-Tor, “Second Intermediate Period Scarabs from Egypt and Palestine: Historical and Chronological Implications,” in \textit{Scarabs of the Second Millennium BC from Egypt, Nubia, Crete and the Levant: Chronological and Historical Implications. Papers of a Symposium, Vienna, 10th-13th January 2002}, ed. Bietak Manfred and Ernst Czerny (Vienna: Österreichischen Akademie der Wissenschaften, 2004), 27–42; Ben-Tor, \textit{Scarabs, Chronology, and Interconnections}.

\textsuperscript{60} Wegner, “Evolution”; Ben-Tor, “Administrative Use.”
Introduction to Geographic Information Systems

Geographic Information Systems, or GIS, are computer-based tools that are widely applicable for the purposes of collecting, storing, analyzing, interpreting, visualizing, and sharing spatial and geographic data.\(^1\) It was first developed by Roger Tomlinson in 1963 based on the Canada Land Inventory (CLI) for automating map analysis.\(^2\) ArcGIS Pro is a popular GIS software developed and maintained by the Environmental Systems Research Institute (ESRI), first released in January 2015.\(^3\) Paul Bolstad summarized the many uses of GIS technology concisely in *GIS Fundamentals*:

GIS are essential tools in business, government, education, and nonprofit organizations, and GIS use has become mandatory in many settings. GIS have been used to fight crime, protect endangered species, reduce pollution, cope with natural disasters, treat epidemics, and improve public health; in short, GIS have been instrumental in addressing some of our most pressing societal problems.\(^4\)

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ArcGIS Pro builds spatial models in a geodatabase, which holds multiple datasets with established rules about how they relate to each other. The main datasets held in geodatabases are feature classes, attributes, and mosaic datasets. Feature classes are discrete spatial features, such as roads, buildings, rivers, and trees, represented as points, lines, or polygons. Attribute data is nonspatial data which defines and provides metadata for feature classes, providing information such as coordinates, size, and identification. Mosaic datasets contain multiple instances of raster data – which is made up of individual images – and combines them as if they were one image.

GIS systems create spatial models using different kinds of conceptualization, though most often, vector data or raster data are used. Vector data is distinct real-world objects represented as points, lines, or polygons. Raster data is an image or images represented as a grid of individual cells covering a spatial region. Whether vector or raster data is used depends on the needs of the user; where vector data is often used for identification of discrete spatial data, raster data is more often used for continuous data such as elevation, average rainfall, mean temperature, and slope. Since geodatabases allow for multiple datasets to exist within the same

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6 “Getting Started with the Geodatabase.”  
7 “Getting Started with the Geodatabase”; Bolstad, GIS Fundamentals, 40.  
8 “Getting Started with the Geodatabase.”  
9 “Getting Started with the Geodatabase.”  
10 “Getting Started with the Geodatabase”; Bolstad, GIS Fundamentals, 40–41.  
12 Bolstad, GIS Fundamentals, 41; “Displaying Raster Data in ArcGIS.”
file, ArcGIS Pro uses layers to separate out different spatial models, allowing the user to relate them as they please.

**GIS in Archaeology**

Archaeologists have slowly adopted GIS software into fieldwork starting in the 1990’s. ArcGIS Pro is popular with archaeologists due to its user-friendly interface, its existing user base, and its mobility. The software also allows for hybrid use with paper records insofar as it is easy to integrate written or otherwise hardcopy records into ArcGIS datasets if individuals do not wish to rely on it entirely, in any case. In addition to data collection, ArcGIS allows for complex analysis of archaeological sites, including “proveniencing features or artifacts with an existing polygon..., photomapping through geo-referenced vertical digital photographs, and precise mapping using a total station.” For example, a project in Guatemala was able to use ArcGIS to map LiDAR imagery in 3D to reveal previously undiscovered Mayan cities, with no previous excavation at those sites. Similarly, many projects can now use Drone2Map, an ESRI app very similar to ArcGIS Pro, which interprets drone images as raster data, complete with

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13 Nicholas Tripcevich and Steven Wernke discuss at length why archaeologists were so hesitant to adopt what should have been a very welcome improvement to archaeological data collection and analysis, but it is not immediately relevant to the topic at hand. For more information, see Nicholas Tripcevich and Steven A. Wernke, “On-Site Recording of Excavation Data Using Mobile GIS,” *Journal of Field Archaeology* 35, no. 4 (December 2010): 381, https://doi.org/10.1179/009346910X12707321242511.

14 I use the word “mobility” here to refer to the fact that ArcGIS Pro has developed several different apps that allow for efficient field data collection, among other things. See Tripcevich and Wernke, “On-Site Recording of Excavation Data Using Mobile GIS,” 381.


16 LiDAR is a type of aerial laser-scanning which allows the user to “see” topography through dense vegetation cover. See Matt Ball, “Digital Archaeology Reveals the Past without Digging in the Dirt,” *Esri* (blog), June 27, 2018, https://www.esri.com/about/newsroom/blog/archaeologists-dig-into-data-not-dirt/. 
coordinate data for proper spatial placement, allowing users to create a three-dimensional, high
resolution map of their site.  

Present Use of ArcGIS Pro

For the purposes of this thesis, I used ArcGIS Pro to map the site at Elephantine using
drone images, create vector data for specific buildings at the site, mark find spots for seal
impressions as noted in field reports, and create an ArcGIS Dashboard with my findings.

First, using drone images provided to me by Dr. diss. Johanna Sigl from the Elephantine
evacuation, I mapped the site using Drone2Map (Figs. 1-2). With a focus on Houses 166 and 169
in the northeastern portion of the site, I then overlaid the houses with polygon feature classes to
delineate their rooms, walls, and related installations. Once the polygons were placed as
designated spatial zones, I added a point feature class to denote where the seal impressions were
found (Fig. 3). Each stratigraphic layer, or stratum, received a separate point feature class so that
impressions found in different layers were not mixed and the results could be clearly seen.
According to archaeological reports, the seal impressions were found in strata B through I,
with Stratum I dating the earliest, estimated around Dynasty 6, and Stratum B dating the latest,
estimated around the Second Intermediate Period through the New Kingdom. More information
on the stratigraphy of the site can be found in Chapter 4.

I noted several trends in the concentration of seal impressions in certain areas after the
vector data had been plotted, including their proximity to doorways, fireplaces and other
installations, and walls (Fig. 4). I was also able to observe changes in concentration over time
since the point feature classes were separated by strata. Most important for my analysis was the

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17 Andreas Forrer, “GIS Gains Altitude in Archaeology,” Esri (blog), February 1, 2019,
concentration of seal impressions in stratum E, in H169. H169 contained the most seal impressions of the corpus, and it was also the most thoroughly excavated by the Realities of Life project. As such, the locations where seal impressions clustered indicate potential function and date. This is complicated by whether the find context is primary or secondary, but tracking spatial patterns is the first step in this analysis.

Once the analyses in ArcGIS were complete, I used ArcGIS Dashboards to present my findings. ArcGIS Dashboards are just one way to simplify spatial data for public use. For example, I can illustrate the different spaces in H166 and H169, the proveniences of the seal impressions, and the spatial and diachronic patterns I identified, in addition to images of the site and the impressions themselves. ArcGIS is an incredible tool for archaeologists for its capability to share data with the public in a way that is easily understandable to those who are not well-versed in archaeology or GIS. Similarly, I want my findings to be accessible to the general public in addition to those who are professionally familiar with Egyptian archaeology.

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18 Martin Sählhof et al., “Report on the Excavations and Site Management at Elephantine by the German Archaeological Institute and the Swiss Institute from Autumn 2019 to Spring 2020” (German Archaeological Institute and the Swiss Institute, 2020), 13.
CHAPTER 3 – SEAL IMPRESSION TYPOLOGY

Historical Typology

William Ward and Olga Tufnell’s seal impression design typology as laid out in Scarab Seals I and Scarab Seals II will form the basis for my categorization of the Elephantine corpus.\(^1\) As such, I will explain their typology in more depth and their conclusions regarding whether diachronic design classes can inform us on dates, specific progress, and use of scarab seals. Additionally, I will explain my classification of the Elephantine corpus and what that may tell us about the use of sealing practices at Elephantine during the Middle Kingdom. Finally, I will discuss the implications of the find locations of the seal impressions from this corpus.

In Scarab Seals I, Ward asserted that a study of scarab seals for the purposes of establishing a relatively reliable chronological sequence must use a majority of seals from a known archaeological context, since the provenience of the artifacts greatly assists in the dating thereof. For this reason, Ward used a majority of “excavated material from reasonably well-dated contexts,” and minimized his use of supplementary materials from less verifiable contexts and separated the latter from the former so that they could be easily distinguished during analysis.\(^2\) The supplementary series proved to be a useful tool in analyzing stylistic patterns and provided reference for impressions that may have been only fragmentary in the excavated context, despite the fact that it cannot be relied upon for dating purposes.\(^3\)

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1 Ward, Scarab Seals; Tufnell, Scarab Seals.

2 Ward, Scarab Seals, 1:4.

3 Put more simply, seals and seal impressions are often fragmentary or otherwise obscured due to age. If there is a fragmentary impression that is hard to identify on its own, but we can only match to a more complete impression from the supplementary series, we can more effectively analyze its context and use than if we only had the fragmentary impression.
Ward established an absolute chronology divided into four periods within which to place scarab seals to order them and identify and analyze diachronic change. His periods as published in *Scarab Seals* I are dated as follows:⁴

- **Period One** – late Dynasty 6 through early Dynasty 11 (ca. 2200-2125 BCE)
- **Period Two** – early Dynasty 11 to mid-Dynasty 11 (ca. 2150-2075 BCE)
- **Period Three** – mid-Dynasty 11 to late Dynasty 11 (ca. 2100-2025 BCE)
- **Period Four** – late Dynasty 11 to early Dynasty 12 (ca. 2050-1975 BCE)

As discussed earlier, Ward’s dating in this publication is largely considered to be too early. The publication of *Scarab Seals* III in 1994 by William Ward and William Dever was an attempt to correct these chronological problems and adopted Olga Tufnell’s methodology of basing dates on Canaanite chronology.⁵ For ease of understanding, as discussed below, I will not be using Ward’s periods in either publication to describe the scarab chronology, but rather the time periods he was referring to.

In *Scarab Seals* II, which covers scarab seals during the second millennium BCE, Olga Tufnell chose to organize the chronology through comparison to Levantine and reliable Egyptian sites; at the time in the early 1980’s, she considered Levantine sites to have a more reliable chronology because most Middle Kingdom sites did not have reliable excavation records.⁶ Her chronology is based on pottery found at each site – Byblos (Montet Jar), Ruweise (Tomb 66), Megiddo, Jericho, Kahun, Uronarti, Tell Fara, and Tell el-ʿAjjul – and her analysis seeks to

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provide a sequence of visible changes over time in scarab seals more than a sequence which can be explicitly tied to established time periods. While this was an effective and potentially more precise system than Ward’s periods in *Scarab Seals* I at its publication, it creates a confusing system for anyone who is not familiar with the published material on the sites she references, particularly now when records for Middle Egyptian sites are more reliable and abundant. So, for the sake of brevity and clarity in the scope of the present work, I will refer to anything dated after Ward’s Period Four by the appropriate dynasty or a general period such as “the late Middle Kingdom”.

There are eleven broad design classes for seal impressions, as defined by Ward and Tufnell in *Scarab Seals* vols. 1 and 2. They serve to classify impressions by their basic forms and potential meanings. Per my analysis, only design classes 1 through 6 and 11 are relevant here for my purposes, and so I will not discuss the other classes. Additionally, since many seal impression designs have elements which overlap between two or more design classes, the categorizations presented later in this chapter will be based on the dominant motif.

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8 Significant work has been done at sites including Elephantine, South Abydos, and Tell Edfu after Tufnell’s 1984 publication, which might have changed her thoughts on the reliability of Egyptian archaeology surrounding the Middle Kingdom specifically; though some of these sites have found seals or impressions in secondary contexts, they nonetheless add substantially to the total corpus of Middle Kingdom seals and seal impressions that did not exist when Tufnell was writing *Scarab Seals* II. See von Pilgrim, *Elephantine XVIII*; Josef Wegner, “Excavations at the Town of Enduring-Are-the-Places-of-Khakaure-Maa-Kheru-in-Abydos A Preliminary Report on the 1994 and 1997 Seasons,” *Journal of the American Research Center in Egypt* 35 (April 1998): 1–44; Ben-Tor, *Scarabs, Chronology, and Interconnections*, 5–9; Wegner, *The Mortuary Temple of Senwosret III at Abydos*; Sählhof et al., “DAI Report, 2019-2020.”
Class 1 – Linear Patterns

Class 1 patterns are some of the earliest scarab seal impression types, and most types disappear before the Middle Kingdom. Two subcategories of Class 1 patterns appear in the present corpus:

1B – Geometric patterns
1E – Floral designs

Geometric patterns (1B) appear prominently in the late Old Kingdom and early Intermediate Period but disappear by mid-Dynasty 11. They were introduced alongside scarab seals, and for that reason were probably made for scarab seal impressions, and they were largely unique, and thus cannot be categorized any more specifically. The floral designs (1E) appear rarely in the late Old Kingdom, unlike most other Class 1 subclasses, but they experienced an explosion of popularity in the early or mid-First Intermediate Period. Ward characterizes 1E as a standard design lasting through the Middle Kingdom and into the Second Intermediate Period, and the archaeological evidence supports this characterization. They most often include symmetrically arranged papyrus plant and lotus motifs, though the latter in far fewer numbers than the former.

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10 The Class 1 seal impressions can be found in the catalogue on p. 87-88. For Class 1 subclasses, see Tufnell, *Scarab Seals*, 2:29.
Class 2 – Scrolls and Spirals

Class 2 specifically covers impressions in which scroll or spiral motifs dominate the impression design.\textsuperscript{15} Scrolls and spirals are used in many impression designs but are not always the dominant characteristic; this category was not meant to include every design which includes scrolls and/or spirals. Class 7, which covers scroll borders, may be easily confused with Class 2. For that reason, I have combined all seal impressions from the current corpus which may fall into either or both classes into Class 2. Class 2 is divided into two main subcategories:\textsuperscript{16}

2A – Unlinked scrolls and spirals; Z-, S-, and C-scrolls
2B – Interlocking scrolls and spirals

Basic scroll patterns first appear in the early First Intermediate Period, often alongside floral motifs.\textsuperscript{17} Mid-to-late Dynasty 11 examples saw an increase in complexity, specifically in attempts at interlocking patterns of S- and Z-scrolls. The early Middle Kingdom versions of this pattern continued this trend and included grouping and interlocking scrolls and spirals.\textsuperscript{18} Due to this observable progression in style, Class 2A is generally, but not always, associated with earlier dates than Class 2B.\textsuperscript{19}

\textsuperscript{15} Ward, \textit{Scarab Seals}, 1:54.

\textsuperscript{16} The Class 2 seal impressions can be found in the catalogue, p. 89-96 (Class 2A, p. 91-92; Class 2B, p. 93-96). For Class 2 subclasses, see Tufnell, \textit{Scarab Seals}, 2:29.

\textsuperscript{17} Ward, \textit{Scarab Seals}, 1:54.

\textsuperscript{18} Ward, \textit{Scarab Seals}, 1:55.

Class 3 – Egyptian signs and symbols

As with Class 2, Class 3 is defined by amuletic Egyptian signs and symbols being the dominant element of seal design, as opposed to a subsidiary element within a larger design.\(^{20}\) Class 3 first appears in the late Old Kingdom but is much more common by the early First Intermediate Period and beyond.\(^{21}\) Some of the most common signs which appear on these impressions are ‘\(nh\), \(nfr\), and \(sm\)', and they often appear in pairs or as a large centerpiece of the design.\(^{22}\) The subdivisions of Class 3 which appear in the present corpus are as follows:\(^{23}\)

3A1 – Sign of union, \(sm\_tswy\)
3A4 – Horus hawk with \(nfr\) and other signs
3B3 – Red crowns
3B7 – Forepart of lion (\(hst\))

Tufnell theorizes that Class 3A1 should only appear “at times when union between the Two Lands was strong,” such as at the beginning of the Middle Kingdom during Nebhepetre Mentuhotep II’s reign (c. 2060-2010 BCE) and the reign of Senwosret I (1971-1928 BCE).\(^{24}\) Ben-Tor adds that this design is found in “all published late Middle Kingdom excavated groups and its popularity is attested in the large corpora at Kahun, Uronarti, and Elephantine.” Based on


\(^{22}\) Ward, *Scarab Seals*, 1:56 and pls. XI-XIII.

\(^{23}\) The Class 3 seal impressions can be found in the catalogue, p. 95-100 (subclassed Class 3 impressions, p. 99-100). For Class 3 subclasses, see Tufnell, *Scarab Seals*, 2:29.

\(^{24}\) Tufnell, *Scarab Seals*, 2:117. It should be noted that Tufnell accompanied the reigns of these kings she suggested with dates that were approximately 50 years too early in both cases. The more widely accepted date for Nebhepetre Mentuhotep II’s reign is ca. 2009-1959 BCE, and for Senwosret I, 1920-1875 BCE. See Hornung, Krauss, and Warburton, *HdO*, 83:491.
this, it is clear that the *sm2-tswy* design shows up across Middle Kingdom contexts and is very likely to appear in late Middle Kingdom contexts as in Kahun, Uronarti, and Elephantine.

Class 3A4 (fig. 5A) is an originally Canaanite design which post-dates the Middle Kingdom in Egypt, i.e., this class likely dates well into the Second Intermediate Period. Class 3B3 (fig. 5B) is further divided into five sub-groups largely regarding the positioning of the red crowns in the design. The singular example present in this corpus is most likely 3B3b, red crowns addorsed (that is, facing away from each other) or 3B3e, red crowns presented *tête bêche*, which means the crowns are either addorsed or confronted but are vertically opposites (one is “right-side up,” the other is “upside-down”). Both types first appear in the late Middle Kingdom and appear, although in very small numbers, at Kahun and Uronarti.

Class 3B7 (fig. 6B) is a very popular late Middle Kingdom design which usually overlaps with other categories of Class 3. The *hst* lions (F4) are usually displayed in symmetric opposition, flanking a central hieroglyph such as the *wḏ* (M13) or *hs* (M16) plants. Since this subclass was often found on royal-name scarabs for Sesostris II and III, and Amenemhat III, Tufnell suggested that the type became scarce after the latter’s name declined in use near the end

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27 Ben-Tor, *Scarabs, Chronology, and Interconnections*, 18–19.

28 Ben-Tor, *Scarabs, Chronology, and Interconnections*, 20.

29 Ben-Tor, *Scarabs, Chronology, and Interconnections*, pls. 5 & 7-11.
of Dynasty 12. Its appearance in reliable Dynasty 13 contexts such as Uronarti contradicts her theory directly.

Class 4 – Concentric Circles

Concentric circles – defined as one or more circles of different sizes which have the same center point – are easy to confuse with Class 2 scrolls and spirals when the state of preservation is poor, but they are a distinct design. Ward asserts that Class 4 was in use as early as mid-Dynasty 11 based on his dating of the Montet Jar seals at Byblos, from which most of his examples originate. They suffered a decline in Dynasty 12 and then became more popular in the Second Intermediate Period. Concentric circles are still attested in designs from late Middle Kingdom sites such as Kahun, Uronarti, Elephantine, and el-Lisht, but they are either early Middle Kingdom designs or secondary motifs. Thus, Class 4 designs are generally indicative of early Middle Kingdom or Second Intermediate Period contexts and designs.

Class 5 – Cross Patterns

Class 5 is rarely represented before the Twelfth Dynasty, with Ward placing their origin in mid-Dynasty 11, and gaining popularity in late Dynasty 11. Cross patterns, as the name suggests, are dominated by a central cross-shape, usually made up of plants or volutes, and later,

30 This theory was posited as a way to explain the lack of Class 3B7 in Tufnell’s late Palestinian series. Tufnell, Scarab Seals, 2:120–21; Ben-Tor, Scarabs, Chronology, and Interconnections, 20.

31 Ben-Tor, Scarabs, Chronology, and Interconnections, 20.


33 Tufnell, Scarab Seals, 2:124–25; Ben-Tor, Scarabs, Chronology, and Interconnections, 22–23.

34 The Class 4 seal impressions can be found in the catalogue, p. 101-102.

35 Ward, Scarab Seals, 1:39 and 57.
concentric circles and spirals; Ward and Tufnell theorized that the inclusion of these particular motifs indicate that cross patterns were created after them.  

Similarly to Class 2, one indication of late Middle Kingdom Class 5 designs is an increase in complexity of the design. There are attested examples of such designs at Kahun, Uronarti, Mirgissa, el-Lisht, and Elephantine.

Class 6 – Coiled and Woven Patterns

Like Class 5, Class 6 is also rare before the Twelfth Dynasty, but became a staple during the Middle Kingdom. This class constitutes patterns of infinite looping or coiling rope, and it is not commonly found combined with other motifs. Tufnell divided Class 6 into many subcategories, but only the following appear in the present corpus:

6B1 – Convoluted coils

6C3 – Encompassed, central cable

Class 6B1 is first attested in the early Middle Kingdom and, like Classes 2 and 5, becomes more complex over time. It is popular in the late Middle Kingdom and appears at Uronarti, Kahun,

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37 The Class 5 seal impressions can be found in the catalogue, p. 101-102. For attested examples of Class 5 at other sites, see Ben-Tor, *Scarabs, Chronology, and Interconnections*, 23.


39 Ben-Tor, *Scarabs, Chronology, and Interconnections*, 25.

40 The Class 6 seal impressions can be found in the catalogue, p. 103-104. For Class 6 subclasses, see Tufnell, *Scarab Seals*, 2:29 and 125–26.

41 Ben-Tor, *Scarabs, Chronology, and Interconnections*, 25.
Elephantine, Mirgissa, and Harageh.\textsuperscript{42} Class 6C3 is less common than 6B1 at late Middle Kingdom sites, but still attested in small numbers.\textsuperscript{43}

Class 11 – Names and Titles

Tufnell designated this final category for impressions which explicitly contain the name and or title(s) of royal or private individuals.\textsuperscript{44} They first appeared on scarab seals during Senwosret III’s reign (c. 1837-1819 BCE), along with a host of other administrative changes which will be discussed later in this work.\textsuperscript{45} Their popularity peaked during late Dynasty 12 and Dynasty 13, experienced a sharp drop off at the end of the Middle Kingdom, and largely disappeared by the beginning of the Second Intermediate Period.\textsuperscript{46} There are fourteen examples of this class in the present corpus.\textsuperscript{47}

Classification of the Elephantine Corpus

Front Types

The Elephantine corpus is made up of 423 seal impressions. Of those, I was only able to typify the designs, or front types, of 121 objects, or 28.6% of the corpus. My ability to identify the impressions was hindered in part due to some photographs being out of focus or not well-

\textsuperscript{42} Ben-Tor, \textit{Scarabs, Chronology, and Interconnections}, 25.

\textsuperscript{43} Ben-Tor, \textit{Scarabs, Chronology, and Interconnections}, 26.

\textsuperscript{44} Tufnell, \textit{Scarab Seals}, 2:140–48.


\textsuperscript{46} Ben-Tor, \textit{Scarabs, Chronology, and Interconnections}, 5–6.

\textsuperscript{47} The Class 11 seal impressions can be found in the catalogue, p. 103-106.
oriented, since I was limited to analyzing the photographs of these objects rather than studying them in person. The distribution among those identified is in Table 1 in the Appendix. The distribution of design classes supports a late Middle Kingdom date for the majority of the seal impressions, which is consistent with the archaeological context in which they were found.

**Broad Patterns**

First, Classes 2 and 3 dominated, at 38.8% and 27.3% of the total identified, respectively. While both classes first appear in Ward’s Period One (late Old Kingdom), they do not become more common until Periods Three and Four (late First Intermediate Period into early Middle Kingdom), as well as in Dynasties 12 and 13. Additionnally, of the forty-seven Class 2 impressions that I was able to classify more specifically, I identified nine as Class 2A and nineteen as Class 2B; this indicates a slant towards the later Middle Kingdom when Class 2B was more popular.

Second, while Class 1 overall is associated more closely with Periods One and Two, the majority of those identified (ten out of thirteen) in this corpus fell into Class 1E. While Class 1E is first attested at the same time as the other Class 1 subcategories, it did not disappear after Period Two, but rather lasted until the Second Intermediate Period. Thus, it can also be associated with a mid-to-late Middle Kingdom date. The other three Class 1 impressions fall into Class 1B, which would have been rare by the Twelfth and Thirteenth Dynasties, but not

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nonexistent. Their presence does not necessarily indicate an earlier date; however, the fact that they appear at all does indicate that a portion of the corpus may date to the early Middle Kingdom. As I will discuss in more detail in Chapter 4, all three impressions assigned to Class 1B were found in fill context, which means they may date earlier to the stratigraphy surrounding them, and their early Middle Kingdom design would support that theory. Similarly, the Class 4 impressions are more likely to indicate an early Middle Kingdom date, and they too were found in fill context. The presence of Classes 5 and 6 strongly support a Twelfth Dynasty date or later. Though they are attested pre-Dynasty 12, they are much more popular during Dynasties 12 and 13, and thus are more likely to date from that period.

Finally, there was a relatively significant number of identified name and title (Class 11) impressions (11.6% of identified, 3.3% of the whole corpus). These cannot date any earlier than Senwosret III’s rule (c. 1837-1819 BCE) in mid-Dynasty 12. I have explored them in more detail below, but they include two whole titles, four partial titles, three identifiable names, and one legible royal name in a cartouche, most likely Neferhotep I, II, or III of the Thirteenth Dynasty.


53 Ben-Tor, *Scarabs, Chronology, and Interconnections*, 7; “Locus Sheets 43501-48502,” Unpublished reports (German Archaeological Institute, 2018).


56 Joshua Roberson identified all of the legible inscriptions for Class 11 while helping me with this project; he had already identified 47501V/m-21 and 47501Y/i-13 (which has a duplicate: 47501S/r-13) in “DAI Report, 2017-2018.”
Discussion of the Legible Impressions

Most of the Class 3 designs include singular, isolated amuletic hieroglyphs, but seal impression 46501P/g-2-9 (duplicated twice, in 47502B/c-13 and 47502B/f-9) (Fig. 6A) contains a slightly more complex epithet: $nfr \, \tilde{snj} \, \text{wsd}$. These glyphs together most likely mean something along the lines of “Perfection – Protection – Flourishing” or “May he be well, be protected, and flourish”. While this seal impression was clearly used for administrative purposes, the present epithet suggests an apotropaic value to the seal itself in addition, in line with the present theory that seals could double as administrative seals and protective amulets.

Seal impression 45502N/k-2-6 (Fig. 6B) is too fragmentary to read, but a few of its signs are visible, allowing us to identify it as the subclass 3B7, forepart of lion ($hst$). This category in its various forms overlaps with most other subclasses in Class 3. In this case, it is too fragmentary to identify any overlaps, except perhaps Class 3B3 if the identification of a red crown in the bottom left (the reversed “L” shape) is accurate. At the top of the impression, a $\text{wsd}$ plant (M13) is flanked by $hst$ lions (F4). Two thin horizontal lines are situated under the $\text{wsd}$ sign, most likely creating a register. Based on the placement of the signs, the full impression likely has three registers. Underneath the register line in the center are two broad signs which most closely resemble the mouth sign for $r$ (D21) and an eye sign with an eyebrow or lid for $jr$ or $m3$ (D4 or D6), respectively; however, given the size and often poor rendering quality of seal impressions, they could be similar-looking signs including N28, X1, et al.

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57 Joshua Roberson aided me with this translation as well as those in Class 11.

58 Ben-Tor, Scarabs, Chronology, and Interconnections, pls. 5 & 7-11.
Of the fourteen identified Class 11 name and title designs, twelve of them have at least partially legible translations. Impression 45502L/q-2-8 (B) (Fig. 7A) contains some form of bird glyph which is only visible by its bottom half, and two reed leaves beneath it. It is too fragmentary to make any attempt at translation.

Impression 47501Z/h-15 (Fig. 7B) bears the red crown (S3) and the seal glyph (S20), spelling htm.tj bj.tj or “seal-bearer of the king”. The šs glyph (V6) is partially visible in the top left corner of the fragment, and a broad sign below S20 might be the ripple n sign (N35). It is unclear what they might add to the inscription.

Impression 46501Q/b-2-9 (Fig. 7C) is topped with a football-shaped symbol which is purely amuletic. The sign on the far left is almost certainly nfr (F35), most likely meaning “good” or “beautiful” here in connection with the sign to its right, the Horus falcon (G5). The Horus falcon stands directly on top of a stylized nb sign (V30). This design is similar to Class 3A4 designs, but it is too fragmentary to categorize as such for certain; as it appears in this corpus, it is still plausible that the seal could be a private name.

Impression 47501S/o-2-7 (Fig. 7D) contained clear signs with an unclear order because of how fragmentary the piece is. It is most likely to read from left to right […] b-y […] [line break] […] smn htp[?]. As it appears, the identification of signs is not definitive enough to translate at present. However, it is likely that it is part of a private individual’s name.

Impression 47501H/t-12 (Fig. 8A) displays a seated falcon god (C2) on top of a shrine, with the determinative glyphs pr (O1) and t (X1) below the shrine glyph. This probably reads as hwt-śt or “temple”, but since the bottom of the impression is not visible, the identity of the

temple is lost. However, there are several local possibilities, including the early Middle Kingdom temples to Satet or Heqaib.

Impression 47501V/m-21 (Fig. 8B) is the only impression in this corpus that has a legible private name and title. The left column has some clear glyphs, but their combination is hard to parse. The glyphs are as follows: […] w-jiw[-?] hkr mr(y). Everything before mr(y) might be a name, but the glyphs grouped at the top above an unidentified quadruped are difficult to define for certain. Two of them are certainly birds and both appear to be the quail chick (G43) which make the phonetic w, but the sign to the left of the lower chick is too damaged to identify. The right column is clearer, and it reads n wr n mdw. w šmōw ūmmj. The mouth sign (D21) above the water glyph with phonetic sound n is likely a phonetic complement of mry at the base of the left column. Thus, the seal reads, “[name]-khekher, beloved of the Great one of the tens of Upper Egypt, Khememi”. The title “Great one of the tens of Upper Egypt,” is attested as early as the early Middle Kingdom and appears to become more popular by the late Middle Kingdom. It is included in the titles in the bureau of the vizier in the text Duties of the Vizier. According to Quirke, it designates “the staff of the vizier, or officials in his bureau”, making it a significant title to find at Elephantine. Additionally, given the content of the sealing, it seems likely that this seal belonged to a woman – namely, a wife or female relative of the named official.


62 After much discussion, Dr. Roberson and I decided the quadruped most resembled the greyhound glyph (E14), which might make the phonetic sound jw, but it is still far too damaged to tell for certain.


64 Quirke, Titles and Bureaux of Egypt, 87.
Khememi. Though uncommon, female names on seal impressions is attested in the Middle Kingdom.\textsuperscript{65}

Impression 47501L/v-5 (Fig. 8C) is whole enough to read on the left side, $mdw\ \dot{s}m\acute{w}$, as part of the title $wr\ mdw\ \dot{s}m\acute{w}$, or “Great one of the tens of Upper Egypt”.\textsuperscript{66} There are signs beneath the title which likely denote the name of this official and include the glyph $k$ (N29), but the full name is too obscure to parse out. The right column of text on this seal impression is harder to read than the left, but the transliteration of the visible signs is $hnw...r\ mry[?]$.\textsuperscript{67}

The left column of impression 47501Z/h-13 (Fig. 8D) begins with what appears to be a shrine glyph, and reads $hwt-[…]\ n\ sbk\ htp\ \dot{r}\ nh\ d.t$, translated as “enclosure[?] of Sobekhotep, may he live eternally”. The right column is more obscure, but starting about halfway down the column (as the upper half is missing), reads $hnw.t-tz\ wy$ or “mistress of the two lands”. The sign above $hnw.t$ is some form of recumbent animal, but it is too damaged to identify. Given the positioning of the glyphs, it is likely that the missing beginning of the right column is a name. Whether it is the name of an official or a goddess who fits the title “mistress of the two lands” is unclear; women who are not goddesses rarely appear on seal impressions, but they are attested in small numbers at Wah-Sut in South Abydos, which is contemporary with Elephantine.\textsuperscript{67}

Impression 47501Z/h-22 (Fig. 9A) is one of the two clear shield impressions in the present corpus, and as such, we know it is likely representative of an institution rather than an

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\textsuperscript{66} Quirke, \textit{Titles and Bureaux of Egypt}, 87.
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\textsuperscript{67} Wegner, “King’s Daughter and Other Women at the Town of Wah-Sut.”
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individual. The angle of the photographs are not directly aimed at the impression, so the following is all that could be read: s-[…] jmj-r pr, translated as “S-[name], overseer of the house / steward […]”. According to Quirke, there are at least nineteen more specific titles this could be based on jmj-r pr, but the rest of the impression is lost.

Impression 47501Z/y-20 (Fig. 9B) is also a shield impression. What is legible is htm-šnw…m […] or “seal of the entourage [of…]”; more specific information as to whose entourage this seal belongs to has been lost. Additionally, there are signs which might be read between the two quail chicks on the second line, including the tentatively identified m sign (Aa 13) but they are difficult to read due to the shine of the photograph.

Impression 47501V/w-18 (Fig. 9C) is the only definite cartouche in this corpus. It contains the clear zr r nfr above the cartouche, and then begins with nfr. The sign below nfr is nearly lost, but the shapes which remain closely resemble the htp altar, and therefore, I find it very likely to be the cartouche of Neferhotep, of which there were three in Dynasty 13.

Finally, impressions 47501S/r-13 and 47501Y/i-13 (Fig. 9D) are clearly stamped ‘nh-hr(w) zr hr(w)-nḥt, or “Ankh-hor/Hor-ankh, son of Hornacht”. Both Ankh-hor and Hor-ankh

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69 Quirke, Titles and Bureaux of Egypt, 144.

70 Khasekhemre Neferhotep I is the most often mentioned in other seal impression corpora, but there is no reason to count out Neferhotep II and Neferhotep III, so I cannot speculate as to which Neferhotep it specifically refers to. See Tufnell, Scarab Seals, 2:356–57 and 366–67.

are attested names, though given the spelling provided in Ranke’s *Die ägyptischen Personennamen*, Ankh-hor seems more likely of the two.\(^{72}\)

Impression Types

The impression type refers to the basic shape of the impression, which informs us what kind of seal was used, which in the Middle Kingdom is overwhelmingly the scaraboid or ovoid type, with a few examples of shield and button seals.\(^{73}\) I identified 202 of 423 impression types and found that scarab impressions made up 97% of those identified (Table 2). Even though button seal impression types are generally associated with an earlier date, in this instance, that tendency is overruled by its archaeological context, which places two out of three button seal impressions in Dynasty 13, with the third in a secondary find context which cannot be definitively dated.\(^{74}\)

The overwhelming presence of scarab impressions in the corpus is a strong indication that Elephantine had a thriving administrative system in place during the Middle Kingdom.\(^{75}\)

Scarab seals became the dominant form of stamp seals by the end of the First Intermediate

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\(^{73}\) I will continue to refer to all oblong shaped impressions as ‘scarab’ shaped, since we know from excavated examples that the overwhelming majority of ovoid seals were scarab seals; even if the impression cannot tell us definitively if it was a scarab seal or not, it is quite likely it was if it is an oblong impression. See Ben-Tor, “Administrative Use,” 290–94; Wegner, “Evolution,” 237–39.

\(^{74}\) Button seals without context may be used to infer an earlier date, since they lost popularity in the Middle Kingdom as opposed to the Old Kingdom and earlier, but they were not by any means obsolete in the Middle Kingdom, and so their appearance in a Middle Kingdom stratum is not unexpected. It is possible the few button impressions I identified are heirloom seals, but there is no substantive evidence for this in this instance, particularly since they were impressed on a sealing, and so functioned presumably in an administrative context.

Period, and their popularity is attested at many Middle Kingdom sites, largely in an administrative context.\textsuperscript{76}

Shield impressions are a common Middle Kingdom impression type used as institutional identification instead of individual identification.\textsuperscript{77} Their presence at Elephantine further solidifies the theory that Elephantine had a strong administrative system in place during the Middle Kingdom. Though they were common, they were not near as proficient as scarab impressions, and so their low numbers at Elephantine are unsurprising.\textsuperscript{78}

**Back Types**

The back types of seal impressions are an identification of what the sealing was impressed onto by analyzing the negative impression.\textsuperscript{79} Sealings were used to seal storage containers and rooms. The most common back types include pegs, papyrus, fabric, wood, wicker, and door bolts.\textsuperscript{80} The distribution in the present corpus is listed in Table 3 in the Appendix.

Pegs were generally used to seal doors or boxes and could be circular or rectangular in shape. Since I did not identify any rectangular pegs, there was no need to differentiate the two,


\textsuperscript{80} Moeller, “Unsealing Tell Edfu,” 119; Wegner, “Evolution,” 239.
and thus any peg back types that I refer to are exclusively the circular kind. Papyrus back types indicate sealed documents, which can be administrative, royal, or private in nature. Fabric back types are thought to belong to storage bags, folded cloth materials, or cloth covers for open-mouthed jars, secured with string. Wood back types generally refer to wooden box seals, different from the peg sealings used on boxes. They likely sealed the seam of a wooden box, rather than sealing the cord to the peg that held it shut as peg sealings do. Wicker back types refer to a more general back type wherein the negative impression consists of several adjacent concave stripes, indicating that the sealing adhered to a basket of some sort. Some scholars differentiate between basket back types and wicker back types, but for the purposes of this paper, I will refer to both as wicker. Finally, door bolt back types refer to sealing sliding door bolts which were permanently affixed to doors leading into a room, a shed, a cabinet, or the like.

I was able to identify 54% of the seal impression back types. Back types are most helpful in informing the robustness of an administrative system, but not in dating the impressions themselves. In the present case, this is especially true since the majority of the corpus originates


86 Wicker back types are different from basket back types by the alignment of the individual pieces weaved together. Wicker generally refers to strictly straight, adjacent pieces, while baskets could be more curved or radiate from a center point. Since they both act as containers and are made of extremely similar material, and for that reason they are also difficult to differentiate by their negative impressions, I decided not to differentiate them here. See Wegner, The Mortuary Temple of Senwosret III at Abydos, 301 for an illustration of the difference.

from secondary find contexts, which means the impressions cannot be definitively tied to the 
structure they were found in, nor the time period of surrounding strata, based on their find spot 
alone. Nevertheless, the distribution of back types present is consistent with some 
contemporary Middle Kingdom sites, where pegs make up the overwhelming number of 
identifiable back types, followed by papyrus and fabric. The importance of back types in 
context of the provenience of the impressions is discussed in further detail in Chapter 4.

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88 See the discussion of find context in Chapter 4.

CHAPTER 4 – ARCHAEOLOGICAL CONTEXT

Terms

Before introducing the archaeological context of the settlement site at Elephantine, it is important to clarify the archaeological terms used in the present work. The most important terms are related to find contexts, and have been divided into two basic groups, use layers and non-use layers:

Use layers

1. **Floor debris** - In most cases, a primary location where objects were intentionally or accidentally discarded and remained in situ until modern excavation.

2. **Fireplace** - A primary location wherein the objects were lost or discarded in an ancient fireplace.

Non-use layers

3. **Fill or pit** - A layer in which the objects were discarded; fill layers can be ancient or modern and most importantly, contains material which was not necessarily produced in the structure in which it is found.

4. **Leveling layer** - A layer in which objects were taken from their primary location to be used as packed fill underneath a floor or the like.

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1. Use layers are *in situ* layers which were part of the active occupation of a structure; objects from use layers can be associated directly with the structure during its occupation; synonymous with primary location.

2. Includes listed contexts: floor, threshold, walking horizon, staircase, etc. “Locus Sheets 43501-48502.”

3. Fireplaces are only use layers/primary locations if the ash layers in which objects are found are undisturbed.

4. Layers which were added to the structure during or after its occupation; objects from non-use layers cannot be associated directly with the structure at all without accompanying evidence, and similarly cannot be assumed to be contemporaneous with the structure; synonymous with secondary location.

5. Includes listed contexts: ash fill, silt fill, fill, silt and ash fill, foundation pit fill, pit fill, magloop (i.e. fallen, broken mudbrick fill), etc. “Locus Sheets 43501-48502.”

6. Includes listed contexts: clay leveling layer, leveling layer, etc. “Locus Sheets 43501-48502.”
Wall - A layer similar to a leveling layer in which the objects were discarded after use and then used (intentionally or not) in the materials used to build a wall.

Demolition layer - A layer in which the objects arrived there by means of destruction or demolition of the building.

Realities of Life

From autumn 2013 to fall 2018, the Realities of Life (RoL) project excavated two adjacent 10 x 10 m trenches in the northwestern section of the preserved settlement site on Elephantine Island. The project was co-directed by Prof. Dr. Stephan Seidlmayer and Dr. diss. Johanna Sigl, and further study of excavated material is currently overseen by Marie-Kristin Schröder. The goals of the project are to combine traditional Egyptological inquiry and methods with experts and methodologies from the sciences, in order to identify and analyze the details of daily life for the settlement at Elephantine Island, with emphasis on three specific topics: food and drink, daily work, and living environment. The project identified four main building layers which date from the First Intermediate Period to the late Middle Kingdom, based on stratigraphic and ceramic analysis.

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7 Includes listed contexts: mudbrick, wall, and plaster. “Locus Sheets 43501-48502.”

8 Includes listed contexts: mudbrick rubble, demolition layer, destruction layer, etc. “Locus Sheets 43501-48502.”


The present corpus consists of 423 seal impressions from the Elephantine settlement site and were excavated between 2013 and 2018. 293 of the 423 seal impressions (69.3%) came from stratum E alone, and of those, 237 originated from the domestic structure H169 (80.9% of stratum E impressions, 56% of the entire corpus). H169 was the focus of the RoL project’s 2015-2018 excavations due to its well-preserved stratigraphy, dating from late Dynasty 12 to Dynasty 13 (c. 1800-1650 BCE) (Fig. 10).12 It is part of a three-building unit, oriented directly west of houses H166 and H73 (Fig. 11).13 H166 and H73 are not as well-preserved as H169, and as such, they are not the primary focus of this study.14 Its occupation period has been divided into three phases, based on the stratigraphic and ceramic analysis: E1 (mid-to-late Dynasty 13), E2 (mid-Dynasty 13), and E3 (late Dynasty 12 to early Dynasty 13).15 It should be noted that the earliest phase (E3) contained structures which were removed during later remodeling of the building, and the latest phase (E1) was damaged by later building activity, and so is poorly preserved.16

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13 These buildings are oriented on a northeast-southwest axis, so for ease of discussion, my use of cardinal directions for the rest of this chapter will be in reference to the buildings’ orientation independent of true (magnetic) north, e.g. “north/northern” will actually be the magnetic northwest (towards the back of the buildings) and so forth.

14 The stratigraphy of H73 was disrupted by earlier excavations of the 20th century, and H166 was only partially in either trench, and so was only partially excavated (and had similar problems of past disruption). Peter Kopp, “Excavations in settlement,” in Arnold et al., “DAI Report, 2013-2014,” 2.


following discussion will focus primarily on E1 and E2 (Dynasty 13), which provided more extant structures to analyze.\textsuperscript{17}

H169 is approximately 150 m\textsuperscript{2}, and it is one of the largest Middle Kingdom houses known from Elephantine.\textsuperscript{18} It contained a central courtyard (R04) and up to nine other rooms.\textsuperscript{19} The layout of H169, along with what is known of H166 and H73, is consistent with the Middle Kingdom domestic building style on Elephantine Island as established by Cornelius von Pilgrim in 1996.\textsuperscript{20} Additionally, there is extensive evidence compiled from 2016 on of several types of production within the house including bread-making, processing raw amethyst for jewelry, and refining red ochre ore for paint, which may suggest that H169 functioned as a workshop in addition to a domestic building.\textsuperscript{21}

In all phases, H169 was likely entered from a public alleyway (running east-west) south of the house.\textsuperscript{22} A visitor would advance north through the corridor (R02), leading into the transit area R03, which opens on the left (west) into the central courtyard, an L-shaped room (R04). In

\textsuperscript{17} Though E1 is poorly preserved for the reasons stated above, its structures still exist, while many in stratum E3 are simply gone. See Plate 3:1 for a model of all three phases at H169.


\textsuperscript{19} Some of the areas which have been designated as “rooms” have been discussed in more recent reports as potentially installations rather than rooms in and of themselves. Sigl, “Of Bugs and Beads,” 11.

\textsuperscript{20} Sigl, “Of Bugs and Beads,” 8. For the characteristics of domestic building style in the Middle Kingdom, see von Pilgrim, Elephantine XVIII, 190–205.


\textsuperscript{22} The layout of R01 is hypothetical since it lays outside the excavation area, but it is likely this was the first transit area a visitor would enter before the corridor, R02, which then led into R04. Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in Sigl et al., “DAI Report, 2016-2017,” 4; Sigl, “Of Bugs and Beads,” 8.
phase E2 (mid-to-late Dynasty 13), R04 contained a main fireplace along its northern wall, Installation 603, and a storage room along the southern wall, R05. Installation 602 was a small storage area enclosed in brick attached to the western wall of R05. Installation 604 was immediately adjacent to Installation 603 and was identified as a granary. In the following phase E1 (late Dynasty 13), R07, located on the north wall of the central court, became the main fireplace, structured as an oven room with a low brick threshold, designed to keep ashes contained. Phase E1 also saw the construction of Installation 492, a rectangular, brick-lined storage area in the northwest corner of R04 which contained goat feces and small pieces of wood. These materials match some of the materials identified in the ash fill of R07 (chaff, wood pieces, and various animal feces), which suggests Installation 492 was used to store fuel for the fireplaces. Additionally, the ash deposits from the fireplace in R07 and the eastern adjacent Installation 499 yielded a high concentration of bread mold sherds in phase E1, indicating that bread was produced in H169, at least during late Dynasty 13. It is likely bread was produced in a

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23 It contained such materials as chaff, bones, and ashes, which led Sigl to suggest that it was re-used for fuel for the adjacent fireplace, Installation 603, similar to the function of Installation 492 in phase E1. Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in Sigl et al., “DAI Report, 2017-2018,” 5; Sigl, “Of Bugs and Beads,” 12.

24 Sigl notes that even though R07 has been called an “oven room” in RoL publications, there is no evidence of structured ovens; rather there is only proof of a fire pit contained within a room used as an oven, hence “oven room”. This contrasts with Cornelius von Pilgrim’s assumption that constructed ovens existed in these rooms (see von Pilgrim, Elephantine XVIII, 35, 45, 132, and 161.). Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in Sigl et al., “DAI Report, 2016-2017,” 4–5; Sigl, “Of Bugs and Beads,” 16–17.

25 Interestingly, Peter Kopp suggests that the combination of materials found in the fireplace remains as identified by Dagmar Fritzsch might mean that “that any kind of household waste was used as fuel.” See Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in Sigl et al., “DAI Report, 2016-2017,” 5–6.

26 Installation 499 seems to have been a secondary fire pit to R07 during phase E1. It directly covered the phase E2 main fireplace, Installation 603. Sigl, “Of Bugs and Beads,” 17.
similar manner in H169 prior to phase E1 as well, but the current archaeological evidence does not currently support this.²⁷

In addition to bread-making, there is evidence of semiprecious stones and ochre ores in R04. Amethyst fragments overwhelmingly dominated the deposits of semiprecious stones in H169, though fragments of rock crystal, agate, and carnelian were also recovered.²⁸ Phase E2 alone yielded 527 amethyst fragments, with the vast majority of them in the southwest quadrant of R04.²⁹ Other deposits in R04 during phase E2 included Installation 604 and the area between Installation 603 and R05.³⁰ It is likely that the amethyst was largely mined from Wadi el-Hudi, a “primary site for amethyst mining from the 11th Dynasty until the end of the Middle Kingdom”³¹

²⁷ Bread mold sherds dating to phase E2 were more often found in fill contexts underneath the main fireplace area (versus primary ash fill left from the fireplace during its use), which suggests that those sherds were brought in from a waste depot outside the house. This, in turn, indicates that these sherds may not have originated from H169 at all (or if they did, from an earlier phase, after which they were dumped and then brought back in for fill), and so cannot be used as evidence of bread-making during this phase. However, given the importance of bread as a staple of nutrition in ancient Egypt, as well as an important economic commodity, it seems likely (but cannot be proven presently based on the archaeological evidence) that bread was produced in H169 throughout its occupation in the Middle Kingdom, though the frequency and amount of bread produced probably varied. For a discussion on the importance of bread-making in daily life and economy of ancient Egypt, see Leslie Anne Warden, “Tying Technology to Social, Economic, and Political Change: The Case of Bread Molds at Elephantine, Egypt,” *AJA* 123, no. 1 (January 2019): 2, 4–5, and 14–15. For stratigraphic and ceramic analysis of the bread molds found at the Elephantine settlement site, see Keramikformationen der 1. Zwischenzeit und des Mittleren Reiches auf Elephantine”; Peter Kopp and Leslie Warden, “Studies on Middle Kingdom Pottery,” in Sigl et al., “DAI Report, 2016-2017,” 9–14.


³⁰ Phase E1 also yielded large amounts of amethyst, but not as many as phase E2. For phase E1 amethyst finds, see Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in Sigl et al., “DAI Report, 2016-2017,” 6.

located approximately 35 km southeast of Aswan, before it was brought to Elephantine for further processing. The amethyst fragments were found in various stages of processing, including several beads, and were found alongside materials including ostrich egg beads, corroded metal, and broken sealing remains. Amethyst was used in ancient Egypt primarily for creating scarabs and jewelry; the former was confirmed by the discovery of an unfinished amethyst scarab seal found in floor debris in R08. Additionally, there is evidence of carnelian processing, most likely for jewelry, in the adjacent houses, H166 and H73. This evidence supports the theory that one of the products of H169 was amethyst jewelry. Furthermore, it seems likely that the amethyst was processed primarily in R04 due to the high concentrations there in use layers, but that is only a preliminary conclusion; for instance, it is possible that the amethyst was not processed in R04, simply discarded there with other production waste. The presence of the fragments concentrating in R04 only proves where they were last discarded in antiquity, not where they were used.

Similarly, red (and some yellow) ochre ore was found in several rooms in H169 and H166, largely in secondary contexts fill contexts. Basem Gehad theorized that the red ochre ore

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was smelted and refined in R04 of H169,\textsuperscript{36} since the central court contained the main fireplace(s) and has been identified by the RoL project as the main production area of H169 during its occupation, especially during Dynasty 13.\textsuperscript{37} Gehad also asserts that the red ochre ore originated from quarries at Wadi el-Hudi or Wadi Abu Agag, in addition to the tools which were used to grind pigments.\textsuperscript{38} The presented evidence thus tentatively adds pigment production to the production activities of H169 during the late Middle Kingdom.

Moving beyond R04, the pathways from the front to the rear sections of H169 changed between phases E2 and E1. In phase E2, a visitor having advanced north through R02 would turn left (west) from R03 into R04, cross to the western edge of R04, then turn right to walk north into R09, which opened to the east to R08.\textsuperscript{39} In phase E1, however, R07 no longer extended across the northern edge of R03 to wall M583 (Fig. 10 and Fig. 11), which inhibited direct access to R08 from R03 during phase E2. Thus, a visitor in late Dynasty 13 could advance north through R02 and R03, and from there would be able to continue north to access R08.\textsuperscript{40} R08 was a secondary courtyard, which contained a staircase along its eastern wall (M583) during phases

\textsuperscript{36} This conclusion is interesting but tentative. Red pigment was found in multiple rooms in the house, including R09 and R08 at the rear of the house, and mostly in fill contexts. See Basem Gehad, “Report on pigment investigation and analysis from DAI excavation mission at the Elephantine Island in 2018 and 2019,” in Sigl et al., “DAI Report, 2018-2019,” 26.


E2 and E1. The staircase likely led to a second story or a roof of the house, but there was no extant evidence of either one. Installation 84 was a storage container located under the stairs, but its contents do not survive. Installations 600 and 601 were likely storage containers during phase E2; they were located almost directly across from each other, with Installation 600 on the west wall of R08 and Installation 601 attached to the western wall of Installation 84 (which itself was attached to the east wall of R08).

R08 contained a set of pegs driven into the floor from one of the older phases of the house. Their placement might indicate the presence of a loom; however, the only attested looms in Egypt during the Middle Kingdom, based on pictorial and archaeological evidence, were horizontal looms, and the arrangement of pegs in R08 would only fit a vertically constructed loom. Vertical looms are attested in Egypt in later periods, but the pegs in R08 support a construction that has “no known contemporary parallels in Egypt.” Therefore, while a loom has not been ruled out as an identification for the function of the pegs, it is not strongly supported given the available archaeological evidence. It has also been hypothesized that the pegs were used to tension a canopy or to aid in leatherworking, but these theories are similarly

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42 Installation 84 exists in phases E2 and E1, contemporary with the staircase. See the previous citation.


unsupported. Furthermore, R08 does not contain the fireplaces or accumulation of deposits which indicate material production that are so prevalent in R04.

Two smaller rooms (R09 and R10) are attached to the western wall of R08, though R10 only appears in phase E1 (Fig. 10). R09 contained a quern emplacement (Instl. 491), an implement used for hand-grinding flour or other materials (such as pigments). Two vessels, which were likely set into the mud floor, were found in R09, and their presence suggests that R09 may have been used for storage. The limits of R10 extend beyond the excavation trench, and thus conclusions on its function cannot be determined at present (Fig. 10).

**Seal Impression Distribution**

Of the 423 seal impressions in the present corpus, 239 of them were found in H169, which all date to stratum E or one of its subdivisions (E1, E2, or E3), contemporary with the house’s occupation period during late Dynasty 12 to Dynasty 13. Of that group, 144, or 60%, of the total found in H169 (and 34% of the entire corpus), were found in R08 (Fig. 12). The next highest concentrations were a group of 32 found in R09, which is the room directly west of R08.

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47 Its floor layers, of which there are more than 15, are also separated by very thin or no fill. Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in Sigl et al., “DAI Report, 2017-2018,” 5; Sigl, “Of Bugs and Beads,” 14.


51 This count includes seal impressions recovered from wall M1967, which is the western wall of R08 shared with R09, and installations 84, 600, 601, and 606, all of which are assigned to at least one of the three occupation levels of H169.
and a group of 25 in R04.\(^{52}\) Seal impressions were also found in small numbers in rooms R02, R03, R05, R07, and R10.\(^{53}\) Seal impressions have not been recovered from R01 and R06, owing to the fact that these rooms are south of the limits of the excavation trench, and so do not have any objects associated with them.

The vast majority of the corpus (69\%) was found in fill (Fig. 13), and that pattern applies even when the scope is narrowed to strata D and E.\(^{54}\) Even though this kind of find context is not usually conducive to interpreting the function of the room they were found in, it still provides important information: namely, consistent with the conclusions of other scholars, that seal impressions were often discarded on the floor upon being broken, and then later gathered together and placed in a secondary context such as a waste deposit.\(^{55}\) Owing to the physical extent of the trenches between 2013 and 2018 which did not extend beyond the houses which were excavated, there are no known waste deposits directly associated with H169, H166, or H73. Thus, the fill and other secondary layers do not have a known source at present, though some preliminary conclusions may be made based on ceramic analysis.\(^{56}\)

\(^{52}\) The count for R09 includes seal impressions recovered from wall M1971, which is the northern wall of R09 shared with R10; the count for R04 includes seal impressions recovered from installations 603 and 604, which are part of H169’s phase E2, and sit along the northern wall of R04, immediately to the west of R07.

\(^{53}\) Rooms R02 and R03 contained 7 seal impressions each, R05 contained 3, R07 contained 17 (including one found in its eastern wall, M1974), and R10 contained 2.

\(^{54}\) Though this is not unexpected considering most of the corpus is made up of impressions from stratum D and stratum E. “Locus Sheets 43501–48502.”


\(^{56}\) There is no way to know what pottery is associated with which house without particularly compelling evidence, but the pottery within fill can still be dated, at least approximately, based on its similarities with pottery found in more secure find contexts, both at Elephantine and at contemporary sites. Peter Kopp published an extensive pottery analysis on the pieces from Elephantine excavated by the RoL project in 2020 with these considerations: see Kopp, “Keramikformationen der 1. Zwischenzeit und des Mittleren Reiches auf Elephantine.”
The content of the fill layers can also provide clues as to their original function. Many of the fill layers from rooms R04 and R07 listed ash as their primary composition, and these layers most often included pottery sherds of varying sizes, animal bones, charcoal, and plant fibers and/or plant fragments in addition to the seal impressions. Based on this information, I can conclude that these fill layers were either fireplaces themselves, as in the case of R07 which was established by the RoL project to be an oven room, or that they must have originated from a fireplace whose ash was cleaned out at one point in time and re-used later as fill. Both of these characterizations are supported by the fact that there have been a number of seal impressions, albeit small, found in identified fireplaces in H169, such as those in R04 and R07, but also in R08 and R09. This suggests that fireplaces were used for disposal of small items rather than simply leaving them on the floor.

The next largest find context was floor debris, or objects found on the ancient floor of a building or installation. Floor debris made up about 16% of the total corpus (17% of impressions from strata D and E) and suggests a primary discard location; more simply put, once the sealings were broken, they fell onto the floor and were left there. Rooms R02, R03, R08, R09, and R10 all contain at least one instance of an impression found in floor debris, which may be indicative of sealings being used throughout the house during its occupation, but it is also possible seal

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57 “Locus Sheets 43501-48502.”


59 R08 contained seven seal impressions listed as originating from a fireplace, of which there were at least three lining R08’s southern wall. “Locus Sheets 43501-48502”; Peter Kopp, “Excavations in the Middle Kingdom settlement of Elephantine,” in “DAI Report, 2016-2017,” 4–5.

impressions were swept into certain areas with which they are not associated originally.\textsuperscript{61}

However, rooms R08 and R09 have higher concentrations of impressions found in floor debris (Fig. 14).\textsuperscript{62} Particularly with R08, this suggests that sealings were used more frequently in those rooms.

Room R08 poses an interesting dilemma in that its fill layers between floors were notably less robust than room R04, as noted above, and yet it contained a significantly higher number of seal impressions in its fill – 98 to 23 (Fig. 14). There are a number of reasons this could be, and they would all be purely hypothetical given the available evidence. However, it might be significant that almost half (41) of the impressions found in fill in R08 come from one spot, 47501Z/h. The excavator, F. Lozada, described the “stone step and fill” layer:

\begin{quote}
This feature was composed of one sandstone placed at the entrance way of room R10 and some soil beneath it that served as a lifting layer for the step. The fill layer was loosely packed brown loam with many pottery sherds and some plant fragments. The sandstone measured 84 cm in length, 36 cm in width, and 9 cm in height.\textsuperscript{63}
\end{quote}

Given this information, there is a possibility that the fill provided under this stone step was gathered from within the house, since it did not require as large an amount of fill as filling a

\begin{footnotes}
\item[61] “Locus Sheets 43501-48502.”
\item[62] This might seem a foregone conclusion because R08 and R09 also had the highest number of seal impressions of all the rooms in H169, but notably, R04, which had the third largest number of seal impressions, contained no impressions which were found on the floor, and rooms with fewer seal impressions did (R02, R03, R10), which suggests the high concentrations in R08 and R09 is not necessarily a result of bulk. All of that being said, there is plenty of room for human error in identifying the find context, and that should be taken into consideration as well.
\item[63] The excavator listed the location as the entranceway to R10 but based on the sketches provided on the locus sheet as well as the drawings of phase E1 as done by Peter Kopp, it seems as though Lozada meant the entranceway to R09 from R08. Additionally, there is no entranceway to R10 directly from R08, and the latter was listed as ‘Room’. “Locus Sheets 47501-47502,” Unpublished reports (German Archaeological Institute, 2018).
\end{footnotes}
whole floor layer would. This would be supported by the fact that R08 had a high concentration of seal impressions in the floor debris relative to the rest of the house (with R09 having the second highest). It is also interesting to note that 15 of the 41 seal impressions with this provenience have been identified across various design classes, including Design Class 1E, 2, 3, 5, 6, and 11. Notably, this includes three at least partially legible name and title sealings.\(^64\) However, this does not support my tentative theory, and overall, the present data does not strongly support it.

The only room which contained impressions with find contexts categorized as a demolition layer is R08, with four seal impressions from said context.\(^65\) This might indicate the collapse of the level or ceiling above R08, but there is too little evidence to explore this find context very deeply.\(^66\) Impressions from stratum E were also found in walls M1967 (bordering R09 and R08), M1971 (bordering R09 and R10), and M1974 (bordering R07 and R03) (see Fig. 10).\(^67\) As with their presence in leveling layers, this most likely indicates that after the seal impressions were discarded to a secondary location with other materials, they may have been regathered and used in the materials to build the wall.\(^68\)

\(^64\) The classed sealings are as follows: 47501Z/h-11 through 47501Z/h-24 and 47501Z/h-29. The three Class 11 sealings are 47501Z/h-13, 47501Z/h-15, and 47501Z/h-22, found on pages 103 and 105 in the catalogue. The titles include: “[...-enclosure?] of Sobekhotep, may he live eternally | [...] mistress of the two lands” (47501Z/h-13); “seal-bearer of the king” (47501Z/h-15); and “S[…], overseer of the house” (47501Z/h-22). While interesting, this does not provide very much information in the way of sourcing the fill for 47501Z/h; if anything, it undermines it, since high-ranking titles seem out of place in this typical domestic/small-scale workshop setting.

\(^65\) “Locus Sheets 43501-48502.”


\(^67\) “Locus Sheets 43501-48502.”

\(^68\) Cornelius von Pilgrim discusses this practice in Elephantine XVIII, 261–63.
The back types of the seal impressions can only be informative when they are both correctly identified and found in a use-layer. In H169, only 22 sealings meet that criteria, with the vast majority of them originating from floor debris R08. Considering the very small sample size, this brief discussion should be taken as a preliminary analysis rather than any overarching statement on the kinds of goods and containers found in H169 during its occupation. First, the sealings in R02 and R09 in this category total three, all found in floor debris. It is possible, given the function of R02 as a corridor leading into the larger areas of H169 that these sealings broke off of their containers as goods were being brought into the house, but it is equally likely that they were swept or otherwise moved to that area by mistake. For R09, it is more likely that the impression may have broken off its storage container accidentally since R09 has been tentatively designated as a storage area as discussed above, but it is not unlikely that this sealing was also discarded there accidentally, as a result of sweeping R08 or for another reason. The two seal impressions from R02 and one from R09 were identified as peg back types; given the structure of H169, it seems more likely that they would have originated from wooden boxes rather than doors.

The 19 seal impressions from R08 diverge into two find context groups: fireplaces and floor debris. As discussed above, it seems likely that fireplaces were used to discard small household waste items such as broken seal impressions. All four of the seal impressions discarded into fireplaces in R08 were identified as peg back types, again indicating that they originally sealed a wooden box. Three of the floor debris sealings from R08 were identified as papyrus back types, which most likely indicates letters or documents. Since the impressions of these sealings were not clear, the identity and status of the sealers is unknown, but it is possible that they were either private or administrative. The other twelve seal impressions from floor
debris in R08 were identified as peg back types.\textsuperscript{69} One of these sealings (47501Z/y-20) was a shield impression. However, the impression is fragmentary and thus only the text \textit{htm-šnw} ("seal of the entourage…") survives, which is not particularly helpful for analysis purposes.\textsuperscript{70}

\textbf{Conclusion}

The present corpus of seal impressions from Elephantine largely derives from H169, which was occupied from late Dynasty 12 to Dynasty 13. While there is little evidence of \textit{living} in H169,\textsuperscript{71} the materials and structures found in the central courtyard, R04, suggest that the house was active in the Middle Kingdom, especially during Dynasty 13, in the production of amethyst jewelry, bread, red pigment, and perhaps more. The secondary court in the back of the house, R08, lacked these production materials and structures, but had the largest concentration of seal impressions by far. Unfortunately, the sealings overwhelmingly originated from a fill context, which greatly complicates any archaeological analysis of its function. However, the high concentration of seal impressions in floor debris in R08 may indicate that seal impressions were freshly broken from imported or locally transported raw goods in R08, where the impressions were saved, recorded, and then discarded, while the goods themselves were moved to R04 for processing. Finally, while too few of the seal impression back types were positively identified to make any overarching theory, it is still worth noting that the bulk of the identified back types found in use-layers were peg or papyrus back types.

\textsuperscript{69} It should be taken into consideration that peg back types were the easiest for this author to identify, and thus are likely to be identified more frequently than the other types in the present study.

\textsuperscript{70} Further discussion of this seal impression can be found in Chapter 3, in the discussion of figure 5C.

\textsuperscript{71} Namely, the RoL team has yet to find evidence of bedrooms, bathrooms, or other such necessities required or living in a given structure.
CHAPTER 5 - CONCLUSION

The present work has analyzed the corpus of 423 seal impressions from Elephantine Island by classifying each front, back, and impression type where possible, identifying provenience, date, and function, and placing the corpus in a broader geographic and cultural context of sealing practices in Middle Kingdom Egypt. All these facts together strongly support a late Middle Kingdom date (mid-Dynasty 12 through Dynasty 13) for most of the corpus, with a few outliers likely to date slightly earlier (early Dynasty 12). The evidence from the seal impression corpus therefore is consistent with the dating of strata D - E, as established through pottery analysis done by Peter Kopp and Leslie Warden. Additionally, the find context of the corpus was largely secondary fill contexts, but rooms R08 and R09 of H169 had high concentrations of seal impressions in primary contexts (floor debris), which suggested that seal impressions were most often broken and discarded in those rooms.

Of the 121 seal impressions which were identified according to Ward and Tufnell’s typology, 66.1% belong to Class 2 (scrolls and spirals) or Class 3 (Egyptian signs and symbols).

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2 “Locus Sheets 43501-48502.”

3 For design classes 2 and 3, see Ward, Scarab Seals, 1:47–64; Tufnell, Scarab Seals, 2:28–31 and 115–48.
Classes 1, 4, 5, 6, and 11 also appear, but in much smaller numbers. This is a broadly typical
distribution for late Middle Kingdom administrative sites. The $\text{sm3-t3wy}$, motif (3A1) appears
three times, red crowns either addorsed (3B3b) – that is to say, symmetrically opposed back-to-
back – or tête bêche (3B3e) appear once, the Horus hawk with $\zeta n\dot{n}$ (3A4) appears once, and the
symmetrically opposed $\text{hst}$ lions flanking a $\text{w3d}$ plant (3B7) appears once. Each of those motifs is
attested throughout the Middle Kingdom, but based on their find context most likely date to the
late Middle Kingdom. Next, the concentric circle designs (Class 4) are more likely to be early
Middle Kingdom, as they are rare during the late Middle Kingdom as dominant motif, although
they do occur as secondary motifs from that time, at sites such as Uronarti. Considering that
they were found in fill context from stratum E at Elephantine and that the design is likely to
predate stratum E (late Dynasty 12 through Dynasty 13), it seems probable that the concentric
circle exemplars in fact date to the earlier Middle Kingdom and were discarded at a nearby waste

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4 For contemporary examples of Middle Kingdom administrative sites, see Nadine Moeller and Gregory Marouard,
“Discussion of Late Middle Kingdom and Early Second Intermediate Period History and Chronology in Relation to
the Khayan Sealings from Tell Edfu,” A&L 21 (2011): 105–6; Olga Tufnell, “Seal Impressions from Kahun Town
Temple of Senwosret III at Abydos, 305.

5 “Locus Sheets 43501-48502,” Unpublished reports (German Archaeological Institute, 2018). For dating seals with
both design pattern and archaeological context in mind, see Ward, Scarab Seals, pls. XI-XIII; Tufnell, “Kahun
Town and Uronarti Fort,” 71–72; Tufnell, Scarab Seals, 2:117, 120; Daphna Ben-Tor, Scarabs, Chronology, and
Interconnections: Egypt and Palestine in the Second Intermediate Period, OBO, Ser. Arch. 27 (Fribourg: Academic

6 Ward, Scarab Seals, pl. XV; Ben-Tor, Scarabs, Chronology, and Interconnections, 22–23.

7 For design pattern chronology, see Ward, Scarab Seals, pl. XV; Ben-Tor, Scarabs, Chronology, and
Interconnections, 22–23.
site, to be used later used as fill. The Class 5 and 6 impressions are widely attested late Middle Kingdom designs, and occur in late Middle Kingdom stratum E, as would be expected.

Class 11 (names and titles) scarab impressions, by their very existence, establish a solid *terminus post quem* for their creation and use: significant administrative changes under Senwosret III (ca. 1837–1819) directly resulted in the earliest mass-production and use of private name and title scarab seal impressions. Thus, these impressions cannot date earlier than Senwosret III’s reign in later Dynasty 12. Of the fourteen name and title seal impressions identified here, four of them were found in stratum D, though in a secondary find context, while the others were found in stratum E. These find contexts support the late Middle Kingdom date for the noted sealings found in either stratum. Furthermore, a few of the Class 11 impressions were legible, and included several noteworthy titles such as “seal-bearer of the

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8 For other examples of waste disposal at sites contemporary with Elephantine, see Reisner, “Uronarti Fort,” 26; Smith, “Middle Kingdom Frontier,” 206.

9 Objects 46501C/a-2-9, 47501H/v-8, and 47501Z/h-11 are the only exceptions, and mainly because they are too fragmentary to compare to other corpora and find matches which may inform what iteration of the design class they are. See “Locus Sheets 43501-48502.” For Class 5 and 6 dating, see Ben-Tor, *Scarabs, Chronology, and Interconnections*, 23–26.


12 These four (47501S/r-13, 47501L/v-5, 46501Q/b-2-9, and 46501O/c-2-6) were found in fill layers, meaning they may date earlier than stratum D (late Dynasty 13 to Second Intermediate Period). Since they cannot date any earlier than Senwosret III, they must originate from stratum E (late Dynasty 12 to late Dynasty 13) and thus still fit in the late Middle Kingdom context.

13 45502L/q-2-8 (B) did not have a stratum listed on its locus sheet. However, since it was found during the spring 2016 season (before strata D and E were excavated outside of a few lone exceptions) and in secondary contexts, it can be said that it certainly does not predate Senwosret III, although beyond that, it is hard to analyze this impression much further in terms of dating.

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king”\textsuperscript{14} and “great one of the tens of Upper Egypt”\textsuperscript{15}. These titles are well-attested during the period in question.\textsuperscript{16} Additionally, one legible cartouche was identified as Neferhotep\textsuperscript{17} – one of the three known kings named Neferhotep from Dynasty 13 – providing a \textit{terminus post quem} for that impression.\textsuperscript{18}

While the design classes for seal impressions are helpful for dating purposes, most are not sufficiently diagnostic to be used without additional, supporting evidence. Well-documented archaeological data is a more reliable tool for dating purposes, as well as for determining potential function based on provenience and surrounding context. Accordingly, I have used information on the stratigraphy, find context, and surrounding artifacts to determine likely dates and function for much of the corpus.

69.3\% of the corpus is attributed to stratum E (late Dynasty 12 to Dynasty 13), and all impressions from stratum E with identified proveniences originate from H166 or H169.\textsuperscript{19} Of that group, I focused my analysis on the group specifically found in H169, which made up 82\% of the stratum E group.\textsuperscript{20} Additionally, H169 was the explicit focus of the Realities of Life (RoL)

\textsuperscript{14} Identified on seal impression 47501Z/h-15 by Joshua Roberson. The transliteration is $htm.tj\ bj.tj$ and the inscription can be found in fig. 7B.

\textsuperscript{15} Identified on seal impressions 47501V/m-2 and 47501L/v-5 by Joshua Roberson. The transliteration for the title is $wr\ mdw\ \overset{\circ}{smw}$ and the inscriptions can be found in figs. 8B and 8C.

\textsuperscript{16} Quirke, \textit{Titles and Bureaux of Egypt}, 12 and 87.

\textsuperscript{17} Identified on seal impression 47501V/w-18 by Joshua Roberson. The transliteration is $z\overset{\circ}{nfr-htp}$ and the inscription can be found in fig. 9C.

\textsuperscript{18} Hornung, Krauss, and Warburton, HdO, 83:492.

\textsuperscript{19} This excludes 4 impressions which had a stratum but no provenience listed on the sheet. “Locus Sheets 43501-48502.”

\textsuperscript{20} “Locus Sheets 43501-48502.”
project between 2015 and 2018. H169 was occupied from late Dynasty 12 through Dynasty 13 (ca. 1800-1650 BCE) and contained up to ten rooms in its youngest phase E1, numbered R01 to R10. H169 was the site of several production activities, including bread-making, processing raw amethyst for jewelry, and smelting and refining red ochre ore to make pigment. These activities took place in their various stages in rooms R04, R08, and R09. Incidentally, these rooms also contain the highest concentrations of seal impressions. Rooms R04 and R08 are the largest in H169, with the former being a “dirty,” L-shaped courtyard and the latter being a “clean,” courtyard with a staircase that probably led to a roof or second story. Based on these characteristics, the distribution of artifacts in each room, and the sizes of the fireplaces in R04

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24 “Locus Sheets 43501-48502.” Also see figs. 4 and 12.


and R08, it is probable that R04 was the main production room while R08 served to open, sort, and distribute goods coming into the house.

There is evidence from H169 that some seal impressions (24 in total) were discarded in a fireplace, both in R07 (an extension of R04) and R08; others (32 in total) were found in ash fill, alongside pottery sherds, plant fragments, and pieces of charcoal, indicating waste from a fire pit. From this, I have concluded that one disposal method was tossing broken impressions into the fireplace, where they would be removed with the rest of the ash and debris later and reused as fill. I would like to explore this in more depth in future studies to see if fireplaces were intended as waste deposits for small household items, or if there was another reason we find so many such items in fireplaces and ash fill.

While the majority of seal impressions were found in fill contexts, R08 and R09 contained a high number of impressions found in floor debris relative to other rooms in the house (Fig. 15). This stands in contrast to R04 in which no seal impressions were found in floor debris. This distribution of seal impressions in use layers in H169 suggests that seal impressions were broken more often in R08 and R09 than in R04 or any other room in the house during its occupation. Since I have established that the bulk of production took place in R04, it seems likely that raw materials were taken to R08 as they first arrived at the house to be recorded before being distributed to their appropriate stations, whether that be storage in R09 or R05, or

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27 “Locus Sheets 43501-48502.”

28 Of the 144 impressions in R08, 32 (22%) were from floor debris. Of the 32 impressions found in R09, 10 (31%) were from floor debris. Rooms R01 and R02 also had high percentages of floor debris impressions (42% and 57% respectively) but both rooms had only seven impressions each, and thus this information is less relevant. Additionally, these rooms were likely not activity rooms, but hallways. Similarly, R10 contained 50% floor debris impressions, but only two impressions were attributed to R10. “Locus Sheets 43501-48502.”

29 “Locus Sheets 43501-48502.”
immediate production in R04. Too few back types with primary find contexts were identified to make any definitive claims regarding the trends in containers which were associated with H169, but the large number of pegs suggests wooden boxes were a regular occurrence, and the few papyrus sealings found in floor debris suggests the use of letters or documents in H169. Further investigations into the back types and archaeological context of the sealings might illuminate more information on the occupation of H169 during the late Middle Kingdom at Elephantine.

Suggestions for Further Study

A theory I would like to further explore is the possibility of organized archival systems in the Middle Kingdom at settlement sites similar to and including Elephantine. This theory was suggested by Stuart Tyson Smith in 1990, and it remains a debated topic in the discourse surrounding ancient Egyptian sealing practices in the Middle Kingdom. It is possible, though not currently supported by archaeological evidence, that seal impressions were recorded for the sealer’s identity, the date, and the sealed object before being broken, at which point they were either collected for reference purposes for the duration of one administrative cycle or discarded within the room to be taken out to a larger waste deposit at a later time. A New Kingdom text, *The Duties of the Vizier*, outlines a daily routine wherein the chief treasurer reports to the vizier every morning after checking every sealed room to ensure it was still intact, and the vizier responds, “There has been reported to me the sealing of the sealed chambers to this hour and the


opening of them to this hour by every responsible official.”32 This established that, by the New
Kingdom at least, there was a precedent of very strict control of access to goods, which must be
reported to the appropriate officials regularly. Similarly, though there is no archaeological
evidence to support this at Elephantine, it seems plausible that this practice existed during the
Middle Kingdom, which had an elaborate administrative system. In any case, it requires further
research and remains an open question.

Regarding the geo-spatial analysis, my application of GIS did not elucidate many patterns
that were not already obvious in the data, insofar as many of the trends had clear outliers.
Nevertheless, mapping the site at Elephantine using ArcGIS Pro based on Drone2Map
renderings of drone data still created a useful tool. As seen in Plate 2:1-2, visual representations
of the distribution of seal impressions in houses H169 and H166 punctuates the concentrations
and their spatial relation to one another. For example, the concentration of seal impressions in
the back of the house is underlined in a way that it is not when simply charted on a bar graph as
in Plate 4:2. More importantly, rendering the different stages of stratum E in ArcGIS Pro created
a clearer visualization of chronological changes, such as the enlargement and addition of
fireplaces from stratum E1 to stratum E2, which may indicate an increase in production activity.
It is possible that a future GIS study, incorporating more robust data points, might reveal further
patterns that have gone unnoticed in the data.

Although the seal impression corpus has confirmed and supported much of what we
already know about ancient Egyptian sealing practices during the Middle Kingdom, it also leaves
some questions open which I would like to explore at a later date. These include: Could more

focused excavations at H166 reveal more information on the function of H169, or the site as a whole? Do fireplaces have a larger role in waste disposal than previously thought? Are there larger waste deposits outside of these buildings which contain larger concentrations of seal impressions like we see at other sites like Tell Edfu and Uronarti? If so, what does this change, if anything? These questions can only be answered with further excavation at the site and continuing study of the excavated materials. I would also like to explore the archaeological context of the corpus in more depth, and in particular within the context of other artifacts found at the site, including amethyst shards, animal bones, red ochre ore, and pottery sherds. I believe that analyzing these together would further elucidate the function of H169 during the Middle Kingdom.


———. *Scarabs and Cylinders with Names.* London: School of Archaeology in Egypt, Constable and Quaritch, 1917.


———. “The Practice of Sealing in the Administration of the First Intermediate Period and the Middle Kingdom.” In *Les sceau et l’administration dans la Vallée du Nil: Villeneuve*


———. “Of Bugs and Beads: Realities of Life in the Late Middle Kingdom Northwestern Town of Elephantine.” Pre-publication article draft, 2021.


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### Tables

**Table 1 – Distribution of Design Classes**

<table>
<thead>
<tr>
<th>Design Class</th>
<th>Number</th>
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**Table 2 – Distribution of Impression Types**

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**Table 3 – Distribution of Back Types**

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FIGURES

Figure 1
Drone2Map rendering of Elephantine archaeological site. Drone images used with permission from Dr. diss. Johanna Sigl, German Archaeological Institute.

Figure 2
Drone2Map rendering of the northwest area of the settlement site on Elephantine Island. Drone images used with permission from Dr. diss. Johanna Sigl, German Archaeological Institute
FIGURES

Figure 3
Map of H169 and H166 in stratum E1 (late Dynasty 13), with installations represented from all three phases of occupation. Each seal impression find location identifiable from the unpublished locus sheets has been noted here with a red dot, and impressions found in the same spot are overlaid.
Figure 4
Map of H169 and H166 in stratum E1 (late Dynasty 13), with installations represented from all three phases of occupation. Seal impressions are plotted by heat map, with clusters of seal impressions showing more “heat” as indicated by the color scale in the legend.
FIGURES

Figure 5 – Class 3A4 and 3B3
Left to right: A. 46501Q/b-2-10; B. 43501C/d-38 (A)

Figure 6 – Class 3 seal impressions with legible text
From left to right: A. 46501P/g-2-9; B. 45502N/k-2-6

Figure 7 – Class 11 seal impressions, group 1
From left to right: A. 45502L/q-2-8 (B); B. 47501Z/h-15; C. 46501Q/b-2-9; D. 47501S/o-2-7

Figure 8 – Class 11 seal impressions, group 2
From left to right: A. 47501H/t-12; B. 47501V/m-21; C. 47501L/y-5; D. 47501Z/h-13

Figure 9 – Class 11 seal impressions, group 3
From left to right: A. 47501Z/h-22; B. 47501Z/y-20; C. 47501V/w-18; D. 47501S/r-13
FIGURES

A: phase E3 (late 12th/early 13th dyn.)

B: phase E2 (middle 13th dyn.)

C: phase E1 (middle/late 13th dyn.)

Figure 10
House 169 in phases E3, E2, and E1 (original drawings: R. Colman, P. Kopp; digitalization: P. Kopp © DAI Cairo).
Figure 11
Houses 73, 166c, and 169c (phase E1, late Dynasty 13), (original drawings: R. Colman, P. Kopp; digitalization: P. Kopp © DAI Cairo).
FIGURES

**Figure 12**
Distribution of seal impressions in H169 by Room

**Figure 13**
Distribution of seal impressions in strata B through I by find context.
**FIGURES**

![Find Context by Room (H169)](image)

**Figure 14**  
Distribution of seal impressions in H169 by room and find context.
CATALOGUE

Design Class 1B – Geometric Patterns
47501H/i-13
47501O/a-8
48501D/g-9

Design Class 1E – Floral Motifs
46501Q/b-2-6
47501A/a-2-10
47501B/l-2-8
47501I/d-2-4
47501L/w-2-8
47501N/o-2-12
47501O/b-6
47501O/x-8
47501Z/h-21
48501D/g-11

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### CATALOGUE

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CATALOGUE

Design Class 2 – Scrolls and Spirals

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45502K/f-15

46501E/b-2-5

46501M/o-2-9

46501N/b-2-7

46501O/z-2-6

47501B/o-7

47501B/o-8

47501E/c-2-8

47501H/u-18

47501L/e-2-6

47501L/h-2-2

47501L/w-2-9

47501N/g-2-10

47501S/o-2-8

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**CATALOGUE**

*Design Class 2 – Scrolls and Spirals*

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Design Class 2 – Scrolls and Spirals

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47501Y/e-2-4

47501Z/h-19

47501Z/t-2-4

Design Class 2A – Scrolls and Spirals, Unlinked

43501C/d-38

46501E/a-2-8

46501G/u-2-11

47501A/a-2-11

47501H/f-2-20

47501L/e-18

47501M/g-12

47501S/u-2-5

47501Z/h-24
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CATALOGUE

Design Class 2B – Scrolls and Spirals, Interlocking

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45502K/u-2-9  
45502L/q-2-8 (A)

46501B/x-2-6  
46501G/d-2-6  
46501H/b-29

46501M/c-2-12  
46501M/d-2-9  
46501M/k-2-16

46501O/c-2-8  
46501Q/b-2-13  
47501G/t-10

47501I/h-22  
47501M/k-24  
47501N/q-6
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**Design Class 2B – Scrolls and Spirals, Interlocking**

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Design Class 2B – Scrolls and Spirals, Interlocking
47501V/w-17
47501V/k-2-4
47501Z/n-7
48501D/f-4

Design Class 3 – Egyptian Signs and Symbols
46501G/z-2-11
46501M/d-2-10
46501M/e-2-8
46501Q/f-2-9
47501G/h-2-21
47501G/z-2-8
47501H/t-11
47501L/p-2-7
47501M/s-8
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#### Design Class 2B – Scrolls and Spirals, Interlocking

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#### Design Class 3 – Egyptian Signs and Symbols

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CATALOGUE

Design Class 3 – Egyptian Signs and Symbols

47501N/p-2-3  47501S/k-12  47501S/q-2-21

47501S/q-2-22  47501S/q-2-24  47501S/q-8

47501V/v-11  47501V/w-19  47501Z/h-12

47501Z/h-16  47501Z/h-18  47501Z/h-20

47501Z/h-23  47501Z/h-29  47501Z/i-9

97
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CATALOGUE

Design Class 3 – Egyptian Signs and Symbols (Repeated patterns)

Design Class 3A1 – Sign of union, $sm3-3wy$

Design Class 3A4 – Horus hawk with $nfr$ and other signs

Design Class 3B3 – Red crowns

Design Class 3B7 – Forepart of lion ($h3t$)
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Design Class 3 – Egyptian Signs and Symbols (Repeated patterns)

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Design Class 3A1 – Sign of union, *sm3-t3wy*

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Design Class 3A4 – Horus hawk with *ntr* and other signs

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Design Class 3B3 – Red crowns

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Design Class 3B7 – Forepart of lion (*h3t*)

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CATALOGUE

Design Class 4 – Concentric Circles

45502A/f-2-17  47501O/a-9

Design Class 5 – Cross Patterns

46501C/a-2-9  47501G/x-2-7  47501H/v-8

47501K/e-9  47501S/r-14  47501Z/h-17

47502B/f-2-9
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### Design Class 4 – Concentric Circles

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### Design Class 5 – Cross Patterns

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CATALOGUE

Design Class 6B1 – Coiled and Woven Patterns, convoluted coils

47501B/l-2-11  47501Z/y-18

Design Class 6C3 – Coiled and Woven Patterns, encompassed, central cable

46501G/r-2-10  47501S/d-2-3  47501Z/h-11

Design Class 11 – Names and Titles

45502L/q-2-8 (B)  46501O/c-2-6  46501Q/b-2-9

47501H/t-12  47501L/v-5  47501S/o-2-7
### CATALOGUE

#### Design Class 6B1 – Coiled and Woven Patterns, convoluted coils

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#### Design Class 6C3 – Coiled and Woven Patterns, encompassed, central cable

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<td>Peg</td>
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#### Design Class 11 – Names and Titles

*In the last two columns, columns within the impression are separated by a ‘|’ and ‘{ }’ indicates a cartouche*

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<td>good [...]</td>
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<td></td>
<td></td>
<td>{[…]} r[…]</td>
<td>{[…]}-Re-[…]</td>
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<td>E</td>
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<td>D</td>
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<td>[wr] mdw šm³w</td>
<td>[Great one]</td>
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<td></td>
<td></td>
<td>k [...] r</td>
<td>of the</td>
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<td>hnt [...] jm/gs-r [...]</td>
<td>tens of</td>
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<td>[…] smn-htp [...]</td>
<td>[…]Semenhetep[?]</td>
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Design Class 11 – Names and Titles

Royal Name: maybe Neferhotep, contained within in a cartouche

Private Name: Ankh-hor / Horankh, son of Hornacht
## CATALOGUE

### Design Class 11 – Names and Titles

*In the last two columns, columns within the impression are separated by a ‘|’ and ‘{ }’ indicates a cartouche*

<table>
<thead>
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<td>E</td>
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<td>Beloved of [name]-kheker, Great one of the tens of Upper Egypt, Khememi</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>mr(y)</td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>wr n wr mdw.w</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>šm(w h r m m j)</td>
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| 47501Z/h-13   | Scarab         | Peg       | E       | H169, R08   | [hwt?-…] n sbk | [...-enclosure?] of Sobekhotep, may he live eternally | [...]
|               |                |           |         |             | htp ʾnh ṣ ḫ.t | mistress of the two lands |
|               |                |           |         |             | [{...]} ḫnw.t- | |
|               |                |           |         |             | ts.wy |             |
| 47501Z/h-15   | Scarab         | Unclear   | E       | H169, R08   | htm.tj bj.tj | Seal-bearer of the king |
| 47501Z/h-22   | Shield         | Wood      | E       | H169, R08   | S-[…] ṣmj-r pr | S-[…], overseer of the house / steward |
| 47501Z/y-20   | Shield         | Peg       | E       | H169, R08   | htm-šnw | Seal of the entourage of […] |

**Royal Name: maybe Neferhotep, contained within a cartouche**

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<th>Impression Type</th>
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<td>Basket</td>
<td>E</td>
<td>H169, R08</td>
<td>z3 r ʾ {nfr htp […]}</td>
<td>Son of Re, {Neferhotep}</td>
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**Private Name: Horankh / Ankh-hor, son of Hornacht**

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<td>ṣnh-hr z3 ḫr-nḥt</td>
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<td>47501Y/i-13</td>
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<td>Peg</td>
<td>E</td>
<td>H169, R08</td>
<td>ṣnh-hr z3 ḫr-nḥt</td>
<td>Horankh/Ankh-hor, son of Hornacht</td>
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