

**Matmar: Revisiting Burial Practice of the Non-Elite during the Third
Intermediate Period**

By

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Abstract

This thesis engages with two areas which have been historically overlooked in the study of Egyptian archaeology: the Third Intermediate Period (TIP) and the history of the non-elite. It is an attempt to demonstrate the benefits of a reconsideration of existing site data and dated reports, using modern theoretical and statistical techniques, in order to broaden our understanding of the non-elite classes in Ancient Egypt. The chosen trial dataset is the TIP grave corpus from Matmar in Middle Egypt, originally excavated by Guy Brunton between 1928-31.

After evaluating the original excavation report and updating Brunton's results in line with current understanding, SPSS chi-squared and cross-tabs analysis was carried out in an attempt to isolate any relationship between: sex, age, burial location, coffin style, amulet inclusions. In turn the results were interpreted to shed light on local perceptions of sex and gender, religious practice and economy.

The statistical analysis demonstrated a strong link between the sex and age of the individual and the choice of grave goods. The results also disputed some of Brunton's original conclusions and assertions regarding practice at the site. The exercise itself successfully demonstrated the benefits of revisiting older site reports, although the statistical methodology utilised for this study would require further refinement before application to other sites would be possible.

Abbreviations

<i>BSAE</i>	British School of Archaeology in Egypt
<i>BSdE</i>	Bulletin de la Société d'Egyptologie
<i>GM</i>	Göttinger Miszellen
<i>JARCE</i>	Journal of the American Research Centre in Egypt
<i>JAMT</i>	Journal of Archaeological Method and Theory
<i>JEA</i>	Journal of Egyptian Archaeology
<i>MDAIK</i>	Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo
<i>SAGA</i>	Studien zur Archäologie und Geschichte Altägyptens

Some notes on referencing

There are some referencing points and irregularities which must be drawn to the reader's attention. First, concerning Aston, 2009, no page numbers were available for the prepublication chapter, supplied to me months before the completion of the book. Although now in publication, I have not been able to obtain a copy to correct this issue. Equally, regarding Stevenson's forthcoming publication, 3 draft chapters were supplied prior to finalisation with the publisher. The appropriate chapter numbers have been supplied, but no further information is available to me at this time.

When discussing tables and figures embedded in the text, numerical references are given. For tables and plates in the appendices, all references are in Roman numerals.

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Contents

	Page number
1.0 Introduction and Background	1
2.0 Aims and Objectives	6
2.1 Objectives: Improving the Site Resource	6
2.2 Objectives: Artefact Distribution Analysis	7
2.3 Objectives: Interpretation and Analysis	13
3.0 Previous Scholarship and Research Context	15
3.1 Archaeology	15
3.1.1 Unravelling Status and Identity in the Mortuary Context	18
3.2 Egyptology	21
3.2.1 Developing a History of the Non-Elite	21
3.2.2 Interdisciplinary Studies	24
4.0 Methodology	29
4.1 Updating the Cartographic Resource	29
4.2 Creating and Compiling a Site Database	30
4.3 Statistical Analysis	34
4.3.1 Chi-Square	34
4.3.2 Bivariate Analysis	35
5.0 Introduction to the Matmar Data-set	36
5.1 Some Notes on TIP Chronology	36
5.2 Introducing Matmar: Site Location, Topography and Mapping	37
5.2.1 Site Records	38
5.3 History of the Site	41
5.4 The TIP dataset	44
5.4.1 Some Notes on the Revised Database	46
5.4.2 Analysis of the Dataset	47
6.0 Statistical Profiling and Results	61
6.1 Sorting the Dataset	61
6.2 Sex vs. Coffin Style	62
6.2.1 Sex vs. Coffin style: Area Breakdown	64

6.3	Amulets	69
6.3.1	Sex vs. Amulets	70
6.3.2	Coffin Style vs. Amulet style	73
6.3.3	Amulets vs. Amulets	76
6.3.4	Amulets vs. Object Position	78
6.3.5	Amulet Materials	79
6.3.6	Amulet Colour	80
6.4	Results Summary	80
6.5	Atypical Burials: Accessing the Individual?	83
7.0	Site Interpretation	85
7.1	Perceptions of Sex, Gender and Social Identities	85
7.2	Religious Practice	89
7.2.1	Amulet Selection	89
7.2.2	Coffin Selection	91
7.3	Local Economy	93
8.0	Conclusion	95
8.1	Methodological Analysis	95
8.2	Factual Conclusions	96
8.3	Further Research	97
	Bibliography	99

Embedded Figures

Figure Number		Page Number
1	Grave Card Entry Form	32
2	Object Record Form	33
3	Photograph 256, possible south-facing shot. Matmar, location unknown	40
4	Photograph 269, south-facing. Matmar, location unknown	40
5	Photograph 304, north-facing. The Tomb of Sheikh Abu Khatwa	41

Embedded Tables

Table Number		Page Number
1	Sex distribution across site	49
2	Coffin distribution across the site	51
3	Area and Sex distribution of ceramics	55
4	Sex distribution of amulets	60
5	Area categories and groupings	61
6	Chi-Square results for sex vs. coffin style	63
7	Chi-Square results Areas 1-4	65
8	Chi-Square results for Area 6	67
9	Sex distribution across amulet areas	70
10	Amulet and coffin style dataset	73
11	Most frequent amulet categories by area	76
12	Graves containing green glazed pieces, by area	80

Appendices: Tables

Table Number		Page Number
I	Sex based breakdowns of coffin use (Brunton, 1948: 80)	115
II	A percentage based breakdown of the distribution rates of amulets which occur in the graves of women and children (Brunton, 1948: 83)	115
III	The frequency of seal amulets grouped by their location on the body (Brunton, 1948: 85)	116
IV	Comparison of Brunton (1948), Aston (2009a) and Humphreys (2009) catalogues	117
V	List of theomorphic or anthropomorphic deities (12 designs)	119
VI	Natural representations (18 designs)	120
VII	Other sacred objects (7 designs)	122
VIII	Crosstabulation for Sex and Coffin Style	123
IX	Crosstabulation for Sex and Coffin Style (Area 1)	124
X	Crosstabulation for Sex and Coffin Style (Area 2)	125
XI	Crosstabulation for Sex and Coffin Style (Area 3)	126
XII	Crosstabulation for Sex and Coffin Style (Area 4)	127
XIII	Body Position of Seal Amulets and Plaques	128
XIV	Chronologies for the 21st–25th dynasties (Hornung et al, 2006: 493-4)	129

Plates

Plate Number

I	Sketch map west (Brunton, 1948)
II	Sketch map east (Brunton, 1948)
III	Modern cartographic resource for Matmar
IV	Matmar site with village locations
V	Rectification of original sketch maps
VI	Satellite map with complete site features
VII	TIP burial areas
VIII	Temple area Map (Brunton, 1948)
IX	Biological sex distribution by area
X	Locations of seal amulets and plaques:

Graph 1: Positions of Amulets, Seal Amulets and Plaques across the entire site

Graph 2: Positions of Amulets, Seal Amulets and Plaques across area 700

Graph 3: Positions of Amulets, Seal Amulets and Plaques across area 1200

XI	Locations of seal amulets and plaques:
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Graph 4: Positions of Amulets, Seal Amulets and Plaques across area 1700

XII	Amulet Distribution by Colour
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Chapter one: Introduction and Background

The act of burial provides archaeologists with a variety of potential information about past funerary practices and their social context. The provision of a final resting place for someone's mortal remains is generally a carefully thought out procedure... Burial is therefore a deeply significant act imbedded with meaning...*It represents one of the most formal and carefully prepared deposits that archaeologists encounter.*

(Parker Pearson, 1999: 5, italics added by author)

Death, perceptions and preparations for the afterlife and funerary practice in ancient Egypt present themselves as highly formalised ritual acts. One can observe repeat practice in the preparation of the body for the afterlife, objects included to assist the dead on their way and subsequent maintenance of funerary cults. Copies of texts included with the deceased detail the complex array of challenges and scenarios which the Egyptians associated with the afterlife. On initial inspection Egyptian funerary practice appears, in many respects, to be well documented, both by the Egyptians themselves and through surviving archaeological evidence. Egyptologists have at their disposal a wealth of evidence, illuminating the thought processes, theological concepts and attitudes of the ancient Egyptians (Taylor, 2001a: 7).

From the Pyramid Texts and private tomb inscriptions of the Old Kingdom, to the Middle Kingdom Coffin Texts and the vast quantities of funerary literature recorded during the New Kingdom: it appears we have been left an incredible portal into a complex theology detailing Egyptian beliefs, fears and aspirations of their afterlife. However, in reality, relatively little textual evidence relates directly to the attitudes of living society towards death and the dead. The majority of sources present rather uninformative, repetitive mortuary formulae containing little that is personal or reflective (Baines, 1999: 24). Equally, whilst it is clear that royalty, the wealthy elite and even skilled artisans (such as those at Deir El-

Medina) had the time and resources to invest in creating substantial mortuary arrangements, relatively little remains known about the funerary preparations of the lowest classes of society. Scholars such as Morenz (1960: 6-15) and Assman (1984: 9-14) have suggested that religion was a unified form, implying that religious practices attested to the elite are reliable reflections of the rest of the population. Baines (1987) and the author strongly disagree with this belief.

The longevity and scale of Egyptian society appears to have helped foster complex (and sometimes inconsistent) attitudes to the deceased, as Baines and Lacovara note: 'textual sources suggest Egyptian Culture was not unified in its perceptions of mortuary needs and destinies and that attitudes to death were often contradictory' (2002: 7). Additionally, the literacy level¹ implies that, in the majority of situations, any theological teachings would have had to have been orally transmitted. With such high probability of religious 'Chinese whispers', it seems naïve to assume a national cultural coherence.

If religion cannot be treated as a unified concept, even within the theological funerary texts of the elite, then how can the discipline assume a cohesive body of practice regarding the lived religious experiences of 'the masses'? How did the less affluent, less travelled and less educated experience the ceremony surrounding death and burial within their communities and in what ways did this vary regionally on a 'grass-roots' level? With this in mind, it seems important to investigate to what extent it may be possible to isolate archaeological variations in practice on a site by site basis. It was these questions that provided inspiration for this study. There is an identifiable need to revisit and re-evaluate the funerary practices and beliefs of the non-elite on a national scale.

¹ Literacy levels have prompted much debate and the evidence available remains extremely limited. They have previously been estimated at between 1-5% of the population (Cerquiglini, 1989: 36-7); but considering the use of multiple scripts and variation in levels of comprehension these figures must be treated sceptically. Additionally, it should be noted that Cerquiglini, whose study is so often quoted, is in fact a medievalist, not an Egyptologist. Lesko (2001: 297-99) has stressed the need for awareness of different 'grades of literacy' and suggested it is impossible to talk of 'literate' or 'non-literate' persons, but rather literacy should be discussed with regards to varying levels of written understanding from one extreme to the other.

Given the duration of Pharaonic Egyptian history, it is immediately apparent that to conduct a detailed, comprehensive region by region survey of non-elite funerary practice would be far beyond the capacity of a doctoral thesis. Even the production of a period-specific study covering a sufficient range of rites to a suitable level of detail from which to accurately analyse regional variation would also greatly exceed the current available word limit. In light of the limitations placed on this dissertation, this work will serve as a pilot case study and methodological trial in preparation for expansion into a national, wider survey. It will attempt to assess how readily one can employ modern data analysis techniques inspired by the wider archaeological discipline in order to isolate trends in funerary practice on an individual Egyptian site. The results of statistical analysis will be combined with notes on dating and interpretation of grave goods in order to produce a revised profile of funerary practice, which can then be compared with further sites across the country, should it prove viable to expand the project.

The era of Egyptian history identified as the most appropriate for this research is the Third Intermediate Period (TIP). Spanning the 21st-25th Dynasties (Hornung, 2006: 493-4) the TIP saw hostile invasions and government by the Libyans in the north and by the Kushites from the south. This, coupled with political decentralisation and localised administration, make it one of the most disjointed, exciting and least understood periods of Pharaonic history. Whilst there is substantial evidence supporting the adoption of Egyptian traditions by their new foreign rulers, one cannot ignore the probable infiltration of their cultural practices on a localised or even national scale.² Of course, it would be extremely presumptive to suggest that fragmentation in the Egyptian political system during this period and the resulting decentralisation of power *must* have encouraged a more localised approach to religion. However, it is hard to visualise

² For example, the curious absence of strong, evident Libyan cultural traditions in the north, outside of the appearance of feathers, names and titles (rendered phonetically in Egyptian languages). For further information see Wainright, 1962; Leahy, 1985.

circumstances whereby an absence of internal cohesion would foster a more unified cultural structure. Fuller (1999: 203-8) has already demonstrated this principle to great effect regarding the breakdown of Meroitic culture in ancient Sudan.

The ongoing confusion surrounding the chronology and political structure during the TIP may have initially contributed to its somewhat neglected and undervalued status as a research focus. Despite a discernable improvement in the level of academic attention accorded to TIP orientated research over the last 25 years, outside of the publication of primary site reports, much work has understandably continued to focus upon issues relating to chronology and regency (for expansive bibliography see Janssen-Winkel, 2006a, 2006b). This has left a substantial quantity of under-exploited archaeological material, especially those pieces lacking in strong chronological relevance, available for study. There is, to the author's knowledge, currently no substantial study relating to the domestic or funerary activities of the non-elite during the TIP.³ One collative volume dedicated specifically to TIP practices is due for publication (Aston, 1987 and 2009a [revised]) and provides an excellent base from which to launch this work. Attitudes to TIP research at the time are reflected by the need Aston feels to state in his introduction that his aim was to 'show that earlier cemeteries of this date are not of no historic value' (1987: 1).

The data set identified for this pilot study is the grave corpus from the multi-period site of Matmar in middle Egypt. Excavated by Guy Brunton between 1928-31, this consists of 519 TIP grave cuts containing 542 bodies (or partial interments), 99% of which were previously undisturbed, making this the largest collection of non-elite graves for the TIP. Excavations were carried out and published, 17 years later (Brunton, 1948), under the banner of the British Museum.

³ Aston (2009a) will provide a revised catalogue of all burials and tombs from the period. There are also ceramic typological resources available (See Aston (1996;1999).

The primary source for the Matmar data remains the original site report, supplemented by revisions from David Aston (1987; 2009a). A key factor in this site selection, in addition to its size and condition, is the under-exploitation of the primary data. Subsequent synoptic publications regarding Egyptian funerary practice (Spencer, 1991; Grajetzki, 2003: 107-9) have referred to Brunton's personal conclusions when describing the funerary practice at the site, however, aside from dating adjustments (Aston and Bader, 1998) no substantial further research has been undertaken on the TIP graves. Indeed, some seminal volumes on the subject of death in ancient Egypt (Taylor, 2001a) neglect to mention the site. Comparatively, burials from earlier periods at Matmar have received extensive academic attention and become the subjects of further study and wider research.

Chapter 2: Aims and Objectives

The primary aim of this work is to carry out an in-depth analysis of burial practice during the Third Intermediate Period at Matmar. However, the extent of this will be limited by time and resources.

This dissertation is perhaps best viewed as a pilot study which aims to 'test the water' prior to engagement with further sites across the country.⁴ The long term aim of the project remains its expansion in order to create a nation-wide catalogue of TIP funerary practice with a focus upon the non-elite in Egyptian society. The field of mortuary analysis has previously been criticised for the quantity of site specific statistical studies with no attempt made link these back into their wider archaeological framework (Beck, 1991: xiii). This study is therefore designed to act as a platform from which to assess the level of practicality and potential benefits of reviewing TIP Egyptian site reports (especially those of some age) using modern statistical methodologies whilst also contributing new information to the Matmar record. It is intended to begin the process of re-evaluating the practice of the site but will be by no means exhaustive of its great potential for further study.

2.1 Objectives: Improving the site resource

Taking into account the time allocation and word limit of this dissertation, the following objectives have been compiled with regards to updating and modernising the site record in order to promote it as a viable resource for further study:

- The production of a revised site catalogue database using Microsoft Access, encompassing Brunton's original site details supplemented by

⁴ Potential further site have been identified in Lower Egypt: Tell el Yahudieh (Aston, 1987: 73-90), Saft El Henneh (Aston, 1987: 91-94), Saqqara (Aston, 1987: 118-28). Also in Upper Egypt: Lahun (Aston, 1987: 147-83), Medioum (Aston, 1987: 137-43), Abydos (Aston, 1987: 273-98), Dra Abu' el-Naga (Aston, 1987: 312-16). Additionally there is the possibility to examine large quantities of secondary burials in tomb shafts from the Theban area.

David Aston's revisions (Aston, 1987, 1998 & 2009a).

- The digitisation of Brunton's original sketch maps and subsequent georeferencing of the digitised sketches on top of modern topographical maps and satellite photography of the area.

Digitisation of the topographic resource will provide the reader with a greater understanding of the site and its spatial relationships both internally and externally.

2.2 Objectives: Artefact distribution analysis

The Matmar dataset remains one of the largest and best preserved corpora of non-elite burials from this period (Aston, 2009a). Its size and lack of subsequent disturbance prior to excavation should provide the optimum conditions for the identification of patterning in funerary artefacts. The focus will be placed upon the site itself, refraining from entry into broad comparisons using pre-existing national generalisations and conclusions, as this would contradict the ethos of the wider project.

One can divide the funerary equipment and grave goods recovered from the site into the following categories:

- Coffin style.
- Ceramic forms and fragments.
- Stone vessels.
- Beads.
- Amulets.
- Shells.
- Seal amulets.
- Cloth.
- Ear and finger rings.

- Other grave artefacts.

Whilst revised, concise comments will be offered on the above categories (where appropriate), the primary focus will remain the employment of statistical analyses in order to quantify and explore the most abundant data populations in an attempt to isolate strong, statistically verifiable correlations between the following variables:

- Artefact deposition (selective from the list above).
- The biological sex of the deceased.
- The location of the burial on the archaeological site.

Initially focusing on those grave good types present in the highest quantities should maximise the potential for successfully identifying correspondence and significance between variables in the archaeological record. Given the size of the Matmar corpus and the variety in its grave goods, two specific aspects are particularly suitable for statistical analysis:

- Amulet distribution (including seal amulets and plaques).
- Coffin type.

The quantity of contemporary literature⁵ regarding the use and underlying meaning of amulets in Egyptian society make these objects an excellent candidate to illustrate the potential of collaborative archaeological and historical research (Andrews, 1994; Hutner, 1995; Germond, 2005)⁶, indeed amulets recovered

⁵ Andrews (1994: 6-7) lists some of the main textual sources: Amulets are the subject of spells in chapters from the *Book of the Dead* whilst they also feature in Coffin Text and even Pyramid Texts. Additional sources include: amulets depicted on the thickness of a doorway in the complex of rooms dedicated to Osiris on the roof of the Ptolemaic temple at Dendera; the verso of the MacGregor Papyrus; several Late Period funerary papyri end with lists of amulets.

⁶ These three publications, particularly Andrews (1994), have drawn together the vast amulet and scarab lists of the late 19th and early 20th century (e.g. Reisner, 1907; Petrie, 1914) into more concise reference guides.

from earlier periods at Matmar have contributed heavily to recent studies (Dubiel, 2007).

Amulets are thought to have been worn throughout the life of an individual (Germond, 2005: 11) and as such, transcend the funerary context to potentially shed light on local religious preference and superstitions. Teeter's (2003) extensive survey of scaraboids and seals from the New Kingdom onwards at Medinet Habu may also provide important comparative data if the study is expanded, although the possibility of a detailed item by item reassessment has already been excluded here.

Substantial comparative work has also been carried out on coffin style and development (Taylor, 1989; 2001a) and the use of colour in the mortuary context (Taylor, 2001b; Davies, 2001), providing an excellent base from which to begin interpretation of the site material.

As part of his original report, Brunton also highlighted coffins and amulets as the two populations most viable for analysis and the prospective identification of patterns in interment. Several sets of tabled statistics are provided as part of the original publication. These encompass the site as a whole and include:

- Sex-based breakdowns of coffin use and orientation of the head (Brunton, 1948: 80).
- A percentage-based breakdown of the distribution rates of amulets which occur in the graves of women and children (Brunton, 1948: 83).
- The frequency of seal amulets grouped by their location on the body (Brunton, 1948: 85).

Using data from these tables Brunton records the following observations regarding funerary practice during the TIP at Matmar:

Coffin Type

- Children were usually buried in ‘rectangular’ coffins, or none at all (Brunton, 1948: 80).
- Older children were more likely to be buried in anthropoid coffins.
- Men were more likely to be buried in anthropoid coffins than women (Brunton, 1948: 80).
- The oval coffins are viewed as a cheap degradation of the anthropoid coffins. Therefore their prevalence in certain areas of the site⁷, led Brunton to suggest a later date for the former as well as a period of economic decline (Brunton, 1948: 79).

Amulets (inclusive of seal amulets and plaques)

- Seal amulets were mainly recovered from adult, female burials (Brunton, 1948: 85).
- The left arm area was the favoured place for seal amulets and plaques (*Ibid*).
- The majority of the graves contained only one seal amulet (*Ibid*).
- Amulets were found almost exclusively with women and children (Brunton, 1948: 83).
- Only male graves could contain male divinities⁸ (*Ibid*).
- Children were more likely to be buried with ‘natural’ amulet styles, such as cows, sows and eyes (*Ibid*).
- Children were not buried with ‘adult deities’⁹ (*Ibid*).
- Children were likely to be buried with Bes amulets (*Ibid*).

⁷ Area 1200, relative to area 700. Area breakdown is discussed below, *see* 5.2.

⁸ This has been interpreted as anthropomorphic deities with a traditionally male role or male form. For example Ptah, Thoth, Osiris etc.

⁹ This definition of ‘adult’ is taken to exclude Brunton’s self defined ‘naturalistic’ forms and any deities associated with women or childbirth (Tauret, Isis, Isis and Horus or Bes).

All points highlighted above are generalisations made regarding burial practice across the entire site. As a response to these points, this work seeks to evaluate and understand the following:

1. Whether these observed conclusions are accurate.
2. Whether, where sample quantities permit, practices are consistent across all cemetery areas or if Brunton was of glossing over chronological or topographical variations in favour of the 'bigger picture'.

The statistical analysis for this study will be carried out on a site-wide basis and then broken down, area by area, where the number of examples permits. In addition to seeking to verify the validity of Brunton's original conclusions, the primary questions it looks to address are:

- Is it possible to observe a statistically significant correlation between the sex of the deceased and their style of coffin?
- Is it possible to observe a statistically significant correlation between the sex of the deceased and the amulets included in the burial?
- Are further correlations visible between the coffin style and the amulets included in the burial?
- Can significant patterns be established regarding the combination of amulets with one another externally to the sex, coffin or location of the deceased?
- Does the form or category of amulet affect its position on the body?

In addition to these primary research questions, this study will also seek to make comment on the raw materials and goods utilised for grave goods. These will be addressed on an area by area basis independent of other variables, to identify any changes in the use of materials and availability of resources over the Third Intermediate Period. Equally, observing changes in colour preferences, especially

in steatite or faience glazes¹⁰ may highlight variation and development regarding local production trends on a more specific level than has previously been observed.

There is little value in drawing weak, purely observational correlations between a wide spectrum of artefacts of which we have only limited examples. When attempting to identify verifiable examples which constitute repeat practice in these ancient deposition processes an emphasis must be placed on objects that exist in large enough quantities to make their appearance in combination not dismissible as chance. Modern statisticians advise that when using statistical programmes a minimum expected frequency of 5 is advisable so as not to lose statistical power (Field, 2009: 692). As such, detailed statistical assessments will therefore not be carried out on areas with less than 5 TIP graves,¹¹ as whilst it is fair to observe, it is difficult to interpret repeat practice in, for example, 2 out of 3 graves, as anything more than coincidence. Brunton occasionally presented and described data in a manner which, despite being technically accurate, was in fact somewhat misleading. He included apparently overwhelming percentages¹² and rates of occurrence for certain amulet/area/sex combinations, presented with such confidence that one could easily assume he had access to many more examples than was actually the case. Although he may not have intended to create an exaggerated impression to the reader, the author must remain aware of the implications of the manner in which the data is presented.

An effort will also be made to identify graves which run against statistical trends, through dramatically different inclusions, placement and 'wrong sex' grave goods. Often overlooked, these burials can provide valuable information regarding gender and individuality in ancient society.

¹⁰ Steatite and faience are by far the most common materials for amulets.

¹¹ This includes Areas 600, 800, 900, 1100, 3200, 6000.

¹² e.g. '75% of Isis and Horus amulets are buried with females' (Brunton, 1948: 83). This statement, whilst technically accurate, is somewhat misleading as there are only 4 Isis and Horus amulets recovered from the entire site (Graves 726, 745, 1219, 1701).

2.3 Objectives: Interpretation and analysis

The results of the statistically driven work are meaningless without interpretation in the modern research context. Statistics can identify the differences between graves, but do not proceed to speculate on, or take into account, the reasons for these differences (Stevenson, forthcoming: ch.9). It is important therefore to provide a level of contextual background and interpretation for all results acquired during this project.

The antiquarian culture which surrounded excavations prior to the development of the processual archaeological movement promoted the idea that interpretation was something to be conducted at a later point, when the data would be re-visited and compiled into more comprehensive studies on aspects of ancient culture. This system resulted in the production and inclusion of minimal interpretative work within the site reports and which itself remained secondary to the identification of general, normative trends and assumptions. Many early reports consisted of reams of tables, data and statistics, with their results given little consideration¹³ (*pers.comm.* Alice Stevenson¹⁴). This system of post dated interpretation in itself is not at fault; indeed it encouraged the prompt publication of many site reports in the early 20th century by Petrie and others, whilst today many sites struggle to fully publish their excavation reports because of the time required and financial implications. However, it does present two obvious problems, both of which have affected the Matmar record. First, that any information omitted (deliberately or otherwise) from the original report will be permanently excluded from interpretative and analytical discussion, as analyses will be made by those with no first hand knowledge of the site. Secondly, the possibility that certain sites (or areas thereof) will be overlooked as subjects of further study and fail to realise their potential contribution to the historical and archaeological record.

¹³ Matmar is a good example of this. See also Gerzeh (Wainright, 1912).

¹⁴ Taken from conference presentation: 'The expression and significance of social identities in Predynastic burial practices' at the 2nd British Egyptological Conferences, University of Liverpool, March 14-16 2008.

This work will seek to underwrite its results with meaningful interpretations, in an effort to use this data to construct a wider picture of religious practice at the site over the TIP (the theoretical background to this is explained in greater detail, *see 3.1-3.2 below*).

The following categories have been identified by Stevenson (forthcoming, Ch.7) as social concerns with the potential to be reflected in the burial process (*see 3.1 below*). In light of this and also for reasons of time and convenience observations and interpretations will be presented under three subheadings:

- Perceptions of sex, gender and age identities (social structure).
- Religious practice and deitic preference.
- Local economy.

Chapter 3: Previous scholarship and Research Context

3.1 Archaeology

The archaeology of death is a vast and inclusive area of research. It stretches from those fields associated with the study of physical human remains, to the more sociological aspects of ancient life such as economy, social structure, religious beliefs and conceptual structures. It is these latter, more cultural, elements on which this study will focus.

When one considers that it is the living that make the decisions necessary for the burial of the dead, the act of burial becomes integral to the social structure of a community and therefore is influenced by both social¹⁵ and cultural¹⁶ forces. Funerary objects are deliberately and purposefully chosen to enter the archaeological record in a structured, formalised manner (Hurcombe, 2006: 43), as such the grave becomes a complex expression of 'social, economic, political, religious and ideological concerns' (Stevenson, forthcoming: ch.7). As noted previously (*see 2.3 above*), these cultural sub-headings will be used to divide and guide the interpretation of the Matmar data set.

Identity invariably becomes fluid and malleable in death. Whilst we cannot discount the possibility that the deceased left specific instructions for their interment or understood the procedures which would be undertaken upon their passing (such as the commissioning of one's own tomb amongst the ancient Egyptian elite), as with our own lives, we cannot be sure that they were accorded the respect and rites which they may have wished for or aspired to post-mortem. As it is obvious that social identity can be easily manipulated with respect to burial practice, archaeology must always challenge itself to ask: 'How *do* we infer cultural meaning from past material remains (Hodder and Hutson, 2003: 20) and to what extent can we use this to articulate social relationships and belief structures (Tarlow, 1999: 5)?'

¹⁵ Social factors are linked to social hierarchy, both within the family and wider community. They are linked to social interactions and social status. They may also allude to wealth and one's financial situation.

¹⁶ Cultural factors stem from learned beliefs, rituals, customs and practices. They are learned throughout a lifetime in a patterned format and passed on during one's lifetime.

Within archaeology as a discipline, the last century has seen great developments in social theory. Archaeological attitudes to the dead have followed anthropology in a shift from empirical and removed cultural observations, to involved interpretation and engagement with the individual (*see below 3.1.1*).

It is not the intention of this chapter to provide a history of archaeological theory, when this has been so effectively and thoroughly summarised elsewhere (for an introduction see Whitley, 1998; Johnson, 1999; Hodder, 2001; Hodder and Hutson, 2003), but just as the body of current excavation and recording practice develops alongside an increasingly complex interpretative framework, when addressing a site report of Matmar's age one cannot fail to see the influence of contemporary archaeological thought reflected in its excavation and recording methods. It is for precisely this reason that we have a duty to review site data and revise its conclusions, lest we base our synoptic work around analyses which, however well carried out, are wholly outdated by the current standards of our discipline or, worse still, were only ever to be considered preliminary at the time of the report's publication (as is likely with Matmar).

Actively excavating during the age of 'Culture Theory', Brunton was clearly searching for normative traits by which to define separate ancient 'cultures'. Childe's culture historical theories encouraged archaeologists to produce vast quantities of descriptive data with little or no interpretative analyses. His theories, most prolifically publicised by *What Happened in History* (Childe, 1942) and *Man Makes Himself* (Childe, 1951) advocated a polythetic view of cultural history and led, especially in North America to the creation of vast lists of tabulated traits (Johnson, 1999: 17) detailing the differences of each regional 'culture' from one another. Contemporarily, Hawkes proposed working backwards through regional cultural histories, through their specific 'culture sequences' to find a starting point, debating a cultural nucleus to all ancient societies (1954: 167-8). This concept of peeling back 'historical layers' is sometimes referred to as his '*onion theory*' (Hodder and Hutson, 2003: 137).

Crucially, these approaches were flawed when they painted culture as stagnant and unchanging, except to external development and diffusion. They professed that cognitive understanding of prehistoric thought processes was impossible, despite employing presuppositions regarding purpose and ideas of past minds in their writings (Hodder and Hutson, 2003: 149). Equally, one cannot treat material culture as simply the result of human behaviour. It is, rather, an active component of social structure and strategies of social practice, meaning that its historical significance is not represented by its form but rather 'lies in the diverse contexts of the social practice in which it was situated' (Barrett, 2001: 156).

As archaeology once strove to move beyond culture historical theory to embrace new archaeology and positivism, it now attempts move beyond the much overused ethnographical, comparative data trends which dominated much of the original processual work (Parker-Pearson, 2003: 84), pioneered by Binford and Saxe (see Brown, 1991: 3-23 for summary of their impact on mortuary analysis). Within the archaeological discipline there has been a noticeable shift back towards inward reflection, considering the empirical site data itself rather than engaging in comparisons with multiple, often unrelated societies with superficially similar habits. Archaeology has developed a wider engagement with external ideas across humanities and social science, but equally matured in itself as a subject (Hodder, 2001: 2-3). The modern archaeologist is, therefore, faced with a plethora of approaches, extracted from early philosophical thinking, anthropology and years of archaeological interpretation. Operating in a post-processual (and significantly post-structuralist) era which, by its very nature, encourages a multi-disciplinary approach, one can no longer privilege society above the individual and must not discount or separate archaeology from written history, where it is available. Even within prehistoric archaeology there has been a recognisable resurgence of interest towards the writing of a 'historical' archaeology. Tarlow believes this can be attributed to universal post-processual desires to create more humanistic, narrative pasts (Tarlow, 1999: 3). The development of phenomenological schools of interpretation and a focus of lived and shared sensory experience bare witness to this (Thomas, 2001: 170.)

3.1.1 Unravelling identity and status from mortuary practice

Since the advent of 'new archaeology', there has been a drive within funerary archaeology to attempt to distinguish between status achieved in life and that status and identity which is ascribed to the deceased upon their passing on in their burial. The ability to read social structure from the mortuary environment is of particular relevance to the expansion of this study outside of the Matmar case study. As discussed below (*see 3.2.1*), to refer to the 'non-elite' is a phrase imbued with high levels of assumed meaning and infers a level of understanding of the status of the deceased. The quantity and quality of grave goods in ancient Egypt has been shown, both through archaeological and literary evidence, to have been associated, in almost all cases, with social and economic standing. Those with the resources available invested high levels of time and wealth into their funerary arrangements. The exceptions to this rule were those with the *skills* to create their own funerary monuments (i.e. artisan craftsman such as those at Deir el-Medina) who instead invested their personal time into creating beautiful tombs for themselves. As we can demonstrate awareness of broad status divisions in Egyptian society, we can deduce with reasonable certainty that the graves interred at Matmar are not those of high ranking government officials, priests or nobility. However, it is the finer social nuances, on more subtle and localised level which this study hopes to identify, alongside the previously identified religious and economic concerns.

We have acknowledged above (*see 3.1*) that through funerary practice individuals can acquire, manipulate and discard social roles. In accepting this one also concedes that the body transcends its role as a biological entity; it is also a carefully crafted artefact, which can be transformed and further worked after death.

A variety of approaches, developed within the processual frameworks of the 1960s and 70s presented funerary objects and their deposition as components of a deliberate, structured and formal process (e.g. Brown, 1971; Tainter 1975, 1977; Schiffer, 1976). Archaeology has begun to move beyond the concept that 'human behaviour left a fossilised record in the form of spatial patterns of variation and co-variation of artefacts' (Chapman and Randsburg, 1981: 10) which could simply be decoded via the correct, complex statistical analysis. However, processual theories overlooked the fundamental concept that human beings are not automatons and all the scientific analyses in the world cannot mimic the human cognitive process. Taking the above into consideration, all mental phenomena must be viewed as containing objective and subjective elements (Renfrew [conference comment] in Shanks and Hodder, 1995: 42). It is impossible to treat funerary deposition solely as a socially constructed 'language' of sorts as some early structuralist theorists may have liked (see Tilley, 1990: 3-84 for a comprehensive introduction to the work of Levi-Strauss).

The importance of considering the opportunity that the grave offers the 'buriers' to manipulate the identity of the deceased to whatever ends they choose (Sørensen, 2006: 106) has been introduced above (*see 3.1*). Particularly relevant to this study would be the potential distortion of age, gender and perceived social status. Unfortunately, the low frequency of grave goods recovered at Matmar makes the identification of the social role of the deceased extremely difficult and highly subjective and further inhibits the ability of the archaeologist to discern complexities of social status from the burials.

The grave can be viewed as much as a representation of the communities relationship with the deceased as a reflection of the deceased themselves (Stevenson, forthcoming; Ch.9). The inclusion of objects in the grave may contain a mixture of possessions and 'burial gifts'. Gifts, an import from an external source, are more likely to manipulate the identity of the deceased. Prehistorians working in Egypt have postulated that, in an attempt to identify the deceased ownership of grave goods, spatial proximity to the deceased may play a role.

Crubézy (2002: 473) proposes that close proximity to the corpse equates to direct ownership in life, whilst greater distance from the body in the burial implies the object was a gift post-mortem. It is, of course, impossible to prove such theories either way and one must not forget that regardless of how gifts may have been placed in the grave, they will always retain the multiple identities of both the giver and recipient and as such have the ability to blur the boundaries between the deceased, their origins, environment and other members of their community. Even, the earliest social anthropologists (e.g. Mauss, 1990 [1922]) recognised these difficulties in reading the archaeological record.

Within the bounded space of the grave and cemetery as a wider grouping, studying the interactions between grave goods and the deceased can help to reveal new levels of association. However, for many years sweeping social ascriptions have been presumed from the inclusion of funerary material, which have distorted the evidence presented by funerary archaeology to meet our own enforced expectations of ancient life.

Early studies into material culture liked to portray objects as passive, implicitly associated with but not actively linked to gender (Sørensen, 2006: 108). From this viewpoint, assumptions were often made regarding the biological sex or lived gender of the grave occupant. Archaeology has long been guilty of perpetrating an androcentric view of society, whereby female 'status' demonstrated via prestige items was only attained by association with a high ranking male member of society (Parker-Pearson, 2003: 97). Brunton is himself guilty of associating an 'object to a specific sex', in grave 736 (Brunton, 1948: 83), where he assumes the presence of an iron tool must mean the occupant was male. The inaccuracy and gender bias inherent in these associations was highlighted by Weiss (1972) who conducted a survey of previously sexed prehistoric graves from mass burials in the Ukraine and found a 12% bias towards sexing skeletons as male as many of the sex assumptions had been made on the basis of grave inclusions. As it is not possible to review the biological sex descriptions made by Brunton, the prospect

of inaccurate primary data must always be considered as a temperate to any strong trends of association.

3.2 Egyptology

The absence of a collative regional analysis of funerary practice, focusing on the less affluent members of society across Egyptian history, has already been identified as the primary inspiration for this work. It is beneficial to briefly recapitulate the state of research within Egyptology with regards to attitudes to the non-elite, archaeological practice and interdisciplinary (historical-archaeological) research.

3.2.1 Developing a history of the non-elite

The subject of ‘private’ or ‘daily’ life (and death) for Egypt’s ‘non-elite’ has always attracted attention on a very general level. Early volumes (e.g. Glanville, 1930; Hayes, 1941), perhaps sensing the limited scope of interest at that time, chose to focus on broad trends across the whole of Egyptian history. In more recent years there has been a dramatic increase in interest relating to the lives of the ‘ordinary’ person in ancient Egypt. With the field of ancient ‘domestic studies’ growing in credibility (and profitability) as a discipline in its own right, more precise geographical and chronological foci have emerged, resulting in the publication of some comprehensive period focused (Meskell, 2005) and site-specific (Meskell, 1999; Szpakowska, 2008) volumes.

There remains within this area of Egyptology a tendency to over-use data from certain sites and ignore other, less publicised options. Many of the better-known settlements, such as Deir el-Medina, Lahun (Quirke, 1999; Szpakowska, 2008) ¹⁷ and, more recently, the Amarna workman’s village (Kemp, 1987; Samuel, 1999), were largely artificial environments: government planned and selectively settled.

¹⁷ Originally built during the Middle Kingdom to house not only the workmen of the pyramid of Senusret II but also the many different people one would expect within a flourishing town; priests, officials and craftsmen (Szpakowska, 2008: 8).

Despite their high level of significance as archaeological data sets and great contribution to the Egyptian historical record, it is clear that they were populated by a carefully selected workforce and included a disproportionately high level of skilled artisan workers and craftsmen, who were crucial to the construction and maintenance of nearby royal monuments, tombs and funerary cults.

Historically, the recovery of burials from the lower strata of Egyptian society has been disproportionately low. Despite the greater part of our evidence for the non-elite hailing from the mortuary context, estimates place the Ramesside population at approximately between 2.4 – 4.5 million (Baer, 1963: 12; O'Connor, 1972: 81; Butzer, 1976: 76 in Baines and Eyre, 1983: 65). It is not difficult to deduce therefore, that even after many years of excavations, the majority of graves remain invisible to the archaeological record (Baines and Lacovara, 2002: 12). Perhaps it was this uneven distribution of data which led some Egyptologists chose to cite the artisan classes mentioned above as the 'common man'¹⁸ in ancient Egypt (Gunn, 1916; Ward, 1977; Romer, 1984). This approach could now be challenged as flawed, prone to distorting the level of education and wealth of the majority of the population. It is therefore necessary to define society's lower economic strata, and intended focus of this study, more specifically. Kemp (1991: 192) understandably warns against the use of modern class terminology to describe ancient social structure and economy for fear of presenting a false impression of Egyptian society to the reader.

When discussing profession and status, Egyptologists have certainly evolved their economic view of ancient society from its early descriptions, which painted Egypt as a society divided into two economic groups: the rich and the poor (Payne, 1964: 31). Papyrus Wilbour¹⁹ provides a crucial window into local economy,

¹⁸ Ward concedes that the subject of his paper, one Neferhotep, is described as 'obese', a highly unlikely state for a poor man (Ward, 1977: 65).

¹⁹ An administrative document from Year 4 of Ramesses V. Its main text records the measurement and assessment of fields extending from near Crocodilopolis (Medinet el-Fayyum) southwards to a little short of the modern town of El-Minya. The fields, of which the localisation and the acreage are given in every case, are recorded with reference to the land owner's provenance.

listing a series of professions along with their landholdings and temple donations helping one to assess their relative economic. It reveals a small group of high ranking and wealthy officials, with greater economic affluence than a far larger group of bureaucrats, military diplomats, soldiers (colonists), scribes, priests, 'citizenesses'. These are followed by a selection of cultivators and herdsmen (Trigger, 1983: 192). Of course this list does not include the aforementioned artisan classes, whose payments are likely to have been in rations from the state, but does serve to illustrate the diverse range of professions and economic statuses of late New Kingdom Egypt.

The prospective subjects for this study are likely to consist of those identified above by Papyrus Wilbour as least economically affluent, but also include those common professions excluded from this document, but attested elsewhere such as: tenant farmers,²⁰ domestic servants²¹ and manual labourers.²² The emphasis must be placed on those who could not have occupied the elite professions reserved for the better skilled and educated strata of society.²³

Making distinctions regarding economic status is not an issue at Matmar, as none of the TIP burials can be considered to be of outstanding wealth,²⁴ even by a relative margin. Whilst one must always exercise caution when presuming status from grave inclusions as it is hard to value objects and contexts without a thorough understanding of the activities they are associated with (Sørensen, 2006: 107),

²⁰ Well documented throughout Egyptian history through the survival of land rental agreements (Ikram, 2005: 146).

²¹ An especially common profession for women, as detailed in many letters from the period (Capel and Markoe, 1996: 40).

²² Conscripted peasants, used to work along side craftsmen and artisans on large scale building projects (David, 200: 32).

²³ Kemp (1991: 307) hypothesises that, based on calculated estimates from Amarna records at least 50% of the population was involved in manual or agricultural production, as opposed to more bureaucratic or aristocratic professions. That estimate, he acknowledges, is for a model town, built and populated to order, and the percentage would have likely been far higher in the general population.

²⁴ Whilst quantities of grave goods vary, the construction of the burials is limited to poor quality grave cuts, sporadically re-enforced with a small amount of mud brick. No tomb superstructures or subterranean constructions are evident. No titles or occupant's names are recorded on any grave goods. One piece of text was recovered from a piece of cartonnage, but no spells or texts are otherwise evident on the coffins recovered. No gold was recovered from the site, silver and bronze were only ever present in small quantities, mainly as small rings.

Egyptologists are most fortunate that their written historical record provides a textual account regarding the use of funerary equipment and highlights the importance of certain objects, pomp and ceremony in the burial process. Without the survival of funerary text we would never have known that spells from the Coffin Texts and Book of the Dead were to be recited over amulet designs drawn on the mummy bandages of the deceased (Andrews, 1994: 6) or the importance of the correct spells and procedures to transform the earthly body into an eternal one (Taylor, 2001a: 17). By utilising these texts, one is able to identify those graves with an absence of seemingly key funerary equipment, objects and texts, to an extent which would not be possible without the documents recovered from Pharaonic Egypt.

3.2.2 Interdisciplinary studies

A primary objective of this dissertation is to fuse statistical testing with current archaeological practice and Egyptological theory, in an effort to progress beyond outdated, stagnated forms of mortuary analysis which still follow the examples of early processual work which directly associated apparent economic wealth with social status (such as Binford, 1971; Saxe, 1970; Tainter, 1971. See Brown, 1991 for further discussion). The proven relationship between economic and social status and funerary pomp in ancient Egypt has been noted above (*see 3.1.1*), but despite the obvious need of this project to grapple with the documented material elements of Egyptian funerary culture in order to identify potential sites for expansion and burials for inclusion, Matmar's distinct lack of grave goods and unexpected object distribution in relation to the sex of the deceased, provides an excellent opportunity to seek out more subtle expressions of status and relationships in the mortuary context.

A great inspiration for this methodology and approach was the ongoing work of Egyptologist and archaeological theorist, Lynn Meskell. A third wave feminist,²⁵ she supports an interdisciplinary approach to the search for pluralism in ancient society, exploring identity issues, class, sexuality, age and ethnicity (Meskell, 1999: 2). Throughout her work she has attempted to mesh substantive archaeological data and statistical testing with social theory in order to produce a viable social archaeology (Meskell, 1999; 2002; 2004), exploring how large scale social processes and individual choice linked together in the ancient world (Meskell, 1999: 6) as a deliberate contrast to the earlier work who focused solely on broader statistical trends in funerary practice (Smith, 1992: 196). Meskell is a firm universalist claiming that we all experience the world from the starting point of one human body, no matter what our cultural experience (Meskell, 1999: 38). 'Individualism', in the modern western sense, may not have operated in the ancient world but given the production of biographical materials and self portraits in antiquity it is impossible to discount the concept of the socially self-aware individuality (Meskell, 1999: 10-1).

The intensely phenomenological approach which underpins much of Meskell's work has been criticised by those who feel she, perhaps unintentionally, infuses her conclusions with modern worldviews (Parker Pearson, 1999: 104) leading to unsubstantiable claims about past thought processes (*pers.comm.* Leslie Anne Warden).

Whilst it is dangerous to focus entirely on a processual 'best fit', one should not ignore unexpected or unusual data outside of a trend (as one may discard 'rogue' data in a science experiment). However, it is misleading to follow phenomenological pathways to places which we could never truly understand and therefore produce a false impression as to our level of viable interpretation. In stressing the importance of the individual, one does not diminish or suggest the

²⁵ Feminist theorists have embraced elements of postmodernist thoughts in the third wave; their interests have shifted to more cultural and symbolic approaches (Gilchrist, 1999: 2). They have set aside the universalist meta narratives of second wave feminism. Emphasis is now placed on correctly understanding gender difference (Brooks, 1997 in Gilchrist, 1999: 2).

redundancy of other categories, such as culture, religion or society. Whilst we all start from the point of 'one body', that body is brought into radically different climate, environmental, social and belief systems.

There remains criticism from within Egyptology (Stevenson, forthcoming: ch.9) as to the level at which these current ideas and theoretical developments, within both archaeological and historical contexts, have been embraced and integrated into the discipline (*see* 3.2). However one should treat more dramatic claims,²⁶ such as those made by Redford, suggesting that theory (historical and archaeological) has yet to penetrate the majority of Egyptological studies (Redford, 2000: 3, 7) as perhaps overly cynical and misrepresentative.

Aside from the aforementioned study by Smith (1992), further examples of statistical analysis (outside of artefact seriation) within 'historical' Egypt have previously been rare,²⁷ although Matmar burials dating to the Old Kingdom have previously been subject to statistical work (Seidlmayer, 1990). Egyptian prehistory, as with prehistory worldwide, has embraced more rigorous methods to determine patterning in practice. Recent doctoral studies by Stevenson (2006) and Rowland (2004), as well as ongoing work by Mawdsley²⁸ demonstrate that there is no shortage of young scholars undertaking new research in this area of Egyptology. Nubian and Kushite archaeological studies, again disciplines which sporadically deal with text, have also long utilised a more mathematical approach.²⁹ It was Sinclair and Troy's (1981) pioneering study using CANOCO correspondence analysis which partially inspired the pursuit of multivariate analysis in this study.

²⁶ Donald Redford suggests that Egyptology needs to embrace more theoretical approaches, especially within historical theory. However, he subsequently goes on to voice opposition to the rise of a 'history from below', describing it as an 'indulgence' for the modern historian (Redford, 2000: 3).

²⁷ Some unpublished works are available (e.g. Sfakianou Bealby, 2006).

²⁸ Lisa Mawdsley, PhD Candidate at Macquarie University researching Naqada III period burials at Tarkhan.

²⁹ Additionally see Rose (1992).

Universally, there is a growing understanding of the benefits of interdisciplinary work to supplement historical archaeology.³⁰ Over the last 15 years there has been a move by some within the archaeological profession to combine interpretative archaeologies with historical theory (Last, 1995). Comparatively, both medieval England and ancient Egypt suffered from an extremely limited literacy level and both could be suggested to have historically suffered from 'a deep seated prejudice in Western intellectual traditions which privilege language' (Shanks and Hodder, 1995: 43). More recently, Anglo-American *historical archaeology* has slowly justified its existence to sceptical academics, moving the discipline forward to an era beyond the dismissal of archaeological evidence as significantly less informative and towards a greater incorporation of written sources in historical and site interpretation (Tarlow, 1999: 3). Perhaps Egyptology, in turn, may benefit from the construction of a 'proto-historic archaeology', a cautious but informed amalgamation of written documents with archaeological data on a more localised and domestic scale. Recent Egyptological publications with a text-based focus have benefited from successfully integrating current theoretical developments into their research methodologies (e.g. Gozzoli, 2006: 2-17).

In spite of the aforementioned formulaic nature of many Egyptian religious texts, Egypt's data set still presents a rare opportunity within the ancient world to fuse, albeit tentatively, archaeological evidence with social and historical theory into a unique historical archaeology. Through Egypt's written records we are gifted a more concrete platform of underlying social concepts and precedents upon which to base our interpretation of sites with no direct historical record. Archaeology and historiography should not be confined to separate academic realms within the ancient world, despite the demands of specialisation (Ambridge, 2007: 638). A cooperative approach will be key to 'formulating the questions so that both disciplines may contribute to their solution' (Laurence, 2004: 106). This in turn may help Egyptian archaeology shake off its isolated status, forcing the world to

³⁰ A term applied to all archaeology in UK from the medieval period onwards.

acknowledge its validity as a viable data set from which to test and improve statistical and interpretative methods (Meskell, 1999: 2).

Chapter 4: Methodology

4.1 Updating the cartographic resource

The need to revise Brunton's site maps was immediately identified as a priority (see 2.1). Observing and understanding the spatial relationship between natural and archaeological features on site is an integral part of any archaeological research. The ability to display topographical information digitally will provide a

long term resource for the site, which can be utilised for future projects. Additionally, the quality of the original cartographic record, Brunton's 'sketch' maps (see below), was sufficiently poor that modernisation was essential.³¹

The spatial mapping programme ArcGIS provides an excellent framework within which to create interactive maps suitable to display satellite imagery, cartography and provisions for further data input and data collection. Until recently, excavations wishing to use Geographic Information Systems (GIS) display programmes on Egyptian sites were forced to create an independent '0,0' grid point around which they constructed an arbitrary stand-alone mapping system³² (*pers.comm.* Mark Kinney). This is a time-consuming and specialised process, which restricts use of the maps to the area covered by the initial survey grid. The Egyptian Supreme Council of Antiquities (SCA) is in the process of creating a national database of base maps³³ for use in ArcGIS. These maps will be tied into a fixed, national co-ordinates grid.³⁴ However, this project is far from completion and at present all the SCA are able to offer are fixed modern topographical maps without exact embedded co-ordinates (*See pl.III*).

Creating a topographical portrait of an area has been made considerably easier as an increasing amount of professional aerial and satellite imagery is available online thanks to both the de-classification and digitisation of 'outdated' military archives and the production of worldwide geographic information and mapping programmes, such as Google Earth. The United States Geological Survey (USGS) which provides access to American satellite imagery (including those from the CORONA project)³⁵ was less helpful than had initially been hoped, as the picture

³¹ Brunton's Matmar sketch maps are fundamentally unsuitable for use in modern archaeology. Hand drawn without a reference grid, they contain an array of problems (See pl.I and pl.II). For example, Brunton did not include the direction of North, or identify any of the three villages (Khawaled, Matmar, Ghoraied) he names in his descriptions. There is no map key and they are full of unexplained, often illegible annotations in Arabic.

³² For example, the Giza Plateau Mapping Project (GPMP) (Source: GPMP).

³³ At scales of 1: 10000, 1: 25000 and 1: 50000.

³⁴ Similar to the Ordnance Survey system employed in the UK.

³⁵ These images were collected from as early as 1959 and were declassified in two batches in 1996 and 2002 respectively (Source: USGS).

quality was too poor. This is unfortunate as older imagery may have matched Brunton's sketch maps more closely, given that the archaeological area sits on the edge of the Nile and cultivated areas. Egypt has also experienced a huge surge in population growth over the last century, which has brought with it inevitable destructive consequences on the landscape (Awad and Zohry, 2005).

The final revised maps were created using ArcGIS by layering and geo-referencing Google Earth screenshots, on top of the SCA map provided (*pl.III*). In turn the scanned sketch maps from Brunton's report were geo-referenced on top and rectified using common landscape features (*pl.V*). This allowed the area numbers and significant features to be copied across onto the digital maps, transferring all relevant data across but allowing it to be selectively displayed.

4.2 Creating and compiling a site database

Creating an electronic database containing a revised and current grave catalogue was essential. Within the original report (Brunton, 1948), information on the graves is divided between the grave registers and main body of text. Additionally, Aston's revisions (2009) needed to be integrated into the data set to create a current and comprehensive corpus.

The database was constructed using Microsoft Access which is best suited for querying this quantity and complexity of data. The level of information presented for each grave varied greatly from burial to burial and some graves were excluded completely, only appearing in the main body of the text.

Those graves recorded on the tomb registers provided information under the following headings:

- Tomb number*/**
- Shaft Dimensions (North-South, East-West and Depth)*

- Chamber comments or dimensions (as above)*
- Azimuth (grave orientation)*
- Attitude (position of the body and direction of the head)*
- Biological Sex *
- Pottery inclusions (if any)**
- Stone vessels (if any)**
- Beads (if any)**
- Amulets and Shells (if any)**
- Seal Amulets (if any)**
- Other objects (if any)** including: Cloth/Ear Rings/Finger Rings/Baskets/Spathas/Bread/Shoes/Iron tools/Dishes /Pennanulars/Figurines
- Coffin style and dimensions (if any)*
- Dimensions of any included bricks*
- Grave condition*
- Reference to further discussion/Index*

The design also had to account for some grave cuts containing more than one burial and a huge fluctuation in the frequency of grave goods. In order to avoid using one clumsy and over-populated entry form, which would often result in the majority of the fields remaining blank, the data was split into two smaller linked tables within the single database.

The first table's entry form (see fig.1 below) includes all information which can only occur once per burial (of which there may be up to 3 included per grave cut).³⁶ This creates a reference card for the burial itself, including the coffin style, but does not record any of the material culture, except the coffin, deposited in the burial.

³⁶ Categories included on this form are marked with * above.

Figure 1: Grave Card Entry Form (Designed by author)

The second, smaller table (see fig.2 below) documents all grave goods, dividing them by typological sub headings.³⁷ It also records, where possible, the position of the object within the grave, its typological reference and current location.

Figure 2: Object Record Form (Designed by author)

³⁷ Amulets, beads, cloth, earrings, stone vessels, plaques, pottery, rings, seal-amulets, shells, shoes and other. Categories included on this form are marked with ** above.

Both tables contain two common fields: 'tomb number' and 'burial number', which refer all artefacts and data to their original grave cut. These fields can be linked together to create queries including data from both tables.

This format allows the grave goods to be queried as a separate data set or by area, using a wild-card search based on the beginning on the tomb number (e.g. 7**, 12**). This relational table system allows a high level of flexibility for running a variety of queries.

The database has been tailored to the site but not to this specific project. It has been designed to help facilitate further research on the site. The general format of the entry forms could easily be modified for further research on other sites.

A copy of the database has been included on the enclosed CD-ROM.

4.3 Statistical Analysis

The variable categories identified between coffin and amulet populations provide the basis for the division of the dataset. These imposed divisions can be plotted against the sex/age of the deceased and the area of the site, as well as each other, in an attempt to isolate relationships of statistical significance between them.

The data has been initially be queried and sorted within Microsoft Access before being exported into Microsoft Excel to create data spreadsheets and graphs. Finally, data suitable for statistical manipulation will be imported into SPSS³⁸ for analysis. All calculations are first performed on a site-wide basis, with a view to performing area-specific comparisons where the quantity of data will allow this

³⁸ Version 17.0.

without lowering the validity of the results. Over stretching the data will only serve to damage any credibility attached to the results of the study.

Null Hypotheses³⁹ (H_0) will be offered for all statistical calculations conducted to provide a control scenario.

4.3.1 Chi-square

Analysis of the significance between sex and grave good styles (by Area) will involve Chi-square tests (see Fletcher and Lock, 2005: 134). Chi-square tests assess the potential of there being a statistically strong relationship between two groups of data. This is achieved by comparing the expected (E) and observed (O) frequencies of data within the sample population.⁴⁰ The significance of these results can be further examined through the observation of the standardised residual (the discrepancy between the two values). When subdividing the data set by area, the small quantity of examples present will require the calculation of the exact significance rather than the asymptotic significance.⁴¹

Chi-square has become a popular starting point for archaeologists when attempting to identify or conclusively prove the significance of a relationship between variables across a wide cross section of archaeological studies (Gunneman and Euler, 1976; Weglian, 2001; Bray, 2003; Stevenson, 2006).

4.3.2 Bivariate Analysis

³⁹ The Null Hypothesis offers a statement which will or will not be disproved by the following statistical testing. It is often used to represent the outcome one wishes to disprove or the outcome if the tests prove nothing e.g. 'There is no relationship between x and y '.

⁴⁰ The standard Chi-square [$\chi^2 = (O-E)^2/E$] test will be used in crosstabs format (bivariate), plotting the two variables against each other. An asymptotic significance between variables equating to less than 0.05 displays a statistical significance, incrementally increasing in significance to less than 0.01 for extremely strong significance.

⁴¹ A 'best-fit' rounding based on an asymptotic curve.

To compare more expansive, multi-variable data groups, such as amulet design, bivariate correlation analysis will be used to plot each of the variables against one another. This is effectively a time-saving measure, allowing large scale data comparison when one is unsure of the level of correlation between variables. The results enable identification of those pairs of variables whose relationship may be formally structured and beneficial to investigate further.

Due to the binary nature (present or absent) of the amulet information, the 2-tailed significance presented in the SPSS results will be inaccurate. However important relationships can still be identified where the Pearson's correlation coefficient⁴² returns a value greater than 0.2. These relationships can then be investigated using Chi-square and their true significance gained through reading the Phi coefficient output.

Chapter 5: Introduction to the Matmar Dataset

5.1 Some notes on Third Intermediate Period Chronology

The TIP traditionally covers the 21st-25th Dynasties, covering around 400 years of Egyptian history and encompassing two periods of foreign rule (see Table XIV for dating and kinglist). Dynasties 21-24 are usually referred to under the umbrella of the Libyan Period,⁴³ whilst Dynasty 25 refers to Kushite rule of Egypt. Inaugurated by the weakening of the economy and major political upheaval, civil war left the country divided with power split between the continuing line of

⁴² Pearson product-moment correlation coefficient (typically denoted by r) is a measure of the correlation (linear dependence) between two variables X and Y , giving a value between +1 and -1 inclusive. It is widely used in the sciences as a measure of the strength of linear dependence between two variables (Rogers and Nicewander, 1988: 60).

⁴³ Broekman, 2009 provides a strong reference for current theory and research across this period.

Ramesside kings in the north and the powerful line of priests at Karnak in the south (Taylor, 2000: 331).

The subsequent political schism was so great that Thebes, under the command of the Generals (and High Priest) Piankh and Herihor (Jansen-Winkeln, 2006a: 218-33), temporarily ceased to use the regnal years of the Delta kings in favour of the term 'renaissance' (Van Dijk, 2000: 309). The ruling line in the south was quasi-autonomous and command of the area passed from Piankh to his son, Pinudjem I (Jansen-Winkeln, 2006a: 225-6).⁴⁴ Psusennes I (c.1051-1006), Pinudjem's son, succeeded Amenemnisu at Tanis and took control of Lower Egypt, temporarily reuniting the country under one ruling family.

This decentralisation of power did little to stem incursions by Libyan Meshwesh and Libu tribes, into Egyptian territory and gradually into local government (recorded in both the south and north) leading Taylor to suggest that Meshwesh chief Sheshonq I's ascension to the throne at Tanis and foundation of the 22nd dynasty, was something of an inevitability (2000: 335).

Establishing a solid chronology for the TIP, particularly dynasties 22,⁴⁵ 23⁴⁶ and 24,⁴⁷ has long proved problematic and remains a source of debate and academic disagreement (e.g. Kitchen, 1996; Hornung, 2006; Gozzoli, 2006; Aston, 2009b). Equally, the dates relating to the establishment of the 25th dynasty prior to installation of Taharqa are still unclear (Jansen-Winkeln, 2006b: 258). Owing to the apparent chronological overlap of 'kings' during this period (see footnotes 45-47 below and Hornung et al (2006) for further information) and an absence of any comprehensive, contemporary records, Egyptologists have had to mitigate

⁴⁴Jansen-Winkeln proposes that Herihor's reign should be placed between that of Piankh and Pinudjem, but in either case the son eventually succeeded to the position (2006a: 225-6).

⁴⁵ Rulers of Meshwesh Libyan origin across large portions of the country. Manetho states this dynasty ruled from Bubastis, but they may have ruled from Tanis, where their tombs are located.

⁴⁶ The dating and origins of Dynasty 23 are highly contentious, but they appear to be a separate, independent line of Libyan rulers based in Upper Egypt.

⁴⁷ A short lived dynasty, possibly based at Sias.

between Manetho's work⁴⁸ and a minefield of other textual sources (Taylor, 2000: 330; Gozzoli, 2006). However, the finer points of kingly succession do not affect this paper, therefore all chronological references will conform to the chronology set out in Table XIV (Hornung et al, 2006: 493-4).⁴⁹

5.2 Introducing Matmar: Site Location, topography and mapping

The Matmar village (El-Matmar) is located in Middle Egypt, centred on co-ordinate points 27°06' N 31°20'E. It lies approximately 18km south of the modern city of Asyut (Source: Google maps).

The ancient town is situated on the east bank of the Nile (Baines and Malek, 2000: 14), part of the 10th nome of ancient Upper Egypt,⁵⁰ the capital of which was Tjebu, near Etmanieh around 35 km south of Matmar (O'Connor, 1972: 83).

Using evidence from Brunton's original description (Brunton, 1948: 2) and maps, it appears that the majority of the original Matmar concession and archaeological area appears to be an encroachment by the desert edge into the agricultural strip which runs along each side of the Nile (*pl.IV*). It is possible that the unusually close proximity of the desert plain to the river may have been a factor in the initial settlement of the site. Prehistoric burial preservation, along with the compacted sand and sandy gravel subsoil's, suggests that this area had not been affected by the inundation for sometime.

Brunton clearly viewed the site as two distinct areas. In his site introduction he describes he notes that:

⁴⁸ Himself heavily reliant on Delta based sources (Taylor, 2000: 330). No other Pharaonic king lists cover this period.

⁴⁹ The most up to date and comprehensive edited volume concerning Egyptian chronology; for in depth discussion see Jansen-Winkel, 2006a;2006b.

⁵⁰ Referred to as the Cobra nome, located in the modern region of Qaw el-Kebir (Wilkinson, 2003: 86).

[From Khawaled to Matmar]...The cliffs, following the general north-south direction, recede therefore from the cultivated plain; the stretch of low desert becomes wider and wider and is not broken up into such well marked spurs and wadys as are found south of Khawaled.

Beyond Matmar, there is a great change; the desert edge reverts to its more usual northerly trend, while the cliffs are much more broken up and cease to form the characteristic rampart with occasional gorges.

(Brunton, 1948: 2)

The majority of TIP burials were excavated from the northern end of the first section of the site. However, with one exception, they were clustered in close proximity to the village of Matmar itself (see *pl. VII*).

5.2.1 Site Records

Within the original and only site report, Brunton assigned each area of excavation a number moving upwards in increments of 100, beginning from 100. These 'area numbers' were recorded on his report maps but whilst the sketches illustrate the relative location of the arbitrary excavation areas to one another, they do not record area boundaries (*pl. VI*).

It is clear that each area number only provisioned for a maximum of 100 registered features (i.e. 100, 200, 3200, 3300), meaning some numbers must have been issued as an 'overflow', rather than for a distinct new excavation area. The majority of TIP graves (*pl. VII*) are located in the adjacent areas of 700, 1200, 1700 presenting a false first impression of three distinct cemeteries.

In contrast to the sketch maps provided for the site as a whole (see *4.1 above*), cemeteries 2600, 2700 and the temple area appear to have been planned with great competency. Their mapping includes a magnetic north arrow and they plot the position of relevant archaeological features and surrounding burials, displaying all grave numbers, shapes and sizes. Why Brunton chose not to record

the rest of the site to this level of accuracy is unclear as his team was clearly capable of doing so.

The final topographical sources available for Matmar are the un-catalogued photographs, held in Oxford by the Griffith Institute. There are 566 photographs in total, which, if the catalogue numbers on the artefacts have been correctly interpreted,⁵¹ span from the 1928-32 seasons. The majority of the photographs document finds from the site,⁵² as well as pre- and early-dynastic burials.⁵³ Although they are not labelled, several shots provide an overview of the Matmar landscape during Brunton's excavation. They present the area as a typical Nile valley landscape (see Figs. 3 and 4); the standing water and vegetation illustrate the proximity of the site to the inundation area during the time of excavation.



Figure 3: Photograph 256, possible south-facing shot. Matmar, location unknown (Courtesy of the Griffith Institute, Oxford University).

⁵¹ For example, 28/2221 would refer to 1928/Area2200/Grave or Feature 21.

⁵² photograph numbers 439-566.

⁵³ photograph numbers 275-300.



Figure 4: Photograph 269, south-facing. Matmar, location unknown (Courtesy of the Griffith Institute, Oxford University).

The only landmark identifiable in the landscape photographs, may be the mausoleum (circled in red below, see fig. 5) of Sheikh Abu Khatwa. This would identify fig.6 as the area near the temple site including 900, 1000 and 1100. The direction of the dramatically sweeping desert edge shows this to be a northward facing shot.

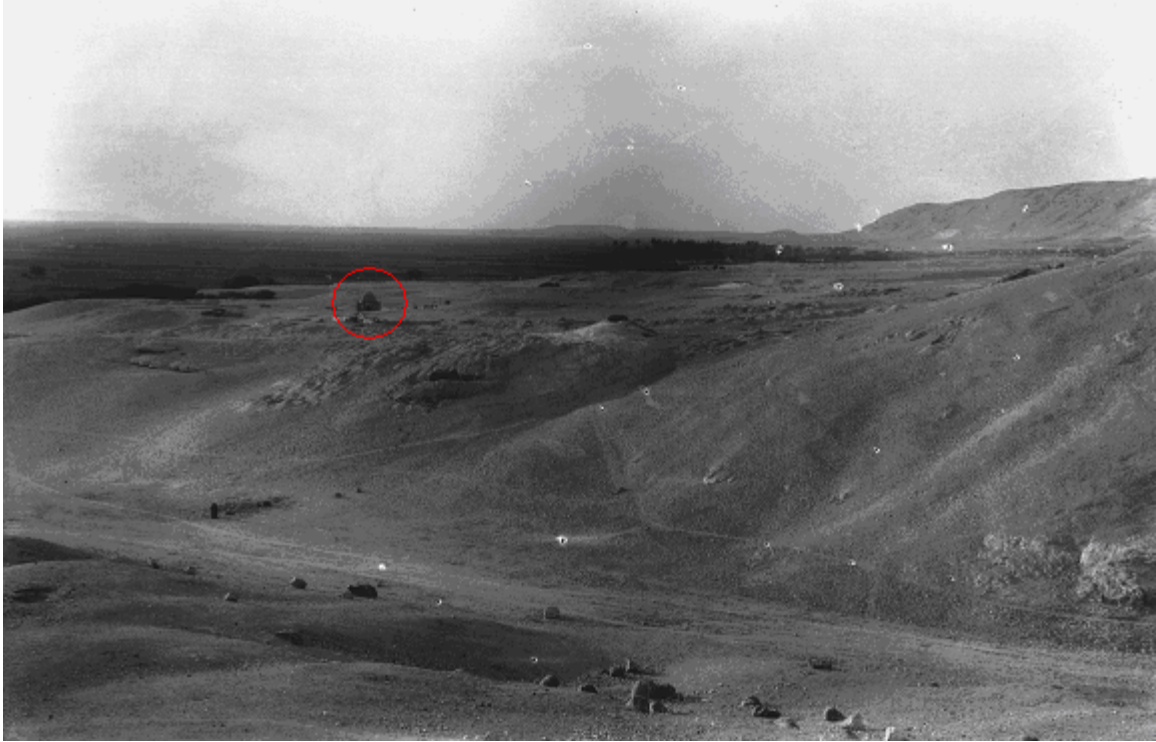


Figure 5: Photograph 304, north-facing. The Tomb of Sheikh Abu Khatwa (Courtesy of the Griffith Institute, Oxford University).⁵⁴

5.3 History of the site

The archaeology of the area implies continuous, or near continuous activity, both domestic and funerary, in and around Matmar village, from the early prehistoric periods right through until the present day.⁵⁵ Mortuary archaeology vastly outweighs settlement evidence across the concession.

The detail of recording methods varies between areas, perhaps following the excavation team or sponsors interests. For example, across the Predynastic cemeteries of Areas 2600 and 2700, particular care was taken to record each grave's position on a plan (Brunton, 1948: pl.xix). Similarly, burials of the 4th and 5th dynasties were recorded in great detail, as a plan and section and noting the

⁵⁴ Circled in red.

⁵⁵ National Geographic identifies the site, under the name of *Al-Mitmar* as part of its current online mapping service (Source: National Geographic Maps).

distribution of material culture, but not their location relative to one another (Brunton, 1948: pl.xxxvii – xli). Comparatively, levels of recording for the TIP corpus are poor.

If we are to trust Brunton's dating techniques then population and activity levels on site appear to fluctuate wildly over time, with the recovery of graves heavily biased towards the earlier periods⁵⁶ and the large TIP cemetery. Of course, Brunton's excavations were by no means exhaustive and one cannot discount the possibility that graves have been missed or lie outside the boundaries of this concession. There remains an absence of any substantial settlement archaeology for the TIP, which, when one considers the high quantity of burials, raises the question of the location of the TIP settlement. One would assume that the poor would bury their dead closer to their settlements, primarily for reasons of practicality. Therefore there is every likelihood of undiscovered TIP domestic settlements in and around the Matmar area, perhaps highlighting further fieldwork potential.

The earliest evidence of activity is located at Badarian villages⁵⁷, which with their accompanying cemeteries⁵⁸ date the site activity back to at least 6000 years ago. The Matmar site is only 15 km north of Badari, so their presence is unsurprising. Brunton also speculated as to the presence of 'Tasian' artefacts across areas 2000, 2100, 2500 and 2700 (1948: 4); however the existence of this culture remains under debate.⁵⁹ Later Predynastic⁶⁰ and Protodynastic⁶¹ graves have

⁵⁶ Badarian to late Old Kingdom/First Intermediate.

⁵⁷ Areas 2000, 2100, 3200.

⁵⁸ Areas 2000, 2500, 3000, 3100 and possible 6000.

⁵⁹ Brunton's excavations at Tasa, just north of Badari led him to conclude that a second 'Tasian' culture was present in the area. Since 1955 scholars have failed to agree on its existence. For further discussion see Baumgartel 1955: 20-21 (against), Kaiser, 1985: 71-79 (pro), Hendrix and Vermeersch, 2000: 40 and Midant-Reynes, 2000: 164-6).

⁶⁰ Areas: 200, 2600, 2700, 3000, 3100, 5100.

⁶¹ Areas: 100, 200, 400, 600, 900, 1000, 1300, 2000, 5000.

been identified across the site as well as substantial amounts of burial activity from the Old Kingdom⁶² and First Intermediate Period.

Evidence declines for interments during the Middle Kingdom⁶³ and Second Intermediate Period,⁶⁴ however, the construction of a Seth temple precinct, including the use of stones with Atenist iconography⁶⁵ in Area 1000, indicates renewed activity and major construction projects from the early 19th Dynasty. This may have been a result of the unsuccessful attempt by the Ramessides to install Seth as the principle deity of Upper Egypt (Andrews, 1994: 26).

A scattering of late New Kingdom graves uncovered in and around the temple⁶⁶ and a cluster of contemporary mud brick structures, probably granaries and houses, are the first major domestic constructions Brunton encountered. A large, ceremonial bone pit sits on the border between areas 800 and 900, close to the temple of Seth, but had been subject to robbery.⁶⁷ Two further example of bone pits were discovered close by near Qau during excavations by the British School of Archaeology in 1923 and 1924 (Brunton, 1948: 65).

The majority of Third Intermediate Period graves (see below)⁶⁸ are located to the east of the temple site within the area encompassed by cemeteries 700, 1200 and

⁶² Fourth Dynasty: 2300, 3200; Fifth Dynasty: 3200, 3300, 5300; Sixth Dynasty: 400, 500, 600, 800, 3200, 3300, 5300; Seventh and Eighth Dynasties: 400, 500, 600, 1300, 3000, 3300, 5300; Ninth and Tenth Dynasties: 300, 400, 500, 600, 700, 1200, 1300, 1700, 2600, 3000.

⁶³ Graves in Areas: 400, 500. 2000.

⁶⁴ Areas: 5000, 5300.

⁶⁵ The presence of positively dated late New Kingdom burials (19th-20th Dyn.) at the temple, combined with an absence of any concrete 18th Dynasty activity at the site, have led to speculation that these blocks may have been brought into the area from another site, rather than coming from a local Aten temple (Aston, 2009). *Where* they could have come from has not been addressed and their placement within the Seth temple structure is not regular. Brunton does not record a second temple site or temple foundations in the immediate vicinity, but the site is approximately 120km south of Amarna (Source: Google maps) making a local source a more plausible option.

Aston suggests that the initiation of burial activity within the temple boundaries could indicate there was no longer a cult practicing there by the late 19th or early 20th Dynasty (Aston, 2009aa). However, this is purely speculation, as burial at sites such as Tanis appear to run concurrently with an active temple cult.

⁶⁶ 900, 1000, 1100 hold graves from the 19th-20th Dynasties (see Aston and Bader, 1998 for further comments on the age of these burials).

⁶⁷ "The story went that ivories, some 'inscribed', had been sold to dealers for £135" (Brunton, 1948: 65).

⁶⁸ Large cemetery areas: 700, 1200, 1700. Others in 600, 800, 900, 1000, 1100, 3200, 5000, 6000.

1700. They stretch into the desert plain, further away from the Nile and agricultural areas than burials of any other period.o

Whilst the Late⁶⁹ and Ptolemaic periods are barely represented⁷⁰ there are large quantities of late Roman or Coptic graves.⁷¹ The areas between 200 and 300 were previously ‘completely and methodically’ plundered and no further excavations were carried out. Brunton attributes the grave robberies to the demand for early Christian textiles and fabrics (1948: 91).

No comments were made in relation to activity after the Arab conquest, although Brunton does make reference to an ‘Old Arab Village’ on part of his West sketch map (Brunton, 1948: pl. I), implying the current phase of settlement had some longevity. The village is also identified on western maps dating from to the mid 19th century (Johnston, 1861).

5.4 The TIP dataset

The TIP graves represent the second largest corpus from the Matmar site, behind those graves from the Predynastic period.

515 graves from this period were recorded by Brunton, 228 of which are featured on his tomb register (Brunton, 1948: pl. liv, lv, lvi), which appears to have been reserved for graves which contained funerary goods. Graves were originally dated between 900-650 B.C. (22nd-25th Dynasty), based on contemporary amulet, ceramic and stone vessel typologies (Brunton, 1948: 79-81 90).⁷² These original dating estimates have been verified and expanded upon by Aston (1987; 1996; 1999; 2009).

⁶⁹ 26th dynasty onwards (Hornung, 2006).

⁷⁰ Small quantity of graves (Number of burial shown in brackets after the area where known): 300, 400, 500, 800 (1), 2000 (2), 5200.

⁷¹ Excavated Areas: 600, 800, 900/1100.

⁷² Particularly relevant were those from the *Lahun II* volume (Petrie, Brunton and Murray, 1923).

As a discipline, archaeologists accept that early excavation reports are rarely of the standard one would expect in modern practice and Matmar is no exception to that rule. However, Brunton's recording methods were comparatively thorough and forward thinking for the period in which he was excavating and he presents a fairly comprehensive body of data. New forms of ceramic or stone vessels and beads were drawn, but existing styles were referenced back to existing typologies (e.g. Petrie, Brunton and Murray, 1923). The report's attention to detail is commendable, providing illustrations of almost all finds from the site, pottery seriations, bead registers and 10 photographic plates.⁷³

Since the original report's publication, the only additional work carried out on the TIP grave corpus has been by David Aston, latterly in collaboration with Bettina Bader. As part of his PhD thesis (Aston, 1987), he presented a revised catalogue of finds, with additional comments on dating. Aston subsequently used artefacts from Matmar in his seriation of 12th-7th century ceramics (Aston, 1996), which led to further amendments concerning portions of Brunton's original dating (Aston and Bader, 1998). These adjustments were primarily focused around graves from the temple area; Areas 1000 and 1100. Aston's comments are collated in the revised edition of his PhD (Aston, 2009a).

5.4.1 Some notes on the revised database

Table IV compares both catalogues alongside the revised database⁷⁴ and serves to highlight the discrepancies between datasets.

The deleted graves, 9 in area 900 and 2 in area 6000, were removed as no information was provided in the original report other than their grave number. Brunton did not use the full 100 burial numbers available in each area. However

⁷³ Pl..vi, vii, xvii, xviii, xxxvi, li, lii, liii, lxviii, lxix.

⁷⁴ **N.B.** Area 999 has been assigned to the graves from areas 700, 1200 and 1700 which Brunton recorded as a mass block.

his recording is not consistent and he often appears to skip numbers from the middle, rather than the end, of the sequences.⁷⁵ Additionally, the Aston catalogue does not always match Brunton's entries. 'Tomb group 506 Tomb number 'vii' (unregistered)' (Aston, 2009a) could not be located from the original records and has therefore not been included in the revised database.

The decision to include graves from area 1000 which Aston has suggested may be of an earlier date (20th-21st Dynasty) (based on ceramic forms, see Aston and Bader, 1998) has been taken on the basis of the ambiguity of ceramic typologies over this and the appearance of green glazed amulets, which Aston concedes are considerably more common from 850 BC onwards.

Graves 1232 and 1255 have been reassigned as amulet burials on the advice of Aston:

Although the excavator assumed that this was a disturbed burial with the body missing, it is similar to the so-called tomb, Matmar 1255 (below), and both are probably to be associated with the burial of wedjat-eye amulets known elsewhere; the best documented examples being found at Tell Suein.

(Aston, 2009a)

Similarly, grave 766 has been reassigned as a pot burial, with all forms dating to the 8th century - early 7th century BC.⁷⁶

5.4.2 Analysis and notes for the key areas of the dataset⁷⁷

Amulets (including seal amulets and plaques) and coffin type have previously been specified as the primary areas of investigation for this study relative to the

⁷⁵ He does not include: 782, 798, 1208, 1229, 1255, 1268, 1280, 1289, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729.

⁷⁶ Types 69, 81, 148.

⁷⁷ All figures given are from Humphreys, 2009 database.

biological sex of the individual and the *area* of the grave's location. With this in mind, there are several points of limitation which should be addressed before proceeding with analysis.

Area

Brunton's mapping techniques have already been brought under scrutiny. To recapitulate with specific focus upon TIP interments:

- The vast majority of grave locations were not recorded in detail, only by general association to an arbitrary area number (itself without boundaries).
- The exact boundaries of these areas are not noted on the sketch maps or in the report itself.
- The only exception to this rule is the area 1000 graves which are plotted in detail in the area surrounding the temple ruins (*pl. VII*).

Datable artefacts show area 1000 as the only area with an early TIP *terminus post quem*, as it consistently contains early TIP artefacts such as strongly datable ceramic forms⁷⁸ and a large *wedjat* amulet.⁷⁹ Area 700 contains items assigned a mixture of dates, some as late as the 25th Dynasty.⁸⁰ Equally, Area 1200 varies from the 22nd Dynasty⁸¹ to late TIP when dated by grave goods. Further dated areas include:

- 999 includes 2 late TIP ceramic forms,⁸² but these burials could have been located anywhere within the main cemetery area.
- 1700 consistently produced late TIP forms.⁸³
- 900 produced a single late TIP date.⁸⁴

⁷⁸ 1044, 1096.

⁷⁹ 1073.

⁸⁰ 732, 733, 745 (aprox. 6th-7th century).

⁸¹ 1256.

⁸² 999020, 999021.

⁸³ 1701, 1702, 1720.

Sex

No attempt was made by Brunton to identify the biological sex of infant burials, leaving us with four 'age/sex' categories; Male/Female/Child/Unknown.⁸⁵ With regard to the biological sex of the grave occupant, no notes were provided as to the methodologies used. Sexing of burials at this stage in history was in its infancy and often inaccurate (*pers.comm.* Emily Beales).⁸⁶ One cannot discount the possibility that an adult with a child may have been automatically assumed to be its 'mother' or that other assumptions were made about bodies based on grave good inclusions, as previously discussed above. Unfortunately, the absence of skeletal remains, drawings or photographs means we have little choice other than to rely upon Brunton's information, and attempt to identify dubious sexing based on our own understanding of the grave goods.

There is, unusually, no shortage of infant burials at Matmar. Brunton approximates the ages of at least 19 children as under 10 (definitely pre pubescent). More significantly, nine of these are identified as aged 5 or under indicating, however crudely, the presence of young infants in the cemetery. The age of five has been cited as a milestone in life for pre-industrial societies which, if reached, meant the subject could look forward to a reasonably full-term life (Brewer and Teeter, 2007: 114).⁸⁷ As it is not clear why Brunton chose to provide estimated ages for only 28 skeletons or by what method he reached his conclusions, these figures should be treated with the highest scepticism. However, they at least provide us with some evidence of a diverse range of child

⁸⁴ 901.

⁸⁵ For the purposes of sex based profiling all 'Unknown' graves have been discounted (858, 4082, 4083, 1096, 1108).

⁸⁶ Modern osteologists can sex around 95% of burials accurately by looking at the pelvis, chin and brow. However it remains something of an inexact science subject to ethnic variation (Chamberlin, 1994).

⁸⁷ For the lower, peasant classes this was around 33 for men and 29 for women. The more elite member of society, with their better diet and less strenuous professions could live well past 60 years (Brewer and Teeter, 2007: 114).

internments. Some discussion as to how the Egyptians themselves viewed these burials and the concept and boundaries of childhood takes place below.

The validity of the TIP grave data is particularly affected by Brunton's decision not to record 'empty' graves (graves without funerary goods) on the official register (see *pl.IX* for skewed data distribution). Correctly identifying each area's demographic is impossible as many of the adult male graves in areas 700, 1200 and 1700 did not contain artefacts, meaning most of these 'unregistered' burials are only known from the report's coffin styles table.

The totals given by Brunton (1948: 80) show male graves made up 31% of the total corpus. However, only 29 male burials (5% of the total corpus, 18% of male burials) are recorded on the grave registers.

Sex	Quantity (/542)	Percentage (/100)
M	165	31
F	226	41
C	146	27
U	5	1

Table 1: Sex distribution on site

Brunton's selective recording methods place limitations on the potential for understanding relationships between male burials and their location but, as noted above, it is important to consider that the area divisions of 700, 1200 and 1700 do not necessarily correlate to distinct cemeteries. The value of these unregistered graves should not be discounted, but this data must be treated with caution as to its accuracy. Sex is still a valid variable for use within multi-variate analysis, as we cannot exclude investigation into the differences between the grave goods of women and children because of a lack of information regarding the men. Whilst it is unfortunate that we do not have the locations of all male

burials on record, the data may still be used in comparison with burials from areas outside the main TIP cemeteries and have the potential to contribute to understanding on broader issues, such as burial styles or mortality rates.

Burial style

All burials are recorded as attitude 8F: flat on their backs with hands crossed across the pelvis (Brunton, 1948: 73). The majority were orientated approximately East-West⁸⁸ with their head facing to the west⁸⁹ and almost all burials contained cloth of some kind in the form of bandages.⁹⁰ Brunton did not comment on any evident signs of mummification, but the specific presence of bandages and body wrappings implies some care in the preparation of the dead for burial.

The construction of the burials is little more than a shallow cut. The deepest is 200cm, with an average of 120cm (Brunton, 1948: 79). From Brunton's notes it appears that 35 burials across the site (approximately 6.5%) are reinforced with some form of mud bricks, however this number may be higher as it is not always clear whether measurements refer to the coffin or included bricks. No grave cuts are re-enforced with stone or any kind of superstructure, giving the appearance that no construction was carried out before the death of the occupant.

Coffin styles

Coffins were divided by Brunton into the following 5 styles:

- Anthropoid
- Oval

⁸⁸ 143 tabulated burials lie between 46° and 143° azimuth, 26 are below and 13 above (Brunton, 1948: 79). The remainder are not recorded.

⁸⁹ Brunton records 399 out of 464 with the direction of the head as West (Brunton, 1948: 80).

⁹⁰ Those containing exceptionally well preserved cloth are noted on the grave table (Brunton, 1948: 80).

- Rectangular
- Other⁹¹
- None

Secondary coffin details included (additional):

- Cartonnage
- Wood
- Reeds
- Twigs

	Quantity (/542)	%
Anthropoid	270	49
Oval	89	16
Rectangular	37	7
Other	23	4
None	123	24

Table 2: Coffin distribution across the site

Across the site, the majority of coffins with identifiable colour traces were anthropoid (59), others were oval (1), unidentifiable wood (2) and a section of cartonnage (1). Despite Brunton's comments, which described all burial caskets as being in a very poor state of preservation, he was able to record detailed colour schemes for several of the coffins, including internal and external patterns. No photographs or sketches were provided and not all coffins identified as painted had their colours noted (12 without further entry).

Red is most commonly used (found on 36 coffins) and instances of blue (9), yellow (3), white (7), brown (4), pink (1) and black (1) are also recorded. One

⁹¹ **N.B.**Other (compiled by author) includes: cartonnage, reeds, sticks, wood, twigs as the first recorded occurrence in the burial.

coffin is noted as 'various'.⁹² One instance of hieroglyphs painted onto cartonnage in yellow and black is also recorded.⁹³

The majority of anthropoid wooden coffins from the 22nd, 23rd and 24th dynasties are known to have been decorated sparsely (Quirke, 1993: 167-8; Taylor, 2001b: 172). The use of funerary texts, on papyri or the coffin itself, also went into great decline between the mid 8th to 7th centuries B.C. (Quirke, 1993: 168). Colour preferences for red, blue, black and white are also recorded for this period (Taylor, 2001b: 173), which tie in well with the evidence recorded at Matmar, as does the introduction of cartonnage as evidence of post 21st dynasty burials (Taylor, 2001b: 172).

Grave goods

As discussed above, only graves containing artefacts were included on the registers, however, not *all* graves with artefacts were included as a matter of course. 9 'unregistered' graves contained ceramics, a not insignificant proportion when one considers the general absence of TIP pottery across the site.⁹⁴

The following notes are presented under the headings identified for the Object Record data entry form. No extra information will be provided on the beads as they are diverse enough and found in such large quantities to warrant a separate study.⁹⁵

Earrings and Rings

⁹² Grave 708 (2).

⁹³ Grave 999023.

⁹⁴ Additionally, unregistered graves featured, 2 bronze bells, a Bes amulet, a papyrus sandal, beads and a stone fragment (Brunton, 1948: 80).

⁹⁵ 216 separate *pieces* containing beads were found. Many of these pieces (47 bracelets, 94 necklaces, 2 anklets) contained multiple types of beads. 73 were single bead entries.

53 pieces were recorded across the site. These were made from silver (23), bronze (12), lead (12), copper (3), iron (1), and blue glaze steatite (1). One was unspecified. These items are highly gender specific. All earrings and all but one ring are included with female and child burials. Their distribution across the site is consistent, although none were present in Area 1700:

- 27 are found in Area 700 (23/27 or 89% precious metals⁹⁶)
- 22 are found in Area 1200 (11/22 or 50% precious metals)
- 4 are within 900 and 1000 (1/4 or 25% precious metals)

Earrings and rings are relatively high status objects, requiring expert skills and expensive metals.⁹⁷ The reduction in silver and bronze from cemetery 700 through to 1700 is one of the more convincing proofs presented by Brunton to support a trend of economic decline as one progresses through the TIP area (Brunton, 1948: 90), if indeed its chronological layout does run from 700-1700, which Aston agrees is difficult to prove on the available dating evidence (Aston, 2009a).

Stone Vessels

Stone vessels are extremely rare in TIP burials (Aston, 1987: 626). Across the entire site only 9 stone vessels were recovered; 7 travertine,⁹⁸ 1 limestone and 1 unspecified. The majority (5/9) were found in Area 700. The styles of 3 the pieces are somewhat rare, with un-pierced lug handles. Brunton wrongly states that only women are buried with stone vessels (1948, 90). There are in fact two

⁹⁶ 'Precious' is defined as gold, silver or bronze.

⁹⁷ There is linguistic evidence (see Schorsch, 2001: 55-6) to suggest that silver, electrum and gold were considered of similar value.

⁹⁸ Often referred to as Egyptian Alabaster or calcite (Klemm and Klemm, 2007: 162).

child burials containing stone vessels in area 700.⁹⁹ No stone vessels appear to have been recovered from male graves.

Pottery

In comparison with stone vessels, ceramics were rather more prolific on site. However, with only 43 occurrences of ceramics recorded across 35 graves (6.5%), they are by no means common. Unlike other objects, ceramic distribution across the site remains fairly constant:

- Area 700: 11
- Area 1200: 10
- Area 1700: 8
- Area 999 (700-1700 Unregistered): 9
- Other (800, 900, 1000,¹⁰⁰ 1100): 5

The majority of pots were placed away from the body in the grave filling (22/43 or 51%).¹⁰¹ Other recorded locations are the head (5) and feet (1) area but they were never recorded as being placed on top of the body. The sex and area distribution of ceramics is the most even of any of the grave artefacts.¹⁰² From the table below it would be difficult to comment on any bias in ceramic burial inclusions:

Sex of burial	700	1200	1700	999	Other (900, 1000, 1100)
M	1 (1)	3 (3)	1 (2)	7 (7)	0

⁹⁹ Burials 731, 781.

¹⁰⁰ Aston (1999: 65) notes the similarity of form 904 from area 1000 with Libyan IIb ceramics from Elephantine.

¹⁰¹ The location of 15 of the pots within the grave is not recorded.

¹⁰² Bracketed numbers indicate the actual amount of pots across all the graves including duplications. The first number is the number of individual graves with one or more ceramics inside.

F	7 (8)	2 (2)	1 (5)	2 (2)	2 (2)
C	2 (3)	4 (5)	1 (1)	0	0
U	0	0	0	0	1 (2)
Total ceramics found in Area	12	10	8	9	4
Total graves with ceramics	10	9	3	9	3

Table 3: Area and Sex distribution of ceramics

There is quite a variety in the style and form of ceramics on site. There are 4 examples of blue glazed ware¹⁰³ but aside from a faience vase¹⁰⁴ there are no other glazes and only one wash/slip.¹⁰⁵

Pilgrim flasks¹⁰⁶ and beer jar style forms¹⁰⁷ (all of which were found inside the grave filling) are the most common ceramics recorded from the site. The beer jars (Types 117 and 118) are only recorded in the main cemetery area.

It should also be noted that several pots recorded on Brunton's original pottery plates (1948: pl.lvii) are attributed to the townhouse graves¹⁰⁸ which were not included on this database due to an absence of any recorded information aside from a tomb number on the tomb registers. The pots were noted as:¹⁰⁹

- 902: 10 (baked mud squat shallow dish), 6E, 24B
- 904: 12M, 10T, 130, 93B (pilgrim flask), 93W (double pilgrim flask?), 92H, 94S
- 907 : 5N

¹⁰³ Found in 766 (2: blue glaze flask and bowl), 726 (blue glaze vessel) and 1297 (blue glaze pilgrim).

¹⁰⁴ Grave 772.

¹⁰⁵ Grave 1246 (White slip fragment).

¹⁰⁶ 3x 1701 (Type 93) and 739 (Type 98).

¹⁰⁷ 711, 729, 783, 1259, 1214, 999015, 999016, 999017, 999018, 999019 (Type 117) and 725 (Type 118).

¹⁰⁸ 902, 904-7, 910-4.

¹⁰⁹ All references are for (Brunton, 1948: pl.lvii). Artefact references to be prefixed 'Matmar, pl.vii.'

The frequency of pottery in 904 is particularly uncharacteristic of TIP burials in this area, although it does contain forms found elsewhere on site which confirm its date. The domestic context of these burials may have played a part in the record of these inclusions as Brunton may have confused domestic archaeological deposits with mortuary practice in this area if the pots were recovered from the 'grave filling'. Sadly, due to the absence of information for Area 900, it is very difficult to draw any conclusions from the evidence.

Shoes

There are four occurrences of leather work,¹¹⁰ likely to be shoes or sandals. The 3 examples in the main cemetery all belong to children. No pictures are provided so further comments based on style or form are not possible.

Other

A wide variety of other goods were found consistently across the site. The low frequencies of occurrence¹¹¹ and individual nature of many of the artefacts strongly suggest these may have been personal belongings of the deceased.

It is interesting to note that over half (23/44) of the less orthodox grave goods were associated with children. Particularly interesting objects¹¹² from the child burials included a 'limestone abacus',¹¹³ blue glaze Bes figurine,¹¹⁴ silver *mnxt* emblem,¹¹⁵ a variety of pendants in bone¹¹⁶ and travertine.¹¹⁷

¹¹⁰ 718, 761, 1073, 1269.

¹¹¹ From 44 entries, only 4 were duplicated: 2 Bronze bells (999282), 2 Bone pendants (708, 1230), 2 Baskets (1276, 1294) and 11 Pebbles/small rounded stones (731, 744, 766, 779, 781 (2), 799, 1244, 1236, 1277, 1254).

¹¹² Unique pieces, as opposed to lumps/scrap of quartz, amber, bone, blue glazed clay, stone etc.

¹¹³ Grave 795. Brunton is somewhat ambiguous about the 'abacus'. There are no pictures of this find, or explanation. Abaci are referred to as present in Egyptian culture by Herodotus during the 5th century BC (Smith, 1958: 160), but that date is late for Matmar.

¹¹⁴ Grave 769.

¹¹⁵ Grave 1254.

¹¹⁶ Graves 1230 and 708.

¹¹⁷ Grave 723.

A single female burial included several vanity items: an ivory mirror handle and duck shaped kohl palette,¹¹⁸ whilst several men were buried with wooden¹¹⁹ or iron¹²⁰ poles, possibly tools. Of course, as discussed above, these gender ascriptions must be kept in the historical context of the report and approached with some level of caution.

Amulets, Seal-Amulets and Plaques

Already identified as the second focus of the distribution-based study is the large quantity of amulets, seal-amulets and plaques. Together they make up 409 of the 996 entries (41%) in the object record table of the database and as such provide the best candidate for study out of all categories of grave goods. The decision to include seal-amulets and plaques as subdivisions of the amulet category was taken partly due to their frequency on site but also a logical progression as they are part of the same family of artefacts and included in the same synoptic publications (Andrews, 1994; Germond, 2005). Additionally, there appears to be something of a grey area between discussion of scaraboid forms and seal amulets at Matmar. Brunton appears to use the terms interchangeably. Andrews includes references to both seal amulets and plaques in her 1994 synoptic publication, in which she defines an amulet as:

A personal ornament which, because of its shape, the material from which it is made, or even just its colour, is believed to endow the wearer by magical means with certain powers or capabilities.

(Andrews, 1994: 6)

The implicit status of the amulet within the Egyptian belief system as possessing protective and invocative qualities make it an ideal artefact through which to

¹¹⁸ Grave 755.

¹¹⁹ Graves 1073, 1224.

¹²⁰ Grave 736.

identify local variation in religious beliefs. Amulets could portray deities as completely human, with animal head or in their sacred animal manifestation. It had previously been assumed that amulets were only crafted to represent a small number of the many deities from the Egyptian Pantheon (Andrews 1994: 14). However, one must remember the Egyptians had only a limited number of animals available to represent a vast quantity of deities and, as such, certain species and iconographical representations were sometimes reused across several gods. Therefore, without accompanying text it is sometimes difficult to know exactly who is being represented.

Brunton chose to distinguish between ‘deities’ and ‘naturalistic’ amulets (Brunton, 1948: 83). Various attempts have been made to define and classify amulets into distinct categories within Egyptology,¹²¹ however, as no fixed system has been agreed and for reasons of time, this study will not debate these more complex systems.

Amulets can also be divided by material and colour, the latter of which can be used as a tentative dating tool.¹²² However, one must be wary of stretching the dataset too thinly. When the amulet corpus (excluding seals and plaques) is divided the amulets by material, form *and* colour, it produces 88 separate categories. Similarly, seal amulets form 13 and plaques 11 categories. It is therefore, necessary to isolate each variable separately in order to perform successful analysis. Tables V-VII present the amulets by form alone (37 varieties), additionally listing the material and colours.

Additionally ‘seal amulets’ and ‘plaques’ create 5 form categories:

¹²¹ Petrie (1914) identified 5 amulet categories in his synoptic work ‘*Amulets*’: homopoeic (endows the wearer with the creatures characteristics or capabilities), dynatic (inanimate objects with powers which could be transmitted to the wearer), ktematic (representing the property of the wearer), phylactic (protective) and theophoric (shaped as deities; in their human or animal forms). Theophoric amulets also offered protection and are thus also Phylactic (Andrews, 1994: 12-3). The majority of amulets (apart from seals and *wedjat*) from Matmar would be considered theophoric. Subsequent works by Bonnet (1971: 28-30) and Falkovitch (1992: 19-26) have each used different criteria.

¹²² For example, Aston observes that burials with a majority of green glazed pieces are likely to be attributed to after 850 B.C. (Aston, 2009a).

- **Seal Amulets** are all scarabs of various materials, except one which is listed as 'Blue Glaze seal amulet'. Materials: alabaster, carnelian, steatite, travertine, lapis lazuli, stone (brown), glass, unspecified – probably faience.
- **Plaques** are listed as specifically containing two *wedjat*-eye and one sow designs. The rest are of a simple design. The Materials: steatite, jasper, limestone, unspecified – probably faience.

Brunton records a strong sex bias in amulet distribution. Only 28 of the 409 amulets are recorded as coming from male graves (19 distinct burials). Brunton claimed this phenomenon as expected and normal (1948: 83), once again raising concerns regarding the levels of sex assumption based on grave goods. Amulets are well documented with graves of both sexes throughout Egyptian history.

Sex	Grave count	Percentage of amulet grave count (194 graves)	Percentage of total graves (542 graves)
M	19	9.5	3.5
F	85	44	15.5
C	87	45	16
U	3	1.5	0.5

Table 4: Sex distribution of amulets

If the sex distribution is accurate and not the product of misguided gender attribution, the inclusion of amulets with male burials could be seen as an example of social non-conformity. Thus it has the potential to provide clues to

gender identities and religious abnormalities amongst the grave corpus. The likelihood and reasoning for this will be discussed in detail below, but it is an interesting initial observation that within an inherently patriarchal society, the males of these families appear to be left with the least provision (surviving at least) for the afterlife.

Chapter 6: Statistical profiling and results

6.1 Sorting the dataset

Before the analytical process could begin, it was necessary to regroup the data in such a way as to ensure the outcomes would be statistically strong and viable.

First, area 900 was grouped together with 1000 and 1100 for reasons of proximity (*pl. VII*) to increase the quantity of burials, as were 600 and 800. 3200 and 6000 have been grouped together as only 1 grave is found in each. The area numbers assigned to these clusters are detailed below in table 5.

Area Number	Areas Included
0	3200, 6000
1	700
2	1200
3	1700
4	999
5	600, 800
6	900, 1000, 1100

Table 5: Area categories and groupings

Whilst the variables associated with sex¹²³ and coffin style¹²⁴ could be grouped in the original categories specified by Brunton. The amulet corpus required further subdivision and some collation, in order to address the great variation in style and design.

194 graves contained at least one example of an amulet, seal amulet or plaque. Within these categories the amulets have been grouped as follows:

- Bes (18) ¹²⁵
- Sekhmet (21) ¹²⁶
- Ptah-Sokar (19)
- Isis (11)
- Other anthropomorphic/theomorphic amulets (19)
- Cats (21)
- Sows (14)

¹²³ M (category 1), F (category 2), C (category 3), U (category 0).

¹²⁴ Anthropoid (4), Oval (3), Rectangular (2), Other (1), None (0). Coloured coffins have not been grouped separately as Brunton concedes that preservation is too poor to determine how many coffins originally had colour decoration (Brunton, 1948: 79-80).

¹²⁵ As this study is concerned with the frequency of occurrence (presence or absence) of artefacts, the bracketed figures are representative of the number of graves across the site in which that style of amulet occurs, rather than the number of times it occurs in total, which would include duplications within the same grave and further complicate figures.

¹²⁶ There appears to be no theological or iconographic precedent to require the distinction between Sekhmet standing, seated or in shrine.

- Lion (9)
- Hawk (9)
- Other animal amulets (4)
- Aegis (6)
- *wedjat* Eye (55)
- Other amulets (5)
- Seal (scarab) amulets (75)
- Plaques (38)

6.2 Sex vs. coffin style

Graves of an indeterminate sex were excluded from sex-based queries as they were considered to provide no value. After this adjustment the dataset consisted of 537 burials.

The null hypothesis (H_0) for this query rejects a statistical significance between the sex of the individual and their style of coffin.

Calculations carried out using Chi-square analysis showed there to be a highly significant relationship between the sex of the deceased and their coffin style.

Chi-Square Tests			
	Value	df ¹²⁷	Asymp. Sig. (2-sided) or <i>P-value</i>
Pearson Chi-Square	179.279 ¹²⁸	8	.000

Table 6: Chi-Square results for sex vs. coffin style

¹²⁷ df = degrees of freedom, total possible categories minus 1.

¹²⁸ 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.98.

From these results we are able to immediately reject the null hypothesis on the basis of a P -value of less than 0.001%.

To explore the relationship between sex and coffin style in greater depth, the standardised residual count was calculated. This allows a closer examination of the expected count against the observed (actual) count, providing an indication of the size of the discrepancy between the two and the strength of the relationship. A positive standardised residual signifies the observed count is more than expected, whereas a negative shows it is less. In table VIII we can observe the discrepancies for sex and coffin style. Whilst there is no set interpretative pattern in place for standard residuals, a standard residual of more than 2 can be considered of moderate importance and a standard residual of more than 5 can be considered highly important (*pers.comm.* Allan White).

Table VIII clearly shows the greatest bias occurs in the distribution of children's coffins, which is heavily weighted towards no coffin at all. Additionally, there are more than twice the expected numbers of rectangular coffins present in child burials. Male coffins show moderate bias towards anthropoid burials with 15 examples of no coffin and only 5 rectangular coffin examples. Female burials represent the closest observed distribution to the expected with only categories 4 (anthropoid) and 0 (no coffin) exceeding a standardised residual of 2. Overall there is a strong, statistically sound relationship between anthropoid coffins and adult burials.

6.2.1 Sex vs. Coffin Style: Area Breakdown

Areas 0 (3200 and 6000) and 5 (600 and 800) were discounted due to a lack of data. All other areas required the exact significance to be calculated in order to produce a viable P -value.

The main cemetery (Areas 1-4)

- Area 1 consists of all graves containing burial goods from area 700 (103 burials).
- Area 2 consists of all graves containing burial goods from area 1200 (96 burials).
- Area 3 consists of all graves containing burial goods from area 1700 (25 burials).
- Area 4 includes all unregistered burials and burials without grave goods across areas 700, 1200 and 1700 (286 burials).

As tables 7 illustrates, the P-Value consistently showed there to be a highly significant relationship between sex and coffin style and the null hypothesis could be rejected at a significance of between 0.006-0.001%.

Chi-Square Tests				
Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided) or <i>P-value</i>
Area 1	58.583	8	.000	.000
Area 2	51.266	8	.000	.000
Area 3	15.531	6	.017	.006
Area 4	41.938	8	.000	.000

Table 7: Chi-Square results Areas 1-4

Area 1

Table IX shows that the coffin to sex distribution within area 1 is closest to the overall site distribution. One can observe a slightly heavier bias towards female

graves containing anthropoid coffins and a more even distribution of coffin styles for child burials. It is worthy of note that out of twenty three anthropoid style coffins containing children, nine (40%) were recovered from Area 1 alone. Equally, however, there is still a strong leaning towards less ornate coffins, or nothing, for children: 24 burials have no coffin at all, whilst 7 have no formal coffin but contain other burial materials and 7 are buried in rectangular coffins.

Oval coffins are particularly under-represented here with only four (5% of site total) examples recorded.

Area 2

Area 2 (Table X) also displays a higher level of bias towards female burials containing anthropoid coffins when compared with the site average. Relative to area 1 the quantity of oval coffins has dramatically increased. Unlike anthropoid coffins they appear to be (more) equally distributed through the sexes and common for men buried with grave goods in this area; out of twelve male burials containing grave goods, eight (66% in Area 2) were oval shaped.

Area 3

Area 3 (Table XI) presents a dramatically different picture with regards to coffin use. Only four (16%) of its twenty five burials actually appeared to contain a coffin whilst one had badly decayed traces of wood.¹²⁹ The three anthropoid coffins contained female burials, whilst the male graves from Area 3 completely run against the trend with the majority in coffin-less graves and the remaining two in coffin categories 1 and 3. No rectangular burials are recorded for this area.

Area 4

¹²⁹ Grave 1711.

Area 4 (Table XII), despite only containing 10 graves with artefacts and covering the entirety of the TIP main cemetery area, maintains a high level of anthropoid coffins. Whilst overall, observed instances run much closer to the expected levels, as with area 1 there are still slight leanings towards a preference for anthropoid coffins in male burials and a much higher number of child burials without any discernable coffin. The number of observed female burials in area 4 runs closer to the expected levels than any other sex in any other area.

Area 6

The 19 graves across areas 900, 1000 and 1100 did not return any statistical significance from the Chi-square test. The exact significance was recorded at 0.2%.

Chi-Square Tests Area 6				
	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	8.796 ^a	6	.185	.215

Table 8: Chi-square results for Area 6

Area, sex and coffin style summary

The Chi-square analysis has revealed that strong statistical correlations between sex and coffin style are only present within the main cemetery area (1-4: 700, 1200, 1700). Areas 0 and 5 do not provide enough graves for analysis and Area 6's 19 graves are distributed very closely to the expected count based on the site wide results.

Based on overall percentages across the site, men are no more likely to be buried with anthropoid coffins than women,¹³⁰ they are actually marginally less likely. Whilst it has already been acknowledged that presenting data area by area in such a skewed data set is of limited significance, it should be noted that the only group of graves which have a higher percentage of anthropoid coffins for men are those in area 4.¹³¹ With 10 exceptions, these graves are entirely without grave goods. The percentage differences between male and female anthropoid burials are consistently so small (less than 7%) that it is not unfair to say that if the burial is adult, there is no real preference given to either sex regarding anthropoid coffins.

The high level of anthropoid coffins used in burials with no grave goods (over 60% of male and female graves in area 4) becomes particularly significant if anthropoid coffins were considered to convey a higher status.

With regards to the other coffin styles, rectangular coffins emerge as almost entirely reserved for children.¹³² The oval style, which Brunton regards as the degradation of anthropoid coffins, does not consistently increase in frequency across the three cemeteries. There are oval examples from area 1¹³³, but the majority of examples are found in area 2,¹³⁴ with only one oval coffin recorded from area 3¹³⁵. Without understanding the locations of oval burials from area 4¹³⁶ it is difficult to comment further on distribution patterns. However, areas 5 and 6 both contain no oval coffins at all.

Brunton was correct to assert that there is an overwhelming tendency for children to be buried with no coffin at all.¹³⁷ This practice is consistently the preferred

¹³⁰ 63% (144/226) female burials; 62% (103/165) male burials.

¹³¹ 60% (74/123) female burials; 67% (92/136) male burials.

¹³² Also used by 1 female in area 1; 6 females and 5 males in area 4; 1 female in area 6.

¹³³ 3 female; 1 male.

¹³⁴ 8 child; 12 female; 8 male.

¹³⁵ 1 male.

¹³⁶ Oval coffins: 3 child; 22 female; 31 male.

¹³⁷ 51% (75/146) of all child burials have no coffin.

burial practice for 'children' never falling below 40% of the 'child' burials recorded from any area grouping.¹³⁸ The graves from area 2 (Brunton's 1200) highlight a increase in the popularity of rectangular coffins,¹³⁹ but the numbers clearly show that children are significantly more likely to be buried in a less anthropomorphic styled coffin (or no coffin at all) when compared to adults.

Brunton's claim that older children were 'more likely to be buried in anthropoid coffins' is difficult to substantiate, even when based on the evidence he presents.¹⁴⁰ It is not illogical to consider that elaborate humanoid shaped sarcophagi are more difficult to build for smaller infant skeletons and that perhaps this practical issue may have swayed the choice of coffin.

Across areas 1-4 commenting on sex distribution is extremely difficult, and perhaps not wise for fear of making unsupportable claims. Area 5 does not feature any male graves whilst area 6 has only 1. This distribution is especially interesting with regards to area 6's proximity to the temple area of Matmar which could be considered a more sacred area of the site.

6.3 Amulets

It was not possible to conduct amulet calculations by area as there were only 194 individual graves containing an amulet, seal amulet or plaque. Breaking this down by area would have removed any hope of a statistically strong outcome.

At least one example of an amulet, seal amulet or plaque was found in the following areas:

- 600
- 700

¹³⁸ Area 1: 51% (24/47); Area 2: 41% (19/46); Area 3: 100% (12/12); Area 4: 40% (11/27); Area 6: 88% (8/9).

¹³⁹ 24% (11/46).

¹⁴⁰ 3 anthropoid coffins for children under 10, 3 for children over 10.

- 1200
- 1700
- 1000
- 1100
- 3200
- 999

The sex distribution across these areas is as follows:

Area	Child	Female	Male	Unknown
600	3	1	0	0
700	47	46	10	0
800	2	0	0	1
900	1	1	0	0
999	27	123	136	0
1000	6	8	1	3
1100	2	0	0	1
1200	46	38	12	0

Table 9: Sex distribution across amulet areas

6.3.1 Sex vs. Amulets

The null hypothesis (H_0) for this dataset rejects a statistical significance between the sex of the individual and the selection of amulets in their burial.

Site-wide bivariate correlation analysis¹⁴¹ identified the following variables as having an important relationship¹⁴² with the sex of the deceased:

- Bes amulet
- Cat amulet
- *wedjat* eye amulet
- seal amulet

To confirm their statistical significance, Chi-square analyses were performed for each pairing using the Phi coefficient to extract the exact significance. It was then possible to reject the null hypothesis for the amulet deposits named above as they clearly have a significant relationship to the sex of the deceased.

Bes amulets

The Chi-square analysis returned an exact significance (P - value) of 0.05, denoting a highly significant relationship between the sex of the individual and choice of Bes amulet and cross tabs analysis shows 82% of burials with Bes amulets¹⁴³ to be those of children. The remaining 18% of amulets (3 pieces) are found with female burials. One of the graves is of indeterminate sex; the probability associated with Bes amulets dictates it is likely to be a child or female burial.

Cat amulets

¹⁴¹ Pearson method.

¹⁴² More than 0.2, positive or negative correlation.

¹⁴³ 19/23 (20 out of 24 individual examples).

The Chi-square analysis returned an exact significance (P - value) of 0.09, denoting a significant relationship between the sex of the individual and inclusion of cat amulets. As with Bes amulets, over 80% of cat amulets¹⁴⁴ were found with children and the remainder with women.

***Wedjat* Eye amulets**

The Chi-square returned an extremely high exact significance (P - value) of less than 0.001. The *wedjat* eye occurs at least once in burials of each sex; however it is, as with both examples above, heavily biased towards child burials in its distribution.¹⁴⁵

Seal amulets

When comparing sex and seal amulet distribution, the Chi-square analysis returned an extremely high exact significance (P - value) of less than 0.001. Seal amulets proved to be the only amulet style with a significant distribution pattern outside of child burials.

The cross-tabulation showed a strong bias towards seal amulets in Matmar's adult burials. Out of only 19 male burials containing amulets, 10 (52%) contained seal amulets. Similarly, out of 85 female burials, 46 (56%) included a seal amulet. In all but one case, a seal amulet can also be read as a scaraboid form. As with the association of anthropoid coffins to one particular gender, on a percentage basis both sexes are equally likely to be buried with seal amulets, but when one considers the huge discrepancies between male and female amulet inclusion in real terms, it is difficult to refer to seal amulets as a universally popular choice for adults.

¹⁴⁴ 81%, 17/21.

¹⁴⁵ 78% 43/55.

Sex and amulet summary

The Chi-square results prove that Brunton was correct when he stated that children were more likely to be buried with Bes amulets and *wedjat* eyes. His further claims regarding their association with 'natural' amulet styles could also be interpreted to include their relationship with cat forms. However, no further strong incidences could be proven regarding sows (of which he made particular mention) or other 'naturalistic' amulet styles. SPSS deemed their quantities insufficient to make any substantial claim over their distribution.

Brunton stated that children were not buried with 'adult deities'. If this definition of 'adult' is taken to exclude his self defined 'naturalistic' forms (1948: 136) and any deities associated with women or childbirth (Tauret, Isis, Isis and Horus or Bes), it leaves the following amulet styles (numbers found in child burials included in brackets):

- Sekhmet (16 examples across 12 graves).
- Ptah-Sokar (9 examples over 9 graves).

These examples show that, whilst not overly common, children's burials do have the potential to contain some deities which display no traditional link to childhood, although Sekhmet amulets have been shown to be an extremely popular choice at Matmar across all burial styles.

The results disprove Brunton's claim that male divinities were more likely to be associated with male burials. Only 2 male divinities¹⁴⁶ are featured with male burials, at a frequency of 1 example of each. Other deity-based amulets take the

¹⁴⁶ Thoth (753) and Ptah-Sokar (768).

form of Isis¹⁴⁷ and Sekhmet (6 examples). ¹⁴⁸ Based on these results, male burials can be considered equally likely to be buried with divinities of either sex.

6.3.2 Coffin style vs. Amulet

The amulet data set restricted the coffin quantities to the following:

Coffin style	Quantity	Percentage of amulet grave count (194 graves)	Percentage of total graves (542 graves)
Anthropoid	80	41	15
Oval	22	11	4
Rectangular	13	7	2
Other	14	7	2.5
None	65	34	11

Table 10: Amulet and coffin style dataset

¹⁴⁷ 1267.

¹⁴⁸ 1714 (x2), 736 (x4).

The null hypothesis (H_0) for this dataset rejects a statistical significance between the sex of the individual and the selection of amulets in their burial.

As with sex analyses above, site-wide bivariate correlation analysis¹⁴⁹ identified the following variables as possessing an important correlation¹⁵⁰ with the sex of the deceased:

- Bes amulets.
- *wedjat* eye amulets.
- Seal amulets.

We can therefore reject the null hypothesis, as there is an identifiable significance between coffin style and amulet distribution. However, upon closer examination this significance may have been skewed by other factors.

Bes amulets

Bes amulets returned an exact significance (P - value) of 0.028 when assessed against coffin distribution. It is clear that the statistical pattern highlighted here is the trend towards inclusion in graves with no coffins,¹⁵¹ and thus, by proxy, a relationship with child burials. The relationship between Bes amulets and children, as well as an absence of coffins in child burials, has already been established above. Therefore, as the significance between sex and Bes amulets is greater (0.005%) one may assume that this significance represents a convergence of these two distinct patterns and is not an independent occurrence.

***Wedjat* eye amulets**

¹⁴⁹ Pearson method.

¹⁵⁰ More than 0.2, positive or negative correlation.

¹⁵¹ 10/65 (15%).

The *wedjat* eye amulets returned an exact significance (P - value) of 0.012 when assessed against coffin distribution. Again this apparent relationship has most likely resulted from a strong association between *wedjat* eyes and children, thus resulting in a high percentage of graves with no coffin also containing *wedjats*.¹⁵²

Seal amulets

The seal amulets returned an exact significance (P - value) of 0.001 when assessed against coffin distribution. The distribution was concentrated in anthropoid coffins¹⁵³, which were again the most commonly used coffin for adults on the site.

Coffin style and amulet summary

From the evidence above it is clear that coffin style is not a significant factor in the distribution of amulets, rather, any correlations shown are to be considered a consequence of pre-existing, stronger links between sex and coffin style or amulet.

6.3.3 Amulets vs. amulets

Investigations were carried out into amulet combinations in an attempt to shed light on religious practice at the site. Although, as already noted, amulet quantities were insufficient to assess each area in isolation, the table below lists the most popular amulets in each area, where there is more than one example;

Area	Most common amulets (1/2/3):
700	Cat, <i>wedjat</i> eye, Sekhmet
1200	<i>wedjat</i> eye, sow, cat

¹⁵² 27/65 (41%).

¹⁵³ 43/80 (53%).

1700	<i>wedjat</i> eye, Bes/Sekhmet/Ptah-Sokar (all 3 examples)
800	Sow
1000	<i>wedjat</i> eye
1100	Cat

Table 11: Most frequent amulet categories by area

This demonstrates that there is a fairly consistent distribution across the site, with similar categories of amulet occurring throughout most areas. Very little comment can be made regarding distribution without extensive further study.

Once again site-wide bivariate correlation analysis was used and substantiated with Chi-square analysis on those combinations with a Pearson correlation of more than 0.2. The following correlations were identified (*P* – value is shown in brackets):

- Isis and Sekhmet (0.003); 5 examples in combination.¹⁵⁴
- Sekhmet and lion (0.009); 4 examples in combination.¹⁵⁵
- Cat and Isis (0.020); 4 examples in combination.¹⁵⁶
- Isis and lion (0.010); 3 examples in combination.¹⁵⁷
- Cat and lion (0.001); 5 examples in combination.¹⁵⁸
- Hawk and Bes (0.044); 2 examples in combination.¹⁵⁹
- Sekhmet and plaques (0.008); 9 examples in combination.¹⁶⁰

¹⁵⁴ 11 occurrences of Isis amulets and 21 occurrences Sekhmet amulets; 5 of which occurred in the same graves.

¹⁵⁵ 9 occurrences of lion amulets and 21 occurrences Sekhmet amulets; 4 of which occurred in the same graves.

¹⁵⁶ 11 occurrences of Isis amulets and 21 occurrences of cat amulets; 4 of which occurred in the same graves.

¹⁵⁷ 11 occurrences of Isis amulets and 9 occurrences of lion amulets; 3 of which occurred in the same graves.

¹⁵⁸ 21 occurrences of cat amulets and 9 occurrences of lion amulets; 5 of which occurred in the same graves.

¹⁵⁹ 18 occurrences of Bes amulets and 4 occurrences of Hawk amulets; 2 of which occurred in the same graves.

- Sekhmet and aegis (0.018); 3 examples in combination.¹⁶¹
- *wedjat* eye and seal amulets (0.002); 12 examples in combination.¹⁶²

‘Other animal form’ amulets were also highlighted as having a correlation with aegis amulets, but, with only 2 examples, closer investigation showed there to be no identifiable significance between animal form amulets.

It is difficult, from the above evidence, to isolate any patterning with certainty. One would have expected to see a greater association between Bes amulets and other forms previously identified as prevalent in child burials, such as cats and *wedjat* eyes. Instead feline forms appear to cluster together; Sekhmet, lions and cats, although this may be something of a false trend, given their overriding popularity on site. Similarly, Sekhmet amulets appear in four of the identified patterns.

The identified significance of *wedjat* eyes and seal amulets in combination is somewhat surprising, as above tests demonstrated their burial preferences with different demographics on the site: seal amulets with adults and *wedjats* with children.

It is a little disappointing that none of the above combinations have an occurrence rate of more than 50% for the population of either amulet (with the exception of Bes and hawk, but there are only 4 hawk amulets on site). This makes it hard to talk about any kind of repeat practice. However, it does not mean that these results are invalid. Conversely they provide a case of examples with which to compare similar sites at a more advanced point in a wider national survey of TIP funerary practice.

¹⁶⁰ 38 occurrences of plaques and 21 occurrences of Sekhmet amulets; 5 of which occurred in the same graves.

¹⁶¹ 21 occurrences of Sekhmet amulets and 6 occurrences of aegis amulets; 3 of which occurred in the same graves.

¹⁶² 75 occurrences of seal amulets and 65 *wedjat* eye amulets; 12 of which occurred in the same graves.

6.3.4 Amulets vs. object position

It was not possible to analyse the position of the amulets within the SPSS statistical framework outlined above.

Upon initial inspection it was clear that the dataset presented a radically different picture of object placement between seal amulets and plaques when compared to the main corpus of amulets.

The positions for the standard amulets show a very strong bias towards placement around the neck area. Of 299 amulets (excluding seal amulets and plaques), the location of 55 were not recorded, 59 were away from the neck area but 185 (62%) were identified as at or around the neck.

The seal amulets and plaques present a much more varied distribution (Table XIII). *Gr.I* (See *pl.X*) presents a percentage breakdown of the recorded positions of seal amulets and plaques across the entire site.

A significant proportion (17.29%) were found in the neck area, however a greater number were found on the left wrist (25.56%). Whilst items from the main amulet corpus found away from the neck area are recorded in a wide variety of locations on the body, it is the left hand side of the body which appears preferable for seal amulets and plaques. However, this distribution pattern does not remain constant across the site.

Area 700 (see *Gr.II*) has a similar distribution pattern to the site as a whole, as does area 1200 (see *Gr.III*), with a little more polarisation on the left hand, left wrist and left forearm. Area 1700 (*Gr.IV*) does not contain any objects positioned on the left wrist. The neck is by far the most common choice in this area, but the left hand side of the body remains more popular.

Position Summary

It is clear that the left hand side of the body and the neck are given preference over other areas for the placement of amulets. However, seal amulets and plaques appear to have commanded more flexibility in their burial position than other amulets.

6.3.5 Amulet Materials

Across Matmar, by far the most common material for amulets is glazed faience¹⁶³. These glazed amulets make up 69%¹⁶⁴ of examples collected and are the most frequently recorded in every area. Steatite amulets make up a further 25%¹⁶⁵ across the site. There is no significant change in the proportion of materials used across the several areas, which does not appear to support Brunton's claim of economic decline (1948: 79).

6.3.6 Amulet Colour

Following Aston's comments equating an increase in green glazed pieces to burials from the 8th Century B.C or later (Aston, 2009a), it should be noted that the distribution of burials containing these artefacts does not concur with other variables (i.e. ceramics) in identifying area 1700 as later than 700 or 1200. *Pl.XII* displays the proportional representation of colour across all amulet areas. It identifies the *percentage* of green glazed amulets as highest within area 1000, the earliest in this study. Area 1200 has approximately 5% more green pieces than area 700, but the quantity of burials containing them actually decreases from 700 to 1200 (Table 15).

Area	Quantity of graves with green glaze pieces
700	19

¹⁶³ Brunton only refers to these amulets as 'glazed' but it is highly likely they were faience.

¹⁶⁴ 304/438.

¹⁶⁵ 108/438.

1200	17
1700	2
1000	4
1100	1

Table 12: Graves containing green glazed pieces, by area

Additional points on colour:

- Red glazed amulets are only present in areas 700 and 1200.
- Black glazed amulets are only present in area 700.
- Yellow glazed amulets are only present in area 1100.

6.4 Results summary: creating a revised site profile

Having completed all statistical analysis and profiling of data it is now possible to fully review and critique Brunton's conclusions and produce a revised site profile.

Each of the above studies has been concluded with a short summary highlighting the results and their relationship to Brunton's observations. To avoid repetition, the site summary below is a concise recapitulation of these observations, grouped by their relationship to the original site conclusions. The following statements apply to the site as a whole, unless otherwise stated.

The following points from Brunton's original conclusions are supported by the results of this study:

Coffin styles

- Children are more likely to be buried with no coffin.
- 'Other' coffin styles and rectangular coffins appear almost exclusively reserved for children.

- The quantity of anthropoid coffins containing grave goods decreases dramatically between areas 1-3; oval coffins take preference in area 2, and coffin use in itself becomes far less common in area 3.

Amulets

- Women and children are far more likely to be buried with grave goods, especially with regards to amulets.
- The burial of children with Bes amulets and *wedjat* eyes is highly significant.
- The use of 'precious' materials for grave goods does decrease between areas 1-3, which could imply economic decline. However, all evidence in support of this theory remains somewhat circumstantial.

The following points contradict Brunton's conclusions:

Coffin styles

- Anthropoid coffins are more likely for adults than children, but there is little distinction between the sexes, statistically speaking.
- There is no strong evidence to suggest older children were more likely to be buried in anthropoid coffins. Anthropoid examples are found in infant burials.

Amulets

- There is no strong statistical evidence to suggest that children are associated with 'natural' amulet styles outside of the cat amulet style.
- Children are buried with 'adult' deities, albeit less frequently.

- Men are no more likely to be buried with 'male' gendered deities than women.
- Analysis of amulet materials shows there to be no degradation of quality across the main cemetery site.

The following points provided new information, in addition to previous statements:

Coffin styles

- Areas 0, 5 and 6 do not contain enough coffin or amulet examples for a strong statistical comparison.
- Oval coffins are limited to the main cemetery area.
- No male burials are recorded in the temple area (Area 6).

Amulets

- The burial of children with Cat amulets is of a high level of statistical significance.
- Seal amulets are strongly associated with adult burials.
- There is no significant correlation between the amulet style and the type of coffin used. All apparent significance is a reflection of the sex of the individual.
- Amulets (excluding seal amulets and plaques) are most likely to be found on or around the neck.
- Seal amulets and plaques are strongly associated with the left hand side of the body. The left wrist and neck remain the most popular positions across all areas.
- The most common material for amulets across the site was faience.
- Steatite was consistently the second choice material for amulet construction.

The statistical profiling has shown Brunton to have been inaccurate and presumptive in as many of his conclusions as he was correct. These revisions highlight the potential benefits of further research on sites such as Matmar, both to unlock new information from the archaeological record and verify the integrity of conclusions effected by outdated methodologies.

6.5 Atypical burials: Accessing the individual?

An additional benefit of the site profiling and statistics analysis is the subsequent ability to identify those burials which appear to contradict the expected practices for their demographic. As discussed above (see 3.2), Meskell rightly placed an emphasis on the importance of acknowledging the individual and actions associated with individual expression in the ancient world (Meskell, 1999: 9-11). In order to further develop the site analysis, this approach was incorporated into the site summary, to see which, if any, burials at Matmar do not conform to the social and religious 'norms' identified above.

The issue of mis-sexing has already been raised and cannot be discounted with regards to adult sex. One could be tempted to isolate males associated with amulets as non-conformist burials (see 5.4.1). However, there may have been a far more balanced gender distribution of amulets than the picture presented by Brunton's report. The 'male' amulet burials follow the coffin distribution patterns found in 'female' graves across areas 1-3 almost exactly; they appear dominated by anthropoid coffins in area 1 (700) with a marked increase in oval coffins in area 2 (1200) and an absence of coffins in area 3 (1700). Perhaps, given how closely the amulet inclusive graves follow the same coffin fashions, it would be better to talk of 'adult' and 'child' interments, rather than singling out unusual burials based on the occupants supposed sex. It is based on these observations that the author believes there to be very limited value in proposing male graves as expression of individuality or gender variation, at this time.

The small quantities of children buried in anthropoid coffins with amulets¹⁶⁶ are of interest as they move against the trend of children to be associated with more box-shaped coffins or no coffin at all. There were 12 'children' buried with amulets in anthropoid coffins and 8 with no grave goods at all. It is these 8, all from the main cemetery area, which are perhaps the most significant. On a site where only 27 children were buried without out amulets, one must question why the choice was made to associate these young people with an essentially adult method of burial.

Chapter 7: Site Interpretation

The interpretation of funerary practice at TIP Matmar must be approached with caution. When one considers that this study is partially a reaction to an overly simplistic approach to funerary practice of the non-elite during the TIP, it would be unwise to set the results within a national framework which it is the long term aim of this project to revise. Therefore, this interpretation is inwardly focused in an attempt to offer meaningful explanations and add value to the results of this project. Discussions will be carried out across the three areas previously identified (*See 2.3*).

7.1 Perceptions of sex, gender and age identities (social structure)

Above (3.2.2) it was noted that a level of stagnation has occurred within Egyptology regarding the classic theoretical assumption that 'differential access to certain goods confers real economic power and continues social hierarchies' (Costin and Earle, 1989: 691 in Stevenson, forthcoming: ch.9). With such

¹⁶⁶ 6 in area 700, 6 in area 1200

limited economic wealth, Matmar challenges one to explore a more complex social structure. There are so few 'precious materials' recovered from the site and such limited burial inclusions, one must seek to find more indirect expressions of social stratification.

When attempting to understand attitudes to burial goods (see 6.5), a clear distinction is apparent between 'adult' and 'child' practice on the site. These groupings are not unexpected. The age of the deceased has been shown to clearly impact upon burial practice throughout Egyptian history, from the predynastic period (Carr, 1995) to the late New Kingdom (Meskell, 1994). It is highly influential upon coffin style and amulet inclusion at Matmar.

Across the site, anthropoid coffins are clearly reserved, in most cases, for those more advanced in age, those who had achieved 'adulthood'. If one accepts that adults held higher social status than children this trend could provide a status marker for those children who were important enough to achieve this style of burial in this way.¹⁶⁷

Due to Brunton's limited provision of information regarding the possible age of the child internments, we are unable to further postulate at what age the transformation from child to adult was made. It is generally accepted across wider Egyptian history that girl's childhood ended with the onset of menstruation which would of course vary greatly depending upon the individual (Brewer and Teeter, 2007: 115). Comparatively, it appears that boys were initiated into adulthood through the practice of ritual circumcision, which would seem likely to have carried with it a fixed age (Brewer and Teeter, 2007: 115-6), although this does presuppose the concept of awareness of age amongst the general population which may not have been the case, in a world where the general population had no access to calendars or time keeping devices.

¹⁶⁷ Brunton does specifically record 'infants' ages 5 or under in Anthropoid coffins.

One must remain aware that those 'child' burials listed by Brunton as approximately ages 15, 14 and perhaps even 12, are likely to have been considered adult by Egyptian standards. In a civilisation with a low average life expectancy, especially for the poorer classes (Robins, 1993: 64), one could expect to be married as early as possible, if only to maximise the chances of healthy, long lived children.

It is probable that the preference for shaped coffins (anthropoid or oval) for those of a more advanced age may also have its origins in more functional concerns. The construction of an anthropoid coffin for a smaller occupant may have simply not been practical in many cases, rather than due to a lack of concern, as the inclusion of grave goods with infant burials demonstrates that many must have been buried with care (Szpakowska, 2008: 33). Theological considerations are discussed below (see 7.3.2).

The inclusion of grave goods in so many burials with no coffin at all may suggest two separate systems of social status are in operation at Matmar. Whether one chooses to take into account the apparent sex-based divide within the amulet corpus, or to regard age as the primary decisive factor, there is a highly significant association of forms which has been proven to operate externally to the choice of coffin style for the burial.

If one chooses to support Brunton's original grave sexing then the question resurfaces as to why Matmar's funerary goods were so heavily biased towards females and children. Aston (1987: 643) provisionally supports the concept of a general bias in grave goods towards the female sex in poorer tomb groups. However, he uses the Matmar corpus as a primary source for this statement. Whilst I do not wish to be guilty of ignoring the evidence and imposing preconceived opinions regarding ancient Egyptian society, this still seems greatly out of character and unexpected, especially as the practice does not transcend to the more wealthy members of society. Nor is it a universal division, as Brunton himself identified, which begs the question of *which* men would have qualified

for burial with amulet inclusions. These questions lead to complex gender and sex identity studies, it is perhaps better to refrain from comment until further sites have been examined for comparison.

Moving away from ascriptions of status based on the inclusion and patterning of physical objects, spatial association of graves with areas of the site could also have reflected social prestige (O'Shea, 1984 in Parker Pearson, 1999: 76). The traditional division of intra and extra-mural burial¹⁶⁸ separates the area 900 burials from the remaining grave corpus. Burials within a settlement in Ancient Egypt are traditionally associated with children, often found under the floor in the domestic setting, a practice which, in itself, is not fully understood (Adams, 1998: 25 in Szpakowska, 2008: 42).

The two area 900 burials recorded on the grave registers belong to a female and a child. It remains a point of frustration and disappointment that no details from the 9 burials situated within the ancient town itself were included in the original report, so further comment other than highlighting their contrasting burial setting.

Area 1000 encompasses the temple of Seth, which may or may not have been active across the 21st-25th dynasties. If active the area could potentially have held prominence due to its religious, cultic associations: Egyptian society was known to venerate places of ancestral and religious significance.¹⁶⁹ Even without an active cult it may still have been respected as holy ground, as the temple itself would have remained part of the landscape. The majority of TIP burials are actually situated just outside the temple complex and all burials recorded by Brunton contain grave goods. Area 1000 again casts doubt on Brunton's sexing of the graves as it appears there is only one male burial in close proximity to the temple. The author finds it difficult to comprehend the impression of Egyptian

¹⁶⁸ Intra-mural burials being within a well defined space for the living, the extra-mural those outside this space (Morris, 1990: 262).

¹⁶⁹ As displayed by 'The Great Sphinx Stele' (Amenhotep II) at Giza (Lichtheim, 1976: 39-42). On a more practical level veneration of the Tomb of Tetisheri at Abydos.

society presented by Brunton's evidence and interpretation at Matmar. It appears to show an example from this deeply patriarchal, albeit comparatively liberal ancient society, which paints women and children as most likely to be buried with items for the after life and close to sites of religious importance. Equally, it makes no distinction between adult men and women with regards to coffin style.

It is possible that there may have been burial areas with a higher level of social prestige that cannot be easily recognised from the archaeological record (for discussions regarding economic status within the main cemetery area see 7.4 below). However, if any area of the main cemetery was reserved for occupants of higher social standing, Brunton's recording methods have made it impossible to detect.

7.2 Religious practice

The grave goods recovered from Matmar do not only provide a potential window into social relationships but also the opportunity to explore local religious practice and burial rites.

7.2.1 Amulet Selection

Religious practice at a regional level, may have impacted local worship and reverence at Matmar.

There are no major temples/cult centres in close on or in proximity to the site, but Brunton records a small New Kingdom temple of Seth in area 1000. Seth was also the principle deity of Matmar's nome, however this religious order does not appear to have made a lasting impact upon the local selection of amulets for inclusion in burial. It has been observed that the recovery rate of Seth amulets is consistently low and virtually non existent prior to the Ramesside period (Andrews, 1994: 26). Some believe that Seth was not the only deity associated with the Qaw el-Kebir area. Wilkinson cites Mihos (also known as Mahes) and

Nemtywy as major deities in the region (2003: 87), although his evidence for this is not forthcoming.

If accurate, the presence of Mahes in the region may go some way to explaining the high quantity of feline amulets recovered from the site. However, Mahes is the only known male feline deity (Andrews, 1994: 25). The original translation of his name equating literally to the word 'Lion' and it is clear that all of the feline anthropomorphic amulets recovered from Matmar are female forms.¹⁷⁰

There is no theological reason or precedent for Sekhmet's image to have been placed exclusively with women or children. Originally from the Memphite region, this goddess was thought to wield considerable power both to heal and destroy, and whilst she possessed great protective qualities, she was as equally associated with pestilence, plague and battle (Wilkinson, 2003: 182). Regarded within the pantheon as the daughter of Re, Sekhmet was commonly considered to be the consort of Ptah and mother of Nefertum as part of the Memphite Triad (Hart, 1986: 187). Ptah-Sokar amulets are another frequent form from the site. The commonality of forms associated with these Lower Egyptian gods is surprising and difficult to explain as there are no major cult centres associated with Sekhmet or Ptah-Sokar in the area surrounding Matmar.

Other amulet practices are more familiar. The inclusion of Bes amulets with the graves of children as a protective measure is attested from the Old Kingdom throughout Egyptian history and occurs consistently across the Matmar site. Similarly, *wedjat* eyes, another strongly protective symbol, were also most popular with children. These reflect the view of a child as fragile, requiring special protection, even in death. The identification of stronger, recurring patterns regarding the burial of children does imply a more regimented deposition process. Variations in their amulet inclusions (and coffin choice) are far less common.

¹⁷⁰ He is always depicted as a walking man in a short kilt, *atef* crown and bare torso (Andrews, 1994: 25), as opposed to the long dresses and female figures usually associated with feline deities.

The absence of seal amulets from the majority of child burials is understandable, as these were often items (or funerary copies of items) that adults would have used in daily life to mark and seal property. As such, they had little or no association with childhood.

The structured deposition within the coffin, and spatial relationships between the funerary artefacts and the deceased have been shown to preference the left hand side of the body over the right. Whilst the vast majority of amulet pieces were recovered from the neck area, the left hand side of the body (head, wrist, arm, foot) were extremely popular with seal amulets and plaques. The author cannot currently find any solid theological reason for this preference. One would have speculatively assumed that the *right* side would have been given priority, as this was associated with the Western side, symbolising the transitional movement from the land of the living to the land of the dead.

7.2.2 Coffin Practice

The marked absence of coffin materials for so many of the child burials at Matmar appears to suggest that less emphasis was placed upon this funerary tradition for younger members of society. The author is curious as to the possible justifications for this practice. Whilst social concerns, such as high child mortality rates have traditionally been cited as the reason for apparent detachment (Heer, 1968: 454), one cannot escape the careful deposition of grave goods within many of the site's child burials, as discussed above, displaying a degree of care for the child's spiritual wellbeing inconsistent with a notion of detachment: why be 'detached enough' to not provide a coffin, but 'concerned enough' to provide other funerary items? The coffin in ancient Egypt has been described as akin to a mother's womb¹⁷¹: a chalice of symbolic rebirth in death. Temporally, children are closer to their point of birth and their mother's womb. The author tentatively

¹⁷¹ See the *Nut Texts* (Assman, 2005: 165-169) which include coffin inscriptions from King Merenptah.

suggests that their closer connection to the act of birth may have been seen to negate the need for a symbolic re-entry to the womb upon death. Theologically, if the perceived point of origin for the *ka* before it entered the body was the afterlife or spiritual realm, then complex funerary texts may not have been essential for children as they had made the same journey more recently. One must also consider the emphasis placed in funerary text regarding the importance of a moral existence. Children have had less time to commit acts which would be deemed unacceptable at the point of judgement¹⁷² and therefore would require less guidance (in the form of texts) explaining how to negotiate the path to eternity. However, they would still require protection (justifying the amulet inclusions) in their journey to the afterlife, as the stele of Iskemheb (Lichtheim, 1980: 58) suggests.

48.6% of the child burials at Matmar *did* contain a coffin and whilst this would again count against those who believe the Egyptians were emotionally detached from their children, it presents a confusing and divided picture of burial practice on the site. Crucially, across the entire site, the absence of a coffin does not equate to an absence of grave goods.

All burials from Matmar suffer from a marked absence of traditional funerary literature. The only exception was a piece of cartonnage¹⁷³ painted white with black and yellow hieroglyphs. In isolation one could be tempted to associate this absence with local literacy levels or lack of imported funerary material. Whilst these may also have been minor factors, in reality this trend simply serves to confirm the dates of the Matmar cemeteries. Quirke (1992: 168) observes that no large scale funerary texts were recovered from major tombs dated between the 7-8th Century B.C., a sentiment echoed by Aston (1987: 621). The use of text in the funerary context had quite clearly begun to dramatically decrease from the 9th century onwards. It is also plausible that smaller pieces of text recorded on

¹⁷² Most notably portrayed through the 'Weighing of the Heart', chapter 125 of the Book of the Dead (see Faulkner, 2008).

¹⁷³ Tomb Number 999023.

mummy bandages or papyrus have simply been lost to the natural decomposition process. Whilst Egypt's arid climate desiccates and preserves exceptionally high quantities of organic material (bread was recovered from a Matmar grave),¹⁷⁴ ingestion by insects and changing water tables have the potential to damage and destroy perishable burial inclusions.

7.3 Local Economy

Brunton was convinced that the 'degradation' of coffin styles across area 700-1700 was not only chronological, but also symptomatic of economic decline. As demonstrated above (*see 7.2.2*) coffin fashions varied greatly at a national scale throughout the course of Egyptian history. The inclusion or removal of colour schemes or text appears un-related to a change of economic circumstance making it impossible to directly equate the evolution of a localised casket style with economic change at Matmar. A more plausible indicator would have been a dramatic drop off in the quantity of coffins in the area which, despite hints from the grave registers, Brunton fails to record in any detail.

If one examines the grave goods themselves, the quantity of 'precious' metal does appear to decrease across the three areas¹⁷⁵, however, this could simply be evidence of a more exclusive cemetery area based on economic status (potential spatial concepts of status are discussed above *see 7.2*). Dating evidence from seal amulets and ceramic forms suggests some area 1200 graves may be of a later date than area 700 (Aston, 2009), however when one compares those burials for which we have a fixed date one is tempted to suggest it remains somewhat inconclusive.

Whilst the recovery of bronze or silver objects may decrease across the cemetery area, the materials used to create amulets and plaques remain largely the same.

¹⁷⁴ Tomb Number 1019.

¹⁷⁵ Area 700 contains 29 pieces of silver or bronze, area 1200 contains 14 and area 1700 contains none.

Faience and steatite remain the most popular choices, with some variation in colour, although the majority are blue glazed.

Despite the limited evidence to justify the assumptions made by Brunton, it is entirely likely that Matmar *did* suffer economically as the TIP progressed. The periodic lack of a strong central government meant that there would have been little provision available, such as centralised grain resources, to assist local rulers in times of local economic turbulence.

8.0 Conclusions

This case study has effectively demonstrated the potential benefits of a revised, in-depth analysis of funerary material. This has been shown to be particularly relevant when dealing with reports written before the archaeological re-invention of the 1960s.

8.1 Methodological analysis

With regards to the methodologies involved, the author believes this work as demonstrated the benefit of revising all areas of the resource, including topographical planning and data storage.

If further study is to be undertaken on the Matmar material, the existence of GIS compatible map files and digitised grave registers will be conducive to a more efficient and streamlined research process. Egypt's development of a national GIS basemap database and grid, tied into the Alexandria international mapping point, will greatly improve the potential for digital mapping work on sites and monuments, as currently all systems are stand alone, often based around arbitrary grids and therefore incapable of relating to one another.

The selection of statistical methodologies proved successful for the Matmar dataset. Chi-square, a consistently popular theory with archaeologists, has been shown to be particularly informative in isolating significant relationships for further investigation. One should not under estimate the impact of visually displaying data in charts or graphs as an alternative to statistical work. When addressing issues such as colour distribution and object placement, percentage pie and accumulative bar charts proved to be more than adequate and far less time consuming. Overall, for the purposes of this study the statistical work can be considered largely effective. However, when one considers that the principle aim

of this research was to assess the potential application of this style of methodology across a wider selection of TIP funerary sites, there is some doubt as to the practical implications of wide study. The major difficulty one faces with the application of statistical analysis is, as identified at the start of this dissertation, quantity and quality of information available to be tested. The quantity of information required to extend these forms of statistical analysis outside of amulets and coffins at Matmar is simply not present. When one considers Matmar is the largest non-elite grave corpus from the TIP, it is unlikely that these methodologies will be suitable for smaller sites. Chi-square can be adapted for smaller sample populations (Weglian, 2001: 143-145), however these single variant calculations are more suitable for assessing the probability of occurrence of a single variable (e.g. how many burials are likely to be buried on their side), rather than identifying correlations between factors. This study has highlighted the potential benefits, in knowledge gained, of detailed analytical work, however, refining the appropriate mathematical methods may take some time.

8.2 Factual Conclusions

This study has demonstrated the inaccuracy and generalised nature of some of Brunton's conclusions regarding the TIP cemeteries at Matmar. The results have shed light upon new relationships between the deceased and their burials goods, whilst also raising further questions about the quality of recording at the original excavation (*see above 6.4 and 7.0*). It is certainly a lesson never to take someone else's conclusions at face value.

Most importantly, I strongly believe that to presume Brunton's sex recording as accurate without comparative further study across more modern site reports, would be unwise. There is not a single, statistically viable difference between any aspect of adult burial, apart from the apparent inclusion of amulets with women. Equally, those 'male' burials which do contain amulet inclusions cannot be seen to follow a unique pattern of deitic preference. The absence of an osteologist or any kind skeletal or medical specialist from the Matmar mission team, at a point

in history when the science remained highly inexact, leads me to believe that Brunton may have projected his recorded preconceptions regarding the association of females with amulet inclusions onto the grave corpus, and thus distorted the data set.

The correlation of changes in coffin design and amulet style and colour at Matmar with trends previously observed nationally casts some doubt on the overarching theory of localised evolution of funerary practice throughout the period. Indeed, it is very difficult to discern how evident subtle, local developments will be within the archaeological record. The fact that this project was undertaken as case study in isolation makes it impossible to suggest how it will compare to other sites without further study.

8.3 Further Research

There is an obvious need for this project to be expanded to at least one additional site, in order to ascertain if a localisation of funerary practice can be isolated in the historical and archaeological record. Of particular interest are the recent discoveries at Akoris (Kawanishi, 2007), as the TIP burials recovered from the excavation appear to contradict some of the trends isolated at Matmar. There is a wealth of TIP burial information (identified above, see 2.0) waiting to be explored, much of which is, like Matmar, connected to sites which are rarely included in popular literature or synoptic volumes. Equally, the Matmar corpus itself has much more to offer. This study did not touch upon the vast quantities of beads and shells recovered from burials. Also, many of the scaraboid seals carried with them inscriptions and motifs which have not been subject to further research since the notes provided Alan Rowe with the original report (Brunton, 1948: 85-9).

Overall, the quantity of new information extracted from the data set at Matmar would lead the author to consider this project a successful case study. However, it is clear that further exploration of more suitable statistical methods is required in

order to maximise the potential TIP dataset, especially with regards to those sites with a smaller quantity of burials.

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Appendices: Tables

Table I: Sex based breakdowns of coffin use (Brunton, 1948: 80).

	Males	Females	Children
Anthropoid	103	138	19
Oval	43	40	35
Rectangular	5	9	35
Other		3	3
None	5	16	54
Totals	156	206	121

Table II: A percentage based breakdown of the distribution rates of amulets which occur in the graves of women and children (Brunton, 1948: 83)

Amulet style	Females (%)	Children (%)
Isis and Horus	75	25
Nefer-Atum	50	50
Ptah-Sokar	50	50
Sekhmet	42	58
Isis	30	70
<i>Wedjats</i>	16	84
Cats	15	85
Sows	7	93
Bes	6	94

Table III: The frequency of seal amulets grouped by their location on the body (Brunton, 1948: 85)

Position	Scarabs	Oval Plaques	Square Plaques	Cartouche Plaques	Animal plaques	Total
Neck of Body	32	16	2	1	1	52
Left Arm	13	2	1	0	1	17
Left Wrist or Hand	33	14	6	1	1	76
Right	0	1	1	0	0	2

Arm						
Leg, feet or loose	8	1	0	0	0	9

Table IV: Comparison of Brunton (1948), Aston (2009) and Humphreys (2009) catalogues

N.B. The bracketed sections highlight anomalous or unregistered graves.

Area	Aston (2009) Catalogue	Brunton (1948) Report	Humphreys (2009) database catalogue
700	96	96	96
1200	91 (2 reassigned as amulet burials)	87 (+ 6 Unregistered)	91
1700	23	21 (+ 2 Unregistered)	23

600	3	3	3
800	3	3	3
900 – housing area	2	2 (+ 9 from town group)	2 (9 deleted due to no information)
1000 – Temple area	11 (suggested date of 20 th or 21 st dynasty)	11 (+7 Unregistered)	18
1100	3	3	3
3200	Not included	1	1
6000	Not included	2 (+ 1 unregistered)	1 (2 deleted due to no information)
Unregistered (listed individually without Area)	44	47	47
Listed only in coffin styles table: Area 999 (Humphreys, 2009)	Not included	231	231
Total of grave cuts	275 (or 264 discounting Area 1000)	521	519
Additional burials within cuts (Burials '2')	-	-	23
Total Database	-	-	542

Entries			
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Table V: List of theomorphic or anthropomorphic deities (12 designs)

Amulet	Quantity	Material	Colour
Bes	23	Unspecified (faience?)	Blue and black, blue, red, white and blue, white, unspecified
Sekhmet (standing)	21	Unspecified (faience?)	Blue, yellow
Ptah-Sokar	21	Unspecified (faience?)	Green, blue, blue and black
Isis	11	Paste, Unspecified (faience?)	Blue

Sekhmet-in-shrine	8	Unspecified (faience?)	Blue, unspecified
Nefertum	5	Glass, Unspecified (faience?)	Blue, blue and black
Seated Sekhmet	4	Unspecified (faience?)	Blue
Isis and Horus	4	Unspecified (faience?)	Blue, green
Tauert	3	Unspecified (faience?)	Blue, blue and black
Harpocrates	2	Unspecified (faience?)	Blue, white
Thoth	1	Unspecified (faience?)	Blue
Goddess (unspecified)	1	Unspecified (faience?)	Unspecified

Table VI: Natural representations (18 designs)

Amulet	Quantity	Material	Colour
Cat	36	Limestone, travertine, steatite, Unspecified (faience?)	Blue, green, yellow
Sow	16	Bone, pebble, Unspecified (faience?)	Blue, black and white, unspecified
Lion	16	Unspecified (faience?)	Blue, red

Hawk	7	Bronze, unspecified (faience?)	Blue, green, silver
Twin bA	4	Unspecified (faience?)	Blue
Lion head	2	Unspecified (faience?)	Blue
Fish	2	Silver, Unspecified (faience?)	Blue, silver
Double Ram	1	Unspecified (faience?)	White
Baboon	1	Unspecified (faience?)	Blue
Twin Baboon	1	Unspecified (faience?)	Blue
Cobra	1	Unspecified (faience?)	Blue
Double ape	1	Unspecified (faience?)	Blue
Ram	1	Unspecified (faience?)	Blue
Double ram head	1	Unspecified (faience?)	Blue
Fly	1	Unspecified (faience?)	Blue
Ibis	1	Bronze	Bronze
Jackal	1	Bronze	Bronze
Serpent	1	Unspecified (faience?)	Unspecified

Table VII: Other sacred objects (7 designs)

Amulet	Quantity	Material	Colour
Aegis	7	Silver, Unspecified (faience?)	Silver, blue
wDat eye	81	Steatite, paste, carnelian, glass, travertine, Unspecified (faience?)	Blue, blue and black, red, green, white, black, unspecified
'Amulet' -	1	Unspecified	Blue

unspecified		(faience?)	
multiple wDat-eye	1	Unspecified (faience?)	Blue
Offering table	4	Limestone, Unspecified (faience?)	Pale green, blue
Situla	1	Bronze	Bronze
Heart	1	Carnelian	Red

Table VIII: Crosstabulation for Sex and Coffin Style

			Coffin style¹⁷⁶					
			0	1	2	3	4	Total
Sex	C	Count	75	13	24	11	23	146
		Expected Count	32.4	6.0	10.1	24.2	73.4	146.0
		Std. Residual	7.5	2.9	4.4	-2.7	-5.9	
	F	Count	29	8	8	37	144	226

¹⁷⁶ 0 = No Coffin, 1= no coffin structure but other inclusions e.g. twigs, 2= rectangular coffin, 3 = oval coffin.

		Expected Count	50.1	9.3	15.6	37.5	113.6	226.0
		Std. Residual	-3.0	-0.4	-1.9	.0	2.8	
	M	Count	15	1	5	41	103	165
		Expected Count	36.6	6.8	11.4	27.3	83.0	165.0
		Std. Residual	-3.6	-2.2	-1.9	2.6	2.2	
	Total	Count	119	22	37	89	270	537
		Expected Count	119.0	22.0	37.0	89.0	270.0	537.0

Table IX: Crosstabulation for Sex and Coffin Style (Area 1)

			Coffin style					
			0	1	2	3	4	Total
Sex	C	Count	24	7	7	0	9	47
		Expected Count	11.9	3.7	3.7	1.8	26.0	47.0
		Std. Residual	3.5	1.8	1.8	-1.4	-3.3	
	F	Count	1	1	1	3	40	46
		Expected Count	11.6	3.6	3.6	1.8	25.5	46.0

		Std. Residual	-3.1	-1.4	-1.4	.9	2.9	
	M	Count	1	0	0	1	8	10
		Expected Count	2.5	.8	.8	.4	5.5	10.0
		Std. Residual	-1.0	-.9	-.9	1.0	1.0	
	Total	Count	26	8	8	4	57	103
		Expected Count	26.0	8.0	8.0	4.0	57.0	103.0

Table X: Crosstabulation for Sex and Coffin Style (Area 2)

			Coffin style					
			0	1	2	3	4	Total
Sex	C	Count	19	2	11	8	6	46
		Expected Count	10.5	1.4	5.3	13.4	15.3	46.0
		Std. Residual	2.6	.5	2.5	-1.5	-2.4	
	F	Count	1	1	0	12	24	38
		Expected Count	8.7	1.2	4.4	11.1	12.7	38.0

		Std. Residual	-2.6	-.2	-2.1	.3	3.2	
	M	Count	2	0	0	8	2	12
		Expected Count	2.8	.4	1.4	3.5	4.0	12.0
		Std. Residual	-.5	-.6	-1.2	2.4	-1.0	
	Total	Count	22	3	11	28	32	96
		Expected Count	22.0	3.0	11.0	28.0	32.0	96.0

Table XI: Crosstabulation for Sex and Coffin Style (Area 3)

			Coffin style				
			0	1	3	4	Total
Sex	C	Count	12	0	0	0	12
		Expected Count	9.6	.5	.5	1.4	12.0
		Std. Residual	.8	-.7	-.7	-1.2	
	F	Count	5	0	0	3	8
		Expected Count	6.4	.3	.3	1.0	8.0

		Std. Residual	-6	-6	-6	2.1	
	M	Count	3	1	1	0	5
		Expected Count	4.0	.2	.2	.6	5.0
		Std. Residual	-.5	1.8	1.8	-.8	
	Total	Count	20	1	1	3	25
		Expected Count	20.0	1.0	1.0	3.0	25.0

Table XII: Crosstabulation for Sex and Coffin Style (Area 4)

			Coffin Style					
			0	1	2	3	4	Total
Sex	C	Count	11	0	5	3	8	27
		Expected Count	3.5	.3	1.5	5.3	16.4	27.0
		Std. Residual	4.0	-.5	2.8	-1.0	-2.1	
	F	Count	18	3	6	22	74	123
		Expected Count	15.9	1.3	6.9	24.1	74.8	123.0

		Std. Residual	.5	1.5	-.3	-.4	.0	
	M	Count	8	0	5	31	92	136
		Expected Count	17.6	1.4	7.6	26.6	82.7	136.0
		Std. Residual	-2.3	-1.2	-.9	.8	1.0	
	Total	Count	37	3	16	56	174	286
		Expected Count	37.0	3.0	16.0	56.0	174.0	286.0

Table XIII: Body position of amulets

Position	Count
Upper left arm	1
Chest	1
Top of coffin	1
Grave filling	1
Shaft	1
Left ankle	1
Ankles	1
Hands	1
Left arm	2
Left elbow	2

Right arm	2
Left side	2
Side	3
Feet	4
Right wrist	4
Right elbow	4
Right of head	8
Head	10
Left wrist	10
Unknown	55
Neck	185

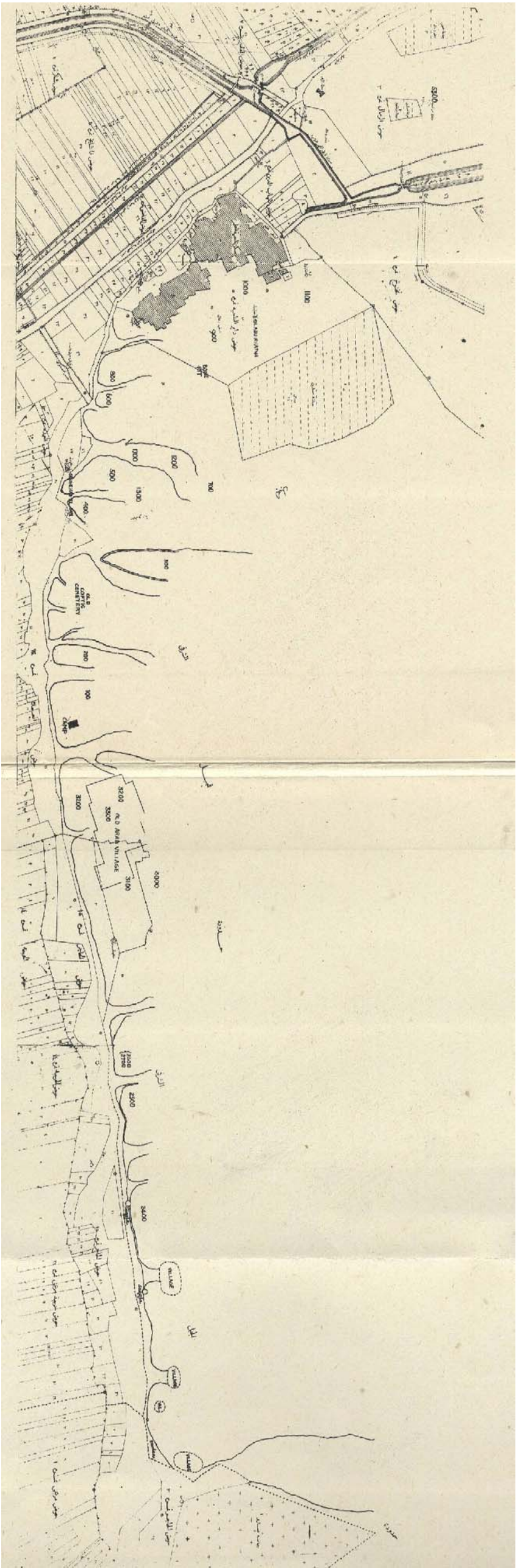
Table XIV: Chronologies for the 21st–25th dynasties (Hornung et al, 2006; 493-4)

DYNASTY 21	c.1076-994
Smendes	c.1076-1052
Psusennes I	c.1051-1006
Amenemnisut	c.1005-1002
Amenope	c.1002-993
Oorkon the Elder	c.992-87
Siamun	c.986-968
Psusennes II	c.967-944
DYNASTY 22 (Libyan)	c.943-746
Shoshenq I	c.943-923

Osorkon I	c.922-888
Takeloth I	c.887-874
Shoshenq II	c.873
Osorkon II	c.872-842
Shoshenq III	c.841-803
Shoshenq IIIa	?-c.790
Pami	c.789-784
Shoshenq V	c.783-746
DYNASTY 23 (UE)	
Takeloth II	c.845-821
Iuput I	c.820-809
Osorkon III, Takeloth III	c.780 (+/- 20)
DYNASTY 23 (LE)	c.730
Pedubaste II	?
Osorkon IV	?
DYNASTY 24	c.736-723
Tefnakhte	c.736-729
Bocchoris	728-723
DYNASTY 25 (Kushite)	c.722-655
Piye/Piankhy	c.753-723
Shabaqa	c.723-707
Shebitqu	c.706-690
Taharqa	c.690-664
Tantamani	664-c.655
DYNASTY 26 (Saite)	664-525

Plates

Plate I: Sketch map west (Brunton, 1948)



Sketch map east (Brunton, 1948)

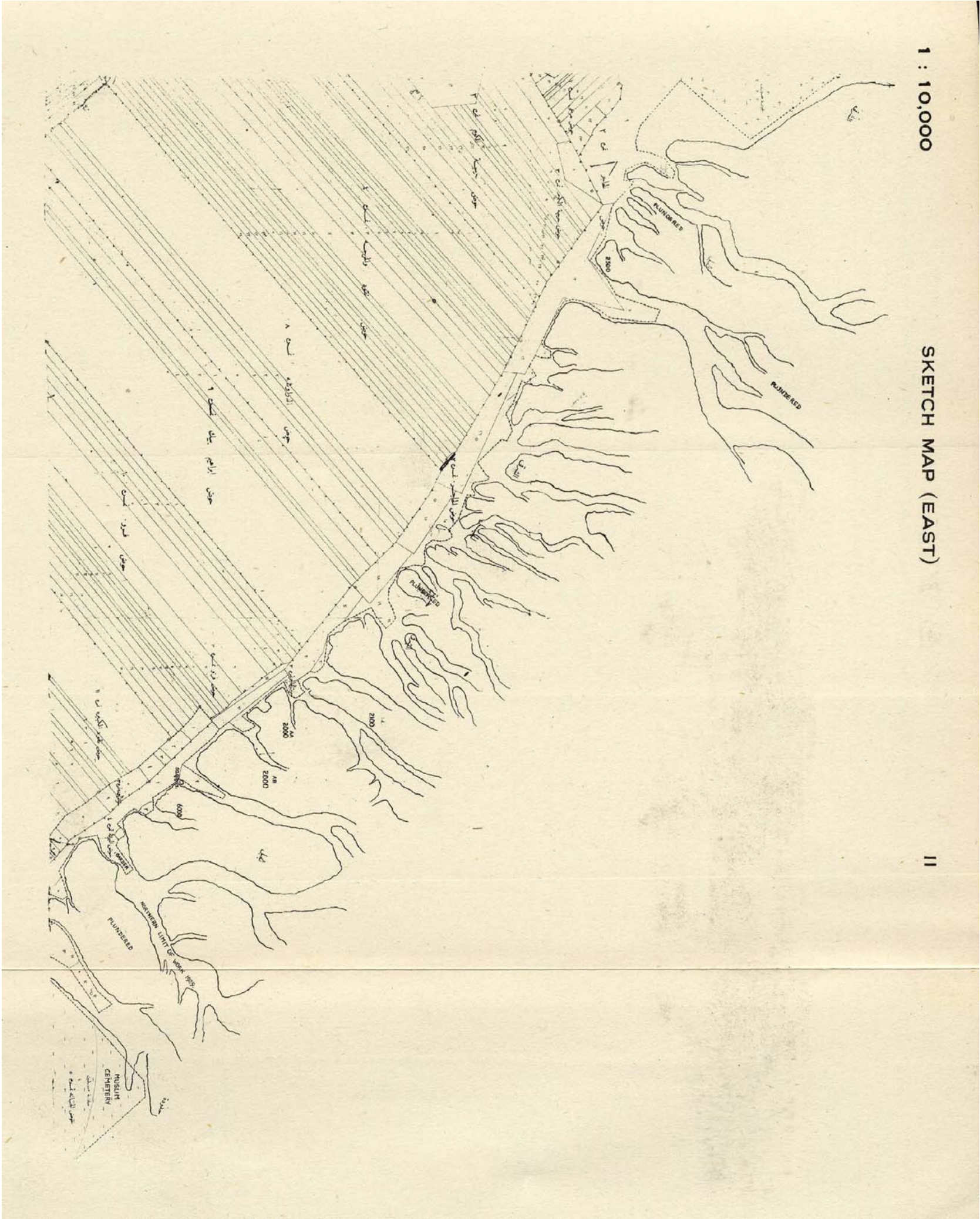


Plate III: Modern cartographic resource for Matmar.

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GIS officer.

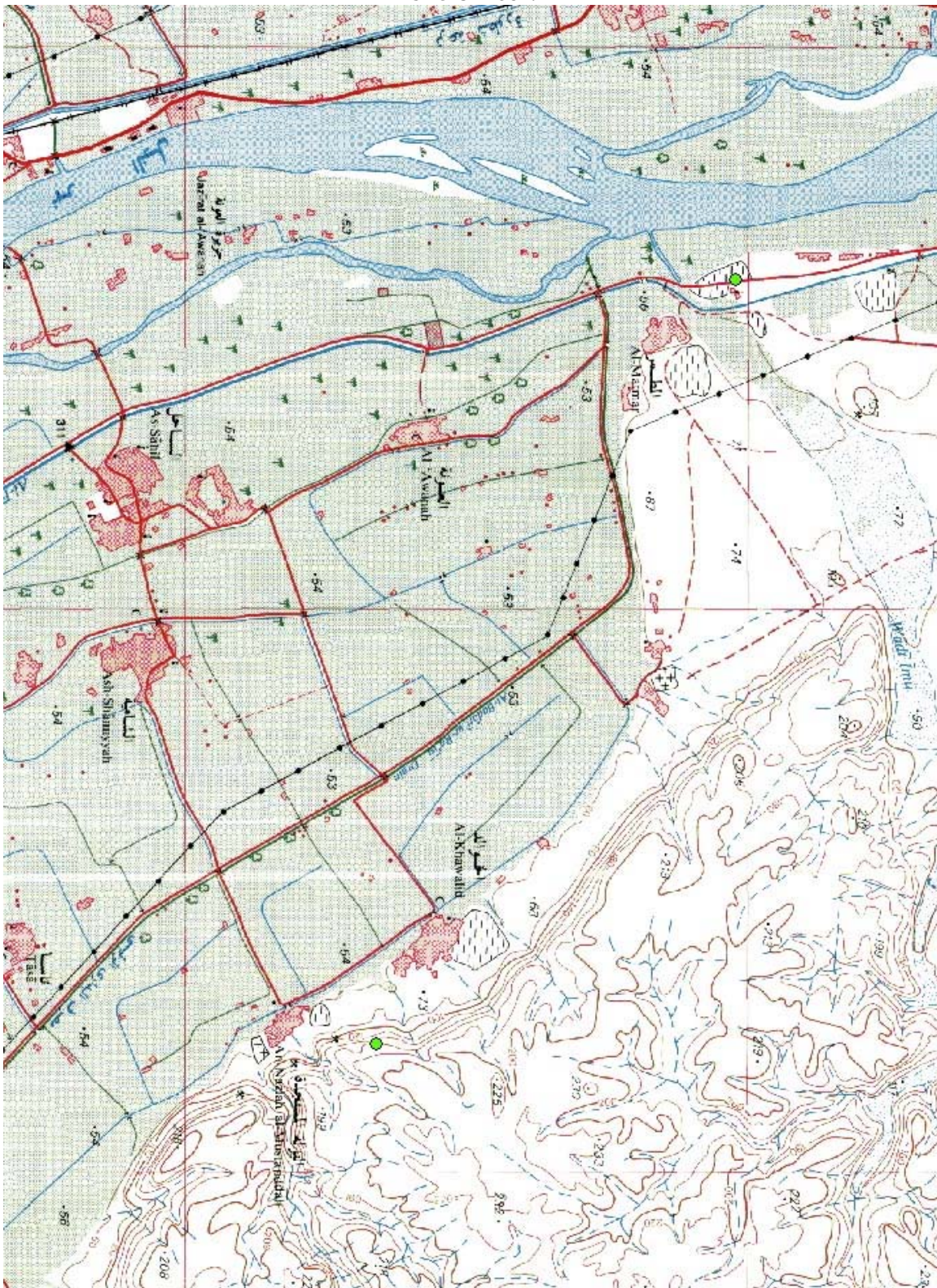


Plate IV: Matmar site with village locations

Matmar Site



Legend

- Khawaled
- Matmar

Plate V: Rectification of original sketch maps

Matmar: Georeferencing Brunton's Sketch Maps



Legend

- Khawaled
- Matmar

Plate VI: Satellite map with complete site features

Matmar Satellite Map



Legend

♦ 100	♦ 800	♦ 1700	▲ 2600	♦ 6000	Old Arab Village
♦ 200	♦ 900	♦ AA 2000	▲ 2700	● Khawaled	Old Coptic Cemetery
▲ 300	♦ 1000	♦ AB 2000	▲ 3000	● Matmar	Plundered Areas
▲ 400	♦ 1100	▲ 2100	▲ 3100	■ Bone Pit	
▲ 500	♦ 1200	▲ 2300	▲ 3200	■ Brunton's Camp	
♦ 600	♦ 1300	▲ 2400	▲ 3300	● Sh. Abu Khatwa	
♦ 700	♦ 1500	▲ 2500	▲ 5300	● Sh. Shehad El-Din	

Plate VII: TIP burial areas

Matmar TIP Grave Areas



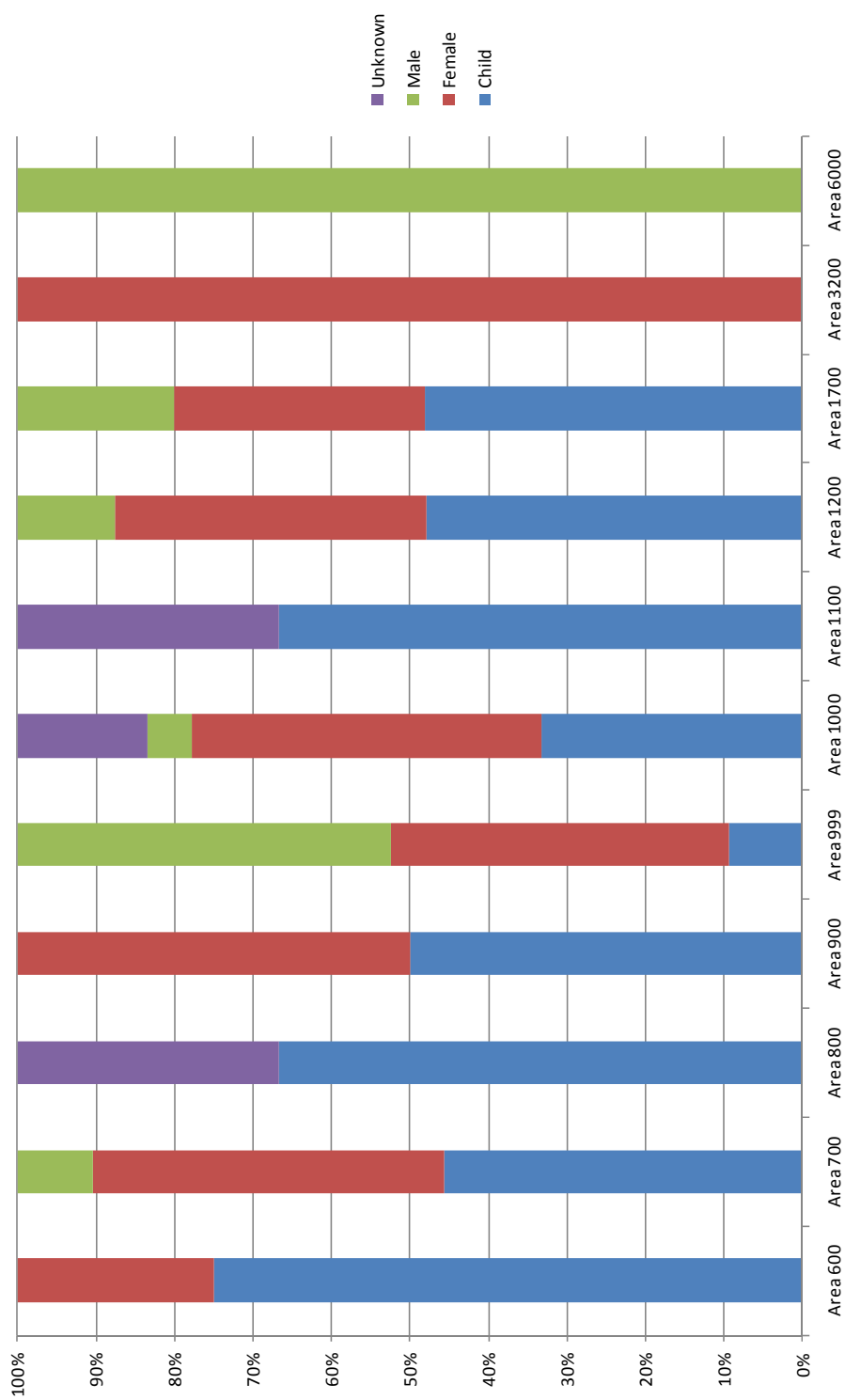
Legend

◆ 600	◆ 800	◆ 1700	◆ 6000
◆ 700	◆ 900	▲ 3200	● Khawaled
◆ 1000		● Matmar	
◆ 1100			
◆ 1200			



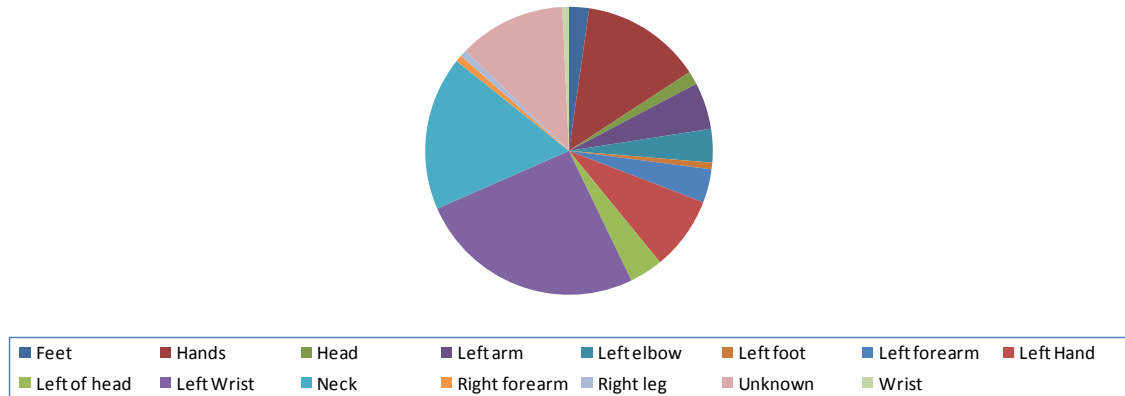


Pl.IX: Biological sex distribution by area

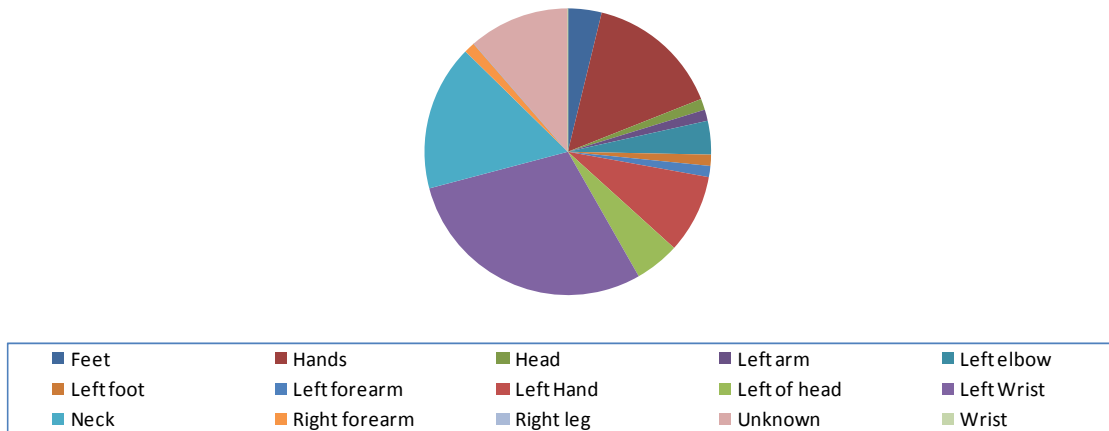


Pl.X: Locations of seal amulets and plaques

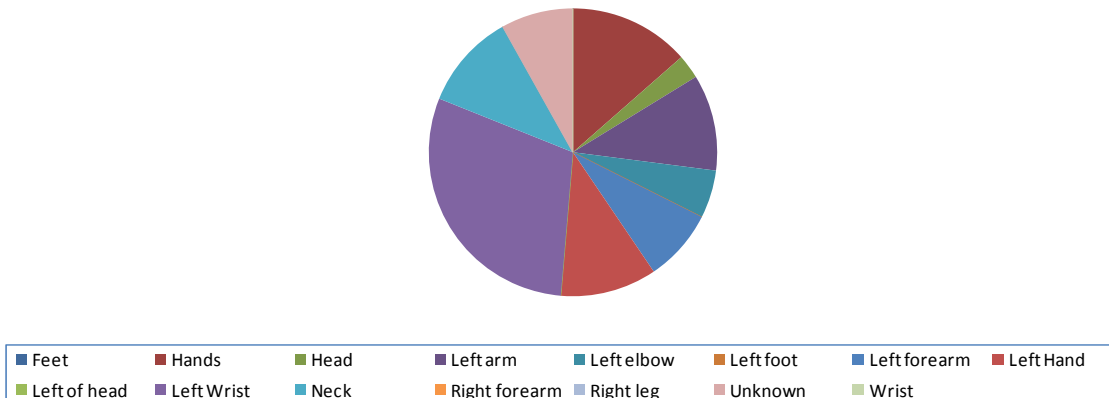
Graph I: Positions of Amulets, Seal Amulets and Plaques across the entire site



Graph II: Positions of Amulets, Seal Amulets and Plaques across area 700



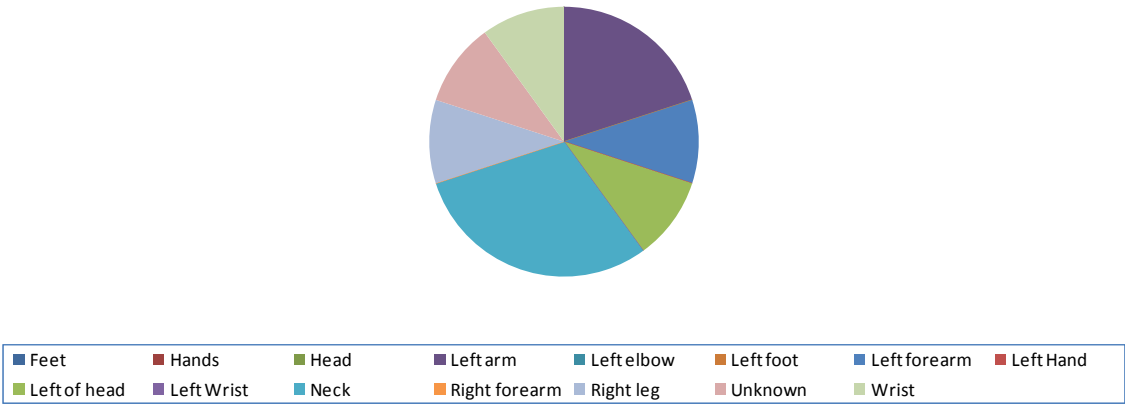
Graph III: Positions of Amulets, Seal Amulets and Plaques across area 1200





Pl.XI Locations of seal amulets and plaques (2)

Graph IV: Positions of Amulets, Seal Amulets and Plaques across area 1700





Pl.XII Amulet Distribution by Colour

