

# The Delta Survey Workshop: Proceedings from Conferences held in Alexandria (2017) and Mansoura (2019)



Edited by  
Ayman Wahby and Penelope Wilson



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The Egypt Exploration Society  
 in collaboration with  
 The Ministry of Antiquities  
 and  
 The BA Alexandria Center for Hellenistic Studies


**THE FIFTH  
 DELTA SURVEY WORKSHOP**


6-7 APRIL 2017  
 BIBLIOTHECA ALEXANDRINA CONFERENCE CENTER,  
 LECTURE HALL



**PROGRAM  
 AND  
 ABSTRACTS**

Sponsored by  
 The British Academy  
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## INTRODUCTION

The Delta Survey Workshop began as part of the Special Delta Survey Project of the Egypt Exploration Society funded by the British Academy and organised by Dr Jeffery Spencer and Dr Patricia Spencer in collaboration with the Egyptian Ministry of Antiquities. The first five workshops were held in Cairo at the British Council and in the Zamalek lecture theatre of the Ministry, with the first in spring 2009. Each workshop has benefitted from the exchange of archaeological information between colleagues working all over the Nile Delta, from the chance to meet old and new friends and to support each other in our endeavours to record, research and disseminate our archaeological and historical work in the northern provinces of Egypt.

The Fifth Delta Survey Workshop was held in the Bibliotheca Alexandrina on 6th-7th April 2017 in collaboration with the Alexandria Center for Hellenistic Studies and the Sixth Delta Survey Workshop was held in collaboration with the University of Mansoura on 11th-12th April 2019. The papers in this volume reflect the breadth of presentations given at the two conferences.

The Delta Survey project was established in order to gather information, often of the most basic kind, from the numerous archaeological sites in the Egyptian Delta and to make it available to the local authorities and interested scholars. The kind of data gathered at the sites ranges from basic observations, photographica and visual inspection, to satellite data and images, topographical and magnetic mapping, drill augers and material culture recording. Subsequently, some sites have been the subject of more detailed excavation projects. The information is held by the Egypt Exploration Society at: [www.ees.ac.uk/delta-survey](http://www.ees.ac.uk/delta-survey). Part of the remit of the project was to hold a biennial workshop to bring together those carrying out archaeological work in the Delta in order to share information and discuss themes and topics common to the Delta work. These Proceedings are the first publication arising from the Workshops and, hopefully, not the last. The collegial atmosphere of the workshops have been much appreciated over the years and seen new generations of fieldworkers emerge.

## ACKNOWLEDGEMENTS

The thanks recorded here are also an acknowledgement of the respect and the partnership, advice and support of the Ministry of Tourism and Antiquities, the Minister Dr Khaled el-Enany and the Secretary General of the SCA, Dr Mostafa Waziri, as well as the Foreign Missions Department under the auspices of Dr Nashwa Gaber and Dr Mohamed Ismail Khaled. Staunch supporters over the years have been Dr Mohamed Abd el-Maksoud, Dr Aiman Asmawy, Dr Nadia Khedr, Dr Hisham el-Leithy and colleagues from the foreign institutes working in Cairo and Egypt.

We would like to thank Dr Chris Naunton, Dr Margaret Mountford, Dr Cédric Gobeil and Essam Nagy at the Egypt Exploration Society, Ken Emond at the British Academy and, particularly, Dr Mohamed Kenawi CHS, Professor Ayman Wahby, Professor Maha Seguni and Professor Randa Baligh in the University of Mansoura for all of their help and all of the participants for their papers, posters, discussion and friendship.

In Alexandria we thank Dr Ismail Serageldin, Founding Director of Bibliotheca Alexandrina, who inaugurated our Workshop, Dr Mohamed Kenawi in the Center for Hellenistic Studies (2017) and his colleagues and students who worked so hard to make the Workshop a success. Thanks are also due to the Travel Unit, Studio Unit and the Conference Center for all of the logistical support.

In Mansoura we thank Professor Dr Ashraf Abdel Basset, President of Mansoura University, Professor Ashraf Abdel Hafez, the Vice-President for Postgraduate Studies and Research, Professor Reda Sayed Ahmed, former Dean of the Faculty of Arts, Professor Mahmoud El-Giedy, Dean of the Faculty of Arts, Professor Maha el-Seguni, former Vice-Dean for Postgraduate Studies and Research and coordinator, Professor Mosa'ad Salama, Vice-Dean for Postgraduate Studies and Research, Professor Mohamed el Kenawy, former President of the University, Professor Ashraf

Sewilem, the former Vice-President for Postgraduate Studies and Research and the staff of the Department of Egyptology, Faculty of Arts, Mansoura University.

In the preparation of this volume the editors would like to thank the University of Mansoura for their willingness from the beginning to publish the proceedings, the EES for their project support and administrative assistance through the Delta Survey Committee, British Academy for funding and anonymous reviewers who gave their time and effort to validate the papers, Jeffrey Spencer and Steven Snape for their support for the Delta Survey project in many ways. Finally, we are most grateful to Archaeopress and their Director Dr David Davison for accepting the volume for publication.

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Penelope Wilson and Ayman Wahby

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Prof. Dr. Maha El Seguinny, Prof. Dr. Randa Baligh, Dr. Mohamed Kenawi,  
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**In Memory of our friends and colleagues**

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Geoffrey Martin  
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## FOREWORD

### **Prof. Dr. Ashraf Abdel Basset, Conference-Chair & President of Mansoura University**



We were pleased to host the 6th Delta Survey Workshop, the first to be held in Mansoura University under the auspices of Prof.Khaled Abdel Ghaffar, the Minister of Higher Education and Research and Prof.Khaled El-Enany, the Minister of Tourism and Antiquities. We were delighted to have strong participation from International scholars; we address our thanks to all of you for coming from distant countries to join us. This International conference was organized to discuss the efforts and achievements carried out by archaeologists and researchers in the Delta region.I'd like to thank everyone for accepting our invitation and I hope that you all found the conference highly engaging, fruitful and beneficial.

### **Prof. Dr. Ashraf Hafez, Vice-President for Post Graduate Studies & Research**



It gives me immense pleasure to thank you for the 6th Delta Survey Workshop which was held at Mansoura University on 11th–12th April 2019. Since I began my work as Vice–President for Postgraduate Studies and Research after my Colleague Prof. Ashraf Sewilm who was responsible for organizing this workshop at that time, I focused on and supported the archaeological activities carried out by our colleagues in the Department of Egyptology, Faculty of Arts who did a successful job in the project of Tell Tebilla, which is funded by the Researches Fund of Mansoura University.

The conference of the 6th Delta Survey Workshop was evidence that we can have a workable partnership with the EES and the Delta Survey Project. On this occasion of having distinguished scholars in the field of Archaeology and the Delta sites specialists, I am sure that all participants and attendees felt enriched with new knowledge after the completion of this big event. Finally, I wish that you all had an enjoyable and fruitful stay in Mansoura.



Alexandria, 2017 (Photograph copyright Bibliotheca Alexandrina).



Mansoura 2019 (Photograph by Essam Nagy).

# EGYPTIAN INFLUENCE IN THE HELLENISTIC PERIOD: A CASE STUDY FROM THE EL-ABD SITE, ALEXANDRIA

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## Abstract

Mutual cultural interaction is one of the most interesting aspects of Egyptian society during the Hellenistic period. This article presents a primary study, published for first time, of some examples, which were discovered in the eastern cemetery of Alexandria, that confirm Egyptian influence in the Hellenistic period. The examples have been discovered in the one of most important rescue excavation sites in this cemetery, a site called El-Abd. This paper will present an introduction to the site and its importance, as well as a comparative analysis of examples and results, according to other excavation reports.

## ملخص

يعد التفاعل الثقافي المتبادل أحد أكثر الجوانب إثارة للاهتمام في المجتمع المصري خلال الفترة الهلنستية. ويقدم هذا المقال دراسة أولية نشرت لأول مرة لبعض الأمثلة التي تم اكتشافها في المقبرة الشرقية بالإسكندرية والتي تؤكد التأثير المصري في العصر الهلنستي. وتم اكتشاف الأمثلة في أحد أهم مواقع حفائر الإنقاذ في هذه المقبرة، وهو موقع يسمى العبد. وستقدم هذه الورقة مقدمة عن الموقع وأهميته، بالإضافة إلى تحليل مقارنة للأمثلة والنتائج، وفقاً لتقارير الحفائر الأخرى.

## 1. Introduction

Cultures in contact usually affect each other, even in miniscule ways. This becomes more overtly true when one culture conquers and colonizes another. After the Macedonian conquest of Egypt in 332 BCE by Alexander the Great, many Egyptians were relieved to be 'free' of the previous Persian power in the country. In 331 BCE and the creation of a new capital, Alexandria, in the Nile Delta changed the dynamic for Greek colonies and the entire Egyptian nation. Once Alexander died, however, his former general Ptolemy I Soter established himself as pharaoh in 305 BCE (Grant 1982). The Egyptians were now under Hellenized rule (Payne 2012: 5).

There is agreement among historians to name the period, which spans four centuries before the birth of Christ, the Hellenistic Era. It was a time when the cultures of Greece and the ancient Near East intermingled. The word 'hellenistic', of course, has its root in the ancient Greek word 'hellene' which means 'Greek' and is an adjective relating to Greek culture, history and art. New excavations are being conducted and theoretical frameworks devised to account for the evidence shown in the archaeological record for non-elite people living under the Macedonian-Greek occupation in Egypt. Since 2011 until now, new excavation sites have been discovered in the Eastern cemetery of Ancient Alexandria, which extends from the Chatby/Hadra district to Ibrahimieh and Sidi Gaber to Mustafa Kamel district, and Kafer Abdou (Fig.1) and was considered the place for the burial of Macedonians, Greeks and Romans. This cemetery was not mentioned in Strabo's writings when he visited Alexandria in about 24 BCE (Venit 2002: 22).

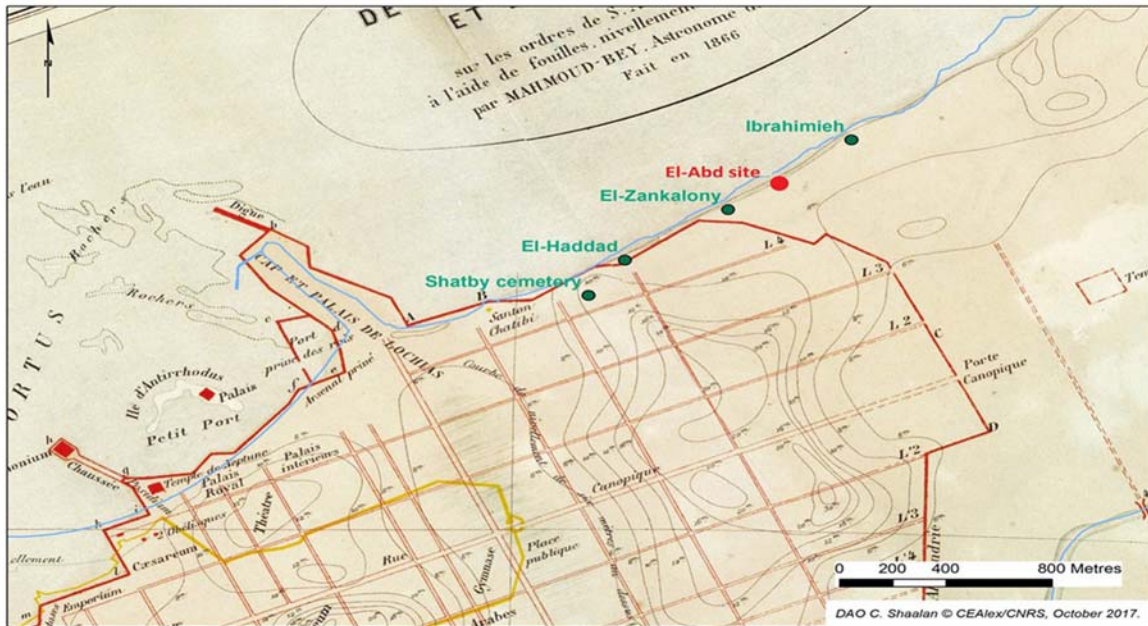


Figure 1. Map showing the location of sites from the Eastern Cemetery. (Adapted from Mahmoud Falakhi Map, 1866).

The rescue excavation was carried out in order to record information in a site, which was in danger of being destroyed (Paula 2011). It is the most common type of excavation in Alexandria, because of the development pressures in a crowded and small city centre, and beneath the modern city streets is a wealth of archaeological deposits. The archaeologists sometimes have the opportunity to excavate and save the information from sites under development before the information is lost. The site in question was one of the graveyards of the eastern cemetery of Alexandria, located in the Ibrahimieh Area around 820 m from Chatby Cemetery and not far from three sites discovered recently in the same area, that is El-Haddad, El-Zankalony and Ibrahimieh. The importance of El-Abd site is that it presents information about the new part of the Eastern cemetery in ancient Alexandria, reflecting the development of architecture and rituals in ancient Alexandria from the Hellenistic period to the end of the Roman period, ca. 4th century BCE to 3rd century CE.

## 2. The Excavations

Four trial trenches were excavated, in order to identify the places containing archaeological elements. The single context recording system developed by the Museum of London (MoLAS 1994) was applied during the excavation and recording stages with a few modifications to record loculi. Photogrammetry was used to obtain 3D models to record the site phases by Mohamed Abd El-Aziz. A north/south grid was established over the site and divided into 5 x 5 m squares. Each square had a letter and number designation and the site was divided into four areas: Area I, II, III and IV, which contained a huge cemetery with a great variety of burials. Hellenistic period tombs exist in all areas and were covered by Roman tombs (Fig. 2).

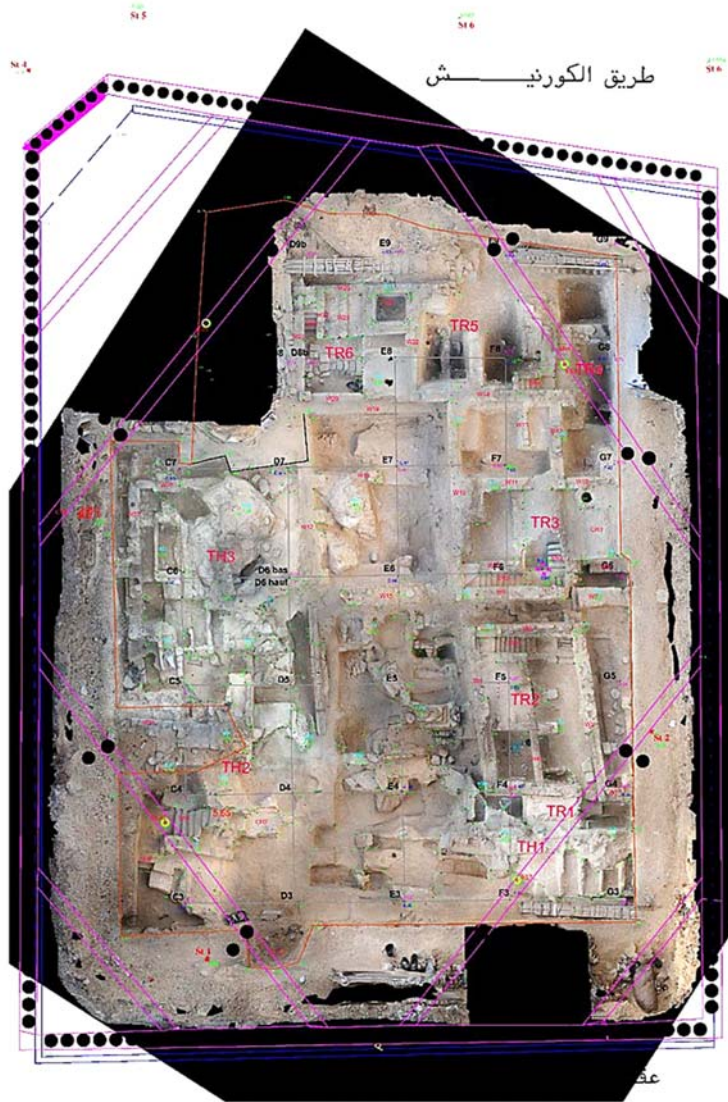


Figure 2. A 3D-model shows the archaeological elements in the site of El-Abd.  
(Image by M. Abd el-Aziz).

Egyptian influences can be discussed using the examples of three tombs. The first tomb is called TH1 and was located in the south-east. It consists of a staircase located in the south wall that leads to a room containing 14 loculi in the north, east and west walls (Fig. 3).

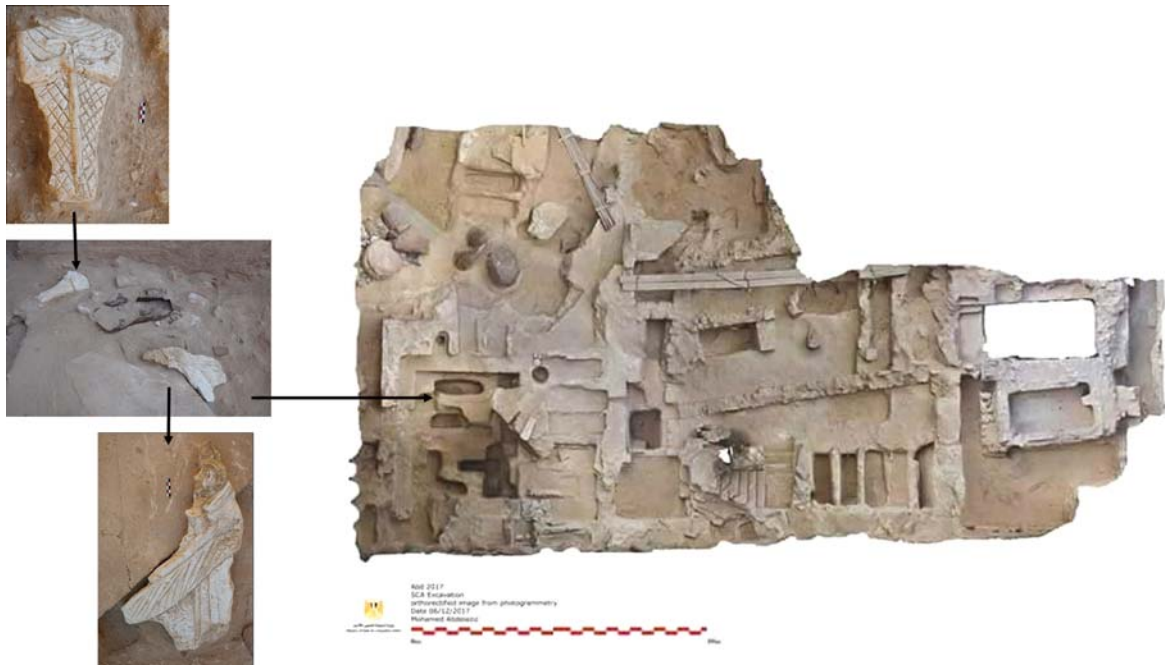


Figure 3: Tomb TH1 with examples of loculi and details of the decoration.

The second tomb called TH3 was located in the south-west and it contains approximately 24 loculi and a funerary *kline*-room (Fig. 4).

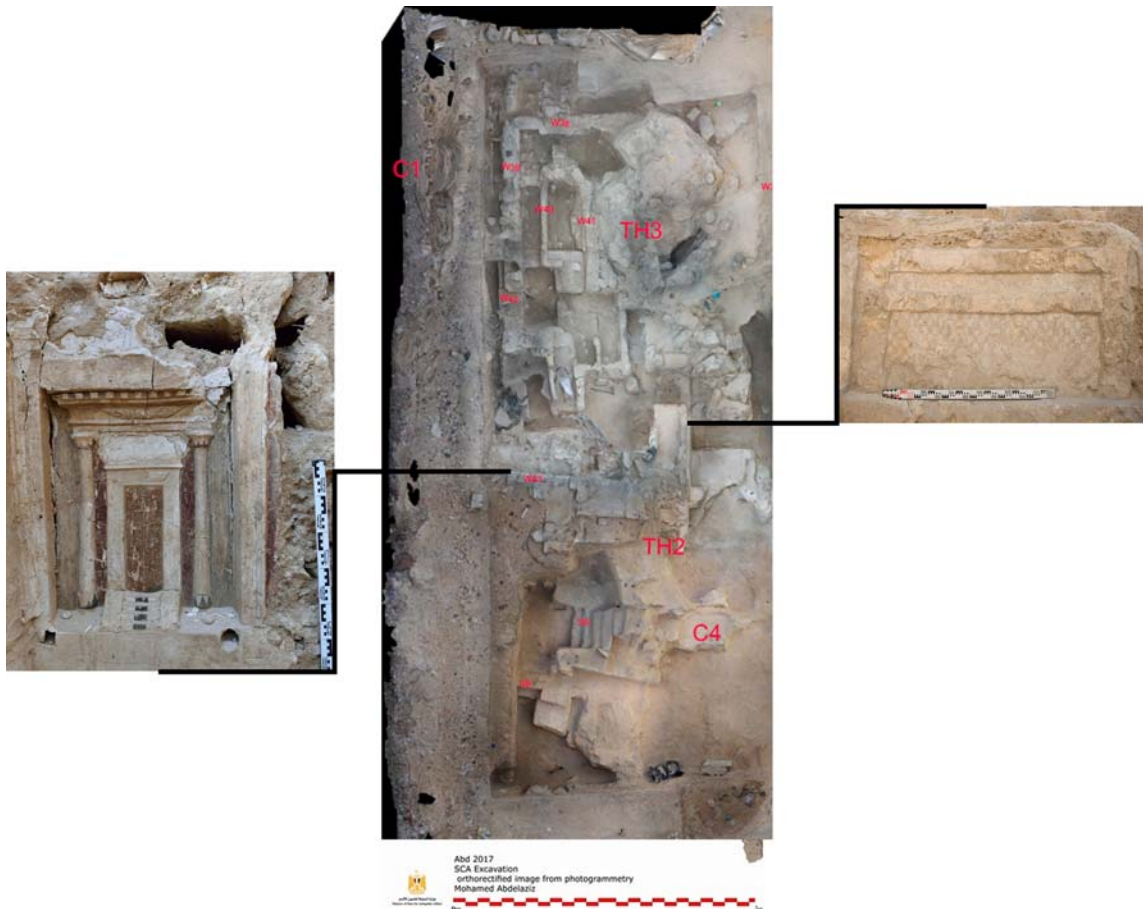


Figure 4. Tomb TH3 with examples of loculi and details of the decoration.

The third tomb was one of the Roman tombs called TR6 located to the north-east, which showed examples of Egyptian influence (Fig. 5).



Figure 5. Tomb TR6 with examples of loculi and objects found in it.

### 3. Egyptian Influence in Hellenistic-Roman period

When Alexander III of Macedon conquered Egypt in 332 BCE, his rule was welcomed and it seems clear that Alexander wanted to be viewed by the public as the saviour of the Egyptian people and a ruler who would be able to maintain the order of life in Egypt politically, economically, and religiously. In contrast to the tyrannical suppression and lack of religious tolerance of the Persians, which had created widespread resentment among the Egyptians, Alexander demonstrated whenever possible that he respected the Egyptian lifestyle and the native pantheon of gods as well as religious festivals and traditions (Green 1991: 268-269). For example, in 331 BCE, Alexander visited Heliopolis and Memphis and made sacrifices to the gods as an Egyptian king would and he also visited the oracle of Ammon at the Siwah Oasis. Here, he was reportedly declared “son”, which related him directly to Ammon/Amun (Zeus to the Greeks).

Alexander’s alleged divine parentage fit nicely within the Egyptians’ traditional view that their pharaoh was the son of a god. Alexander succeeded in not only expanding his empire, but in creating, what may be conceived of as, a globalized economy that stimulated cultural exchange all over the Mediterranean world. Alexandria, previously known as Rhakotis, was reestablished in 311 BCE (Green 1991: 271). Alexandria was the epitome of a cosmopolitan Hellenistic city with a multi-ethnic population, advanced city planning, centres dedicated to cultural development, like the Museum and Library. The city became an important economic hub that connected Egypt to the broader Hellenistic Mediterranean trade network. In addition, many of the most important intellectual innovations of the Hellenistic age occurred in Alexandria, and the city fostered several generations of scientists, academics, and philosophers. It was also the site of several cults that would later spread to Europe, including those of Isis, Osiris, and Serapis (Moss 2017: 43). El-Abd site is one of the most important sites to show us the Egyptian influence in the Ptolemaic-Roman period, and the specific examples below will be discussed in relation to Egyptian influences on Hellenistic art.

### 1. Statue of Osiris (Fig. 6)



Figure 6: Figure of Osiris.

Object Type: part of a funerary stela.

Description: the statue depicts the god Osiris standing, his body wrapped in mummy-bandages and holding the crook and flail sceptres. The head is missing.

Date: Hellenistic period.

Findspot: TH1.

Material: Limestone.

*Comments:* Osiris was a complex god, linked to the flooding of the Nile, the moon and royalty. His immense popularity is due to his funerary role. Originally, he was probably a god of fertility and agriculture. As his cult expanded in the Old Kingdom, Osiris was assimilated with the gods of the underground and became important in funerary rituals. His myth promised life after death for every individual who received the proper rites. Each deceased person became an Osiris in his or her own right and attained eternal life, although the oldest beliefs promised only a vague, collective future linked to the dead king. He was regarded in later times as a god of fertility, agriculture, the afterlife, the dead, resurrection and vegetation in ancient Egyptian religion. He was one of the first to be associated with mummy wrappings. When his brother, Seth, cut him up into pieces after killing him, Isis, his wife, found all the pieces and wrapped his body up to create a mummy. Osiris was at times considered the eldest son of the god and the sky goddess Nut, as well as being brother and husband of Isis, with Horus being considered his posthumously begotten son (Wilkinson 2003: 105). Osiris was the judge of the dead and the underworld agency that granted all life, including sprouting vegetation and the fertile flooding of the Nile River. He was described as “He Who is permanently Benign and Youthful” and the Lord of Silence (Redford 2003: 302-307). The kings of Egypt were associated with Osiris in death – as Osiris rose from the dead so they would be in union with him, and inherit eternal life through a process of imitative magic (Brandon 1971: 2087-2088).

### 2. Figure of Isis (Fig. 7)



Figure 7: Figure of Isis.

Object Type: part of a funerary stela.

Description: the figure depicts the goddess Isis standing, with open wings. The feet are missing

Date: Hellenistic period.

Findspot: TH1.

Material: Limestone.

*Comments:* The Egyptian goddess Isis gained popularity and influence both in Egypt as well as across the wider Mediterranean region, starting in the 4th century BC and continuing throughout the Ptolemaic period (323–31 BCE). This period witnessed the most intense expansion of this cult into areas outside of Egypt, especially into Greece. Her cult appears at many sites both in Egypt and at locations with a historical economic link to Egypt, such as Byblos, from at least the Third Intermediate Period (ca. 1070-712 BCE). The conquest of the Achaemenid Empire by Alexander III of Macedon hastened the diffusion of the cult of Isis that occurred during the 4th century BC and in the Hellenistic period, since the trade networks of the Mediterranean were intense between the kingdoms of the diadochoi, Alexander's successors. Eventually, due to the expansionist policy of the Roman Empire and the adoption of Isis as a patron of the military and seafaring, her cult spread well beyond the Mediterranean as far north as Britain and as far east as Bactria. The mysteries of Isis would remain famous through the preservation of the Iseion at Pompeii and Apuleius's account of her mystery cult in his *Metamorphoses*. Even today, her iconography as a mother nursing her son arguably remains present in the iconography of the Madonna and Child in the Christian world.

Some scholars have examined why the cult of Isis was so influential and so well received into the Hellenistic-Roman world. Solmsen argues that, 'she was bound to appeal to different people for different reasons', because of her vast number of patronages and dynamic qualities that addressed the needs of many different people (Solmsen 1979: 61).

Isis' roles in Egyptian religion surrounding agriculture, motherhood, healing and numerous other realms help account for the easier reception of her cult into other cultures as well as the syncretization of her with other goddesses. Witt argues that it was Isis' Egyptian associations with revitalization, healing, and magic above all of her other attributes that made her so appealing to Egyptians and Greeks alike (Witt 1971: 22-23). While Solmsen and Witt explore the reasons for Isis's reception, only Brady (1935) addressed the correlation of the cult of Isis with the political and economic events of the Hellenistic period. Brady's study, however, emphasizes the cult of Serapis, the syncretized Egyptian god Osiris Apis, over that of Isis and does not examine the cult prior to the Ptolemaic Dynasty.

Isis was a prominent deity in the city of Alexandria from its foundation. That explains the attention Alexander purportedly paid to Isis, making her the only named Egyptian deity to have a temple in his newly refounded Greek city, and it could suggest that there was enough interest among the Greek population of Alexandria in honouring the deity to justify the cost of constructing the shrine and maintaining the cult. When Arrian was writing in the 1st and 2nd centuries CE, he demonstrates that Alexander thought it was important to construct both Egyptian and Greek temples. Isis was a prominent deity in the city from its foundation as Alexandria. She had cult centres all over Alexandria (Dunand 2007: 258) including shrines within the Serapieion, on Pharos Island, and at Cape Lochias.

### 3. *Head of an Osiris statue* (Fig. 8)

*Comments:* (See above for notes on Osiris). The head must have come from a large figure of the god Osiris as it is 11cm in height. The sun disk was painted red and the eyes were added in black and white paint.



Figure 8: Head of Osiris.

Object Type: part of a figure.

Description: head of Osiris, wearing the atef-crown, with remains of colour.

Date: Hellenistic period.

Findspot: TH3.

Material: Gypsum (lime plaster).

#### 4. Figures of Harpocrates (Fig. 9)



Figure 9: Representations of Harpocrates.

Object Type: statuettes and amulet.

Description: figures and an amulet of Harpocrates, shown as a child with the side-lock of youth and finger to his mouth. In Egyptian and hellenistic styles.

Date: Roman period.

Findspot: TR6.

Material: pottery and gypsum.

#### Comments:

Harpocrates (Ancient Greek: Ἄρποκρατης) was the god of silence, secrets and confidentiality in Hellenistic religion that was developed in Ptolemaic Alexandria and he was also an embodiment of hope, according to Plutarch. Harpocrates was adapted by the Greeks from the Egyptian child god Horus, who represented the newborn sun, rising each day at dawn. Harpocrates's name was a Hellenization of the Egyptian Har-pa-khered or Heru-pa-khered, meaning 'Horus the Child' (Forgeau 2010: 24, 48, 334) who was the son of Isis and Osiris and thus 'the young Horus'. Harpocrates transcended his Egyptian origin through his association with other deities, which secured new followers for his cult in the Ptolemaic-Roman period, when he grew in importance in temple and popular cults (Barrett 2015: 197). Harpocrates was popular in different areas across Egypt in the Ptolemaic period. As the son of Isis and Serapis, his cult was well established in Alexandria, where he once had a Harmotieum. In the Roman Period, Harpocrates attained the peak of his popularity in Egypt and his cult spread, in the shadow of Isis and Serapis, into different regions of the Greco-Roman world.

#### 5. Figure of Bes (Fig. 10)

Comments: Bes was an ancient Egyptian guardian and war god. He was worshipped as the protector of households, especially of mothers and children during childbirth. Although he is viewed as a



Bes Statue

Figure 10: Figure of Bes.

Object Type:statue and amulet.

Description: the figures depict the god Bes standing, with short legs, a leonine face and beard/mane. His upper body is covered with the skin of a wild-cat, including the head. The hands are placed on the thighs and a girdle is shown below the navel.

Date: Roman period.

Findspot: TR6.

Material: Faience.

minor god of ancient Egypt, Bes is a complex deity who is also considered to be a demon-fighting warrior. He originally protected the pharaoh, but quickly became popular among ordinary Egyptians who put his statue in their homes to scare away demons. As a household protector, he would fight off dangerous animals, such as snakes and scorpions. Bes was often associated with Horus the child. Being the god of childbirth who protected the birth room and the mother, he is even said to have entertained the newborn with music and dancing, making the baby smile. Due to his stature as protector of homes and childbirth, a picture of him was present in many birth houses.(Gods and goddesses website 2019:10).

#### 6. *Funerary kline* (Fig. 11)



Figure 11: Funeray *kline*.

Object Type: part of a funerary stela.

Description: remains of a *kline*, decorated with a painted chessboard pattern on plaster and floral motifs.

Date: Hellenistic period.

Findspot: TH3.

Material: Natural limestone rock, plaster, paint.

*Comments:* Many of the Greeks of Alexandria continued the habit of the Egyptian elite by burying their dead in graves specially carved for this purpose and resembling a bed with pillows. The most prominent of these graves are in the cemetery Chatby, which began use in the 3rd century BCE. Over time Egyptian decorative features were used alongside the Greek elements in the forms of decoration and architecture of columns. These rock tombs provide us with an illustration of the process of integration within Alexandria.

#### 7. *Egyptian decoration on funerary stele* (Fig. 12)

A stele is one of the slabs used to close one of loculi. It is a tombstone or a panel decorated with raised relief, made from a mixture of sand and lime applied on a flat background. The existing motifs represent the facade of an Egyptian-style building where the scene emerges from the top of a frieze of black and white coloured squares, representing the wooden props used in supporting



Figure 12: Funerary stele.

Object Type: Funerary stele.

Description: Doorway with cobra frieze, steps and lotus columns under a cavetto cornice lintel. Painted.

Date: Hellenistic period.

Findspot: TH3.

Material: Limestone, with gypsum appliqué and colour.

ceilings. The Egyptian cornice with the winged sun disk is topped by a prominent decoration representing Egyptian plant ornamentation. These elements together represent the roof of the building depicted on the sealing panel and the ceiling is supported upon a pair of half-columns that adorn the sides of the facade of the building, where the open papyrus crowns are decorated with colour. A stairway is flanked by graceful pillars with a swollen bases and bearing black decoration representing the papyrus plant. The building is at the centre of a colourful view, which represents an open door, one half-open, surmounted by the winged sun decoration and surmounted by a frieze of serpents crowned by the sun disk. The relief is made from applied gypsum, painted red-brown and black. Two holes were found to fix an offering table in front of the burial hole in order to give gifts to the deceased.

The scene appears to be an evolution of the idea of false-doors in ancient Egypt, evolved to be used for almost the same purpose, but on a smaller scale in used closing burial openings. The decoration illustrates the extent to which ancient Egyptian beliefs, art and architecture are clearly influencing burial decoration in Alexandria. This Egyptian style can be contrasted with a group of limestone funerary monuments from early Ptolemaic Alexandria bearing painted images in Greek style of soldiers on horseback or horses being controlled by attendants. To my knowledge, these paintings have never been treated as a cohesive group though they share similar iconography and styles drawn from the Greek mode of depicting heroic hunters and warriors on horseback. The monuments commemorated Macedonian and Thessalian members of the Ptolemaic cavalry. The Greeks custom was to either burn (cremate) or bury the bodies. Hundreds of tombstones have been found in the cemeteries around ancient Alexandria often in the form of different sizes of rectangular pieces of limestone. Most of the Ptolemaic tombs are found in the Eastern and Roman cemetery in the Western necropolis, due to the spread of the eastern suburbs in the Roman era. The cemeteries were concentrated on the western side of the city and the first cemeteries in the Ptolemaic period are located in Shatby outside the eastern wall of the city, while the late Ptolemaic tombs are either far east or far south. During the Roman era, the Western Necropolis was used for burials.

#### 4. Results

El-Abd site was used as a cemetery from the founding of the city of Alexandria until the end of the Roman era, so that different cultures and burial beliefs can be found there, confirming the diverse

social and economic aspects of the city. Egyptian influences appear clearly in some decorations, mummification vases and pottery coffins, and it seems that Egyptian people were buried in this cemetery beside Greek people, so the Eastern cemetery was not limited to burials of foreign people. In conclusion, the salvage excavation of the El-Abd necropolis was an ideal study area for creating a picture of the population that was buried between the third century BCE and the seventh century CE, both within the surface cemeteries and in the hypogea.

### Acknowledgements

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# THE RESULTS OF RESCUE EXCAVATIONS IN EL-HADDAD SITE (2016-2017)

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## Abstract

This article presents the results of excavations of an ancient cemetery found during the rescue excavation of construction foundations, as a part of the required procedures by the municipalities to build or rebuild on empty land at 18, EL-Haddad St., Alexandria intersecting with EL-Gaish road. The excavations found a cemetery dating to the Ptolemaic-Roman period showing diverse practices ranging from burial in loculi, decorated with carved and painted stelas to cremation burials in Hadra urns. This attests to the cultural diversity of city life in ancient Alexandria.

## ملخص

يقدم هذا المقال نتائج إنقاذ مقبرة مكتشفة تم العثور عليها أثناء أعمال حفائر الإنقاذ لأساسات إنشائية كجزء من الإجراءات المطلوبة من قبل البلديات للبناء أو إعادة البناء على مساحة فارغة في 18 شارع الحداد المتقاطع مع طريق الجيش بالاسكندرية.

## 1. Introduction

A rescue excavation is exactly, as the name implies, an excavation to rescue the information from a site which is in danger of being destroyed (Rahtz 1974). It is now the most common type of excavation in Alexandria, because of the development pressures in a crowded city, because beneath the modern city streets is a wealth of archaeological deposits. Whenever new building work is carried out, the archaeologists go to the sites to excavate and save the information they contain.

The El-Haddad Street site was one of the cemeteries of the eastern cemetery area of Alexandria, which extends from Chatby/Hadra district to Ibrahimieh, and then to Sidi Gaber. The cemetery was probably connected to Nikopolis, the Roman barracks town or to a village situated on the hill of present-day Kafr Abdou district (Fig. 1)



Figure 1. Location of El-Haddad site. (mage by C.Shaalan, CEAlex).

The rescue excavations at this site took place from 6th November 2016 to 28th November 2017 by an Egyptian Team.<sup>1</sup> The open area in which the trenches were made is 335.26 m<sup>2</sup>, owned by Ahmed Foad Ahmed Ali El -Qoushy, and it is 300 meters east of Chatby Eastern Cemetery.

From 2011 to 2015, three rescue excavations took place in the same area and all revealed the presence of funerary zones (Fig.2). The first excavation area at Ibrahimieh uncovered a Hellenistic



Figure 2. Falaki map with the location of the El-Haddad Site.

(Archives CEALex, modified by C. Shaalan).

tomb as well as a pit grave and a cremation in a Hadra vessel, the second area is at Abd Site where the rescue excavation found a Greco-Roman cemetery, and the third area is at El-Zankalony Site. Together the excavations provide good examples of burial practices in the Alexandrian Eastern Cemetery during the Greco-Roman period.

The importance of the El-Haddad site is that it presents information about new portion of the Eastern cemetery in ancient Alexandria which was not mentioned Strabo's writings after he visits Alexandria about 24 BCE (Venit 2002: 22).

## 2. Aims of the Work

The archaeological site at El-Haddad is endangered by construction work, so the main aim is the preservation of the site by record, using specific protocols, because the information that has not been documented during the excavation is irretrievably lost for later analysis. Therefore, excavation methods and documentation should be as accurate as possible to reconstruction of the distribution of finds.

## 3. Methods

- The single context recording system developed by the Museum of London (MoLAS, Museum of London 1994) was applied during the excavation and recording stages, with a few modifications to record the funerary loculi.
- Features were numbered from 1000 sequentially and photographed, the details of which were recorded on pro-forma and stored on the site's database.

1. Team members were: Mahmoud Abd El Elkader, Chief Inspector of the downtown district of Alexandria, Aya Salem, Hanaa Magdy, Ahmed Abo Zaid and Magda Mahmoud.

- The tombs are described, piece by piece, by describing the walls from the north in a clockwise direction, then a test of the reconstruction of the different phases of arrangement of each room was made, for example, wall A = north wall, wall B = east wall, wall C = south wall, wall D = west wall. This is the same recording system of the Gabbari Necropolis (Callot & Nenna 2001: 44).
- Plans, sections and elevations were drawn at a scale of 1:10 or 1:20 as appropriate.
- Object were numbered sequentially, photographed and stored on the Site database.
- All inscriptions were drawn at a scale of 1:1 and graphic techniques were used to reveal unseen scenes and inscriptions on the tomb surfaces; they will be published in a separate future study.
- All pottery sherds and objects have been studied and drawn by the team's ceramicist, Magda Mahmoud.
- All burials were treated individually, taking into account general information (Kaiser 2011: 183). Determination of sex was based on discriminatory characteristics of the skull and pelvis (Ublaker 1994: 16-21). Estimation of age was based on several methods: degree of tooth wear (Lovejoy 1984; 47-56 and 1985); morphology of the auricular surface of the ilium (Meindle 1985: 15-28), age-related modification of the pubic symphysis (Suchey 1990: 227-238).
- A series of temporary benchmarks was established, using a Total Station, which was used for all stages of excavation by CEALex and an Auto Level was used for elevations recorded during excavation above sea level (m ASL).
- Photogrammetry was used to obtain 3D models to record the site phases, by Mohamed Abd El-Aziz.
- The stratigraphy of the site was recorded using a 'Harris' matrix (Harris 1989).

#### 4. Stages of the Work

There are two basic stages in excavating the site:

- (1) Trial Trenches - four trial trenches were identified, and each trench was numbered A, B, C and D. The trench size ranged from 5 by 4, 5 by 5 and 5 by 6 meters (Fig.3).

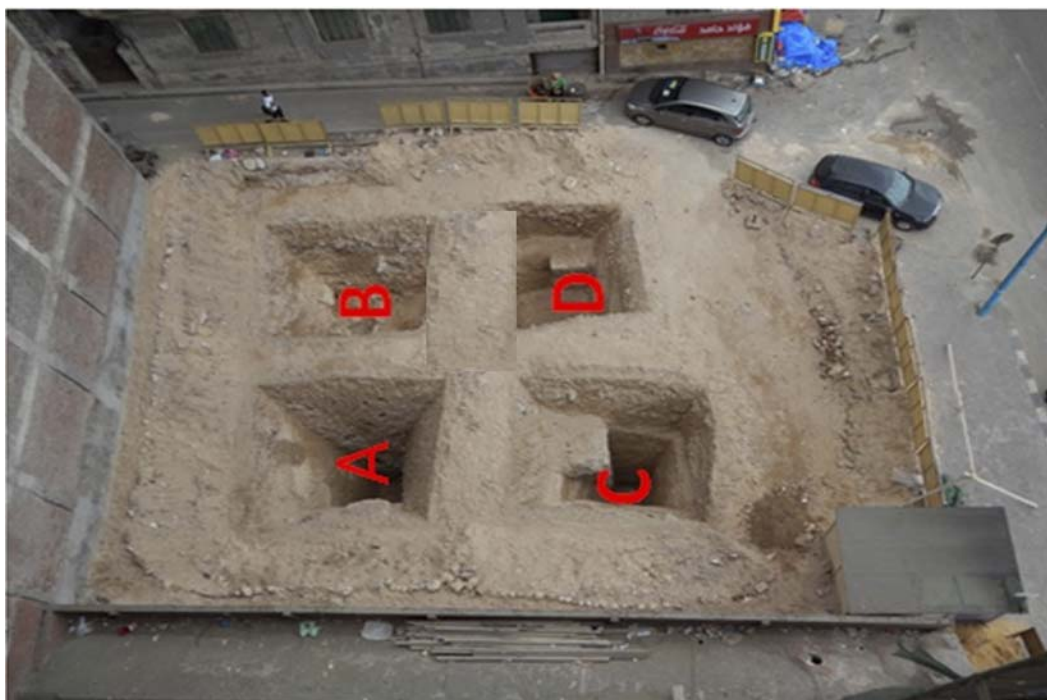


Figure 3. Trial trenches, G7-081006 facing south. (Photograph by Aya M. Salem).

(2) Scientific Excavations - the site was divided according to a Grid Square system. After uncovering the archaeological elements and removing all modern foundation layers, the area of work was 93.75 m<sup>2</sup> (12.5 by 7.5 m), and a Hellenistic Tomb with four rooms was discovered (Fig.4).



Figure 4. Grid Square, CEALex Jan. 2017. (Map by Dr. Ismail Awad).

## 5. Results

1. *Hellenistic Tomb* (Fig. 5) including 4 rooms, 83 loculi, of which 44 were closed by slabs of different kinds, including 28 with inscriptions (Figs. 6 and 7).



Figure 5. Photogrammetric rendering of the Hellenistic tombs in E-Haddad. View to the west.

(Image by Mohamed A. El-Aziz).

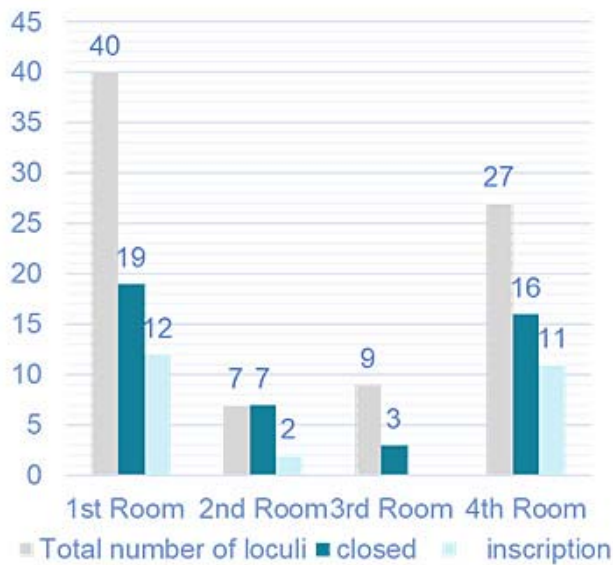


Figure 6. Graph showing loculi analysis.  
(Graph by Aya M. Salem).

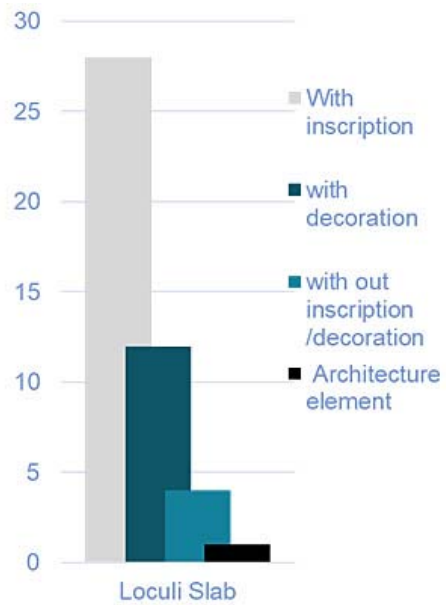


Figure 7. Analysis of slab types.  
(Graph by Aya M. Salem).

Type 1 was the most common and included a brief, painted inscription (Fig. 8); type 2 were decorated in paint (Fig. 9); type 3 had incised decoration or inscription and type 4 included architectural elements on the slab (Fig. 10).



Figure 8. Loculi Slab Type 1, with inscription. (Photographs by Aya M. Salem).



Figure 9. Loculi Slab, Type 2 with decoration.  
(Photograph by Mohamed A. El-Aziz).



Figure 10. Loculi Slab Type 4, architectural elements. (Photograph by Aya M. Salem).

There were 28 slabs with inscriptions, of which most included the name of the deceased and phrases lamenting the dead (Fig. 11) and all inscriptions were drawn at a scale of 1:1 and graphic techniques were used to reveal unseen scenes and inscriptions on the tomb surfaces (Fig. 12).

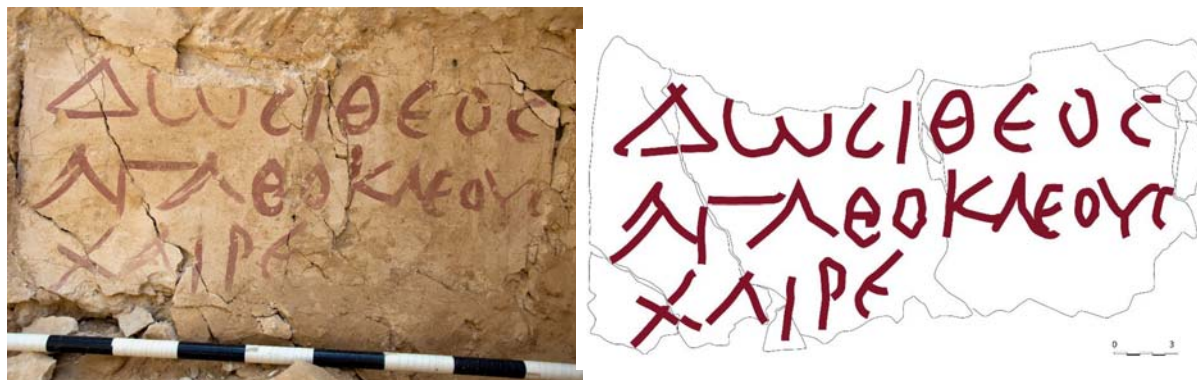


Figure 11. Loculus slab with inscription no. 23.  
(Photograph by Aya M. Salem).



Figure 12. Results of Lab colour to reveal a non-visible inscription.  
(Photograph by Mohamed A. El-Aziz).

2. *Human Remains*. Fifty skeletons were discovered and all of the burials were treated individually, taking into account general information and the determinations of sex and age was carried out as described above. Most of the identified skeletons were male and in the category of young adults; a larger proportion of the females were old adults (Figs. 10 and 11).

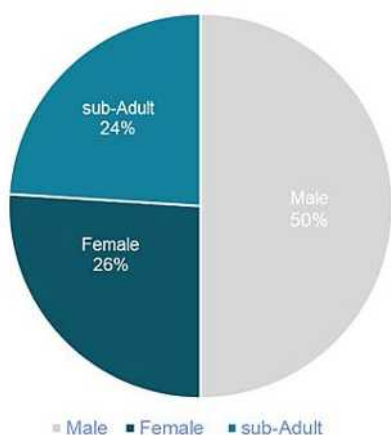


Figure 13. Primary sex distribution.  
(Graph by Aya M. Salem).

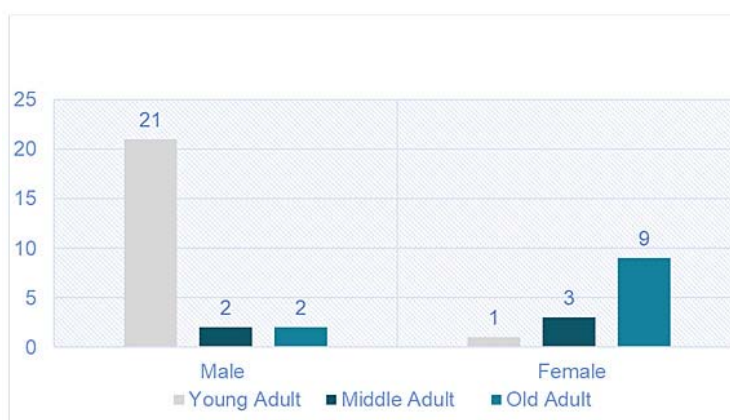


Figure 14. Primary age distribution.  
(Graph by Aya M. Salem).

Almost all of the skeletons were found in loculi, with only two being cremated (Fig. 15) and two buried in a simple pit (Fig. 16).



Figure 15. (left) Cremation burial in a Hadra-vessel.  
(Photograph by M. A. El-Aziz).



Figure 16. (right) Burial in a pit.  
(Photograph by M. A. El-Aziz).

3. *Pottery*. Egyptian-produced pottery constituted the majority of the El-Haddad site pottery and included table wares, cooking wares, common wares, lamps and amphorae. The chart below explains the main statistics about El-Haddad pottery which was most likely to have been produced especially for the burials because the majority of the pottery was made in Egyptian fabrics (Fig. 17). The analysis of the pottery gave the best evidence for the date range of the tomb complex, for example there was a group of Egyptian amphora Type AE 2. Furthermore, an imported colour-coated *skyphos* with recurved horizontal handles was discovered, dating to the second century BCE. In addition, a group of third and second century BCE lamps were also discovered in the same tomb.

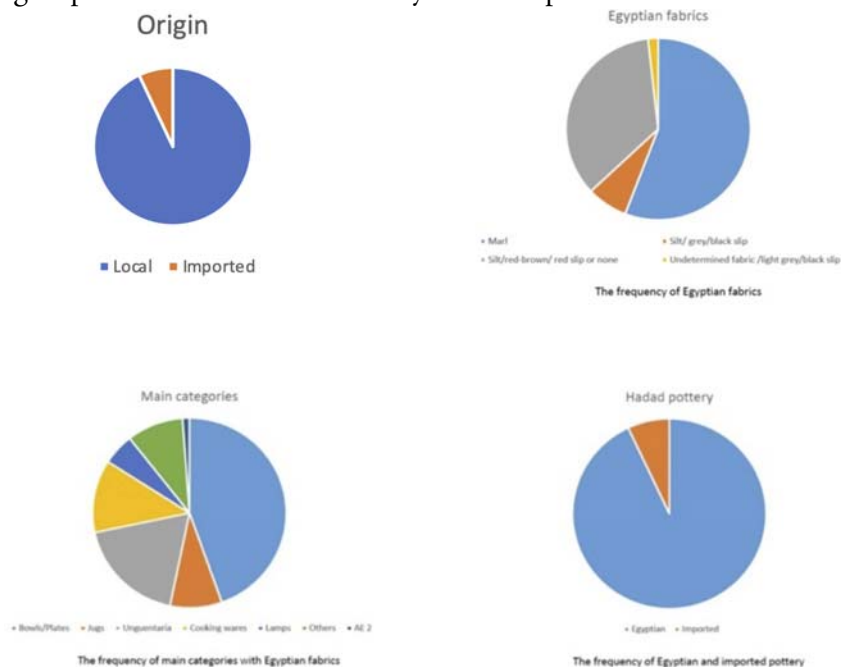


Figure 17. The main statistics and types of El-Haddad pottery. (Graph by Magda M. Ibrahim).



Figure 18. Pottery types from the tombs. (Photographs by Magda M. Ibrahim).

The main types of pottery included bowls, plates, and skyphoi perhaps for liquid and food offerings, as well as lamps for light and unguentaria for oils of different kinds (Fig. 18). In addition, there were also some cooking vessels, with burning on the outside suggesting they have been used, and handled bowls, dippers and jugs for the pouring of different kinds of liquid (Fig. 19). It is possible that the vessels were deposited after the funerary banquet having been activated for the deceased's use in their afterlife.

## 6. Conclusions

The tomb complex discovered in the El-Haddad area dates to between the second half to last quarter of the third century and the late second to early first century BC (250-75 BCE). According to a preliminary study of the inscriptions and cremation practices, it is suggested that the tomb was dedicated to the burial of Greeks from Alexandria during the Ptolemaic Period.



Figure 19. Other pottery types from the tombs. (Photographs by Magda M. Ibrahim).

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A word of appreciation is given to the Ministry of Antiquities for permitting the work at El-Haddad. In addition we thank Dr. Marie Dominique Nenna, CEAlex Director, Chris Marshall, Freya Sadarangani, Dr. Mohamed Mostafa Abd El- Maguid, Mr. Ibrahim Metwalli, Mr. Ahmed Shoukry, Mohamed Abd El-Aziz, Takwa Amany and Yomna El-Hossary for their help and support.

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# AMPHORAE AND TRADE IN TAPOSIRIS MAGNA

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## Abstract

Excavations in Taposiris Magna revealed large numbers of amphora sherds, both Egyptian and imported, representing 29 types of amphorae. The amphorae found during the excavation shed light on the importance of the site as a port on the Northern coast and its role in trade and reflect the leading commercial aspect of the area in the Mediterranean during the Ptolemaic and Roman periods.

## ملخص

كشفت الحفائر الأثرية في تابوزيريس ماجنا عن أعداد كبيرة من كسرات الأمفورات ، سواء المصرية أو المستوردة ، تمثل 29 نوعًا من الأمفورات. تسلط الأمفورات التي تم العثور عليها أثناء التنقيب الضوء على أهمية الموقع كميناء على الساحل الشمالي ودوره في التجارة وتعكس الجانب التجاري الرائد للمنطقة في البحر الأبيض المتوسط خلال الفترتين البطلمية والرومانية.

## 1. Introduction

The site of Taposiris Magna is situated 45km west of Alexandria, on the Mediterranean shore in the modern province of Matruh, few metres south of the northern coast. A joint Egyptian-Dominican archaeological mission has been working in the Ptolemaic temple of Taposiris Magna since 2006 (Hawass & Martinez 2013). The archaeological site in Taposiris contains the Osiris temple probably dating to the reign of Ptolemy IV (Strabo, *Geography* 17,1,10). The remains of the structure survives as four walls, containing four gates, but it is proposed that one of the gates which is to the west was made by mistake in the restoration which happened in 1970.

Large numbers of amphora sherds, both Egyptian and imported, representing 29 types of amphorae were found during the excavations. Their identification and analysis can shed light on the importance of the site as a port and its role in trade, in turn reflecting the leading commercial aspect of Taposiris Magna in the Mediterranean during the Ptolemaic and Roman periods. The ceramic material collected from the site dates from the Ptolemaic Period to the Late Roman Period. In this paper we will describe and discuss the amphorae found in the excavations in Taposiris Magna.

## 2. Significance of the amphorae in Taposiris Magna

Amphorae were the best form of trade-packaging in the ancient world. They were used for transporting liquid and dry commodities such as wine and olive-oil, and, once the amphora reached its final destination, the vessel could be used as a storage jar for other kinds of commodities. Amphorae were mainly used in seaborne commerce, and these vessels thus provide us with evidence of the ancient economy. It has been argued that pottery in general can be used to help us evaluate the strength and direction of commercial currents in the Roman world (Peacock & Williams 1986: 154).

Taposiris Magna played a remarkable role in trade, both internal and external to Egypt. The city, like other trade centres in the Mediterranean sea, such as Ostia, Berenice, Sabratha, Carthage, Caesarea and other commercial centres, indicate the interrelations that existed between these centres. The city of Taposiris stood on the shore of the of the ancient Lake Mareotis between the Nile delta and the Sea. The size of the lake raises the possibility that the lake harbour played an active role in the trade between Egypt and Libya. Traders from the west of the Mediterranean could use water transportation to the harbour and then take a caravan route towards the east or south. Similarly, traders from Libya could be shipped aboard boats to Taposiris and transported to the interior cities of Egypt by means of boats.

The city's wealth and prosperity were generated by trade through its important and complex harbour system, which included, not only harbours on the sea, but also on Lake Mareotis to the south and west of the city. Taposiris Magna's role becomes clearer in the light of the records of historians such as Strabo and Plutarch. Strabo, who was in Alexandria around 25 BCE, records of Taposiris Magna: 'The place is washed by two seas, on the north by the Egyptian sea as it is called, and on the south by Lake Maria, or Meriotes. This is filled by many canals from the Nile, both from above and the sides and through the canals, the imports are much larger than from those from the sea, so that the harbour on the lake was in fact richer than the harbour on the sea'. The wine produced in Taposiris Magna was also famous during this time. The Mareotes region produced high quality wine and Strabo also mentioned that, 'the vintages in this area are so good that the Mareotic wine is ranked off with a view of ageing it' (Strabo, *Geography*, 17,1,10).

### 3. History of excavation

The first reference to the temple of Taposiris was made by Strabo. A century later Plutarch provided an explanation for the name of the temple at Taposiris as a tomb of Osiris. Various archaeologists have been working at the site since the early twentieth century including Breccia from 1905 to 1922, Adriani from 1940 to 1950 (Adriani 1952), Rashed Nouier (SCA) in 1969 (Nouier and Ashmawy 1955), Faisal Ashmawy (SCA) in 1982 and the Hungarian Mission of G. Vörös from 1990 to 2000 (Vörös 2001).

### 4. Stratigraphy

The site of the temple contains at least two main phases of occupation: (1) a Ptolemaic temple; (2) a Coptic monastery.

(1) Recent excavations found evidence suggest that the temple was built during the reign of the Ptolemy IV. A monumental sculpture, in the form of a traditional figure of an ancient Egyptian pharaoh wearing a collar and kilt, could represent Ptolemy IV, the pharaoh who constructed the Taposiris Magna temple. The team also found limestone foundation stones, which would once have lined the entrance to the temple. One of these bears traces indicating that the entrance was lined with a series of sphinx-statues similar to those of the pharaonic era. Behind the temple, a necropolis was discovered, containing many Ptolemaic-Roman style mummies. Early investigations show that the mummies were buried with their faces turned towards the temple.

(2) The Coptic Church is located at the eastern entrance of the temple and was first recorded by Ward Perkins in 1940. The inside of the church was surrounded with a series of rooms aligned with the walls of the temple. These chambers could be dedicated for the use of the priests of the church.

## 5. Pottery

The pottery came mainly from the excavations carried out by the Hungarian mission in the 1990s and the new excavations of the Egyptian-Dominican mission. The pottery from the Hungarian mission was out of context and was reburied in the south-west corner of the temple without reference to its original context. The pottery from the excavation came from six main areas:

Area 1: pottery from the pedestal area.

Area 2: pottery from the very deep shaft located in the north-west part of the temple.

Area 3: the pottery deposited by the Hungarian mission in the south-west corner of the temple.

Area 4: Surface collection.

Area 5: the very deep shaft located in the north-west part of the temple.

Area 6: from the north-east corner of the temple.

The Amphora assemblage that came from the site also contained some 5th-7th century CE material, because the site was used as church in the Byzantine period. The large numbers of amphora sherds, both Egyptian and imported were found to represent 29 types of amphorae (Ward-Perkins 1946; Grossmann 1992).

### 5.1. Egyptian Amphorae (Fig. 1)

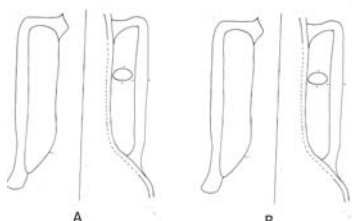


Figure 1a. Upper part of AE1 amphora, narrow neck, articulated handles, oval in section, rim is missing, Mariout fabric.

Figure 1b: as above, missing rim, Mariout fabric.



Figure 1c-d: Upper part of AE2 amphora, outcut rim, horizontal handles, Mariout fabric.



Figure 1e: Upper part of AE2 amphora, outcut rim, horizontal handles, Nile silt.

Figure 1f: Upper part of AE2 amphora, Mariout fabric.



Figure 1g: Upper part of AE2 amphora, Mariout fabric.

Figure 1h: Upper part of AE2 amphora, outcut rim, horizontal handles, oval in section, Mariout fabric.

During the Ptolemaic period the most frequent amphorae were two types of vessel termed by Empereur as Amphore égyptienne 1 and Amphore égyptienne 2, also classified as the Petos Group (Empereur & Picon 1988: 77, fig. 2). In general, AE 1 has a small simple rim, long neck and long oval handles reaching from just below the rim to the carinated shoulder. It has a slightly tapering body, leading to a narrow solid spike. This type of amphora has been studied by Dixneuf (Dixneuf 2011) and subdivided into three groups: AE1 was exported outside Egypt to places such as Cyprus (Finkielsztein 2007: 707, fig.2), the Levant (Marangou 2007: 678, fig. 1), and for the internal market, for example Upper Egyptian places such as Dendara (Marchand 2000: 374, fig. 8), Karnak (Marchand 2007: 373, Fig. 6), Tôd (Pierrat-Bonnefois 2002: 177, fig.10), Elephantine (Aston 2007: 424, Fig. 3.), the Berenike in the Eastern desert (Tomber 1998: 142, Fig. 5-7), Tell el-Herr

(Defernez & Marchand 2006: 78, fig. 4). AE1-2 amphorae were produced in great quantities around the shores of Lake Mariout to contain wine of the Mariout region; the fabric was local clay that was calcareous, with a few grits and a few mica flecks.

Starting from the end of the Ptolemaic period the Egyptian amphorae transformed into a new shape termed as AE3 (Empereur & Picon 1988: 77, fig. 4). The shape of this type of amphora belongs to the 'bitronconic' family. The AE3 type is characterized by a triangular grooved rim, round handles fixed on the upper part of the grooved neck, elongated body and a tapering solid spike. Usually this type of amphora contains a fermentation hole on the neck.

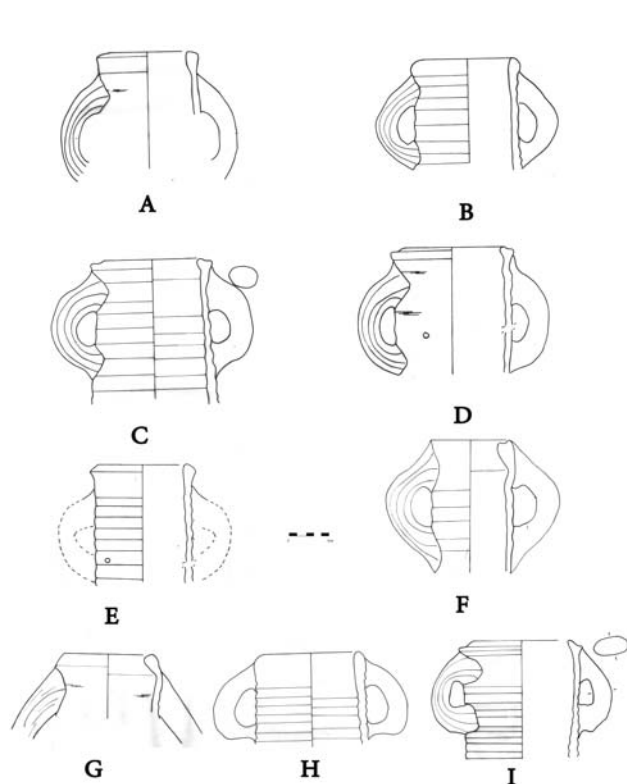


Figure 2a: AE3 thickened rim, loop handles, smoothed surfaces, Mariout fabric.

Figure 2b: AE3, simple round rim, ribbed body, loop handles, coated outside, smoothed inside, Mariout fabric.

Figure 2c: AE3 grooved rim, round handles, ribbed body, round in section, Nile silt.

Figure 2d: AE3 grooved rim, round handles, hole below the rim, smoothed surfaces, Nile silt.

Figure 2e: AES triangular rim, missing handles, hole in the neck, coated outside, smoothed inside, Nile silt.

Figure 2f: AE3 thickened grooved rim, round handles, smoothed surfaces, Mariout fabric.

Figure 2g: AE3 thickened narrowing rim, round handles, smoothed surfaces, Nile silt.

Figure 2h: AE3 simple straight rim, round handles, ribbed body, coated outside, smooth inside, Mariout fabric.

Figure 2i: AE3 grooved rim, round handles, oval in section, ribbed body, smoothed surfaces, Nile silt.

### 5.2. Imported Amphorae from the Greek Islands (Fig 3.)

Rhodes and Knidos were important production centres of the Mediterranean Basin and produced characteristic ovoid amphorae that had mushroom rims, hollow toes and strong handles. According to the results of the salvage excavations in Alexandria conducted by CEAlex, this type of amphora arrived in Alexandria in the early Ptolemaic Period because Alexandria was an important customer for the Rhodian winemakers. Not all of the amphorae of Rhodes carry wine, however, and we know from several extracts of the correspondence of the steward Zenon, of the importation into Egypt of dried figs (Marangou & Marchand 2008: 245). Rhodian amphora are made of dense, fine-grained fabric with medium and fine quartz, and perhaps some mica. The oldest shape of the Rhodian amphora is characterized by the so-called 'Mushroom rim' and arched handles. During the 2nd century BCE the Rhodian type was characterized by the rounded rim and the high arched handles. Rhodian amphora manufactured between the late fourth century BCE and the early second century CE were commonly associated with the transport of wine. The decreasing influence of the Rhodian wine trade in the Mediterranean Basin, at the beginning of the Roman Imperial Period, encouraged local wine producers especially in Egypt (Senol 2007).



Figure 3a. Hellenistic period, hollow base.



Figures 3b-c. Rim and handle of Koan amphora, bifid handles.

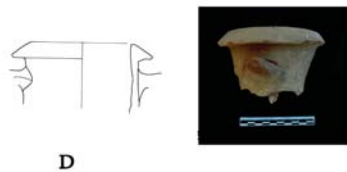


Figure 3d. Rim and handle of proto-Rhodian amphora, with mushroom rim



Figure 3e. Rim and handle of Rhodian amphora.

Figure 3f. Rim of Rhodian amphora, with stamped handle.

### 5.3. North Africa (Fig.4)

Tripolitanian Amphorae are generally considered to have contained olive-oil. Alexandrian merchants ceased to provide olive oil from the Italian Peninsula after the first century CE, as had previously happened for wine imports, and oil was provided from North Africa as well as Baetica (Senol 2007, 85). Tripolitanian amphorae have been found in relatively limited numbers in Egypt, but have been recorded at sites such as Tebtynis (Marangou & Marchand 2007: 249), Karnak (Marouard 2007: 351), Bahariya oasis (Bonifay 2007: 452), which suggest the importation of olive oil from this important olive-growing region. The fabric of this type of amphora is hard, rough and brick-red, sometimes with a black surface and often with a white outer surface.

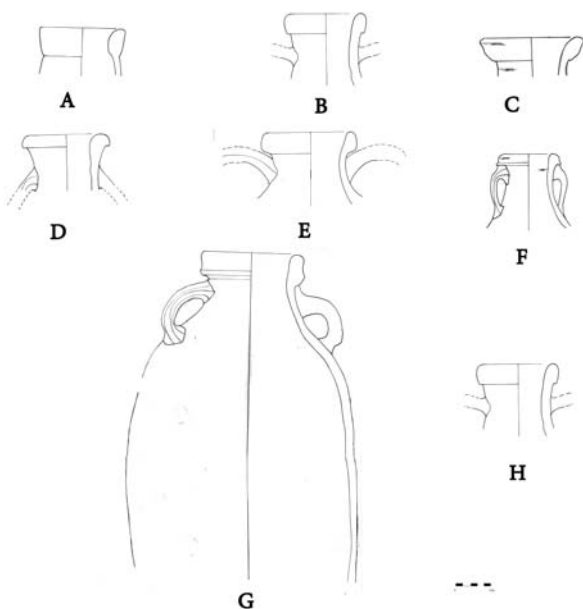


Figure 4a. Rim of Keay 55 amphora.

Figures 4b-c. Rim of North African amphora.

Figure 4d. Rim of North African amphora, Keay 35a.

Figure 4e. Rim of North African amphora.

Figure 4f. Rim of North African amphora, Keay 8B.

Figure 4g. Upper part of a Tripolitan amphora, Bonifay type 55.

Figure 4h. Upper part of North African amphora.

#### 5.4. Amphorae of Gaza

The region of Gaza played an important role in the wine importation policy of Alexandria during the sixth century CE (Senol 2008: 68) and the production of the Gazan wine 'LR4' amphorae boomed after the end of the fourth century CE (Peacock & Williams 1986: 198; Majcherek 1995). The shape of the Gazan amphora is torpedo-shaped, with a blunt pointed base, cylindrical body, incurving shoulder, loop handles and clay accretions on the neck. The vessels were manufactured in southern Palestine although it is commonly referred to as the Gaza Jar. The vessel is usually linked to the local wine industry and was imported to Egypt between the late fourth and the seventh centuries. Ballet suggested that the form was manufactured in the region from the eastern Delta to Gaza, and possibly even in the Delta itself (Ballet & Picon 1987: 33). The importation of Gaza Amphora extended south as far as Elephantine (Aston 2007: 438), Wadi Natrun (Marquié 2007: 89), Old Cairo (Gascoigne 2007: 165), Baouit (Marchand & Dixneuf 2007: 320), Dakhla Oasis (Hope & Ross 2007: 473), Douch (Ballet 2007: 484) and North Sinai (Dixneuf 2007: 541).

The fabric of this type A hard, thick sandy fabric with a little white limestone scattered throughout, drab brown in colour, sometimes with a greyish core (Peacock & Williams 1986: 198).

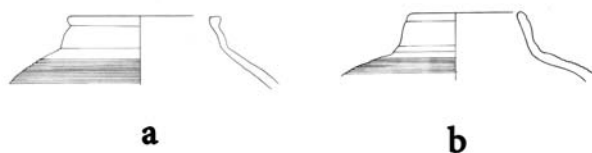


Figure 5a-b. Upper part of Gazan amphora, thickened rim with two ring handles on the shoulder.

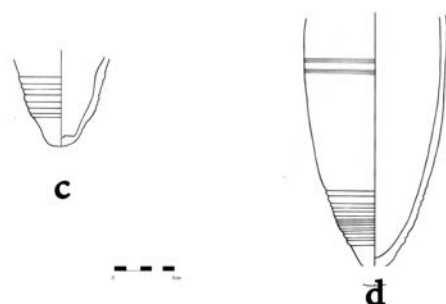


Figure 5c-d. Lower part of Gazan amphora.

#### 5.5. Asia Minor

Late Roman 3 was the most famous amphora type produced in Asia Minor between the late first and the mid-sixth century. Prior to the late fourth century the form had only a single handle (Gascoigne 2007: 165). The LR3 was manufactured in the Aegean as well as in Cyprus and the southern regions of Asia Minor and was then exported to the Eastern Mediterranean centres such as Alexandria. Examples of the amphora have also been found in other places in Egypt such as Oxyrhynchos (Subías Pascual 2007: 297) and Luxor in front of Luxor temple in the avenue of the sphinxes (personal communication). The shape of the amphora is long slender neck with two short strap-handles, high rounded shoulders and a tapering solid foot. Broad shallow ribbing covers most of the body of the vessel.



Figure 6. Late Roman 3 Amphora.

## 6. Conclusions

Through the archaeological pottery found on the site we can identify the historical phases represented by the pottery. Phase I: the phase before the construction of the temple, at some time before the third century BCE as there is no pottery from before this time. Phase II: the stage of the construction of the temple, especially in the period of building the foundations of the temple that dates back to the third century BCE and was represented by many Ptolemaic amphorae and many open vessels, some of which were used to contain building materials, such as mortar. Phase III: the period of the use of the temple and the performance of temple rituals. This period extends from the third century to the end of the first century BCE and encompasses the Ptolemaic period. Imports are attested especially from the Greek islands such as Rhodes and others, and this period was also characterized by the abundance of famous Mariout amphorae. If they were used as containers of Mariout wine, then the wine may have been used for the rituals carried out in the temple. Phase IV: the Byzantine settlement phase. This period requires further study to determine the exact time span of this stage.

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# THE EARLY IMPERIAL ERA WINE AMPHORA WORKSHOP OF AKADEMIA, MAREOTID AREA

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## Abstract

The Akademia site on the western arm of Lake Mareotis, contains many types of industrial installation including pottery production installations. The paper reconstructs the operational chain of pottery manufacture through close examination of the workshops and kilns during the Early Roman Empire in the 1st-2nd century AD. Furthermore, the research has added to the long-term study of the organisation of amphora production in the region that has been developed within the framework of the CEALex Mareotid project.

## ملخص

يحتوي موقع الأكاديمية على الذراع الغربي لبحيرة المريوط على أنواع عديدة من التركيبات الصناعية بما في ذلك منشآت إنتاج الفخار. وتعيد هذه الورقة البحثية بناء السلسلة التشغيلية لصناعة الفخار من خلال الفحص الدقيق للورش والأفران خلال عصر الإمبراطورية الرومانية المبكرة في القرنين الأول والثاني الميلادي. علاوة على ذلك، قد أضاف البحث إلى الدراسة طويلة المدى لتنظيم إنتاج الأمفورا في المنطقة والتي تم تطويرها في إطار مشروع CEALex Mareotid.

## 1. Introduction

The Akademia site is located in the 'Mareotid of the Wells', a semi-arid region to the south-west of Alexandria, some distance outside the Delta proper. It is one of many amphora production sites of the Ptolemaic and Early Imperial periods that were installed along the western arm of Lake Mariout, from the Horn (a sector located to the north-east of Amreya) up to the sector of Borg el-Arab (Empereur and Pichon 1998: 87; Blue, Khalil 2011; Pichot & Senol forthcoming) (Fig. 1).



Figure 1. Location of the Akademia site, map adjusted by author after Google Earth.

Akademia is situated on the southern bank of Lake Mariout, some 30km as the crow flies from Alexandria and 1.5km south of the Marea peninsula site, to the north of the Pleistocene Ridge III of Gebel Mariout and stretching more than 800m in length along a canal that runs north of Huwareya village, about 100m from the lakeshore.

The site is being developed for the construction of second and holiday homes, and has been excavated by the CEALex since 2012 under the direction of V. Pichot (Pichot & Senol 2014; Pichot & Flaux 2015; Pichot & Senol 2015; Pichot & Senol forthcoming). The site is composed of two large and distinct parts: to the west, two large hydraulic structures from the 5th-6th century AD: to the east, a series of elements (dumps, amphora workshop, wine press) dated to the end of the 1st to 2nd century CE connected to a now lost farm villa (Fig. 2).

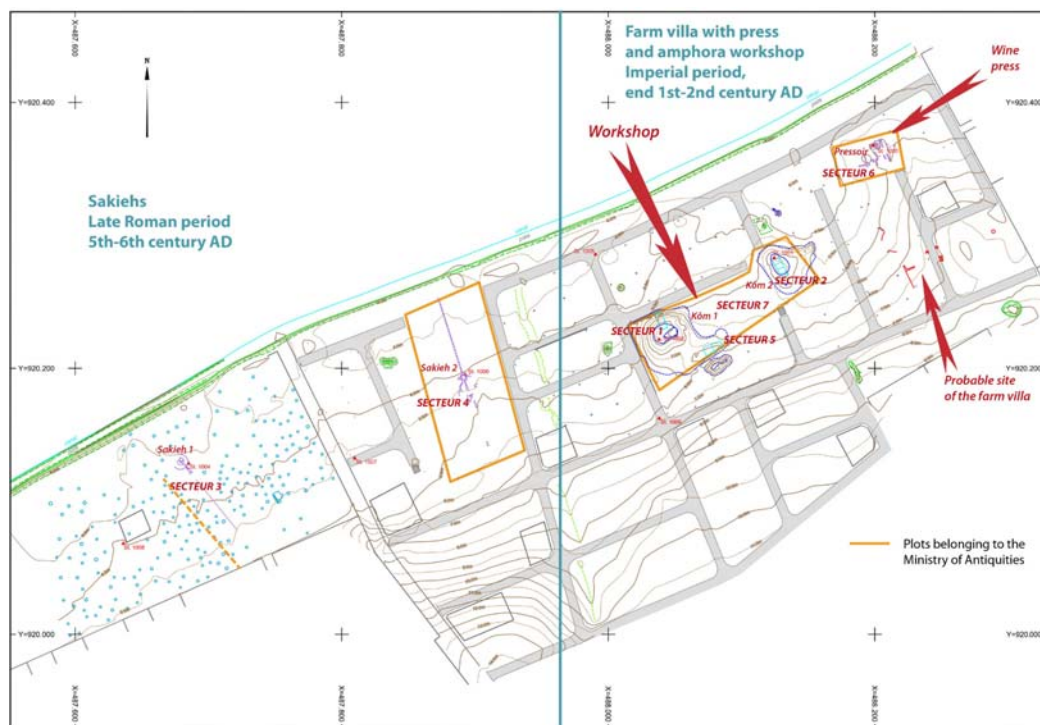


Figure 2. General map of the Akademia site. (Photograph © CEALex).

The preserved part of the amphora production workshop is located on a rectangular plot measuring 140m east/west by 40m north/south bordered to east and west by two refuse koms. Several sectors have been established during the excavations. Sector 1 corresponds to the large western refuse kom where a trench of 5m by 13m was dug in its northern part, from the summit of the kom to the base, along with an excavation of the north-east part. Sector 2 corresponds to eastern refuse kom where a limited sondage was made on the summit. Sector 5 corresponds to the small refuse kom in the south-east of Sector 1, which was partially excavated revealing poorly preserved vestiges of an amphora kiln and the remains of later activity levels. Sector 7 comprises the low-lying part between Sectors 1 and 2, a relatively flat zone of some 70m in length (circa 2800m<sup>2</sup>) that has revealed amphora kilns and many activity levels connected to amphora production, with a paved courtyard to the south.

Not all of the many vestiges discovered in this part of the site belong to the same occupation phase, the workshop having developed over time, however, they allow us to illustrate the different phases in the amphora production operational chain, from the preparation of the clay to the coating

of the amphorae. While the different activity phases are still being identified, it is difficult to propose the duration of occupation of the workshop given the lack of material that would allow a precise chronology, such as imported pottery, coins and so on.

## 2. The operational chain of the amphora production workshop

### 2.1. Preparation of the clay

#### *Clay*

The clay used by the amphora production workshops on the south bank of Lake Mariout essentially comes from a geological deposit that lies between the foot of Ridge III and the shore of the lake, and on which the Akademia production workshop is directly located. A sondage dug in the south-west part of Sector 7 revealed a clay extraction pit that had been transformed into a refuse pit, and which is related to the first amphora production activities of the site, although the later activity of a nearby workshop cannot be excluded.

#### *Wedging pit*

During excavation of the foundation support layers of the east kiln in Sector 7, the details of which appear below, a large pit carved into the natural soil was partially cleared. The western part of the pit is beneath the unfired brick wall of the kiln and has not yet been cleared. The inside of the pit held a very thick layer of highly plastic clay, which corresponds to the abandonment of the activity phase of the pit, mixed with many amphora fragments from the foundation support layers of the kiln built above.

This was most probably a pit for wedging the clay, an essential process in the workshop in order to produce clay that is suitable for making pottery. Wedging is a phase in the operational chain between decantation (when it exists) and resting the clay before use. It consists of treading the clay underfoot and adding a degreasing agent that can vary (seashells, sand, ash, etc.), but which has properties that can help the clay to attain a plasticity so that it can be used by the potters. A detailed study of this pit has shown that the potters of Akademia added coarse sand, small crushed seashells, ash and small fragments of burnt limestone.



(Photograph:  
V. Pichot © CEALex).

Figure 3: Wedging Pit (Sector 7), found west of the western kiln, view from the south.

The north part of the pit revealed surrounds of what appear to be unfired bricks and a sort of platform giving access to the pit and from where one could add the different materials. The access to the pit is very flat and shows some installations, including channelling to control the addition of water, and two postholes on the east of the platform (Fig. 3)

## 2.2 Shaping, assembly and drying

Investigations in Sector 7 led to the discovery of installations that can be linked to the activities of shaping and assembling amphorae. In the north part of the sondage, the badly deteriorated remains of structures made from reused fired bricks — low walls, flooring, bracing elements etc.— were cleared, and the dismantling of their destruction level (currently underway) has already revealed the negatives left by a potter's wheel on a floor of reused flat bricks (Fig. 4).

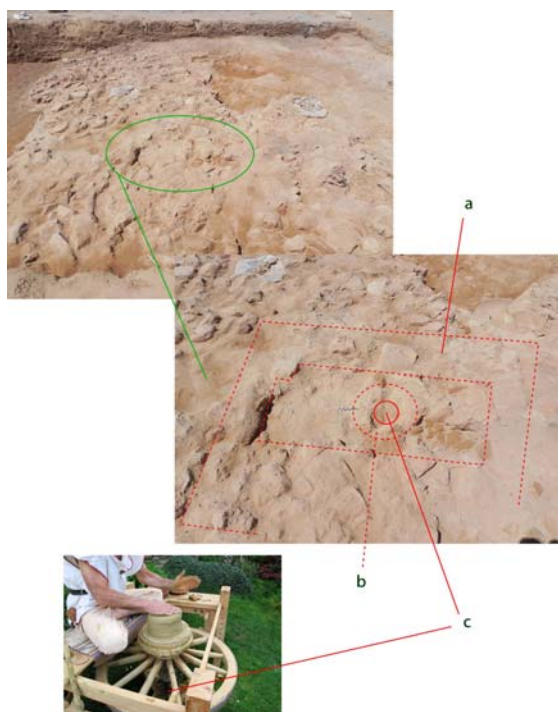


Figure 4. Emplacement of a potter's wheel (Sector 7, Sondage 5), view from the east:  
a) negative impression of the base of the wheel;  
b) wheel-shaft socket (?);  
c) emplacement of the end of the shaft.  
(Photographs V. Pichot, © CEALex,  
see: <http://arscretariae-archeocreamique.blogspot.com/eg/p/amphores.html>)

The other signs of activity found in this sondage consist of an ensemble of very compact red floor levels made of a mix of crushed, fired bricks with beaten and levelled clay, onto which many lumps of unfired clay were packed (Fig. 5).



Figure 5. Beaten floors and circular pit (foreground), Sector 7, Sondage 5 south part, view from the north-east. (Photograph V. Pichot, © CEALex).

We also recorded the presence of two circular pits in the south-east part of the sondage and some negatives of ceramic vessels used to store water and/or clay, both essential for the work of shaping.

The manufacture of an amphora involves specific handling since the shape and large size mean that the individual vessel cannot be turned as a single piece. For example, Amphore égyptienne Type 3 have an average height of circa 135 cm and the biggest AE 4 is circa 160cm tall. The potter thus must work in three or four stages and separately shape the mouth and neck, the body (often in two segments) and the foot, which they then assemble on a smaller wheel after a period of pre-drying for several hours. The final assembly stage is the addition of the handles.

The amphora must be upright during assembly, and the size, especially those of Akademia, poses a problem when it comes to affixing the upper parts, that is the neck, shoulder, upper segment of the body and handles. The potter must necessarily be in a raised position in relation to the amphora in order to create a perfect fit. In the north part of Sondage 5, the presence of 20cm difference in ground level could be interpreted as a feature allowing the potter to place himself above the amphora during assembly of the upper parts.

Once fully assembled, the amphora is left to dry for several days in a shaded and well-ventilated spot in order to avoid any cracking, especially at the joins of the handles. No remains of this stage in the process have yet been detected on the site.

### 2.3. Firing: kilns and fuel (Pichot & Flaux 2015)

Four large amphora kilns, all of the same type, have been identified on the Akademia site. The kiln in Sector 5 has left very few remains since the kom has been very largely destroyed by mechanical diggers during the creation of building lots for the new buildings. Of the three kilns in Sector 7, the one in the eastern part is the best preserved and the only one to have been entirely cleared. In the western part of the sector, two successive kilns have been discovered, the older of which was totally destroyed by the construction of the later example and by nearby developments in the north of the area.

#### *The eastern kiln (Figs. 6 & 7)*



Figure 6. Eastern kiln, Sector 7, under excavation, view from the south.



Figure 7. Eastern kiln, Sector 7, kiln floor cleared, view from the south-west.

(Photographs by V. Pichot, © CEALex).

Investigation in the eastern part of Sector 7 revealed the presence of a large amphora kiln directly beneath the surface sand and under a thin sandy clay layer containing little amphora material. It is relatively well preserved, however, it is impossible to study it in its entirety because groundwater covers the lower parts of the kiln floor. The kiln is circular, circa 12.65m exterior diameter, circa

7.68m interior diameter, with walls circa 2m thick. It is partially buried and built of unfired bricks, though the bricks closest the interior have been baked through contact with heat.

### *Installation*

The installation required the digging of a large pit to contain the kiln and the firebox. This pit cut through to the south of refuse layers, constituted of fragments of amphorae and raw and baked bricks, down to a homogeneous stable level for the exterior part of the kiln: it destroyed the eastern part of the older wedging pit. The circular wall of the kiln, built of raw bricks and earth mortar some 2m thick, is set upon the levelled-off, stable layer, which is clearly higher than the bottom of the combustion chamber, as has been confirmed by boreholes. The connection of the kiln floor to the peripheral wall of the kiln is above and close to this homogenous level. The structure was then enclosed within buttressing layers made principally of misfired amphora rejects.

### *The firebox*

A sondage was dug to the north of the kiln in its exterior wall where two lines of parallel stones indicated the presence of the firebox and the access door to the combustion chamber, similar to the model of the Borg el-Arab kiln (El-Ashmawi 1998). The excavation revealed a succession of layers linked to the destruction of the zone and the development of later levels. The ensemble cannot be easily read, and the proximity to the north of the limit of the excavation zone and the asphalted road, as well as the presence of the water table prevent any interventions that might reveal access down to the firebox and the entrance to the lower chamber.

### *The combustion chamber*

The height of the water table prevents access to the combustion chamber. In an attempt to get around this problem, auger-bores were taken from the kiln. The results revealed a minimum of eight combustion phases characterised by levels of soot and ash. The very thinness of these levels, sometimes only millimetres, suggests that they are residue from cleaning the chamber. It is worth noting that these recurrent phases of cleaning could sometimes have completely eliminated the combustion level, which would not then be preserved. The eight levels found here constitute a minimum number of uses of the combustion chamber, the initial height of which is circa 4m.

### *The firing chamber*

The firing chamber was partially buried. It is separated into two parts by a transversal supporting wall with openings built upon the kiln floor. This latter is 40cm thick and composed of three layers of thick, raw bricks meshed into the peripheral wall of the kiln. It is supported by a central pillar and underpinning arches set in the wall.

The walls of the firing chamber, the interior wall with openings and the bricks of the upper part of the floor were rendered smooth with a clay coating. This smoothing before each use prevented the structure from being weakened by the appearance of cracks in the joints during firing. The perforations in the floor to allow the passage of hot air were bolstered by the insertion of amphorae necks in order to prevent accidental blocking by crumbling bricks or the coating.

The fill of the kiln was caused by the collapse of the surrounding walls and by the accumulation of wind-blown silty sandy layers in the central part. Everything indicates that the kiln was abandoned and was not backfilled with rejects from the continued activity of the workshop. As

an empty and protected zone, it could, on the other hand, have been used as a storage space for a more or less extended period of time before the deterioration of its walls.

#### *The western kiln* (Figures 8 & 9)

On the western edge of Sector 7, wind-blown layers covered the remains of two large amphora kilns that stretch partly under the large kom and which are of the same type as the eastern kiln. The vestiges of the older of the two are barely legible. It was almost completely destroyed by the construction of the second kiln slightly to the south-east, and by the large east/west wall in the northern part of the workshop. The remains of the more recent kiln are located in the south part of the sondage.

They consist of a part of the oven floor, that is the surface on which the amphorae to be fired are placed in the south-east corner, a mud brick wall more than 2.5m thick which is baked close to the inside of the kiln, imposing layers of the kiln's foundations, and the western edge of the firebox,



Figure 8. Western kiln, Sector 1, Sondage 3: the curving wall of the most recent kiln can be seen in the background; centre left, wide unfired brick wall marking the western edge of the firebox; view from the north-east.



Figure 9. Western kiln, Sector 1, Sondage 3: curved wall of the kiln and part of the cleared kiln floor in the upper corner, view from the south-east.

(Photographs by V. Pichot, © CEALex).

that is the hearth at the base of the kiln at the north of the kiln, and a large solid mass more than 2m wide composed of mud bricks on top and limestone blocks below. This is the north-west part of the large kiln that was found in 2014 in Square 3 of Sector 7. This new data allows us to estimate more precisely its dimensions: approximately 14m exterior diameter and 8.5m interior diameter, making it the biggest amphora kiln known to date.

#### **2.4. Comparisons**

The amphora kilns of Akademia find parallels in the Mareotid, in particular in the Borg el-Arab workshop (El-Ashmawi 1998), where there is a kiln measuring with an exterior diameter of 12.60 m and an interior diameter of 7.60 m. Among the bigger, an example at Marea-Philoxenite (for the discovery, see Szymanska & Babraj 2005: 57ff.; on the numerical modelling, see Babraj, Kogut & Zieba 2012; Kogut 2013) measures 8m exterior diameter and one at Margham has an exterior diameter of 7m and diameter of 6m. The kilns of Akademia are among the largest structures of their

type yet to be discovered. The eastern kiln has an exterior diameter of roughly 12.65m and an interior diameter of 7.68m, while the western kiln has an exterior diameter estimated to be 14m and an interior diameter of 8.50m.

The Akademia kilns seem to indicate that such large kilns, striking both for their size and quality of construction (Fig. 10), were perhaps the rule in this part of Alexandria's chora during the Imperial period. Currently, no other region of the ancient world has been shown to have such large amphora kilns. Their capacity of several hundred amphorae per firing puts early imperial production on the shores of Lake Mariout at an "industrial" level.

The exceptional nature of this type of kiln requires a careful and comprehensive archaeological approach that will take into account studies of similar archaeological structures (El-Ashmawi 1998; Babraj, Kogut & Zieba 2012; Kassab Tezgör 2010) and ethno-archaeological examples (Nicholson 2009; Nicholson 2010:3-5; Nicholson & Patterson 1985a:230-233, 1985b, 1985c: 57 and 59; Nicholson & Patterson 1989:73-80).



Figure 10. 3D reconstruction of a Mareotid amphora kiln of the Early Empire: developed from the remains of the eastern kiln and parallels, especially Borg el-Arab and Marea-Philoxenite. (Design V. Pichot, modelling and graphics Mohamed Abdel-Aziz, © CEAlex).

## 2.5 The fuel

The fuel used in the kilns of Akademia was predominantly *Phragmites australis*, or common reed, with a slight quantity of small woody plants of the *Chenopodiaceae* family (Pichot & Senol 2014: 230-231).<sup>1</sup> The assemblage confirms that all the then available, and still currently present resources of the lakeside environment of the site were exploited: marshy banks of reeds and brush which today form the low vegetation scattered across the base of Ridge III. The reeds constituted by far the largest resource. This fuel has a very low heating value and burns quickly, thus posing problems of heat management in combustion structures. The use of this fuel would explain in part the large dimensions of the Mareotid kilns, which allow for a better control of the heat generated by burning reeds. The use and management of this resource is known in antiquity, notably for the heating of baths in Alexandria (Reinach 1910: 133; Cuvigny 1987: 33; Nenna 2009: 498). The dimensions

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1. Confirmed by the botanical studies of Th. Otto (ECOLAB, UMR5245, CNRS) as part of the ANR Geomar programme (2013-2016).

of the Mareotid kilns can be compared with the furnaces of the primary glass workshops at Wadi Natrun from the Imperial period — the largest yet discovered— which used the same fuel (Nenna 2007; 2008; 2015).

## 2.6 Coating the amphorae (Pichot & Senol 2015).

The western part of Sector 5 situated to the south of the large kom has occupation levels that are later than the abandonment and backfill of the kiln located below the layers of domestic rubbish and workshop rejects. Gaza amphorae of the type Form 1 of the LR4 amphora filled with resin have been found in these levels. They have all been cut at the shoulder and placed on the ground and are generally broken. The upper parts of these amphorae were systematically found in the refuse layers of the site. The flooring corresponding to these activity levels, as well as the low walls marking out this work and/or storage area, is made of reused fragments of flat bricks laid over beaten and evened earth, composed of a mix of silty sandy soil and chalk. Despite the very poor state of the remains, the western part of the sondage provides an answer as to the function of this work area delineated by the low walls. In effect, the discovery of reclining AE 3 amphorae along with the Gaza amphorae filled with resin (Fig. 11) indicates that this space was used for the coating of the amphorae before being transferred to the wine press.



Figure 11. Amphora coating area, Sector 5, seen from the north-west.  
Photograph V. Pichot, © CEALex.

The remains of similar activity, though less easily read, have been revealed in Sector 7. In the northern extension of Sondage 5, some 18 m west of the eastern kiln, between layers from the abandonment of the site and layers from the destruction of installations linked to manufacturing activity, a thin and very deteriorated layer of clay had been laid down to level the zone. The discovery of the bases of Gaza amphorae, filled with resin set in this level and propped up with bricks leaves, little doubt as to the function of this space despite the few preserved vestiges. It is noteworthy that the few samples of raw resin discovered on this site were found in the abandonment levels of the activity zones. The remaining samples of resin were systematically found in the bottoms

of Gaza amphorae, either in the activity zones or in the layers of rejects. No other type of amphorae or ceramic containing resin has been found.

All of this evidence supports the idea that the resin was imported to the site of Akademia in these containers and, once in place, when the resin was to be used, the container was sliced through at the shoulder and was used as a heating vessel to melt the resin for coating the amphora manufactured in the workshop.

Once the amphorae were coated, they were transported directly to the wine press of the villa some 80 metres to the north-east of the workshop where they were filled with wine. While the state of preservation of the press and adjacent buildings prevents any attempt at classification of the ensemble according to the typology of M. Rodziewicz (1998), the remains that are still visible indicate that it was a big building which held a large-sized press, undoubtedly composed of several crushing areas, secondary presses and many storage rooms. Further detailed work will be carried out here in the future.

### 3. Workshop refuse and production characterisation

#### 3.1. Refuse dumps

The refuse koms were formed by a succession of rejected amphorae, either flawed or badly fired and thus unsuitable for use, plus layers of ash, burnt clay, and bricks from the cleaning or destruction of kilns in the vicinity. The largest of the koms measures about 40m in diameter and stands about 4m above current ground level (Sector 1). Sondage 1 (5m by 13m) was dug from the top to the base (Fig. 12).

Figure 12. Sondage 1 in the large kom of Sector 1, view of the western section, from the south-west.

(Photograph V. Pichot © CEALex).



Any study of the complex stratigraphy revealed by the excavations must take into account inclination, content, thickness and the position of the dumped layers: this study is still ongoing but we can already note some important points. The kom sits directly upon the natural substrate, which is composed here of a layer of yellow-orange silty clay sometimes with pale yellow, powdery nodules, according to the analysis of auger cores taken from the base of Sondage 1 in the kom.

Three main strata have been revealed. The first is composed of the formation layers of the initial small koms: the layers of rejects to the east have a noticeable E/W incline, while those more to the west have a S/N incline. The second ensemble is composed of intermediary layers that seem to be the junctions between the older small koms. The upper layers, which contained several

examples of stamps with the name Apol(l)onios, and which mostly have a south/north or south-east/north-west incline, are part of the formation of the large final kom.

Compacted horizontal layers made of small amphora fragments and/or ash have been recorded upon the levels that join the small initial koms and on some of those that form the large final kom. They indicate circulation zones on top of the kom whilst it was being created. Some levels have visibly been dug into, and some layers have been partially displaced and changed after being dumped, which would indicate an organisation of the positioning of refuse as the dump was growing.

### 3.2 Identification of the workshop production

The excavations of the refuse koms and the foundations of the eastern kiln provided an overall view of the workshop production and led to the establishment of a typology of this production. In every phase of activity the workshop produced AE 3 and AE 4 types (Fig. 13) with the latter being slightly more prevalent. Detailed study of the archaeological material allowed for the two types of amphora to be broken down into groups and sub-groups that were distinguishable by, for example, the width and shape of the rim, or the neck profile, etc. (Pichot & Senol 2014; Pichot & Senol forthcoming). Many separating elements were discovered, which were used during firing to prevent the amphorae from sticking together. Other elements, such as support-stoppers, were also found in large quantities. These enabled the amphorae to be stacked up in the kiln without causing the necks to be deformed.

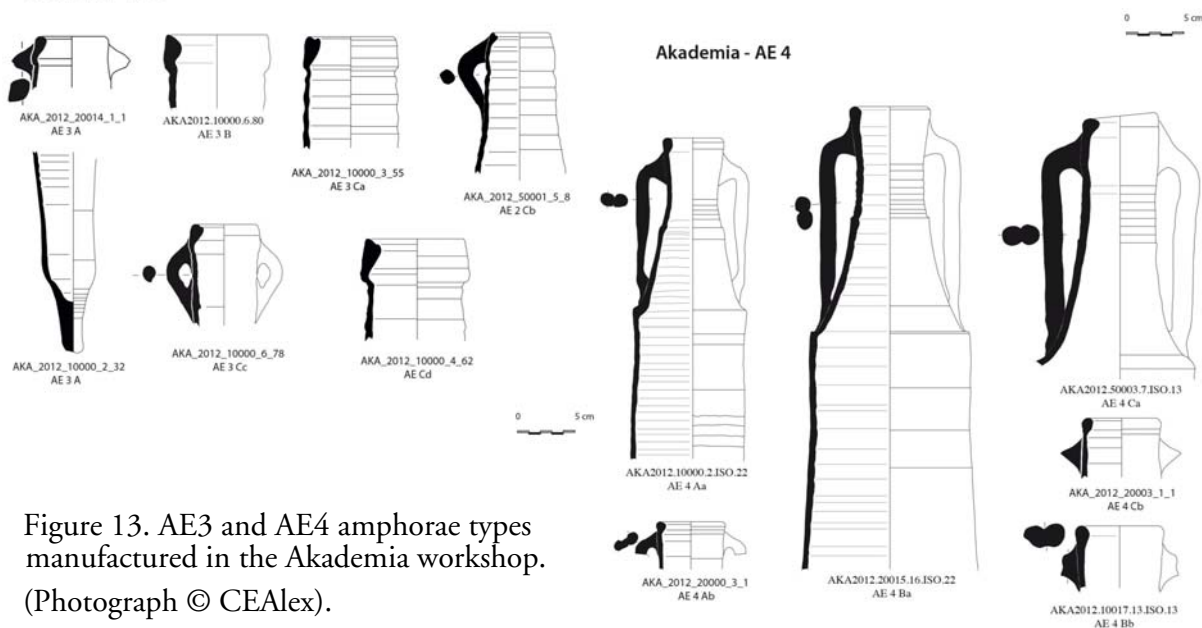


Figure 13. AE3 and AE4 amphorae types manufactured in the Akademia workshop. (Photograph © CEAlex).

The Akademia site also produced a small amount of other ceramic ware<sup>1</sup> of limited variety. This was almost certainly intended for the needs of the villa and the workshop itself, and is comprised of open form receptacles: basins and wide bowls with slanting or slightly convex walls. The clay fabric of this production is similar to that of the amphorae: medium fine, sometimes slightly coarse and flaky. The inclusions mainly consist of small grains of sandy quartz, white nodules and some grey lumps of different sizes (seashells).

1. The ceramics are being studied by Delphine Dixneuf, ceramologist at the Laboratoire d'Archéologie Médiévale et Moderne en Méditerranée (LA3M, CNRS, UMR 7298, Aix-en-Provence, France)

Chemical analyses<sup>1</sup> using a handheld XRF spectrometer and petrographic examinations have been conducted on almost 390 samples taken during excavations. They have demonstrated a very homogeneous production whatever the type of container manufactured at the site (AE 3, AE 4 and other ceramics) and whatever the sector or even the stratigraphic context.

The workshop's production is characterised by a limestone fabric with a CaO concentration of 7 to 17.5%, a high content of carbonate fragments and a low distribution of heavy minerals (amphiboles and pyroxenes), with the scattered presence of iron oxides (Fe<sub>2</sub>O<sub>3</sub> concentration, 5 to 7%). The texture is medium fine to coarse, containing coarse non-plastic inclusions: predominantly carbonate fragments (bioclasts and finely crystallised fragments of calcite) and a low distribution of coarse sandy quartz grains. Concentrations of strontium are higher than 400ppm, and zirconium higher than 200ppm, and, as might be expected for Mareotid production, concentrations of chrome and nickel are no higher than 250 ppm.

#### 4. Conclusion

The results of the investigations conducted into amphora production at Akademia, one of the rare examples of a workshop to be excavated in the Mareotid, are rich in information. Our research has managed to identify the production of this workshop during the Early Empire and has gathered much information regarding the operational chain, as well as the organisation of work. Furthermore, the research has added to the long-term study of amphora production in the region that has been developed within the framework of the CEALex Mareotid project.

More generally, the ensemble of the Akademia site feeds into our knowledge of the Mareotid in the Roman period. This fertile region was widely exploited during the Hellenistic era, and activities were accelerated in the Early Empire. The region was then divided between different, more or less independent entities: large farm villas, as found in the eastern part of the Akademia site, managed all or at least a large part of the production. The slightest step in the operational chain was controlled by these institutions: from agricultural production to transport, including processing, the manufacture of containers and even the filling of the amphorae. At some time around the beginning of the 3rd century CE, a sharp rise in the level of the lake (Pichot & Flaux 2015) led to the partial abandonment of lower sections of the southern bank. Only those sites built upon the rocky promontories continued to be occupied to any meaningful degree at this period. The majority of artisanal production moved to the hinterland further south. Nevertheless, certain low-lying areas of the lakeshore were used for agricultural activities, some of which were extensive, as in the western part of Akademia.

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1. Analyses were conducted by the materials characterisation lab of the CEALex under the supervision of Valérie Pichot: chemical (XRF), statistical analyses by Mai Abdel Gawad, and petrographic studies (macrography and thin sections) by Assem Bahnasy. A summary of the lab results is under preparation and will be published in the near future.

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# INVESTIGATING THE WESTERN DELTA: A REGIONAL SURVEY IN KAFR EL-DAWAR *MARKAZ*, BEHEIRA PROVINCE, SEASON 2018.

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## Abstract

The report outlines the results of the survey conducted in autumn 2018 on four sites in the Beheira governorate: Kom el-Ghasuli, Abdu Pasha, Kom el-Magayir, and Kom el-Mahar. The work of the Durham University–Egypt Exploration Society mission was carried out as part of the Delta Survey Project (EES).

## ملخص

يستعرض التقرير نتائج المسح الذي أجري في خريف 2018 على أربعة مواقع بمحافظة البحيرة: كوم الغزولي ، عبده باشا ، كوم المغاير ، كوم المحار. تم تنفيذ عمل البعثة المشتركة من جامعة دورهام وجمعية الاستكشاف المصرية كجزء من مشروع المسح الأثري للدلتا.

## 1. Introduction

A regional survey mission was conducted in autumn 2018 from November 24th to December 5th, on four selected sites of Beheira governorate in Kafr el-Dawar *markaz*: a) Kom el-Ghasuli, b) Abdu Pasha; c) Kom el-Magayir, and d) Kom el-Mahar. All of the sites lie south of Kafr el-Dawar and of the Alexandria-Cairo agricultural highway (Fig. 1).



Figure 1. Map of the area showing the location of the sites in satellite imagery (Photograph © Google Earth).

The work aimed to monitor the current preservation of the sites, to interpret the ancient landscape and environment of Beheira region and to add information acquired to the Delta Survey Project database. Moreover, the survey aimed to create a detailed dataset for those places for which information was still lacking, and to investigate and improve the knowledge of the geographical setting of the western Delta of Egypt.

Each site presented unique elements and different non-destructive methods were applied in order to collect a range of data: site visit with a visual description, collection of topographic and photographic information, use of photogrammetry to map visible architectural and topographic features, collection of pottery and material. The pottery was mainly recorded on the surface of the sites, thus providing a broader indication of human activity at each of them. Therefore, historical and chronological conclusions based exclusively on the surface material should be taken with caution. The diagnostic sherds of pottery were collected from the entire surface of the sites and include fragments of rims, bases, handles and decorated elements. At Kom el-Gasuli, however, sherds were recorded exclusively in the five most significant areas of the kom (see below). All of the fragments were washed, drawn, recorded and photographed. Fabric study of the material was limited to field examination and petrographic analysis was not possible. Moreover, in several cases a geophysical investigation of sub-surface features was carried out, using a Bartington Instruments Grad601-2 dual sensors fluxgate gradiometer.

## 2. The regional survey

### a) *Kom el-Ghasuli* (SCA no. 100131; EES Delta Survey no. 362)

Kom el-Ghasuli is located close to the modern village of Al-Baslaqun, and nowadays is surrounded by fields. The site is recorded with the name of ‘Ghaswleh’ in the 1916 Survey of Egypt Maps. G. Botti visited the site for the first time between 1901 and 1902, and he collected several ‘barbarian’ figurines, Byzantine coins of Constantine I and poor quality pottery. According to the scholar, at that time the site covered an area of about 500m (Botti 1902: 56). The site was surveyed again in 2008 by M. Kenawi, who focussed his survey on the collection of pottery sherds (Kenawi 2014: 27, 170, 233).

Nowadays, Kom el-Ghasuli is ca.180m north-south and ca.125m east-west in extent, while the area of the site is about 1.25ha. The site is characterised by two sandy mounds of which the highest is 2.14m above the field level (Fig. 2a). The northern area of the kom is nowadays levelled in two flat areas, located in two different levels, both used as a football playground. There is no archaeological material visible on the surface, but sections of the kom show clear stratified sequences of layers, including brick and pottery deposits, revealing remains of archaeological structures (Fig. 2b).

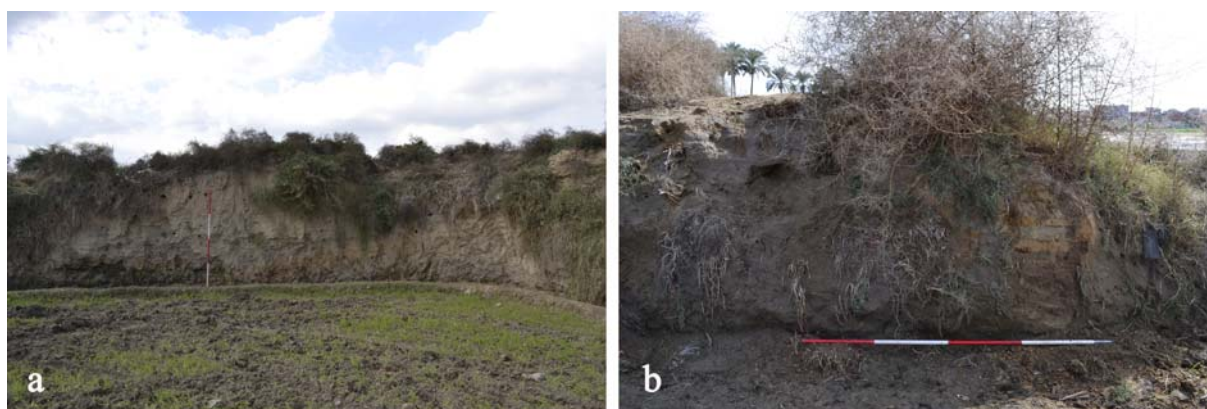


Figure 2. a) Remains of the higher mound of Kom el-Ghasuli; b) evidences of sequences of layers (Photograph: Elena Tiribilli).

CORONA satellite imagery of the 1960s confirms that once the site was larger. Indeed, in antiquity the site might be part of a much larger group of settlements, such as Kom el-Qadi and Abdu Pasha, or one more extensive settlement (Wilson & Grigoropoulos 2009: 82). The geographical position of Kom el-Ghasuli, which is located close to the ancient borders of Lake Mareotis, suggests that during the Ptolemaic-Roman period the site may have had connections with Alexandria, being part of the hinterland and a food and wine supplier.

Pottery was collected in five areas of the site, corresponding respectively to the lower flat area, the higher flat area, the larger mound, to the smaller mound and to the fields around the site. The overall surface pottery indicates an occupation range from the second century BCE to the seventh century CE. The pottery survey reveals a high presence of imported amphorae, such as the types LRA 1 from Cyprus and Cilicia (Marchand 2007: 183, 188, fig. 19b), and LRA 4 from southern Palestine (Gascoigne 2007: 165). In addition, imported table wares are also attested, such as bowls of Cypriot Red Slip Ware (Wilson & Grigoropoulos 2009: 396, 401, fig. 143, no. KA.2.2. P4). The local production dates back mostly to the sixth and seventh centuries CE and consists mainly of cooking pots, storage vessels, and basins (e.g. Berlin 2001: 158–159, fig. 2.55, no. 2). Furthermore, as well as other sites in Beheira, sherds of amphorae of the type AE 3 are very common. Although the majority of pottery is from the Later Roman period, a small range of cooking pot sherds are dated instead to the second century BCE (Ballet & Południkiewicz 2012: 78, 762, pl. 24, fig. 264). The pottery collection suggests a domestic nature of the site but also shows the presence of a flourishing trade network with the eastern Mediterranean during the Roman Period.

*b) Abdu Pasha* (SCA no. 100147; EES Delta Survey no. 621)

The small site of Abdu Pasha lies about 6km to south of Kafr el-Dawar. Nowadays, only a small part of the site is preserved, surrounded by irrigation ditches and fields. Most of the ancient *kom* has probably been overbuilt by the modern village of Ezbet Abdu Pasha. CORONA satellite imagery shows that the site in 1960s was slightly larger, but already levelled. Abdu Pasha is ca. 52m x 38m in extent, standing around 2m above the modern field level. The area of the site is approximately 0.22ha. No clear structures and material are visible on the surface of the mound and around the flat areas. The sections of the small mound still preserved show stratified sequences of layers and a medium concentration of pottery (Fig. 3a-b).



Figure 3. a) Section of the mound at Abdu Pasha with sequences of layers; b) concentration of pottery in the section of the mound (Photograph: Elena Tiribilli).

A pottery sample was collected mainly from the fields around the *kom*, and in the sections of the mound. The pottery indicates a high percentage of local production. Sherds of AE 2-2.1 (Dixneuf 2011: 92, 313, fig. 67, no. 58) and vessel stands (Wilson & Grigoropoulos 2009: 347, 349, fig. 124, TAG. P.1) are attested, dating mostly from the third to the first century BCE, suggesting an earlier foundation than Kom el-Ghasuli. Abdu Pasha, as well as Kom el-Ghasuli, was probably part of the same supply chain between the Lake Mareotis and the Canopic Nile branch (Hinojosa-Baliño et al. 2019: 11).

c) *Kom el-Magayir I* (SCA no. 100133; EES Delta Survey no. 395), *Kom el-Magayir II* (SCA no. 100134; EES Delta Survey no. 697), and *Kom el-Magayir III* (SCA no. 100135; EES Delta Survey no. 698)

The EES Delta Survey database includes three sites labelled as Kom el-Magayir I, II, and III, which were all, perhaps, originally part of the same settlement, but nowadays are separated by a modern road and the Shereishra canal. Kom el-Magayir I is completely overbuilt by the modern village of Baba el-Koupra, although several brick structures are still visible on the surface below the modern village. The 1912 Survey Maps of Egypt marks 'Ikhwan Baba Kom el-Magair' at this location. Nowadays, the area of the site is approximately 8.4ha. Kom el-Magayir I extended originally on the eastern side, where a satellite mound is located, the so-called Kom el-Magayir III, nowadays overbuilt by a modern cemetery and the village of el-Hilbawi (Fig. 4). The mound under the cemetery is about 127m x 85m in extent, with an area of ca. 0.97ha.



Figure 4. View of the mound of Kom el Magayir III, overbuilt by a modern cemetery with the modern road and the Shereishra drainage canal in the background (Photograph: Elena Tiribilli).

Kom el-Magayir II consists instead of a small rectangular patch of land (40m x 24m, area of c. 0.12ha). The area contains numerous collapsed firebricks scattered on the ground. The identification of the structures is difficult to determine, as well as any chronological range of human activity

based on a few pottery sherds recorded in this location. In addition, doubts may also arise concerning the identification of the area as an archaeological site, since CORONA satellite imagery shows modern buildings in this area in the early 1960s.

The surface pottery collected at Kom el-Magayir I and III mainly consists of local (AE 3) and imported amphorae coming from the eastern Mediterranean, such as from Cnidus (Marchand 2007: 181) and a high quantity of Egyptian utilitarian wares, such as cooking casseroles (Wilson & Grigoropoulos 2009: 321, 323, fig. 113, KK. P9) and vessels (Wilson & Grigoropoulos 2009: 321, 323, fig. 113, KK. P15). The sherds collected suggest a long period of human activity, from the third century BCE until the seventh century CE.

According to the geographical linear arrangement of these sites, they may have been located along a waterway connected with the ancient Lake Mareotis (Hinojosa-Baliño et al. 2019: 13, map).

*d) Kom el-Mahar* (SCA no. 100167; EES Delta Survey no. 398)

Kom el-Mahar lies to the east of Nubariyah Canal, to the south-west of Sidi Ghazhi village and about 24km south-east of Alexandria. Kom el-Mahar literally means ‘mound of shell’, the name perhaps deriving from the thousands of seashells scattered all over the site. The seashells may have come from the nearby Lake Mareotis in antiquity, when mud from the lake was used to make bricks for several buildings on the site (Wilson & Grigoropoulos 2009: 54). Kom el-Mahar covers an area of about 440m x 240m, rising to a height of 12m above the fields. It is surrounded by fields and irrigation ditches, and its eastern part has a modern cemetery which is gradually extending on the top of the mound. Sections on the slopes present stratified sequences of layers with mudbricks and limestone blocks. In 2004 and 2009 P. Wilson (Wilson & Grigoropoulos 2009: 53-55, 297-300) and M. Kenawi (Kenawi 2014: 161-162) undertook surveys at the site: the pottery collected during their missions indicates that the site was founded during the Ptolemaic period, and it was abandoned around the time of the Arab invasion (seventh century CE).

The survey at Kom el-Mahar conducted in 2018 focused mainly on a geophysical investigation. The magnetometer survey was undertaken on three selected areas: a) the flat area in the southern side, including partially the southern slope of the mound; b) the top of the mound and partially its northern slope, c) the flat and bushy area on the eastern side of the site. The magnetic prospection has been particularly fruitful for the reconstruction of the ancient layout of this settlement: the magnetic map shows, indeed, clear structures with rectangular plans of different sizes on the eastern side of the flat area and on the top of the mound (Figs. 5-6). Certainly, this site deserves further investigation in order to understand better the nature and the layout of the settlement and its relationships with other sites nearby.

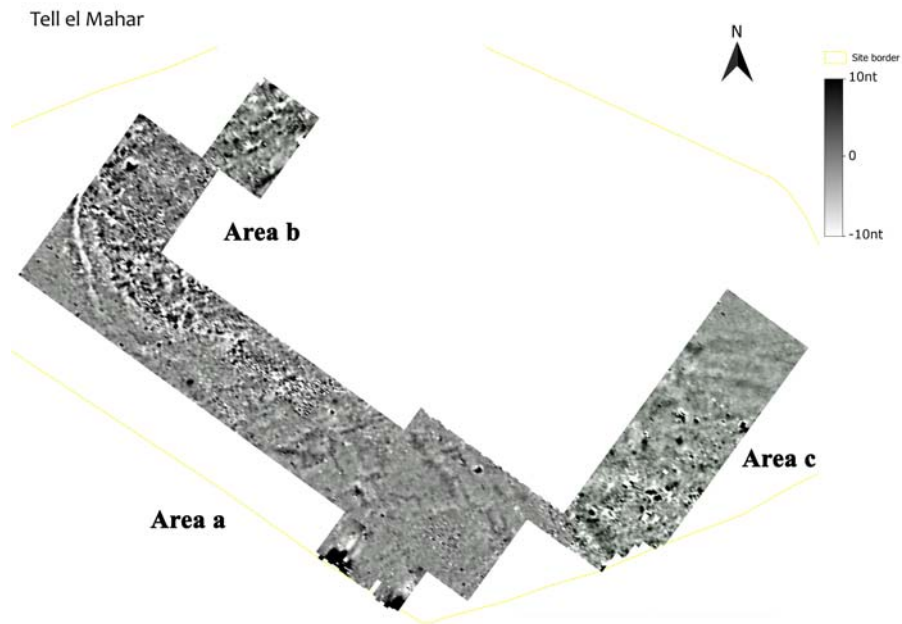


Figure 5. Magnetic map of Kom el-Mahar showing rectilinear features in the areas.  
(Map: K. Armstrong, I. Hinojosa-Baliño, E. Tiribilli).



Figure 6. Kom el-Mahar. Magnetic map overlaid on satellite imagery  
(Map: K. Armstrong, I. Hinojosa-Baliño, E. Tiribilli).

### 3. Discussion

The data set acquired from the regional survey carried out in 2018 at Kafr el-Dawar province shed new light on small villages that are not yet well investigated, increasing the knowledge of the history and economy of Beheira region, and confirming the importance of this area during the Ptolemaic

and Roman periods. The survey shows, once again, that settlements developed mainly along waterways and distributaries of the Canopic branch, which fed Lake Mareotis. Small centres, such as Kom el-Ghasuli and Abdu Pasha, located between the Canopic branch and the Lake Mareotis, may have worked mainly as transit points for food and wine supplies for the capital and its hinterland (Wilson 2010 and 2012). Moreover, the high attestation of imported pottery, such as at Kom el-Magayir and Kom el-Ghasuli, confirms the presence and the importance in the Beheira region of flourishing trade routes, during the Roman Period, especially with the Eastern Mediterranean (Kenawi 2015).

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# RECOVERING THE LANDSCAPE OF THE WATERFRONT AT LAKE IDKU: ARCHAEOLOGICAL SURVEY AT KOM EL-DIBA<sup>c</sup>

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## Abstract

Recent archaeological and geophysical survey at the site of Kom el-Diba<sup>c</sup> on the southern edge of Lake Idku, has allowed the reconstruction of the settlement at the site and the landscape around it. The site was found to be situated on natural sand hills and comprises two mounds, one with a temple enclosure, storehouse and residential area and both active from the Late Period to the Byzantine era. The inlets and natural harbours of the lake's southern edge can also be mapped and linked to other major cities in the area such as Kom Ghuraf and Kom el-Ahmar. They form part of a network of trade that extends into the Delta heartlands, west to Alexandria and into the Eastern Mediterranean basin.

## ملخص

أتاح المسح الأثري والجيوفيزيائي الأخير في موقع كوم الضبع على الحافة الجنوبية لبحيرة إيدكو إمكانية إعادة بناء المستوطنة في الموقع وتخطيط المنطقة المحيطة بها. أقيم الموقع على تلال رملية طبيعية ويتألف من تلين ، أحدهما به معبد ومخزن ومنطقة سكنية وكلاهما شهد نشاطاً من العصر المتأخر إلى العصر البيزنطي. يمكن أيضاً تعيين المداخل والموانئ الطبيعية للحافة الجنوبية للبحيرة وربطها بالمدن الرئيسية الأخرى في المنطقة مثل كوم الغراف والكوم الأحمر. تشكل تلك المواقع جزءاً من شبكة التجارة التي تمتد إلى قلب الدلتا ، غرباً إلى الإسكندرية وحوض شرق البحر الأبيض المتوسط.

## 1. Introduction

The research area of the Japanese mission on the Mediterranean coast of Egypt (2008–2018) has previously been overlooked as a research topic within the history of classical archaeology because the area has been viewed as a low-production wetland, made swampy by the annual inundation (Fig. 1).

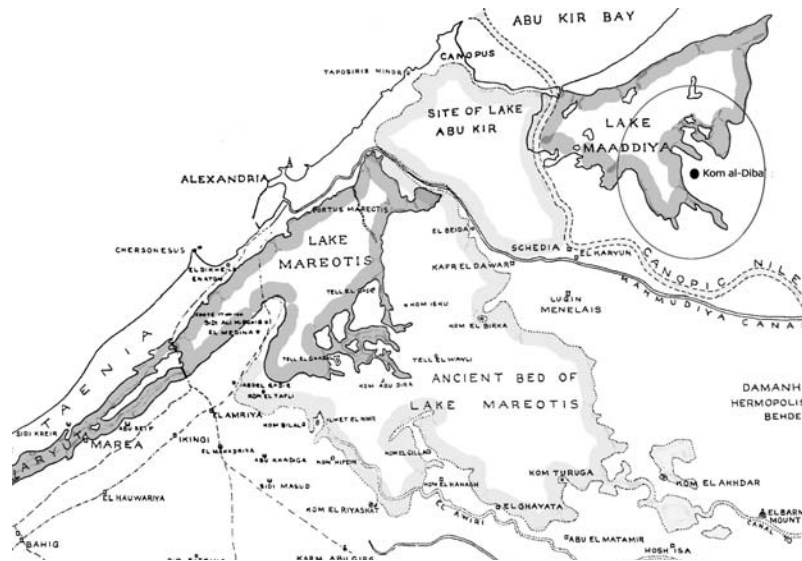


Figure 1. Location of the research area in the hinterland of Alexandria. (After de Cosson 1935).

The ancient Canopic branch connecting the Rashid tributary with the Mediterranean Sea ran west of Lake Idku, and no attention was paid to the role of this area, which was always described as a “transitional point” of circulation. This tendency is based on the historical topic of the trade network between Naucratis and Canopus, including Thonis (East of Canopus) and Heracleion. In fact, this coastal area was covered by the advancing sea during the period between 6,000–5,000 BCE. Lake Idku appears to have formed approximately 7,500 years ago (Stanley et al. 1993: 630–634). Since then, the balance of the sea level and the discharge of the Nile River have caused changes in the sediment distribution (Flaux et al. 2013: 22–23) and it became a difficult place to perform basin irrigation because of the high salt content of the area. In fact, until the end of the 19th century, the irrigation system probably stopped at the line between Bilbais and Dilingat (Richard 1982: 10–11). Since then, although land reclamation has been carried out, the Lake Idku area remained as an agriculturally, vacant place (Toussoun 1934: Map). On the other hand, as can be seen on the old topographical map (Mahmud Bay 1872: Map), many archaeological sites dating back to the Late Antique period were situated around the lake area (Wilson 2010: 119–124, Figure 9.1, Table 9.1). In regard to the economic background of the area, apart from villages along the Nile, intensive agriculture was not considered to be practical. Thus, daily economic life may have been based on a “composite livelihood” model, dependent on part-time farming, fishing, hunting (mostly of birds), production of pottery, glassware, and woven materials made of reeds and palms, and transportation by boat. The archaeological sites of Kom al-Diba<sup>c</sup> in the target area were chosen as an area of focus, and excavations were planned and carried out in order to reveal the ancient lifestyle of the region. After carrying out a geophysical survey, it was surmised that the site was a village chronologically dating to the Hellenistic period (Hasegawa 2017: 59–61).

## **2. Reconstructing a tentative image of Kom al-Diba<sup>c</sup>**

The archaeological site of Kom al-Diba<sup>c</sup> is registered by the government in the lakeside area. Although an English expedition performed a simple survey in 2010 (Wilson et al. 2012: 99–101), the site has remained essentially untouched. There is a north hill and a south hill; the top of the south hill is 10 m higher than the foothill, with a rough area of about 6 ha. Careful observation of the stratigraphic sections led us to understand that the sites were formed on a sand dune, although the surface of the south hill was covered by thick silt. A series of geophysical studies using mechanical equipment were carried out (see Fig. 2). During this process, a conspicuous anomaly was obtained by the magnetic survey (Grad 601, 60 HZ) on the south hill. Some features were recognizable on the surface, but the magnetic image appeared to show that a lower part of mud brick remained, consistent with a settlement, including houses, storage facilities, animal pens, streets, and squares. A dense distribution of remains was seen at the south and west of the south hill, with an east–west axis, although the southern part had a differently angled east–west axis.

Careful architectural observation detected a 144cm thick wall built of mud bricks, measuring 36cm in length and 19cm in width, at the middle of the hill; and, at the top of the hill, the base of a wall of a naos, with a width of 660cm, and a 76cm thick wall built of bricks, measuring 38cm in length and 20cm in width. Both sets of remains may be part of the same temple construction. The naos was composed of a single chamber, and its entrance was oriented southward, with rather heavy walls—of two-brick thickness—for its small size. The construction date was uncertain, although the Ptolemaic period was a reasonable deduction considering the size of the bricks, which were quite different from the smaller ones (ca. 24cm long) from the Roman period (Phase I).

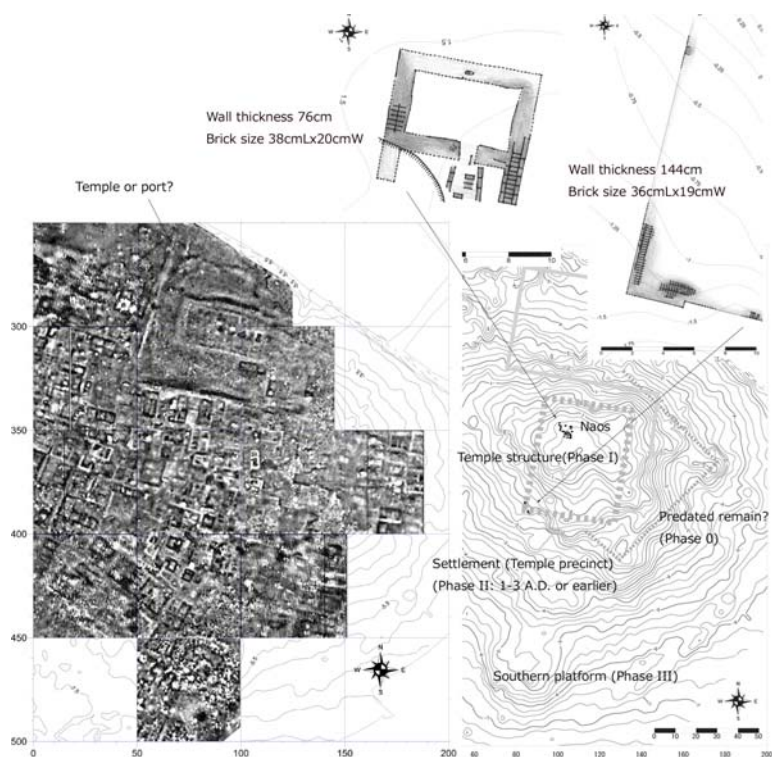


Figure 2. Plan of detected features on the south hill of Kom el-Diba<sup>ϕ</sup>.

The material culture collected from the surface of this area was dated as being from the first to the third century CE, or even somewhat earlier, as indicated by an assemblage of Eastern Sigillata A wares (Fig. 3) and silt wares, including amphoras, unguentaria, black polished wares, and a Hellenistic lamp.



Figure 3. Eastern Sigillata A wares on the surface.

From the results of the architectural research, the settlement was considered to be a typical “temple precinct” formed around the naos construction at the higher point of the hill, with its most active phase in the early Roman period (Phase II). It should be noted that ground-penetrating radar detected signs of construction at the southernmost platform, where an extremely sparse distribution of material culture and a dense distribution of red brick ware was found; the material may date from

the Byzantine period (fourth to seventh century CE) (Phase III). In addition, several raised mounds were observed in the lower area of the naos construction, located at the east and south of the south hill, where the existence of “Late Period” material was mentioned by the English expedition (Phase 0). Based on the observations and the results of the coring survey, Wilson mentions that the north hill, probably dating to the Ptolemaic and Roman periods, may have been founded on an earlier site of the Late Dynastic period, as may also have occurred at the eastern and southern area of the south hill. The author adds that the north hill settlement has a slightly different character from that of the south hill, which may indicate that the north hill was a cemetery or harbour installation (Wilson 2010: 119–124). Henceforth, the south hill is considered to consist of multiple layers dating back to the era from the late period to the Byzantine period, with its active phase centred on the Hellenistic period. Here, the reconstructed image of Kom al-Dibaʿ tentatively shows the structures that existed on the hill (Fig. 4).



Figure 4. Reconstructed image of the hills at Kom al-Dibaʿ.

From a geological perspective, the coastal area is divided into a “coastal dune with palms and other indigenous vegetation” area and the “coastal dune, mostly barchan-type” area. The inland sand dune area is described as the “Hills (kom sands), largely cultivated” area and the green belt as the “irrigated and cultivated” area (Stanley et al. 2007: 9, Figure 2.4). The central area of the inland sand dune area, within a 1m contour above the sea level, seems to have the potential to reveal the landscape during the season of inundation, as it shows a similar range to that of Lake Idku, as depicted on the map by Mahmud Bay (1872). When a 1m contour line is drawn on the 1920–30s’ map of Egypt developed by the Department of Measurement, the contour reveals several large sand dune deposits with a northwest–southeast axis and shows that the inner bay of Lake Idku extended further south than the current Ghiṭṭās Bay, reaching almost to the north of Abū Ḥummuṣ.

The sand deposits are higher, reaching over 6–10m in height, where settlements are considered to have stood. The landscape is recovered where Jazīra Raqm forms an island with Kom Tallūz, Kidwa al-Ghazāl, at Deposit 1; ‘Izba Zaghāiba, Kom Ḥāshim, ‘Izba Shābūn (Mansūr Bahnās) at Deposit 2; Kom al-Diba<sup>ᶜ</sup>, Kom ‘Azīza, ‘Izba Mūsa Banūna at Deposit 3; and ‘Izba Mikhāil al-Khairī at Deposit 4 (Fig. 5). In the lower lying cultivation areas, floodwater may have penetrated narrow recesses between deposits, and these are viewed as inlets of the inner bay. One of the inlets is Bāb al-Ghazāl, along with Bāb al-Sa‘īdy or Bāb Ṣabāḥ al-Khair, which separates the target area from another sand dune deposit, where the well-known old villages of Nakhla Bahriya and Bisantwāy are mentioned the Mamluke document (Halm 1982: 409, 436) but not around the lakeside area. Archaeologically, there is no positive proof to support the view that the lakeside recovered during the Islamic period.

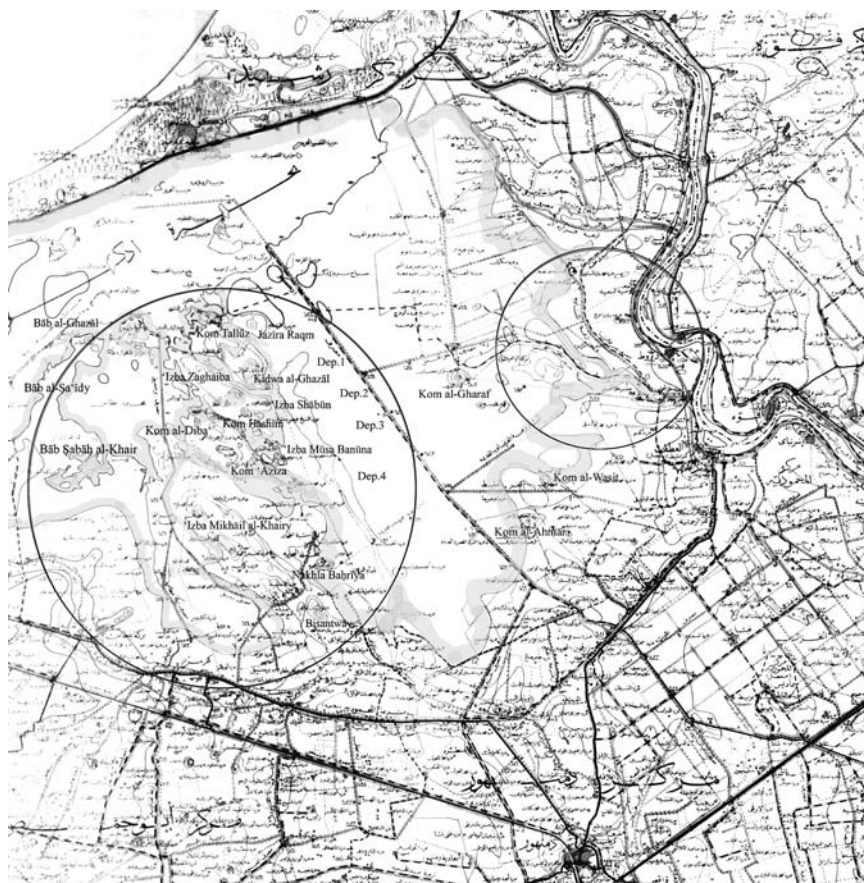


Figure 5. Area A and Area B at the east of Kom el-Diba<sup>ᶜ</sup>, (1/100,000 Survey of Egypt map, 1926).

Now, the key features are sand deposits located at the southern end of the lake expansion and the coastal sand dunes accumulated in the area between Rashid and Idku, which is considered to have been formed at the period between the late Pleistocene and the early Holocene. A Corona satellite image taken in 1964 shows that the sand deposit still existed at this period (Hasegawa 2017: 56, 63; since then, most of the characteristic sand dunes have been replaced by orchards or fish farms. At the ancient lakeside, only Kom al-Diba<sup>ᶜ</sup> and Kom ‘Azīza seem to have remained and been registered by the Antiquity Department (Wizāra al-thaqāfa wa wizāra al-ittiṣālāt wa ma‘lūmāt 2002:99). Kom ‘Azīza was excavated in the 1980s when a Byzantine burial site was revealed (Aḥmad abd el-Fattaḥ 2004; Kenawi 2014: 86-88), while Kom al-Diba<sup>ᶜ</sup> remained untouched (Wilson et al. 2012: 109–116; Kenawi 2014: 89–91). Strabo described this area when he sailed to

Memphis from Schedia. He found a place called Kabria, probably to be identified with the current Abū Ḥummuṣ (Ramzy 1994: 240), and reported a series of villages on the right-hand side of the canal (the south), but made no remarks on the north side of the canal of that waterfront area (Strabo 17.1. 23 c803).

World View-2, with its high resolution, indicates only a small part of this sand dune deposit in the orchard of ʿIzba Zaghāiba remains. The surface and plausible traces of the lower part of the remnants are observed, indicating the ancient use of the higher parts of the sand dune hills. This suggests the existence of a group of similar village sites at the top of the sand dune deposits, which may have played a leading role in the east area of Kom al-Diba<sup>ϕ</sup>, while only a standard village distribution has been discussed so far in relation to the Nile sediment in the most part of the Delta greenbelt (Fig. 6).



Figure 6. Reconstructed image of the sand dune deposit to the east of Kom al-Diba<sup>ϕ</sup>.

### 3. The marshland beyond the sand dune deposit

Further east, beyond the sand dune settlements, there is low-lying land at the edge of the large area of marshland. Based on an analysis of Landsat satellite images, encroachment as a result of dumping landfill and levelling for land reclamation has greatly reduced the size of the lake, from 152km<sup>2</sup> in 1946 to 114km<sup>2</sup> in 1984 and only 57km<sup>2</sup> in 2017 (El-Bastawesy et al. 2017: 49–50), which is roughly in line with the development process. The irrigation map (1958) indicates that an area of 10,000 feddan (1 feddan = 0.42 ha.) to the east of Maṣraf Idku was promoted as the New Idku development area, while a total area of 28,000 feddan to the west and the north was incorporated into the Zaghālū and Barsīq development areas, according to the 1/250,000 irrigation map from 1958. The ground-truth survey observed traces of the lower parts of walls that correspond to a dry surface pattern, surrounded by weeds, and measuring approximately 4m-6 m shape, showing the vestiges of ancient construction (Hasegawa 2017: 56, 63). The higher points of the sand dune deposit are thought, therefore, to be a site territory. The island on the sand dune called Gezīra Ḥassan is located at the north, inside the lagoon and beyond the sand deposits. At the northernmost sand dune deposit, Kom Tallūz was located on the former island called Gezīra Raqm

at the east and the mouth of Ghiṭṭās Bay, with two inlets called Kom Ghiṭṭās and Kom Faghṇūn at the east. Given these facts, we assume that extensive development of this area was promoted in the 1950s and 1960s. The noteworthy points in the area are the canals or small Nile branches, most of which are distributed to the south-east and out of the target area. Several branches running from the area between al-Raḥmaniya and Zāwiyat al-Baḥr are reconstructed, as is represented by the Alexandria Canal (Khalij al-Iskandriya). The only major canal is Naṣiriya Canal, starting from Maḥmūdiya and it played a significant role as the main canal connecting the Nile and Alexandria in the first half of the 16th century (Kumakura 2017: 75–76).

It is also mentioned that the historical records suggest that the region in the area of north of Naṣiriya Canal was active in producing summer crops, especially sugar cane, through the use of waterwheels. It seems obvious that the area was irrigated by canals and waterwheels, as short canals are seen in the *Déscription* (Fig. 7), and summer crops and fruit trees were planted in these areas (Kumakura 2017: 83–85).



Figure 7. Water channels depicted in *Déscription* at Area B.

The crops may indicate that the flood plain, which can be viewed beyond the sand dune deposit, was divided into barren marshland and fluvial terrace. When considering the background of the area, the ancient site locations should be discussed. Some archaeological sites are shown at the waterfront on the map of Mahmud Bay, and, based on an understanding of the 1m contour line mentioned above, the tentative recovery of the location of some sites is noteworthy, including Kom al-Wasiṭ and Kom al-Aḥmar on the lake's edge at the easternmost end and the villages of Bisantwāy

and Nakhla Baḥriyya at the opposite waterfront edge (Halm 1982: 409, 436), along with Kom al-Ghuraf, which stood in the water and where there must once have been an island (Fig. 8).



Figure 8. Waterways on Tousson's image.

(Based on al-Makhzūmy's description, Cooper 2015: 275, Fig. A1.13).

The scale of the sites of Area B, including Kom al-Ghuraf (830m x 755m, highest point 15m), Kom al-Wasiṭ (420m x 420m, highest point 8m), and Kom al-Aḥmar (730m x 475m, highest point 13m), is generally larger on the Idku lakeside. The sites are identified as ancient Metelis, supposedly a capital of a nome, and are only attested in historical documents (Kenawi 2014: 99, 100–101, 106, 112–113).

Beside Naṣiriyya Canal and regarding the location of Kom al-Diba<sup>c</sup>, the focal point is the Nile branch running toward the northernmost sand dune village at Kom Tallūz. The reconstructed image of the branch parting from the Alexandria Channel is by Toussoun based on the text by al-Makhzūmy (1183). The radar satellite image captures this early Canopic branch running from the north of Damanhur towards Kom Tallūz, (Stanley et al. 2006: 503–514; 509, Figure 3). Its mouth connected to the Mediterranean Sea, which was the easternmost mouth of the Canopic branch (Toussoun 1926: (1) 213–27, (3) Pl.XV) / Cooper 2015: 275, Figure A1.13 in Appendix 1) and which might have brought rich fresh water and, thus, been the basis of local economic activity in the target area.

#### 4. Tentative Conclusion

Currently, Kom al-Diba<sup>c</sup> has been surveyed by the Japanese mission, and it has been surmised that the site is a typical “temple precinct” settlement, formed around the naos at the higher point of the

hill, and with its most active phase in the Hellenistic period. In this paper, the area east of Kom al-Diba<sup>6</sup>, between the Nile and the site, is highlighted. At the adjacent area to the east, the sand dune deposit accumulation is conspicuous, and the higher part seems to have been used for settlements, which might have played a leading role. Only a standard village distribution has been discussed so far in relation to the Nile sediment in most of the Delta area. In addition, in the area beyond this large sand dune deposit near the Rashid Tributary, a lowland consisting of a vast marshland extended where a group of village sites were distributed at the lake edge waterfront (Fig. 9).



Figure 9. Reconstructed image of the area beyond the sand dune deposit.

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**RECENT WORK IN TELL EL-FARA'IN:  
PTOLEMAIC AND ROMAN BUTO (2016-2019)**

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**Abstract**

From 2016 to 2019, the University of Paris Nanterre/the IFAO, in cooperation with the DAI and the Inspectorate of Kafr el-Sheikh (Ministry of State of Egyptian Antiquities), has undertaken the excavation of a large storage building from the Early Roman period on the top of the Kom A (Sector P18), a very rarely preserved kind of economic structure in the Delta in Graeco-Roman times. At the same time, a workshop (Sector P20), on the eastern part of Kom C, dating to the Ptolemaic period has revealed ventilation techniques for the kiln in the lower chamber and new pottery types (table wares and common wares), different from those discovered by the Egypt Exploration Society in the 1960s (mainly black ware).

**ملخص**

منذ عام 2016 إلى عام 2019 ، قامت جامعة باريس نانتر / المعهد الفرنسي للدراسات الشرقية، بالتعاون مع المعهد الألماني ومنطقة اثار كفر الشيخ (وزارة الدولة للآثار المصرية)، بحفر مبنى تخزين كبير من العصر الروماني المبكر في الجزء العلوي من Kom A (القطاع P18) ، وهو نوع من المباني الاقتصادية نادرًا ما يتم الحفاظ عليه في الدلتا في العصر اليوناني الروماني. في الوقت نفسه، تم الكشف عن ورشة (القطاع P20) ، في الجزء الشرقي من كوم سي ، تعود إلى العصر البطلمي، وذلك ساهم في الكشف عن تقنيات تهوية للفرن في الغرفة السفلية وأنواع جديدة من الفخار (أواني المائدة والأواني الشائعة)، تختلف عن تلك التي اكتشفتها جمعية استكشاف مصر في الستينيات (الأدوات السوداء الأساسية).

**1. Introduction**

The research was initiated in 2001 by the University of Poitiers and, from 2016, by the University of Paris Nanterre/Institut français d'archéologie orientale, in cooperation with the Deutsches Archäologisches Institut and the Inspectorate of Kafr el-Sheikh (Ministry of Antiquities). The project concerns the evolution of the urban settlement at Tell el-Fara'in (Buto) between the end of the Late Period and the beginning of the Islamic Period, by sector and by period, and aims to determine the type of the different contexts in the town, such as household, production and collective places, including bath complexes. We are also interested in the palaeoenvironment in Buto during the Graeco-Roman and Byzantine times. The discovery of a Roman storage building for foodstuffs such as grains, cereals and perhaps products contained in amphorae extends this approach.

In this paper, we will present the last results of our excavations between 2016 to 2019 (Fig. 1) showing evidence of a large storage building of the Early Roman period on the top of the Kom A

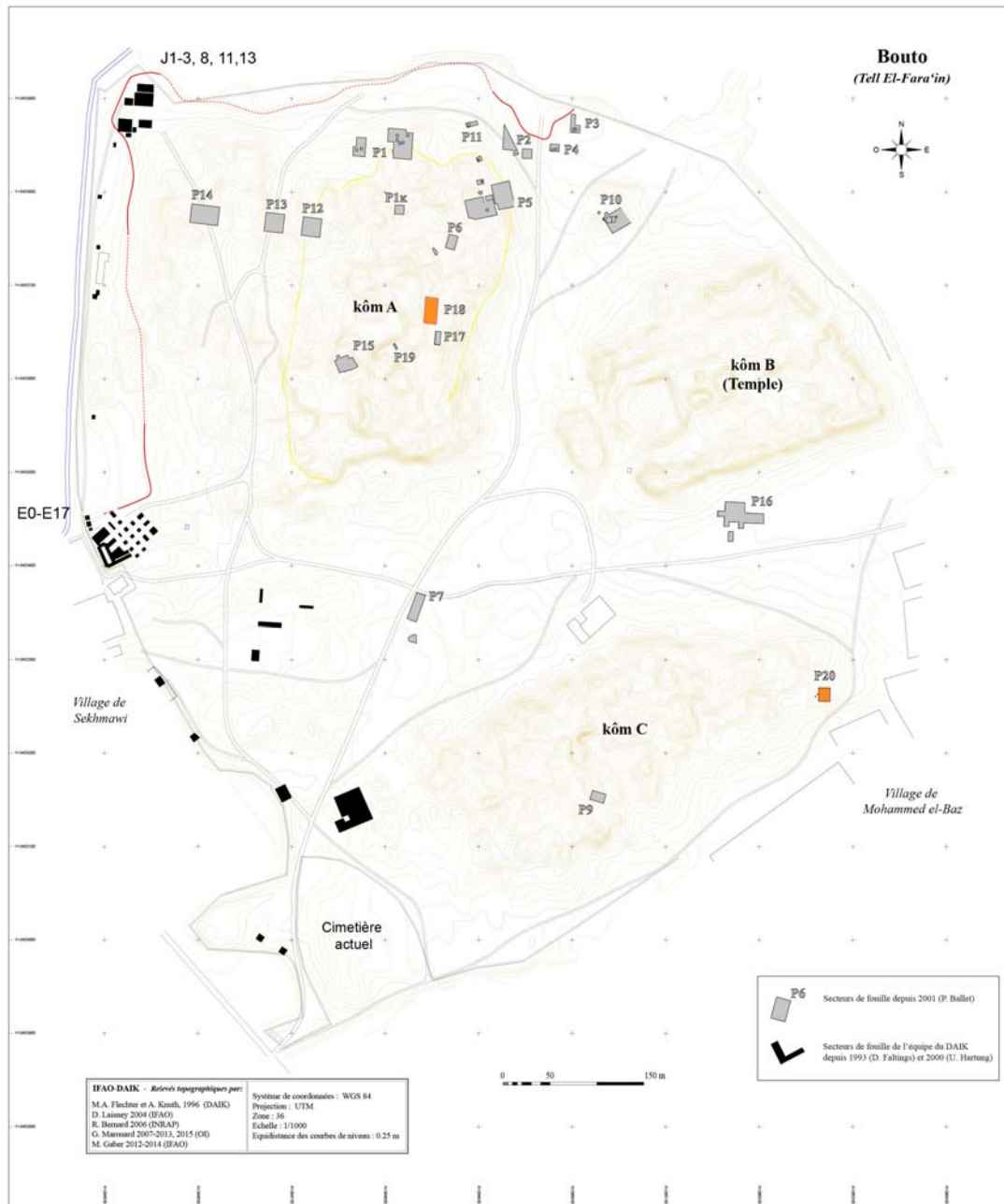


Figure 1. General map of Buto, with Sectors P18 and P20 in orange.

(sector P18), a very rare kind of economic structure in the Delta in Graeco-Roman times. The other sector (P20), on the eastern part of the Kom C, is occupied by a pottery workshop for the manufacture of tableware and common wares, and dates from the Ptolemaic period, revealing ventilation techniques for the furnace in the lower chamber of a kiln, and new pottery types, different from the mainly black ware discovered by the Egypt Exploration Society in the 1960s.

## 2. Previous Work in Buto (2010-2016)

A short introduction is necessary to sum up our previous works concerning the extensive studies of Buto (for surveys and excavations 2001-2006, see Ballet et alii 2019; for the previous works from 2007, the Ptolemaic houses, the Early Roman potters, the bath complex excavated by the EES in the 1960s revisited, see Lecuyot, Redon 2014). A new method of surveying and mapping,

developed by Grégory Marouard (Marouard et alii, 2019), was tested in an area of more than 11.000m<sup>2</sup> from 2010 to 2012 on the Kom A. The results show a large extension of the city during the Saite-Persian period and a progressive reduction from the early Ptolemaic period until the Byzantine/Early Islamic times, when there was a late occupation of the town confirmed by other sources, such as the Peutinger Table and the list of the bishoprics.

In 2013, diagnostic trenches (P12, P13, and P14) were carried out to gather better knowledge of the evolution of the city fringes, from the Late Period to the Early Roman times, based on a visual survey and on the magnetic survey made by T. Herbich in 2006. Sectors P14 and P13 consist of domestic buildings, dated to the Late Period. In a "tower house", three casemates, including circular mud brick silos (for similar types in Buto, see Hartung, Ballet et alii, 2003: 211-219), kept important domestic and votive material including stelae and amulets. Pottery assemblages permit the building to be dated to the last occupations from the 5th century BCE.

On the Kom C, the same method of prospection was applied but with different results: the Late Period is scarcely indicated as are the Late Roman, Byzantine and Islamic periods. The survey revealed, however, a considerable concentration of pottery dating to the Ptolemaic period and, at a lower degree, to the Early Roman period.

### **3. The top of the Kom A (Sector P18): Mutations in the functions of a neighbourhood**

Based on the results of the surveys carried out on the Kom A in 2012 and 2013, the exploration of the highest part of the Kom since 2015 and 2016, whose archaeological remains extend from the 1st century to the end of the Byzantine period and the beginning of Islam, was the focus of our work.

Excavations were recently concentrated on the central and north part of the Kom A (P15, P17 and specially P18), on the top of the hill, with larger areas and where the stratigraphy is the best preserved, in order to approach the Early and Late Roman occupations. The sector P18 covers a total area of approximately 1,200m<sup>2</sup>. During the excavation, we were able to identify four construction phases (Fig. 2), whose chronological range extends from the mid-1st century CE to the 3rd-4th century CE, and residual phases only perceptible through the pottery material dating up to the 6th or 7th century CE. These phases raise issues relating to the history and late changes in the city of Buto, but also to urban forms and functions. The most original result is the large storage building dating from the Early Roman Empire in the second phase.

#### **3.1. The Storage Building (Phase 2, 2nd Century CE)**

The four excavation seasons carried out in the ancient city of Buto from 2016 to 2019 at the top of Kom A highlighted several buildings characteristic of food stock management, agricultural production and, in particular, a food storage building containing mainly cereals. During the excavations, we have been able to identify four phases of occupation, for which the chronology extends from the middle of the 1st to the 4th century CE, according to the stratigraphic data. The storage building (Phase 2) was built on top of a first phase, which can be dated to the second half of the 1st century CE, represented by three buildings: the first (excavated in 2016) to the north-west of sector P18 was a space that may have been used for the storage of foodstuffs and their preparation, with the discovery of a limestone mortar and pottery of the setier type for the sampling and measuring of grains; the second to the north-east was discovered at the very end of the 2018 campaign and seems to correspond more to a living room; the third to the south-east was also found



Figure 2. Map of the northern part of the sector P18 (L. Mazou).

dating from the 2nd century CE, is marked by the presence of a large mud brick building, covering an area of approximately  $225\text{m}^2$  by the end of the 2019 season (building 5) (Figs. 3 - 4). at the end of the 2018 campaign and is marked by the presence of two walls preserved to a height of about 2 metres, but whose function could not be identified, as the deep excavation did not yield any significant material. The storage activity in the second phase of P18 (Mazou et alii 2019), The structure consists of imposing peripheral walls about 0.90m thick and internal bulkheads of about 0.60m in width between the storage rooms. This building contains nine spaces, which according to recent discoveries, consisted of eight rooms: four adjacent rooms constituting the east wing facing north-south (rooms 7 to 10); two forming the north wing facing east-west (rooms 15 and 16); two forming the west wing facing north-south (rooms 17 and 18); and an area in the centre, constituting a courtyard bordered by a portico, drawing a “U” shape. This type of building is to be compared with other storage facilities, particularly in the Fayum area, and more particularly in Karanis, Bakchias and Tebtynis where a similar spatial organization is noted (Husselmann 1952: 56-73; Grimal 1999: 447-566; Mathieu 2000: 443-575; Marouard 2002; Tassinari 2007: 27-44).



Figure 3. General view of the storage building (Phase 2), view to the east. (L.Mazou)



Figure 4. Plan of the storage building (Phase 2). (L. Mazou).

The rooms are approximately  $13\text{m}^2$  ( $3.55 \times 3.7\text{m}$ ) for three of them (rooms 8 to 10);  $12.5\text{m}^2$  ( $3 \times 4.15\text{m}$ ) for room 7;  $20\text{m}^2$  ( $3.6 \times 5.6\text{m}$ ) for room 16;  $17.5\text{m}^2$  ( $4.8 \times 3.65\text{m}$ ) for room 17; and  $9\text{m}^2$  ( $3.65 \times 2.5\text{m}$ ) for rooms 15 and 18. These rooms have a floor built of mud bricks, more or less well preserved depending on the parts of the building, which were supposed to have a particular function in the proper preservation of wheat grains and castor seeds. The absence of containers in the chambers suggests that the grains were stored directly above the ground or in containers made of perishable materials. For five of these rooms, the access was via small stairs with three mud brick steps. These semi-buried rooms were intended to keep some coolness inside for a better preservation of the goods. The rooms were abandoned after a fire, for the traces of the flames are visible on the floors and walls.

During the 2019 season, the chronology of events following the fire episode was clarified. It was possible to distinguish two phases of use of the granary in rooms 17 and 18, the first corresponding to the grain storage and fire phase that affected the entire building (Phase 2A). After the disaster, the storage building appears to have been partially rebuilt and reused (Phase 2B). Indeed, traces of this reconstruction have been found, particularly in the western part of the building (the area most damaged by the fire), in rooms 17 and 18. The restoration of the site is particularly visible in room 18, particularly on the north wall and the access staircase in the northeast corner. The north wall was rebuilt but of a lesser thickness, from about 0.90m to 0.60m, and the staircase leading to this room, which suffered from the fire, was lined with a new layer of brick. The rooms to the east of the building, those that suffered the least, were cleaned and reused.

The courtyard, located in the centre of the building, covers an area of approximately 40m<sup>2</sup> (L. 8.5 x 4.7m approx.). The portico mentioned above is only preserved in the eastern part of this space in parallel with rooms 9 and 10 of the storage building. The remains of this portico consist of a seating wall, about 0.90m wide, on which rest two still preserved fired brick column supports. This seating wall, rising above the circulation levels of the courtyard, was to form a kind of peripheral circulation space between the open central space (?) and the storage rooms and thus delimit the amphora or silo storage area in the centre. In its first phase of use (Phase 2A), the courtyard hosted several types of storage, including a silo composed of an imported buried amphora of unidentified type — with a large body and an opening made of bricks and lime mortar — and Egyptian A3 amphorae, semi-buried in the ground to keep them in a vertical position. In addition, the courtyard had a small low-rise quadrangular structure to the south (two mud brick foundations), whose function could not be determined. After the fire in the storage building in Phase 2A, a part of the building was restored (Phase 2B) and the first circulation and storage conditions inside the courtyard (*aulê*) (Phase 2A) were recharged by a layer of backfill over its entire surface to form a new circulation level (Phase 2B). As with rooms 17 and 18, it was not possible to identify the new functions of the building due to the lack of significant equipment.

Furthermore, the discovery of the storage building and its firing made it possible to find organic elements covering the floor of several rooms and in the silo of the courtyard (Fig. 5). Cereal



Figure 5. Left: wheat grains (G. Pollin). Right: castor seeds (L. Mazou).

and castor oil seed samples were found and transferred in 2017 and 2019 to the IFAO Materials Studies Centre for study by Mennat Allah el-Dorry, Ministry of Egyptian Antiquities, with the collaboration of Florian Jedrusiak, UMR 7041 ArScAn-GAMA, in 2019, with regard to sampling. Among the preliminary results for the first batch of selected plants (2017-2018), the majority of cereal samples are starch wheat (*Triticum dicoccum*) and, among the other plant species, castor oil (Mazou et alii 2019). The identification of *Triticum dicoccum* (with spikelets or not) is based on both the grains that have a typical hump on their backs characteristic of emmer wheat, but the

conclusive identification is based on the chaff. Thanks to the last transfer of samples now to IFAO in June 2019, some results obtained are of great importance, but it is worth remaining as a preliminary observation since only a part of the samples has so far been studied by Menna Allah el-Dorry. Nevertheless, the research already reveals the concomitance of starch wheat and durum wheat in the same contexts, which is completely new data. Indeed, it seems that *Triticum dicoccum* was replaced in Egypt by durum wheat between the Ptolemaic period and the beginning of the Roman period, which does not seem to be the case at Buto.

### 3.2. Residential Building (Phase 3, end 2nd century to beginning 3rd century CE).

The third phase of the sector P18, to the west of the excavation, corresponds to a building composed of large walls and a red brick structure, with a small water supply channel (Fig. 6). This



Figure 6. Plan of the residential building (Phase 3). (L. Mazou).

phase dates from the end of the 2nd to the beginning of the 3rd century, according to stratigraphic and ceramic data. The structure includes partially excavated rooms distributed around a central space housing a pleasure garden, bordered on the southern side by columns that can support a portico, on the same model as that found in the courtyard of the Phase 2 storage building. These supports, in baked bricks, intended to receive a light structure, were connected by a low wall or a mud brick foundation cut by two buildings belonging to the fourth phase. The whole is currently identified as a residential building. In 2018, a level of destruction of the residential building, consisting of numerous decorated cornice fragments and painted plaster fragments (blue, yellow,

green and red), most certainly related to the interior decoration, was discovered in the street space bordering the building west of sector P18.

In 2019, a number of amphorae placed in the ground along the central portico and in room 14 in the western part of the building were uncovered, indicating that the storage function in this area had continued. These amphorae reflect the diversity of storage practices in this sector and in particular the storage methods used in a space that seems residential at first sight.

This discovery, combining the central space with its ornamental garden, portico, decorated cornice fragments and painted plaster fragments, indicates the presence of a rich house in this area, perhaps a kind of house organized around an open central area, such as a courtyard bordered by a peristyle. It will be necessary to continue to investigate this excavation area in order to fully understand the organization, distribution and function of the rooms in this house.

### **3.3 The Copper Metallurgical Workshop Area (Intermediate phase between Phases 3 and 4, 3rd century CE).**

In 2019, investigations continued in the copper metallurgy workshop area uncovered in 2017 and 2018. The discovery of workshop dump areas at the east side of the Phase 4 East Building (Building 2), as indicated by the presence of a greenish substrate in the corners of a small adjoining structure leaning upon it and bounded by mud brick walls, showed that metallurgical activity may have carried on until this last phase of occupation and, according to stratigraphic data, it is possible to give a time range extending from the 3rd to the 4th or 5th century CE (Fig. 2).

The different copper working layers correspond to working levels (copper balls and drops), emptying foundry furnaces, and thick layers of ash and workshop waste levels (ash, crucible pieces, and moulds and copper alloy fragments). Further excavation in the metallurgical workshop area (discovered in 2017 and 2018) completed the typology of material culture related to metallurgy activity. There are now two types of fireplaces, one reusing the space of an old domestic oven and the other in the form of a pit filled with ashes (Fig. 7).



Figure 7. Photogrammetric image of the metallurgical fireplace (L. Mazou) and an example of a crucible for copper (G. Pollin).

The first type of hearth corresponds to a small domestic circular furnace used and probably related to the use of Phase 3. The hearth consists of a fireplace made of a mud brick wall topped by a kind of ceramic "draft shield", added during its transformation into a metallurgical furnace, and a ventilation pipe made of a neck of late Egyptian amphora (AE3T) that was placed in the upper part of the furnace. The use of the furnace for copper smelting was to the south of the area. It should be noted, however, that the natural ventilation system does not appear to have contributed to the melting of copper, but would most certainly be related to the first use of the structure as a domestic fireplace. Indeed, ventilation does not seem to have been practical or very efficient for raising the temperature of copper. At most, the "pipe" could have been used as a guide for the installation of a

nozzle, but it would seem that this hypothesis should also be rejected because of the length required by such a nozzle. In addition, this ventilation pipe was filled with fine ash that completely blocked it. In addition, no nozzle remains have yet been discovered on the site.

The second type of fireplace is a simple pit about 0.30m deep dug in a semi-circle against the levelling of a Phase 3 wall. The choice of location could be justified by the pragmatic use of the wall levelling as a support for the ventilation system, allowing the copper to rise in temperature. The pit was filled with homogeneous fine ash containing some melted residues — balls and drops of copper. This homogeneity suggests that the filling was only intended to support the crucibles and that the moulds could also be held there when the metal was poured. In addition, the pit, which shows no trace of reddish colour or any trace of fire, was not the heat source necessary for melting copper, which corroborates the results and observations obtained during the archaeological experiments at the polymetallurgical platform in Melle mining site in France (Téreygeol, Mazou 2019: 165-179). In addition, considering the presence of a mobile ventilation system based on the levelling of the Phase 3 building, the smelter had to work towards the north/north-east, which explains the presence of workshop waste in this direction, that is the ash, used crucibles, copper beads and droplets, as the smelter removed the waste away from the work area.

#### **3.4. Residential Buildings (Phase 4, 3rd-4th Century CE)**

The fourth phase corresponds to the construction of two buildings on either side of a street or an open area (Fig. 2), but it is impossible, in the state of our researches, to determine their functions. Nevertheless, the excavation of the filling of a space between two thick walls allowed us to discover the presence of cellars in a kind of corridor or narrow passage, that contained ceramics for cooking, which contained animal residues, and buried amphorae in the floor. These elements suggest that the building also contained storage spaces, as in the Phases 2 and 3. Was this area dedicated to storage or an economic function in the second phase and the fourth phase? The evidence for the fourth phase is not sufficient to be sure at the moment, but a large amount of Egyptian and imported amphorae found around the area could confirm these hypotheses. Furthermore, the receipt of amphorae from the Western and Eastern Mediterranean during Phases 2 to 4 (Tunisia, Tripolitania, Cilicia, Pamphilia, Cnidos, Creta, Gaza) reaffirm Buto's place in the distribution network of imported food products, and which can be inferred legitimately in this sector.

#### **3.5. Concluding remarks about Sector P18**

The excavation of the Early Roman storage building (Phase 2) made it possible to clear an open space bordered by porticoes, which corresponds to the *aulai* (courtyard) of the Greek papyri, as well as amphorae placed in the ground, which shows the relative diversity of storage methods within the same complex. If the area retained a storage function in the second and fourth phase, it should be noted that the mode of packaging of food evolved from bulk storage to storage in amphorae and small underground spaces. The change of storage mode could indicate the modification of the use of the neighbourhood, passing from collective storage place to a dwelling place with individual food reserves. It is difficult to know if the storage building belonged to the state or to a private owner and if the cereals were distributed for local consumption or for trade (short or long distance 'trade?'). Its location is also surprising, as the area is far from the lower levels of the city. The presence of many Egyptian and imported amphorae in this part of the city seems to confirm the hypothesis of the persistence of the storage function in the district. In addition, the reception of amphorae from the

western and eastern Mediterranean is remarkable in Phases 2 to 4, legitimately establishing the place of Buto in the distribution network of imported food. But another document sheds some light on the local or regional supply of Buto, at least, in wine. In May 2017, an ostrakon was found, dated from the 3rd century CE by Jean-Luc Fournet (Mazou et alii 2019). A donkey belonging to a certain Paesis is recorded as bringing 8 amphorae, with 2 donkeys, during a third 'turn' (journey). Fournet suggests that this document was written in the place of the production of a wine, probably not far from Buto. For the moment, however, we have no trace of a vineyard in the Buto area, nor kiln for amphora making (*keramion*).

On the eastern side of the storage building, the excavation of the secondary metallurgy workshop discovered in 2017 continued and another manufacturing area, located in its immediate surroundings, was uncovered. Following these results, we know that Sector P18 hosted several, small copper working workshops, which appear to be concentrated in the eastern and western part of sector P18 and operated between the third and fourth phases or even beyond. Could this production of copper objects in workshops be related to the recycling, among other things, of Phases 2 and 3 structural materials after their abandonment or destruction? The results of Florian Tereygeol's (CNRS, UMR 5060 IRAMAT-LMC) analysis of metal residues seem to support the latter hypothesis, because the copper waste recovered would correspond to the recovery of elements intended for recasting. It is now known that, among the moulds, some of them were intended for the manufacture of containers (pots, dishes), as well as small tools.

The later occupancy levels (Phases 3 and 4), which can be dated to the 3rd century or even the beginning of the 4th century CE, correspond to residential functions, with buildings being bordered by traffic routes.

### **3. Kilns and Workshop Activity on the East of Kom C (Sector P20)**

Following systematic surveys carried out in 2014 and 2015 on Kom C and in an attempt to locate workshops from the Ptolemaic period, in particular those producing black fine ceramics, a preliminary exploration of the south-eastern part of Kom C was undertaken in 2016, where the remains of levelled ovens and some overburden were exposed. From 2016, on the eastern border of Kom C, a whole area was devoted to industrial ceramic activities during the Ptolemaic period, probably in the 2nd century BCE. The finding confirms the importance of Buto during this period and its long activity for pottery production.

#### **3.1. Location and Objectives**

Sector P20 is located at the extreme eastern part of Kom C, on the top of a little mound, at the border north of the wall surrounding the site, near the village of Mohamed el-Baz (Figs. 1 and 8).

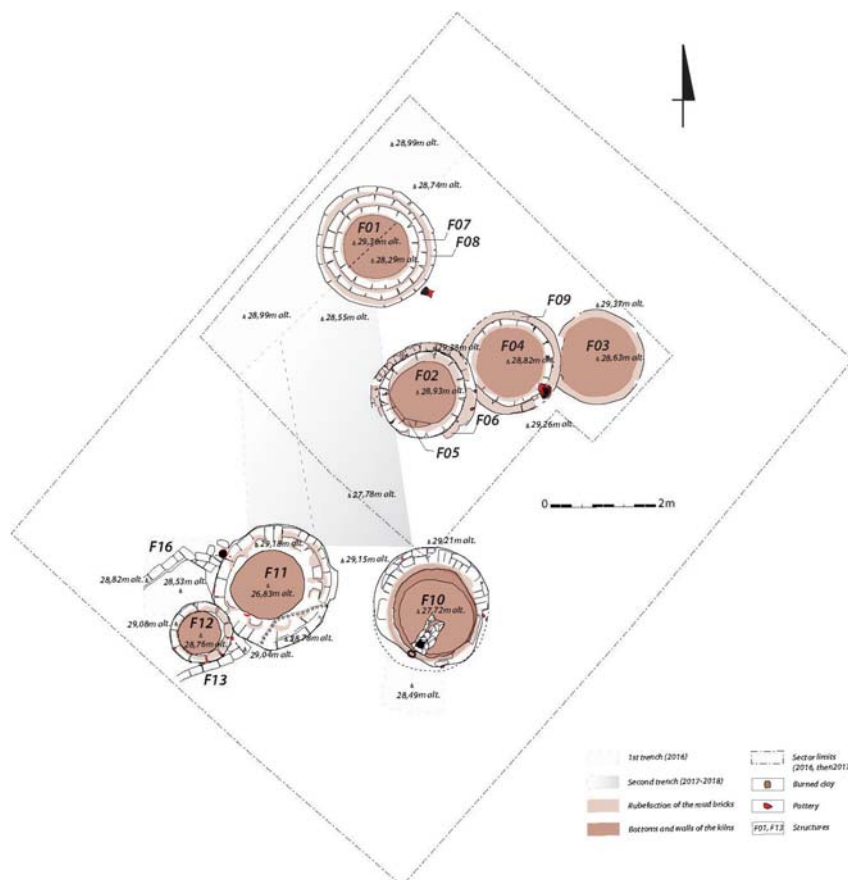
The area was surveyed in 2016, and the presence of Ptolemaic kilns and ceramic workshop was confirmed with a first test excavation (initial soil removal and trench) in 2016. In 2017, the sector was extended (37m<sup>2</sup> to 130m<sup>2</sup>) and a new trench (4 x 3m) was opened to understand further the development of spatial organization of the structures, the ceramic production and the duration of occupancy of the area. Therefore, the aim of the 2018 intervention, was to concentrate the study on production — the pottery study is being carried out by Rabea Reimann, Cologne University/ Paris Nanterre University — and achieved the excavation of the firing structures, while the main trench was extended deeper. At the end of the work, the southeastern part of Kom C was surveyed by foot in order to supplement the work and to prepare future interventions.

Figure 8. General view of Sector P20 to the North (R. Séguier).



### 3.2. The Workshops from the Middle Ptolemaic Period (3rd–2nd Century BC)

The excavation of Sector P20 confirmed the presence of Ptolemaic ceramic production (3rd–2nd BC). A total of twelve kilns within eight separate structures were discovered, separated into three distinct zones (Fig. 9): the area of the first trench with the superimposed kilns F01, F07 and F08; the eastern area with a set of kilns aligned from north-east to south-east, namely F03, F04/F09, F02/F06/F05; and the south area, with the largest kilns F10–F11 and the smallest one F12.



Sector P20 - Location of the structures (campaigns 2016-2018).  
From photogrammetric work and hand drawings (R. Séguier).

Figure 9. Plan of Sector P20. (R. Séguier).

<b>Kiln</b>	<b>F01</b>	<b>F02</b>	<b>F03</b>	<b>F04</b>	<b>F05</b>	<b>F06</b>
Relation	F07/F08	F06	-	F09	-	F02
External diameter	1.60m	1.65-1.70m	1.85-1.90m	1.79m	unknown	2m
Internal diameter	1.30m	1.25-1.30m	0.70m	0.50m	0.10m	0.30m
Height of preservation	0.20m	0.30m	0.70m	0.50m	0.10m	0.30m
Mud brick dimensions	32-31x18-17cm	36-31x18-17cm	32-30x16-14x12-11cm	36-33x17-15cm	30-29x14x10.5cm	31-28x16-15cm
Ventilation system	unknown	-	-	Pipe D.22-20cm	unknown	0

<b>Kiln</b>	<b>F07</b>	<b>F08</b>	<b>F09</b>	<b>F10</b>	<b>F11</b>	<b>F12</b>
Relation	F01/F08	F01/F07	F04	-	-	-
External diameter	2.00m	2.25m	1.95-2.00m	2.10m	2.30m	1.20m
Internal diameter	1.65m	2.05m	1.70m	1.60m	1.80m	0.90m
Height of preservation	1m	1m	unknown	1.45m	2.35m	0.30m
Mud brick dimensions	36-25x17-15cm	35-25x17-13x10cm	30-28x16-15x11-9cm	32-30x18-15cm	33-32x18cm	30x17-15cm
Ventilation system	-	Pipe D.15/14-12cm	Pipe D. 22/20cm	Mud brick channel	Pipe D.18/13cm	Unknown

Table 1. Comparison of the features of the kilns in Sector P20.

To summarise the characteristics of the kilns (Table 1): all of the kilns were built in mud-bricks, of medium modules, the walls of the kilns more or less burned (from 20mm thickness to completely) and made with one width of brick (except F10-F11, with two rows of bricks). The high technical status of the kilns is marked by the use of some pipes and a built channel (F10) for the ventilation system. Only the lower firing chambers were preserved, that attest to the strong erosion of the sector.

In spite of the low-level of preservation, the second trench allowed us to understand development from north to south of the workshops. The upper levels were mainly dedicated to the waste from the production, for example ash, slag, debris cleared from firing chambers and overfired ceramics, that was deposited from the north. The foundations of the kilns followed the same north-south slope, giving us their relative chronology. There was also some evidence for earlier occupancy, of the site with the presence of worked clay and mud brick fragments, emphasising the distance away from the heart of the workshops and the suburban atmosphere of the area.

Coming back to the firing structures, F10 and F11 are the most relevant and offer important records. Their fillings give precious information about the daily life of the sector. They were, in part,

employed as dump, containing common pottery, animal bones and some built material, but also contained material from ceramic production with unfired pottery in a good state of preservation and raw material (clay). The bottom of the firing chambers was full of ashy remains, which will provide data about the combustible material used in the kilns (the study of the samples is still in process). In addition, F10 contained the most ancient built ventilation system (mud brick channel) known for this period in Buto and F11 with its 2.30m external diameter and 2.35m height, had a remarkable state of preservation for the area, to just under the level of the oven base. Furthermore, located to the north-west, the entrance (0.50 x 0.65m) of the firing chamber was discovered, associated with a retaining wall (F16), allowing the delimitation of the cooking activity in oven F13 to the south. Finally, the kiln F12 was a small structure (1.20m exterior diameter), with only 0.30m depth, perhaps used for a small part of the production process or another purpose. It is the most recent structure in the area, leaning partially against the wall F13 and cutting the wall of kiln F11.

### **3.3. Concluding Remarks about Sector P20**

The eastern border of Kom C could be an area devoted to industrial ceramic activities during the Ptolemaic period. Over a relatively small surface area (ca 40m<sup>2</sup>), several ovens, whose furnace chamber is preserved, as well as the rows of the firing chamber in some cases, operated in all likelihood simultaneously. At least, the time differences between the operation of the different units are very short. Indeed, the presence of the kilns testifies to the intense nature of the occupation of the area. These first results from this area enlighten us about the local ceramic productions, confirming the role and importance of Buto during Ptolemaic times. The production consists of fine and common ceramics of relatively good quality, similar to those observed in the residential areas (sectors P1, P5), and which can be dated to the middle of the Ptolemaic phase, around the 2nd century BC. The area is not so far from Sector P16 excavated in 2015 (a late Ptolemaic workshop pottery), which is located outside the enclosure wall of the Wadjet temple.

All the results linked to ceramic production confirm Buto's position as a major ceramic production centre throughout the Graeco-Roman period, covering all needs and phases of occupation thanks to the manufacture of diversified categories of vessel. They also indicate the existence of industrial zones clearly dedicated to these activities, in the north and in the south-east of the site.

## **4. General Conclusion**

The discoveries of a large storage building as well as a copper metallurgy workshop are totally new to Buto. With regard to the storage building in particular, it should be noted that this type of agricultural and economic building has rarely been found in Egypt. The different areas identified in which the distribution of cereals is important, correspond more to a collective or public structure, whose excavations have already revealed the presence of at least 8 rooms and a central space, than to a building with a private character. According to the papyrological evidences about this kind of structure in the Ptolemaic and Roman times in Egypt, it could be designed as a *thesauros* or storage facility. In addition to the discovery of seeds from oleaginous plants or beans from the floor of the building, as well as cereal grains, it is worth recalling the abundance of imports of amphorae in the disturbed surface levels from several major regions of the Mediterranean.

For the activity of copper metallurgy, we were able to link this workshop to an intermediate phase between Phase 3 and Phase 4, at a time when the Phase 3 buildings were abandoned and

before the construction of the Phase 4 buildings. To conclude, this discovery reveals the whole process of bronze casting dating from the 3rd century, using the lost wax technique. The raw metal could have come from looting or reuse of rubbish on site, but the quality of moulds confirms the presence of a professional smelting team.

The food storage activity as well as the significant number of imported amphorae and the activity of copper metallurgy, attested by the discovery of numerous crucibles, cast copper alloy scrap and a hearth, serve two purposes. On the one hand they demonstrate Buto's role in the medium and long-distance trade of its local agricultural resources; on the other hand, they shed light on the diversity of artisanal practices from the imperial to Byzantine periods, as also the Kom C has shown for the pottery. In fact, concerning the Kom C, its eastern border, excavated from 2016 to 2018, could be an area devoted to industrial ceramic activities during the Ptolemaic period (probably from the middle of this period). Indeed, the presence of the kilns testifies to the intense nature of the occupation. These first results from this area enlighten us about the local ceramic production (fine and common wares), confirming the role and importance of Buto during Ptolemaic times.

For the next years, our program will concern first the extension of the excavations between Sectors P18 and P19 on the top of the Kom A. Secondly, in the context of the survey mission, a preliminary investigation on the cemetery zone was carried out in 2019, in three different areas located in the west of Kom A of Buto (P21, P22 and P23). The choice of these areas was determined by the survey previously made by the mission and revealing a dense presence of coffins. The concentrations of coffin fragments are mainly situated on the heights of the area surveyed. We should mention, through a surface cleaning in Sector P22, the discovery of a collective tomb, built in red bricks, with a relatively large entrance and two rooms, including some coffins.

This first systematic exploration of the west necropolis will allow us to engage with a further exploration of this kind of occupation, partly investigated on the west fringe by the Deutsches Archäologisches Institut in 2002.

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# THE RAILWAY LINE FROM BUEILI TO SIDI GHAZI, KAFR EL-SHEIKH IMPACT ON TELL MUTUBIS AND TELL SHEIKH IBRAHIM

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خط سكة حديد (البصيلي - سيدى غازى) وتأثيره على تل مطوبس والشيخ إبراهيم

أدى مد وإنشاء خطوط السكك الحديدية على المواقع الأثرية بإستخراج القطع الأثرية بطريقة عشوائية غير علمية مع عدم ربط الطبقات الأثرية والذي أدى إلى عدم ربط الأحداث وفهم طبيعة الموقع المدمر بواسطة السكك الحديدية وتدمير جزء كبير من تراثنا الثقافى.



Figure 1: Train passing by Tell Mutubis.

## 1. Introduction (Fig. 1)

The construction and laying of railways on archaeological sites has had some negative effects on archaeological sites and resulted in the extraction of artifacts in a random, non-scientific manner, with no link between the archaeological layers. The damage to the stratigraphy led to a failure to link the chronology of the sites to each other and, more broadly, to understand the nature of the site destroyed by the railway line and its construction.

We can compare the two archaeological sites of Tell Mutubis (Kom el-Ahmar) and Tell Sheikh Ibrahim in Kafr el-Sheikh governorate, which were in the path of a proposed extension of a railway line (Fig. 2), the construction of which was implemented without archaeological recording in the past. The general plan for the extension and the establishment of a railway link between Busseili and Sidi Ghazi was made in 1931 and it would pass by some archaeological sites. Eventually a line was implemented at the site of Tell Mutubis, and, although the project was stopped because of the revolution of 1952, it was estimated that the line would also have passed the site of Sheikh Ibrahim. If this had happened, it would have caused the destruction of the archaeological strata and a very large part of the tell-site of Sheikh Ibrahim. In fact, the project at Tell Mutubis caused a large part of the hill of Mutubis, which is of great importance, to be destroyed.



Figure 2: Satellite image of Tell Mutubis and the city of Metoubes, showing the railway line to the south of the site and Tell Sheikh Ibrahim without railway line. (Image © Google Earth).

## 2. Tell Mutubis

A survey of the site of Tell Mutubis was conducted by the Mission of the University of Durham and the Egyptian Exploration Society between 2001-2016 (Wilson and Grigoropoulos 2009: 195-201). The archaeological survey of the site revealed the existence of a number of glass and pottery kilns, substantial mud- and red-brick buildings and housing for both elite and lower classes. The last date of the site seems to be the eighth century CE when the population moved to another place, perhaps to the heart of the modern city of Fuwa, the new city of Mutubis and villages in the surrounding area.



Figure 3: Amphoras of Egyptian Type 7 from the 1950s excavation at Tell Mutubis.

Through the research and study of some of the artifacts extracted by the random rescue excavations in the late 1950s when the project to extend and establish a railway between Buseili and Sidi Ghazi was begun, further information has come to light about the site. The study revealed the presence of amphorae and pottery dating to the Late Roman period, including complete examples of Gazan amphorae, Amphore égyptienne 7 (Dixneuf 2011: 164-165, Fig. 155, type 7-1.3 5th-8th century and 167-8, Fig. 160, type 7-1.8, 7th-8th century) (Fig. 3). Other material included a bronze stand that was used to carry an oil lamp in the Late Roman period (Fig. 4).

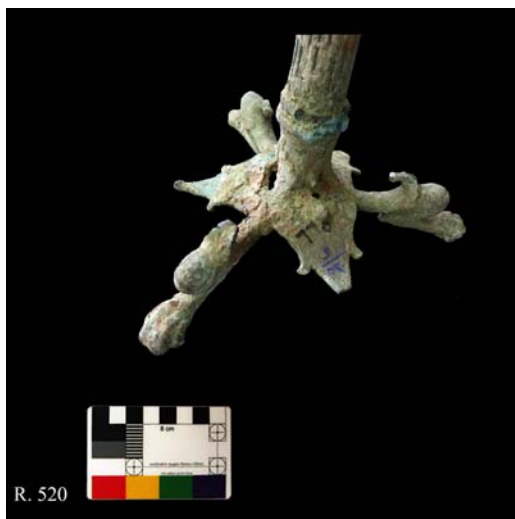


Figure 4: Ornate foot of a bronze lamp stand, Tell Mutubis.

The archaeological study is being completed within the approval of the Standing Committee of the Egyptian Antiquities approving the photography and study of the pieces extracted from Tell Mutubis within the registration of the doctorate degree at Tanta University under the supervision of Prof. Dr. Abdul Hamid Saad Azab.

If we apply the risk analysis process (UNESCO 2010: 4, fig.4) for the preservation of cultural heritage between generations, we know that the extension and establishment of railways on archaeological sites is dangerous and leads to destruction: *Heritage Equation: Source + Weaknesses = Risk*

Application to Tell Mutubis:

*establishment of a railway on an archaeological site + uninformed decision making and cultural weakness = the destruction of a part of the archaeological site*

Without doubt, the passage of the railway line at Tell Mutubis destroyed up to 10% of the site, including part of the main mound, but it was necessary to create advantages for the local people and others in the area. The railway line provides easy and safe access to the region and to the site from Alexandria and Kafr El-Sheikh and therefore has the potential to expand local development and it could activate internal and external tourism by bringing visitors to the area.

The city of Metoubes is 3km away from the site and has the marketing services required for tourism. A Mutubis Museum within the site or at the city of Mutubis could be part of the revitalization of the area through tourism heritage in the rural areas adjacent to the site and engage with community participation to help to maintain and protect the site for the future. The railway line, therefore, can also have a positive impact that is waiting to be developed.

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# RECONSTRUCTING THE TANGLED ANCIENT WATERSCAPE OF THE NORTHWESTERN DELTA

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## Abstract

The article discusses the process of attempting to reconstruct the ancient landscape, in particular the ancient watercourses, in the region of Buto (Tell el-Fara'in) in the northwestern delta. This is presented in an arch spanning the geographic and archaeological data, the initial hypothesis regarding the ancient water system based on this data, a description of the methods used to verify the hypothesis, and reaching the current conclusion by means of new methods. The modern landscape provides no clues to the shape of the ancient surface; therefore, a linear distribution pattern of ancient settlements was taken as the basis for the hypothesis on the course of an ancient Nile branch. This paper is, on the one hand, a presentation of methods, discussing the interpretation of historic maps, the use of textual sources, auger coring, and the analysis of a satellite based Digital Elevation map. On the other hand, the hypothesis, and its ultimate falsification, demonstrate how the landscape of the Delta is still conceptualized based on certain pre-conceived ideas of what the ancient delta looked like. The new results hope to contribute to a rising awareness of the diversity of the ancient Delta waterscape.

## ملخص

يناقش المقال عملية محاولة إعادة بناء المناظر الطبيعية القديمة، ولا سيما مجاري المياه القديمة، في منطقة بوتو (تل الفراعين) في شمال غرب الدلتا. ويتم تقديم هذا في قوس يشمل البيانات الجغرافية والأثرية، ومعرفة الفرضية الأولية المتعلقة بنظام المياه القديم بناءً على هذه البيانات، ووصف للطرق المستخدمة للتحقق من الفرضية، والوصول إلى الاستنتاج الحالي بوسائل جديدة. لا تقدم المناظر الطبيعية الحديثة أي أدلة على شكل السطح القديم؛ لذلك، تم أخذ نمط التوزيع الخطي للمستوطنات القديمة كأساس للفرضية على مسار فرع النيل القديم. تتناول هذه الورقة البحثية، من ناحية، عرض للطرق، وتناقش تفسير الخرائط التاريخية، واستخدام المصادر النصية، وحفر المتقارب، وتحليل خريطة الارتفاع الرقمي المعتمدة على القمر الصناعي. من ناحية أخرى، توضح الفرضية، وتزويرها النهائي، كيف أن منظر الدلتا لا يزال يتم تصويره على أساس بعض الأفكار المسبقة عن شكل الدلتا القديمة. وتأمل النتائج الجديدة في المساهمة في زيادة الوعي بتنوع مناظر دلتا المائية القديمة.

## 1. Introduction

In the course of the research project "Settlement networks and landscape archaeology around Buto (Tell el-Fara'in)", conducted under the auspices of the German Archaeological Institute Cairo, and in collaboration with Jürgen Wunderlich and Andreas Ginau of the department of Geography of the Goethe University of Frankfurt am Main, the region surrounding the ancient city of Buto (Tell el-Fara'in) in the northwestern delta, governorate of Kafr el-Shaikh, is being investigated (Schiestl 2012a, b, 2015, 2016, 2017, 2018, 2019). Two inherently connected issues are the central research questions: the settlement history and the changes of the ancient landscape in this region. In the following, the focus will lie on the second issue, the question of the ancient landscape, in particular how to tackle the reconstruction of former Nile branches. Very little was known about the ancient regional watercourses at the outset of the project. It is assumed that a city of such importance as

early Buto (Tell el-Fara'in) must have been located on a Nile branch in the 4th and early 3rd millennia BCE when it flourished as an urban centre, but such a branch has not been identified to date. Other aspects of the ancient landscape around Buto are better understood. Based on the geoarchaeological investigations of Jürgen Wunderlich in the 1980s (Wunderlich 1989) it had become clear that the southern edge of a lagoonal zone, possibly a predecessor of the later Burullus lake, reached far south, as far as about 4km north of Buto. This landscape setting applied to Predynastic and Early Dynastic Buto. Eventually, in the course of the 3rd and 2nd millennia, but not yet understood precisely when, the lagoonal zone retreated north.

Archaeologically, only the central site of Buto has been excavated systematically and, since the early 1980s, the settlement of Buto is being investigated by a mission of the German Archeological Institute Cairo (see Hartung et al. 2016 with references to earlier reports). Different surveys have touched upon the region around Buto in the past (Ballet & von der Way 1993; Wilson & Grigoriopoulos 2009; Wilson 2012). In 2010 a new research project of the German Archaeological Institute Cairo was initiated to investigate the region systematically (Fig. 1).

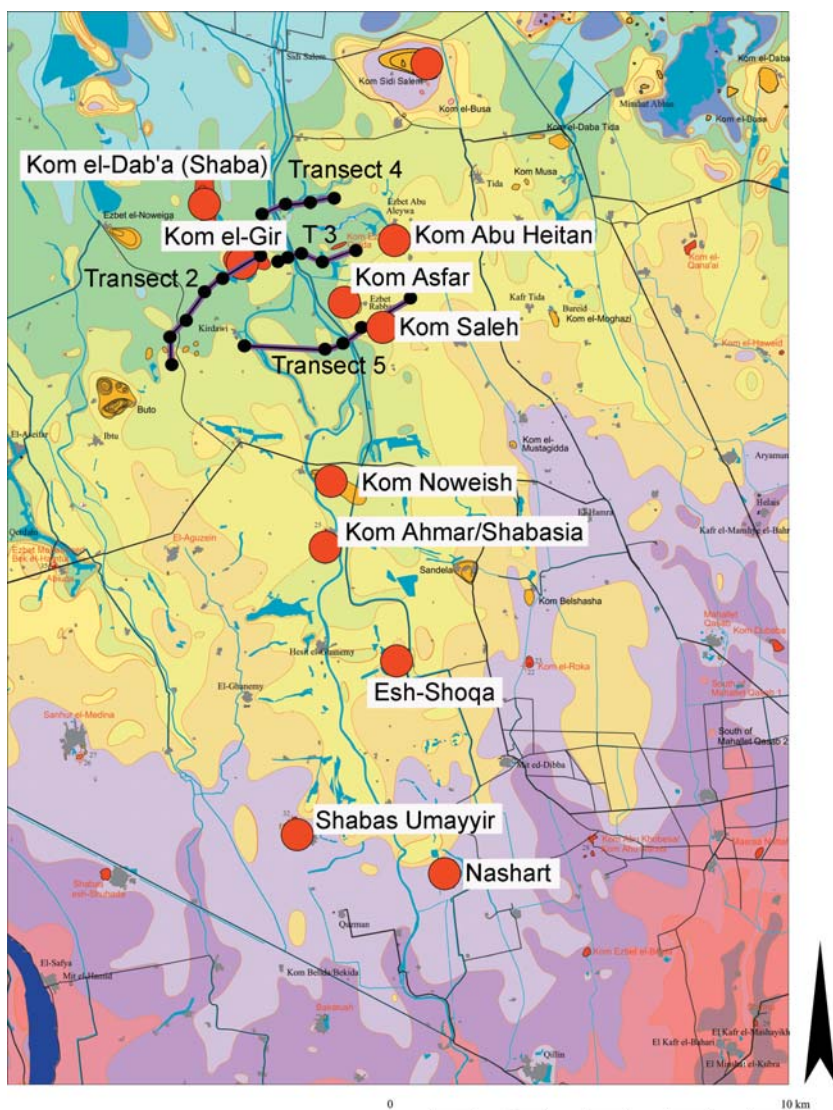


Figure 1. Survey area showing the auger core transects T2-5. Map based on topographic information of Survey of Egypt maps, series 1920s/30s, 1:25,000. The change of colour represents a change of elevation of 50cm between bordering areas. The sites marked by red dots formed the basis for the hypothesis of the Nile branch reconstruction.

## 2. The Data

From Kom el-Dab'a (known locally as Kom el-Dab'a-Shaba, SCA 090105, EES 332) in the north to Nashart in the south, a distance of about 17km as the crow flies, ten ancient sites were identified, which lie east and west of the modern Bahr Nashart water system (Fig. 2).



Figure 2. Bahr Nashart, near auger core G 26, transect 5, southeast of Kom Asfar.

The sites were located based on previous publications and historic maps, primarily using the El-Falaki map of 1872, the Survey of Egypt editions from the 1900s/10s (1:50.000) and 1920s/30s (1:25.000). Satellite imagery, both recent Google Earth images and Corona data from 1968, was applied to precisely locate and define the sites. This was particularly important in the case of levelled sites, such as Kom Saleh (EES 278; Figs. 1, 6, Schiestl 2012a, fig. 3a and b) and completely overbuilt sites, such as Kom Ahmar/Shabasia (Figs. 1, 6, Schiestl 2012b) and Nashart (Schiestl 2012a). The sites were then documented by surface walking, collecting pottery sherds on the surface, and auger coring (Fig. 3). The dating of the sites is based on the dating of pottery from the surface and from the auger cores. Textual evidence on settlements, mainly providing information on later periods (e.g. Timm 1984-1992; Halm 1982), was added.

Figure 3. Mounir Maaruf preparing for auger core G 26, conducted in fields south-east of Kom Asfar.



## 3. The Hypothesis

The distribution of the sites seemed to follow a roughly linear pattern (Fig. 1). Connecting the settlements, a slightly meandering ancient watercourse could be suggested as the linking feature. In some cases, the sites are immediately on the banks of the modern Bahr Nashart, for example, Kom

Ahmar/Shabasia and Kom Noweish. Mostly, however, they are at a distance between 500m and 3km from the modern watercourse(s).

Linear settlement distribution is defined as the development of settlements along a natural or man-made linear feature (Nierlich 1962). Rivers are the most frequent natural feature encouraging linear settlement development, roads and train lines being common man-made factors. The Nile valley is a good example, where two linear features are crucial: the river itself and the edges of the deserts bordering the valley to its east and west. The linear development can be determined by an interplay of natural constraining factors and opportunities that the river provides, such as a source of fresh water, a mode of communication and a route of transport. The Delta provides a different topographic setting; similar distribution patterns can, however, be observed. A case in point is the Bahr Saghir in the governorate of Dakahlia in the eastern Delta, which Cooper has shown to be a remnant of the late antique Tinnis branch (Cooper 2014: 78-89).



Figure 4. Canal d'Ashmoûn, modern Bahr Saghir, in the governorate of Dakahlia in the eastern Nile Delta, showing the linear development of settlements along the channel. Map of the atlas of the *Description de l'Égypte* (Jacotin, & Jomard (eds) 1828, fouille 35).

Fig. 4 shows this watercourse on the early 19th century *Description de l'Égypte* map where it is called Ashmoûn or Mansurah canal, densely flanked by settlements and a cultivated hinterland on both sides, which in turn is bordered by non-settled areas: the Daqalieh plain, a seasonally flooded area in the south, and the Manzala lake in the north. In this case, both an ancient river course, modified, and old settlements, albeit overbuilt, have survived. In the dynamic waterscape of the Nile delta, watercourses shift laterally or silt up and eventually disappear. Ancient settlements originally bordering this watercourse may remain visible or be detectable on the modern surface, thus creating a sort of chain linking an invisible river branch. They thus can form the basis for reconstructing the course of a defunct river. Such “riverbank settlements” (Uferrandsiedlungen) played an important role in the reconstruction of the Pelusiatic branch of the Nile by Bietak (1975: 81).

Along the Nile and its distributaries, building settlements on riverbanks was primarily due to specific topographic considerations connected to the annual Nile flood. In order for settlements to remain above the flood line of the annual inundation, they needed to be built on elevated land. Two main options were available in the delta: natural sandy elevations, so called *geziras* or turtle backs, and alluvial levees. *Geziras* (Butzer 1976, Wunderlich 1989), are found in different regions of the delta in varying amounts. While frequent in the central and north-eastern delta (Butzer 1976: fig. 4; van den Brink 1986; 1993: 282), this feature is less well represented in the northwestern Delta.

In the area under discussion only Buto (Tell el-Fara'in) and Kom Asfar are verifiably built on geziras. The second option, alluvial levees, not only provides a safe building ground, but in the case of active Nile branches, the settlements are directly linked to a water course, supplying fresh water and a transportation route. There is evidence for both settlement options from the earliest settlements in the region, as shown by the predynastic levee-settlements of Ezbet Qerdahi and Konaiset el-Sardusi near Buto (Wunderlich, von der Way, Schmidt 1989; Butzer 2002: 91). The levee-settlement will, over time, become the most common type of settlement in the Delta.

#### 4. The Bahr Nashart Water System and its Topographic Setting

The hypothesis above suggested that the settlements were connected by a watercourse. Some former great Nile branches are today represented, at least in segments, in the form of modern, often unimpressive, canals. In the eastern Delta, in the region of Tell el-Dab'a/Avaris, the courses of the modern Bahr Faqus and Bahr Didamun can be identified with sections of the course of the ancient Pelusiatic branch (Bietak 1975: 81), which has been reconstructed in some parts with certainty based on hundreds of auger core drillings (Dorner 1992/3: 405; Dorner 1999, plan 1). Also, in the eastern Delta, the Bahr Muweis follows, in parts, the course of the ancient Tanitic branch (Bietak 1975: fig. 8 C). This raised the question as to whether the Bahr Nashart may, in parts, represent traces of an ancient watercourse. Since the early 20th century the Nashart system consists of two waterways: the Masraf Bahr Nashart, or in short simply Bahr Nashart, and to its east the former drain, the Masraf Nashart. While in the north of the study region, they run closely parallel to each other, separated in parts by only 50 m, in the south, between Nashart and Shabasia, they diverge quite substantially.



Figure 5. Approximate survey area, map of the atlas of *Description de l'Égypte* (Jacotin and Jomard (eds), 1828, fouille 36. If names of ancient sites in the survey area have changed, the currently used ones are added.

The earliest detailed map of the region, from the *Description de l'Égypte* (Fig. 5), shows a minor watercourse flowing roughly in the area of the Masraf Nashart drain, until about the location of Kom el-Gir. From here on it flows north in the same line as the modern parallel watercourses Bahr Nashart and Masraf Nashart. On the *Description* map, the watercourse branches off the Rosetta branch of the Nile south of El-Saffeh, modern Es-Safiya, just slightly southwest of Nashart. On the El-Falaki map of 1872, the watercourse, called Bahr Seif, takes the same course as the Bahr Nashart on the *Description* map, that is, west of the course of the drain. On a cadastral map from 1884 (Kafr Zayyat, 1:40.000) the name Nashart Canal appears for the first time. The watercourse is no longer a branch of the Rosetta branch, but emerges from the confluence of smaller canals much further south, just east of Basyun. Bietak's detailed discussion on the reconstruction of ancient Nile Delta branches, following Toussoun (1925), Ball (1942) and Shafei (1946) outlines some important methodological principles. These serve as both a helpful guide and a warning against overly simplistic attempts at drawing a connection between modern and ancient watercourses. They also shed light on some of the weaknesses of the hypothesis, which were immediately apparent. The guiding principle of ancient Nile branch reconstruction is elevation. Left and right of active Nile branches, alluvial levees formed as a result of larger sediment particles contained in the Nile flood waters being deposited close to the watercourse. Levees remain, even after a branch's activity ceases. Due to the intense modern use of the Delta, many of these features are, however, flattened. Nevertheless, they can remain detectable, albeit as only slight changes in elevation. Historic maps showing the Delta prior to intense transformation can provide valuable information. Note, for example, the prominent levees in the bottom right corner of Fig. 1, most likely associated with the Thermuthiatic branch of the Nile, or the features north of Kom Daba'a-Shaba and Kom el-Gir on the *Description de l'Égypte* map on Fig. 5. These are marked as 'dunes', but auger coring was able to verify that they are the remains of ancient levees (Ginau et al. 2019: figs. 6 – 8, see also supplementary data Transect 6). The traditional source are contour lines on topographic maps, where particular features such as elevated "tongues" form the basis for reconstruction of ancient water courses.

For the study region, in a first step, an elevation map of sorts was created, based on topographic information from the Survey of Egypt series from 1920s/30s (1:25.000), as shown in Fig. 1. The Survey of Egypt maps contain two sorts of elevation information: contour lines, generally separated by 50cm in height, and elevation points given in decimeters, usually placed at a distance of about every 300-350m. Using these maps has advantages and disadvantages. The main advantage is that they document a historic landscape which has since been transformed by intense agriculture and development of towns and infrastructure. Particularly in the northern part of the Delta, many areas at the time of the creation of the maps had not yet been drained and cultivated, thus providing a glimpse of the more natural landscape. The main disadvantage is the level of accuracy. While this edition provides by far the greatest topographic detail of the historic maps, the level of resolution is coarse by current standards. What is immediately apparent, however, is that the Bahr Nashart is not flowing in an elevated area, but to the contrary, lies mostly in a wide and shallow depression. With no traces of levees on the surface, this seemed to fundamentally contradict the principle of fluvial sedimentation in the Nile Delta. As possible explanations strong morphological changes to the surface were considered. Levees are often flattened by human activity or can also become submerged under floodplain deposits, as has been demonstrated in the eastern delta (van Wesemael 1988, figs. 4-5). This would explain the absence of a visible continuous levee structure. As the area lies far north in the Delta, it was initially considered a possibility that the shallow depression had been created by

marine transgression. There were from the beginning, however, strong morphological arguments against considering the Bahr Nashart a remnant of an ancient branch.

## 5. Dating of Sites

The sites in the Bahr Nashart area are not only connected physically, but also connected by their dates. Only one site, Kom Asfar, was founded in the early 1st millennium BC. The remaining sites are either Ptolemaic foundations (Kom el-Gir) or were mostly founded in the Roman Period (see table 1). All sites existed in the Roman and Late Roman periods. The hypothesis was thus specified: the sites were potentially linked by an ancient Nile branch, which was active in the Roman and Late Roman period.

	KDS	KG	KAH	KA	KS	KN	KA/ SHA	SHO	SH. UM A	NAS
earliest	R	P	R	TIP	R? LR	P? R	R	?	R	R
latest	LR/ EI?	LR/ EI?	LR/ EI?	LR/ EI	LR/ EI?	LR/ EI?	LR/ EI?	Med	Med	Med

KDS-Kom el-Dab'a Shaba; KG-Kom el-Gir; KAH-Kom Abu Heitan; KA-Kom Asfar; KS-Kom Saleh; KN-Kom No-weish; KA/SHA-Kom Ahmar/Shabasia; SHO-Esh Shoqa; SHA UMA-Shabas Umayyir; NAS-Nashart.

TIP-Third Intermediate Period; P – Ptolemaic Period; R-Roman Period; LR – Late Roman Period; EI-Early Islamic Period; Med-Medieval Period.

Table 1: Listing the dates of the sites, arranged from north to south, based on surface pottery and pottery from the auger cores. The dates given refer to the evidence for the earliest and the latest material.

Textual evidence can be added for the reconstruction of the regional waterscape in the Roman period. Ptolemy (mid 2nd century CE) describes the Thermuthiatic (Phermuthiatic) branch of the Nile as flowing east of Buto (Tell el-Fara'in) and west of Xois (Sakha), which is precisely the region we are dealing with (Ptolemy, 4, 5, 48-50; Stückelberger/Graßhoff 2006: 435). Sakha (Xois) is just outside the map shown on Fig.1, 3.5km east of Masraa Nattaf, in the lower right corner. It lies thus just east of very prominent elevated ridges visible in the southeast of the survey area. This feature consists of two parallel levees flanking a central depression, which marks the former riverbed of a substantial Nile branch. This most likely represents the main Thermuthiatic branch. Its northern course is, however, less clear. Within the framework of the hypothesis, the suggested ancient branch in the area of the Bahr Nashart was considered a potential side branch of the main Thermuthiatic branch.

## 6. Testing the Hypothesis

A further weakness of the hypothesis was that the proposed branch could not account for the remaining sites in the survey area. Numerous ancient sites lay beyond the “linear feature” (Fig. 1), which was, as will be demonstrated, effectively a scientific construct. In order to verify the hypothesis, a series of auger core transects were placed across the Bahr Nashart system, where, according

to the proposed theory, an ancient watercourse system and buried levees were located (Fig. 1; Ginou et al. 2019: figs. 7 and 8). The transects were oriented approximately west-east, extending from west of the modern Bahr Nashart system to the eastern side, and roughly perpendicular to the modern Bahr Nashart/Masraf Nashart courses and the presumed ancient water system. Their lengths were between 1.6 and 4.1 km. The southernmost transect, T 5, ran west-east approximately at the level of Kom Asfar and Kom Saleh, the middle transect, T 3, approximately at the level of Kom el-Gir, and transect T 4, placed the furthest north, ran approximately at the height of Kom el-Dab'a-Shaba. All in all, these three transects encompassed 17 auger cores. In some cases, the transects could be linked with older cores executed by Wunderlich in the 1980s (Wunderlich 1989). An additional transect, T 2, was placed roughly south-north spanning the area between Buto and Kom el-Gir and could be connected to transect T 3. And a further transect, T 6, was placed in the northwest, starting just north of Kom Qalyah, running west-east, and then turning south, ending just northeast of Kom Sheikh Ibrahim (see Fig. 6 below, not shown on Fig. 1, as it lies just beyond the northern edge). It cuts two of the linear structures marked on the *Description de l'Égypte* map on Fig. 5, where a second site marked as Kom el-Gir is most likely to be identified with the site currently named Kom Sheikh Ibrahim. The auger cores of transects 3 – 5 reached depths between 8 and 16m below the surface.

What emerged was evidence for numerous buried watercourses and associated levees, but dating these features and connecting them with settlements remained a challenge. Most features interpreted as ancient watercourses lay at great depths, with their bases between 7 and 11m below surface level, while the upper limit of the channels was often harder to define (Ginou et al. 2019: fig. 8). In transect 5, however, crucial stratigraphic information was provided by the fact that the watercourse lay below a peat layer, which had been dated by C14 to the 6th and 5th millennia BC by Wunderlich in the 1980s. This watercourse thus was distinctly older than the settlements under discussion and of no relevance to the reconstruction of the landscape of the Graeco-Roman period. In the area of the northwestern transect 6, the levees, marked as 'dunes' on the *Description de l'Égypte* map (Fig. 5), were still visible as subtle elevations on the surface. In the auger coring, a central riverbed could be clearly identified in the western levee (Ginou et al. 2019: fig. 8). This watercourse reached down very deep, about 17m below the surface, measuring from the top of the levee, or about 14m below sea level. It cut through the above-mentioned peat layer, and based on C14 dates and the connection of its levee to Roman settlements, this channel can be shown to have been active in the Roman period (Ginou et al. 2019: 62). In short, great depth alone does not exclude a "late" (in this case Graeco-Roman) date. In auger core G 21, placed east of Kom el-Gir and marking the end of transect 2 (Ginou et al. 2019: figs. 7-8), another channel was reached which abutted Kom el-Gir. It was covered by thick layers of settlement debris with pottery, probably colluvium of the adjacent ancient settlement. Based on the auger core evidence, these two examples were the only channels whose activity could convincingly be argued to have been roughly contemporary with the settlements of the region. No case could be made for the proposed course of a channel linking the settlements shown on Fig. 1, as postulated by the hypothesis. The hypothesis seemed thus, for the area investigated, falsified.

## 7. New Methods, New Results

New insights were eventually provided by new methods, which had not yet been available at the outset of the project. Based on a cooperation with the German Air and Space Centre and the de-

partment of Geography of the Goethe University Frankfurt, we gained access to a DEM (digital elevation model) of the region based on TandemX satellite data. The high resolution of the elevation data provided surprising results (Fig. 6).

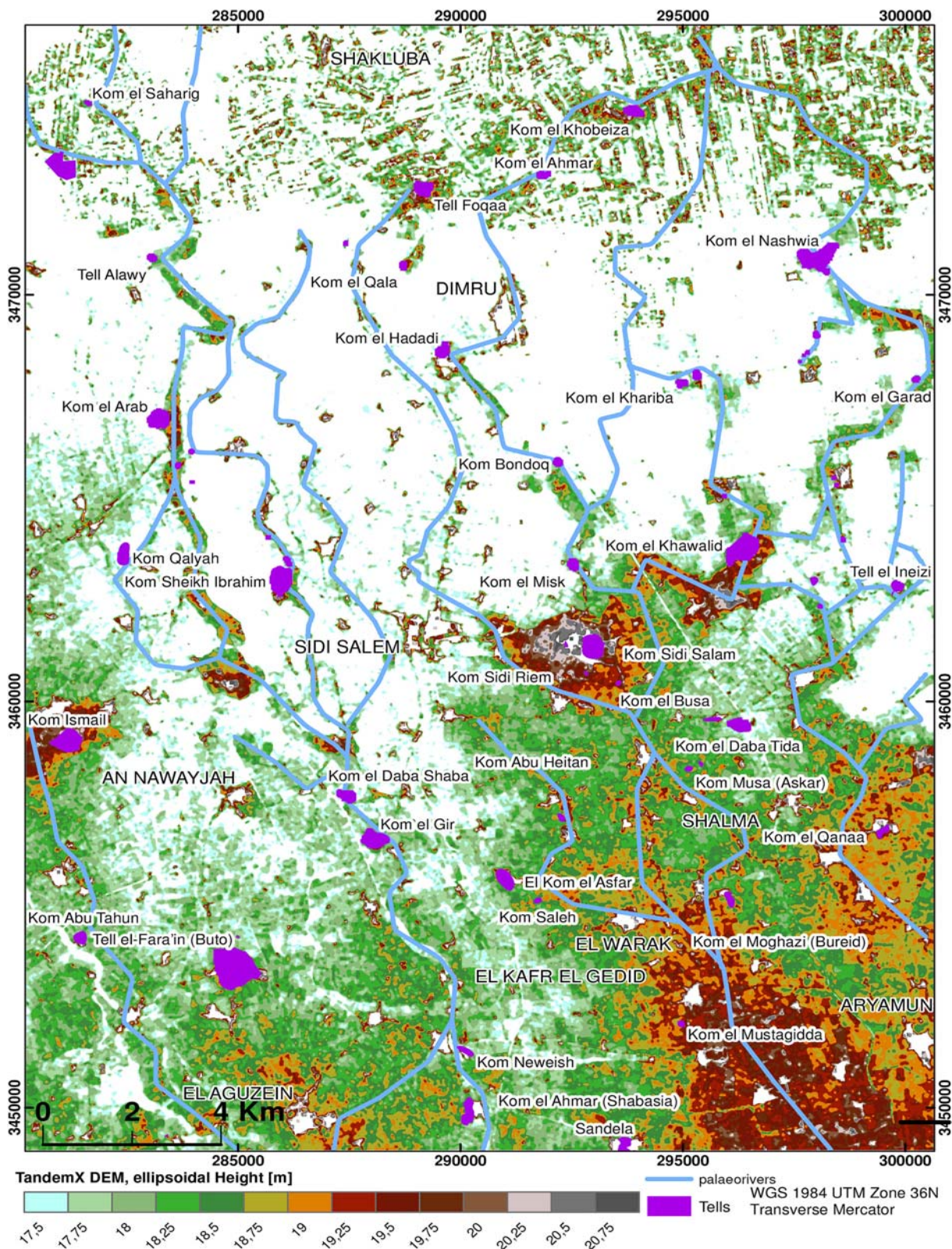
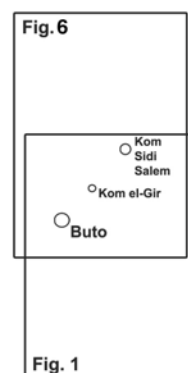


Figure 6. Digital Elevation model based on TandemX satellite data. Reconstructed courses of ancient river branches have been added in light blue, ancient settlements are added in purple (Ginau et al. 2019: fig. 5).

Numerous continuous elevated features, which were neither detectable with the naked eye in the landscape nor marked on historic maps, became visible. So far, the analysis of the TandemX data covers only the northern part of the area studied in the survey (northern half shown on Fig. 1) and will be discussed here. The southern half will follow in a separate publication. Understanding the settlement history of this low-lying area had been considered particularly difficult. On the one hand, the modern surface did not seem to provide any clues at all. On the other hand, this region displayed an enormous increase of settlements in the Graeco-Roman period, which were widely spread out (Wilson & Grigoropoulos 2009). What emerged was a system of numerous finely ramified branches, roughly all flowing in a southeastern-northwestern direction. The watercourses would often split into finer ones, occasionally reconnecting later, thus creating “islands” of different sizes. We do not know, however, whether these branches were contemporaneous or represent variations of courses of different periods. Thus, the finely ramified system shown in Fig. 6 may be misleading, as it may conflate the systems of different time periods to one. Consequently, at one point in time, the system may have been less complicated. What was considered a single watercourse in the hypothesis are actually two roughly parallel watercourses, separated by about 2.5–6km. Of the sites emphasized in Fig. 1, Kom Abu Heitan, Kom Saleh and Kom Asfar are on the banks of the eastern channel C 2, whereas Kom el-Dab’a-Shaba, Kom el-Gir, Kom Noweish and Kom Ahmar (Shabasia) lie on the western channel C 1. The section further south will not be discussed here (see Fig. 7).

Figure 7. Sketch illustrating the overlap between Fig. 1 and Fig. 6.



## 8. Comparison of the Watercourse Suggested by the Hypothesis and the Watercourses Reconstructed Based on the TandemX DEM

For comparative reasons, on Fig. 8 the results of the reconstruction of the ancient watercourses based on the TandemX digital elevation model (Fig. 6) have been placed on the elevation map based on the historic Survey of Egypt topographic data (Fig. 1). Of the four suggested larger ancient channels crossing the zone under investigation, the two central ones, C 1 and C 2 (see Fig. 8), will be discussed in greater detail in the following. This offers some insights into the relevance of the older topographic data of these sources. In particular, the relationship between modern watercourses and the reconstructed ancient ones will be addressed. Channel C 2 emerges from a distinct elevated tongue, visible on both the older topographic map and the digital elevation model. Therefore, reconstructing an ancient branch here was strongly suggested by the historic maps. The situation for channel C 1 is somewhat more complicated and the historic maps did not provide much guidance. The ancient course C 1 will be discussed in comparison to the watercourse suggested by the original hypothesis.

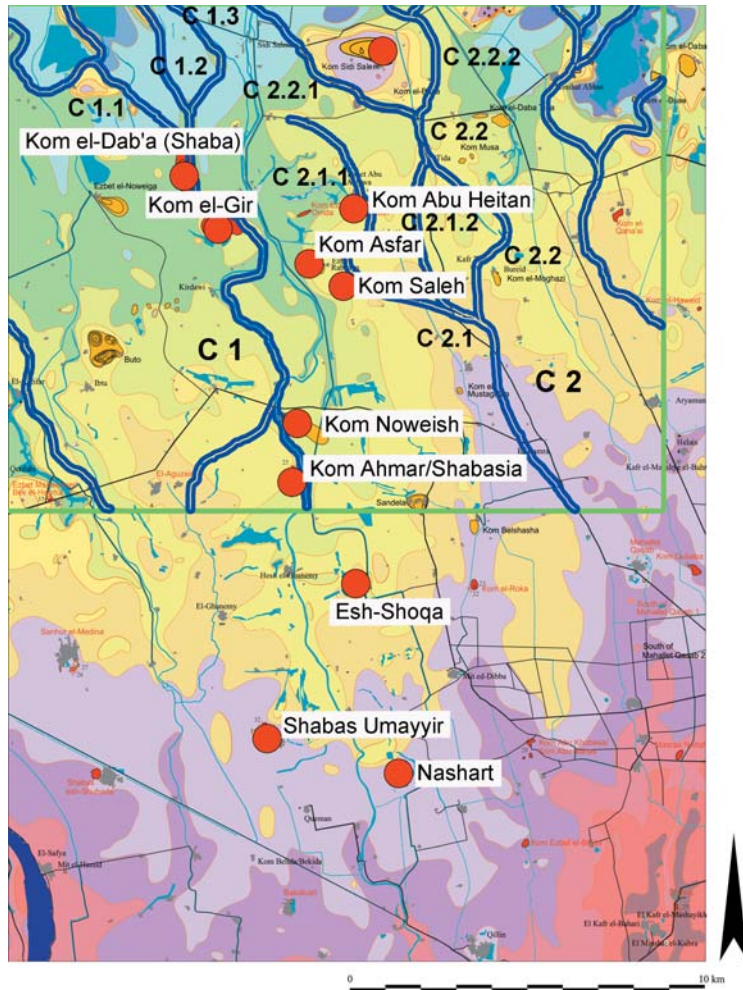


Figure 8. Reconstructed water courses shown as wide blue lines, for the northern part of the study region, based on the TandemX digital elevation model (Fig. 6). For comparative purposes, the map of Fig. 1 based on the Survey of Egypt maps, series 1920s/30s, 1:25,000, was used as a background.

In general, the ancient channels correspond with short sections of different modern canals. In modern land use, the new canals combine and connect the routes of different ancient channels, “jumping” from one feature to the next. Parts of the lower course of the channel C 1, flowing north past Esh-Shabasia (Kom Ahmar) and Kom Noweish, correspond with the Bahr Nashart system (Fig. 8) and thus confirm the hypothesis. Past Kom Noweish, it continues due north and does not turn east, but slightly west. This correlates with an “old water” branch, creating a bulge in the Bahr Nashart, which on the Survey of Egypt maps of the 1920s/30s is named Bahr Abu Dukhan el-adim and Masraf Abu Dukhan. The course of C 1 does then not reconnect to the main Bahr Nashart branch, but swerves slightly west, and flows just east of Kom el-Gir. The ancient channel has been recently confirmed by a combination of an electrical resistance survey and auger coring adjacent to Kom el-Gir (Schiestl 2019; Altmeyer 2020; Altmeyer et al. 2021). Flowing north, past Kom Daba’a-Shaba, its course is parallel to the Bahr Nashart system, about 2km west of it. North of Kom Daba’a-Shaba, the course breaks up into four branches: One flows southwest, and then turns north-west, but cannot be followed very far. It will be not discussed here. From west to east we have at least three more branches, C 1.1, C 1.2 and C 1.3. Further very small ones are possible between C 1.2 and C 1.3 and east of C 1.3. The branches C 1.2 and C 1.3 both have levees visible even today

and were cut by the transect 6 (Ginau et al. 2019 fig. 7). C 1.2 flows past Kom Sheikh Ibrahim, C 1.1 splits again into two arms, the western one flowing past Kom Qalyah, and south of Kom el-Arab the two join again. Notably, north of Kom el-Daba<sup>ʿa</sup> Shaba, none of these ancient channels can be correlated with modern canals. When the detailed Survey of Egypt maps were compiled in the 1920s/30s, this area was not yet intensely cultivated and no fine network of fresh water canals had been established between the Bahr Nashart system and the Ibtu canal to the west. Channel C 2 conforms in large parts to the modern Ruweina canal. This is the case in the section between El-Hamra and Kafr el-Gedid. North of Kafr el-Gedid it splits off into two branches, C 2.1 flowing west, C 2.2 continuing north. C 2.1 splits again after about 1.5 km, with the western branch C 2.1.1 equalling today's Safti Canal, flowing past El-Waraq towards Kom Saleh and Kom Asfar. Here the channel turns north, flowing past Kom Abu Heitan. This section cannot be correlated with any modern canal. Its eastern branch, C 2.1.2, continues due north, essentially along the lines of the Ruweina canal, then rejoining again with the branch C 2.2 north of Tida. The eastern branch, C 2.2, leaving the course of the Ruweina canal, flows north to Kafr Tida and passes Bureid/Kom el-Moghazi. No modern canal conforms to this section. At this point it turns slightly east, a curve roughly equal to that taken by the very small modern Sifsaf canal. The ancient channel C 2.2 then turns west again, conforming to the course of the large Tirat Mit Yazid canal. Flowing past Tida, the sections (C 2.1.2 and C 2.2) join briefly again, before splitting off into two parts southeast of Kom Sidi Salem. The western branch C 2.2.1 flows south and then west of Kom Sidi Salem and the eastern branch C 2.2.2 flows northeast of Kom Sidi Salem. In both cases modern canals run the same course, in the case of the western C 2.2.1 it is a very small canal for which no name is provided on the Survey of Egypt maps. In the case of the eastern branch C 2.2.2 it is the Tirat Mit Yazid.

## 9. Conclusion

The ancient Delta landscape needs to be conceptualized as a world not just of large branches, but of many medium and smaller ones. As not even all courses of the main branches of the Delta have to date been reconstructed, the focus generally remains on the larger ones. This practice is reinforced by the use of ancient written sources, which only list, by name, the main branches. The development of the original regional hypothesis of one branch linking a group of ancient settlements was framed by thinking in terms of the "large branch theory". While linear developments remain a fitting model of settlement distribution in the delta, one has to reconceptualize lines differently. Lines can be less organized and straightforward as a single river branch, but more tangled and complex. Such a ramified network of minor branches, as shown for this part of the delta, can, however, provide the backbone for the settling of an entire region. The close connection between settlements and channels is confirmed. All settlements are located on levees of branches - it is the fact that these branches break up into smaller ones and spread out over such a wide area that explains the extensive distribution of ancient settlements. The period when this system was active is tentatively dated to the Graeco-Roman period. As this period is very long (late 4th century BCE – 7th century CE) we must assume changes of the water system within it, which we as of yet cannot grasp. Notably Buto (Tell el-Fara<sup>ʿin</sup>) seems to be disconnected from this network. How the large Graeco-Roman settlement of Buto dealt with this is not clear. Was the city connected via an artificial canal to an active branch? This raises the basic question of the extent of human intervention in the creation of this system.

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# THE THRONE CHAPEL OF RAMESSES II IN ARAB EL-HISN

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## Abstract

In October 2017, Ain Shams University started the scientific mission to excavate Arab Al-Hisn. In April 2018, a royal platform was found for a throne chapel of Ramesses II, which was often used throughout the Ramesside period. This throne chapel was used not only as an audience hall of the king but also most probably as ceremonial chapel for the royal celebrations of the king, such as the ceremony of the king's coronation and the Heb-Sed festival. We uncovered also the floor and walls of the throne chapel, which is characterized by a floor tiled with mud bricks.

## ملخص

بدأت بعثة جامعة عين شمس العلمية في أكتوبر 2017 إجتيا حفائر في عرب الحصن. في أبريل 2018 ، تم العثور على منصة ملكية تمثل مقصورة عرش رمسيس الثاني ، والتي كانت تستخدم غالبًا طوال فترة الرعامسة. تم استخدام مقصورة العرش هذه ليس فقط كقاعة جمهور للملك ولكن أيضًا على الأرجح كمقصورة شعائرية للاحتفالات الملكية للملك ، مثل مراسم تتويج الملك وعيد اليوبيل (حب سد). كما اكتشفنا أرضية وجدران مقصورة العرش الذي يتميز بأرضية مبلطة بالطوب اللبن.

## 1. Introduction

The most important ancient city of Heliopolis  (Iwnw) lost its political and religious role since the Roman Period, and its antiquities were destroyed during the following ages. Since the beginning of the 20th century the scientific excavations and researches have been carried out at Heliopolis by E. Schiaparelli's excavations (1903-1906) to uncover the city and its temple, then William Flinders Petrie ( Petrie, 1915), and the Egyptian Antiquities Authority **مصلحة الآثار المصرية** from the 1950s to the 1970s. There was a mission of the Faculty of Archaeology, Cairo University directed by Abdel-Aziz Saleh in the 1980s (Saleh 1981-1983) and Dietrich Raue wrote his doctoral thesis about Heliopolis and its temple (Raue 1999). Since 2012, Raue directed a joint Egyptian-German mission to excavate the area of the ancient temple of Re in Heliopolis.

In October 1st 2017, Ain Shams University — which is a geographical part of the ancient city of Heliopolis — started the scientific mission to excavate Arab Al-Hisn in the northwest part of the ancient temple of Re in Heliopolis (Figs. 1-3). This led to reviving interest in this site, as one of the most important scientific projects to promote Egyptian heritage, the environment and the adjacent community.

The site of Arab Al-Hisn in Matareya is the only site remaining next to the obelisk of Senusert I of the ancient city of Heliopolis. The results of the excavations in Arab Al-Hisn in the first season were very promising. The work has revealed the remains of a palace from the Ramesside period, which was built starting in the reign of King Ramesses II started its construction. The excavation also revealed many additions to it in the following dynasties. This paper deals with the most important discovery of Arab Al-Hisn in the excavation work in 2018, that is the throne hall of Ramesses II in his ceremonial palace, which is connected to the temple of Re.



Figure 1. The Temple of Re at Heliopolis with area of the work highlighted in red (after Ashmawy and Raue 2015: 10).



Figures 2–3. The Mission’s area of work in March 2018.

## 2. Excavations in 2018-9

Figure 4: Plan of excavation area from 2017 to 2019.



On Thursday, April 19, 2018, the Mission completed the excavation work in sector 4 'Squares 5a-b' (Figs. 4-5). After we had removed the first layer of ovens remains dating to the Third Intermediate Period, we discovered a limestone block, which is the first step of a staircase consisting of five steps (Fig. 6).

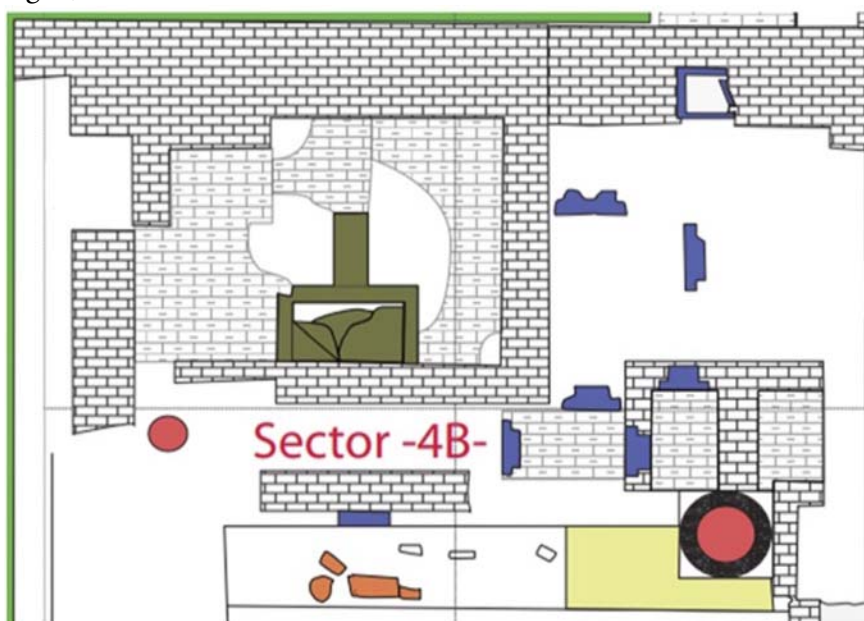


Figure 5. Plan of Square 4 with the throne chapel.



Figure 6. The first day of the uncovering of the throne platform.

The work was continued to uncover this staircase fully and the related building from the southern side, to find its limits and understand its architectural form in 'Square 5a'. We were able to uncover the largest part of a podium or platform of a throne chapel which was reached by the staircase of five steps. However, the digging season ended at the end of April 2018, and we returned to complete the excavation on 1st October of the same year. The Mission's priority, for the autumn 2018 season was to complete the uncovering of the royal platform and to document it, to specify how it was used, as well as its history.

After completing the cleaning of the square from the weeds as well as removing the sand layer, which had been placed on top of the features at the end of the previous season to cover and secure the site, work proceeded. Firstly, the walls that were found in the previous season were cleared, then

the limestone platform was completely uncovered and the surrounding area was cleaned from all sides.

Regarding the limestone platform, the southern side was cleaned directly behind it, with the aim of reaching its southern edge. In addition the northern edge that represents the staircase to ascend to it, as well as its western and eastern edges (Figs. 7-8) were also found; and during that part of the excavation, a group of broken stone blocks were found, possibly original parts of the platform itself, but they were in a destroyed condition.



Figure 7. The throne chapel, with platform, staircase, walls and lower door lintels.



Figure 8. The throne chapel from the south.

After completing the cleaning over and around the platform and making sure that there was no extension to its southern side, we can say that the platform was laying directly against the back wall of the throne chapel on the southern side.

Work continued on the western side of the platform and we found its western edge, which is a single big limestone block that forms the left side of the platform; it was found lying down on its left side on the ground and separated from the platform. The block was returned to its original state at the left side of the platform. While we were bringing the limestone block to its original position at the left side of the platform, some important aspects of the chapel were noted: firstly, we reached directly to the floor of the throne chapel, which was made of mud brick (each brick with the dimensions 20 x 40cm) and they were joined together by sandy mortar (Fig. 9); secondly, the platform is filled with sand between the limestone sides of the platform, and then it was tiled with limestone slab-tiles on top of the sand; thirdly, we found a hole or pit — 20cm in diameter and 50cm deep — in the north corner of the platform, which was filled with sand as well. We thought that it should be a pit for foundation deposits, but we did not find anything except the sand. We decided to postpone the work for the next season, in order to carry out a more extensive examination and survey, in order to know more about the pit without damaging the floor of the platform; fourthly, a thin layer of sand was located under the platform that spread to the rest of the hall that joined the mud bricks together.



Figure 9. Mud brick floor of the throne chapel.

The dimensions of the platform are as follows: width from east to west is 324cm; length from north to south is 195cm; height of the platform is 52cm. The five steps of the stairs from which to climb to the platform on the northern side have a width of 73cm for each one. The method of building the platform can be visualized through four stages as follows:

1. The long stone blocks were placed at the north, east and west sides of the platform; the southern side was the back wall of the hall and they made the form of a rectangular box, oriented to the cardinal points and facing north.
2. This rectangular box was filled with mixed sand and rubble consisting of broken small stones, in order to make the foundations of the platform floor.
3. Tiles of relatively large stone blocks were laid on the top of this sand rubble to make the floor of the platform.
4. After the completion of the construction of the platform, a separate five-step staircase was prepared and added to the middle of the platform's northern side.

We continued the cleaning of the whole area of the chapel to reach the level of the mud-brick floor of the chapel, and we found the rest of the floor of the platform compartment in a very good condition. This floor had been made of mud brick tiles, tightly compacted below and around the platform. These tiles were topped by a thin layer of fine sand. The floor — especially in the northern area of the platform ladder — was apparently covered with white stucco, the remains of which are clear to see, but the material has been erased due to the rise of the groundwater and the muddy floor. Each mud brick is about 40cm in length and 20cm in width.

Sand was used to pave the floors and fill the spaces between the bricks, thus creating a level surface. This layer of sand also preserves the integrity of the buildings and ensures their continuity. But what is remarkable in the area surrounding the platform is that this floor, which is tiled with mud-bricks, has been reused, as is shown through a group of circular pits that were cut into the floor, and which include the remains of burnt material. These circular pits were used as circular ovens. These ovens were distributed, in separate areas of the floor, especially in the northern and eastern sides of the platform.

After the completion of work in Squares 5 a-b, the floor of the chapel, which demonstrated accurate engineering planning, was exposed, as the door sills led to rooms and corridors separated by walls that were 120cm wide. The clearest example of these walls is the wall to the east of the platform that has a north-south axis, leads 220 cm from the platform and is connected to the back wall of the platform; the back wall runs east-west.

Outside the eastern wall we found six lower door thresholds (Fig. 10) and it is clear that all of these door thresholds are connected to the platform of ceremonies located in the same square. Together they show the pathway of the king as he entered the podium and then the route of his exit from it. Each door threshold, which is 1.66 m wide, has a simple door axis hole for, most probably, a wooden door (Fig. 11).

The north and east area need more excavation to clear the rest of the pathways, galleries and rooms that connect to the royal ceremonial chapel.



Figure 10. The throne chapel walls and door thresholds.



Figure 11. One of the door thresholds.

### 3. Discussion

A parallel of this throne chapel/room is that of Merenptah's palace in Memphis (Fisher 1921; Fisher 1924), and that of Ramesses II in the Ramesseum in Thebes. This unique throne chapel of Ramesses II was used not only as an audience hall of the king but also, most probably, as a ceremonial chapel for the royal celebrations of the king, such as the ceremony of the king's coronation and the Heb-Sed festival that was already celebrated since the first dynasty (Figs. 12-13). The royal chapel at Heliopolis can be considered the first of its kind discovered there from the New Kingdom. The area of the ceremonial palace may have witnessed important incidents of ancient Egyptian history during the reigns of King Ramesses II, Ramesses IV and Ramesses IX according to dating evidence from the excavations.



Figure 12. Ebony label of King Den, First Dynasty showing the throne platform at the Sed-festival.

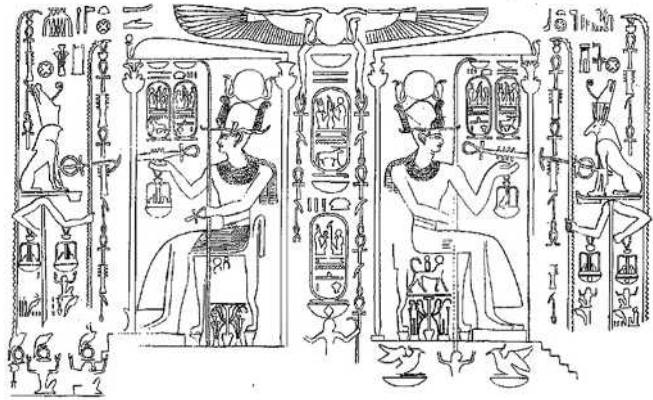


Figure 13. King Merenptah in his throne chapel, from Memphis (Petrie 1909, Pl.2).

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Figure 8 credit: [https://commons.wikimedia.org/wiki/File:EbonyLabelOfDen-BritishMuseum-August19-09\\_CloseupOfSedFestivalPortion.jpg](https://commons.wikimedia.org/wiki/File:EbonyLabelOfDen-BritishMuseum-August19-09_CloseupOfSedFestivalPortion.jpg).

### Appendix: Catalogue of artefacts from the excavations

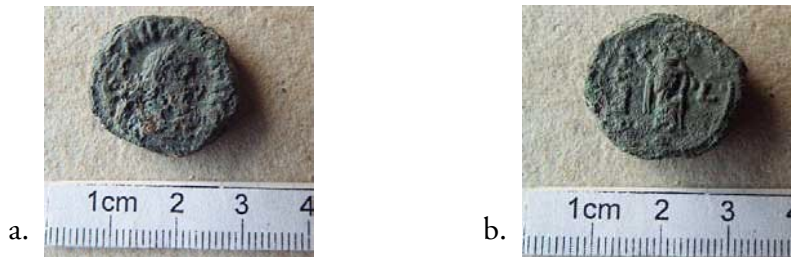
Although the royal platform of the throne chapel of Ramesses II was the main find of our excavation, during the four seasons of our mission (autumn 2017, spring and autumn 2018 and spring 2019) we also found many small artefacts and objects that will be published in full later, but are presented here to complete the archaeological record.

#### *Autumn 2017*

Figures 14a-c: The lower part of a limestone statuette of a scribe, with a male head in profile incised on the base; it was found behind the four destroyed statues of Ramesses II in Square 5d, that formed the entrance to the ceremonial palace of Ramesses II.



Figures 15a-b: bronze coin of Roman date.



#### *Spring 2018*

Figures 16a-c: heart amulet of Pa-?; Ramesside period, found in Square 5b.



Figures 17a-c: Lower part of an alabaster statue of Ramesses II as a child, in the south-west part of Square 4c (under publication in the *Festschrift of Regina Schulz*).

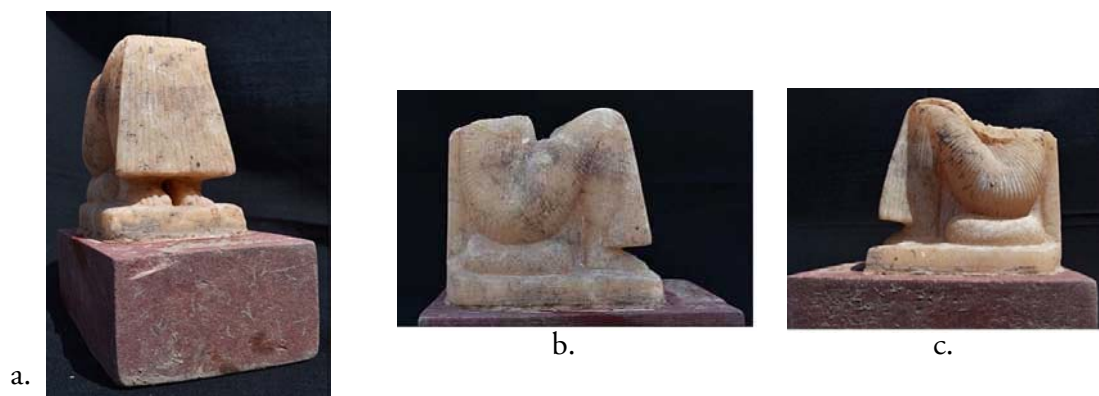


Figure 18: Three fragments of the lower part of a painted limestone stele with a relief of a family prayer to Ptah, from the south of Square 5a. Figure 19: Part of an offering table.



Figure 18.



Figure 19.

Figures 20a-f: Limestone blocks with hieroglyphic inscriptions including the name and Horus title of Ramesses II. An inhabitant of Arab Al-Hisn told us about some stone blocks that were buried by antiquities robbers many years ago in sector 10 (Square 8g).



a.



b.



d.



c.



e.



f.

Figures 21a-d: Terracotta figures of a human head, a dog, a cat and a cobra.

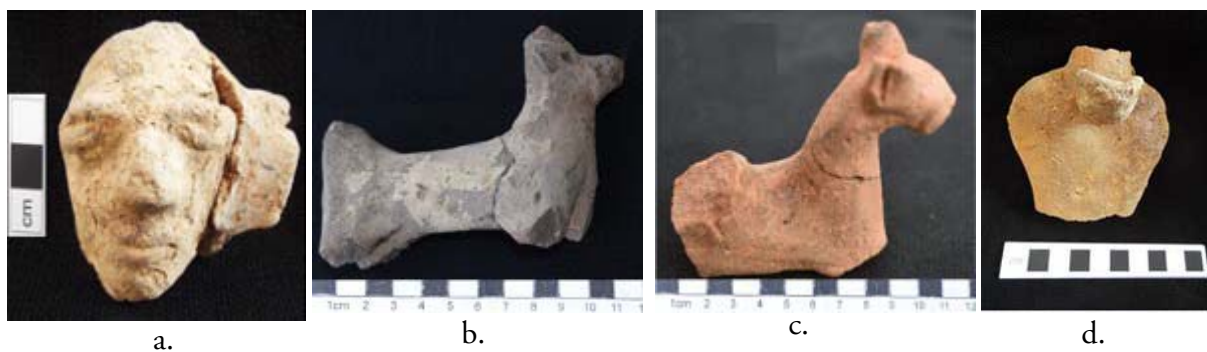
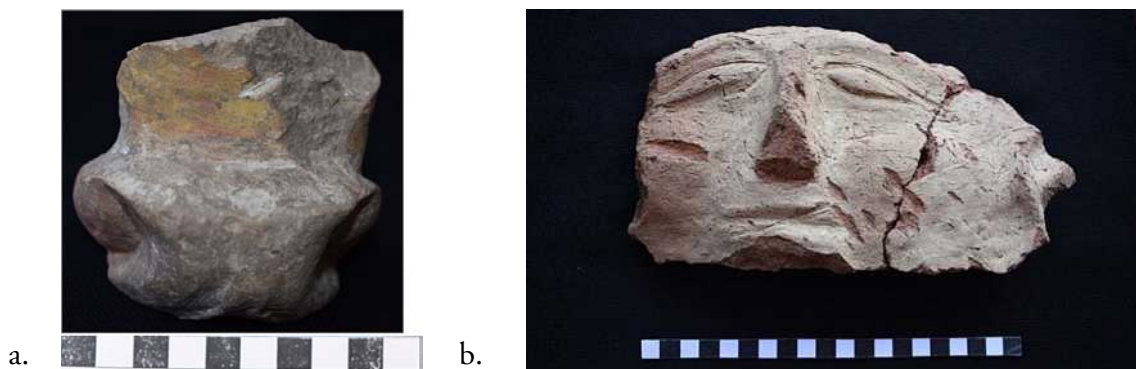


Figure 22: Painted limestone fragment of a cobra head.

Figure 23: Fired clay face-plate with portrait of a man.



### *Autumn 2018*

Figure 24: Debris was removed in squares 4c-d behind the four destroyed statues of Rameses II and revealed two limestone walls, between which there was an entrance to a room with a mud-brick floor. It contained a column fragment and a basin.



Figure 25a-c: Part of an octagonal column in square 4d.

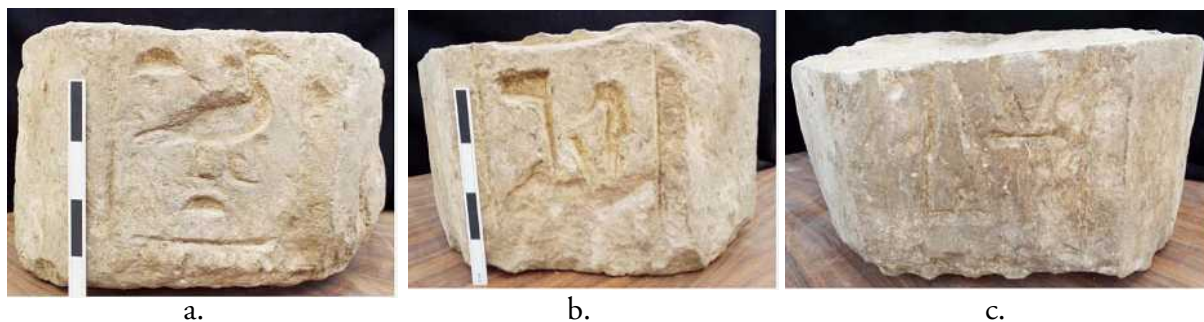


Figure 26: A limestone basin in square 4d.



Figure 27: Two limestone blocks were inscribed with a text naming Amenemhet, the architect of the monuments of Ramesses II in Matareya. Parts of five lines of hieroglyphs were preserved.



Figure 28: A small mud-brick room with a water container made of fired mud brick, that dates to the Third Intermediate Period/Late Period, in square 7a



*Spring 2019*

Figures 29a-c: A square limestone basin full of sand and with a pottery jar in its north-east corner, in square 5b.

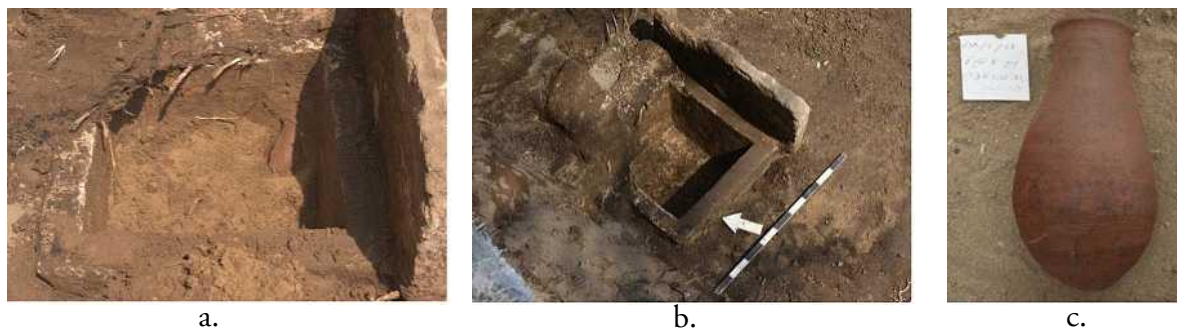


Figure 30: Model of a votive chapel/temple gateway, found behind the destroyed statues of Ramesses II, in square 5d.



Figures 31a-b: Lower part of a 'slipper' coffin (restored by Mohamed Waheed), found behind the throne platform in square 6a.

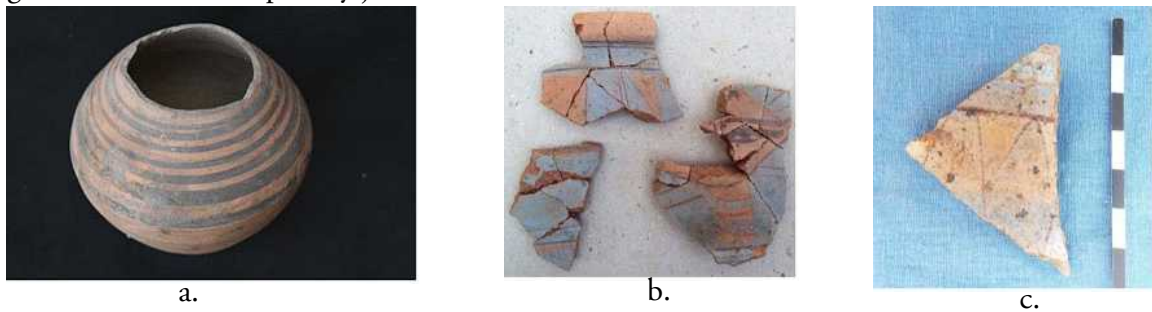


Figure 32: The mud-brick floor uncovered, in the front courtyard of the Ramesses II ceremonial palace, in front of his statues, squares 4e-f and 5e-f.



*General finds from various squares and different seasons*

Figures 33a-c: Painted pottery jar and sherds.



Figures 34a-s: examples of many types of pottery jars and sherds.



Figures 35a-b: Fragments of coloured pigments.



a.



b.

Figures 36a-d: Sickle blades and saw blades made from flint.



Figure 37: Pounders and burnishing stones.



Figures 38a-c: Fragments of statues.



a.

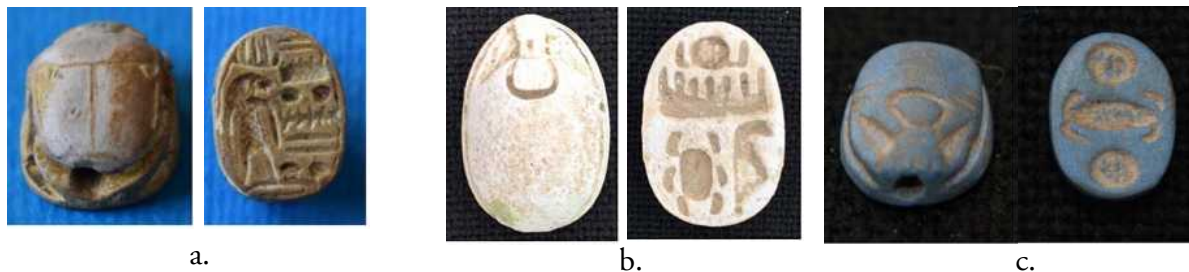


b.

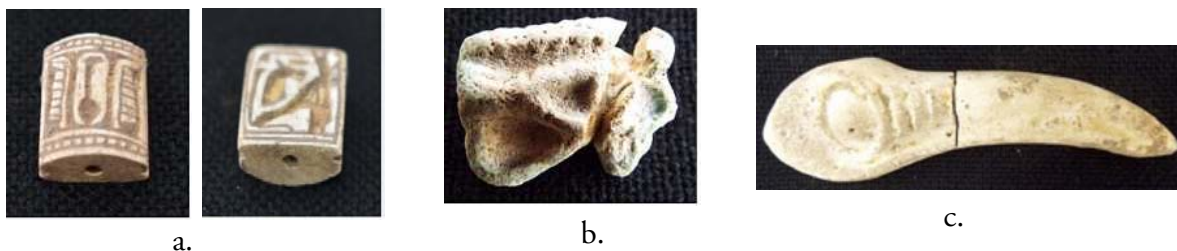


c.

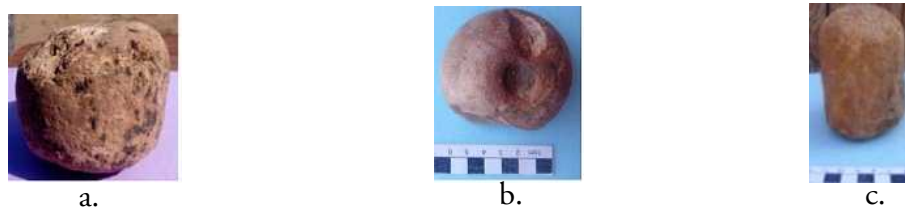
Figures 39a-c: Scarabs from the Ramesside period.



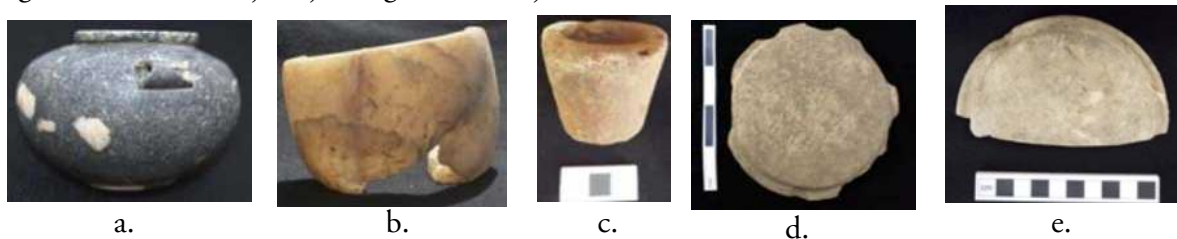
Figures 40a-c: Amulets - a plaque, a *wedjat*-eye, an ibis head.



Figures 41a-c: Stone weights and smoothers.



Figures 42a-e: Stone jars, jar fragments and jar lids.



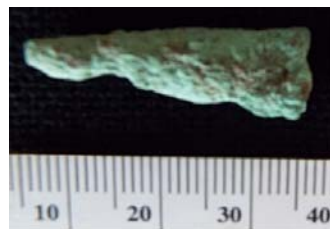
Figures 43a-d: Weaving bowls and tools.



Figures 44a-b: Fragments of glass and copper alloy tools.



a.



b.

Figures 45a-c: Fragments of stone with worked or inscribed elements.



a.



b.



c.

Figure 46: Faience fragment with part of a cartouches of Ramesses.

Figure 47: Mould of Bes amulet with modern positive.

Figure 48: Unfinished limestone cobra.



a.



b.



c.

# PRELIMINARY REPORT ON THE EXCAVATION IN THE PRECINCT OF THE TEMPLE OF BASTET IN BUBASTIS/TELL BASTA (AREA A), SEASONS 2009-2017

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## Abstract

While the famous temple of Bastet has been the focus of research for many years, little attention was paid to the surrounding area in Bubastis. To gain further knowledge about the integration of the temple into the city, the area in front of the entrance of the temple (Area A), once the endpoint of a dromos, leading from the city in the east to the temple of Bastet in the west, became the main focus of the Tell Basta-Project, a German-Egyptian mission (University Wuerzburg / Ministry of Antiquities). Our excavations revealed a built-up area dating from the Saite to the Ptolemaic Period and a Roman open court.

## ملخص

بالرغم من أن معبد باستت الشهير كان محور البحث لسنوات عديدة، لم يتم الأهتمام بشكل كبير لمنطقة سور في بوباستيس.

وذلك الأهتمام كان مهم لاكتساب مزيد من المعرفة حول اندماج المعبد في المدينة، وهي المنطقة الواقعة أمام مدخل المعبد (المنطقة أ) ، التي كانت ذات يوم نقطة نهاية دروموس، المؤدية من المدينة في الشرق إلى معبد باستت في غرب، Wuerzburg / وهو ما أصبح التركيز الرئيسي لمشروع البعثة الأثرية في تل بسطة، وهي بعثة ألمانية مصرية (جامعة وزارة الآثار). كشفت الحفريات التي أجريناها عن منطقة مبانى تعود إلى فترة العصر الصاوى حتى العصر البطلمي وفناء مفتوح من العصر الروماني.

## 1. Introduction

Tell Basta, the site of the ancient city of Bubastis, one of the most important cities of Lower Egypt since the 4th millennium BCE, is located in the south-eastern Delta, close to the Pelusiac Nile branch (Lange et al. 2016: 377-392; Ullmann et al. 2019: 185-199). Today, more than 50ha of its territory is preserved close the south-eastern edge of Zagazig, the modern capital of the province Sharqiya. The famous temple of the lioness goddess Bastet, the main local deity of the time, attracted the attention of Greek historians like Herodotus and early travellers alike and led to the first systematic epigraphic documentation of its reliefs by Edouard Naville from 1887-1888 (Naville 1891, 1892). In the following decades, the temple became the focus of scholarly attention and excavations (Lange et al. 2016: 377-380; Lange-Athinodorou 2019a 5–11; Lange–Athinodorou 2019b, 3-4; Ullmann et al. 2019: 185-186), while its surroundings were mostly neglected, despite the presence of towering mountains of mudbricks close to the temple (Naville 1891: pl.II) that bear witness to the existence of a flourishing city, of which the temple was an essential but by no means isolated part.

Only Labib Habachi, during his work at Tell Basta in 1943, cleared a small area of 25 by 15m directly to the east of the temple to gain a view of its entrance layout. Here, he discovered a

pavement of limestone slabs and a pedestal of limestone blocks with fragments of a column of pink granite nearby. He interpreted his finds as the remains of a Roman temple (Habachi 1957: 93-94). In order to gain a more detailed insight into the connection between city and temple, excavations of the Tell Basta-Project started in the area of Habachi's earlier work, subsequently extending to the south, east and west. Another starting point was the description of the city of Bubastis by the Greek historian Herodotus who provides us with a vivid picture of the ancient city in his time (ca. 450 BCE, 2nd part of the 27th Dynasty), saying: "The temple is a square, each side measuring a furlong. A road, paved with stone, of about three furlongs length leads to the entrance, running eastward through the market place, towards the temple of Hermes; this road is about four hundred feet wide, and bordered by trees reaching to heaven. Such is the temple." (Hist. II, 138; Wilson 2015: 208-09). According to Herodotus' description, the main street of the city, the Dromos, would have crossed the area (labelled Area A) in front of the temple entrance (Lange-Athinodorou 2019a: 549-51). Thus, it seemed promising to look for possible remains of the Dromos there (Fig.1).

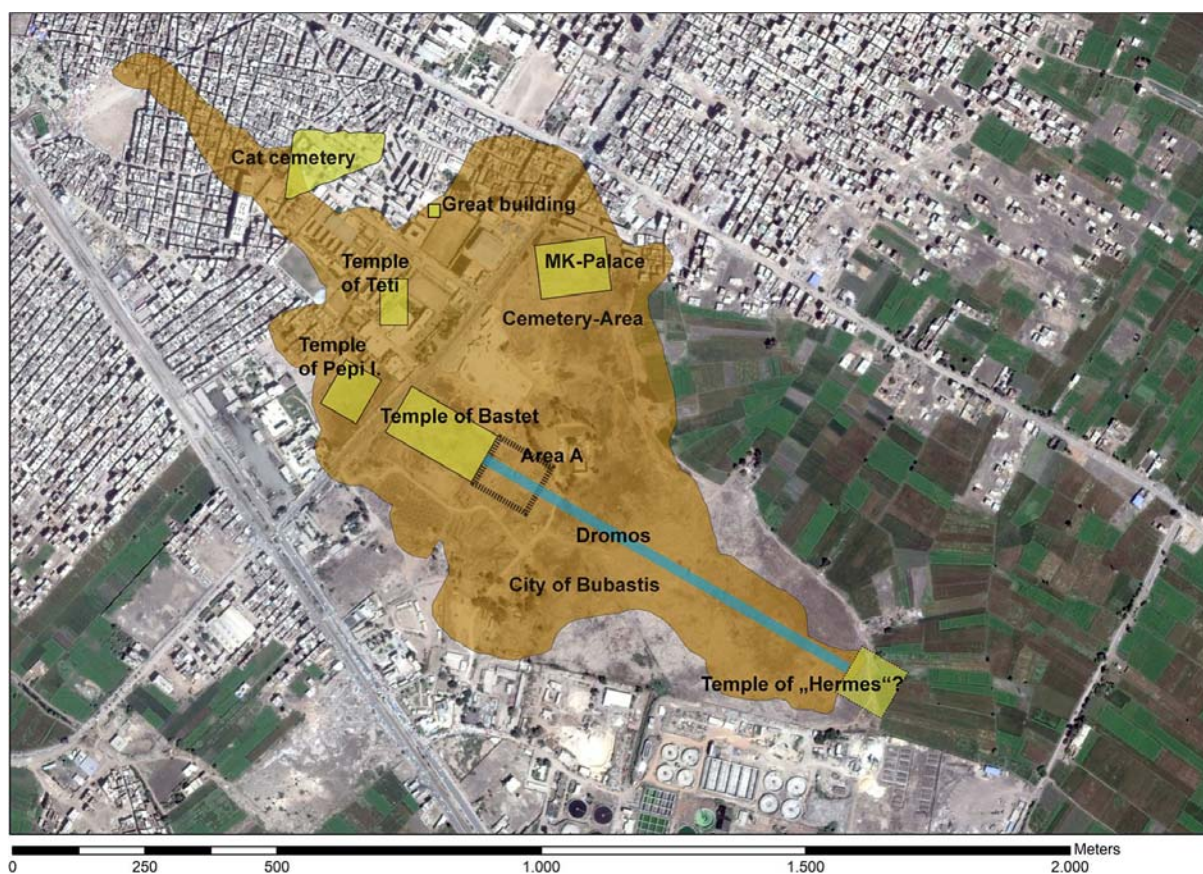


Figure 1. The site of Bubastis/Tell Basta, with a georeferenced version of Wilkinson's map. (Image © Tell Basta Project).

## 2. Excavations in Area A (Fig. 2)

Area A, covering the court in front of the first pylon, would have been well situated within the yet unidentified enclosure wall. Recent geophysical investigations proved the existence of canals surrounding the temple at a distance of about 10m from the main temple house, making a reconstruction of the enclosure wall difficult with the canals so close by (Lange-Athinodorou et al. 2019; Lange-Athinodorou 2021: 78-79). The Pylon, built either of stone or of mudbrick and revetted with slabs of stone, was completely dismantled in antiquity without leaving any trace.



Figure 2.  
Area A: General plan.

(Plan © Tell Basta Project).

During the excavation, the following sub-divisions were established:

- 1.: The paved open court (A/I)
- 2.: The Dromos area (A/II)
- 3.: The buildings to the north of the Dromos (A/III)
- 4.: The buildings to the south of the Dromos (A/IV)

### 2.1. *The paved open court (A/I)* (Fig. 3)

In his excavations in 1943, Labib Habachi discovered a building of fired bricks with parts of its pavement still in place. He also mentions the existence of a column of red granite next to the building, as well as a pedestal built of limestone blocks. A number of small objects found during the clearance of the building led him to date the construction to the Roman period (Habachi 1957, 93-94, pl. XXIV). This pedestal, together with the column which was broken into several pieces, was still in situ at the beginning of our excavation. The area further to the south and north was covered by debris from the earlier excavations of Edouard Naville and Labib Habachi.

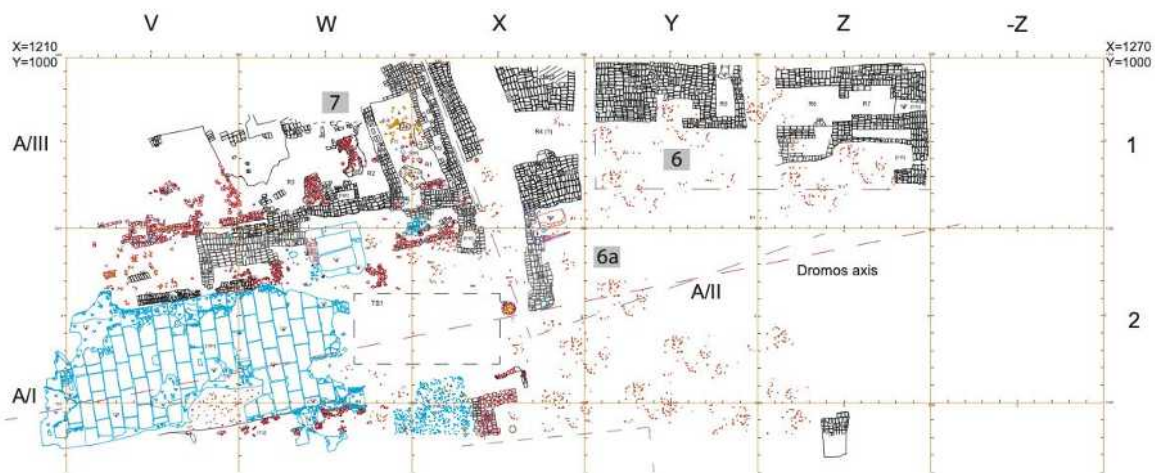


Figure 3: Area A/I-A/III. (Plan © Tell Basta-Project).

At the beginning of our work, it became clear that the pedestal was aligned to the main axis of the temple of Bastet, i.e. to the axis of the Dromos of the temple (cf. Fig. 3, 4). Therefore, the initial excavation began with a re-opening of the area cleared by Habachi, (grid V/2, W/2, cf. Fig.3). Here, at 4.57-5.23m/asl, a floor level of limestone slabs [101] came to light, continuing into V/3-W/3 and U/2-U/3 and further on in the still unexcavated area to the south and west. The excavated part of the limestone floor measured 17.60 by 12.53m. The slabs were mostly rectangular, measuring between 1.59-1.54 by 0.87-0.77m with an average thickness of 5cm. To the north, the buildings of area A/III bordered the pavement (cf. below). Due to destruction, the pavement ended abruptly at half the height of the limestone pedestal and did not continue further to the east. A parallel can be found at Graeco-Roman Hermopolis Magna: Here, the Dromos, referred to in Greek papyri as the “Dromos of Hermes” and being the main south-north-oriented street of the city, was also made of limestone slabs with a foundation of sand and gypsum (Spencer 1989, 34-35, 74-75). Another example exists at Soknopaiou Nesos, where an elevated dromos made of limestone slabs, accessible by stairways, was excavated to the south of the temple (Davoli 2010: 57 Fig. 1, 61 Fig. 4, 63-67; Capasso & Davoli 2012: 83-109; cf. also Rondot 2004: 145, 202; Lehmann 2019: 47, 376).

The rectangular pedestal itself was a construction of six rectangular blocks of limestone with a maximum size of 2.12 by 1.02m. It consisted of four north-south oriented blocks arranged as a square and covered on top by two blocks that were aligned to the east-western orientation of the axis of the Dromos. The best preserved side was the northern side with a maximum length of 3.13m. The limestone blocks were situated on a base of five layers of fired bricks on 4.95 m/asl of at least 20 headers with a maximum size of 25 by 7cm. Two more rows of bricks protruded from the western side of the monument at 4.95m/asl. These were probably reused bricks, coming from the building directly to the north (unit 7, cf. below).



Figure 4. Limestone pedestal and dromos.  
View to the east.



Figure 5. Water conduit A/I [112].  
(Photographs © Tell Basta Project).

The limestone pedestal was probably the base for the above mentioned column found in its vicinity. In that case, the whole construction was probably a single column monument with a statue or a votive on top, a typical element of open courts in Roman cities and temples (Jordan-Ruwe 1995: 124-202; ThesCrA 2005, 405). A relation between the single-column monument and the pavement (seemingly the pavement of such an open court), therefore seems very probable, although the question of the dating of the whole ensemble is difficult, especially as the area was cleared before by Habachi.

At the southern part of area A/I, i.e. the northern side of U/3–W/3, the slabs were partly removed in antiquity to install a water conduit [112] (4.93–4.16m/asl) (Fig. 5). The conduit was 0.62m wide and 1.10m deep and built of fired bricks; it was excavated up to a length of 13.70m. To conserve the even appearance of the white pavement, the surface was patched up with lime mortar after the installation of the conduit, showing that the courtyard was still in use at this time. Only the easternmost part was preserved, revealing its construction, consisting of straight walls and a levelled floor, covered by a vaulted roof. The walls were covered with white plaster. Interestingly, in the same place, a short length of the conduit was also covered with three fragments of limestone slabs. One of those is a fragment of a tombstone and still bears a Greek epitaph. Based on its palaeography, the tombstone dates into the early 1st century CE. At the time of its re-use it was already around 300 years old (cf. the chronology discussion below and table 1).

Directly to the south-east of the water conduit a structure of fired bricks came to light. The almost square structure [127] of 1.84 by 2.20m on 5.57-5.10m/asl was built of five layers of bricks of 24 by 14cm. White plaster was used as mortar for the brick construction and still partly surrounds the structure. On its eastern side, a thin layer of light grey to black ashes ([128] at 5.25m/asl) was observed, most probably deriving from a domestic usage of the area in a later period. Directly on the eastern side at 5.47m/asl, the upper part of a statue of a Ramesside king of pink granite came to light. The fact that this fragment was found lying on some fired bricks scattered over the area shows that it was dumped here in a later period. Its original location was either in the temple of Bastet or an annex temple.

[127] is part of a larger unit of a largely destroyed construction of fired bricks. The floor immediately to the east of it, at 4.94-4.91m/asl, was covered with a layer of tightly packed limestone

chippings [130]. Of this split layer, an area of 5.0 by 4.30m was excavated; it probably continues further to the south. [130] might have been the foundation of a floor paved with limestone slabs.

A north-south oriented wall M1 of 3.82m length and 0.82m width lay at the eastern side of [130] at 5.53-5.13m/asl. At its northern and southern ends, the wall turned to the east and continued another 2.10 m (northern end) before breaking off or disappearing after 1.33m under wall M27 of Area A/IV (southern end). M1 was made of fired bricks in the shape of quarter sections of a circle, mostly arranged in a pattern that resembles the herringbone principle of wall building (Spencer 1979: Pl. 8). Two rows of each eight bricks (headers, max. 34 by 20cm) were still preserved.

The above described shaped bricks were originally used to build columns, a typical construction of the Roman period. Remains of such a column [108] and three courses of a collapsed wall of fired bricks [109] were found 4.45m south-west of M1 at a height of 5.78-5.14m/asl. What was still preserved of the column measured 0.66 by 0.54m. The collapsed wall consisted of a lower layer of three rows of headers (max. 26 by 6cm) still bearing remains of a thick lime mortar. Fired bricks and pieces of limestone were found scattered around.

Summing up area A/I remains of several structures made of fired bricks and equipped with columns of the same material are preserved here. Columns of shaped bricks were also found for example in Late Roman buildings at Ismant el-Kharab, Nag el-Hagar (Ed-Din & Jaritz 1984: 28-9, pl. VIb; Bowen 2002: 71-2) and Luxor (Legrain 1917: 73, pl. 3; Daressy 1920: 172; Lacau 1934: 18). The water conduit may have been connected with the brick structures as fired bricks were mainly used in features exposed to certain strains, like an extensive use of water.

## 2.2. *The Dromos area (A/II)*

Further excavations on the projected axis of the dromos to the east towards the area of the ancient city revealed that limestone slabs were not preserved any more east of square W/2. In fact, the grid squares in question (Y/2 and Z/2) showed a heavily disturbed stratigraphy with no remains of buildings. The finding of two triad statues of the Ramesside period, on a layer of Late Roman-Roman pottery mixed with some Ptolemaic ceramic material underlines the fact that this place suffered from severe destruction in late antiquity. The location of a number of quartzite and granite blocks discovered in the near vicinity of the southernmost preserved wall of house unit A/III.6a north of the dromos area A/II (cf. below) is most probably the result of the same activity.

As said above, no more remains of the stone-paved dromos, described by Herodotus, were found in this area. At 5.99-5.48m/asl however, a lens of 4.0 by 1.48m of densely packed limestone chips with mud and yellowish sand came to light in the eastern part of Y/2. The level of [203] is just above the level of the remains of the dromos to the west [101] at 5.14m/asl (max.) and almost identical with the construction level III in trench TS2 in Area A/IV dating into the early Ptolemaic Period (cf. below). A few limestone fragments of this layer still contained reliefs with royal iconography, obviously coming from the deconstruction of temple architecture. Whether the layer has anything to do with the construction of the dromos or otherwise dates from the same period as level III in TS2 is unclear, however, as the fragments are too small to allow any precise dating.

At a height 3.53m/asl yellowish Pleistocene sands, the surface of the Gezira, appeared (Lange-Athinodorou et al. 2019, 4; Ullmann et al. 2019, 190, 195 fig. 6, 196-197). A find of limestone chippings reaching down into the gezira-sand shows that this area was deeply excavated and

reworked in antiquity, after the dromos had lost its function. Its stone material was removed and transported elsewhere.

In order to further study the building history of the dromos, the east-west oriented trench TS1 of 8.70 by 3.85m was created to the immediate east of the last preserved limestone slabs in W/1 and X/1. The upper stratigraphy revealed a few tumbled mud bricks and several muddy sand layers of aeolian and fluvial origin showing that this place lay open for some time after the removal of the dromos pavement. The associated pottery dated into the Late Roman, Roman and Ptolemaic period. At a height of 4.72-4.50m/asl, a layer of densely packed limestone chips came to light, followed by the remains of two north-south oriented massive mud brick walls TS1-M1 and TS1-M2 (width: 2.67m max. at 4.21m/asl), situated on a layer of domestic waste, containing ashes, animal bones and sherds of cooking pots. The pottery of the deeper levels dates mostly to the Late Dynastic period (27th-30th Dynasty) with some sherds from the Third Intermediate Period in the deepest levels reached so far. At 2.42m/asl, Gezira sand appeared, indicating that the top of the original building ground had already been reached. Especially noteworthy is the finding of a small lens with fragments of fine polished remains of broken faience vessels or figurines at 4.57-4.30m/asl [TS1.S6], some still showing traces of a cartouche of a king *ššnḳ mrj-jmn* from the 22nd Dynasty (Fig. 6). Unfortunately, the fragments were not associated with any kind of context other than the above described fillings. As the pottery of this level is from a much later period, we have to assume that the fragments ended up in the layer as waste or filling material of silty-mud and sand to create a levelled ground for new buildings in the Ptolemaic Period. It is probable that those items originally belonged to a temple deposit or even came from a tomb (Lange 2010: 19-20).



Figure 6: Faience fragments with decoration and the cartouche of *ššnḳ mrj-jmn*.  
(Photographs © Tell Basta-Project).

### 2.3 *The buildings to the north of the Dromos* (Area A/III)

The northern part of Area A is occupied by large house structures built of mud brick. Only a relatively small part was excavated due to the closeness of the area to a modern government installation. Although the floor plan of those buildings is difficult to reconstruct, it seems that two main house units and two construction phases (Unit A/III.7, A/III.6, A/III.6a) are identifiable.

#### 2.3.1 *Unit A/III.7* (Fig. 7)

This building unit abuts the limestone pavement and column monument. Only the southern part has been excavated so far. The floor plan showed a sequence of rectangular, north-south oriented rooms built of unfired mud bricks. The best preserved was the easternmost room R1 of 5.94 by 2.48m. Its eastern wall M2 was found at a preserved height of 6.28–5.34m/asl and was 1.22m wide. It ran 8.60m from south to north and continued into the still unexcavated area further north.

Figure 7. House Unit A/III.7.  
View to the south-west.

(Photograph © Tell Basta Project).



As is obvious from its thickness in comparison with the other walls of Unit 7 (cf. below), M2 also functioned as the outer wall of the house unit itself, preserved in three layers of mostly headers (max. 36 by 18cm).

To the south, the entrance of the room is still clearly visible: the southern wall M3 at 5.93m/asl has a length of 1.60m and a width 0.94m. This wall runs from the southern end of M2 in a 90° angle from east to west and ends 1.0 m before reaching M3, creating a gap for the doorway of a size of 1.03m. At the height of 5.82m/asl, a limestone block of 26.5 by 24cm with a hole for the door hinge was found still in situ at the southern end of M4, further confirming the reconstruction of the entrance to the room. A single fired brick at the south-western corner of M3 shows the reinforcement of those parts of the house that were exposed to increased wear with materials of a greater durability than mud bricks, a practice known from a multitude of other examples like staircases or wall niches (cf. at Tell el-Dab'a: Lehmann 2019a: 178, 232; also: Spencer 1979: 141). Remains of slightly earlier walls were preserved directly to the south of M3 (cf. below).

The western wall of the room consisted of M4 with a maximum width of 0.64m and a length of 5.46m. It ran parallel to M2 and was preserved from 5.92-6.26 m/asl. M4 consisted mostly of stretchers (max. 28 by 9cm). The southern end of M4 lying next to the entrance door was reinforced with fired bricks as well. The northern wall of the room M5 at 6.59m/asl could only be partially excavated; it was a massive wall of east-west orientation which probably continues with a length of 10m to the west. The bricks of M5 changed in an irregular fashion between stretchers and headers with dimensions similar to those of M3.

The main feature of room R1 were the remains of a floor in the south-eastern corner paved with fired bricks of small dimensions (max. 18 by 12cm) at 5.91m/asl [501], measuring 1.46 by 0.56m. The room was filled with heaps of pottery from the Ptolemaic and Roman period [505], L1–5, as well as broken fired bricks and fragments of limestone blocks, showing that the room was used as a waste disposal area probably after the house was abandoned.

Adjacent to the west was room R2 with a size of 5.05 by 3.31m, enclosed by the above described walls M4 to the east and M5 to the north. Its southern wall M6 at 5.10m/asl, consisting of stretchers (max. 35 by 10cm), measured 3.48m with a maximum width of 0.76m. Of the north-south oriented wall M7 that once formed the division between room R2 and the following room to the east R3, only a few bricks remained, mostly on the part that was connected with M6 at 5.78m/asl. The northern wall of the room is M5 (cf. above). R2 was also equipped with a floor of fired bricks, proven by the remains of [507], a large patch of fired bricks and white lime mortar measur-

ing 2.06 by 1.46m, still covering the centre of the room at 5.43m/asl. By making use of M6 and M7, a small compartment [508] (1.02 by 0.56m at the height of 5.43 m/asl) was built into the south-western corner of the room. Its eastern and northern walls were built of only one layer of headers (max. 26 by 18cm).

A third room R3, of approximately the same size as R2, can be reconstructed to the west. In the south-eastern corner, remains of a floor pavement [509] of fired bricks of 1.91 by 1.35m were discovered at 5.84m/asl.

The area to the west of R3 has only been partially excavated so far. The western wall of R3, M8, was largely destroyed. Only its southern part, adjoining M6, could be detected with its bricks (mostly headers of max. 34 by 18cm) scattering off after a length of around 1.30 m. Its thickness seems to be more or less identical with M7. A construction built of fired bricks at 4.94-4.56m/asl extended 8.32m outside of the south-western corner of M8 to the direction of the entrance of the temple [510]. Although it is largely destroyed with many bricks having been removed, it could probably be identified as the remains of a water conduit, maybe a northern counterpart of the water conduit [112] described above with the same orientation.

Further remains of massive walls (MIII-V) were preserved to the west of the above described limestone basis at a height of 4.41-4.94m/asl, on a lower level than the limestone pavement. These represent probably slightly later additions which were levelled and overbuilt with structures made of fired bricks in Roman times. As the area was already excavated by Labib Habachi, nothing can be said for certain, though.

To the south of room R1, a similar situation was discovered: At a level of 5.12m/asl, under M2 and M3, wall MII and a rectangular structure [516] came to light, projecting to the south, which will be investigated further in future seasons (cf. below). Directly to the east of the limestone basis, at 5.23-5.13m/asl, M9, a small wall of fired bricks of 3.58m length was excavated. Two rows of bricks of this wall M9 were still preserved in their original bonds, consisting of a row of headers and a row of stretchers, max. 22 by 14cm. Interestingly, a few bricks were made in the above described shape of quarter section of a circle. Thus, it seems likely that M9 was erected at the same time as M1 in area A/I. This area was also greatly disturbed by the older excavations of Habachi.

### *2.3.2. Unit A/III.6 and A/III.6a*

The western outer wall M10 of unit 6a was discovered at 6.58-6.29m/asl, only 0.52m east of M2 of unit 7. M10 ran parallel to M2 and was preserved up to a length of 9.71m and a width of 1.25m. The bricks were laid out in an irregular way with constantly changing rows of headers and stretchers of max. 40 by 24cm. M10 seemed to form the western wall of a room, yet the corresponding wall one would expect to the east did not exist. Instead, at a distance of 2.48m, exactly the width of room R1, a massive wall M11, maybe the southern outer wall of a building, appeared at 5.53 m/asl in the south-eastern quadrant of grid square X/1, opposite the non-preserved southern part of M10. The exposed part of the wall measured 3.64 m in length and 2.57m in width; it once continued to the east but was destroyed there in antiquity, probably during the destruction of the area of the dromos; at the same time a block of quartzite and a fragment of a block of pink granite, most probably from the temple area, were dumped close to this wall. The wall projecting to the south from the south-western corner of M11 might belong to an earlier phase; however, due to the destruction, nothing can be said for certain.

To the north of M11 and at a distance of 2.21m, another massive brick wall M12 of 4.62m length was revealed at 6.59m/asl. M12 disappears after 4.63m into the baulk between X/1 and Y/1 which has not been removed yet. If M11 and M12 did indeed belong to the same unit, there seems to have been a room R4 between M11 and M12, but without preserved floor levels.

Further east, M13 of unit 6, at 6.13-5.78m /asl, was 7.05m long, covering the northern half of Y/1 almost entirely and extending further to the north into the yet unexcavated area. Its excavated part was 3.27m wide. The southern part of the wall, however, was hacked off during the destruction of the dromos area in antiquity. M13 shows irregular patterns of bricks of max. 36 by 24cm, thus hinting at the fact that it is not part of an occupation level but a foundation wall, most probably of a casemate building. The same is true for the other walls of this unit. A north-south oriented partly excavated room R5 of 1.98 by 1.12m with a possible floor level of mud plaster at 5.83m/asl [511] appeared to the east of M13. The room was later used as a basement or rubbish dump [512] and filled with ashes, shells, animal bones and small fragments of pink granite.

M14, the southern wall of R5, at 5.83-5.78m/asl, was preserved up to a length of 3.54m and 0.66m width, consisting of three layers of bricks in irregular bonding patterns with a size of max. 38 by 16cm. The excavated part of M15, the eastern wall of R5 at 6.05m/asl, measured 3.59m in length and 0.63m in width, probably not preserved in its entire width. Directly to the east followed another east-west oriented room R6, its excavated part measuring 3.59 by 2.23m. Traces of dark ashes from a later fireplace [514] of 0.72m diameter appeared directly at wall M17.

The northern wall M16 of this room R6 at a height of 6.36-6.12m/asl was excavated up to a maximal length of 8.75m and a width of 1.05m. It had up to six rows of alternating headers and stretchers made of huge bricks of up to 48 by 22cm. M16 continued into the unexcavated area to the north of A/III. A small ledge on the eastern end of the wall of two rows of headers, finished by a single stretcher of max. 38 by 10cm, marks the entrance to the likewise east-west oriented room R7. This room has a size of 2.63 by 2.70m and a patch of preserved floor of mud plaster with a size of 1.77 by 0.90m was excavated at a height of 6.46m/asl at its eastern side [513]. The irregular shape of the room points out that it comes from a period of re-use of the massive casemate wall.

The southern wall M17 of rooms R6 and R7, at 6.62-6.18m/asl, was excavated to a maximum length of 8.76m. M17 was only partially preserved, with its eastern end raising significantly higher than its western end. It was built of at least seven rows of alternating headers and stretchers (max. 32 by 22cm) with a maximum width of 1.98m.

The eastern wall of the excavated part of unit 6 is M18, at 6.81m/asl of 6.90m length and 1.73m width, consisting of alternating rows of headers and stretchers with a brick size of max. 38 by 20cm. M18 continued into the unexcavated area north and east of A/III. The southern part of the wall was probably again destroyed by the same activities that led to the destruction of the dromos. Here, the remains of wall M19 running parallel to M17 were preserved at a height of 6.81m/asl. This wall measured max. 0.93 by 0.84m in length with three rows of alternating headers and stretchers (max. 36 by 14cm). The southern part of M18 was disturbed by a large later pit.

From the plan of unit 6 and 6a it becomes obvious that the above described walls and contexts belong to two different periods. The older one was the eastern unit 6a, directly neighbouring unit 7. As its walls, especially visible with M10, follow the same orientation, unit 6a should date into the same period as unit 7. Unit 6, probably not much younger, is oriented directly north-south and seems to be the remains of a re-used casemate building. As only a small part of those units is excavated, not much can be said here for the time being. However, the dimensions of M13 and

M17 show that this casemate building was very big and might be comparable with the huge casemate buildings at Buto (Hartung et al. 2003: 211-16; 2007: 120-26; 2009: 136-39; Ballet et al. 2011: 80-81; Lehmann 2012-13: 81-89).

Most interestingly, to the south of unit 7 and 6a, i.e. the area where the connection between the dromos and the northern settlement area A/III was preserved, remains of walls (MI-MV at 5.28-4.98m/asl) of buildings have been found that would date slightly younger than unit 7 and 6a. These walls, namely MI, are preserved at almost the same level as the limestone slabs of the paved open court at area A/I. Obviously, they are evidence of the growth of the buildings over the very axis of the older dromos, thus subsequently blocking the main pathway to the temple of Bastet and its connection to the town. As we could not yet reveal the underlying stratigraphy here, a dating is difficult. However, if those buildings do still date in Ptolemaic times, their erection would have had consequences for the internal organization of the entire city: not only did it cause a necessary rearrangement of the entrance situation to the temple itself, it also required the establishment of a new processional way for the cultic festivals of the goddess and all the connected deities.

#### 2.4 The buildings to the south of the Dromos (Area A/IV) (Fig. 8)

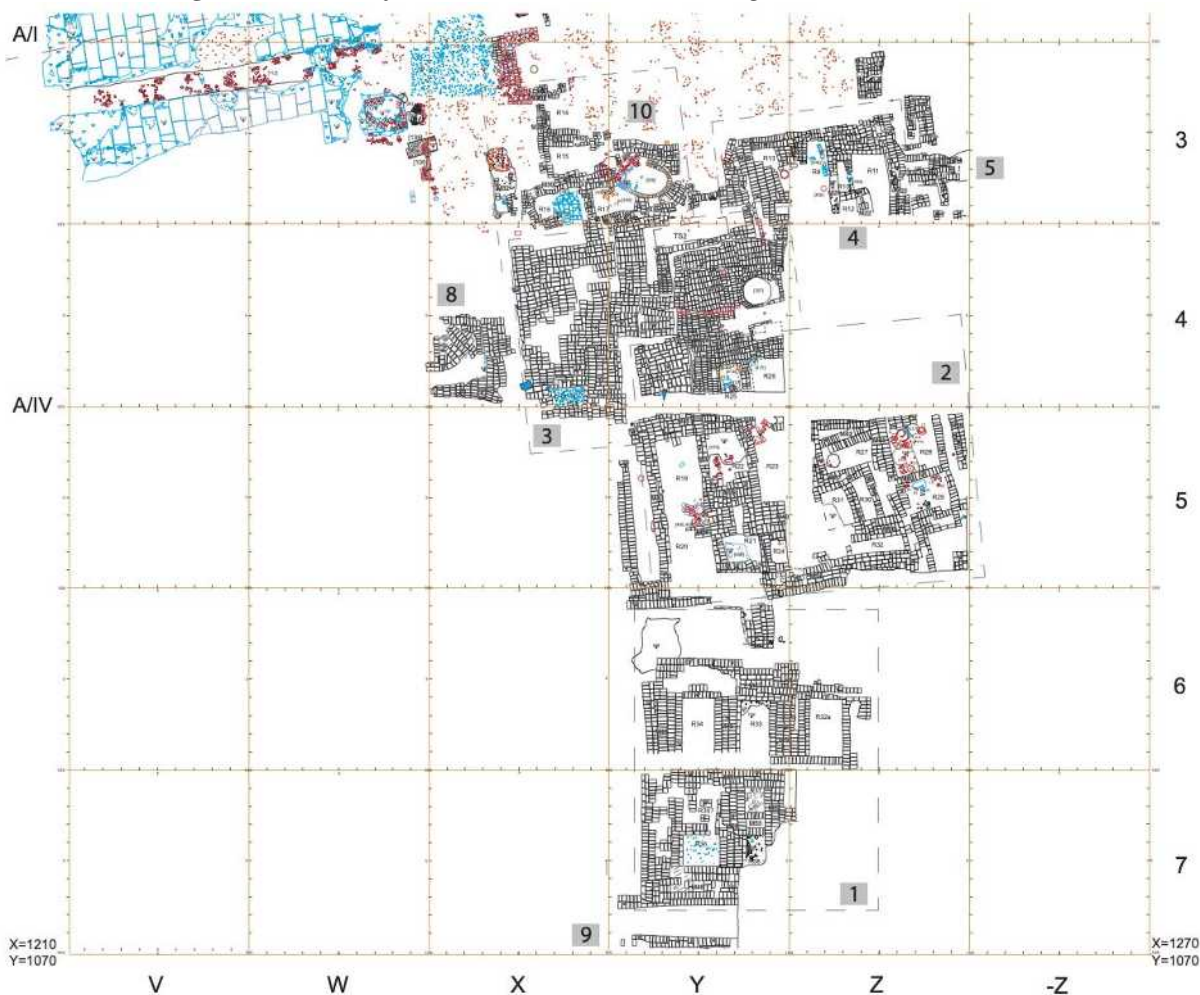


Figure 8. Area A/IV. (Plan © Tell Basta Project).

The largest excavated area so far is Area IV to the south of the Dromos. In total, five house units were identified. All of them could only be partially excavated until now. It was evident, however,

that all buildings had a general north-south axis, as did the buildings north of the Dromos. However, there were slight differences, as the orientation of units 2, 3, 4 and 10 deviated slightly towards the northwest, while units 6a and 7 deviated even more in that direction.

#### *2.4.1. Unit A/IV.4*

This unit bordered the area of the demolished dromos; its southern part is overbuilt by house unit A/IV.3 in its SW-corner. Still, the northern outer wall M20 of the building was preserved at a level of 7.19-6.85m/asl. With a length of 8.13m, M20 ran almost parallel to the main axis of the dromos from east to west. At the eastern end of M20, only the lowest part of the wall is preserved, as is visible by the irregular pattern of the bricks. The western part of M20 shows eight rows of headers of max. 38 by 18 cm. As a room (R9, cf. below) seems to have been enlarged in a later phase by cutting into the southern part of the original wall, the full width of the wall of around 2.92m was preserved only in its most western part.

Adjoining the eastern part of M20 was the eastern outer wall of the building, M21, oriented north-south. M21 consisted of two rows of headers of max. 38 by 18 cm and a row of only incompletely preserved stretchers at the eastern border of room R11. The wall at 7.12-6.88m/asl was a max. 1.23m wide. It was excavated to a length of 4.73m before continuing into the yet unexcavated grid square Z/4 to the south. As said above, M21 also formed the eastern wall of room R11 which had a size of 1.98 by 2.85m. It had a narrow passage from the south of 1.38m length and 0.96m width, widening up to 1.32m at the entrance to the room. This passageway is the result of a later installation of the angled, partly destroyed wall M22 at 6.93m/asl, made of presumably up to five rows of stretchers at its north-south length, and of an irregular pattern of bricks at its east-west oriented part (max. 40 by 22cm). The hereby enclosed space R12 with a maximum width of 0.92m and a length of 0.74m extended into the southern unexcavated grid square as well. In both rooms, no floor level was identified. If some of the seemingly smaller walls of unit 5 to the east of M21 were in fact remains of the destruction of this wall, M21 could originally have been measured around 3,0m in width and formed the western outer wall of unit 4 (cf. below).

The small north-south oriented wall M23 at the western long side of R11 had a length of 2m and was preserved up to a height of 6.85m/asl. It was built of at most two rows of stretchers (max. 38 by 18cm) with a width of 0.76m, and separated R11 from the adjoining room R10 to the west. The passage between the two rooms was marked by two limestone slabs used as a threshold, one of which showed traces of a pivot hole in a door socket [304]. Those slabs were also at a level of 6.85m/asl, thus revealing the floor level of rooms R11 and R10. Therefore, M20 was only preserved 23cm above the floor level.

The western wall M24 of R10 separated it from the following room R9. The wall at 7.10m/asl was badly preserved. Only at its northern part, where it adjoined M20, a regular pattern of a row of stretchers and a row of headers was still visible. The maximum width of M24 was 0.52m, its excavated part 3.12m long. As mentioned above, room R9 cut into the northern outer wall M20. The excavated part of the room measured 3.95m in length and 0.97 m in width.

Close to the northern part wall M24 of R9, at a preserved height of 6.97m/asl, a north-south oriented row of ten broken and fragmented limestone slabs was laid out along the eastern wall of R9. They were found together with a single piece of quartzite [306] and had a size of max. 20 by 20cm. Those may be the remains of a floor, although it seems that they were at least partly moved

or rearranged after the abandonment of the building. At a distance of 0.52m to the south, the base of a storage vessel was found still in situ [305].

To the west, R13 followed, separated from R9 by wall M25. The latter was preserved to a height of 6.97m/asl, was around 1.0m wide, and the length was only preserved to 1.20m. Room R13 probably measured originally 3.70 by 1.8m; it was mostly filled with rows of bricks that came from the collapsed upper part of M25 and the western outer wall of the building, M26. A floor level could not be documented. Unit 3 (cf. below) partly overlays the southern part of the room.

The western outer wall of unit 4 is M26 at 6.83-6.77m/asl, discovered with a length of 2.62m and a width of approximately 1.65m. Visible were three rows of headers, the outermost one being almost completely covered by tumbled bricks of the once higher layers which spread up to 0.80m further to the west.

#### *2.4.2. Unit A/IV.5*

Unit 5 was situated directly east of unit 4. Only the western part of this unit has been excavated so far. It consisted of a number of smaller east-west oriented walls at 7.15-6.69m/asl which continued under the eastern outer wall M21 of unit 4 and could belong to a slightly earlier building phase. Also, the possibility exists that some of this smaller walls were in fact remains of M21 which in this case would have to be at least around 3m wide as would be fitting for an outer wall.

#### *2.4.3. Unit A/IV.10*

Unit 10 is located directly west of unit 4. The northern part of this unit, which seems to have been of the same size as unit 4, that is around 11m, was effected by the destruction of the dromos. Its southern part was mostly not excavated due to the later erection of unit 3 on top of it (cf. below). Therefore, as for unit 4, only a portion of an occupation floor level of the building is preserved.

The northernmost wall belonging to 10 is the east-west oriented M27 at with a preserved height of 6.26-6.16m/asl. The wall was only partly preserved, up to a length of 2.12m and a width of 0.74m with three rows of mostly headers (max. 30 by 16 cm). M27 was the northern wall of the 1.78m wide room R14 and had a preserved length of at least 1.45m. The dimensions show that M27 was either not the outer wall of the house itself, or only represents what was left of it. The room however, probably once had the same size as the neighbouring room R15 (cf. below). Adjoining M27 at 6.24-6.20m/asl was the north-south oriented western outer wall of the house M28. The wall was badly destroyed, its original width seems to have measured around 1.70m, its excavated length was 8.10m.

The east-west oriented wall M29, adjoining M28, of 1.25m length and 0.93m width, was mostly built of headers (max. 36 by 22cm). It was preserved to a height of 6.24m/asl and ran almost parallel to M27. It formed the partition between rooms R14 and R15. The latter was of almost the same width as R14 and 2.26m long. There were no floor levels detectable in any of these rooms which might point to their functions as casemates. The western wall of R15 was almost completely destroyed by the later (?) installation of an oven [300], (cf. below). Again, separated by the east-west oriented wall M30, running parallel to M29 at a height of 6.32-6.23m/asl, a third room R16 with the same east-west orientation as R14 and R15 followed to the south.

M30, of 3.51 m length and max. 1.27 m width did not show any regular brick pattern (max. brick size 34 by 21cm). Room R16 measured 1.50 by 1.44m with an extra space of around 1.0 by 1.0m to the east due to the irregular course of the wall, probably due to destruction. The floor of

R16 was paved with fragments of limestone slabs (compare Lehmann 2019, 192, 279), constructing a floor level at a height of 6.12m/asl [335].

To the east, room R17, later used as a dumping place [336], followed. It was separated from R16 by the small north-south oriented wall M31 which was preserved to a height of 6.34 m/asl. The bricks (max. 32 by 15cm) bordering the room were laid out as stretchers, thus indicating that the original end of the wall was preserved here. The room measured at least 2.25 m in length and 1.50m in width. The north-eastern corner of the room is disturbed by the above mentioned oven [300] which also covers the whole south-eastern part of the house unit at 6.77m/asl, 65cm higher than the original floor level in R16.

Oven [300] was an elliptic northwest-southeast oriented structure measuring 2.18 by 1.95m. It was built of mud bricks that showed clear traces of a secondary? firing process; the north-western part of the oven was set with fired bricks for more stability, forming a ring-like structure of 0.58m width. Its south-western part was strewn with limestone chips. When excavated, it became clear that the oven was completely empty, i.e. no accompanying pottery was found, making a dating difficult. It is obvious, however, that its builders made use of the former walls of the house unit by seemingly reconstructing an open-air addition for industrial work and used some of the previously described shaped bricks that were formerly used before to build columns. The erection of the oven should therefore date to the last usage period of the area (cf. below). Remains of another oven [339] at 6.26m/asl were found just 0.43m to the east of the western outer wall of the building M28. It was attached to the northern end of the badly destroyed wall M32, stretching 2.14m to the south at 6.16m/asl, which could belong to another house unit of which nothing else was left. This second oven is only partly preserved; yet it is obvious that it was much smaller in diameter with approx. 1.54m. The interior of the oven is not yet excavated.

#### 2.4.4. *Unit A/IV.3*

Unit 3 is situated directly south of unit 4 and 10. The remains of this building supersede the southern parts of house units 4 and 10. As this structure still stood up to a relatively high level, its walls were eroded by rain in the passing millennia so that its preserved floor plan is very difficult to interpret. As a result of the destruction, the eastern and higher part of the building especially appears as a massive block of bricks preserved on several levels obscuring the course of individual walls. Another possibility would be that only the deepest layer of the foundation level of the building was preserved. The only way to obtain information about the original floor plan would have been the levelling of a large area, which was not feasible at the time. A deep circular pit of 1.48m diameter [307] was dug into the wall at the eastern border of the structure, in a later period. Only in the south-western part of the building, an east-west oriented room R18 was clearly observable. It measured 1.69 by 0.95m and had a floor of limestone chippings at a height of 6.25m/asl [310].

To gain information about the building phases of Area A/IV, we conducted an east-west oriented trench (TS2 in Y/4) of 2.72m length at the border between house units 3, 4 and 10. The trench started at a height of 7.20m/asl and went down for 2.68m. The stratigraphy from the trench showed that the walls of unit 3 (unit 3.1 in the stratigraphic record) reached down another 0.66m (level I), and were on top of partly destroyed and levelled walls of an earlier mud brick building (level II: unit 3.2). The walls of it were still standing up to 0.80m in height at the time of the erection of unit 3. Unit 3.2 was built on a construction level consisting of a compacted layer of limestone chips with some quartzite fragments (level III) at a height of 5.68m/asl. It had an average

thickness of 8-12cm. Under the construction layer, a thick deposit of silt and sand mixed with sporadically appearing limestone chips (level IV) came to light, in average 30-40cm thick. Level IV rested on the remains of another building of mud bricks (unit 3.3) at a height of 5.30m/asl in the last level (V) discovered in this trench so far. The walls of this building were levelled and covered with an infill consisting of the above mentioned sandy-silty-limestone mixture (level IV) and covered afterwards with the construction layer level III to create a more stabilized ground. TS2 ended at a height of 4.54m/asl before the end of the wall of building 3 was reached. Therefore, the walls of building 3 still stood more than 0.67m high after the levelling of the area (Fig. 9).

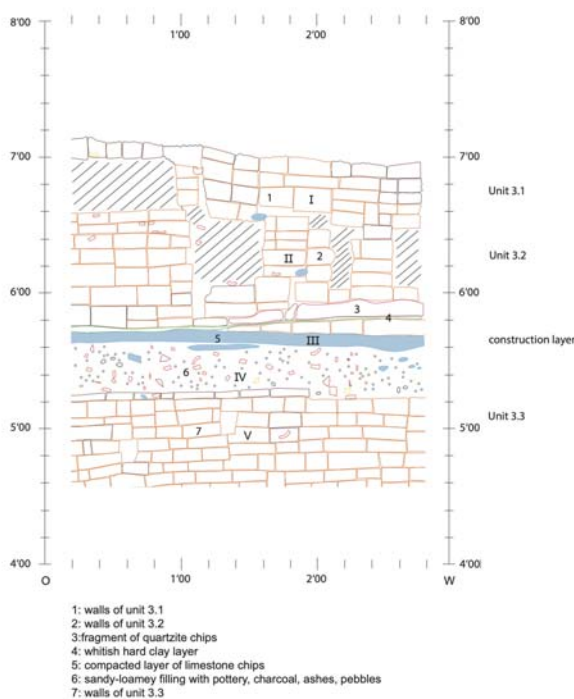


Figure 9. Area A IV. South-section of A/IV.3 (TS2). (Section © Tell Basta-Project).

Based on the stratigraphy described above and the analysis of the accompanying pottery, we reconstruct the building history of the northern part of Area IV as follows:

Level I: 7.17-6.48m/asl	levelling of unit 3.2 of the earlier settlement phase of level II and erection of unit 3.1	Ptolemaic Period, 3rd–2nd century BC.
Level II: 6.48-5.68m/asl	settlement phase: unit 3.2	Early Ptolemaic Period
Level III: 5.68-5.56m/asl	construction level of limestone chips	Late Dynastic/early Ptolemaic period
Level IV: 5.56-5.22m/asl	infill after levelling of unit 3.3	5th–4th century BC
Level V: 5.24-4.54m/asl	settlement phase: unit 3.3	Persian Period, 6th–5th century BC

Table 1. Reconstruction of the phasing in Area IV.

#### 2.4.5. Unit A/IV.2

House unit 2, one of the best preserved structures uncovered in Area A so far, was situated directly to the south of unit 3, covering its south-eastern corner. The north-south oriented western outer wall M33 of unit 2 appeared at 7.53-6.84m/asl with a length of 10.21m and a width of 1.10m (max.). It had two rows of headers and a row of stretchers (max. 38 by 22cm). It seems, however, that the building originally was at least around 15m long, but as the northern part of M33 was destroyed, this is only a tentative reconstruction.

The east-west oriented southern outer wall M34 adjoined M33 at a height of 7.95-6.92m/asl with the higher end of the wall in the east (grid square Z/5, cf. below). It is only partly preserved with a maximum length of 15.25m and a maximum width of 1.58m. M34 consists mostly of headers with a size of 40 by 20cm. In its central part, two rows of headers served as a frame filled with stretchers or irregularly laid out bricks (cf. Spencer 1979: Pl 2, A3).

The outer walls of house unit 2 to the north and east are more difficult to identify, especially as the northern outer wall M35 had collapsed on to the massive walls of unit 3. Of the eastern outer wall M36, only a part in the centre of 3.16m length was preserved at a maximum height of 8.29m/asl. Here three courses of headers (max. 42 by 22cm) ran parallel in a north-south orientation, with a gap of max. 0.60m in between. Because of this gap it is unclear if M36 really was the outer wall of the building with a destruction in the middle or two walls just running in the same direction. Together, the three courses would have made up a wall of around 1.75m width. As the adjacent grid square to the east is still unexcavated, this has to remain an open question for the time being.

Unit 2 had a multitude of north-south oriented rooms and therefore a multitude of small internal walls almost all built of courses of headers with a uniform maximum size of around 40 by 20cm. In the following account, emphasis is given to the description of the rooms while internal walls will be mentioned only if it is necessary to add further information.

The biggest room is R19, adjacent to the western outer wall M33. The long space measured 5.12 by 2.30m. In the south-eastern corner along wall M37, a patch of the floor pavement [400] was preserved made of fired bricks and fragments of limestone blocks and slabs. It had a height of 7.56m/asl defining the walking level of this building. Interestingly, one of these limestone slabs was a reused threshold with a pivot hole. Another very interesting feature was the application of pottery sherds covered with lime plaster [408] where the pavement touched the eastern and southern wall M37 and M38 of the room. Again those sherds were used as a means of reinforcement.

Separated by narrow wall M38 of which only a few bricks were preserved, a smaller room of the same orientation, R20, followed directly to the south. It has a size of 2.76 by 2.30m. Immediately to the east was a room with an almost square outline, R21, measuring 1.96 by 1.40m. It had a floor of white plaster preserved to a height of 7.37m/asl [409]. To the north followed wall M39 which was preserved to a height of 7.56-7.42 m/asl with a width of 3.24 m. Then room R22 can be found with a size of 2.31 by 2.06m. Here, a floor of mud plaster was preserved at a level of 7.4 m/asl [410].

The larger, only partly excavated room R23 was discovered to the east of R22. It measured 4.14m in length; its width was probably the same as in R19 with 2.30m. In the north-western corner of the room a small angled structure of fired bricks laid out in one course of stretchers [411] (max. brick size 22by 14cm). The structure had a height of 7.34m/asl and enclosed a space of 0.82 by 0.48m. This was probably an installation for domestic purposes, i.e. for the storage of vessels or the like. Another only partly excavated room, R24, of 1.24m length lay directly to the south of R23,

separated from it by a thick wall (M40) at 7.63-7.56m/asl, resembling M39. Close to the northern outer wall M35 of unit 2, two more rooms came to light: R25 of a size of 1.40 by 0.94m but probably continuing a little more into the unexcavated baulk between square Y/4 and X/4. In its southern part at a level of 7.63m/asl, floor [412] was preserved, consisting of different kinds of stones (limestone, dark granite, quartzite). In the northern part of the room, two lenses of gravel came to light at 7.53m/asl: [413] measuring 0.26 by 0.14m and [414] measuring 0.22 by 0.18m. These gravel lenses were possibly the remains of the foundation of the floor. Directly to the east followed room R26, which was not entirely excavated. It measured at least 1.80 by 1.76m. In the north-western corner of the room, a small limestone slab [415] appeared at 7.70m/asl. It probably served as a stepping stone in order to enter the room easily from a higher level, showing that this was a basement room. Both rooms R25 and R26 contained finds hinting at their former function: grinding stones and plates as well as parts of pigments (ochre, blue, red, white) and echinus bowls, probably used to prepare paint.

Another cluster of rooms appeared in the south-eastern quarter of unit 2. In general, this area is preserved on a higher level, rising around 0.50m above the general level of its western part. The two northernmost rooms R27 and R28 measured 2.62 by 2.44m and 2.72 by 2.48m. At a height of 7.82m/asl, wall M42 consisting of two courses of headers (max. 42 by 22cm) crossed the northern part of the westernmost room, R27. The east-west orientation of M42 is clearly different from the orientation of house unit 2 and its rooms. This and the fact that the level on which M42 came to light is deeper than any of the surrounding walls of R27 leads to the conclusion that M42 must be the remaining part of an underlying earlier building that was integrated into the foundation of the house. M42 was so far the only older wall discovered in unit 2.

Room R28 to the east contained one of the most interesting contexts found in the area: the room was filled with a heap of large pottery vessels [417] maybe fallen down from a higher place, probably a shelf made of mud bricks connected to the partly excavated northern wall M42 of the room. Bricks of the retaining wall and large patches of the white wall plastering and reed mats were found at a height 8.08-7.98m/asl between the pottery and partly also covering it. Many of the vessels were imported storage vessels of the early Ptolemaic Period (see pottery report). Remains of some broken pottery and white wall plastering were also found scattered on the floor in the next adjoining room R29. This room is located to the south with a size of 2.38 by 1.45m, separated by the small wall M43 with a preserved level of 8.08m/asl. It consisted of only a single course of headers.

To the west, two other small rooms followed: R30 of a size of 2.38 by 0.70m and R31 with 2.06 by 1.30m. Room R30 was separated by a rather thick wall M44 from room R29. It has a width of 1.78 m and was preserved to a level of 7.94 m/asl. Whereas the wall between rooms R30 and R31, M56, was only 0.50m wide, consisting of two courses of headers, on 7.88m/asl. The last room in the western part of unit A/IV.2 R32 was an east-west oriented space of 2.92 by 0.87m.

#### 2.4.6. Unit A/IV.1



Figure 10. House Unit A/IV.1, view to the north.

(Photograph © Tell Basta Project).

The southernmost building discovered so far is house unit 1. It is also the best preserved building of the area. Its eastern part could not be completely excavated, but its floor plan is clearly recognizable.

The north-south oriented western outer wall M46 has a length of 13.35 and a width of 2.24m. The preserved level was found at 7.29-6.93m/asl. This wall was built of four courses of mostly headers of a maximum size of 40 by 22cm. Adjoining the northern part of M46 was the east-west oriented northern outer wall M47, excavated up to a length of 11.47 m at 7.33-6.97m/asl. The wall was 2.25m wide. As can be seen in its eastern segment, M47 consisted of seven courses of bricks laid out as headers on the outer two courses. Next to it was another course of stretchers and two courses of headers, followed again by a course of stretchers that framed the northern wall of a room R32a. The same course of bricks, however, then continued to the west as headers (max. 38 by 22cm). From the southern outer wall M48 that adjoined M46 at 7.34-7.29 m/asl, only 5.32 m length was excavated. M48 was 2.19m wide with six courses of headers (max. 40 by 24cm). Compared to the other buildings excavated in Area A, the brick bonding here was very regular with just a few patches of bricks squeezed in as stretchers. Overall, the construction leaves the impression that more careful work was done here than on the other buildings in this area.

In the northern part of the building were three neighbouring rooms. The two westernmost ones, R34 of 3.26 by 1.76m and R33 of 3.14 by 1.60m were filled with debris coming from ovens: partly burnt mud bricks, charcoal and ashes. Also, the wall M49 that separates room R33 and R34 M49 (cf. below) did show oval holes of 12cm diameter at 6.70m/asl [425] probably as a fixation for wooden beams of some sort. As house unit 1 is clearly a casemate foundation, traces of wooden beams are an interesting context and will be discussed below. M49, measuring 3.26 by 1.42m at 7.21m/asl, was built of three courses of headers with a course of stretchers where it bordered room R33 (max. brick size 40 by 22cm). A rather thick wall M50, running parallel to M49, of 3.18 by 1.72m, consisting of six courses of headers (max. 40 by 20cm), to the east of R33 at 7.45m/asl, separated this room from the next adjoining room to the east, R32.

Another substantial, east-west oriented wall M51 seemed to have separated the northern part of the building from its southern part. M51, its excavated part measuring 7.40 by 1.72m at 7.48-7.40m/asl was mostly built of headers (max. brick size 40 by 20cm). It formed the northern wall of a small square room R37 of 1.40 by 1.06m. This room was filled with fragments of limestone blocks and slabs, broken mud bricks and pottery. Its eastern wall M52 at 7.40m/asl, north-south oriented, was only partly excavated. It was built of three courses of headers of max. 38 by 20cm. The connection between M52 and M51 was made of a patch of six stretchers added to the course of headers which framed the room.

To the south of room R37 and separated by a small wall of 1.10 by 1.06m at 7.40m/asl, consisting of three courses of headers M53 of max. brick size of 38 by 20cm, another room, R38, followed southwards, 1.02m wide, with an excavated length of 1.50m. The room again was filled with ashes, broken mud bricks, limestone chips and pottery. Its western wall M54 with 4.50m length and 2.46m width at 7.41m/asl was made of three courses mostly of headers, with a few stretchers at the southern section of the wall (max. brick size 44 by 22cm).

It is possible that another room, R35, existed in the south-western part but this is unconfirmed for now. South of it, however, R36, a room of 2.0 by 1.78m appeared, once again filled with pieces of limestone chips and slabs, broken mud bricks and pottery. One of the limestone fragments showed remains of an inscription, of which only the sign *mn* was preserved, again hinting at the fact that the limestone pieces, so abundant in the filling of the rooms of the buildings in Area A, came from a temple building or a tomb in the vicinity.

At the northern outer wall M47, almost precisely at the (reconstructed) centre, a rectangular structure of 1.90 by 1.48m, built of at least six courses of bricks of different sizes, appeared. As the bricks were preserved on two levels (7.65-7.55m/asl), the original binding pattern is difficult to determine. This feature is most interesting, as it could be the remains of a ramp or staircase, which could show that the excavated part of this building was originally a platform foundation, the chambers or recesses of which were reused afterwards as basements.

#### 2.4.7. Unit A/IV.9

Unit 9 is located directly south of unit 1. Only one part of the east-west oriented northern wall M55 of this structure has been excavated so far. The preserved height was at a level of 7.06-7.32m/asl. The gap of 1.52-1.82m width between unit 1 and 9 indicates the existence of a narrow street between these two buildings. The orientation east-west suggests a similar time of construction as for unit 1.

### 3. Analysis of the chronology and function of buildings in Area A

Area A was in use for almost a millennium, i.e. from the Third Intermediate Period until Late Roman times. The periods of usage can be roughly assigned to the subareas, with Area A/I providing evidence for the latest period of usage (ca. 4th century BCE) and Area A/IV being inhabited since at least the time of the Persian dominion. Hints for an even earlier occupation, however, came from the trench in Area A/II (TS1 in grid W-X/2) with its deepest layers containing pottery from the Third Intermediate Period. As those layers sit directly on top of the Gezira, Area A/II seems either not to have been in use before that time or any earlier buildings were cleared to the ground before the occupation of the Third Intermediate Period took place, at least for the area of the trench TS1.

As Area A is situated directly east of the temple of the local goddess Bastet, who enjoyed a cult at Bubastis since the Old Kingdom, the question of the earliest occupation of Area A is more complicated, however. Evidence for the existence of an Old Kingdom temple, most probably on the same spot as the temple of the 1st millennium BC is manifold. Firstly, the orientation of the main entrance of the sanctuary of the Ka-temple of Pepi I to the west of the temple of Bastet is connected to the main axis of this later temple, indicating that a temple of Bastet of the same orientation already existed at least at the beginning of the 6th Dynasty. Also, the relief decoration of the southern door lintel from the side entrance of the Ka-temple shows Bastet as coming from the east; exactly the direction where her later temple stood (Lange 2006: 122-23; Lange-

Athinodorou & El-Senussi 2018). In addition, the 5th and 6th Dynasty tombs of the nobles of Bubastis mention titles of offices connected to the cult of Bastet (Bakr & Lange 2017: 31-48). Therefore, earlier usage of the area east of the temple of Bastet could be expected. Remains of inscribed stone architecture from the Middle and New Kingdom in the temple bear witness to its existence in subsequent periods as well (Naville 1891: pl.XXXIII.A, XXXVIII.B-C, C', E, G, H").

The emergence of the Libyan kings of the 22nd Dynasty caused the rise of Bubastis, as it was their probable hometown, and simultaneously added to the importance of the goddess Bastet, whose temple those rulers renewed as the remains of the courts with numerous blocks with inscriptions of Osorkon I and Osorkon II show (Lange 2008: 131-141; Lange-Athinodorou 2019a). As Area A is very close to the entrance hall of Osorkon I, it is fair to assume that buildings of the Third Intermediate Period existed here. The pottery in TS1 points to that fact. Most fascinating is the find of the above described faience fragments bearing the name of a king Shoshenk Meriamun, a ruler of the 22nd Dynasty, of whom almost nothing is known (Lange 2010). As stated above, the original context of the vessels or figurines from which those fragments derive might have come from a temple deposit or even from a royal tomb, which was located within the temenos wall as was the custom of that period (Stadelmann 1971). If the latter was indeed the case, then this would provide very compelling research questions for future archaeological activities in this area.

In the 27th Dynasty, the dromos, leading through the centre of the city to the temple of Bastet, crossed Area A, thereby connecting it with the "temple of Hermes" in the east. The name refers back to the previously mentioned description of Herodotus (II, 138). This so-called temple of Hermes might actually have been a shrine for Atum and Bastet and the starting point of the barque-procession of Bastet (Lange-Athinodorou 2019a: 581-82). The dromos is also described by the Greek historian as paved with slabs of stone. As our excavations in Area A/II have shown, no remains of this pavement has survived in this part of our excavations. The stratigraphy here proves that the area where the dromos would have been, was dug out in late antiquity and possible stone remains of the dromos were taken out.

Yet, in the western part of area A/I, close to the temple, a pavement of limestone slabs actually was preserved. The connection of this pavement with the remains of a column monument shows that this was an open court from the time of the Roman emperors. The Greek epitaph on one of the re-used cover stones of the water conduit provides the early 1st century CE as a terminus *ante quem* for the installation of the water conduit. As the re-use of a tomb stone would certainly happen a while after the interment, and the water conduit was obviously hacked into the pavement of the limestone slabs, we can assume that the Roman court made use of the western part of the old Dromos, which was already described by Herodotus and might date back at least into the 27th Dynasty. The latest change in area A/I, however, took place much later, around the 4th century CE, when a structure with columns of burnt shaped bricks was erected here.

The housing structures in area A/III (units 6, 6a and 7), dating into Ptolemaic times, reveal more details about the activities in Area A: several rooms were paved with fired bricks and lime mortar, indicating that they were bathrooms or the like. Although the water conduit to the south of those buildings is from a later time, we might consider a connection with cultic cleaning rituals for people who were about to enter the temple of Bastet. Evidence for the fact that the temple was still flourishing in that period is the discovery of the Kanopus-Decree in the entrance hall of the temple in 2003 (Lange 2005). Still, the dromos in its full original width was reduced as the extension of house unit 6a shows: at least a wall were in later Ptolemaic (?) times blocking the main

axis. Therefore, the entrance to the temple of Bastet must have been located elsewhere at this moment. Whether the dromos was, at least in its eastern parts, still functioning as a processional way where the sacred barque of the goddess was transported during her festivals, is unclear also (Lange 2019b: 581-82).

The houses in Area A/IV also mainly date to the Ptolemaic period. The imported vessels in unit 2 show that those were the houses of an urban elite. Remains of painted wall plaster and mosaics, coming from the entirety of Area A/IV, emphasize the luxurious equipment of the houses. Interestingly, the pottery also indicates that the structures further to the south (units 2 and 1) are slightly older with pottery from the end of the Late Dynastic Period and the early Ptolemaic Period. If the structure at the southern outer wall of unit 1 is indeed a ramp or a staircase, unit 2, must at least, be dated later than the casemate building, as it would block the access to the ramp.

How can we now interpret the various floor plans of the house units and determine the function of those structures? In many cases, namely house units 7, 2, 4, and 10, the structures show occupation levels. With others, such as house units 1 and probably 6 and 6a, only the foundations were preserved. House unit 3 is difficult to determine due to the above described destruction.

Unit 1 provides a very clear picture. Here, we see a casemate construction with its typical almost square floor plan and thick outside walls. Parallels to the internal subdivision with several small compartments filled with rubble can be found at other sites, i.e. Tell el-Balamun (Spencer 1996: 51-59, Pl. 1, Pl. 6, Pl. 26-32; Spencer 1999: 295), Tell el-Herr (Marchi 2014), Tell el-Dab'a (Lehmann 2012-13; 2014, 2019), Naukratis (Thomas & Villing 2013: 83, 97-99) and Buto (Marouard 2015: 106-113) to name just a few. The excavation of wooden beams as a roofing for rooms R34 and R34 seems quite puzzling. As this is the foundation level, a ceiling is unexpected. An explanation would be that the beams were not so much a roof but a floor, constructed several feet above the base of the chamber in the foundation in order to create a clean, basement-like space that could be reached when standing on the wooden beams. Parallels for such installations can be found at Naukratis (Petrie 1886: 24) and Tell Buweib (Spencer 2016: 16-17).

As recent work on similar structures revealed, casemates were a type of foundation that was in use for buildings with a multitude of other functions, ranging from living (tower) houses, fortified buildings and buildings connected to the temple administration and economy, the *šn<sup>c</sup>-w<sup>c</sup>b*, as well as palaces and small temples (Traunecker 1987: 147-62; Spencer 1999: 296; Lehmann 2019: 67-70). An identification of the function is not always easy. For instance, casemate structure unit 1: chances are, that this is the foundation of a living house of which we know many examples from numerous sites in the Delta (Lehmann 2019). Still, considering the location of Area A inside the temenos, it is worth considering, if it could have had another function. Although the dimensions of our casemate structure unit 1 at approximately 14.5 by 14.5 m are rather small compared to other examples (i.e. Tell el-Balamun: 61 x 54 m, Naukratis: 55 x 55 m), it could still fall in the range of the small peripteral temple or barque-station foundations (Spencer 1979a: 132-137; Spencer 1999: 296). Its situation to the north of the main axis of the Dromos, almost at a right angle to it would certainly fit the picture although it lies in quite a distance. The pieces of smashed limestone in the fillings of the cellular structures, some of them with a smoothed surface and traces of decoration, could be a hint in that direction, as they certainly come from a stone building—a barque station for the goddess Bastet would be a possibility. Still, if unit 1 indeed was a small temple or barque-shrine, it must be older than house unit 2 directly to the north, which would have blocked its connection to the temple. A striking chronological difference, however, is not detectable in the ceramic material

found in both units. As the pottery, however, comes from the fillings of the compartments, which might have been used as cellars, an original date of the casemate structure in the Late Period with a phase of re-use in the following Ptolemaic Period is very probable. Similar processes were observed for instance at Naukratis (Spencer 1999: 298-99). Still, there is no proof for that and it is also likely that the casemate structure unit 1 was the foundation of just another living house. Other tower house foundations could be preserved in unit 3 north of the casemate foundation, and possibly to the north of the dromos in units 6 and 6a. The state of preservation of the first and the incomplete excavation of the latter however does not allow to draw any further conclusions.

Other units, such as 7, 2, 4 and 10, obviously preserve occupation levels, indicated by the door sockets at the entrances to rooms R1 in unit 7 and R10 in unit 10. Also, numerous floor levels with pavements of mud, bricks and plaster were detected. Some structures, such as units 10 and 5, might have been later external additions to the buildings.

Finally, the preliminary overview of the phases of usage of Area A shows that the activities here cover almost a millennium from at least the Third Intermediate Period to Late Roman times (Table 2). Surface findings of glass material suggest an even longer usage (Rosenow & Rehren 2014). The area underwent a multitude of changes, reflecting the continuing importance of the temple of Bastet as a constituting element of the city over a long period of time.

Phase	Dating	Area
Phase I	destruction of the Dromos, after 5th century CE	A/I, A/II
Phase II	water conduit south of open court, 4th/5th century CE	A/I
Phase IIIa	column monument and paved open court; building of fired bricks with columns of shaped fired bricks and re-use of unit 10, 3rd–4th/5th century CE	A/I
Phase IIIb	building activities: paving of open court re-using stone slabs of Dromos?, 1st–3rd century CE	A/I
Phase IVa (Level I in TS.2)	House units blocking the Dromos, Later Ptolemaic Period (end of 2nd/1st century BCE)	A/III
Phase IVb (Level II in TS.2)	House units north and south of the Dromos; Dromos mostly still in function, Ptolemaic Period (3rd/2nd century BCE)	A/IV
Phase Vc (Level III in TS.2)	construction level of limestone chips, end of Late Dynastic/ Early Ptolemaic period (4th/3rd century BCE)	A/IV
Phase VI	casemate building A/IV.1 (?), Late Dynastic Period (4th century BCE)	A/IV
Phase VII (Level IV in TS.2)	infill after levelling building directly south of the Dromos, Persian Period (5th–4th century BCE) (perhaps the time of Herodotus' description of the city)	A/IV
Phase VIII (Level V in TS.2)	building directly south of the Dromos, Saite Period (6th–5th century BCE)	A/IV
Phase IX	undetermined building activities, Third Intermediate Period to 26th Dyn	A/II

Table 1. Preliminary Chronology of Area A.

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# PRELIMINARY REPORT ON THE POTTERY FROM AREA A IN TELL BASTA

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## Abstract

The report gives an initial overview of the ceramics of some selected contexts from Area A east of the entrance of the temple of Bastet, in Bubastis. The bulk of the material came from the house units of the Ptolemaic Period. Roman material, apart from a few exceptions, was found mostly in the uppermost layers strewn across the site, lacking precise contexts. The report will concentrate mainly on the stratified Ptolemaic material from the area south of the dromos, the types of material found and how that can be used to determine that the contexts were mostly domestic in character.

## ملخص

يقدم التقرير لمحة عامة أولية عن بعض الفخار المختارة من المنطقة أ شرق مدخل معبد باستت في بوباستيس. جاء الجزء الأكبر من المواد من الوحدات المنزلية حتى العصر البطلمي. وقد تم العثور على مواد من العصر الروماني، باستثناء بعض الاستثناءات، في الغالب في الطبقات العلوية المنتشرة عبر الموقع، والتي تفنقر إلى السياقات الدقيقة. لذلك، سيركز التقرير بشكل أساسي على المواد البطلمية الطبقة من المنطقة الواقعة جنوب البرومو، وأنواع المواد التي تم العثور عليها وكيف يمكن استخدامها لتحديد أن السياقات كانت في الغالب ذات طابع محلي.

## 1. Introduction

The report gives an initial overview of the ceramics of some selected contexts from Area A east of the entrance of the temple of Bastet, which has been the focus of the Tell Basta-Project excavations for the last few years. The bulk of the material came from the house units of the Ptolemaic Period. Roman material, apart from a few exceptions, was found mostly in the uppermost layers strewn across the site, lacking precise contexts. Therefore, the report will concentrate mainly on the stratified Ptolemaic material from the area south of the dromos, i.e. the following contexts:

- House Unit A/IV.2: rooms A/IV.U2.R25 and A/IV.U2.R26
- House Unit A/IV.1: room A/IV.U1.R38
- House Unit A/IV.2: room A/IV.U2.R28

Before discussing the material in detail, the following section offers a short introduction to the functional groups of Ptolemaic and Roman times and the fabrics of the Ptolemaic material of Area A. For the statistics of this report, only diagnostic sherds, consisting mostly of rims, but sometimes also bases and handles were used. The pottery was sorted according to their fabrics (see below) and their function. So far, we identified five functional groups in Tell Basta: 1. Transport vessels (amphorae); 2. Common Ware (plain vessels for food preparation and storage vessels); 3. Cooking Ware (related to the heating of food such as cooking pots, casseroles, pans and associated lids); 4. Table Ware (related to eating, drinking and for serving, such as bowls, dishes, jugs and small pots); 5. Domestic furnishings and other specialized vessels (perfume vessels, Saqqiah pots, lamps etc.).

## 2. Ptolemaic ceramic material from A/IV

### 2.1. Fabrics

At Tell Basta, we can differentiate between pottery made of Egyptian fabrics and imported fabrics. The Egyptian fabrics consist of two main groups: alluvial Nile silt clay and marl clay. The majority of fabrics were made of Nile silt clay and were most likely produced locally or/and regionally. Based on the Vienna system (Nordström & Bourriau 1993: 168-182), the fabrics were divided into subgroups according to the predominant inclusions, which can be seen by macroscopic analysis:

*TB Nile A* - the 'Mixed Group': The name of this group is due to its well-balanced quantity of inclusions. A relatively moderate amount of sand, organic temper, limestone and voids of different shapes are typical. Some grog and mica may also appear. The clay is fired from brown to red or yellowish red and often has a greyish/black or red to weak red core.

*TB Nile B* - the 'Sandy Group': In this group sand is the dominant inclusion. Organic temper, limestone or grog may also appear, but in much less quantity.

*TB Nile C* - the 'Calcareous Group': Limestone or other calcareous tempers such as shells dominate this group while sand, organic temper or grog may also appear in less quantity.

*TB Nile D* - the 'Glimmer Group': Small mica fragments are the main temper in this group. Only a few other inclusions may appear – such as very small white or black particles. In general, one can find only few inclusions in this fabric, which always has a fine texture. The soft to medium hard fired clay shows a homogenous brown in colour.

*TB Nile E* - the "Organic Group": Organic temper dominates the clay matrix. Sand and limestone temper are also common in this group, but in less quantity.

Within the groups, sub-groups were created according to the appearance and quantity of other temper as well as the density/porosity of the fabrics. The texture varies from fine (I) to medium (II) to coarse (III), indicated by the Roman numerals after the first letter. An equally detailed subdivision is not possible for marl clay at the moment — mainly because of the small number of vessels produced in this fabric — but also because of the uncertainty regarding the division between marl clay and imported clay. Only the density of the marl fabrics is indicated by Roman numerals.

All surfaces may bear a slip or wash, are sometimes polished or burnished or appear plain with a smoothed surface. In some cases, vessels are decorated with painting, decorative applications or incisions.

### 2.2. Forms (Table 1, cf. also Table 2)

Transport Vessels	32	11.4%
Common Ware	70	25%
Cooking Ware	24	8.6%
Table Ware	134	47.9%
Domestic furnishing & other specialised vessels	20	7.1%
<b>Total</b>	<b>280</b>	<b>100</b>

Table 1. Number and percentage allocation of the ceramic finds in contexts A/IV.U2.R25, A/IV.U2.R26, A/IV.U1.R38 and A/IV.U2.R28.

The repertoire of forms does not vary much in the chosen contexts. Most of the vessels belong to the functional groups of Table Ware and Common Ware, while Cooking Ware and Transport Vessels are much less common.

<b>Table Ware</b>	<b>Nile</b>	<b>Marl</b>	<b>Import</b>	<b>Total</b>	<b>Common Ware + Domestic</b>	<b>Nile</b>	<b>Marl</b>	<b>Import</b>
Convex bowl	30	1	3	34	'Goldfish' (globular) bowl	3		
Carinated bowl	12			12	Large, carinated bowl	3		
Bowl (others)	8			8	Krater	3	1	
Dish	8			8	Basin	21		
Dish	8			8	Dokka	5		
Pot	18			18	Bread Tray	4		
Closed vessels	23	6		29	Jar	24		
Kantharos	1		1	2	Cylindrical vessel	3		
<b>Cooking Ware</b>					Ring stand	4		
Cooking pot	16			16	Filter	2		
Lopas	4			4	Kanun/stove	2		
Pan	2			2	Lamp	8		
Lid	5			5	<b>Transport Vessels</b>			
					Basket handle jar	2	1	
					Torpedo Jar	5	3	1
					Amphora	2		21

Table 2. Number of vessels in the contexts, presented by their form and fabric.

### 2.2.1. Table Ware

The group includes vessels for eating, drinking and serving (cf. Plate 1, Fig. 8). The group is dominated by a high number of bowls and the most common form is the convex or so-called *echinus* bowl (cf. Fig. 1). These bowls have an incurved rim, a ring foot and their diameter varies from 8–20cm, although the medium sized vessels occur most frequently. The form of the 'bowl' is of course one of the earliest kind of vessels invented and was already being used by humans in the early history of ancient Egypt, but the style of the convex bowls has its origin in the Greek black slipped *echinus* bowls (Rotroff 1997a, 1997b). Like many other forms of the Greek repertoire, these vessels came to Egypt through early trade as they became common, well-known or even "in fashion" due to an increasing Greek population living in the country after the conquest by Alexander the Great in 332 BC. The new citizens brought their own culture, traditions and personal taste to Egypt and Greek forms and techniques were adopted, imitated and transferred to extend the existing repertoire of ceramic vessels considerably. One imported Greek, large, shallow *echinus* bowl was found in context A/IV.R28 (cf. Fig. 1.15). According to Rotroff (Rotroff 1997a: 161-162), the shallow form was preferred in the 4th century. The rilled resting surface, the non-plump foot profile and the high

number of linked palmettes that decorate the inside of the bowl, suggest a date at the end of the 4th century BCE.

Most of the table ware vessels are made of a fine, dense and hard-fired clay and their surfaces are treated carefully, burnished or polished and sometimes even covered by a slip, but the carinated bowls were made less carefully (cf. Fig. 1.16-20, Plate 7, Fig. 1). Their fabric also seems to be less fine and their surfaces are generally only smoothed but belong to the same functional group. Some dishes complete the repertoire of vessels for eating (cf. Fig. 1.24-29). The most common type in this case is the dish with a rolled rim — a form which again has its origin in Greece. One of the dishes (Y/4.2-101, Fig. 1.28) has a small hollow in the centre on the inside and may imitate a kind of "fish plate", a Greek type of vessel, whose name derives from its decoration of seafood items, including various fish species and other marine creatures. The form is that of a flat, round plate with a small cup at the centre to hold oil or sauce.

A relatively high number of closed vessels were found. For most of them, only their bases are preserved, but the forms include small juglets, flasks and *oinochoi* – vessels related to the serving of drinks, like the Greek vessel for mixing wine with water – the *krater* (cf. below and Fig. 2). Although, as previously mentioned, the Greek drinking culture found its way to Egypt, typical Hellenistic drinking vessels such as *kantharoi* and hemispherical bowls are rare or even absent, not only in Tell Basta. This phenomenon also occurs in Tell Timai (Hudson 2016: 215-218) in the eastern Delta, in Naukratis (Berlin 1998) and in Tebtynis (Ballet & Południkiewicz 2012) in the Fayoum and seems to be characteristic for Ptolemaic Egypt, except perhaps for Alexandria and its surroundings (cf. Élaïne 2012; author's work at Schedia). Berlin and Hudson suggest that the convex bowls were not only used for eating, but for drinking too. Serving as a kind of cup, they replace the common drinking vessels (Hudson 2016: 218). At Tell Basta, only two *kantharoi* were found: one black slipped import from Greece and one made in the local alluvial clay covered by a red slip (cf. Fig. 2.38-39). Only a few rims of perhaps hemispherical bowls were found (cf. Fig. 1.21-23), but their quality is less fine and their surfaces are only smoothed. Whether they were used for drinking is questionable.

### 2.2.2. Cooking Wares

Many of the forms of vessels resemble Greek forms (Harlaut 2002; Ballet 2002): open forms such as *lopades* (Bats 1988: 48-51) and pans, and closed forms like *chytrai* (Bats 1988: 45-46) and *caccabai* (Bats 1988: 46-48) were used as cooking pots. These vessels are generally made of alluvial clay, belonging to the mixed group or, more frequently, to the sandy group, and consist of a fine or medium fine matrix. Their surfaces are in most cases only smoothed but sometimes treated with a red wash or slip, rarely burnished or polished. Not all vessels carry traces of fire (soot), which indicates their use as cooking pots.

The most common forms are *caccabai*. They usually have a globular body with a rounded base, a short neck, and a straight or angular cut rim. The inner face is more or less elaborately concave in order to carry a lid. Preserved are three pieces with two rounded handles which are attached horizontally to the shoulder of the vessels (cf. Fig. 2.40-42). Two of them are decorated with incisions around the area of the body's maximum diameter, immediately at the transition from shoulder to body (cf. Fig. 2.40-41). The other *caccabai* either did not have handles or are not well enough preserved to determine whether they had attached handles. One piece (Z/5.3-28, cf. plate 2, 43) might be a *chytra*. The form of these vessels can be described as tall pots with a rounded body

that narrows in a continuous curve at the level of a short neck or a slightly flared rim with one or two vertical attached handles. The preserved fragment Z/5.3-28, however, has a longer neck than one would usually expect.

The open form of *lopades* appears less frequently in the assemblages of the contexts presented. Two different types could be identified so far: the first one has a straight to slightly everted carinated body of different sizes that ends in a rounded base, occasionally with horizontal round handles (cf. Fig. 2.45-46; Pl. 1, fig. 2 [TB 6a Y/7.5-120]). No complete profile is preserved in the contexts discussed here, but a comparable largely intact *lopas* (W/1.M4-119, cf. Fig. 2.44) was found in unit A/III.7, M5 (Lange-Athinodorou, this volume). The second type has a rounded belly (cf. Fig. 2.47). Both types are characterized by an everted rim with a concave inner face to carry a lid and can appear with or without handles. Comparable material for the second type from Schedia and Alexandria suggests that this type is limited to Ptolemaic times, while the first type also exists in Roman contexts (Alexandria: Harlaut (unpublished): Cricket ground 2352.11 and 2435.03 (deposit dated to the third quarter of the 3rd century BCE); Schedia: Möller 2014, Schedia vessels SE 5240\_500\_4176 and SE 5239\_0102\_4144 (contexts dated to the 2nd/1st century BCE).

Only two examples of pans were found in the contexts presented. The first one seems to be a survivor of pharaonic tradition (cf. Fig. 2.48). It is a carinated plate or pan, slightly profiled and thick walled (parallels were found in Schedia, cf. Möller 2014: vessel SE 5240-0858\_1 in a context dating to the 2nd century BC; at Cricket Ground in Alexandria, cf. Harlaut (unpublished), this shape is typical for the last quarter of the 4th century BCE and the first three decades of the 3rd century BCE). The other example is a deeper, carinated incised dish or pan with a grooved rim to carry a lid (cf. Fig. 2.49). This form may also have originated in the repertoire of pharaonic tradition, but the shape continues until Roman times (Ballet & Południkiewicz 2012: pl. 16).

### 2.2.3. Common Ware group + Domestic furnishing and other specialized vessels.

More than a quarter of the assemblage are vessels belonging to these groups, and include vessels for storage (jars, basins), food preparation (large bowls, basins, *dokka*) and supporting vessels such as stands, stoves and lamps. The majority is made of medium to coarse textured Nile silt clay of the organic or mixed fabric group. The vessels may present a red wash, rarely a burnished or polished slip, but they are mostly left plain.

The large *dokka*-plates made of organic tempered Nile clay represent a permanent element of the material assemblages of domestic life and appear regularly in the Greco-Roman contexts of Tell Basta. Its origin seems to date back to the Old Kingdom (Ballet 1990: 187-188; further information about forms, function and their cultural significance in Zukerman 2014). Its multiple use is difficult to determine, however, according to their shape, it is evident that different types of *dokka* were used for baking bread or different kinds of cake, which was the case in the Old Kingdom (Ballet & Południkiewicz 2012: 199). The examples from the contexts presented here sometimes show traces of fire, but not always. The most common form attested in Tell Basta (cf. Fig. 3.50-52) corresponds to the third group found in Tebtynis (Ballet & Południkiewicz 2012: 200): it is the deeper form with flared walls and a flared rounded or concave rim. The examples from Tell Basta additionally have a concave inner face that creates a deeper depression in the centre of the vessel. One group, named here 'large carinated bowls', may also belong to the group of *dokka* (cf. Fig. 3.53-55). Their function is enigmatic, but Ballet and Południkiewicz suggest it was used as a censer (2012: 201).

Some bread trays (cf. plate 3, 56-59, plate 7, fig. 3 [TB 3b Y/4.2-8]) were also found. They are made of coarse Nile clay tempered with large organic material; their surface is plain. Sometimes a small depression in the form of the tip of a thumb or even of a whole finger is left on the surface. The description of Ballet and Południkiewicz of the making of *dokka*-plates (2012: 200) leads to the assumption that this may either be a complete bread tray or just the base of a *dokka* used for making bread.

The following section includes fairly large shapes, mainly used for the storage of goods and liquids, made of medium to coarse-textured Nile clay with large organic temper. The first group consists of several jars with a truncated conical neck, strongly narrowed at the base and with a sloping shoulder. The well flared short neck has a distinct ridge at the transition to the shoulder (cf. plate 4, 62-66). Tebtynis offers parallels dating from the end of the 3rd century to the 2nd century BCE (Ballet & Południkiewicz 2012: vessel n° 634 and n° 635, 144).

The jars of the second group (cf. Fig. 4.67-69, Plate 1, fig. 4 [TB 6a Y/7.5-8]) display strong morphological and technical affinities with the vessels of the Late Period. Their neck is high and narrow, and they might either bear the same distinct ridge at the transition to the shoulder or appear without it. The red coating shows horizontal traces of burnishing on the surface. Parallels from the end of the Saite to the Persian Period can be found at Elephantine (Aston 1999: n° 1996, 224 and n° 2146, 246) and in 2nd century BCE contexts of Tebtynis (Ballet & Południkiewicz 2012: vessel n° 647, 147). The possibility cannot be ruled out, however, that they constitute the residual traces of a previous occupation before the Hellenistic period.

Another common type is a jar with a short neck, strongly concave at the transition to the shoulder, and a rounded, distinctive concave rim (cf. Fig. 4.70-71). This form is generally made of a medium to coarse-textured Nile-silt clay of the mixed fabric group. The surface may appear plain or with a red coating. Parallels from the end of the 3rd century to the 2nd century BCE are known from Tebtynis (Ballet & Południkiewicz 2012: vessel n° 654 and n° 655, 148). Another similar rim shape appears in Sakkara (Aston 2010: fig. 48, 185) in the assemblages of the Late Period pottery of Phase D (early to mid 4th century BCE), which again leads us to the assumption that this form originated in the Late Period.

One large group of vessels consists of the open forms made of a medium to coarse-textured Nile-silt clay, often covered with a thin red coating. There are many variations of forms, but some of the more common ones will be presented below. Three larger bowls with a ring stand, globular body and a rounded, slightly distinctive rim look similar to modern glass bowls used for goldfish, leading to their common nickname 'Goldfish bowls' (cf. Fig. 4.72-74). Their form is similar to pharaonic predecessors (Ballet & Południkiewicz 2012: pl. 34 and 35, 272-273).

The same can be said for the group of bell-shaped basins with slightly out-turned concave rims (cf. Fig. 5.75-78). One basin or large bowl with a distinctive grooved rim and two lugs attached to the body is also an example of pharaonic tradition (cf. Fig. 5.79; Ballet & Południkiewicz 2012: pl. 34 and 35, 272-273).

Greek-inspired vessels for mixing wine with water, the *krater*, or a *lekane*, was imitated at Tell Basta, as for example in example Y/4.7-9 (Fig. 2.36). The fragment is made of a very fine-textured Nile-silt clay and covered with burnished red coating. This form is of course related to the Table Ware, but because we have other pieces that are less finely made and could not be with certainty identified as a *krater* or *lekanai*, they were initially considered to be basins (cf. Fig. 3.35 and 37). Two vessels are made of a medium-textured Nile-silt clay and bear a matt red coating, one example

is made of a medium to coarse-textured marl clay and is red coated, with remains of black painting visible. Parallels can be found at Tebtynis (Ballet & Południkiewicz 2012: pl. 38 and 39, 276-277) and Naukratis (Berlin 1999: fig. 6.17 n° 14, 183).

Continuing the deeply rooted Egyptian traditions, the vessel support or 'stand' remains an important piece of pottery. It constitutes a common and current version of the 'amphora-holder' made of stone, which is attested at Tell Basta as well (cf. Fig. 3.60-61). They are generally low in height and circular with a hyperboloid shape. The pieces made of a medium-textured Nile-silt clay are part of the repertoire of forms of the Late Period. The durability of their usage is well attested for the Hellenistic period (Aston 1999: n° 2465-2475; Ballet & Południkiewicz 2012: 205).

The small stoves, used for the initial cooking or re-heating of food or liquids contained in a pot, have the form of a small basin with a flat base (cf. Fig. 5.80-82). Their walls are vertical or very slightly in-turned. The container may include a large frontal notch, which allows one to put fuel inside or to easily clean it. It is also equipped with supports arranged on the edge of the stove, and very slightly raised above the level of the opening, on which the container could be placed. These supports are normally of a slightly trapezoidal shape with a flattened top. The examples found at Tell Basta are often hand-decorated around the opening. Applications in the form of undulating waves in slight relief are added by pressure. Ballet and Południkiewicz assume that in some cases the stoves were not fired in a potter's kiln, but were probably a home-made product (Ballet & Południkiewicz 2012: 208). Therefore, it is a portable device easy to carry from one space of the house to the other and could perhaps be a secondary fireplace next to the brick ovens or corner hearths found in a certain room or a courtyard of village houses. It is hard to find parallels for the stoves, however, in published literature, perhaps because of the modesty of their appearance, which would not have caught the attention of archaeologists until now. In Tebtynis (Ballet & Południkiewicz 2012: pl. 109 and 110, 347-348), similar containers were found, while two unpublished examples are attested at Tell Timai and Bouto.

#### *2.2.4. Transport Vessels*

In the contexts presented, a few so-called "basket handle jars" were found, vessels that belong to the larger group of transport vessels - amphorae (cf. Fig. 5.83-85). Their unusual loop-handles rising above the rim and their large capacity (80kg) make them peculiar amongst other amphorae. According to Pavlish (Pavlish 2002: 631) olive oil was one of the main commodities transported in these jars, and their use goes from 620 to 250 BCE. The form originated in Cyprus (De Rodrigo 2004), from where they were widely exported, but copies in local fabrics were made all over the Levant as well as in Egypt. The jars found at Tell Basta are similar to basket handle jars from Memphis (300 BCE) and Mendes (Pavlish 2002: 632; Redford 2010: fig. 11.44, 175). They have a ring-shaped rim, no neck, wide shoulders and a body narrowing down to a truncated base. One of our examples was made of marl clay, two of Nile-silt clay. Of one of the latter jars, only the truncated base is preserved. The marl-clay jar bears two stamps on each site of the handle attachments (cf. Fig. 5.85). A 3D-scan by Johannes Vaethjunker (University Wuerzburg) revealed that the stamp probably shows a cartouche surmounted by a double feather crown; however, the name inside is illegible. At Naukratis, a bronze stamp seal (British Museum, 1886,0401.1706) of the Persian period with the name of an official written in Aramaic was found. This seal might have been used to seal amphorae. Pavlish (Pavlish 2002: 634) initially assumed that the origin of the basket handle jars from Mendes was outside Egypt, but results of later chemical analyses refuted this

assumption. The elemental concentration profile of basket handle jars found at Mendes shows a positive correlation with Nile silt clays from Western Delta clay sources, perhaps of Alexandrian origin. For the jars found at Tell Basta a local production of the Nile-silt vessels is clear from their fabric and its macroscopic composition which is identical to the other vessels of the assemblages. Until further geochemical analyses are made, the source of the Marl clay remains unknown.

A more frequent type attested in Tell Basta is the so-called 'Torpedo jar' (cf. Fig. 5.86-87, Fig. 6.88-90 and Plate 1, fig. 5 and 6). The main place of origin of these amphorae is the Phoenician coast. In the contexts presented, we have imported examples as well as Egyptian imitations made of alluvial Nile-silt clay, covered with a white coating (cf. Plate 1, fig. 6 [TB 7a Y/7.5-135]) and also of marl clay (cf. Plate 1, fig. 5 [TB 6a Y/7.5-99]), which is naturally covered by a white self-slip. Geochemical analyses carried out by the Ceramegypt project have shown that the alluvial clay fits well into the chemical 'main cloud' of the probable locally-produced ceramics. Their coating, on the other hand, is made of a marl clay that may have been imported to the workshop from elsewhere. This phenomenon is unusual but not unique: at Tell Timai where excavations recovered raw fine marl clay from two transport jars and the production waste of small perfume bottles produced in the same fine fabric. XRF analyses on both and comparisons with published XRF data suggested an Upper Egyptian provenance near Edfu (Hudson 2018).

The quantity of Egyptian amphorae was very low. Instead, many fragments of imported vessels were found, mainly from Greece. The current state of research allows only few preliminary results: One stamped amphora handle was found in room A/IV.U1.R38 (TB 10a Y/7.5-161, cf. plate 6, 97). The rectangular stamp shows a prow symbol and Greek letters: ΠΑΥ[ΣΙΜ]Α[ΕΩΣ], possibly to read as Pausimachos. This oval handle is probably of Knidian origin and dates to 325-75 BCE, according to comparisons found at Naukratis (British Museum, n° 1955,0920.45).

Two rim forms appear most frequently in the contexts: The first (cf. plate 11, 91-92) is of a triangular shape, similar to early Rhodian and/or Greco-Italian amphorae (cf. M. Py & J.-C. Sourisseau, n.d.; cf. Empereur 1987: pl. 2). The second (cf. Fig. 6.93-94) is of a 'mushroom type'. The long, narrow outward-turned, overhanging rim is reminiscent of Corinthian amphorae. Grace notes that these mushroom-shaped rims were made in Samos latish in the 4th century BC (Grace 1971: 67). The most frequent base type is a short, knob-like, bevelled amphora toe with a slight depression in the base corresponding to early Rhodian types (cf. Fig. 6.95-96; cf. Py & Sourisseau, n.d.). Both the rim-shape and base-shape appear in Mendes too (Shubert & Hummel 2004: 137). According to neutron activation analyses tests, the clay of these vessels is of an Eastern Greek origin, most closely matching other analyses from Samos and furthermore connecting the bases with the rims, as complete vessels are lacking at Mendes. An interesting assemblage [A/IV.1.417] of imported vessels, situated in an upside-down-position, came to light in room A/IV.U2.R28 (cf. Plate 1, fig.9). Most of the vessels were preserved up to 50% or even almost complete. They seem to have fallen off a nearby mud brick construction in the north of the context, while others may originally have leaned on the mud brick walls of the room (Lange-Athinodorou, this volume). The vessels (cf. plate 6 and plate 7, fig. 7 [TB 5b Z/5.3-112]) are imported from Greece, but a more specific origin has not been determined at the moment. Rhodian production seems likely for most of them, but this must be confirmed with future studies.

In A/IV.U2.R26, a part of an amphora stopper was found. It is a terracotta disc with stamped decoration in relief (cf. Fig. 6.101). Those stoppers were used to seal vessels – usually amphorae with liquid contents — and were also intended as a medium to record contents, origin, destination

or ownership (Thomas 2011: 11). Thomas, who noted similar examples in Naukratis and Myos Hormos mentions that mould-made terracotta amphora stoppers, called *πωματα*, were mass produced in Egypt, since at least the mid-3rd century BCE, as recorded in the Zenon archive (Thomas 2011: 7). It is unclear if the stopper, made of Nile-silt clay, was produced in or around Tell Basta, or if it sealed an imported Egyptian vessel. So far, neither kilns for an amphora production nor indications for a wine industry (Thomas 2011: 11) have been found at the site.

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## CATALOGUE

### *Figure 1: Numbers 1 to 29.*

- 1) Convex bowl rim, TB Nile BII5, medium hard to hard fired, completely burnt/overfired, A-B-grey core-B-A (A= 5YR 3/2 dark reddish brown, B= 10R 4/4 weak red), Ø= 200mm, H= 70mm, Rim%= 11%, polished, Inv.N°= TB 5b Z/5.3-94.
- 2) Convex bowl rim, TB Nile BIII1, medium to soft fired, almost homogeneous (7.5YR 5/4 brown), Ø= 190mm, H= 50mm, polished, Inv.N°= TB 3b Y/4.2-3.
- 3) Convex bowl rim, TB Nile BI1, hard fired, A-B-black core-B-A (A= 5YR 6/8 reddish yellow, B= 10R 6/8 light red), Ø= 190mm, H= 47mm, red coating, burnished, Inv.N°= TB 3b Y/4.2-13.
- 4) Convex bowl rim, TB Nile BI, hard fired, Ø= 170mm, H= 38mm, Rim%= 15%, black slip, polished outside, Inv.N°= TB 3b Y/4.2-4.
- 5) Convex bowl rim, TB Nile BI1, hard to medium hard fired, A-B-black core-B-A (A= 5YR 4/4 reddish brown, B= 2.5YR 6/6 light red), Ø= 130mm, H= 62mm, red coating?, burnished, Inv.N°= TB 3b Y/4.2-10.
- 6) Convex bowl rim (2 pieces joining), TB Nile BII2, medium hard fired, homogeneous (5YR 4/4 reddish brown to 4/6 yellowish red), Ø= 132mm, H= 46mm, Rim%= 34%, red slip in- and outside, polished, Inv. N°= TB 5b Z/5.3-36.
- 7) Convex bowl rim, TB Marl II-I, medium hard fired, A-B-A (A= 2.5YR 5/6 red, B= 5YR 6/3 light reddish brown), Ø= 140mm, H= 34mm, Rim%= 6%, white coating (self slip?) in- and outside, Inv.N°= TB 7a Y/7.5-91.
- 8) Convex bowl rim, TB Nile AI1, hard fired, A-B-black core-B-A (A= 2.5 YR 4/6 red, B= 2.5 YR 5/6 red), Ø= 120mm, H=23mm, Rim%= 6%, orange coating in- and outside, polished, Inv.N°= TB 5b Z/5.3-22.

- 9) Convex bowl rim, TB Nile AI1, hard fired, A-B-C-B-A (A= 5YR 5/6 yellowish red, B= 2.5 YR 5/8 red, C= 10R 6/6 light red), Ø= 120mm, H= 32mm, Rim%= 10%, orange coating in- and outside, Inv.N°= TB 5b Z/5.3-21.
- 10) Convex bowl (6 pieces joining), TB Nile BII2, medium to soft fired, homogenous (5YR 6/4 light reddish brown to 5/4 reddish brown), Ø= 110mm, H= 53-60mm, Rim%= 47%, burnished, Inv.N°= TB 3b Y/4.7-10.
- 11) Convex bowl, TB Nile BI1, hard fired, A-B-C-black core-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 5/6 red, C= 10R 6/4 pale red), Ø= 114mm, H= 49-53mm, Rim%= 100%, complete vessel, red coating, burnished, partially soot outside and on the rim, remains of pigments inside the bowl, Inv.N°= TB 3b Y/4.7-6.
- 12) Convex bowl rim, TB Nile BI1, hard fired, A-B-C-B-A (A= 5YR 5/6 yellowish red, B= 10R 5/8 red, C= 10R 6/6 light red), Ø= 100mm, H= 33mm, Rim%= 7.5%, red coating, polished, Inv.N°= TB 5b Z/5.3-40.
- 13) Convex bowl rim (5 pieces joining), Greek Import, hard fired, almost homogeneous (7.5 YR 6/6 reddish yellow to 6/4 light brown), Ø= 180mm, H= 45mm, Rim%= 3.5%, shiny black slip, fine rouletting inside, Inv.N°= TB 10a Y/7.5-157.
- 14) Convex bowl rim, Greek Import, hard fired, homogeneous (...), Ø= 140mm, H= 30mm, Rim%= 11%, shiny black slip, Inv.N°= TB 3b Y/4.7-2.
- 15) Large shallow convex bowl (7pieces joining), Greek Import, hard fired, homogeneous (2.5YR 6/6 light red), Ø= 230mm, H= 63mm, Rim%= 28%, shiny black slip, palmettes and three lines of rouletting inside, Inv.N°= TB 6a Y/7.5-38.
- 16) Carinated bowl with ring base, TB Nile AI2, medium hard fired, A-B-C-black core-C-B-A (A= 7.5YR 5/4 brown to 5/6 strong brown, B= 2.5 YR 5/8 red, C= 2.5 YR 6/4 light reddish brown), Ø= 150mm, H= 50mm, Base%= 26%, Rim%= 2%, red coating in- and outside, polished, Inv.N°= TB 5b Z/5.3-18.
- 17) Carinated bowl (2pieces joining), TB Nile EI3a, medium hard fired, A-B-C-B-A (A= 5YR 5/6 yellowish red, B= 2.5 YR 5/6 red, C= 2.5YR 5/4 reddish brown), Ø= 158mm, H= 48mm, Rim%= 33%, thin reddish wash in- and outside, Inv.N°= TB 6a Y/7.5-29.
- 18) Carinated bowl (5 pieces joining), TB Nile EI1, soft fired, homogeneous (5YR 5/6 yellowish red), Ø= 158mm, H= 42mm, Rim%= 30%, plain surface, Inv.N°= TB 6a Y/7.5-44.
- 19) Carinated bowl (6 pieces joining), TB Nile EI1, medium hard fired, A-B-(black core)-B-A (A= 2.5 YR 5/8 yellowish red, B= 10R 5/8 red), Ø= 120mm, H= 39mm, Rim%= 82%, plain surface, Inv.N°= TB 6a Y/7.5-11.
- 20) Carinated bowl (5 pieces joining), TB Nile EI2, medium hard to soft fired, A-B-A (A= 7.5YR 5/6 strong brown, B= 10R 5/6 red), Ø= 154mm, H= 51mm, Rim%= 52%, thin reddish coating in- and outside, Inv.N°= TB 6a Y/7.5-126.
- 21) Hemispherical bowl rim (2 pieces not joining), TB Nile EI1, medium hard fired, homogeneous (7.5YR 5/4 brown), Ø= 150mm, H= 69mm, Rim%= 25%, plain surface, Inv.N°= TB 6a Y/7.5-139.
- 22) Hemispherical bowl rim (3 pieces, 2 joining), TB Nile AI3, soft to medium hard fired, A-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 130mm, H= 56mm, Rim%= 25%, plain surface, Inv.N°= TB 6a Y/7.5-138.
- 23) Hemispherical bowl (?) rim, TB Nile EI3, medium hard fired, A-B-A (A= 7.5YR 5/6 strong brown, B= 10R 5/6 red), Ø= 110mm, H= 33mm, Rim%= 9%, plain surface, Inv.N°= TB 6a Y/7.5-124.
- 24) Dish with rolled rim, TB Nile CI, hard fired, homogeneous (5YR 5/6 yellowish red), Ø= 200mm, H= 26mm, Rim%= 11%, red coating in- and outside, polished, Inv.N°= TB 5b Z/5.3-51.
- 25) Dish with rolled rim, TB Nile BII3, hard fired, A-B-C-black core-C-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 4/8 red, C= 2.5YR 5/6 red), Ø= 180mm, H= 31mm, Rim%= 9%, red coating inside (possibly), polished, Inv.N°= TB 5b Z/5.3-50.
- 26) Dish with rolled rim, TB Nile BI1, hard fired, A-B-black core-B-A (A= 5YR 5/8 yellowish red, B= 10R 6/4 pale red), Ø= 180mm, H= 24mm, Rim%= 10.5%, red coating outside, polished, smoothed inside, Inv.N°= TB 5b Z/5.3-48.
- 27) Dish with rolled rim, TB Nile AI3, medium hard fired, A-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 5/8 red), Ø= 190mm, H=21 mm, Rim%= 8%, red coating in- and outside, polished, Inv.N°= TB 5b Z/5.3-20.
- 28) Deep dish/fish plate rim, TB Nile EI3a, medium hard fired, A-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 200mm, H= 49-61mm, Rim%= 25%, red coating, partial soot around rim, Inv.N°= TB 3b Y/4.2-101.
- 29) Dish rim, TB Nile AI2, hard fired, A-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 75-177mm, H= 38-43mm, Rim%= 100%, almost complete vessel, red coating, partial soot around rim, Inv.N°= TB 3b Y/4.2-1.

**Figure 2: Numbers 30 to 49.**

- 30) Oinochoe rim, TB Nile AI1, hard fired, A-B-A-B-A (A= 5YR 5/6 yellowish red, B= 2.5YR 5/6 red), Ø= 84mm, H= 39mm, Rim%= 25%, red coating, polished, Inv.N°= TB 3b Y/4.2-7.

- 31) Oinochoe rim, TB Nile AI2, medium hard fired, A-B-A (A= 7.5YR 5/4 brown, B= 10R 6/8 light red), Ø= 90mm, H= 30mm, Rim%= 23%, plain (?) surface strongly polished, Inv.N°= TB 5b Z/5.3-57.
- 32) One handled small juglet rim, TB Nile CI, soft to medium hard fired, overfired, homogeneous (10YR 4/2 dark greyish brown), Ø= 34mm, H= 22mm, Rim%= 100%, remains of red slip in- and outside, burnished, Inv.N°= TB 5b Z/5.3-74.
- 33) Juglet rim, TB Nile BI1, hard fired, homogeneous (2.5YR 5/6 red), Ø= 24mm, H= 25.5mm, Rim%= 50%, orange-red coating outside, shiny (polished?), Inv.N°= TB 6a Y/7.5-4.
- 34) Base and body of one-handled closed vessel (17 pieces joining), TB Nile AI2, medium hard to hard fired, A-B-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 4/4 reddish brown, C= 2.5YR 5/4 reddish brown), Ø= 100mm, H= 245mm, Base%= 90%, remains of red coating outside, Inv.N°= TB 6a Y/7.5-67.
- 35) Krater rim, TB Marl II-III, hard fired, A-B-black core-B-A (A= 5YR 6/6 reddish yellow, B= 7.5YR 7/4 pink), Ø= 480mm, H= 18mm, Rim%= 6%, red coating in- and outside, painted with black stripe on the rim, Inv.N°= TB 10a Y/7.5-128.
- 36) Krater rim (3 pieces joining), TB Nile AI2, hard fired, A-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 5/6 red), Ø= 260mm, H= 94mm, Rim%= 10%, remains of red coating, burnished, Inv.N°= TB 3b Y/4.7-9.
- 37) Krater? rim, TB Nile BII3, hard fired, A-B-black core-B-A (A= 7.5YR 5/4 brown to 5/6 strong brown, B= 2.5YR 6/6 light red to 5/6 red), Ø= 320mm, H= 53mm, Rim%= 12.5%, red coating, Inv.N°= TB 5b Z/5.3-87.
- 38) Kantharos rim, TB Nile BI1, hard fired, A-B-black core-B-A (A= 2.5YR 5/6 red, B= 2.5YR 6/6 light red), Ø= 120mm, H= 101mm, Rim%= 11%, reddish brown coating outside, polished outside and partially inside, Inv.N°= TB 5b Z/5.3-24.
- 39) Kantharos body sherd, Greek import, hard fired, almost homogeneous A-B (A= 5YR 6/6 reddish yellow, B= 2.5YR 6/6 light red), Ø= 39mm, H= 78mm, shiny black slip, Inv.N°= TB 5b Z/5.3-113.
- 40) Cooking Pot/Caccabée rim with horizontal handle (18 pieces joining), TB Nile AI2, hard fired, A-B-C-black core-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 4/4 reddish brown, C= 2.5YR 5/4 reddish brown), Ø= 130mm, H= 151mm, Rim%= 100%, burnished outside, 3 lines of incised rouletting outside the lower part of the vessel, soot outside, Inv.N°= TB 10a Y/7.5-127.
- 41) Cooking Pot/Caccabée body sherd with horizontal handle, TB Nile AI2, medium hard fired, A-B-C-B (A= 5YR 5/8 yellowish red, B= 10R 5/8 red, C= 10R 5/4 weak red), Ø= 238mm, H= 64mm, plain surface, incised rouletting around belly, Inv.N°= TB 5b Z/5.3-35.
- 42) Cooking Pot/Caccabée rim with horizontal handle (7 pieces joining), TB Nile AI1, hard fired, A-B-C-B-A (A= 5YR 5/6 yellowish red, B= 10R 5/8 red, C= 10R 6/6 light red), Ø= 150mm, H= 83mm, Rim%= 48%, red coating outside, polished, soot outside, Inv.N°= TB 3b Y/4.7-8.
- 43) Cooking Pot/Chytra (?) rim, TB Nile BII2, medium hard fired, A-(B)-A (A= 5YR 5/6 yellowish red, B= 10R 5/6 red (very thin)), Ø= 130mm, H= 50mm, Rim%= 14%, plain surface, Inv.N°= TB 5b Z/5.3-28.
- 44) Lopas/Casserole(17 pieces joining), TB Nile BII [AI1 medium-fine), A-black core-A (2.5YR 4/4 reddish brown), Ø= 270mm, H= 111mm, Rim%= 50%, red coating in- and outside, burnished, soot outside, Inv.N°= TB 7b W/1.M4-119.
- 45) Lopas rim with straight body, TB Nile BI1, medium hard fired, A-B-black core-B-A (A= 5YR 6/6 reddish yellow, B= 10R 6/6 light red), Ø= 260mm, H= 64mm, Rim%= 23%, thin red wash (?) in- and outside, Inv.N°= TB 5b Z/5.3-31.
- 46) Lopas rim with straight body (38 pieces joining), TB Nile BII4, medium hard fired, almost homogenous (2.5YR 4/6 red to 4/4 reddish brown), Ø= 190mm, H= 78mm, Rim%= 70%, plain surface, partial soot outside, Inv.N°= TB 10a Y/7.5-120.
- 47) Lopas rim with rounded belly, TB Nile BI2, hard fired, A-B-C-black core-C-B-A (A= 7.5YR 5/4 strong brown, B= 10R 5/8 red, C= 10R 5/4 weak red), Ø= 240mm, H= 80mm, Rim%= 15%, red coating, burnished, partial soot outside, Inv.N°= TB 3b Y/4.7-24.
- 48) Pan rim, TB Nile BII4, medium hard fired, A-B-A (A= 5YR 5/6 yellowish red, B= 2.5YR 4/6 red), Ø= 320mm, H= 24mm, Rim%= 11%, plain surface, partial soot outside, Inv.N°= TB 5b Z/5.3-84.

*Figure 3: Numbers 50 to 61.*

- 49) Pan rim, TB Nile BII2, medium hard fired, A-B-A-B-A (A= 7.5YR 4/4 brown, B= 2.5YR 5/6 red), Ø= 200mm, H= 43mm, plain surface, soot outside, Inv.N°= TB 5b Z/5.3-29.

- 50) Dokka rim, TB Nile EIII1, hard fired, A-B-C-black core-C-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red, C= 2.5YR 5/4 reddish brown), Ø= 340mm, H= 82mm, Rim%= 10%, plain surface, soot inside, Inv.N°= TB 10 Y/7.5-143.
- 51) Dokka rim, TB Nile AIII1, hard fired, A-B-C-black core-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 4/4 reddish brown, C= 2.5YR 5/6 red), Ø= 450mm, H= 76mm, Rim%= 22.5%, light brown coating inside, partial soot inside, Inv.N°= TB 6a Y/7.5-148.
- 52) Dokka rim (2 pieces joining), TB Nile EIII2, hard fired, A-B-A-black core-A-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 480mm, H= 72-73mm, Rim%= 14%, plain surface, partial soot, Inv.N°= TB 5b Z/5.3-58.
- 53) Large carinated bowl rim, TB Nile EIII1, medium hard fired, A-B-C-black core-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 5/8 red, C= 2.5YR 6/4 light red), Ø= 360mm, H= 35mm, Rim%= 6%, plain surface, Inv.N°= TB 5b Z/5.3-55.
- 54) Large carinated bowl rim, TB Nile EIII1, medium hard fired, A-B-C-black core-C-B-A (A= 7.5YR 5/4 brown, B= 10R 5/8 red, C= 10R 6/3 pale red), Ø= 400mm, H= 59mm, Rim%= 6%, remains of red coating inside, outside badly preserved, Inv.N°= TB 5b Z/5.3-60.
- 55) Large carinated bowl rim, TB Nile AII1, medium hard to soft fired, almost homogeneous (5YR 5/6 yellowish red), Ø= 280mm, H= 45mm, Rim%= 10%, red coating, partially soot around rim, Inv.N°= TB 3b Y/4.7-15.
- 56) Bread tray rim (?), hand thrown, TB Nile EIII1, medium hard fired, Ø= 180mm, H= 35mm, Rim%= 100%, plain surface, fingerprint at the bottom, Inv.N°= TB 3b Y/4.2-8.
- 57) Bread tray rim (?), hand thrown, TB Nile EIII1, medium hard fired, Ø= 180mm, H= 30mm, Rim%= 25%, plain surface, Inv.N°= TB 3b Y/4.2-9.
- 58) Bread tray rim, hand thrown, TB Nile AIII1, medium hard fired, A-B-black core-B-A (A= 5YR 5/6 yellowish red, B= 7.5YR 6/6 reddish yellow), Ø= 180mm, H= 23mm, Rim%= 12.5%, plain surface, fingerprint at the bottom, Inv.N°= TB 10a Y/7.5-147.
- 59) Bread tray rim, hand thrown, TB Nile EIII2, soft fired, almost homogeneous (5YR 5/6 yellowish red), Ø= 200mm, H= 31mm, Rim%= 37.5%, plain surface, Inv.N°= TB 10a Y/7.5-96.
- 60) Ring stand, TB Nile AII1, medium hard to hard fired, A-B-C-D-C-B-A (A= 5YR 5/8 yellowish red, B= 10R 5/8 red, C= 10R 5/4 weak red, D= 2.5YR 5/6 red), ØRim= 15cm, ØBase= 160mm, H= 66mm, Rim%= 8%, Base%= 16%, plain surface, Inv.N°= TB 6a Y/7.5-80.
- 61) Ring stand, TB Nile EI3a, medium hard to soft fired, A-B-A-B-A (A= 7.5YR 5/4 brown, B= 2.5YR 5/6 red), ØBase= 170mm, H= 76mm, Base%= 30%, plain surface, Inv.N°= TB 6a Y/7.5-81.

**Figure 4: Numbers 62 to 74.**

- 62) Jar rim (30 pieces, 28 joining), TB Nile EII2, medium hard to soft fired, A-B-(black core)-B-A (A= 7.5YR 5/6 strong brown, B= 10R 5/8 red), Ø= 140mm, H= 288mm, Rim%= 83%, remains of red coating outside, burnished, Inv.N°= TB 6a Y/7.5-129.
- 63) Small jar rim (4 pieces joining), TB Nile EII2, hard fired, A-B-C-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/8 red, C= 2.5YR 5/4 reddish brown), Ø= 130mm, H= 70mm, Rim%= 33%, red coating outside, burnished, Inv. N°= TB 6a Y/7.5-111.
- 64) Small jar rim, TB Nile AII1, hard fired, A-B-C-D-C-B-A (A= 5YR 5/8 yellowish red, B= 10R 5/6 red, C= 10R 6/4 pale red, D= 2.5YR 5/6 red), Ø= 180mm, H= 55mm, Rim%= 9%, red coating outside, Inv.N°= TB 6a Y/7.5-109.
- 65) Small jar rim, TB Nile EII2, soft to medium hard fired, A-B-(C)-B-A (A= 7.5YR 5/6 strong brown, B= 10R 5/6 red, C= 5YR 5/4 reddish brown), Ø= 110mm, H= 61mm, Rim%= 18%, plain surface, Inv.N°= TB 6a Y/7.5-107.
- 66) Jar rim, TB Nile AIII1, hard fired, A-B-C-D-C-B-A (A= 2.5YR 5/8 red, B= 2.5YR 4/3 reddish brown, C= 10R 5/4 weak red, D= 7.5YR 5/3 brown), Ø= 160mm, H= 65mm, Rim%= 16%, plain surface, Inv.N°= TB 10a Z/5.3-105.
- 67) Jar rim with long neck (24 pieces joining), TB Nile EII2, medium hard fired, A-B-A (A= 7.5YR 5/4 brown to 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 140mm, H= 294mm, Rim%= 80%, red coating outside, burnished, Inv.N°= TB 6a Y/7.5-8.
- 68) Jar rim with long neck (2 pieces joining), TB Nile EII2, soft to medium hard fired, A-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 140mm, H= 135mm, Rim%= 13%, red coating outside, burnished, Inv.N°= TB 10a Y/7.5-125.
- 69) Jar rim with long neck (41 pieces, 32 joining), TB Nile AII1, hard fired, A-B-C-D-C-B-A (A= 5YR 5/6 yellowish red, B= 2.5YR 4/8 red, C= 10R 5/3 weak red, D= 2.5YR 5/4 reddish brown), Ø= 120mm, H= 331mm, Rim%= 84%, red coating outside, burnished, Inv.N°= TB 6a Y/7.5-93.

- 70) Jar rim (3 pieces joining), TB Nile AIII1, hard fired, A-B-black core-B-C (A= 2.5YR 5/8 red, B= 10R 6/6 light red, C= 5YR 4/3 reddish brown), Ø= 150mm, H= 162mm, Rim%= 42%, plain surface, Inv.N°= TB 10a Y/7.5-115.
- 71) Jar rim (10 pieces joining), TB Nile AIII1, hard fired, A-B-black core-B-A (A= 7.5YR 6/6 reddish yellow to 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 190mm, H= 52mm, Rim%= 69%, red coating outside and partially inside, Inv.N°= TB 6a Y/7.5-12.
- 72) Goldfish bowl (18 pieces joining), TB Nile AII1, hard fired, A-B-C-B-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 4/8 red, C= 7.5R 6/4 pale red), Ø= 250-276mm, H= 197mm, Rim%= 61%, plain surface, Inv.N°= TB 6a Y/7.5-82.
- 73) Goldfish bowl rim, TB Nile EII1, hard fired, A-B-C-B-A (A= 2.5YR 5/8 red, B= 10R 5/4 weak red, C= 2.5YR 5/6 red), Ø= 232mm, H= 68mm, Rim%= 7%, orange-red coating outside and partially inside, Inv.N°= TB 6a Y/7.5-39.
- 74) Goldfish bowl rim, TB Nile EII2, hard fired, A-B-C-black core-C-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/8 red, C= 2.5YR 5/4 reddish brown), Ø= 360mm, H= 124mm, Rim%= 10%, remains of dark red coating outside and partially inside, Inv.N°= TB 6a Y/7.5-13.

*Figure 5: Numbers 75 to 87.*

- 75) Bell-shaped basin rim, TB Nile EI3a, hard fired, A-B-C-B-A (A= 5YR 6/8 reddish yellow, B= 10R 6/8 red, C= 2.5YR 6/4 light reddish brown), Ø= 260-280mm, H= 143-146mm, Rim%= 15%, red coating, Inv.N°= TB 3b Y/4.7-16.
- 76) Bell-shaped basin rim, TB Nile EIi2, medium hard fired, A-B-(C)-B-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red, C= 7.5YR 4/4 brown), Ø= 280mm, H= 136mm, Rim%= 13%, remains of red coating outside, Inv.N°= TB 6a Y/7.5-136.
- 77) Bell-shaped basin rim, TB Nile EI3, hard fired, A-B-C-D-C-B-A (A= 2.5YR 5/8 red, B= 2.5YR 4/4 reddish brown, C= 2.5YR 6/4 light reddish brown, D= 2.5YR 6/6 light red), Ø= 250mm, H= 57mm, Rim%= 9%, red coating in- and outside, Inv.N°= TB 5b Z/5.3-7.
- 78) Bell-shaped basin rim (3 pieces, 2 joining), TB Nile EII2, medium hard to hard fired, A-B-C-black core-C-B-A (A= 5YR 5/6 yellowish red, B= 2.5YR 5/6 red, C= 10R 5/4 weak red), Ø= 250mm, H= 85mm, Rim%= 17.5% (+ 13% not joining), plain surface, Inv.N°= TB 6a Y/7.5-131.
- 79) Basin rim, TB Nile AIII1, hard fired, A-B-C-black core-C-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 5/8 red, C= 2.5YR 5/4 reddish brown), Ø= 320mm, H= 77mm, Rim%= 9%, thin red coating in- and outside, Inv.N°= TB 5a Y/7.5-134.
- 80) Rechaud/Kanun rim, TB Nile AIII1, medium hard fired, A-B-C-black core-C-B-A (A= 5YR 5/6 yellowish red, B= 10R 5/8 red, C= 10R 6/4 pale red), Ø= 320mm, H= 242mm, Rim%= 11%, red coating (possibly), wavy decoration applied, Inv.N°= TB 7a Y/7.5-97.
- 81) Rechaud/Kanun base with notch, TB Nile EIII1, hard fired, A-B-C-black core-C-B-A (A= 5YR 5/6 yellowish red, B= 2.5YR 5/6 red, C= 10R 6/4 pale red), Ø= 270mm, H= 95mm, Base%= 15%, wavy decoration applied, Inv.N°= TB 7a Y/7.5-165.
- 82) Rechaud/Kanun base, TB Nile EIII2, hard fired, (A)-B-black core-B-(A) (A= 2.5YR 5/6 red, B= 5YR 5/4 reddish brown), Ø= 300mm, H= 155mm, Base%= 25%, white coating outside, soot inside, Inv.N°= TB 5b Z/5.3-109.
- 83) Basket handle jar (49 pieces joining + 16 bodysherds (1x4 joining) not joining), TB Nile AIII1, hard fired, A-B-A (A= 5YR 5/8 yellowish red, B= 2.5YR 5/6 red), Ø= 100mm, H= 713mm, Rim%= 50%, remains of red coating outside, Inv.N°= TB 10a Z/5.3-108.
- 84) Basket handle jar base, TB Nile EI1, medium hard fired, almost homogeneous A-(B)-A (A= 7.5YR 5/6 strong brown, B= 2.5YR 5/6 red), Ø= 74mm, H= 114mm, Base%= 100%, remains of brown coating outside, Inv.N°= TB 6a Y/7.5-146.
- 85) Basket handle jar (67 pieces joining + 6 pieces (1 base+5 bodysherds joining) + 40 bodysherds (1x2 joining) not joining), TB Marl II-III, hard fired, homogeneous (2.5YR 6/6 light red), Ø=120mm, H= 891mm + Base 240mm, Rim%= 22.5%, white coating (self-slip?) outside, Inv.N°= TB 10a Z/5.3-111.
- 86) Torpedo jar, TB Nile AIII1, hard fired, A-B-C-B-A (A= 2.5YR 5/8 red, B= 2.5YR 4/3 reddish brown, C= 2.5YR 5/6 red), Ø= 100mm, H= 543mm, Rim%= 100%, white coating outside, Inv.N°= TB 6a Y/7.5-135.
- 87) Torpedo jar, TB Marl II-III, medium hard fired, A-B-C-B (A= 2.5YR 6/6 light red, B= 10YR 7/4 very pale brown to 6/4 light yellowish brown, C= 10YR 6/2 light brownish gray), Ø= 113mm, H= 538mm, Rim%= 100%, white coating (self-slip?) outside, Inv.N°= TB 7a Y/7.5-99.

**Figure 6: Numbers 88 to 101.**

88) Torpedo jar rim (2 pieces joining), TB Nile AIII, hard fired, A-B-C-black core-C-B-A (A= 5YR 5/6 yellowish red, B= 10R 5/8 red, C= 7.5R 6/4 pale red), Ø= 100mm, H= 138mm, Rim%= 40%, white coating outside, Inv.N°= TB 6a Y/7.5-94.

89) Torpedo jar rim (5 pieces joining), TB Marl III, soft fired, A-B (A= 2.5YR 8/4 pink, B= 2.5Y 8/4 to 7/4 pale brown), Ø= 80mm, H= 111mm, Rim%= 20%, plain surface, Inv.N°= TB 10a Y/7.5-152.

90) Torpedo jar rim (24 pieces, 1x9 joining, 1x3 joining, 2x2 joining), Palestinian import, hard fired, homogeneous (7.5YR 6/6 reddish yellow), Ø= 80mm, H= 207mm, Rim%= 43% (+15% not joining), plain surface, Inv.N°= TB 10a Y/7.5-163.

91) Amphora rim, imported, hard fired, dense, almost homogeneous (5YR 6/4 light reddish brown to 6/6 reddish yellow, inclusions: a lot of greyish-white particles xs-s and some m, some white crystalline particles l-xl, some black particles xs-m and few l-xl, some reddish-brown particles s-m, few golden mica(?) xs-m), Ø= 310mm, H= 90mm, Rim%= 35%, remains of greyish-white coating in- and outside, Inv.N°= TB 3b Y/4.7-60.

92) Amphora rim (8 pieces joining), imported, hard fired, dense, A-grey core-A (A= 2.5YR 6/6 light red, inclusions: a lot of sand (quartz) xs-m and many l, many white particles s-m, some yellowish-white particles m-l, some red particles xs-l, some black particles s-m), Ø= 100mm, H= 169mm, Rim%= 75%, thin creamish-white coating outside, Inv.N°= TB 6a Y/7.5-162.

93) Amphora rim, imported, hard fired, dense, homogeneous (7.5YR 6/6 reddish yellow to 6/4 light brown, inclusions: many white particles xs-s and few m, some sand (quartz) xs-m, some red particles xs-m, few black particles xs-s, few yellowish-white brown particles s-m), Ø= 134mm, H= 78mm Rim%= 23.5%, Inv.N°= TB 6a Y/7.5-47.

94) Amphora rim (2 pieces joining), imported, hard fired, dense, almost homogeneous (7.5YR 6/6 yellowish red to 6/4 light brown, inclusions: a lot of sand (quartz) xs-s and some m-l, some white particles xs-s, few black particles xs-s, few red particles xs-m), Ø= 158mm, H= 75mm, Rim%= 100%, plain surface, Inv.N°= TB 6a Y/7.5-9.

95) Amphora base, imported, hard fired, dense, A-grey core-A (A= 5YR 6/6 reddish yellow, inclusions: many sand (quartz) xs-m, many white particles xs-m, many black particles xs-m, few white crystalline particles m-xl, some red particles xs-m, few fine elongated voids and elongated white particles (burnt straw) xs-s), Ø= 30mm, H= 101mm, Base%= 100%, white coating outside, Inv.N°= TB 6a Y/7.5-28.

96) Amphora base, imported, hard fired, dense, homogeneous (5YR 6/6 reddish yellow, inclusions: many sand (quartz) xs-m, many yellowish-white particles xs-s and some m, some black particles xs-s, some grey particles (rocks?) s-m, some red particles s-m), Ø= 67mm, H= 49mm, Base%= 90%, plain surface, Inv.N°= TB 10a Y/7.5-164.

97) Oval amphora handle with rectangular stamp, probably Knidian import, hard fired, dense, homogeneous (5YR 6/6 reddish yellow, inclusions: a lot of white particles xs-s, many sand (quartz) xs-m, some black particles xs-m, few white crystalline particles l-xl, some red particles s-m, some brownish particles s-m), stamp: 19 x 21mm, prow symbol and Greek letters: ΠΑΥ[ΣΙΜ]Α[ΞΟΣ], Inv.N°= TB 10a Y/7.5-161.

98) Amphora (10 pieces joining), imported, very hard fired, dense, A-B (A= 5YR 6/4 light reddish brown, B= 2.5YR 6/6 light red, inclusions: many white particles xs-s and few m-l, some black particles s-m, some dark red particles xs-m), Ø= 100mm, H= 438mm, Rim%= 100%, surface 2.5YR 7/3 light reddish brown, Inv.N°= TB 10a Z/5.3-93.

99) Amphora (105 pieces joining), imported, very hard fired, dense, almost homogeneous A-B-A (A= 2.5YR 6/6 to 6/8 light red, B= 5YR 6/6 reddish yellow, inclusions: a lot of white particles xs-s, few grey particles s-m, few red particles xs-s), Ø= 127mm, H= 671mm, Rim%= 100%, surface coating 7.5YR 7/3 pink, one stamp on each handle (1x rectangular, 1x almost squared) with Greek letters, Inv.N°= TB 10a Z/5.3-103.

100) Amphora (9 pieces joining), imported, hard fired, dense, homogeneous (7.5YR 8/2 to 10YR 8/2), Ø= 110-170mm, H= 715mm, Rim%= 100%, plain surface, rouletting (?) around belly, handles oval in profile, Inv.N°= TB 5b Z/5.3-112.

101) Amphora-stopper rim, TB Nile AII, Ø= 150mm, H= 21mm, Rim%= 20%, plain surface, Inv.N°= TB 3b Y/4.7-1.

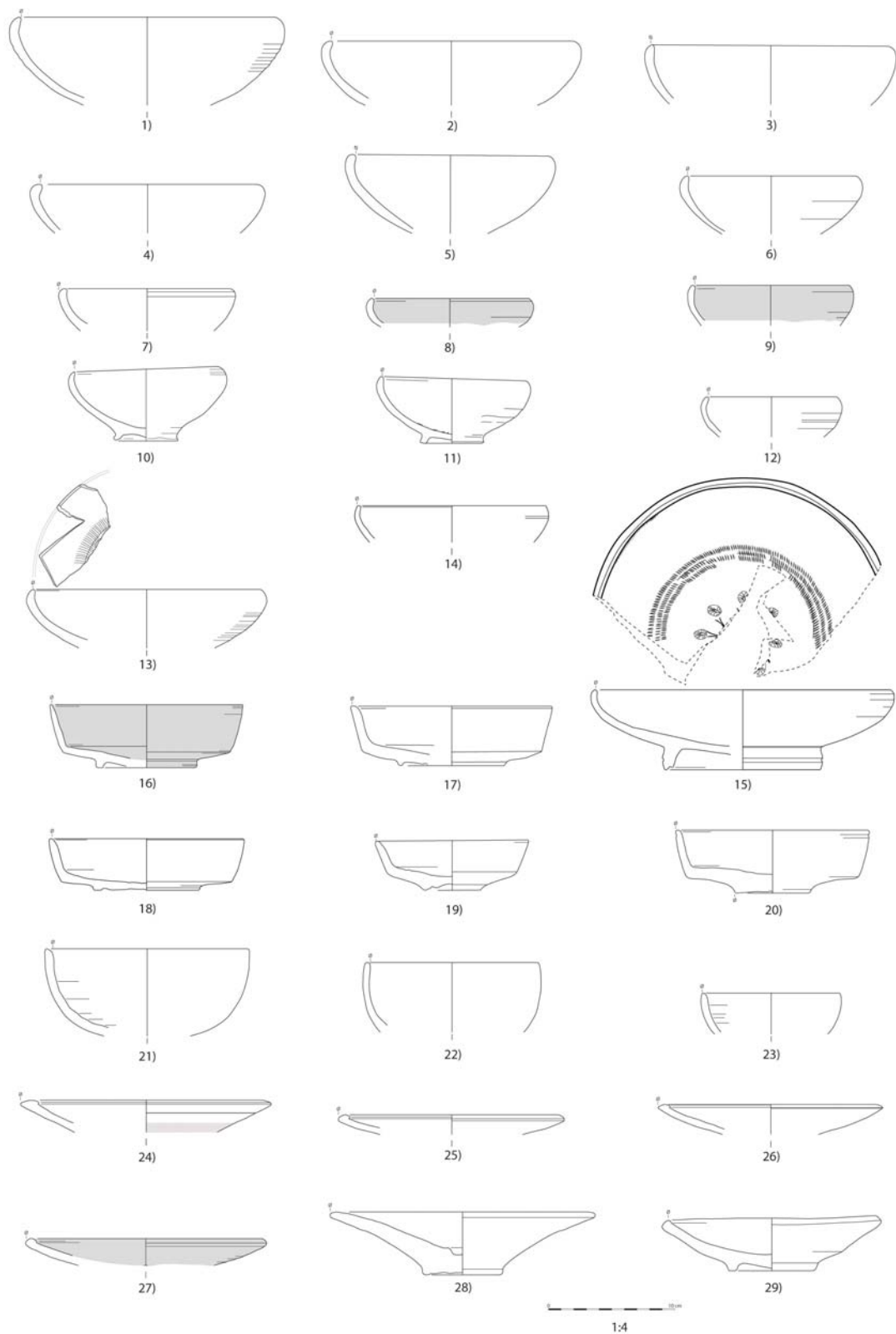


Figure 1. Catalogue numbers 1 to 29.

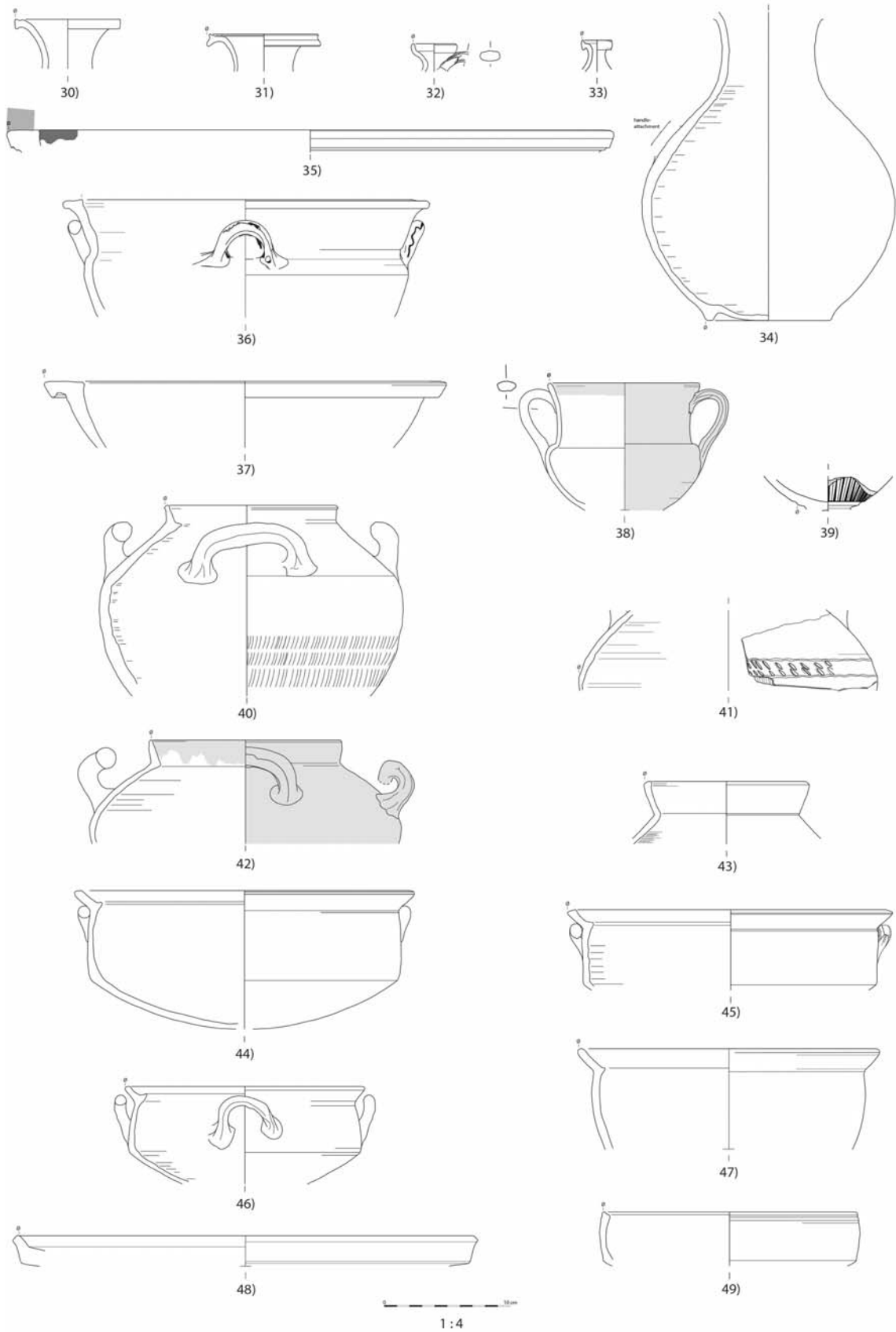


Figure 2. Catalogue numbers 30 to 49.

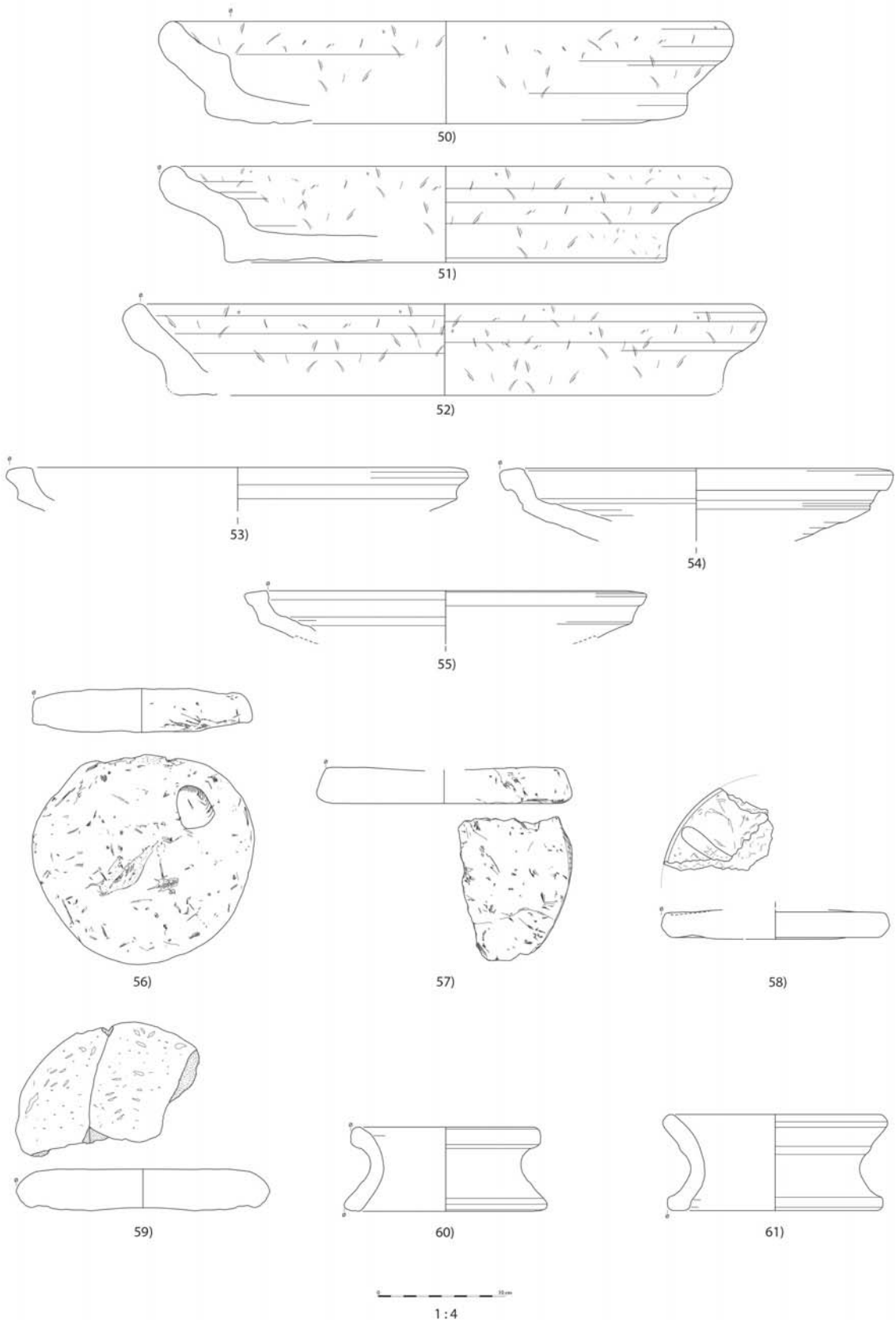


Figure 3. Catalogue numbers 50 to 61.

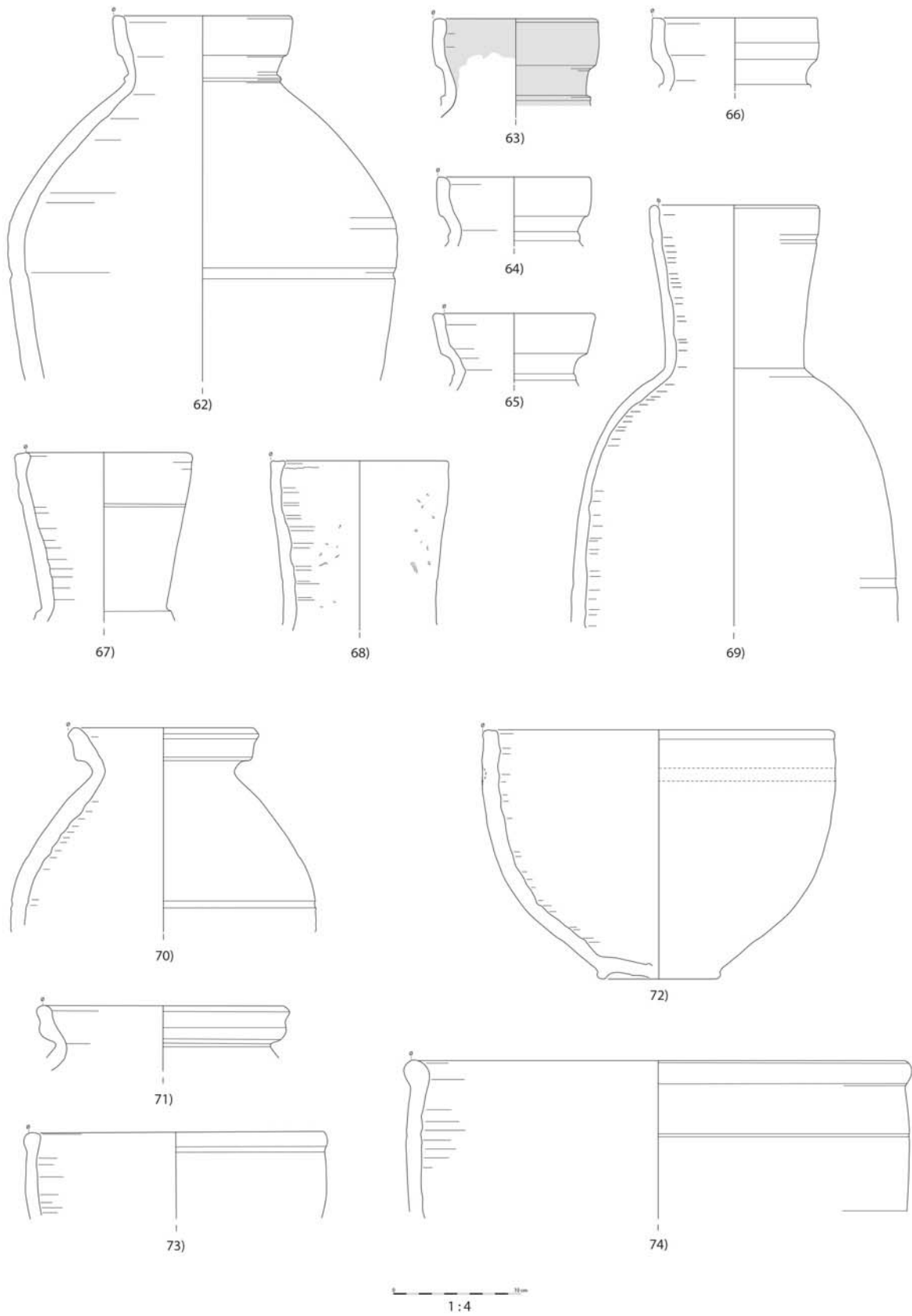


Figure 4. Catalogue numbers 62 to 74.

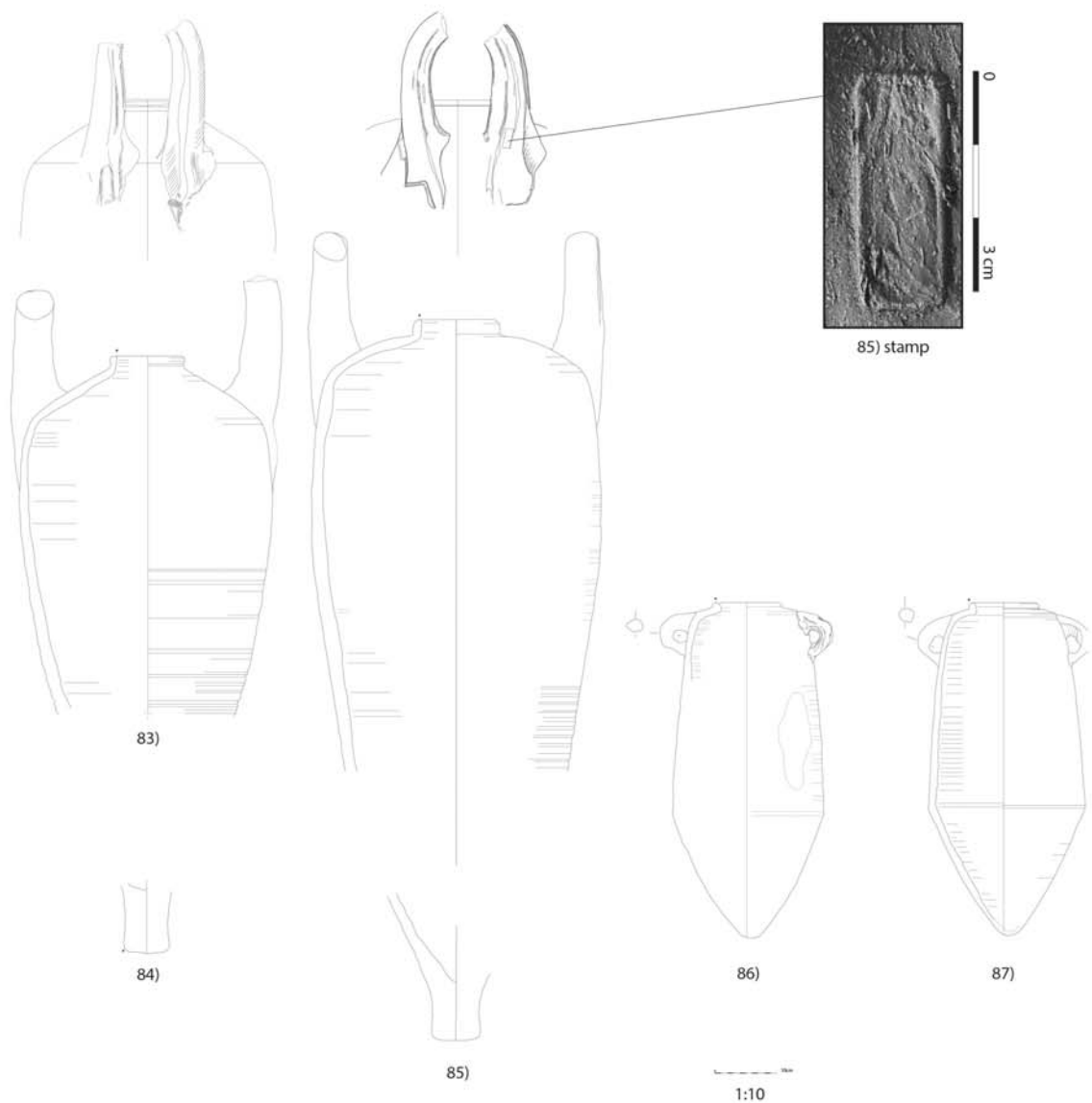
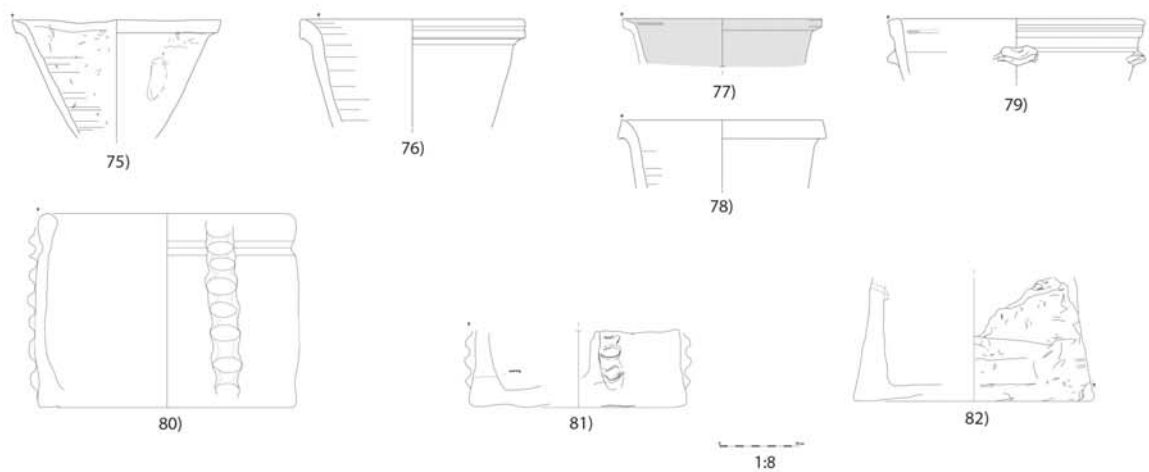


Figure 5. Catalogue numbers 75 to 87.

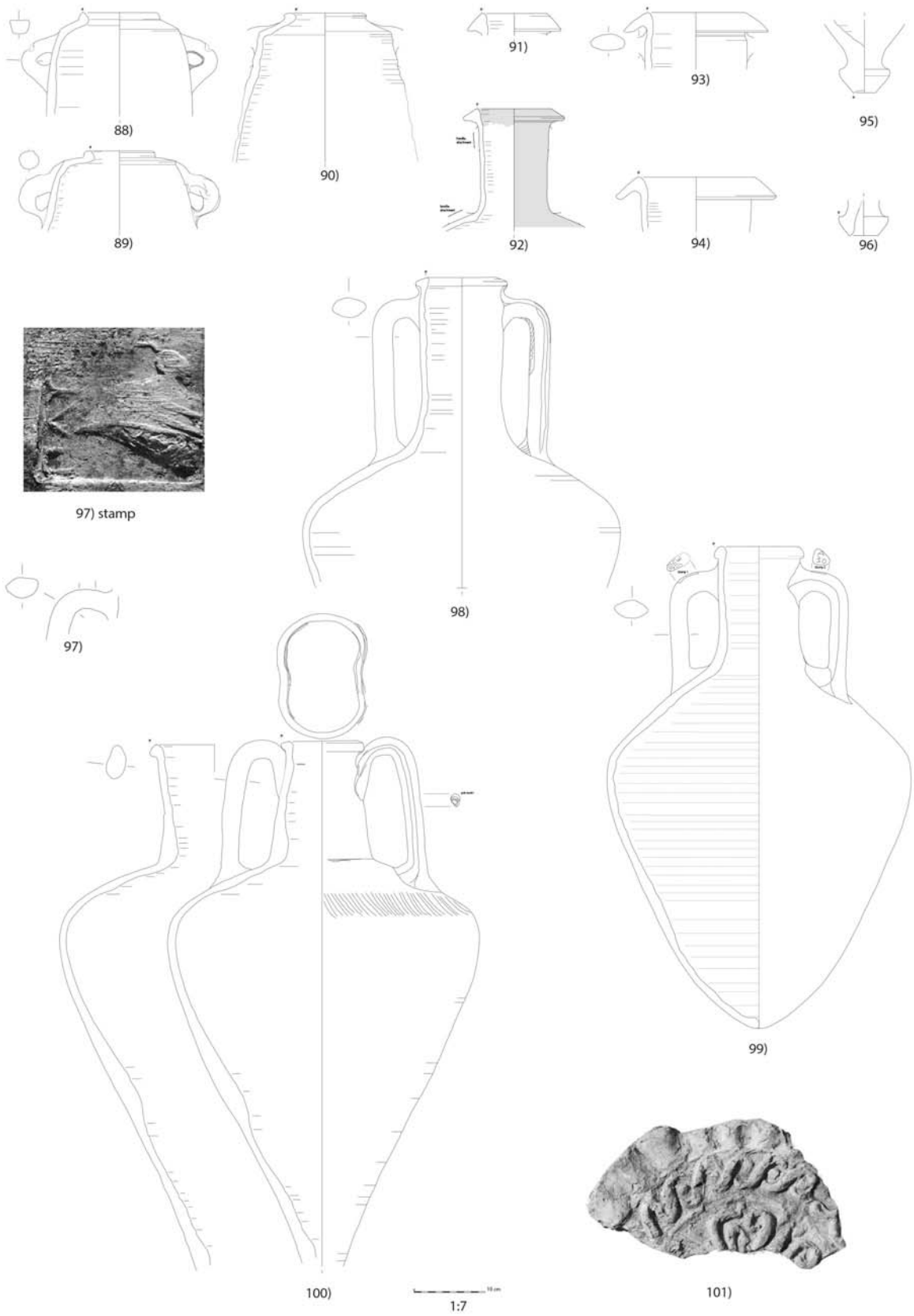


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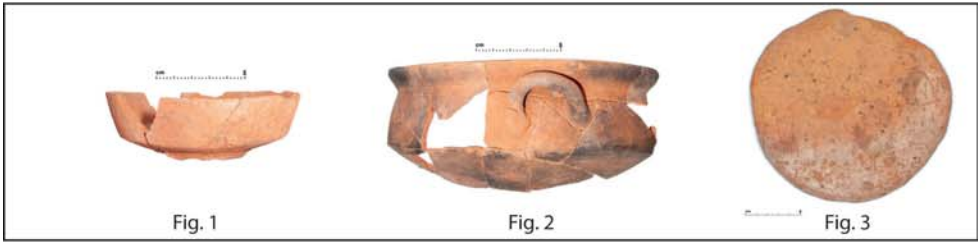


Plate 1. Figures 1 to 9.



# THE CASEMATE FOUNDATION PLATFORM OF TELL HEBOUA I, NORTH SINAI

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## Abstract

On the east bank of Suez Canal in northwestern Sinai, at the site of Tell Heboua I, excavations have revealed a religious complex of the Saite period that included a casemate foundation platform, which was dedicated for economic purposes related to the temple offerings. This paper aims to highlight an architectural type which was built in many deltaic sites, its role and possible functions.

## ملخص

كشفت الحفائر على الضفة الشرقية لقناة السويس في شمال غرب سيناء ، في موقع تل حبة 1 ، عن مجموعة مبان ذات غرض ديني من العصر الصاوي ، يشمل منصة أساسات مسطحة، كانت مخصصة للأغراض الاقتصادية المتعلقة بقرابين المعبد. تهدف هذه الورقة إلى إبراز النوع المعماري الذي ساد في العديد من المواقع بالدلتا ودورها ووظائفها المحتمل.

## 1. Introduction

If we are interested in the urban landscape of the Delta during the Saite period, it is easy at first glance to determine that the architectural evidence is abundant and imposing. The growing prosperity of Egypt during the twenty-sixth dynasty is illustrated by the increasing number of massive constructions, particularly in the deltaic region. The imposing structures of mud brick, such as enclosure walls, temples and casemate foundation platforms, which cover large areas protected by massive walls - temenoi (Valbelle 1990: 314), have been attested in many metropolises, for example at Bouto, Tel el-Balamoun, Naukratis, Mendes, Tanis, Tell el-Maskhouta, Nebesheh (Tell Faraoun) and Tell Dafana. The 'casemate building' is one of the most interesting and intriguing buildings of the Late Period, for it was introduced in many ancient sites during the Late Period, particularly in Lower Egypt. The term "casemate" comes from vaulted storage cells or dungeons such as those that existed in Medieval European castles. In Egypt, the casemate construction was used for the cellular mud brick foundation platforms.

In the light of new archaeological data emphasized by new exploration projects and excavations, which have begun in the recent years, we may also mention: Kom Firin, Tell Belim, Tell el-Muqdam, Tell el-Rataba, Tell el-Herr and Tell Heboua.

## 2. Casemate building of Tell Heboua I

The site of Tell Heboua is located at the extreme eastern end of the Nile Delta at the northern limit of the present administrative province of Ismailia (Fig. 1). The archaeological area is located north-east of the city of el-Kantara East, about 4 km east of the Suez Canal and is composed of three important agglomerations (Tell Heboua I, Tell Heboua II and Tell Heboua III). The site has been intensively occupied since at least the Second Intermediate Period; however, there is some evidence for Middle Kingdom activity. The majority of the archeological remains are dated to the New



Figure 1. location of Tell Heboua in northwestern Sinai (Image © Google Earth Maps).

Kingdom, which is represented by a fortress including several administrative and economic installations (Abd el-Maksoud 1998).

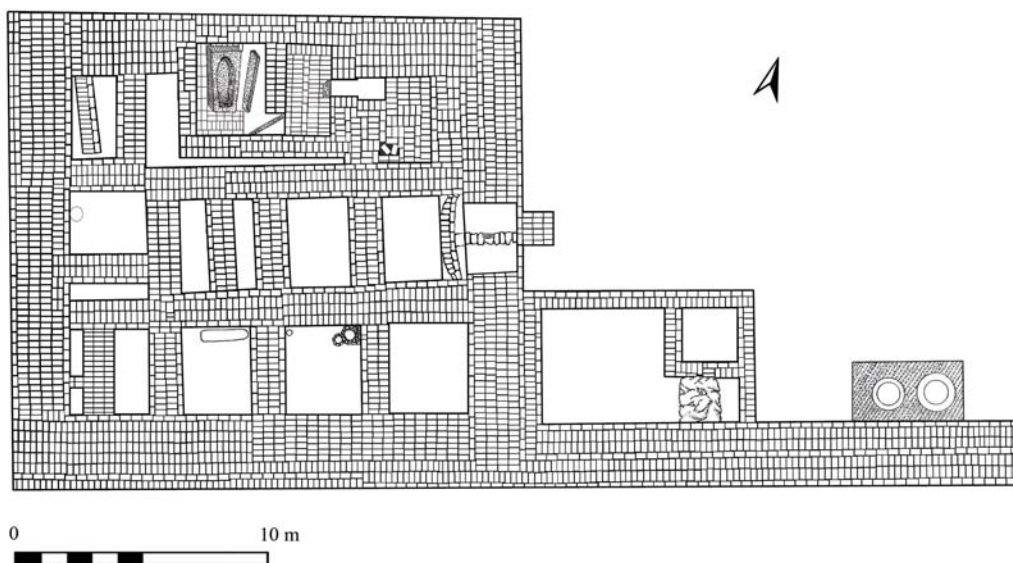


Figure 2. Plan of the casemate building of Tell Heboua I.

Since 2004, the excavations focused on the southwestern part of the site of Tell Heboua I, revealing the remains of a religious complex, surrounded by a 10 meter-wide enclosure wall and occupying most of the southwestern corner of the city. The complex includes a large temple of classic plan, oriented east-west. A smaller ceremonial palace is oriented north-south. In addition there is a casemate foundation platform of nearly square plan. All of these structures are partially

built on earlier constructions (Abd el-Maksoud &Valbelle 2005: 3). Immediately to the south of the temple, the foundations of a nearly square-shaped building cover an area of 20.20m by 18.70m (Fig. 2).

It has twelve cells in the north and south sectors and in the centre along the axis of the building. It is oriented east-west and its axis is parallel to the temple. This building is built of brown mud bricks with dimensions of about 40-42 x 20 x 10cm, and composed of a mixture of clay and sand with a small amount of shells. The upper part of the building was destroyed to the level of its floor. The preserved remains are reduced to the leveled surface of the building, while the subterranean foundations were buried to a depth of almost 2m. Although the bases of this type of building are generally deep, in the case of Tell Heboua I, the foundations seem to be shallower than expected, perhaps due to the modest size of the building.



Figure 3. view from the south over the casemate building.

The platform consists of a network of thick walls separating square or rectangular cells of various sizes without communication between them (Fig. 3). Most of these cells were filled with either brick masonry or clay. This filling did not come from the destruction of the superstructure of the building. It is more likely, from other examples of this type of foundation that the fill was made at the time of construction. Nevertheless, one of the cells contained local and imported ceramic containers. Among them, a Cypriot basket-handled amphora, made it possible to date the construction to the sixth century BCE. (Fig. 4).

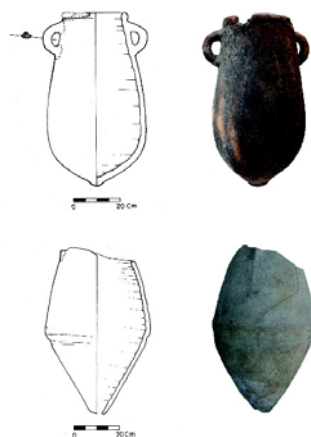


Figure 4. local (top) and imported ceramics (bottom) found inside the building.

The surrounding walls measure 1.80m to the east, 2.40m to the west, 2.30m to the north and 3m to the south and have concave bases with a clear slump from the centre to the raised corners. It seems very clear that the foundations were laid in panbedded courses and rest on a thin layer of pure sand that surrounds the whole building. This particularity has been interpreted from a religious and architectural point of view: according to P. Barguet and E. Hornung (Barguet 1962: 32; Hornung 1992: 119), these rows of wavy bricks evoke waves symbolizing the chaos and primordial water of Noun surrounding the world. From an architectural point of view, however, it is observed that the slope of the outer faces of the walls make it more resistant to forces that could push it to the outside and spread the weight (Leclère 2008: 631). Moreover, the panbedded wall would support the upper storeys. As for the entrance, it is located in the centre of the eastern wall of the building. During the 2015 excavations, we noted the remains of a ramp contiguous to the eastern side and extending eastward but, unfortunately, it was much damaged.

### 2.1. Stairwell

The stairwell was located to the north of the entrance vestibule and occupied the northeastern corner of the building, of which the massive mud bricks were still in situ in the floor. It is obvious that the stair led to the upper storeys.

### 2.2. Burial vault and its antechamber (Fig. 5)

It was perhaps after the partial abandonment of the building that a large burial vault and its antechamber were dug in the foundations of the building. They occupy the location of a former room of the building, a particularly important room to the north, next to the staircase at the north-east corner. The monumental tomb has a narrow entrance on the eastern side (70cm wide), while its stone threshold overlay the pavement of the antechamber, which was 3.60m long by 1.70m in width. The bricks of the floor of the antechamber rest on a layer of sand. It was in the south-west corner of this room that an access door to the vault was to be found. A slab of limestone belonging to the door was still in situ.



Figure 5. Burial vault and its limestone sarcophagus.

A room was dedicated for the sarcophagus, with dimensions of 3.70m long by 2.70m wide, and it is like the antechamber, carefully paved with mud bricks. The monolithic limestone

sarcophagus was discovered looted, the skeleton was gone and the flat lid was reversed. The tomb measures 2.32m by 1.17m, while the inferior cavity is 1.94m by 70cm. A monolithic sarcophagus of the same character was found in the centre of the site of Tell Heboua I twenty years ago; it was deposited in a layer of sand without any superstructure (Abd el-Maksoud 1998: 93).

### *2.3. The Annexes*

The excavation cleared some elements to the east of the building, close to its access; these were annexes intended for the service of the building, probably for the preparation of offerings (bread, meat or beer). In the southeastern corner, outside the building, we have uncovered an extension of the southern wall. This segment consists of two adjacent walls; one measures 1.40m wide, while the outer wall is about 1.10m wide. In the space constituted by this extension and the façade of the building, we found a rectangular-shaped building or a small courtyard measuring 7.75m long by 4.50m wide. This complex has at its northeastern corner a small room of square plan measuring 2.20m. To the south of this small room is a large slab of limestone, 1.70m by 1.50m. This slab could have been used as a slaughter-block for cutting meat. East of the courtyard we have also cleared two ceramic ovens, embedded in a massive mud brick. The two ovens must have served for the needs of building and they were certainly used to produce bread. The large slab of limestone could have been used by butchers in order to prepare the meat. These elements are indicative of the economic vocation of the building, which allows us to interpret it as a place of preparation, consecration and storage of food offerings. This was to be an essential aspect of the operation of the casemate building for the offerings, which is well attested for a *chenâ-ouâb* or pure storehouse.

### **3. Discussion: Function of the building**

With regard to the function of this type of building, the interpretation is controversial and has been the subject of various explanations, for example for E. Naville, it could only be storehouse, as mentioned in the Bible, built by the Hebrews at Pithom (Naville 1885: 10). But the idea of grain silos was rejected by A.H. Gardiner (Gardiner 1924: 96 ) and T.E. Peet who believed that the storehouses he discovered were probably only the foundations of a construction similar to those found in Naukratis and Dafana (Peet 1922: 86 ).

W.F. Petrie proposed a military interpretation of these buildings because of the massive buildings of Naukratis (Petrie 1886: 8) and Dafana (Petrie 1888: 53-54), and their height and also their access ramps. This idea was refuted by F.W. von Bissing, however, in the absence of evidence on the presence of soldiers. He saw the Naukratis building as a storage complex or treasury associated with a temple (von Bissing 1951: 59), a more reasonable hypothesis.

Other studies have made it possible to understand better the function of the casemate buildings, in particular that of C. Traunecker (Traunecker 1987: 147-162). In fact, the inscriptions of the doorjambs on Psamtik building at Karnak define the building as a place of preparation, consecration and storage of the offerings necessary for the divine cults: *chena ouâb*, "pure store" (Traunecker 1987: 149), or "peripteral temples" (Spencer 1979b: 132-137). Of course, it seems clear to us that this analysis is the most reasonable and acceptable for the function of this construction. It is also the opinion of J. Yoyotte (Yoyotte 1994-1995: 681) and B. Muhs (Muhs 1994: 112) who classify the casemate buildings among the buildings to be interpreted as places of preparation, consecration and storage of the ritual offerings (Leclère 2008: 137). It is necessary to consider the edifice of Tell Heboua I as another example of these pure stores according to the new

architectural and archaeological results obtained. This may explain the presence of soft sand around the building, which accentuated the pure appearance of the building. Thus, we can say with certainty that this type of buildings has been attested in the region of North Sinai at Tell Heboua I, and has been dated to Dynasty 26 according to the material and pottery discovered in it.

#### 4. Casemate foundation platforms of the first millennium (Figs. 6 and 7)

Towards the middle of the seventh century BCE, several types of the casemate buildings appear in particular in the Delta: at Tanis (Fougerousse 1933: 76-88; Brissaud 1995: 26), Tell el-Balamoun (Spencer 1996a: 51-62), Naukratis (Petrie 1886: 24-26 and 32-34) and Dafana (Petrie 1888: 48-61); and some contemporary examples of this category also exist in Upper Egypt.

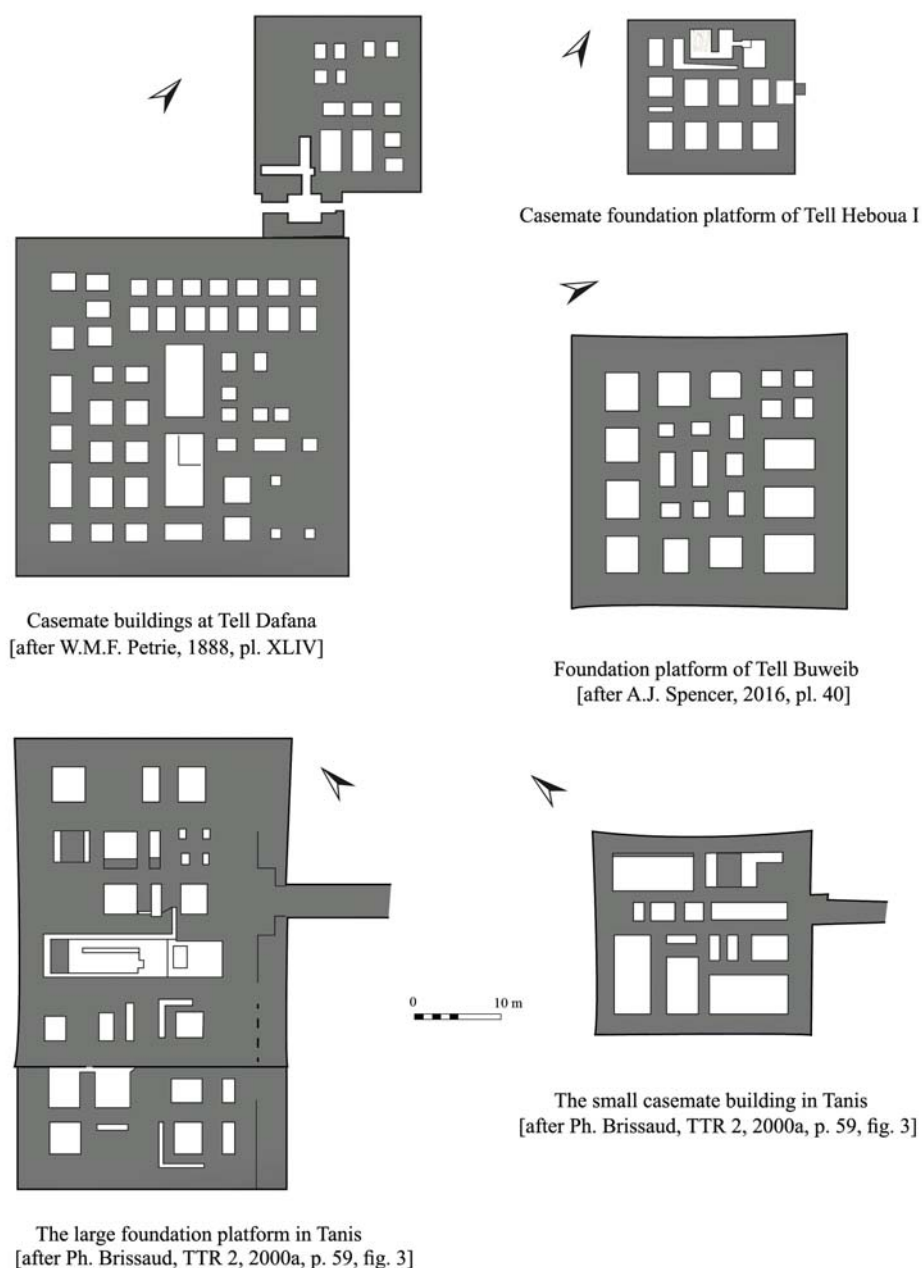
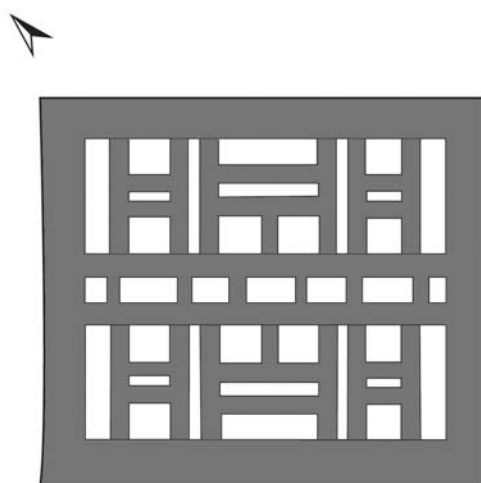
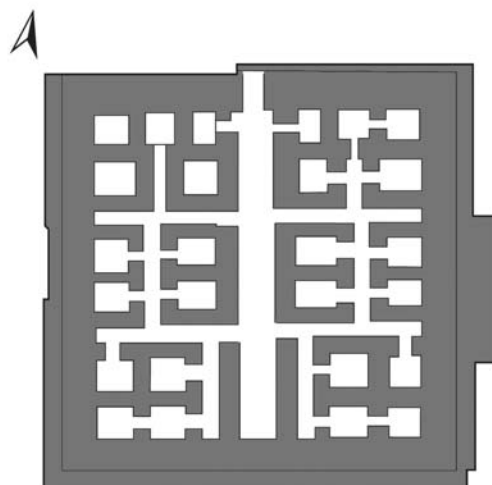


Figure 6. Comparison of Late Period casemate buildings (clockwise from top left): Tell Dafana, Tell Heboua I, Tell Buweib, Tanis (small casemate), Tanis (large casemate).  
(Drawing by E. Abd el-Alim).

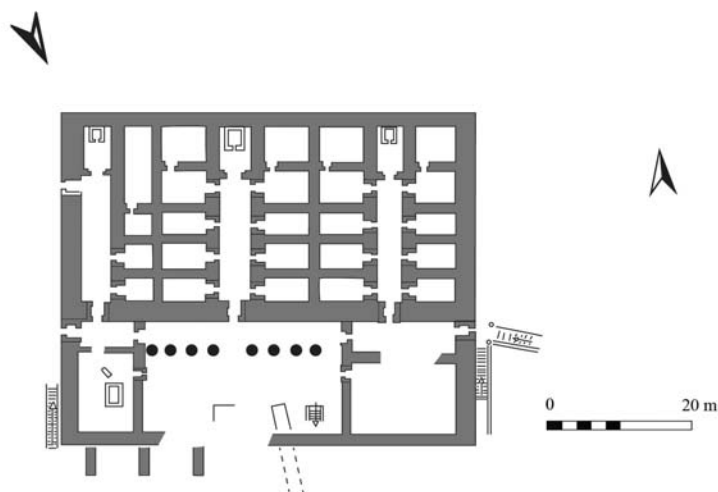
The closest comparable example to the building of Tell Heboua I is that of Tell Dafana where there are two casemate buildings; the largest one has side each of 43 m in length (Petrie 1888: 53), but it is the small one that interests us since it is about the same size as the building of Tell Heboua I. According to Petrie, the small building, located northeast of the main building, measured about 21.50m from east to west and 22.50m from north to south and the mud bricks used in the construction vary between 40-43 x 20-22 x 12-13cm. The outer faces were made in slightly concave foundations, reinforced on several levels by a series of wooden beams installed at regular intervals. The access is on the south side, by a ramp (Leclère & Spencer 2014: 15).



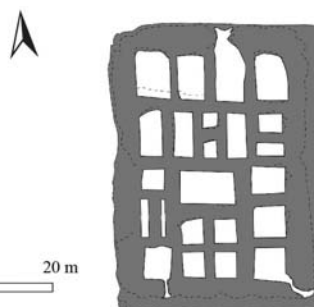
Casemate building of Tell el-Balamoun  
[after A.J. Spencer, 1996 a, pl. 26]



Casemate building in Naukratis  
[after W.M.F. Petrie, 1886, pl. XLIII]



Foundation platform in Karnak  
[after Cl. Traunecker, 1987, p. 161, fig. 3A]



Foundation platform of Baharia Oasis  
[after Fr. Colin, 2011, p. 63, fig. 12]

Figure 7: Comparison of Late Period casemate buildings (clockwise from top left): Tell el Balamun, Naukratis, Baharia Oasis, Karnak. (Drawing by E. Abd el-Alim).

In Tanis in particular, dating to the last indigenous dynasties and at the beginning of the Ptolemaic period, two casemate buildings have been found. The largest is a vast rectangular structure of mud bricks that occupies an area of 32m x 50m. The inclined exterior walls are laid in pan-bedded courses. The ramp is adjacent to the south wall (Montet 1932: 230-231; Fougerousse 1933: 76-88). The other building, located to the west of the first, is of a modest size with a square plan of about thirty metres. Its rooms are have deep foundations. The building is also equipped with an access ramp contiguous to the south wall (Montet 1935-1937: 15; Brissaud 1996: 68).

At Tell el-Balamoun, the south-east corner of the temenos is occupied by a mud brick, cellular platform covering an area of about 54.15m by 61.10m. The building has thick exterior walls about 5.50m wide, delimiting many rooms that are distributed symmetrically inside, without communication between them and filled with broken mud bricks and fragments of limestone. The exterior walls are concave, characteristic of the curved courses of similar constructions. There are some holes in the walls, which indicate the probable presence of reinforcements made of wooden beams. The access to the building is via a ramp extending about 60m from the north-west corner of building (Spencer 1996a: 51-59; 1996b: 88).

Another example, very similar to that of Tell el-Balamoun, is at Naukratis where Petrie unearthed a vast square platform, which he called "The Great Mound". The building was approximately in the centre of the southern half of the temenos (Petrie 1886: 8 and 24-26). It was still preserved, at the time of Petrie, to a height of 10m. The structure is composed of forty-one cells, without entry or communication between them.

Similarly, an example of this type of construction was recently excavated at Tell Buweib, about 20km northwest of Tanis, where 33.50m<sup>2</sup> platform has been discovered. It contains twenty-four cells of different shapes and sizes. The outer walls are 4.20m thick and are built with slightly concave bases using large mud bricks (36-38 x 18-19 x 10-12cm) (Spencer 2016: 16-17). According to the pottery found in this building, Spencer dated it to between the eighth and seventh century BCE (Spencer 2016: 24).

A casemate structure was also attested in the Memphite region at Abu Rawach. Macramallah excavated a square-shaped building 20m wide. It was made of mud bricks of 39-44 x 19.5-22 x 10-14cm which comprise the concave layers (Macramallah 1932: 167-168). Although the construction was dated to the Middle Kingdom, Spencer thinks that it could be attributed to the Late Period, since the dimensions of the bricks were exceptionally large (Spencer 1979a: 107).

The casemate structures are not limited to the Delta and have also been identified in Upper Egypt. Some buildings with mud brick foundations are attested at Karnak in the precinct of Amon, south of the sacred lake. A rectangular mud brick construction of 55.50m by 45.50m (Traunecker 1979: 411 and 426, 1987: fig.3A) was constructed there in Dynasty 26 and renovated during the reign of Achoris Dynasty 29 (Traunecker 1979: 423). The structure has twenty four storage rooms separated by two main corridors, with a ramp leading to its west gate (Traunecker 1987: 147-148). It should be noted that the building housed an open-air construction at its north-east corner, of which a pierced mooring block was perhaps used to attach the slaughter animals (Traunecker 1987: 148). This feature reminds us of the same architectural situation in the annexe of the platform of Tell Heboua I, which also has a slaughterhouse perhaps revealing a function of this kind of building.

Outside the Nile valley and Delta, in the Oasis of Bahariya, one of the casemate buildings was attested at Qasr Allam, where a cellular foundation platform of the eighth/seventh century BCE was

excavated. The building, which is accessed by a ramp on the west side, measures 40m by 29m (Colin 2011: 63).

#### **4. Conclusion**

From previous comparative examples, we can observe that the casemate foundation platforms have varying dimensions, but all have a square or rectangular shape. The common character that unites them is the method of construction of the outer walls, which are built of mud bricks arranged in pan-bedded courses and enclose a series of square or rectangular cells without communication between them. This construction technique seems to have appeared throughout Egypt, especially in the Delta, from the Saite period onwards, and spread widely during the Ptolemaic period. It is also observed that this type of building was placed inside the temenos, and near the main temple, since it was built for and dedicated to the economic service of the offerings process for the temple during the Late Period.

#### **Acknowledgements**

I would like to express my deep and sincere gratitude to Dr Mohamed Abd el-Maksoud, former Secretary General of Antiquities and Professor Dominique Valbelle, Emeritus Professor, Faculty of Arts, Sorbonne University for their continuous support, motivation and immense knowledge during the excavations.

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# MANSOURA UNIVERSITY EXCAVATIONS AT TELL TEBILLA: A PRELIMINARY REPORT

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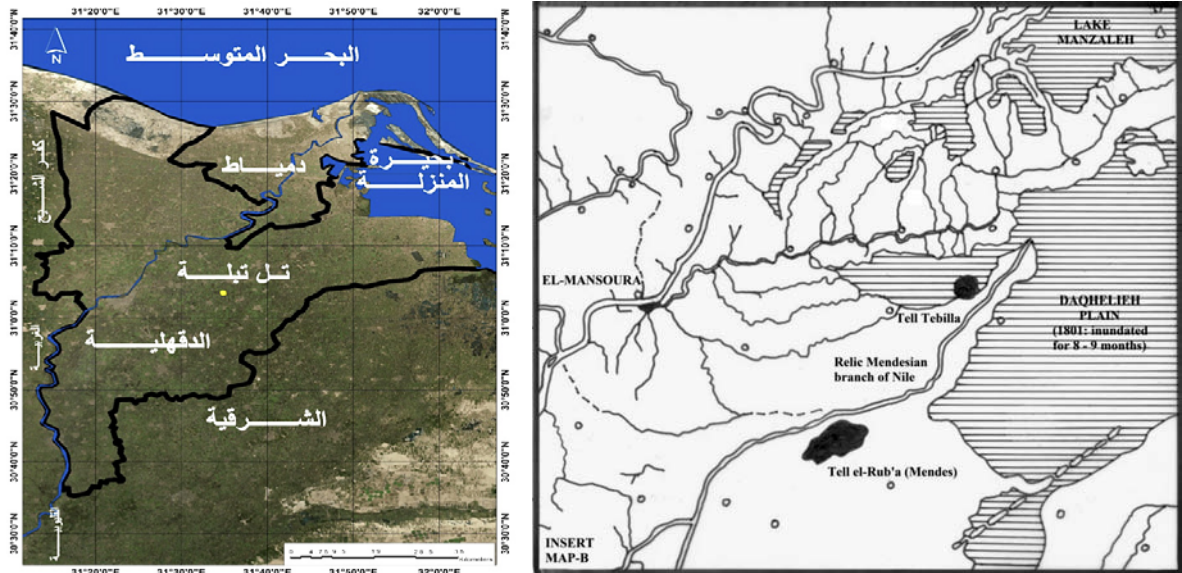
## Abstract

The joint Egyptian archaeological mission from Mansoura University and Daqahlia inspectorate conducted an excavation season in 2018 at Tell Tebilla. Since excavations at Tebilla stopped after 2014, the site was one of those on the priority list of the Ministry of Antiquities. The new excavation team succeeded in carrying out a topographical survey and magnetometer survey and discovered funerary buildings and objects. The present paper will describe and discuss the findings and archaeological work carried out in 2018 by the joint mission.

## ملخص

قامت البعثة الأثرية المصرية المشتركة من جامعتي المنصورة ومنطقة آثار الدقهلية بعمل حفائر موسم تنقيب في عام 2018 في تل تبلة. كانت أعمال الحفائر قد توقفت في تبلة بعد عام 2014، كان الموقع من بين المواقع المدرجة على قائمة أولويات وزارة الآثار. نجح فريق التنقيب الجديد في إجراء مسح طبوغرافي ومسح مغناطيسي واكتشاف المباني والقطع الأثرية الجنائزية. تتناول هذه الورقة وتناقش النتائج والأعمال الأثرية التي نفذتها البعثة المشتركة في عام 2018

## 1. The Location and Importance of Tibilla (Figs. 1 & 2)



Figures 1 and 2. (left) The North-eastern Delta with Tell Tebilla (Image © Google Earth, Geography Department, Mansoura University), (right) detailed location of Tell Tibilla (after Redford 2010).

Tell Tebilla/Tebilla (Gauthier 1975: III, 121) is located to the east of the modern city of Mansoura, Daqahlia Governorate. It is situated east of the Damietta branch of the Nile and about 12km to the north of Mendes and some 6km south of the city of Dikernis (Malek 1985: 354). Tell Tebilla is a

small mound of about 25 feddans in area, but the land belongs to farmers under the supervision of the Ministry of Antiquities.

The ancient name of the site was *R3(-š) nfr*, meaning 'the beautiful (lake) mouth'. The modern name is Tell Tebilla, but it is also known as Tell Balala (Porter and Moss 1952: IV, 39). The name Tell Tebilla could be derived from the word Tell el-Debeleh, which means 'ring' according to its name on the map of Lower Egypt by the French Napoleonic Commission (Benedikt Taschen 1994(ed.): 572-573).

The importance of the city was due to its strategic location during ancient times, for it was a river harbour and, at the same time, a sea port. The settlement had access to the Mediterranean Sea through an opening in Lake Manzala and the Mendesian branch of the Nile was to the east of Tebilla (Mumford 2000a: 1-3). During our investigation of the nearby area we found a modern village to the north west of Tebilla called El-Marsa (Ramzi, 2010 ed.: 232) to which Tell Tebilla was connected by means of a small canal that is still active. The canal lies to the west of the Temple, where there are remains of limestone blocks outside the modern water filtration plant. There could be also another river harbour on a canal connecting with the Damietta branch, which is known as Al Bahr El Saghier (the small sea). It begins from Gedila near Mansoura and reaches to El Marsa and was still in use in Medieval times.

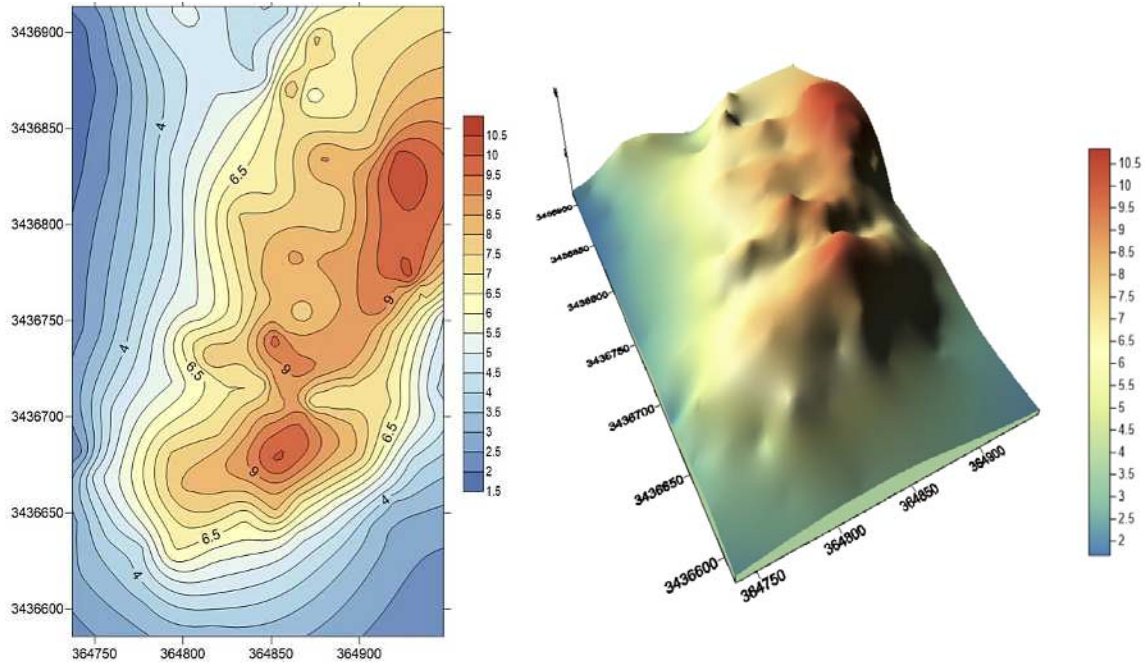
Archaeological evidence attests to the history of Tebilla during the Old Kingdom, First Intermediate Period (Mumford 2000a: 3-4), Second Intermediate Period, New Kingdom, Late Period and Ptolemaic and Roman Periods (Mumford 2002: 1-4; 2004: 267). Tell Tebilla's importance came from its temple that was dedicated to the local and god Osiris-Khes(a) (Gauthier1975: IV,121-122; Montet 1957: I140-141). The temple was built by king Sheshonq of the 22 Dynasty or Teklot II (Porter and Moss 1952: IV 35; Edgar 1914: 277). Other gods worshipped in the temple included Isis, Horus and Sobek (Malek 1985: 354; Mumford 2004: 270).

## **2. History of Excavations at Tell Tebilla**

The French Napoleonic Commission (1798-1800) visited the area and referred to it as Tell el-Debeleh, considering it as part of the Mendesian region (Benedikt Taschen 1994 (ed.): 572-573). In 1828, Burton noticed some granite blocks at Tebilla, which indicated the existence of a temple. In 1908 Mohamed Chaban excavated a sarcophagus and statues at the site (Chaban 1910: 29). In 1980 the Egyptian Organization of Antiquities did some work at the site but their work is still unpublished and excavations by the SCA in 1990 found some pottery that is kept in the Mansoura magazine. From 1999 to 2003 a joint Egyptian and Canadian Mission excavated the site and published most of their findings (Mumford 2000a: 1-3; 2001: 1-3; 2001a: 1-4; 2001b:13-14; 2002: 1-4; 2002a: 18-23). In 2004, during the construction of a water plant, an Egyptian mission worked to the south of the site and the Canadian mission came back to the site in 2009 and worked for a further season (Mumford 2013: 38-67). In 2014 an Egyptian mission worked again and found an intact 26 Dynasty tomb (Hashesh 2015). The excavations stopped at the site until in 2018 when the current work started as a joint mission from Mansoura University and Ministry of Antiquities, in the field from 11th November to 25th December, funded by the Researches Fund Unit of Mansoura University. The present paper is a result of that work.

### 3. Topographical survey

The Mansoura/MoA project began with a topographical survey of the whole area to determine whether any changes had happened at the site since the last survey by the Canadian mission. The work was carried out by our colleagues from the Department of Geography in collaboration with the Department of Geology from Mansoura University. The surveyed area was about 400 by 400 meters and the team succeeded in creating new contour and topographical maps (Figs. 3 & 4) along with 3D-designs of the discovered structures and a section showing the levels of the site. The site consists of two mounds, a larger higher one to the north-east smaller, cone-shaped mound to the south. There is a deep depression between them, perhaps caused by sebakhin-digging.



Figures 3 & 4. Contour map of Tell Tebilla and terrain model of the site, (Images by the Geography Department, Mansoura University).

### 4. Magnetometer Survey

A magnetic survey was also carried out using a Bartington Fluxgate gradiometer loaned by the Sais Mission. Altogether thirteen 40 by 40 meters squares were surveyed, a total of around 3200m<sup>2</sup>. The results of the magnetometer survey show some structures along the eastern and southern parts of the tell containing tombs and ovens (Figs. 5 & 6). Our future plan is to finish the magnetometer survey of the western and northern part of the tell.

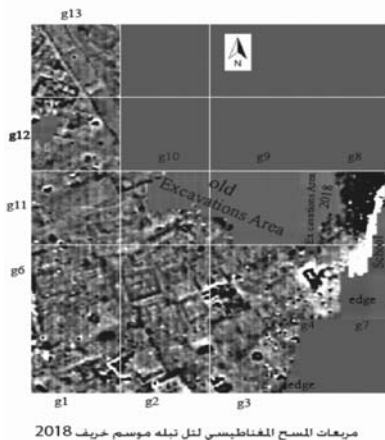


Figure 5. The magnetometer grids at Tell Tebilla. (Image by the Geography Department, Mansoura University).



Figure 6. Details of Grids 1 to 6 after enhanced processing,  
(Image by the Geography Department, Mansoura University).

### 5. The Excavation

The excavation lasted from 11th of November to 25th of December 2018 at the south eastern corner of the Tell, in an area of about 2450m<sup>2</sup> (Fig. 7). We began our clearance work from the north and continued to the south east. The result of the work was the discovery of two structures and an open court (Fig. 8). We called the first structure Mastaba 1 and the second structure Mastaba 2 and between them there is a street. To the south of the second Mastaba there is an open court sloping to the south.

Figure 7. View over the excavation area at Tell Tebilla.



Mastaba 1 is made out of mud brick and it is divided into two rooms (R # 1 / R # 2). There are 6 skeletons in 5 burials in the rooms, and the bodies were identified as consisting of four males and two females. Due to the nature of the clay soil, the poor method of mummification and bad conservation of the bones we could not extract the mummies in one block, therefore they were excavated in parts. The burials are very poor, without any grave goods and the heads of all of the burials were towards the temple, to the west (Al Emary 2019).

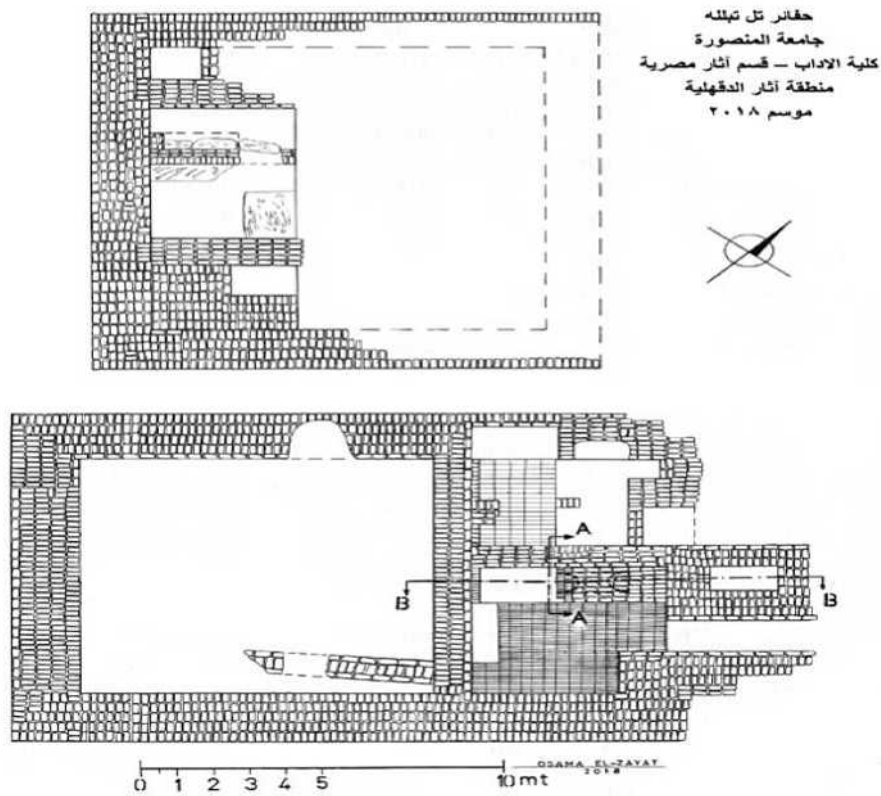


Figure 8. Plans of the two mastabas, open court and tomb with vaulted substructure.

Between Mastaba 1 and Mastaba 2 there is an empty area that we considered to be a street and during the cleaning of this street, there were found a number of complete and broken pottery objects.

Mastaba 2 is divided into two parts. The western part contains an open court, while the second part consists of two rooms. The rest of the eastern part is still under the debris from earlier excavations. At the eastern corner of the open court we found a pit containing many complete and broken pottery objects. A number of amulets were also found in the open court. Our colleagues from the Geography Department examined a section at the open court, and they found the levels in this area consist of five layers: the upper layers are very dark grey, then very dark grayish brown, then very dark grey, while the lower layer is dark reddish grey.

At the eastern part of Mastaba 2 there are two rooms that were found empty. To the south of these rooms we found a rectangular cut and when we cleaned it, the cut led to a vaulted underground sealed tomb to a depth of about three meters below the level of the surface of Mastaba 1 and 2 (Fig. 9). We are going to excavate it in the next season.



Figure 9. Vaulted tomb underneath Mastaba 2.

## 6. Burials (Fig. 10)

Burial no 1: adult male, length 170 cm. A *wedjat*-eye amulet was found next to his body.

Burial no. 2: adult male, length 165 cm, with dental issues including dental wear, enamel hypoplasia, periodontal disease. Some pottery fragments were found next to the body.

Burial no. 3: adult male, 50+ years old, length 170 cm, with dental disease. He was found in an Osirian position (arms crossed on his chest).

Burial no. 4: middle-aged adult female, 45+ years old, length from shoulder to feet 128 cm. She was suffering from some dental diseases.

Burial no. 5: adult female, 55—60 years old at death. The body was buried upside down, with her face down and the body slanted so that the feet were at a higher level than the head. The head is oriented south-west and the feet to the north-east. This situation is very rare in burials of the Delta cemeteries. She was suffering from dental diseases.

Burial no. 6: adult male, 40—45 years old, length 164 cm. The body was found under Burial no. 5. He had dental conditions. A replacement tooth was found in his skull and it seems that the right, second premolar of the maxilla was lost ante-mortem and a replacement was put in its place to compensate for the loss. It is very similar to the steps currently known in prosthetic teeth. However, the material used to make the replacement is unknown and it needs more analysis by specialists in the future (Al Emary 2019).



Figure 10. The six burials from Mastaba 1.

## 7. Artefacts and Pottery (Fig. 11)

We catalogued about 125 pieces in the Register of Mansoura Storage Magazine (RMSM), and 68 pieces in the Study Register of the Storage Magazine (SRSM). Among these pieces are:



Figure 11. (left) Bes jar, (centre) two feeder cups, (3) black-gloss Greek dish with palmette decoration.

- two Bes Jars (RMSM 10,11) found in the pottery pit near Mastaba 2. They are in a very good condition (Abdel Mawla 2019). Similar Bes jars in Nile silt were found by the Canadian Mission (Mumford 2013: 50).
- Pottery vessels in different shapes and materials. Some of them have a long neck with handles, others have round bases (RMSM1-5, 12-15, 19- 21, 24, 29, 30, 33, 34, 37-40, 44-50, 52, 60, 118, 120, 122). Other vessels have elongated shapes, one of them has hole in its base and was probably used to pour water for purification (RMSM 41).
- Vessels with a long neck and wide rim, all of them are in a small scale, and may have been used for perfumes or oils (RMSM 6, 7).
- Dishes and plates were found in different shapes (RMSM17, 18, 25-7, 31, 32, 36, 42, 57, 59, 125), as well as pottery lids (RMSM 17, 18, 43, 58, 119).
- Bread moulds (RMSM 28).
- Cups (RMSM 16, 35, 55).
- Jar stands (RMSM 9).
- a broken jar handle with an inscription of two letters P and H (PH). It is non Egyptian style, and could be an amphora handle imported from the Aegean (Fig. 12a).
- Amulets of different gods and goddesses connected with the worship of Osiris lord of Tell Tebilla (Wahby and Abdel Mawla 2020). Most amulets were made of faience and included deities such as: Bastet (RMSM 75), Horus (RMSM 76), Min (RMSM 77), Taweret (RMSM 78, 104), Sobek (RMSM 79), Ptah (RMSM 80, 83), Isis (RMSM 81, 82, 99), Thoth (RMSM 84, 94, 95), Bes (RMSM 85, 97, 98), Hathor (RMSM 86), Mai Hesa (RMSM 87), a Wadj-pillar (RMSM 88), Wedjat-eyes (RMSM 89, 90, 91, 92, 93). Other amulets were made of bronze and of deities such as Harpocrates (RMSM 105), bear\Reswdja? (RMSM 106), Osiris (RMSM 109), head of Hathor (RMSM 116).
- Terracotta figures. During the excavations many complete and broken statues made of terracotta were found. The forms included: women (RMSM 62, 63, 64, 65, 67, 68, 70, 100), animal forms like horses (RMSM 114), the head of a woman with headdress typical of a Greek goddess (RMSM 73), a head of a man like a soldier (RMSM 96), a head painted in white colour of a man wearing a cap, that could also be a soldier (RMSM 101). Another figure was of a woman lying on a bed while

her head rests on a cushion (RMSM 74), a style of statue well known during the Late Period and Greco- Roman era (Masoud, 2014: 25-56).

- Bronze objects: a bear or a rat (RMSM 106), a horn (RMSM 107), arrows (RMSM 108), a head of Hathor with a solar disc between the two horns (RMSM 116), two coins in good condition (RMSM 123).
- Fragments of lead were found. One of them looks like a piece of a frame (RMSM 124), the second one looks like a cobra and may represent Rennenetet (SRSMS65).
- Inscriptions were very rare from Tell Tebilla, but a few inscribed fragments have been found including an inscribed block of Sheshonk I probably from a demolished temple [Cairo temp 25.11.18.6] (Edgar 1914: 277). Other objects previously found include: a Late Period limestone statue of Osiris-nakht, the mayor of Ta-remu (Yoyotte 1952:179-192), now in Cairo Museum JE40041 (Chaban 1910: 29); a Late Period granite statue of Hor-pa-en-Iset (Cairo JE65843) (Daressy1930: 83); a Late Period or Ptolemaic black granite kneeling statue, (Louvre E7689) (Lefebvre 1933: REF). In the excavation we found a small limestone block bearing an inscription that reads *h<sup>c</sup> R<sup>c</sup> hr* (RMSM 124) (Fig. 12b).
- Greek pottery: sherds of black glazed Greek pottery with decorations (SRSMS 57, 58).

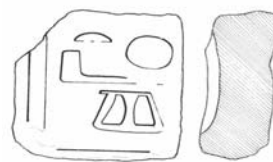
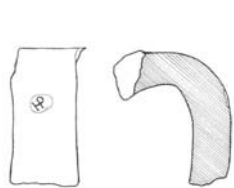


Figure 12a. Stamped amphora handle.

Figure 12b. Part of block with hieroglyphs.

## 8. Conclusion

Tell Tebilla was one of the last rich ancient cities at Delta and its importance came from its fertile agricultural land and the river harbour connecting it with the Damietta branch of the Nile; while and its western border is the Mendesian branch and it also had sea access through the mouth of Lake Manzala. The cult of Osiris was highly significant at Tebilla with other gods, as shown by the amulets found there such as the crocodile, the *Res-wedja* (mouse), Sokar, Isis and Horus. The two mastaba tombs found by the mission date to the end of Late Period to Early Ptolemaic period, according to their shape and the pottery found there; while the lower part was about three metres deep and contains a vaulted construction dating to the Saite Period. The open court area to the south could be a reception hall for public use during the funerary rituals.

Future work will focus on the relationship of the tombs to the temple complex and studying the material from the seasons.

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### Abstract

The archaeological excavation of the joint mission between Mansoura University and the Egyptian Ministry of Antiquities at the site of Tell Tebilla during the season in 2018, resulted in finding and studying a group of fairly well-preserved human skeletal and partially preserved mummified remains. This skeletal material dated to the Ptolemaic Period (c. 330-30 BC) according to the archaeological material. Bioarchaeological studies are characterized by their holistic nature and consequently, the present study adopted an approach that would allow us to investigate the human skeletal material and to reconstruct different life aspects of ancient populations.

### ملخص

أسفرت الحفائر الأثرية التي قامت بها البعثة المشتركة بين جامعة المنصورة ووزارة الآثار المصرية في موقع تل تبلة خلال موسم 2018 ، عن العثور على مجموعة من بقايا الهياكل العظمية البشرية في حالة جيدة من الحفظ إلى حد ما ودراستها. يعود تاريخ هذه الهياكل إلى العصر البطلمي (330-30 قبل الميلاد) وفقاً للمادة الأثرية. حيث أن الدراسات الأنثروبولوجية تتميز بطبيعتها الشمولية وبالتالي اعتمدت الدراسة الحالية نهج علم الآثار البيولوجية من أجل فحص الهياكل العظمية الأدمية ومحاولة إعادة بناء جوانب الحياة المختلفة للسكان القدماء .

### 1. Introduction

Tell Tebilla is located 12km north of Mendes (the capital of the 16th administrative region of Lower Egypt) and 5km south of the city of Dikirnis in Dakahlia Governorate in the eastern delta. The site-mound occupies an area of 22 acres and it is about 6 metres above the level of the agricultural land and 8 metres above the sea level (Mumford 2001).

The importance of the site is due to the fact that it was an important city known as Ronfer, located on the Mendesian branch of the Nile. It was used as the port city of Mendes during the Old Kingdom and Dynasty 21 and 30. Archaeological objects found at the site date to the Old Kingdom, the New Kingdom, the Third Intermediate Period to the Late Period (specifically Dynasty 21 and 30), as well as the Ptolemaic-Roman period. The city of Ronefer contained a main cult temple dedicated to the worship of the god Osiris and was mentioned on one of the statues dating to Dynasty 26 (Nour El-Din 2009: 309-311). During recent archaeological work of Mansoura University and the Ministry of Antiquities a number of burials were found dating to the Ptolemaic period (323-30 BCE) (Wahby, this volume) and this report will describe and discuss the human skeletal material found.

### 2. Aims and limitations of working on human remains

The purpose of excavating and studying human remains is to determine sex, estimation of age and stature, observation of diseases, trauma and stress markers on the bones, as well as to try to

reconstruct the social and economic status of the dead. Due to the nature of the clayey soil at Tell Tebilla and the poor method of mummification, the bones were not well preserved, to the extent that the mummies could not be extracted whole. In this case the mummies were excavated in parts and conserved in preparation for further detailed study.

### 3. Materials and Methods

The study is based on six skeletons from five burials. Age estimations were based on the study of the sutures of the skulls and dental data; while sex determination was based on morphological phenomena of both the skull and pelvis (cf. Buikstra & Ubelaker 1994; White & Folkens 2005; Black & Ferguson 2011; Pickering & Bachman 2009), height estimations were based on comparative data (Raxter et al. 2008).

### 4. The Burials and Human Remains

The excavations at Tell Tebilla in 2018 resulted in the discovery of several burials within mud-brick structures (Wahby, this volume). The 6 skeletons in 5 burials were extracted from 2 rooms (R1 and R2). The mummification process used was unusual and the same in all cases. All of the skeletons were wrapped in resin-encrusted linen. The rolls of linen were thinly wrapped around the skull and more thickly applied around the body. Then, the linen was painted with a layer of blue and other colours. In several cases, there was another layer of painting with very thin gold coloured paint (gilding) which was only a few millimetres thick and of which very little was preserved. There were also found some linen rolls that had not yet decomposed, but retained some body tissues from which were taken samples for analysis. They are still under study.

#### 4.1. Room 2, Level 1: Burial 1, Skeleton 1 (Fig. 1)



Figure 1. Burial 1, Skeleton 1. Adult male, with a wedjat-amulet next to the thoracic vertebrae.

This burial is that of an adult male, 170 cm tall, lying on his left side, with the right arm extended along the body. He was found in the northeastern side of the room. A *wedjat*-eye amulet was found next to the thoracic vertebrae close to the extraction hole for the viscera (embalming incision). This burial was in a very poor state of preservation: the skull was completely broken and the remainder

of the bones of the body were almost completely decomposed. Because of the severe destruction of the skeleton, no diseases could be observed.

#### 4.2. Room 2, Level 2: Burial 2, Skeleton 2 (Fig. 2)



Figure 2. Burial 2, Skeleton 2: Adult male.

This is the burial of an adult male, 165 cm tall, found in a wooden coffin in the northern corner of room # 2, the head facing west and the feet orientated eastward. Both the coffin and the body were in a very poor state of preservation. Some pottery fragments were found next to the body. This skeleton was very disturbed and the skull was completely broken. The vertebrae, left and right ulna and radius were not in a normal position, suggesting that body had been moved in order to bury another individual or that there were other natural factors affecting the body.

Despite the condition of the body, dental conditions were observed on the teeth, including dental attrition, enamel hypoplasia and periodontal disease. Dental wear (dental Attrition) is one of several regressive changes in dental hard tissues generally associated with the ageing process. It is a well-known phenomenon in archaeological skeletons and, because of its correlation with ageing, is used as a method of estimating age (White & Folkens 2005: 369). Attrition is a physiological process because it is the wearing away of tooth hard tissue as a result of tooth – on – tooth contact during mastication and swallowing (Aufderheide & Rodríguez-Martín 2011, 398). Enamel hypoplasia is a developmental defect of tooth enamel which is recognized on the tooth as increased spacing between perikymata (Waldron 2009: 244). Linear or pitted defects in enamel (DEHs) have long been used as a non-specific indicator of systemic physiological stress during early life and are routinely used to investigate patterns of morbidity and mortality in past populations (King et al. 2005: 547). Bouts of malnutrition, disease and fever are known to depress the activity of the ameloblasts and to result in the production of a thin and poorly calcified enamel matrix, with the formation of linearly distributed pits or grooves of defective enamel (Ogden 2008: 292). Enamel hypoplasia is both of considerable antiquity and very common, affecting up to half of all children in some communities (Waldron 2009: 244; Aufderheide & Rodríguez-Martín 2011: 405-407). Periodontal disease is extremely common and in its mildest form — gingivitis — is said to affect between 50 and 90% of modern populations (Armitage 2004; Waldron 2009: 239). Susceptibility to the disease is probably due to bleeding of the gums in response to the accumulation of plaque (Waldron 2009: 239). Periodontitis is initiated by microbial plaque which follows on from gingivitis, but occurs in only 10 to 15% of the population and is influenced by the individual's immune and

inflammatory response (Kinane 2000: 42). The disease is recognized in the skeleton by the recession of the alveolar margin, which is also likely to show evidence of inflammation and remodelling, including pitting and new bone formation and the formation of a cylindrical cavity around the roots of affected teeth (Waldron 2009: 239, 240).

Osteoarthritis was also observed on the proximal end of the humerus and proximal end of the femur. It is a common condition seen in the skeleton and is primarily a disease of the articular cartilage which breaks down as the disease progresses (Waldron 2009: 27-28).

#### 4.3. Room 1, Level 1: Burial 3, Skeleton 3 (Fig. 3)



Figure 3. Burial 3, Skeleton 3: Adult male in Osirian position.

A burial of an adult male 50+ years old, 170 cm tall, found in the Osirian position with the right hand open next to the closed left hand, as if holding something. The body was wrapped in a layer of linen mixed with resin and bitumen and inside the rolls were papyrus, then a layer of white gypsum and a layer of blue coloured cartonnage was placed above it. Remnants of the penis were found inside the rolls below the pelvic area, and inside the abdomen were placed viscera mixed with resin. Dental conditions were observed (Fig. 4) including enamel hypoplasia, possible filing on the upper left central incisor, periodontitis, dental wear (dental attrition), and ante-mortem tooth loss, namely the left upper 1st molar was lost during life.



Figure 4. Burial 3, Skeleton 3: dental conditions, including enamel hypoplasia ( → ); ante-mortem tooth loss ( ↓ ); periodontal diseases ( O ).

Other diseases noted on the skeleton were hemisacralization (Aufderheide & Rodríguez-Martín 2011: 66) of the sacrum and the fifth lumbar vertebra (Mann & Hunt 2005: 335), which is a common irregularity of spine, where the fifth lumbar vertebra is fused to the sacrum at the

bottom of the spine (Fig. 5). The vertebra may fuse fully or partially on either side of the sacrum or on both sides and sacralization is a congenital anomaly that occurs in the embryo (Hecht 2018). The cause of sacralization is not yet known, but it occurs when the vertebrae begin to ossify in about the eighth week of the embryo's life. There may be a genetic predisposition to the condition. Such anomalies are congenital and are observed in about 3.5% of people and it is usually bilateral. Although sacralization may be a cause of lower back pain, it is asymptomatic in many cases, especially the bilateral type. Lower back pain in these cases most likely occurs due to chronic faulty biomechanics and the L5-S1 intervertebral disc may be thin and narrow. Anatomical organization of the lumbar vertebra is irregular with large body, stout pedicle, thick lamina, slender transverse processes and short, thick square spinous process. Because of this robust structure lumbar vertebrae are known for their characteristic biomechanics and support. They transfer the upper body weight and provide mobility in the lower region of the back. If any type of structural disorientation occurs either accidentally or congenitally, then this can cause severe lower back pain and related clinical complications (Singh et al. 2014). There is also osteoarthritis on most of the joints of this individual.

Figure 5. Burial 3, Skeleton 3:  
Hemisacralization of the sacrum  
and the fifth lumbar vertebra ( →).



#### 4.4. Room 1: Burial 4, Skeleton 4 (Fig. 6)



Figure 6. Burial 4, Skeleton 4:  
Adult female, face down.

A burial of an old, adult female 45+ years old, measuring 128cm from shoulder to feet. The skull and the cervical vertebrae were separated from the body. The body was extended on the right side slanted downward, the head to the south and the feet to the north. The skull and the rib cage area were empty and not filled with resin, but the body was wrapped on the outside with linen mixed with resin about 2cm thick, with a layer of blue colour and then a layer of white on top of the linen.

Diseases observed included pigmented villonodular synovitis on the proximal head of a femur (Fig. 7, Aufderheide & Rodríguez-Martín 2011: 115). Morphology was diagnosed in this case only when X-Rays had been carried out and the results were compared with other previously studied cases. This is a benign neoplasm most commonly affecting the 20 to 40 year age group, arising from the synovial cells of tendon sheaths or major diarthrodial joints most commonly the knee. It is a localised lesion affecting only one joint tendon sheath. Histologically the tumour is composed of benign cells arranged as a single mass or more frequently, a papillary, that is surface tumour (Aufderheide & Martín 2011: 115; Byers et al. 1968). We also observed a humeral epigenetic trait, that is a supracondylar spur of the humerus (Fig. 8, Shivaleela et al. 2014). The modern incidence of the supracondylar process of the humerus is very low but there is a high incidence of unilateral supracondylar process of the humerus in "Cornelia de Lange syndrome", an autosomal recessive trait, occurring in approximately 1:10,000 live births.



Figure 7: Pigmented villonodular synovitis on the proximal end of femur from skeleton 4.



Figure 8: Example of a supracondylar spur of the humerus (Shivaleela et al. 2014).

Supracondylar spurs are often misjudged as a pathological condition of the bone rather than as a normal anatomical variation. It is usually clinically silent, but may become symptomatic by presenting as a mass or can be associated with symptoms of medication of the brachial artery (Shivaleela et al. 2014). A supratrochlear spur is a hook-like, bony spine of variable size that may project distally from the anteromedial surface of the humerus. The spine can be 2-20mm in length and about 5cm proximal to the medial epicondyle. It may be joined to the medial epicondyle by a fibrous band ('Ligament of Struthers') which may ossify. The process, band and shaft of the humerus form a ring or canal through the median nerve and the brachial artery (or a branch of it) may be transmitted (Livingstone 1995: 626). The process and 'Ligament of Struthers' may give insertion to a portion of the abnormally low fibres (the third head) of the coracobrachialis muscle and may also give origin to the pronator teres muscle (Shivaleela et al. 2014). Symptoms associated with entrapment of the brachial artery and median nerve beneath the 'Ligament of Struthers' include paresthesia, weakness and muscle wasting related to the median nerve. Vascular symptoms related to the brachial artery include ischemic pain and claudication in the forearm. The symptoms are typically exacerbated by extension and pronation of the forearm, as well as repetitive activities. Most supracondylar processes are asymptomatic, however, and are incidentally identified on humeral radiographs (Bain 2016 et al.). There was also osteoarthritis on the left acromio-clavicular

joint (A C J), and the knee joint. Dental conditions observed included enamel hypoplasia and dental wear.

#### 4.5. Room 1: Burial 5, Skeleton 5 & Skeleton 6 (Fig. 7)



Figure 7. Burial 5, Skeleton 5 (upper), Skeleton 6 (lower).

This was two burials, consisting of an adult female that was fully mummified, and an adult male lying on his left side, with his head below the female pelvic bones.

Skeleton 5: An adult female of 50+ years of age. This mummy is unusual as will be discussed here. In spite of the fact that the body was fully embalmed and painted with decoration on the chest using colours such as blue and white, as well as a layer of gold that does not exceed one or two millimetres, the individual was buried upside down. The head was face down, and the body was slanted with the feet above the level of the head. The head was orientated towards the south west and the feet towards the north east. This situation is very rare in burials of the Delta cemeteries for this period (El-Mary in progress), except for a possible example at the site of Saft el-Henna, where the body was buried inside a coffin. Perhaps the position was intended to protect the body from theft or to preserve the decorations and colours when the grave was opened again.

The body was stuffed inside with linen rolls mixed with resin and bitumen and it was also wrapped on the outside with the same materials. Because of the poor state of mummification, the skeleton was conserved and lifted, only in parts, for study.

Dental conditions were observed, including periodontal disease and there were also abscesses (Leek 1972), resulting in a variation in the level of the periodontal line. There was also ante-mortem loss of the left, upper molars (1,3). On the anterior teeth, enamel hypoplasia was noted (Fig. 8).



Figure 8. Burial 5, Skeleton 5:  
Dental Conditions, ante-mortem tooth loss (∇), enamel hypoplasia (→), periodontal diseases (O).

Other possible conditions included osteoporosis, leading to a condition of reduction of the total bone mass per unit volume while retaining a normal ratio of bone mineral to bone matrix, most common in females (Aufderheide & Rodríguez-Martín, 2011: 114). Morphological diagnosis was made through comparison with previously studied cases and references and full laboratory analysis is still to be completed.

Skeleton 6: A burial of an adult male, 40+ years old, height of 164cm. He was found under burial No. 5, with the head next to the pelvis of the previous burial and the rest of the body extended underneath, lying on his left side. The head level was tilted downwards and the feet were higher.

Diseases observed: despite the age of the individual, osteoarthritis was noted in more than one joint such as the proximal and distal joint of the right femur, the proximal end of the right tibia and also on the right calcaneus (Baxarias & Herrerin 2008). There is a possibility, therefore, that this person put their weight on the right side more than the left, which may have caused a mobility problem.

Most unusually, this individual had a dental implant (Fig. 9). The right second premolar of the maxilla was lost ante-mortem and another material was put in its place to compensate for the loss of the tooth. The type of material used for the implant is still under study.



Figure 9. Burial 5, Skeleton 6: dental replacement, shown by the arrow.

During excavations in 2014 at the same site, the Egyptian mission also discovered a poorly preserved mummy of an official called Wahibra, after the king of the same name. The mummy had a tooth implant to replace a tooth that had come out, perhaps during mummification, that was fixed in place with a white adhesive material (Hashesh 2015: 137). Chemical analysis of the adhesive confirmed that it was anhydrite ( $\text{CaSO}_4$ ), which is the dehydrated form of plaster. Although the final result was successful the embalmers made errors in the placement and type of new teeth that were used. The aim of the embalmers can be regarded as part of the ‘prosthesis for the afterlife’ in which mummification was a process to avoid putrefaction as well as to try to rebuild or improve the body in order for the individual to enjoy and eternal life with the problems or illnesses suffered during earthly life (Hashesh & Herrerin 2019).

## 5. Conclusions

1. The social level of the individuals is of middle status. Although the burials are relatively poor and no grave goods were found, the individuals had been able to afford rudimentary embalming,

decoration and gilding. One individual had a dental implant, that would not perhaps have been widely available.

2. Existing diseases are normal due to age.

3. All of the places of muscle contact on the bones are somewhat normal and there is no protrusion that might indicate excessive effort on a particular joint, therefore it is possible that these people did not perform any heavy or physical work.

4. All of the burials are orientated towards the temple.

5. The human remains were studied in a preliminary fashion at the site and the full analysis still needs to be completed.

There are more human remains that have not been excavated from the site due to the short duration of the excavation, which will be completed next season.

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# QANTIR-PI-RAMESSE — PRELIMINARY REPORT ON THE 2016 AND 2017 SEASONS (SITE Q VIII)

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## Abstract

Between 27 September and 7 November 2016 and 11 September and 19 October 2017, the Qantir-Pi-Ramesse mission conducted two seasons of small-scale fieldwork in order to prepare for a larger project, planned for the future. The site of excavation was chosen based on the results of the previous magnetic survey and the endangerment of the site by modern settlement activities. Thus, an area was chosen in close proximity of the modern settlement of Qantir in which the survey was showing a large-scale palace- or temple structure. The major results will be discussed within this article.

## ملخص

فى الفترة بين 27 سبتمبر و 7 نوفمبر 2016 و 11 سبتمبر و 19 أكتوبر 2017، أجرت البعثة الأثرية بقنطير موسمين صغيرين من العمل الأثرى الميداني من أجل التحضير لمشروع أكبر مخطط له في المستقبل. تم اختيار موقع الحفر بناءً على نتائج المسح المغناطيسي السابق ومدى تعرض الموقع للخطر من خلال أنشطة الاستيطان الحديثة. وهكذا، تم اختيار منطقة قريبة من المستوطنة الحديثة قنطير حيث أظهر المسح الأثري وجود بناء لقصر أو معبد كبير الحجم. سيتم مناقشة النتائج الرئيسية في هذه المقالة.

## 1. Introduction

Between the years 1996 and 2012 a large-scale magnetic survey, using mainly Caesium magnetometers, was conducted around the modern village of Qantir (Pusch & Becker 2017). Covering an area of almost 1.5km<sup>2</sup>, a large number of features were discovered in various zones. The choice of sites Q V, Q VI, and Q VII in the years 2000-2004 for archaeological work was mainly based on the results of the magnetic measurements (Pusch & Becker 2017: 75–115). The same holds true for the 2016 and 2017 seasons and the choice of Q VIII for archaeological work. Two main factors were taken into consideration: the potential importance of the site and the threat posed by recent settlement activities.

Area Q VIII is situated near the south-eastern fringe of the modern village south of Ezbet Silmy (Fig. 1) and about 300m east of site Q IV, the royal stables, excavated between 1988 and 2002. The zone is thus part of the so-called “Ost-Stadt” of Pi-Ramesse (Pusch & Becker 2017: 244–250). Continuing the projects previous nomenclature, the site was called Q VIII. An area of about 3,400m<sup>2</sup> was rented. Within the grid for Tell el-Dab’a and Qantir established by Dorner (Dorner & König 1975) the approximate coordinates are  $x = 1840-1890 / y = 1640-1700$ . In its immediate proximity, modern residential buildings had been constructed, mainly during the last two decades. It is likely that without archaeological investigation the features would remain unknown.



Figure 1. The site prior to the resumption of the work. The vicinity of the modern buildings is visible (Photo R. Stetefeld).

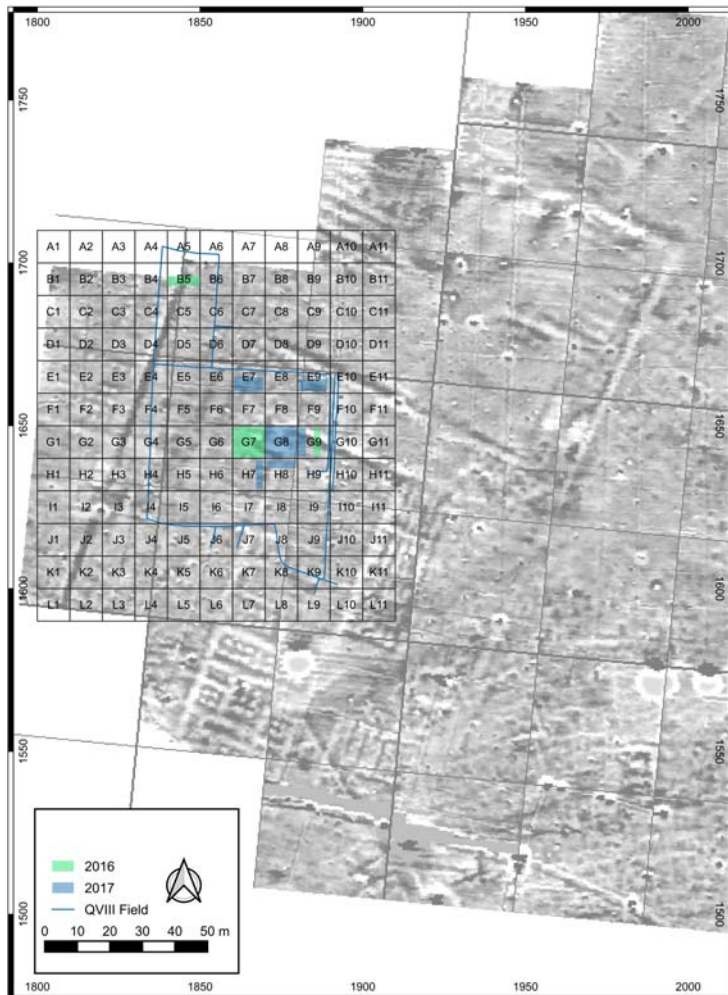


Figure 2. The interpretation of the magnetic measurements in the area of site Q VIII. Excavation areas are marked in blue.

(Magnetic measurements by H. Becker and E.B. Pusch, digital processing by F. Stremke).

The magnetic measurements of this area are characterized by one of the largest structures visible. Previously interpreted as a palace- or temple complex (Pusch 2004: 241–42, Bietak & Forstner-Müller 2011: 38–39; Pusch & Becker 2017: 225–31), it has a total size of about 150 by 250m (Fig. 2). The rectangular precinct possesses a complex internal division of space, exhibiting features of a temple, long storage rooms, columned halls, and seemingly open spaces. This is by far the largest structure visible in the magnetic measurements and already its size, comparable to the Ramesseum, points to an exalted status within the urban fabric of Pi-Ramesse and a royal background.

The major questions that are being addressed by the current project are the following:

- 1) What function did the building have? Was it a temple, a palace or both?
- 2) Does the building belong to the initial construction of Pi-Ramesse in the earlier Ramesside Period or is it a later addition to the city?
- 3) How long was it used and how many construction phases can be discerned?

## **2. The excavation, survey and methodology**

Within the rented fields, a 10x10m grid was laid out by Frank Stremke, archaeologist and surveyor of the team. The corners of the local grid were placed on 10m lines of the grid established by Dorner in the 1970s (Dorner & König 1975), after the reestablishment of the system, using phase differential GNSS (highest precision GPS). In total, the grid comprises 132 squares (a/1–l/11).

Two locations were chosen for excavation in 2016. One in the north, in the immediate vicinity of the modern houses and one towards the centre of the area. In the north, a 3x10m trench was sunk in square b/5, to examine the long structure visible in the magnetic measurements that was interpreted as a wall with a length of 180+x metres. In the centre the squares g/7, g/8, and g/9 were opened to examine a structure interpreted as a potential, atypical entrance into the central building at its north-western corner (Pusch & Becker 2017: 229–30).

In 2017, the trenches in squares g/8 and g/9 were reopened and expanded towards the south. Furthermore, two trenches were opened in squares e/7 and e/9 to investigate structures visible on the magnetic map, namely a wall and supposed column base pits in e/7 and a larger amorphous structure in e/9, which in the end not excavated completely due to the workload in the other areas. In total the trenches cover about 300m<sup>2</sup>.

As no pumping system to lower the ground-water level was available, the regular depth reached was about 1m below modern surface level while the maximum depth reached was about 1.30m (equivalent to approximately 3.20m a.s.l.). Below this, ground-water is present.

All trenches and their individual plans were documented photographically and by drawing. In addition, a total of 88 photogrammetric 3D scans were conducted during the two seasons of fieldwork. Most soil was sieved and all finds were kept, including most non-diagnostic pottery which will be handed over to the ceramicist in later study seasons. Only the non-diagnostic pottery from the topsoil was discarded.

## **3. Major features and finds in the excavated areas**

The squares in which excavation took place will be presented in detail in the following paragraphs from north to south. Square e/9 will be omitted here due to the fact that it did not yield relevant results for the research questions formulated above.

### 3.1. Square b/5

In square b/5 the stratigraphy comprised two main phases. Immediately underneath the topsoil two slightly curved walls, running parallel to each other were identified. In the western part of the trench, west of the walls, a pit [003], filled with a brown material, rich in humus and containing lumps of fired clay, was uncovered (Fig. 3). It contained many small finds, amongst which were 51 faience moulds with 12 different motifs. While most of them show *Udjat*-eyes and other amulets, a group of six identical pieces bears the nomen of Merenptah *Mrj-n-Pth* [*hpt*] *hr-M<sup>3</sup>.t*, very similar to one published by Herrmann (Herrmann 1985: 162, Kat. 1373/BIF 1071; Fig. 4).

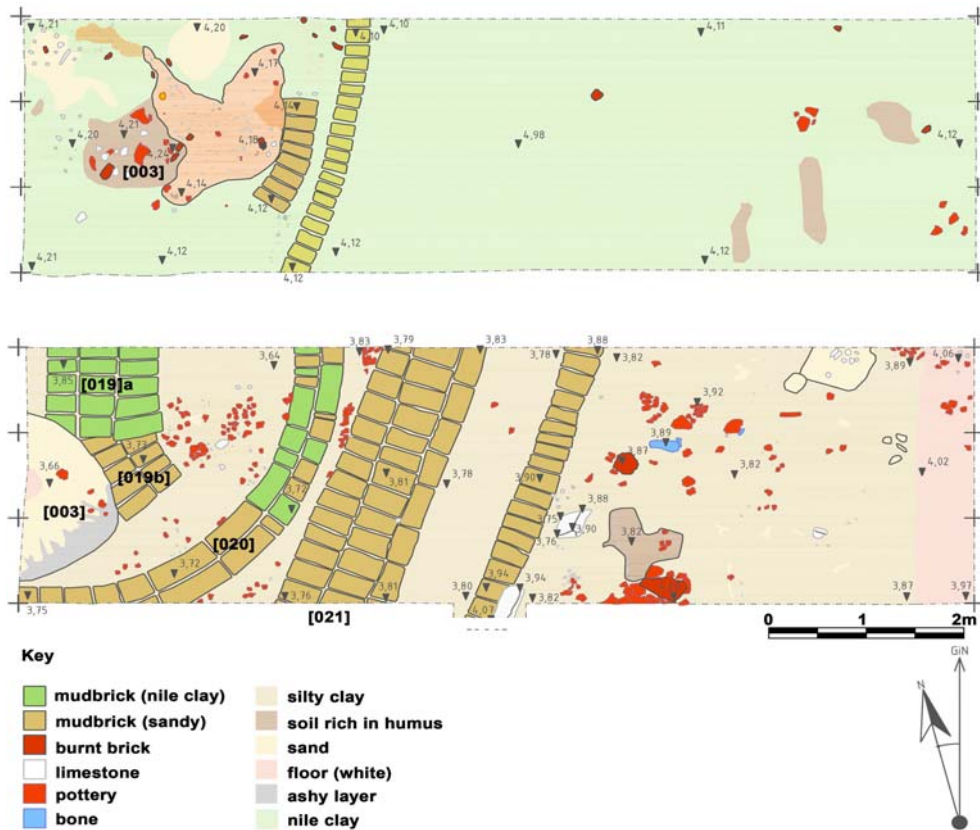


Figure 3: Features of the later phase (above) and the later phase (below) of square b/5. (Original drawings: B. Gilli and M. Osman; digital drawings: S. Hagenauer).

Figure 4: Left – overview of a variety of faience moulds from the pit b/5-[003] (FZN 16/0320, 0001-0032). Right – detail of one of the moulds showing the name of Merenptah (FZN 16/0320, 0001).

(Photographs: R. Stetefeld).



Further finds comprise carnelian splinters, five drill cores of jasper, and a well-preserved bronze arrowhead. Except for the arrowhead, the assemblage points clearly towards the production of jewellery. Most of the motifs of the faience moulds appeared repeatedly, with the same patris having been used. Thus, it seems quite likely that the pit served as the refuse of a workshop in which amulets were produced and that the accumulation within the pit took place while the workshop was

still active. Moreover, the filling of the pit seems to have occurred in a short span of time as the same types of moulds were found on different levels within.

The pit [003] was cut into a lower stratum that was of a different characteristic (Fig. 3). Here, two parallel walls [021] and [022] were found. The western wall had a thickness of 0.95m or 2.5 bricks while the eastern wall had a thickness of 40cm or 1 brick. Both walls consisted of mud-bricks of the same material “Niltonziegel” but different sizes (45x23 and 39x26cm for [021]; 20x40cm for [022]). The mud-bricks are described according to the typology of Pusch & Becker 2017: 116-18. The space in between, 80cm wide, was filled with a very pure, rich Nile clay, almost devoid of inclusions of a larger grain size and anthropogenic material, except for a small number of very small pottery fragments.

On the western side, about a quarter of a round structure was found on the same level, belonging to the same stratigraphic level. The thickness of the wall is one brick (ca. 40–50cm), set in two rows of stretchers. In contrast to the very uniform size and material of the two parallel walls, the sizes vary and different kinds of bricks, some containing more sand, are employed. The round structure most probably can be interpreted as a silo. Within the structure, two floors made of mud-bricks were preserved on which some pottery was discovered. Another concentration of pottery was found in the spandrel between the silo and the parallel walls. Even though the pottery is still waiting for a thorough analysis the first impression points to an early Ramesside date.

The most important information from this trench is the date of the pit [003]. Even though it is located at a position close to the modern topsoil and on top of the walls [021] and [022], it should date to the reign of Merenptah or slightly later. A much later use of the moulds mentioning this particular king is unlikely, and the context supports a date of deposition close to the use of the moulds. Thus, the underlying walls [021] and [022] were already out of use by that time although they seem to be one of the longest and most important walls of the whole complex, pointing to major changes from any original layout already by this time.

### *3.2. Square e/7.*

Square e/7 was chosen in the autumn of 2017 for the features visible in the magnetic images. In square e/7 two round signals are visible that were interpreted as column bases or column base foundation pits.

After excavation, three strata can be distinguished. Under the topsoil four scatters of limestone splinters were observed. The only further feature belonging to this stratum was a pit, used for the extraction of one of the column bases. Underneath every limestone scatter, column base foundation pits were found. They are circular with a diameter of approximately 1.50m and a preserved depth of about 0.80m (Fig. 5). The filling comprises an almost pure yellow sand; the few non-diagnostic sherds in the filling do not allow any precise dating. Two walls running parallel to the rows of column base foundation pits ([001/021] and [002/022]) with a thickness of one and one and a half bricks respectively, most likely date to the same phase. Both walls seem to have two phases. While in the later phase they are mainly constructed of “Normziegel” with a size of 45x25cm, the earlier phases are represented by a mix of “Normziegel” and “Tonziegel”. Both are preserved to a height of only one brick. The original floor connected to both the columns and the walls could not be observed anywhere. Obviously, the demolition process of the columns also involved the destruction of the floor as the scatter of limestone splinters rests directly on top of the layer described below.



Figure 5. Section of one of the column base foundation pits in square e/7.

(Photograph: R. Stetefeld).

The column base foundation pits are sunk into a layer of dark brown soil that was rich in humus. It contained a large amount of finds such as pottery but also a scarab and 15 fragments of pottery figurines, including two heads resembling figurines of deities from Byblos and two heads of horses. Due to its homogeneity, the layer can be interpreted as fill, used to level the previous surface that was not reached during the excavation. The finds date in their majority to the earlier Nineteenth Dynasty, with some earlier remnants, making a connection to the erection of the columned building likely.

It can be concluded that in the earlier Nineteenth Dynasty a building was erected which had a vestibule or portico of two rows of columns. Even though only four column base foundation pits were excavated the magnetic measurements suggest a total of ten columns. The remaining part of the building would have been to the east of the columns.

### 3.3. Squares g/7–g/9 and h/7–h/8.

This area, located in the southern part of the rented plot of land, is the central part of the excavations of the years 2016 and 2017. While square g/8 was excavated completely down to the groundwater level, all other squares were only partially opened.

The uppermost stratum consisted mainly of weathered mud-brick-debris between and on top of a group of walls, mostly preserved only to a height of one brick. These walls, most likely representing a stratum rel(ative).b were not visible in the magnetic maps, probably due to their poor state of preservation. So far, they cannot be associated with a certain type of building and would need excavation on a larger scale (Fig. 6).

The stratum below consists of a variety of features, often related to construction activities and the deposition of refuse. The largest part of square g/7 was filled by a pit-complex that reached its base below the ground-water level, starting from below the layer of weathered mud-brick. The pits seem to belong in their entirety to stratum rel.c and seem to have been filled successively, but within a rather short span of time as no layers of fine washed-in materials were observed. The filling was rich in humus, mixed with Nile clay, containing some concentrations of charcoal. The pits' importance stems from the finds made within that suggest they were used as a dump. Amongst the finds were large amounts of pottery, including a small number of Mycenaean fragments, a few limestone fragments with traces of reliefs, animal bones, and a quarter of an ingot of Egyptian blue. The largest limestone fragment bore traces of an inscription mentioning a  $s^3$  (or  $s^3.t$ ) *nsw n h.t=f*

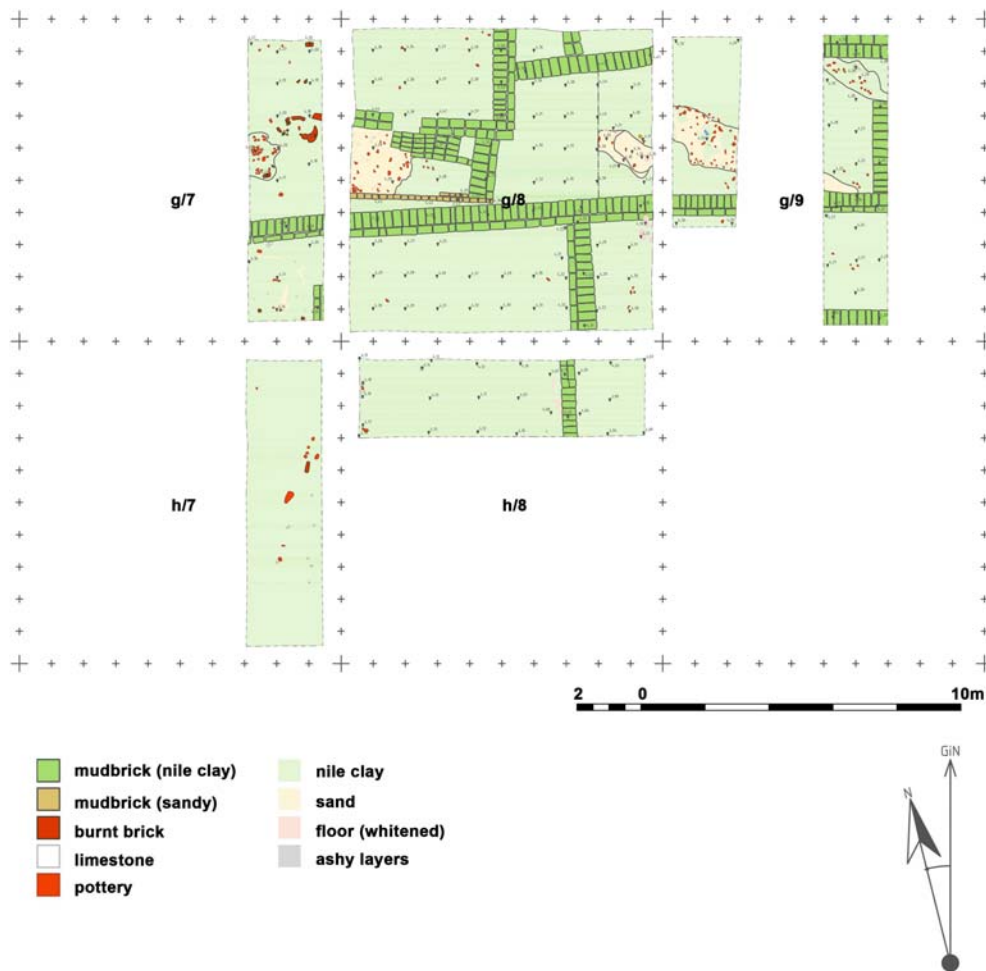


Figure 6. The walls of stratum rel.b in squares g/7-g/9 and h/7-h/8.

*mr=f*, with the rest of the inscription being destroyed. Moreover, a group of burnt mud-bricks were found; later they were also observed in the underlying stratum in other areas but unfortunately nowhere in situ. Their size (45x35x8cm) suggests a use as a flooring. Parallels are rare and burnt mud-bricks from New Kingdom contexts are only known from singular finds from Qantir also not in situ (Pusch & Becker 2017: 117), a tomb at nearby Tell Nabasha (Petrie 1888: 18), and the moat of the fortress of Tell el-Borg (Hoffmeier et al. 2014: 198–201). Moreover, the use of pavement slabs of burnt mud-brick is known from a Middle Kingdom fortress context in Nubia, a basin in a Thutmosid palace in Tell el-Dab'a (Bietak 2018: 234) and a house of the Twenty-first dynasty in Medinet Habu (Spencer 1979: 140–41).

The most important features and finds of stratum rel.c relate to the filling of a basin-like structure that in itself belongs to stratum rel.d (Fig. 7). Here a number of fragments of painted plaster was discovered (see 3.3.1.). A nearby pit, also part of the basin's filling, was of particular interest as it turned out to have a layer of a mud- and sand-based plaster at the bottom. It had obviously been used to mix this plaster and preserved some feet impressions with a length of 15–17cm, suggesting children of roughly four to eight years of age (Fig. 8). Whether these children worked or played in the pit is a matter of pure speculation, though evidence from the southern cemeteries of Amarna points to children already involved in strenuous work (Stevens & Dabbs 2018: 13).

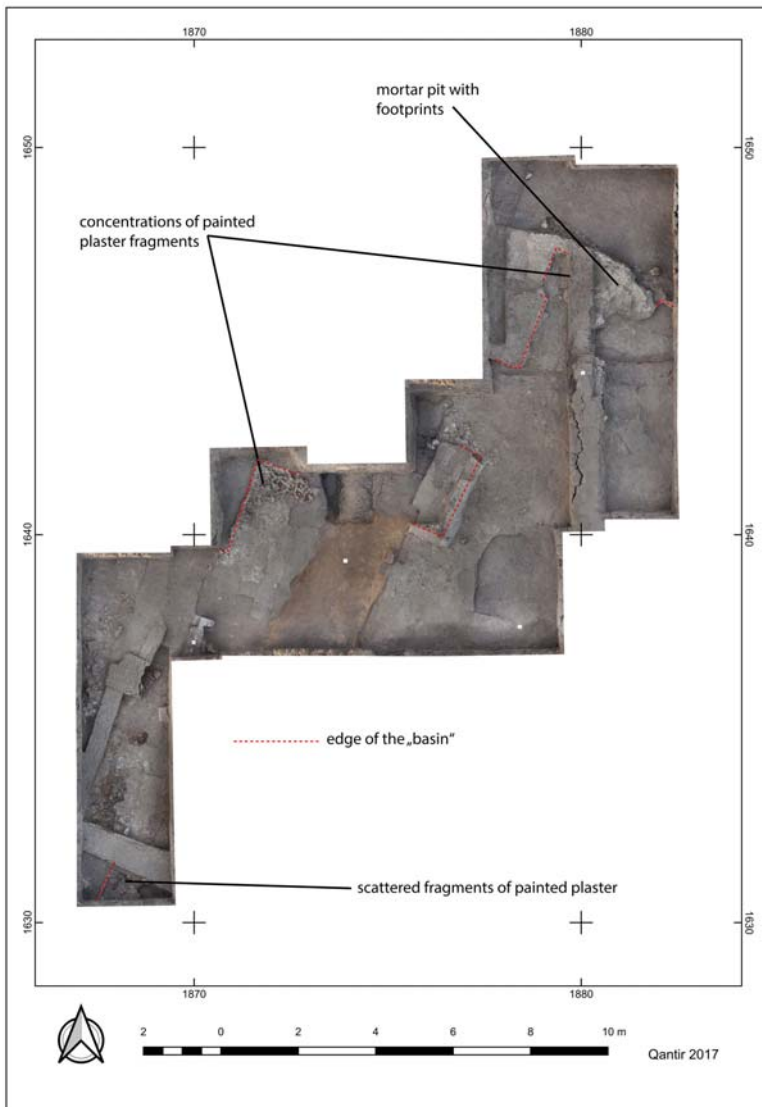
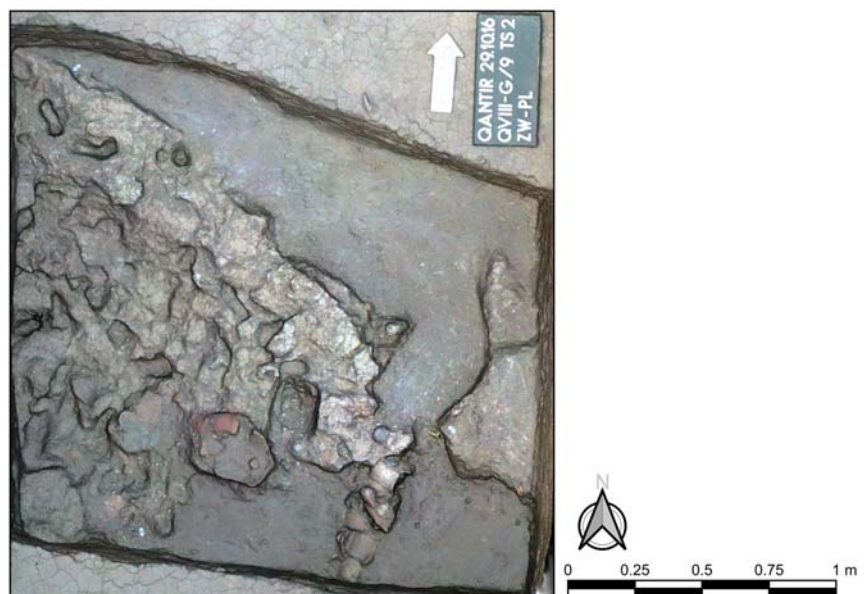


Figure 7. Squares g/7-g/9 and h/7-h/8. Orthophoto with the basin-like structures marked in red. The highest preserved part of the edge is visible approximately in the centre.

(Photograph and digital processing: F. Stremke).

Figure 8. Orthophoto of the mortar pit, showing the footprints. The visibility of the structures is enhanced by a mix of the actual photo and the digital elevation model. (Photograph and digital processing: F. Stremke).



The lowest stratum mainly yielded a large feature that could be followed through almost all squares. It is a basin-like structure with sloping sides preserved to a maximum height of about 45cm. While the top was not preserved, it might have consisted of flat limestone slabs that were sloped on one side as one found in the filling suggested. Its sides and the bottom were made of a whitish fine plaster that hardened when dry, but that was soft when wet. The thickness reached up to three centimetres on the edges while the plain bottom was often a little thinner. It was mostly filled with an almost pure Nile clay with only very few finds. The sides are not straight but show several 90° angles. No clear form is discernible so far and more excavation needs to take place to identify the complete shape and purpose of this structure. A function as water-basin of some kind is a hypothesis even though the plastered edges and the bottom might not have been impermeable.

A major obstacle in the interpretation is posed by the fact that the structure is not visible in the magnetic measurements even though it follows the orientation of the structures of the magnetic maps in the vicinity.

### 3.3.1. *The painted plaster.*

The first pieces of painted plaster were already discovered scattered in upper layers, all find-spots with larger fragments belong to stratum rel.c. None of the plaster was found *in situ* but were in tertiary positions at best. Four concentrations of plaster were uncovered, containing the vast majority of the fragments. These can be identified as dumps where the plaster was deposited. All evidence points to the disposal of fallen down or taken down plaster. Most fragments are small and broken. Their removal from the soil, as conducted by conservators of the University of Applied Sciences and Arts, Hildesheim (HAWK), proved to be very difficult and tedious (Fig. 9). The plaster has a thickness of not more than 1cm. It consists, according to some preliminary, mostly visual, analysis by the conservation team mainly of lime and small amounts of sand. If this impression holds true during further analysis in the future, it would add to the small number of sites with confirmed lime-plaster in contrast to the usual gypsum-based plaster (Lacovara & Winkels 2018: 160–167). At least two different plasters were identified, one very fine and one containing more and larger sand grains as well as some limestone fragments.



Figure 9. Fragments of wall-plaster *in situ* in square g/8 (Photograph: R. Stetefeld).



Figure 10. One of the largest fragments of painted wall-plaster (FZN 16/0472,0002; Photograph: R. Stetefeld).

So far, no motifs were identified but the following observations can be made. The background seems to have been white with the plaster being white. Paintings were executed in red, blue, yellow, and black while green is missing so far (Fig. 10). The technique used can at least partially be iden-

tified as al fresco as there are clear traces that the colours were applied while the plaster was still wet. The biggest fragments measure approximately 20x20cm and are monochrome, pointing to larger monochrome areas. But some smaller fragments clearly show traces of figural or geometric painting with many colours being present on sometimes very small pieces. Moreover, a small number of fragments might have had a plain surface. Whether this is due to an inaccurate execution of plastering or a kind of three-dimensionally structured surface has to remain unknown for the moment. As not all fragments excavated in 2016 and 2017 could have been removed, they were re-covered instead and await excavation in the future. Further research might also shed light upon the question of where the paintings were originally located: wall, ceiling, or floor. All three options are possible.

#### 4. The Stratigraphy

Even though the excavation had only a very limited extent, some general information regarding the stratigraphy can be provided. It must be borne in mind that any dating must be taken as approximate at this stage. But it seems certain that stratum rel.a in all squares does not date later than the earlier Twentieth Dynasty. No evidence was found for any later activities. Whether this is due to the destruction of higher layers or due to an abandonment of the area cannot be answered by now. The earlier strata are contemporaneous to the Nineteenth Dynasty, rel.d probably dates to the early reign of Ramesses II.

The relative stratigraphy presented here, differs to some extent in all trenches, as they were not connected, and the stratigraphy thus cannot be linked by direct stratigraphic evidence. This holds true for the trenches in squares b/5, e/7, and e/9 that are not connected to any other trench while the larger connected area of squares g/7–g/9 and h/7–h/8 share one single stratum, upon which the following overview focuses:

*Topsoil:* All areas were covered by a topsoil layer of 15–30cm that corresponds to the depth to which the original stratigraphy was disturbed by modern agricultural activities. Within this layer some pottery of mixed dates and a few small finds were observed. Except for a potentially Ptolemaic bracelet fragment of a translucent blue glass (FZN 16/0007; dating suggested by Edgar B. Pusch) no post-New Kingdom finds except modern rubbish were observed in the topsoil.

*Stratum rel. a:* In squares g/7–g/9 and h/7–h/8, a continuous layer of mud-brick debris with only a small number of finds was observed. This layer filled the spaces between the mud-brick walls, which belong to the next stratum. Based on preliminary observations, the ceramic material does not contain any late twentieth Dynasty or Third Intermediate Period material. The mixed ceramic fabrics III.A and III.B (Aston et al. 2007: 529) are rare compared with II.D-marls. Shapes such as the characteristic “decanters” (Hummel 2009: 69–72) or the squat globular jars (Aston 1998: 566–67) are missing. This stratum might be tentatively dated to the late nineteenth or earlier twentieth Dynasty. Potentially it is a layer connected to the destruction of the walls of stratum rel.b that might have been a gradual process. It does not occur in any of the other squares.

*Stratum rel b:* This stratum is represented by walls of regular unfired mud-bricks (“Normziegel”) of sizes between 48x25x10cm and 40x20x10cm. They are following roughly an east-west and north-south orientation. The longest wall [004] can be traced over the width of squares g/7–g/9, in total for almost 20m. The date of the walls cannot be determined exactly and no floors belonging

to this stratum can be identified. Only finds from the walls and a small number of features can be used to date this stratum. As the preliminary and far from complete survey of the pottery shows, no pottery dating to a period later than the later nineteenth or early twentieth Dynasties was found. Tentatively this stratum can therefore be dated to this period. This would be in agreement with findings in pit [003] in square b/5 where faience moulds with the name of Merenptah have been found and that has a similar position in terms of depth below the topsoil.

*Stratum rel c:* This stratum contains the features related to the deposition of the painted plaster (see above paragraph 3.3.1.) in squares g/7–g/9 and h/7–h/8. It includes the mortar pit [014] in square g/9 and also the pits [003]–[005] in square g/7. Its connection to stratum rel.b is difficult to determine as some of the features are at a high elevation. An earlier date is suggested as features of this stratum do not cut through the walls of stratum rel.b in any location. In fact, stratum rel. c seems to be related more closely to the features of stratum rel.d. The contexts can most probably be dated to the reign of Ramesses II.

*Stratum rel d:* The lowest identifiable stratum reached so far in the excavations in the years 2016 and 2017 consists of the features that predate the deposition of the fresco fragments. Whether this stratum is connected to the use of the frescoes cannot be proven without further excavation. It was only reached in squares g/7–g/9 and h/7–h/8. The most significant feature of this period is the large basin-like structure [035] and the walls that backfill the slopes of the basin (see 3.3). No exact date can be established at this point, but all circumstantial evidence points towards the earlier nineteenth Dynasty.

Underneath this stratum further anthropogenic layers can be expected, even though they could not be excavated to any larger extent due to the high ground-water table and the lack of large pumps. In square g/8 a small shaft was sunk to a depth of about 1.50m below the modern surface to collect groundwater. Down to this depth further settlement layers containing Ramesside pottery were observed.

## 5. Conclusions

The 2016 and 2017 excavations at site Q VIII made it very likely that the construction of major features dates to the reign of Ramesses II, probably to the earlier part of it. Already in the later nineteenth Dynasty spaces seem to have changed their function. The history of the area after the end of the nineteenth or the beginning of the twentieth Dynasty remains in the dark, as no archaeological features dating to later periods have been identified so far. If this is due to the lack of activity in the area or due to the loss of all later strata cannot be answered. But it is noticeable that during the excavations not a single pit was found that clearly cut into the area from above, and contained later material. This contrasts with all other excavation areas, where such features have always been observed (Pusch & Becker 2017: 58, 67, 79, and 97).

The function of the large complex, which in the past had been described as a “temple-palace”, can most likely be pinned down to palatial in the wider sense. The general layout with the courtyard, followed by two broad halls with 16 columns each and a central room with six columns finds its closest parallels in the “harim” of the great palace at Amarna (Lacovara 1997: 117) and the palace of Merenptah at Memphis (one broad room only; Lacovara 1997: 116). The finds and features add to this hypothesis, especially if the interpretation of the structure as a basin holds true. Examples of

basins in the forecourts of palaces are known from the “harim” of the great palace and the north palace of Amarna (Lacovara 1997: 117, 119). The presence of the name of Ramesses II and a fragment with the title of a royal son (or daughter) furthermore underlines the royal connection, which was to be expected given the size of the complex. The paintings and the exceptional techniques used for both the plaster and applying the colours add to this image of an outstanding building within the urban fabric of the Ramesside capital.

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# TELL EL-MASKHUTA, A KEY SITE ALONG THE WADI TUMILAT: REASSESSMENT AND NEW DATA

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## Abstract

The CNR's Multidisciplinary Egyptological Mission (MEM), founded by G. Capriotti and directed by A. Angelini, inaugurated a new season of archaeological investigations at Tell el-Maskhuta in 2016. The site is well-known in the archaeological literature for its importance along the Wadi Tumilat, one of the oldest communication routes with the East. Investigated in the past, Tell el-Maskhuta still raises several archaeological questions about its chronology and architectural remains, which the MEM has been addressing through modern non-destructive research technologies together with more traditional archaeological excavations.

## ملخص

بدأت البعثة الأثرية متعددة التخصصات التابعة للجنة الوطنية للبحث العلمي (CNR)، التي أسستها كابريوتي ويديرها أنجليني، موسمًا جديدًا من العمل الأثري في تل المسخوطة في عام 2016. يشتهر الموقع في الأدبيات الأثرية بأهميته على طول وادي توميلات، أحد أقدم طرق الاتصال مع الشرق. على الرغم من أن العمل الأثري في تل المسخوطة قد نم منذ زمن طويل، إلا أنه لا يزال يثير العديد من الأسئلة الأثرية حول التسلسل الزمني والبقايا المعمارية، والتي كانت MEM تتعامل معها من خلال تقنيات البحث الحديثة غير المدمرة مع أعمال الحفائر الأثرية التقليدية.

## 1. Introduction

Tell el-Maskhuta is located along the Ismailia canal, about 15km west from that city. The watercourse divides the archaeological site into two parts: on the south, the site lies on an elongated polygonal area, flanked by a high tell, bordering the canal. The surface of the area is very irregular, due to unpaved, sandy roads and uncultivated vegetation. On the northern side of the Ismailia canal, the site is being investigated by the Ministry of Antiquities of Egypt.

The archaeological area was partially excavated by Édouard Naville and Jean Clédat at the end of the nineteenth and beginning of the twentieth century (Naville 1885; Clédat 1921). In the 1970s, John Holladay from Toronto University led some archaeological excavations, opening trenches across the site (Holladay 1982; Holladay-Brock 1996; MacDonald 1980; Paice 1986/1987; Redmount 1993; Redmount 1995a; Redmount 1995b).

The results of the earlier excavations were very conflicting: after finding many Ramesside statues, Naville identified the site with the biblical city of Pithom, built by the Israelites at the time of the Exodus (Naville 1885: 1-3, 12). Several scholars, including Sir Alan Gardiner, refused to believe that the site was so ancient and suggested that the Ramesside finds had been brought to Tell el-Maskhuta from Tell el-Retaba, a huge archaeological site located along the Wadi Tumilat, whose Ramesside date was ascertained (Gardiner 1924: 95-96). Later, Holladay found some remains from the Hyksos period and dated the main building of the site to Saite times, suggesting a long hiatus

between the two periods (Holladay 1982: 19). In 2010, however, the Ministry of Antiquities unearthed the only Ramesside tomb in the Delta on the northern part of the site. This important discovery challenges the preceding conclusions about Tell el-Maskhuta.

## 2. Results of the Archaeological Excavation

The main archaeological feature in Tell el-Maskhuta is the enclosure wall. In Naville's and Holladay's reports, a square enclosure is represented (Naville 1885; Holladay 1982: pl. 26), while in Clédat's article it has a rectangular shape, with a transversal wall, which corresponds to the northernmost wall in Naville's and Holladay's plans (Clédat 1921: tav. XVIII) (Fig. 1).

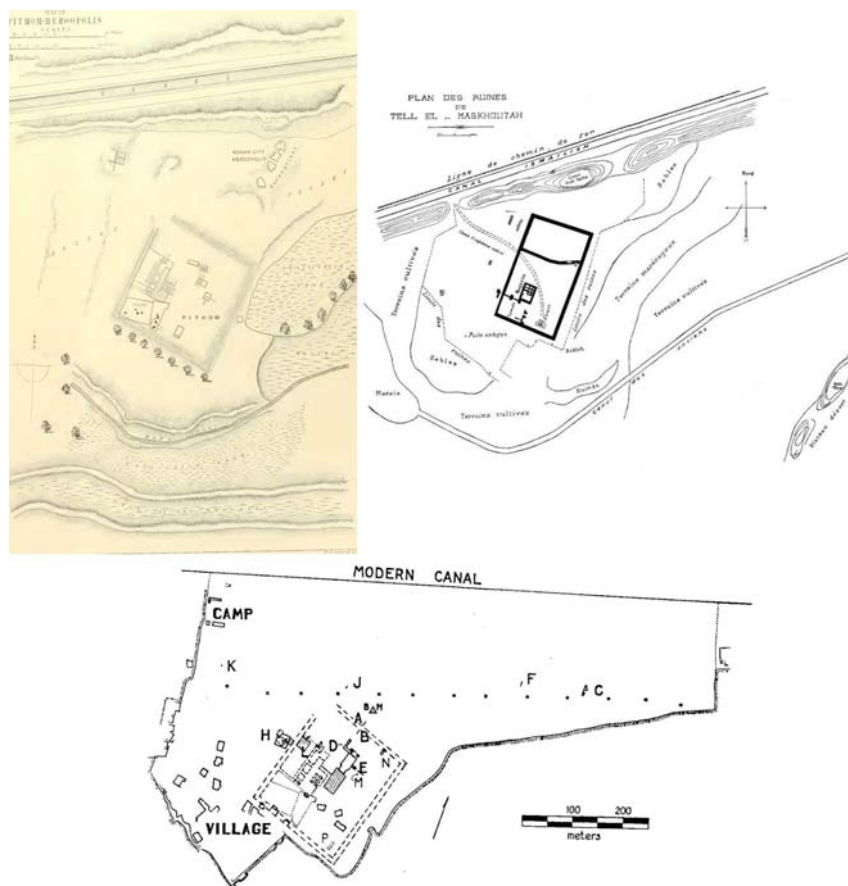


Figure 1. Plans of Tell el-Makshuta from preceding excavations: top left is Naville's plan, top right is Clédat's and on the bottom is Holladay's plan.

Remote sensing and direct observation of the vegetation suggested the presence of a third, northern wall, partially covered under the southern slope of the tell. A small portion of this wall has been found in the most recent archaeological campaign and needs further verification. Considering all the questions that arise about the enclosure, drawing its new and updated layout has been one of the main goals of the initial archaeological season. The mission has also focused on the chronology and the relationships between the square and the rectangular layouts of the enclosure, excavating several trenches and test pits along its walls. Also, two undocumented buildings have been discovered on the western side of the site (Fig. 2 and Angelini 2015; Capriotti Vittozzi & Angelini 2017; Capriotti Vittozzi et al. 2018; Capriotti Vittozzi et al. 2019; Angelini et al. 2020).

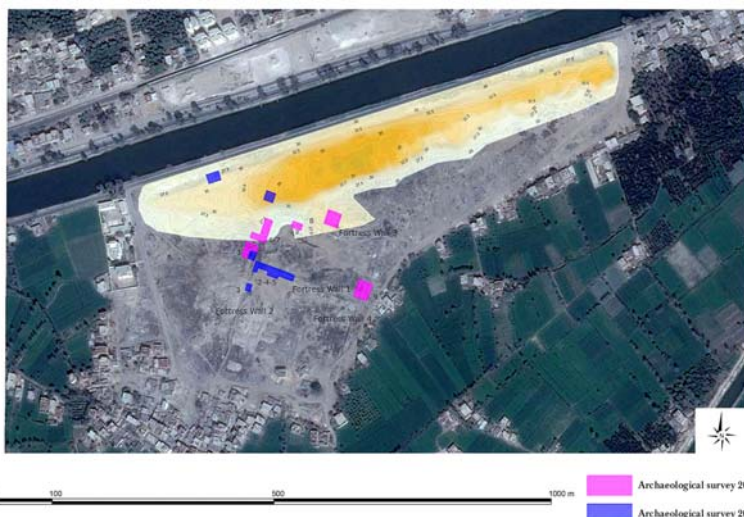


Figure 2. General view of the site © Google Earth, Digital Globe 2017. In yellow: the DEM model of the tell; in pink and blue, areas of work in 2017 and 2016. (Image provided by A. Angelini).

The north (Enclosure Wall 1, as represented by Naville and Holladay), west (Enclosure Wall 2), and east (Enclosure Wall 4) walls of the enclosure have been identified and their surface has been cleaned and exposed. Also, a small portion of the northernmost wall of the enclosure (Enclosure Wall 3) has been found.

Enclosure Wall 1 was partially visible above the ground. More has been exposed and its surface has been cleaned. The wall is a massive mud brick structure, with rectangular projections along the external side, located at 8-10m from each other. The projections are about 16m long and 0.80m wide. The enclosure wall is 7.50m wide (8.30m wide, where the projections are located). The distinctive trait of this wall is the use of two different kinds of mud bricks: yellow mud bricks on the inside (the part of the wall built of yellow mud bricks is 6.70m wide), and dark brown mud bricks on the outside (Fig. 3).



Figure 3. Enclosure Wall 1, from north-west.



Figure 4. Area 2: interior side of the corner between Enclosure Wall 1 and 2, with the foundation of the enclosure.

Along the interior side of the wall, several trenches have been excavated, namely Area 2 and Area 4. Area 2 is located at the interior north-western corner of Enclosure Wall 1. In this trench, the foundation of the enclosure has been found, which is 1m high and built of dark brown mud bricks. The total height of the wall is about 2.30m (Fig. 4).

Area 4 has been excavated approximately at the centre of the wall, to detect its height and verify its preservation. The results are extremely important: the wall is about 6m high, without reaching its foundation.

In the two areas just mentioned, the filling layers of the foundation trench have been removed, showing its large profile. The lowermost filling layer of the foundation trench in Area 2 has given some interesting materials, such as faience amulets, specifically a *w<sup>3</sup>d*-papyrus and a *wn-hare*, some Hyksos-Tell el-Yahudieh pottery sherds, and a black paste juglet, missing the handle and the neck, possibly datable to the Persian-Greek period.

Enclosure Wall 2 is built of dark brown mud bricks, with some yellowish bricks at the junction with Enclosure Wall 1, and it is about 9m large. Along Enclosure Wall 2 some further trenches have been excavated, such as Area 3, placed along the interior side of Enclosure Wall 2, south of the junction with Enclosure Wall 1.

In Area 3, the filling layers of the foundation trench have been removed and, at the bottom of the trench, a red slip flask was found, missing handles and rim. It is comparable with a flask found by the Holladay's mission in Tell el-Maskhuta, dated to around 600 BC (Holladay 1982: Fig. 89.4), and one from Tell Dafana and dated to the twenty-sixth Dynasty (Leclère, Spencer 2014: 196, EA 22340). It is also possible to find some comparisons among later flasks found in the Sinai (Hamza 1997: tav. V).

Area 5 was opened after noticing some white bricks on the top of Enclosure Wall 2, about 20m south of the junction with Enclosure Wall 1. The function of those remains will be clarified in the next seasons.

Area 7 is located along Enclosure Wall 2, north of the junction with Enclosure Wall 1. It is a long trench, measuring around 35 x 3m and follows the external side of the western enclosure. In this trench, it has been possible to identify some projections and the foundation of the enclosure wall.

Enclosure Wall 3 has been analysed only in a small portion, because of the complexity of the area. The wall is the northernmost one of the enclosure and it is partially covered by the southern slope of the tell. Its internal side has been investigated in Area 8 and in Test Pit 1, located about 2m north of the trench, where the foundation of the wall has been found. On the tell, a second test pit has been dug (Test Pit 2), in order to find the external side of the wall, which is 12m wide. This second test pit revealed that Enclosure Wall 3 rests against a second wall, named Enclosure Wall 3/b and 9.90m wide, 1.20m high, with two projections exposed. Putting together the two walls, the total width of Enclosure Wall 3 is 22m and the wall is 8m high. This important discovery will be analysed further in the next seasons.



Figure 5. Area 9: panoramic view of Enclosure Wall 4, from the south-east.

Enclosure Wall 4, the eastern wall of the enclosure, has been investigated in Area 9. The Wall is 12m wide, about 2m high on the internal side (Test Pit 1) and 1.80m high on the external side (Test Pit 2). Also, the corner between Enclosure Wall 1 and Enclosure Wall 4 has been identified, and, on the surface of Enclosure Wall 4, a west-east cut has been noticed, along the line of the corner with Enclosure Wall 1 (Fig. 5). This cut may indicate that Enclosure Wall 4 is formed by two different walls, as observed for Enclosure Wall 2. They have been named Enclosure Wall 4/a, from the corner with Enclosure Wall 1 southward, and Enclosure Wall 4/b, from the former corner northward. Also, the external, north-eastern corner of the enclosure has been partially cleaned in Area 10. It measures 3.50 x 2.50m, presents a rectangular shape and is built of grey and brown mud bricks.

As stated above, two buildings have been identified and excavated outside the enclosure, on its west side. They are in Area 1 and Area 6.

Area 1 is located north of the junction between Enclosure Wall 1 and Enclosure Wall 2 (Fig. 6). The building excavated in this area (Building 1) is a large, east-west oriented building. It has been possible to notice a difference in the colours and components of the bricks between the eastern and the western part of the building. The walls on the eastern part are made of yellow, sandy bricks, while the walls on the western part are made of brown mud bricks. It has been suggested that the eastern part is a later enlargement of Building 1, cut by the foundation trench of the enclosure that probably caused the abandonment of the building (Fig. 7).



Figure 6. Photomap of Building 1. (Image provided by A. Angelini).



Figure 7. Area 1: panoramic view of Building 1 at the end of the 2016 season. On the left, Enclosure Wall 2, with its foundation trench already emptied, from the north-west.

It is still difficult to define the function of the building. In its eastern part, the biggest room (Room 1) shows a small partition where two pottery containers with wide mouths are located. They have not been emptied, so their function is still uncertain, but their presence points to a small storage area (Fig. 8). In the same room, the remains of a mud-brick pavement have been found, suggesting that the ground floor of the building has been reached. Two openings in two walls of Room 1, later sealed by grey mud bricks and located at the same level as the pavement, confirm that the ground floor has been found.



Figure 8. Area 1, Building 1: containers in Room 1.

As already mentioned, this part of the building has been cut by the foundation trench of the enclosure. Among its filling layers, a regular, semicircular cut has been identified, at the interior corner of the projection visible in Area 1. Abundant pottery sherds, charcoal and animal bones have been found in its filling layers. They are very fragmentary due to the high level of humidity of the natural soil, reached in this area and corresponding to a green-grey, very humid, sandy soil, sloping

from south to north. Among the sherds of pottery, a fragment of an amphora, or large container, has been found, with two red ink-painted Greek letters, A and R. This finding points to a chronology dating to the Ptolemaic-Roman period for this part of Enclosure Wall 2.

Further evidence from the building points to the same date. Most of the material comes from the western part of the building, where several rooms have also been identified, without providing any clear evidence for their function. Among the findings from this area, there is a complete jug and an almost complete ring stand, both resting against the external side of Wall 11 and datable to the Late Period/beginning of the Ptolemaic Dynasty (Petrie 1888: pl. XXXIV, 33; Holladay 1982: pl. 27; Marchand 1996: 183, 35; Leclère-Spencer 2014: 111, EA 23676; Wodzinska 2010: 223).

Two terracotta statuettes have also been unearthed in the same area. The lower half of a Bes statuette, probably of the type showing the god with both hands on the knees or with a shield and the right arm raised above his head, holding a sword. Usually, the god is represented with a feather crown (Breccia 1930: tav. XXII, 2-3, tav. XXIII, 6; Besques 1992: 112-113, pl. 71; Dunand 1990: 20-21, 40-43, nn. 34-48, 46, nn. 54-55; Higgins 1967: 132). The second statuette preserves only a very damaged female head, with a flower crown or a tiara, and hair gathered on the head (Dunand 1990, p. 237, n. 663, p. 238, n. 667, p. 239, n. 670, p. 242, n. 684).

Especially important for the chronology of Building 1 is a bronze coin, showing Ammon with ram horns, and a double eagle. The double eagle appears on Ptolemaic coins from Ptolemy II, but it seems to become more frequent between Ptolemy V and IX (Poole 1963, p. 32, tav. V, 7, p. 49, tav. X, 6; Weiser 1995, pp. 32-33, pp. 82-83; Hazzard 1995, p. 114, C1107 e 115, C1111; Fauchner, Lorber 2010, p. 59). The coin needs to be cleaned and studied to define better its chronology, but it seems possible to suggest a date between 113 and 40 BCE, and classify the coin under Svoronos catalogue number 1426 (thanks to T. Fauchner for this information) (Fig. 9).



Figure 9. Area 1, Building 1: Ptolemaic coin.

North of Area 1, Area 6 is distinguished by the presence of a building (Building 1), built of light brown mud bricks and formed of 2 rooms: Room 1 on the east and Room 2 on the west. In Room 1, the vault has collapsed on the pavement, which corresponds to a very hard surface. The collapse of the vault damaged the rim of two ovens, located in the eastern part of the room. Oven 1 is a pottery ring, without the bottom, within a mud brick structure. The oven was filled by three main layers: the upper earth layer, containing some pieces of the pottery ring rim and charcoal; the intermediate ash layer; the bottom earth layer with abundant sherds of pottery and some charcoal. Oven 2 is made of baked clay and it is smaller than Oven 1. It was filled by two layers, an upper earth layer with charcoal and a lower ash layer. The bottom is irregular and formed by pieces of the

same oven. In the middle of the room, a large jar has been found, still in the ground, and closed by a bread mould (Fig. 10).



Figure 10. Area 6, Building 1: the two ovens in Room 1.

Room 2 probably continues over the western limit of Area 6. All of the layers dug out in this room have provided abundant charcoal and remains of animal bones, so that it is possible to suggest that they were discarded from Room 1. Some entire vases have also been found, such as a tall bowl, still standing and a painted juglet. Two alignments of mud bricks have also been identified, located in the southern part of the room and closed by a reused piece of granite, worked only on one side. In the closed area beside them, another juglet has been found, associated with a small bowl and two shells of different species. Despite the alignments of mud bricks, the incoherency of the soil suggests that the ensemble is a disturbed deposit. It seems possible to suggest that the building in Area 6 is dated to the fourth century BCE.

### 3. Conclusion

Tell el-Maskhuta plays an important role in the history of the Wadi Tumilat and its relationships with the Near East. The large enclosure is the main evidence of the site. The new excavations led by the MEM allow us to have a better picture of its building techniques and a better picture of the later development of the site. The importance of the area in Ptolemaic times is well known and celebrated in the famous stela of Pithom (Thiers 2007). The buildings found in Area 1 and 6 contribute to the reconstruction of the plan of the Ptolemaic city, whose role was enhanced by reopening the canal running from the Pelusiac branch of the Nile to the Bitter Lakes area (Sneh et al. 1975: 542-548; Shea 1977: 31-38; Redmount 1995c: 127-135; Hoffmeier 2006: 1-20).

The presence of the canal may have affected the history of the site: according to Holladay, after digging the watercourse, the Saite Pharaoh Necho decided to build the enclosure to protect the border and manage trade along the canal. In fact, Holladay identified the large enclosure with a fortress (Holladay 1982: 19-22). In Ptolemaic times, buildings are located outside and inside the enclosure (Holladay 1982: 30-32). Later, in late Ptolemaic-Roman times, the enclosure was enlarged, cutting into more ancient buildings, as Building 1 in Area 1 demonstrates.

Despite the challenges, such as the large dimensions of the site and the lack of accurate documentation from the oldest excavations, the dynamics of the settlement of Tell el-Maskhuta may furnish a unique perspective on social and environmental development over a long period of time, which the MEM is committed to investigating.

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## DISCOVERING SODWOD EL-BANAT 2: A NEW NABATAEAN SITE IN SOUTH SINAI

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### Abstract

This paper discusses the discovery of a farm in the area of Sodwod el-Banat in southwestern Sinai, with the remains of dams and stone dykes and adjacent stone huts, as well as some petroglyphs and a number of Nabataean inscriptions. Sodwod el-Banat farm depended on rain water by using Irrigation engineering and agriculture invented and practiced by the Nabataeans, and this research aims to highlight and present an overview of the data attesting this Nabataean presence in Southern Sinai. It also aims to determine a chronological framework for their presence during the first and second centuries CE in the light of recent discoveries in South Sinai.

### ملخص

تناقش هذه الورقة البحثية اكتشاف مزرعة في منطقة سودود البنات جنوب غرب سيناء، مع بقايا سدود وسدود حجرية وأكواخ حجرية مجاورة، بالإضافة إلى بعض النقوش الصخرية وعدد من النقوش النبطية. اعتمدت مزرعة سدود البنات على مياه الأمطار باستخدام هندسة الري والزراعة التي اخترعها ومارسها الأنباط، ويهدف هذا البحث إلى إبراز وتقديم لمحة عامة عن البيانات التي تثبت هذا الوجود النبطي في جنوب سيناء. كما يهدف إلى تحديد إطار زمني لوجودهم خلال القرنين الأول والثاني بعد الميلاد في ضوء الاكتشافات الحديثة في جنوب سيناء.

### 1. Introduction

In 2014, Serabit El-Khadim inspectorate conducted a survey, which revealed two archaeological sites in Sodwod el-Banat valley. The valley is located 24km east of Abu Zenima city in South Sinai Governorate, southeast of a sand plateau called el-Ramla. It is a small winding valley about two kilometers long and extends along a north-west axis to the south-east, where it ends at Ba'ba valley (Fig. 1).



©Google Earth

Figure 1. Location of Sodwod el-Banat, 15km south-west of Serabit el Khadim.

The 2 sites are: Sodwod el-Banat 1, a Middle Kingdom copper mining site (dating to ca. 2050 – 1785 BCE) and Sodwod el-Banat 2, the remains of a Nabataean farm, dating to the 2nd century CE. The archaeological remains are stone dams, walls or dykes and rooms or huts, next to Nabataean petroglyphs and inscriptions. This farm relies on rain-fed agriculture, where rainwater is the only source of irrigation, where the optimal and rational use of this seasonal and rare rainwater is vital. It also uses terraces to reduce soil erosion and control irrigation (Ziad Al-Salamin 2016: 24).

## 2. The archaeological remains of Sodwod el-Banat 2 farm

### 2.1. Water harvesting areas

For Sodwod el-Banat, a large area of rainwater harvesting is represented in the Ramla Plateau. From the plateau an area of the slopes in the form of a 2km-wide triangle base extends from the north-east towards the southwest heads towards the Sodwod el-Banat for a distance of about 1 km. Water would flow down the slope and, after reaching Sodwod el-Banat the water branched into two tributaries.

In Sodwod el-Banat, 7 dams were built across 2 streams: 4 dams to control the right stream and the other 3 are to control the left stream. The length of each dam varies depending on the stream width at the site of the dam, and also the width of each dam varies between 90cm to 130cm. The remaining height does not exceed 50cm, with the exception of Dam no. 5, where the purpose is storing the water. In this case the remains are 350cm wide and 100cm high with a length of 25 m. In one side of this dam a conduit was cut for the discharge of excess water (Fig. 2.) five walls or dykes were built. One of them was the wall surrounding the farm while the other 4 walls were built to control the rainwater from the mountain slopes. The length of each belt is varied according to necessity.



Figure 2. Constructions for collecting run-off water, in the valley's north-east tributary.

### 2.2. Agricultural Land

The agricultural land extends for a length of 190 metres and a width of approximately 100 metres. It covers more than four acres beside additional space where trees are planted on the rocky outcrops around the land. The land is currently made up of sand dotted with acacia trees next to several palm trees.

### 2.3. Other Establishments

There are the remains of three rectangular rooms almost north of the farm on the slopes. The three rooms are constructed of pieces of Nubian sandstone, the pieces of around the same size and stacked

one on top of another. The location shows that the main purpose of the structures was to guard the approach to the farm and allow observation from above, as well as providing a resting place for the farmers (Fig. 3).



Figure 3. One of the three structures above the farmland with its surrounding wall.

#### 2.4. Rock art and Inscriptions.

Five rocks were discovered scattered in Sodwod el-Banat valley that were engraved with more than 60 petroglyphs representing hunting scenes, fighting scenes, caravan scenes and people, animals, symbols and other scenes (Fig. 4) as well as Nabataean inscriptions (Fig. 5).



Figure 4. Petroglyphs, showing a hunt scene, with animals and symbols.

Figure 5. Nabataean inscriptions and petroglyphs.



Four lines of inscription were found (Fig. 6):

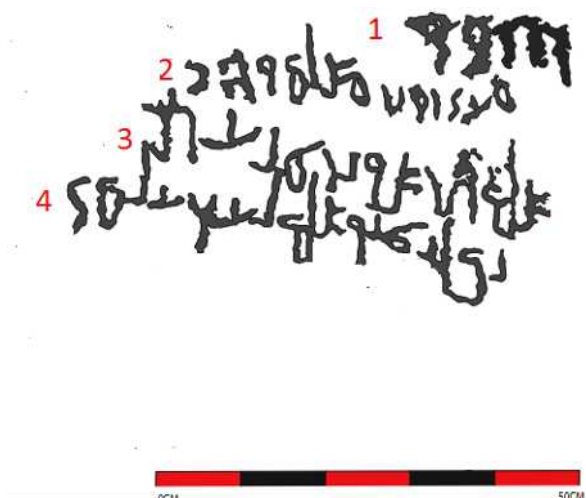


Figure 6. Nabataean inscriptions.

Line 1: Not clear.

Line 2: ٤

م ع ي ن و ب ر ا س ل م و ه ب ا ( ل ت )

MAENO Pr ASLM Wahb A (Lt)

Maeno, son of Aslam Wahb alat.

This memorial text begins with the name of the engraver of the text, MAENO, then a masculine singular noun, and then ASLM Wahb a (Lt) which is the name of the father of MAENO. The Name Wahb a (Lt) is a famous old Arabic name, meaning: "the gift of Allat" (Harding 1971: 652).

Line 3:

س ل م ح ر ش و ب ر ا ب غ ( و ) ث و

S L M H r s h o P r A b g h (w) t h w

Peace! Hrsho, son of Ab ghwthw.

This text begins with the singular masculine noun SLM meaning: "greetings, peace", widely known from the Nabataean Inscriptions (Al-Theeb 2011a: 351a), and is followed by the name of the engraver of the text, Hrsho son of Ab gh(w)thw.

Line 4:

ذ ك ي ر أ ب و س ل م و ع د ع ل م ي ن

Zkier Ab w Slmw Ad Almen  
Remembered be Ab and Slmw, forever.

This memorial text begins with *dkyr*, a noun in the masculine singular (passive participle). It occurs very frequently in Nabataean and other Semitic inscriptions (Al-Theeb 1993: 100). It is followed by the name of the engraver of the text, Ab and his friend Slmw.

### 3. Conclusion

The Nabataean influence over Sinai and the Gulf of Suez during the 2nd century BCE and 2nd century CE, is represented by the widespread extent of the Nabataean inscriptions. According to the Rock Inscriptions Project, there are 8678 rock inscriptions in South Sinai, including 3853 Nabataean inscriptions (website Rock Inscriptions Project). We believe that this number could be even greater. The presence of the Nabataean farm is evidence that South Sinai was the place where the Nabateans fled after the fall of their state in 106 CE. In that late phase of the Nabataean period, the Nabateans began to disperse and disperse in small communities (Al-Theeb 2011b: 45).

The land in South Sinai is extremely mountainous, with valleys, slopes, terraces and plateaus between mountains and narrow coastal plains. Its arable land is very limited (Mostafa and Abdelwahab 2013: 37) because of lack of water, so the management of rainwater was essential. Sodwod el-Banat farm was a type of farm known as a 'run-off farm', which depended entirely on the collection of rain water that could be directed towards the farm, This kind of farm spread in the Negev (Evenari et al., 1961: 982) and good examples of this kind of farm were founded in Avdat and Shivtah (Evenari et al., 1961: 984). Run-off farms were also found in most Nabatean sites such as Siq, Umm al-Hieran, Umm Simon, Umm al-Jammal and elsewhere (Al-Dalaaen 2009: 276).

Like most of the flood control systems in the Negev Desert were built on small valleys or tributary valleys like Sodwod el-Banat farm (Rubin 1991: 200). The establishment of dams or terraces provided flat land and soil suitable for agriculture and allowed the earth to absorb the largest amount of rain water. Stones and gravel were also blocked from the cultivated land and the dam-terrace system protected the cultivated land from destruction by alleviating the force of the water, especially during storms of flash-floods. Furthermore, the dam-terracing kept the soil in one place and prevented erosion (Kedar 1957: 182).

The stone walls and dykes are a way to collect water under the stems of the vines and allowed soil suitable for growing vineyards to be collected in one place and retained (Mayerson et al. 1951: 1752). It is possible that — as the Negev desert today — Sodwod el-Banat could support the cultivation of barley, wheat, lentils and fruits such as apples, pomegranates, grapes, olives and figs (Zohary 1954: 24).

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# CITIES OF THE DELTA ON THE MOSAIC OF THE CHURCH OF ST STEPHEN, UMM EL-RASAS, JORDAN

MANUELA LEHMANN AND MOHAMED KENAWI

## Abstract

A well-known mosaic floor excavated in the nave of the church of St. Stephen in Umm el-Rasas (Jordan) depicts in total 25 stylised vignettes of towns, 10 of which are located in the Egyptian Delta and set within a Nilotic scenery. This article discusses the possible identification of these towns and their location in the Delta as well as several aspects concerning the motifs in the mosaic and execution thereof. This includes the development of tower houses, a type of architecture that goes back to the Late Period in Egypt and continued until at least medieval times. It also touches briefly on mosaic pattern books and workshops in the 8th century CE in the Levant.

## ملخص

تُصور أرضية الفسيفساء الشهيرة التي تم الكشف عنها في صحن كنيسة القديس ستيفن في أم الرصاص (الأردن) ما يمثل مجموعه من 25 لوحة مصغرة من البلدان ، 10 منها تقع في الدلتا المصرية وتقع ضمن مشهد نيلي. يناقش هذا المقال إمكانية تحديد هذه المدن وموقعها في الدلتا بالإضافة إلى العديد من الجوانب المتعلقة بالزخارف في الفسيفساء وتنفيذها. يتضمن ذلك تطور الأبراج ، وهي نوع من العمارة التي تعود إلى العصر المتأخر في مصر واستمرت حتى العصور الوسطى على الأقل. كما أنه يلمس لفترة وجيزة ويحاول البحث الإقتراب بإيجاز من كتب وورش عمل الفسيفساء في القرن الثامن الميلادي في بلاد الشام.

## 1. Introduction

Umm el-Rasas is a large site in Jordan located 30 km south-east of Madaba and 50 km south of Amman. The ancient name for the site is *Kastron Mefa'a* (Piccirillo 1994a: 37–46; inscribed as UNESCO World Heritage Site 1093). The site hosted a strong defensive fort (Fig. 1) during the Roman period because of its strategic location, and it became a major Christian centre in Byzantine times and continued to flourish throughout the early Islamic period.



Figure 1. Satellite image of *Kastron Mefa'a*, with the fort and the roofed area of the church of St. Stephen to the north-east (Image © Google Earth).

The remains of at least nine churches have been excavated at the site so far. To the north-east of the fort a complex of three churches was found situated around a courtyard. The Bishop Sergius church is situated to the north, the Aedicula church to the west and the church of St. Stephen to the east. The latter is the most impressive and best preserved of the three churches and it is especially famous for its mosaic floor in the nave (Fig. 2).



Figure 2. Overview of the Nile mosaic in the church of St. Stephen, Umm el-Rasas.

(After Piccirillo 1993: 238, fig. 380).

Excavations in 1986 showed that there was an earlier and later phase of the church with one mosaic floor each, both of them showing vignettes of towns among other motifs. Parts of the mosaics were destroyed by iconoclasts, probably in the second iconoclasm, and were later carefully repaired (Piccirillo 1994b: 141, 158–161, fig. 31–32). Nowadays, the mosaics of this church have been partly protected by a covering roof to prevent direct sun light and rain from damaging them. The other churches also contain mosaics floors that were covered by sand after their documentation in order to protect them. The most recently excavated mosaic floor in the church of St. Stephen is the focus of this article. It was made in 785 CE in the Umayyad era on top of an earlier mosaic floor dating back to 587 CE (Piccirillo 1987; Piccirillo 1994b: 91–92, 122–123).

## 2. Description of the Mosaic.

The composition of the mosaic consists of several elements (see Figs. 2, 3). The inner panel shows a series of 44 squares, arranged in 4 rows each of 11 squares, filled with a vine, its branches forming a circle in each square. Inside and around the branches, animals and plants are depicted, and a basket with grapes is visible as well. This inner panel is separated by a thin band of white and red meandering waves from an outer band, which is filled with Nilotic scenes. In it, eight boats with cupids between flora and fauna are visible. The cupids have been destroyed by iconoclasts but the

gaps left were later refilled with material to level off the surface. Between the boats, ten stylised Egyptian cities can be seen: one at each corner, one on each short side and two on each long side. The names of the cities are written in Greek letters next to them (Harmaneh 1994: 238, 256–258). The orientation of the text of each city is facing inwards to the centre of the mosaic.

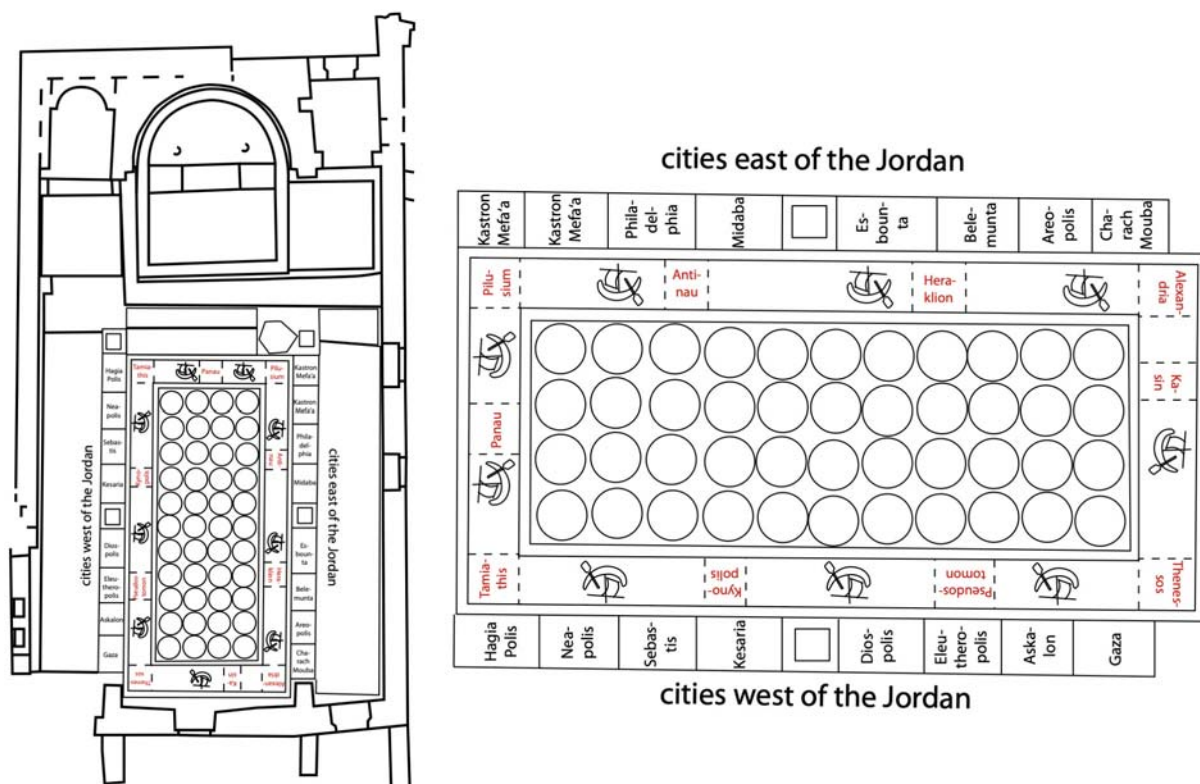


Figure 3. Sketch of the composition of the mosaic, after Piccirillo 1993: 239, fig. 383.

The vignettes vary in width between 35 and 83cm (Duval 1994: 186–191). The towns are naturally incorporated into the Nilotic scene, unlike the Levantine cities. The band with Nilotic scenes is then separated again on the outside by a band containing a row of meandering waves in red and white. This arrangement fills the nave of the church as far as the columns. Two further lateral bands can be found on each long side of the mosaic. In them, settlements located east and west of the Jordan river are depicted in rectangular compartments, separated by lines and they are identified by their name in Greek letters. They are somewhat different in appearance to the Egyptian cities and will, therefore, not be compared in the following discussion (for more details see Piccirillo 1993: 36–37 and Duval 1994: 165–186, 194–207). Only the Egyptian cities in the Delta will be described in more detail here in order to identify and contextualise their appearance on this Jordanian mosaic.

### 3. The Egyptian Delta Cities

The inner band of the mosaic represents ten settlements from the north of Egypt, by means of a quite stylised appearance showing two to four buildings in each vignette (Figs. 4–6). These structures are shown partly frontally and partly in perspective. Often, tower-like structures with a square floor-plan were combined with longer buildings with a rectangular floor plan and a gabled roof. The structures are quite similar from one vignette to the other but vary in small details, for example, buildings with columns and domed roofs are shown, that might depict religious buildings,

as orthodox basilicas usually had a dome. In addition, Duval interprets the rectangular structures with gabled roof as the depiction of the middle nave of a basilica and suggests that one building was shown from two different sides next to each other to show details with the effect that the different sides look like separate structures (Duval 1994: 188, 199–204). If this is indeed the case, it is difficult to determine.

Some researchers suggest that the buildings were already representative enough for a visitor to identify the city visually. This seems doubtful, however, due to the repetition of similar elements for each city and the fact that inscriptions identifying the places are present. Below, each settlement will be described with the structures depicted in the vignettes and the geographic location of the cities will be discussed.



Figure 4. Details of the Egyptian cities in the mosaic of St. Stephen: Tamiathis, Panau and To Pilusen (Photographs by Mohamed Kenawi).

**3.1. ΤΑΜΙΑΘΙΣ** Tamiathis = Damietta (N 31.417068°, E 31.812588°, <https://pleiades.stoa.org/places/727235>, Fig. 4., left; Timm 1984-1992, II, 530-538).

In the vignette depicting Tamiathis two buildings are visible with a gabled roof in a mirror-inverted arrangement. Both are displayed from the front with a large rectangular door, a row of three rectangular windows in the side of the building and above the gable, there is one square window. The lateral outer sides are shown in a two-point perspective in the top part, losing the perspective in the lower part, with the outline of the building running horizontally along the edge of the vignette, instead of continuing to the two-points. This feature can be found for all the structures depicted in Egyptian settlements shown in the mosaic. Masonry is indicated in mostly rectangular blocks. The windows are lined in white on two sides emphasizing them, while the doors are lined in white on three sides. The roof of the structures is subdivided into rectangular fields, arranged in three rows, probably representing roof tiles (Duval 1994: 203). In the background, a third structure with a dome is visible behind the other two structures. A similar arrangement is found for the next two cities, Panau and Thenessos. The theory of Duval that all three structures show different sides of the same building is contradicted by the different colours used for the front sides and roofs of the structures in the mosaic.

**3.2. ΠΑΝΑΥ** = Panau (Abusir Bana, Busiris N 30.913368°, E 31.2387955°, <https://pleiades.stoa.org/places/727090>, Fig. 4).

Panau is characterised by three buildings arranged so that there is a domed structure with four columns in the middle, framed by one tower-like structure on each side. The latter structures are most likely tower houses, a type of building found in Egypt since about 700 BCE (see discussion below). The two tower-structures are depicted without doors, showing only one square window in the upper first floor and another on the left side of the building. Above the lower window, two

horizontal lines are found, separating the first from the second floor and there is one, slightly rectangular window, on each side of the building. The roof is lined with crenellations along the sides which are depicted as if inclined towards the right, most likely representing a flat roof with surrounding crenellations. The structures are mostly shown in a two-point perspective, although the base line is parallel to the vignette. The same method of depiction can be found for structures in Pelusium, Thenessos and Kynopolis.

Duval identifies Mendes with Panau (Duval 1994: 187), after Piccirillo's comment that, according to Strabo (*Geography* 17, 1.19), the Egyptians from Mendes worshipped the God Pan (Piccirillo 1994c: 256). However, following Wiet and Maspero (1919: 49-50) this place might be identified with Abusir Bana (Busiris) close by Sebennytos as the Coptic name of the site was Bana.

**3.3. ΤΟΠΙΛΥΧΝ**, To Pilusen = Pelusium, Tell Farama (N 31.049917°, E 32.600128°, <https://pleiades.stoa.org/places/727192>, Fig. 4, right; Timm 1984-1992, II, 926-935 does not record this form of the name)

The city of Pelusium is represented by three buildings: a long structure with rectangular plan and a gabled roof is found on the right-hand side of the vignette, while a tower house with a flat roof is found on the left and another tower house in the background. The gabled-roof building is similar to those found in the vignette of Damietta and can probably also be interpreted as a basilica. The structure shows some interesting divergent details, however, the front side door has a rounded top revealing some sort of structure inside. This was interpreted by Duval as the presbytery of the church with the balustrade of the choir and possibly the altar behind it (Duval 1994: 187). The first floor is separated from the ground floor by two horizontal lines, above which three rectangular windows can be found. The roof is separated from the rest of the house not only by horizontal lines but also by a row of small squares representing the heads of wooden beams, a feature commonly found in older depictions and house models of tower houses (Lehmann 2021b: 3). The window in the gable is rounded at the top, while the rectangular windows shown on the side have a window grille in the shape of a cross-bar. On this side of the house, the upper floor is separated from the lower by seven, coloured, horizontal lines in black, red and white. The roof has rows of square roof tiles again but contrary to all other depicted gabled roof buildings, this time there are four rows in total, instead of three.

The tower house on the left does not have a door at the front or right side. It has one rectangular window on each side of the first and second floor and one of them is shown with a window crossbar in white. The floors are separated by two horizontal lines, as is the second floor from the roof. The flat roof is surrounded by crenellations, which are inclined again. In the background, a third tower-like structure can be seen, that has an arrangement of horizontal lines without further windows or roof details. This layout is somewhat similar to the one from Kynopolis, which shows an additional building.



Figure 5. Details of the Egyptian cities in the mosaic of St. Stephen: Antinau, To Heraklion and Alexandria (Photographs by Mohamed Kenawi).

### 3.4. ANTINAY = Antinau (unidentified), Fig. 5, left.

In this vignette two structures are visible on what might be a hill. The first building on the right is shown sideways without door but it has two rectangular windows in the upper floor, lined in white. The roof looks like a gabled roof shown from the side with three vertical rows, each of four square tiles depicted in perspective, partly disappearing behind the second building to the left. The second structure looks like a very large column with a shaft and a Corinthian capital, displayed with an almost rectangular outline, reminiscent of a tower house. This might be one of the few instances where the artists vary from the abstract patterns and might show an actual feature of the town (Duval 1994: 198).

Eckersley (2016: 148) follows Duval (1994: 194) and identifies Antinau with Antinoopolis (al-Sheikh Abada) (N 27.8105625°, E 30.8810025°), by Mallawi in Middle Egypt, <https://pleiades.stoa.org/places/756518>. Although this cannot be disregarded, it might be more logical that another place in the Delta was meant that is, as yet, not identified.

### 3.5. TO HPAKAIION, To Iraklion = Thonis-Herakleion (N 31.314035°, E 30.078252°, <https://pleiades.stoa.org/places/727250>, Fig. 5, centre).

Herakleion is represented by four buildings, corresponding to its monumental architecture. In the centre of the vignette, two gabled, elongated structures can be found, the one at the front facing towards the right, while the second building is shown behind it, partly covered, facing towards the left. The buildings are depicted in two-point perspective with the side continuing to the base of the vignette. The structure at the front has a rectangular door and both buildings have three square windows at the front side of the house in a row, that continues along the side of the structure, punctuated by four further windows. The uppermost windows in the gables are circular. On the left, there is a tower house with a rectangular door and one upper floor. The upper floor is separated by two horizontal lines from the basement floor. Three rectangular windows are shown, two on the front and one on the side of the upper floor. The roof is indicated by two rows of roof tiles, each with three rectangular tiles. The depiction of roof tiles for a tower house probably suggests that this roof was not a flat roof but a sloping one, compared with flat roofs with crenellations, as for example in Panau or Thenessos. A second tower house is depicted to the right of the composition and, this time, the first floor above the rectangular door does not have windows. The second floor with two rectangular windows is separated by two horizontal lines, followed by another set of windows. The roof shows four tiles, again suggesting a sloping roof. A similar arrangement of buildings is used for the city of Alexandria.

3.6. ΑΛΕΞΑΝΔΡΗΑ, Alexandria (N 31.201435°, E 29.909773°, <https://pleiades.stoa.org/places/727070>, Fig. 5, right).

The composition of the city of Alexandria is characterised by four structures similar to Herakleion: two gabled buildings in the centre and two tower houses, one on the left and one on the right. The gabled houses have circular windows in the gable. The tower houses show three upper storeys, with the first upper floor only having one window, the second and third each two windows at the front of the houses. The sides are without any windows at all. The roofs are again depicted with tiles, and, whereas, the building on the left shows three vertical rows each of two tiles, the building on the right has three vertical rows each of four tiles.



Figure 6. Details of the Egyptian cities in the mosaic of St. Stephen: To Kasin, Thenessos, Kynopolis and Pseudostomon (Photographs by Mohamed Kenawi).

3.7. ΤΟ ΚΑCΙΝ, To Kasin = (Mount) Kasios, Kasion (N 31.2116°, E 33.0779°, <https://pleiades.stoa.org/places/687872>, Fig. 6, left).

This settlement is only represented by two tower houses, positioned directly next to each other. Both have rectangular shaped doors and two windows per floor, with each storey being separated by two horizontal lines. The building on the left has two upper floors, the structure to the right has three floors above the basement. Both buildings have a roof with three rows of three tiles. The vignette of Kasin is one of the few that does not show a domed structure or a basilica with gabled roof.

The exact location of Kasios is unknown but the name is mentioned in Pliny's *Natural History* 5.68.1 together with Pelusium, therefore suggesting a nearby location, which might be identical with Mount Kasion or Kasion Oros positioned somewhat east of the Egyptian Delta on the coast. It was also described by Strabo (*Geography* 17.2.32f.) and Herodotus (*Histories* II.6.1 and III.5.2) locating it somewhere along the coast of Lake Sirbonis on the north coast of the Sinai Peninsula.

3.8. ΘΕΝΕΚΟC, Thenessos, Tell Tennis (N 31.255258°, E 32.292698°, <https://pleiades.stoa.org/places/727247>, Fig. 6, centre left; Timm 1984-1992, VI, 2686-2694).

In the vignette of the settlement of Thenessos a domed structure with three columns is visible, framed by one tower house on each side. Both tower houses have a rectangular door and a first floor without windows. The second and third floors each show two rectangular windows to the front and one at the side. The upper two floors are separated by two horizontal lines. The roofs are surrounded by crenellations.

The descriptions by ancient authors make it clear that Thenessos is the island of Tell Tennis in Lake Manzaleh (Maspero & Wiet 1919: 60-1), famous for its cloth manufacture into the

medieval period. Recent work at the site has shown the presence of cisterns and a wall around the site (Gascoigne 2020).

**3.9. ΚΥΝΩΠΟΛΙΣ**, Kynopolis (near Abusir Bana) (N 30.896044°, E 31.234453°, <https://pleiades.stoa.org/places/727144>, Fig. 6, centre right).

The vignette is characterised by four buildings. The first is a rectangular structure with a gabled roof in the centre. It has an entrance door with a rounded top. Behind, to the left and right of the first structure, there are three tower houses. The tower house to the right has a windowless first floor above the rectangular door, with the second and third floor being separated by two lines and each showing two windows at the front and one at the side. The fourth floor is separated by three horizontal lines and has three windows at the front and none at the side. The roof is not visible. The second tower house is behind the gabled roof structure and has two windows on the highest floor — possibly the third floor — and shows a roof with three rows of three tiles. For the third tower house on the left of the building with gabled roof, one can see two windows at the front in the first and second floor and one at the side. The roof has crenellations. While the lateral side of this building is depicted in perspective the roof is shown as if the frontal aspect of the house would have been broader, ignoring the lateral side and its perspective. Again, a rectangular door is found in the ground floor.

The Kynopolis mentioned here is most likely to be identified with a site directly south of Abusir Bana along the Damietta branch of the Nile although there may also be a connection with Bana and Panau (see above) (Wiet-Maspero 1919: 49).

**3.10. ΨΕΥΔΟΚΤΟΜΟΝ**, Pseudostomon (unidentified), Fig. 6, right.

The image vignette depicts three tower houses standing directly next to each other. The two outer ones in a whitish colour have two upper floors each, with one narrow rectangular window at the front and side above a thin rectangular door. The roof is characterised by two rows of two tiles. The central structure has three upper storeys with the door showing a rounded top. The first floor is windowless, while second and third floor have one window at the front and one at the side. The windows and the door at the front are surrounded by a white line. The roof is tiled with two by two. Apart from Kasin this is the only other vignette that does not show any religious domed building or a structure with a gabled roof.

The name Pseudostomon translates as “of a river” and, therefore, the city was probably situated close to a river or its mouth (we would like to thank A. Schütte for this information). The exact location is unidentified.

## 4. Discussion

These vignettes representing Egyptian cities raise several discussion points, namely, the occurrence of tower houses as well as the presence of Nilotic scenes in churches and mosques in the Levant. In addition, the geographical position of the Egyptian cities, as well as the usage of pattern books in mosaic workshops and different styles within the workshops shall be discussed briefly.

### 4.1. *Tower houses in Egypt*

The towers visible in the mosaic's stylised vignettes have so far been interpreted as parts of the enclosure walls of the cities (Piccirillo 1993: 34–35; Duval 1994: 186–196). There are parallels for

this in depictions of polygonal walls surrounding cities, as can be seen for example in the church of St. John the Baptist in Gerasa (Versluys 2002: 475), St. Peter and Paul in Gerasa (Piccirillo 1993: 292), as well as in the church of St. John in Khirbet es-Samra (Piccirillo 1993: 35–36, fig. 2, 3.1 and 3.2). Interestingly, however, the cities in the mosaics are mostly identified with the cities of Alexandria and Memphis in Egypt. The towers in the vignettes remarkably resemble so-called tower houses, a type of architecture known from the Late Period onwards in Egypt (Lehmann in print). As several depictions show, tower houses were sometimes incorporated into enclosure walls. This can be seen for example in the Nile mosaic of Palestrina (Versluys 2002: 52–54) or in a similar earlier depiction on a glazed brick showing an Egyptian landscape (Lehmann et al. 2019: 16–17, fig. 11a-c).

In addition to those buildings incorporated into walls, tower houses were often used as dwellings and were, therefore, a common type of architecture of cities in Egypt from the Late Period onwards. In general, illustrations of tower houses as well as archaeological remains are known already since the 7th century BCE in Egypt (Lehmann 2018: 73–122). In many towns, especially in the Delta, as for example at Tell Balamun (Spencer 2009), Buto (Marouard 2012), Tell el-Dabʿa (Lehmann 2018), Kom al-Ahmer and Kom Wasit (Kenawi 2019) and others, casemate foundations exist in abundance and are interpreted as being the typical foundation of tower houses of this time (Spencer 1999; Arnold 2003: 172; Lehmann 2021b).

From Roman times onwards tower houses are a standard feature characterising Nilotic scenes, that can be found in Hellenistic and Roman mosaics and wall paintings as for instance known from the Mosaic of Palestrina, or other examples from Pompeii or Herculaneum (Hachlili 1998; Versluys 2002). In addition, illustrations of Nilotic Scenes are also known from ceramics and textiles (Versluys 2002: 286, 291; McKenzie 2007: 365, fig. 609). In contrary to tower houses of earlier Hellenistic and Roman images, as for example the Nile mosaic of Palestrina dating to the Ptolemaic period (Versluys 2002: 52–54; Meyboom 2005: 16-19; Carrez-Maratray 2014) or an example from Vigna Maccrani in Rome dating to 200–300 CE (Versluys 2002: 76–78, no. 19), the tower houses in the mosaic of the church of St. Stephen do not show any tapering outer walls. Furthermore, pan-bedded brickwork is no longer used. In earlier depictions, the courses of the walls rise towards the corners of the buildings by two to four brick-heights, while they sloped down towards the centre of the walls (Spencer 1979: 114-116; Goyon et al. 2004: 117–12). This feature fell out of use in later Roman times (Lehmann 2021b:10; Arnold 2003: 174–175). The towers also do not have raised corners at the roofs anymore, as can still be seen for example in the Nile Mosaic of Palestrina (see fig. 7 and Meyboom 1995: fig. 16–17). A feature still in common with visualisations of earlier tower houses is the horizontal band separating the floors on the outside of the building. This can be already found in the earliest known illustrations from glazed bricks showing landscape scenes in Egypt dating to the 7th century BCE (Lehmann 2021a: 57-105). The doors of the towers in the mosaic of Umm el-Rasas are usually shown as simple rectangular shapes — with three exceptions that have a rounded top — and the windows are mostly displayed as simple square or rectangular shapes, generally one or two next to each other for each storey, while earlier tower house models more often are equipped with three windows in a row (Lehmann 2021a: 66-74). Some of the houses have crenellations along the roof, which is a common feature already known from earlier depictions (Lehmann 2021b: 3).

	Gabled roof building (basilica?)	Domed structures	Tower Houses	With flat roof	With crenellations	Number of storeys	Doors	Windows: front	Windows: side	Horizontal lines
1	2	1?	-	-	-	-	-	-	-	-
2	-	1	2	-	2	3,3	-	2,2	2,2	2,2
3	1	-	1(+1)	1?	1	3, (?)	-	2,-	2,-	4
4	1	1?	-	-	-	-	-	-	-	-
5	2	-	2	2	-	2,4	2	2,4	1,0	2,4
6	2	-	2	2	-	4,4	2	5,5	0,0	4,4
7	-	-	2	2	-	3,4	2	4,6	-,0	4,6
8	-	1	2	-	2	4,4	2	4,4	2,2	4,4
9	1	-	3	2	1	3,5,?	2	4,7	2,2	6,7
10	-	-	3	3	-	3,4,3	3	2,2,2	2,2,2	2,2
	9	2 (4?)	17 (+1?)	11 (+1?)	6	2 (1x) 3 (7x) 4 (6x) 5 (1x)	13	2 (7x) 4 (5x) 5 (2x) 6 (1x) 7 (1x)	- (3x) 0 (4x) 1 (1x) 2 (10x)	2 (5x) 4 (7x) 6 (2x) 7 (1x)

Table 1. Overview of buildings in the vignettes (basilicas in purple, domed structures in red and tower houses in green) with different features of the tower houses.

The houses shown in the mosaic are generally illustrated standing directly next to each other, with no streets, plants, humans, animals or other details, emphasizing the stylised character of the cities, contrary to the Nile Mosaic of Palestrina, in which much detail can be seen (Meyboom 2005; Versluys 2002: 52–54). In total, 17 to 18 tower houses are visible in the mosaic of the church of St. Stephen out of 31 buildings altogether, comprising 58% of all shown structures (Table 1). In general, two or three of these structures are displayed in almost each one of the vignettes. Buildings with gabled roofs appear nine times (29%), domed structures supported by columns are attested three times (9.7%). Most of the tower houses have three or four storeys, simple rectangular doors and two windows per floor on each side. Six of the houses have crenellations along the roof.

These representations suggest that tower houses were still very ubiquitous structures in the Delta of Egypt in the Late Antique period (cf. Abdelwahed 2016). They stand in a long tradition of visual illustrations of this architecture type (see Fig. 7). Although details may change slightly, the general appearance in visualisations of the tower houses stays very similar over a time of about 1400 years. The houses of the Ptolemaic and Roman times resemble to a large degree the appearance of the Late Antique houses in their main features: a separate building or incorporated into a wall,

horizontal bands dividing the floors, windows only in the upper storeys. The same can be said about the archaeological remains of these houses (Arnold 2003: 171).

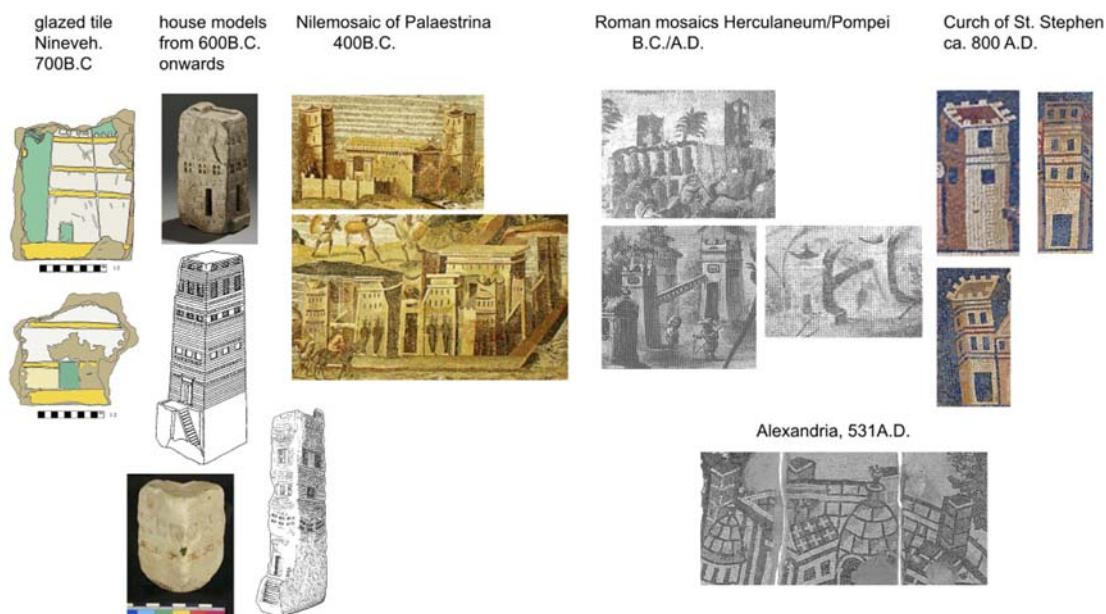


Figure 7. Development of visualisations of tower houses over time. From left to right: Glazed tiles from Nineveh, British Museum, drawing by Manuela Lehmann; upper photo of house model, © Trustees of the British Museum; drawings underneath after Kemp 2005: 354, fig. 123; lower photo: Courtesy of the Petrie Museum; Nile Mosaic of Palestrina: after Meyboom 1995: frontispiece; Roman mosaics at Herculaneum: after Versluys 2002: 77, fig. 27; 147, fig. 87 and 145, fig. 86; Alexandria mosaic: after Piccirillo 1993: 273; the mosaic of St. Stephen Church. (Photographs by Mohamed Kenawi).

The fact that the earlier characteristics of the houses like the pan-bedded brickwork and the raised corners of the roofs as well as the raised entrance of the houses via stairs are not shown any longer in the depictions of the church of St. Stephen prove that there was a certain adjustment of traditional templates for the mosaics and paintings to accommodate the changing architectural details of the period. Similarly, Piccirillo showed that, although the sources of the mosaic of Madaba went back to earlier, probably Roman times, a certain adaptation or updating took place for the map in order to meet the demands of the customer (Piccirillo 1993: 29). The same can be assumed for the vignettes of the ten cities, for example, the idea of buildings within Nilotic scenes has a long tradition and can be traced back to the Ptolemaic Period but the style and architectural details show emendations with attention to detail.

The development of the Egyptian tower houses over time as known from the archaeology is described in detail in Arnold (2003: 170–181). In addition, similar structures are known in late Hellenistic and early Roman times from Palestine as well. These are often singular buildings with a rectangular ground plan attached to other lower buildings and were sometimes used as residential houses (Arnold 2003: 174; quoting Hirschfeld 1998 with more literature). The structures do not have the same function as in Egyptian cities in the Delta, however, where most of the dwelling were tower houses. The examples of tower houses in the Levant seem to belong to the same tradition of architecture (Arnold 2003: 174), suggesting that the local visitors to the church of St. Stephen might have been familiar with this type of architecture. Nevertheless, the vignettes were chosen to

represent Egyptian settlements with secular residential houses and religious buildings within the landscape setting of the river Nile.

#### 4.2. *Nilotic Scenes*

Nilotic scenes were a famous topic within mosaics and wall paintings during Hellenistic and Roman times (Piccirillo 1993: 15, 37; Meyboom 1995: 100; Versluys 2002: 285). They were found in buildings with different functions, for example dwelling houses, pagan structures and churches (Hachlili 1998: 106). Depiction of the topic spread throughout the whole Mediterranean region, for example Hachlili gives an overview of scenes in the Levant and North Africa, Versluys lists examples in Italy, North Africa, Egypt, the Near East and even European Roman provinces (Hachlili 1998: 108; Versluys 2002: 239–241). Already during these periods tower houses were a standard feature characterising Nilotic scenes (Versluys 2002: 270). These scenes are interpreted as exotic decorations creating an “idyllic ambiance” and suggesting “well-being and affluence” (Meyboom 1995: 84; Versluys 2002: 28–34). The motifs already introduced in the Hellenistic and Roman period were in fashion again in Late Antiquity (Piccirillo 1993: 29). This can be seen by their common usage in churches in the Levant, as for example in the church of St. John in Khirbet es-Samra (Piccirillo 1993: 22), the church of St. John the Baptist or St. Peter and Paul in Gerasa (Piccirillo 1993: 34; Piccirillo & Hassan 1993: 35), the church of St. Lot and Procopius in Khirbet el-Mukhayyat (Hachlili 1998: 117), the St. Hippolytus Hall in Madaba (Piccirillo 1993: 24) and others (Hachlili 1998: 117).

The incorporation of the Nile into the motifs used in Christian churches can probably be explained by the reinterpretation of the Nile being one of the four rivers from Paradise (Piccirillo 1993: 28; Hachlili 1998: 118, McKenzie 2007: 365). Furthermore, the story of Moses took place at the Nile (Exodus 2: 1–10). In addition, according to Hachlili and Piccirillo the depictions of Egyptian cities in Nile Mosaics were interpreted as a prayer for continuation of prosperity (Hunt 1994; Hachlili 1998: 113; Piccirillo 1993: 34). The Egyptian anaphora of St. Basil includes in the modern day a prayer for the flooding of the Nile (Budde 2004). The mosaic in the church of St. Stephen in Umm el-Rasas shows that the topic of Nilotic Scenes was still used in the 8th century CE and continued to feature tower houses.

#### 4.3. *The geographical position of the Egyptian cities in the Delta* (Fig. 8)

The locations of eight of the ten Egyptian cities selected for the mosaic can be identified: Tamiathis/Damietta, To Pilusin/Pelusium, To Iraklion/Thonis-Herakleion, Alexandria, To Kasin/Mount Kasion, Thenessos/Tennis and Kynopolis. Panau might be identified with Abusir Bana, Busiris. Only Antinau and Pseudostomon are still unidentified (Piccirillo 1993: 36). The position of the Egyptian cities within this mosaic of the church of St. Stephen compared to their real geographic location in the Egyptian Delta was already discussed by others (Piccirillo 1993: 36–37; Piccirillo 1994c: 256–258; Duval 1994; Eckersley 2016: 145–149).

The cities of the west and east of the River of Jordan (not discussed in this article) show important pilgrimage centres in the Levant following two pilgrimage routes (Eckersley 2016: 189–197; for the topographic value see also Piccirillo 1993: 37). The display of important Christian centres and pilgrimage routes in a church building might have allowed the visitor to experience “a mimetic pilgrimage recreating the one that brought them to these sites (...) mimicking the procession towards the altar during liturgy” (Eckersley 2016: 185). The mosaics are, therefore, not

only decoration but also give a function to the space (Versluys 2002: 298). In addition, they might have been a guide for the pilgrims to future places to visit.

Following this thought concerning the Levantine cities it seems reasonable to suggest that the cities situated in the Egyptian Delta were part of religious centres and, therefore, focal points of pilgrimage or at least popular stops for pilgrims. This is supported by the fact that five of the ten sites had monasteries and eight were bishoprics in Late Antiquity (Eckersley 2016: 189).

Other mosaics with topographic motifs are known from churches in the Levant in Late Antiquity, the most famous one being the map of Madaba (Eckersley 2016: 185). In addition, the cities of Alexandria and Memphis are depicted in other mosaics several times. This shows that the topic of Egyptian cities was quite common in the mosaics of Levantine churches.

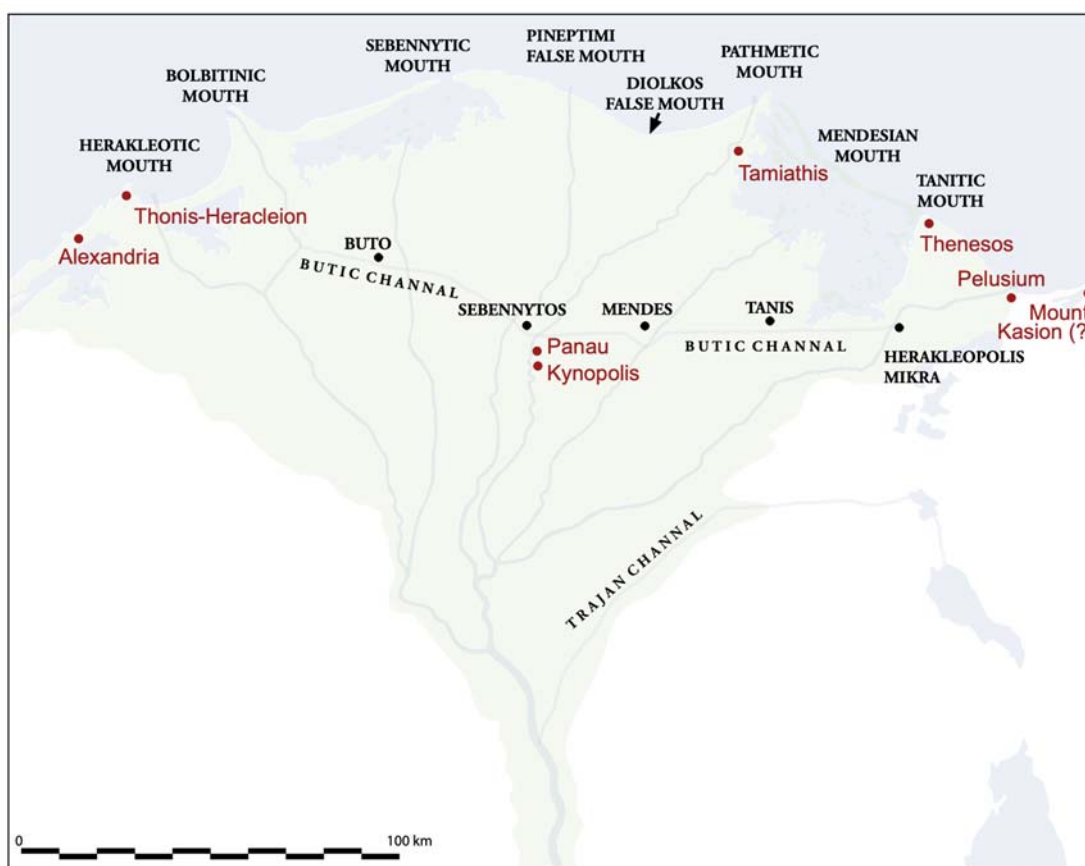


Figure 8. Topographical location of the cities in the Delta.

Map © Manfred Bietak, graphic by Nicola Math with additions by the authors.

If the geographical position of the cities mentioned in the mosaic is plotted on a map (see Fig. 8), a route along the coastal line of Egypt from Mount Kasion/Pelusium via Tamiathis and Herakleion to Alexandria becomes visible and there is a tentative second route along the Butic Canal with Kynopolis and possibly Mendes. Eckersley (2016: 148, map 4) has a somewhat different result including Antinoopolis by Mallawi, and Panau is identified with Busiris. As several other mosaics with Nilotic Scenes usually depict the two cities of Alexandria and Memphis, it is somewhat surprising not to find Memphis among the ten cities shown in the mosaic of Umm al-Rasas.

Comparing the geographical positions of the identified Egyptian cities with their order in the mosaic at Umm el-Rasas no relationship is visible, as the position of the cities within the mosaic

seems fairly random. Therefore, it seems that it was not the position of the cities and their geographical location to each other that was meant to be displayed, but it was more generally the presence of the cities within a Nilotic environment that mattered. In addition, the theory of following the pilgrimage routes, representing a symbolic journey during the liturgy is not supported by the direction of the text labels that always point towards the centre of the mosaic, at least in a strict sense. One might perhaps also have to take into consideration potential furniture in the church covering parts of the mosaic. Also, the two vignettes of Kasin and Peudostomon do not depict religious buildings at all but only tower houses that were most likely residential houses.

Besides the religious meaning of the cities in the Nilotic scenes another reason for the insertion might be the socio-economic value as trading centres for those cities (Eckersley 2016: 187). Likewise, the mosaics gave donors a possibility of influencing the image and giving them a platform upon which to portray their social importance. In addition, Versluys discusses the different meanings of Nilotic scenes depending on different audiences and contexts, opening a wide range of possibilities for the reasons for choosing Nilotic scenes (Versluys 2002: 294-299).

#### *4.4. Pattern books and workshops*

The depictions of tower houses in Late Antique mosaics and more generally the mosaic motifs seem to have been taken from older templates of pattern books, with different options being available that were then used to compose a scene (Piccirillo 1993: 29; Meyboom 1995: 99–102; Hachlili 1998: 115, 119; Versluys 2002: 285–286). Not only the context, but also the client as well as the donor might have had a certain influence over the choice of motifs and compositions. The elements of Nilotic scenes and tower houses go back to Hellenistic and Roman mosaics and wall paintings, showing an interpretation of the local Egyptian architecture through the eyes of Graeco-Roman artists leading to partly local, partly stylized images (Hachlili 1998: 113; Piccirillo 1993: 34). Versluys has demonstrated that during Roman times the Nilotic scenes were constantly changing with different elements being added or disappearing over time (Versluys 2002: 287–299). The same can be assumed for the Late Antique examples (Hachlili 1998: 118). It can be observed that certain features of the houses changed over time in reality and those are adjusted in the illustrations of the houses for better recognition. Therefore, to a certain extent, the mosaics show an understanding of local architecture and their changing appearances over time meaning that the templates were adjusted and changed. Piccirillo suggests that “(...) around 530 CE mosaicists brought into the region a pattern book inspired by classical representations.” (Piccirillo 1993: 22). Such a pattern book would have brought alive again the idea of the Nilotic scenes and the depictions of tower houses that had existed for a long time, leading to a golden age of mosaics in the 6th century.

As discussed by different experts of art and architecture of early Islamic buildings in the Levant, it is feasible that waves of immigrations of artists and skilled workers moved out of Egypt and other countries to the new capital Damascus (Van Lohuizen-Mulder 1995: 193–213; McKenzie 2007: 362, 427 notes 64–65; Eckerley 2016: 131). An example of this is the depictions in the Great Mosque of Damascus that might be the work of Alexandrian mosaicists and local artisans (McKenzie 2013: 291–309). This might also be the case of the mosaic at Umm el-Rasas.

In general, it seems that certain workshops of the region developed slightly differing local styles (Piccirillo 1993: 20). “The workshops of central Jordan from Madaba to Philadelphia-Amman had a preference for figurative compositions, while the mosaicists of Gerasa, and those working in the northern region, preferred elaborate geometric compositions as they traditionally

had” (Piccirillo 1993: 23). Although the workshops evolved their own local styles, the actual motifs were widespread within the Levant and the Mediterranean and were not just one local workshop tradition, but part of a wider visual communication system within the Mediterranean world (Versluys 2002: 294–295; Eckersley 2016: 201).

## 5. Conclusion

The long-lasting tradition of Nilotic scenes and tower houses as “exotic scenes” were transferred and incorporated into religious scenes of pilgrimage in Umm el-Rasas, allowing the visitors to the churches to follow the pilgrimage routes symbolically in their hometown. The adjusting of details in architecture shows that amendments were made to pattern books.

Workshops shared widespread topics executed in slightly varying local styles that were used in different functional structures. The themes of landscape and towns were reinterpreted and adjusted to the local context and culture. This long tradition can be traced in Late Period Egypt via Ptolemaic and Roman times into Late Antiquity showing that the clients were still fascinated by this topic. The Christian churches flourished and their re-establishment with new mosaics in the Umayyad Period shows that the Christian communities were still allowed to have their own religion under Muslim rule (Piccirillo 1993: 47). Umayyad Palaces were equipped with mosaics and continued the tradition of this long-lasting artwork (Piccirillo 1993: 46, 343–353). The presence of Egyptian towns from the Delta on different mosaics in Jordan emphasises the religious importance of these Delta centres during Late Antique Egypt and the Levant.

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# **TANNUR-OVENS AND MAEEFA IN EGYPT: BETWEEN THE PAST AND THE PRESENT**

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## **Abstract**

*Tannur* is a common name among archaeologists, describing the kind of ovens that are still in use for baking in many countries of the Middle and Far East. Although it is believed that the *tannur* no longer exists in Egypt, this paper will shed light on a modern community of Sinai's Bedouins who are using a similar installation to the so-called *tannur*.

## **ملخص**

التنور هو اسم شائع في الوقت الحاضر بين علماء الآثار، وهو يصف نوع الأفران التي لا تزال مستخدمة للخبز في العديد من دول الشرق الأوسط والشرق الأقصى. وعلى الرغم من الاعتقاد بأن التنور لم يعد موجودًا في مصر، إلا أن هذه الورقة البحثية ستسلط الضوء على مجتمع من بدو سيناء يستخدمون تركيبات مشابهة لما يسمى بالتنور.

## **1. Introduction**

Attempts to identify fire-installations in archaeological sites leads to research from the available archaeological evidence to determine the functions and usage of ovens and cooking facilities. The ambiguous question of the technique could be solved by conducting ethnoarchaeological researches that help to identify some installations (McQuitty 1984; Mulder-Heymans 2002; Rova 2014). These studies aim to understand the ancient material culture through the analogy with the recent communities, which, in many cases, may reveal interpretations for the function of the material culture of the past societies. Direct observation is an essential tool for this approach in order to find convincing parallels for the connection between the production and the methods of use. Observing and studying the modern remains, its related activities and behaviour of a present-day traditional culture in various areas of daily life provides insight into the possible reconstruction of the daily life of their ancient counterparts (Shafer-Elliott 2013: 117-118).

In Egypt, we can observe in some instances in our tangible heritage the clear connection between modern and past practices in antiquity. This kind of connection needs to be clarified in order to determine its beginning and the timespan of its continuity. We chose a type of fire-installations that is common in variant sites through Egypt, dating mainly from Middle Kingdom/ Second Intermediate Period to Graeco-Roman times and from sites throughout Egypt (Lisht, Mace 1921: 13-14; Tell el-Dab'a, Müller 2015: 343, fig. 15.4b; Deir el-Medina, Bruyère 1939: 72-74; Amarna, Kemp 1987: 71, Fig. 6.1). Based on iconographical and ethnographic approaches, it is believed that these kind of fire-installations resemble those of the Near East that are identified as *tannur* ovens (Samuel 1994: 296-7). It is believed that this type of oven does not exist in Egypt any more, despite it still being in use in some countries around the world, especially in some neighbouring countries such as Syria (Mulder-Heymans 2002), Jordan (Mcquitty 1984; 1994) and Saudi Arabia (Charloux 2018). The authors present this paper as part of their research topic and

fieldwork that studied fire-installations, whether fixed or portable, from the Predynastic period until the Late Period (Abbady 2017, Elnagar 2018).<sup>1</sup>

## 2. Recent ethnographic and ethnoarchaeological studies

Recent ethnographic and ethnoecological studies have been conducted on specific types of bread types that are still in use mostly in the rural regions in many countries, including Syria, Jordan, Turkey and Iraq (for example: McQuitty 1984; Mulder-Heymans 2002; Parker 2011; Tkáčová 2013; Rova 2014). The *tannur*-oven is a very common type of oven that is used for baking flat, rounded leavened and unleavened loaves by using a particular technique of baking that is only used with these kind of ovens (Samuel 1994: 276; Rova 2014: 121, 126). Once the temperature is appropriate, the baker slaps the bread onto the inner walls of the oven as they adhere easily and then peels the bread off the wall when it has been baked (Samuel 2000: 566, Tkáčová 2013: 26; Ellison 1984: 90; McQuitty 1994: 56) (Fig. 1). This type of oven is well known in antiquity until the



Figure 1. Bread loaves inside the *tannur*-oven. (After Parker 2011, fig. 2).

present day in many countries around the world mainly in Asia and Africa, as for example in Turkey (Parker 2011), Uzbekistan (Gur-Arieh 2018), Iran (Digard 1981), Syria (Mulder-Heymans 2002; Tkáčová 2013) and Jordan (McQuitty 1984; 1994). These ovens are mostly still used by people living in rural areas (Rova 2014: 122, 125, 141) and in the past were used for baking in domestic, industrial or religious production places, for example at the Aton Temple in Amarna Area Q41.9 (Kemp 1994: 142).

## 3. The Term *tannur*

The term *tannur* is known in the Near East with variants in writing, which reflect normal differences in languages and their variability due to the geographic distribution of the term. Nevertheless, all of these variant spellings of the term refer to the same type of oven. The origin of *tannur* may be traced to ancient semitic languages with the word *tinuru* from Akkadian, which means ‘oven’ or ‘kiln’, probably going back to the Sumerian *turuna*, *dilina* (Bottéro 1985: 99; 2002:78; Parker 2011: 603; Limet 2002: 5,11; Forbes 1966: 65-66) which means an oven or kiln. In Arabic, the term *تنور* *tannur* and plural *تنائير* (Rova 2014: 121) is mentioned in the Holy Qur’ān, where it commonly refers to an ‘oven’ *والحرستاني* (89: 2005 *المعجم الوسيط*, 277: 1994 *معروف*). In Hebrew almost the same term *tanūr* (תנור) is used (Symons 2000: 74; Avitsur

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1. The authors have participated in various fieldwork projects where this type of fire-installation was found, for example: Tell Heboua I (Second Intermediate Period to Late Period); Tell Heboua II (New Kingdom); Tell Dafana (Late Period); Karnak excavations in front of the temple (Ptolemaic and Roman Periods); Karnak Ptah temple (Ptolemaic and Roman Periods).

1975). It is mentioned often in the Hebrew scriptures, referring to an oven used to bake bread (Shafer-Elliott 2013: 121; Ebeling and Rogel 2015: 329). In Aramaic the word *tannūrā* is used.

The term is also known in non-Semitic languages, such as Turkish, Iranian and Urdu language families. In Turkish the terms *tandır* and *tanur* are used (Parker 2011: 603; Symons 2000: 74; Bottéro 2002: 78; Rova 2014, 122; Ebeling & Rogel 2015: 329). In Iranian *tanura* (Rova 2014: 122; Ebeling & Rogel 2015:329) and *tanir* are attested (Digard 1981:178) and in Uzbekistan and Azerbaijan, in Asia, the word used is *tandır* and *tandyr* (Behnstedt 2009: 70; Rova 2014: 122), while in India and Pakistan it is *tandoor*, *tandur*, *tendoor*, *tendour* (Bottéro 2002: 78; Symons 2000: 74; Ebeling & Rogel 2015: 329).

In some cases, the term *tabun* is sometimes used to refer to the *tannur* oven (Sghaïer 2017: 214), although the *tabun* is actually a different technique of baking , where the bread is placed at the bottom of the oven after heating it, instead of against the interior walls (Ebeling & Rogel 2015:328-348; McQuitty 1984: 291).

#### 4. *Tannur*-ovens in the Middle East

The *tannur*-oven is known from many Middle Eastern countries, including the Arabian peninsula and the Levant (Ellison 1984: 90; Mulder-Heymans 2002; Behnstedt 2009: 70; Rova 2014), as well as some countries in North Africa (Darby et al. 1977: 512, fig. 12.8b; Behnstedt 2009: 70; Sghaïer 2017: 214). In general, *tannur*-ovens are characterized by having a rounded, cylindrical, beehive or slightly conical-shaped wall made of baked clay. The inner layer is often surrounded by a layer of either mud or mud bricks, in order to support the inner body and to help it maintain the heat (Mulder-Heymans 1997: 52; 2002: 198; Parker 2011: 606 fig. 2; Rova 2014: 121-123, Tkáčová 2013: 18;).

The body of the oven has two openings (Parker 2011: 606; Shafer-Elliott 2013: 120), the first of which is located in the top and is called the ‘mouth’ of the oven (Forbes 1966: 64). This opening is used mainly to insert the bread and the fuel (Rova 2014: 124; Tkáčová 2013: 22). The second opening is much smaller and is found near or at the base. This is the ventilation hole, which is called the ‘eye’ of the oven (Fig. 2). The purpose of the latter opening is to allow for circulation of the air



Figure 2. Piercing the ventilation hole during the fabrication of a *tannur*-oven. (After Tkáčová 2013: fig. 12).

inside the oven (Mulder-Heymans 1997: 52; 2002: 198; Tkáčová 2013: 22), and it is also used for inserting the fuel and clearing out the ash or raking the fuel before baking (Mulder-Heymans 1997: 52; Rova 2014: 121). Some of the ovens also have a small opening on the base for additional ventilation (Mulder-Heymans 2002: 199; Tkáčová 2013: 22).



Figure 3: Syrian *tannur*. (After Rova 2014, fig 2b).

In some countries like Syria (Mulder-Heymans 2002: 199, 213, 220), one can still find *tannur*-ovens used in modified versions that use a gas-heated system instead of solid fuel. This type is built in special workshops and mostly used for industrial purposes particularly in some modern cities (Mulder-Heymans 2002: 199, 213, 220; Tkáčová 2013: 2-5).

### 5. *Tannur*-ovens in Egypt

In Egypt, the *tannur*-oven is known mainly from archaeological sources. Remains of cylindrical ceramic walls surrounded by a compacted layer of mud or mud bricks that support the inner wall are often excavated. This kind of installation was identified in most cases as an oven, based on iconographic and ethnographic parallels and considering its archaeological context. It is clear that this type of oven was in widespread use throughout Egypt (Samuel 2000: 566; Marchand 2017: 230).

Examples are known from various sites in the context of domestic or industrial use in Lower and Upper Egypt, and from different periods, dating at least to the Middle Kingdom-Second Intermediate period and continuing until the Roman period, for example at Tell Heboua (Abd-el-Maksoud 1998: 66, 73-74), the early New Kingdom temple complex at Karnak (Jacquet-Gordon 1983: 141-142, pl. LIII-c), Deir el-Medina (Bruyère 1939: 72-74), Amarna (Kemp 1987: 71, fig. 6.1; Samuel 1994: 296-7); New Kingdom-Third Intermediate period at Kom Firin (Spencer, N. 2014: 44-45, 163, 173), Late Period Tell el-Herr (Marchi 2014: 63) and priests' quarters at Karnak (Masson 2007: 601-620).

It is believed that this type of oven was known in Egypt since the dynastic era probably from the Old Kingdom onwards (Wild 1975: 596) but clear archaeological evidence comes only from the Middle Kingdom (Strouhal 1992: 127; Mace 1921: 13-14; Müller 2015: 343) and then in tombs scenes of the New Kingdom (Rosellini 1834: pl. LXXXV; Wreszinski 1923: pl. 125; Davies 1930: 51, pl. 58). The oven type was still being used throughout Egypt until the Greco-Roman period (Samuel 2000: 566; Depraetere 2002: 119-156; 2005: 477; Tomber 2013: 119-137).

The identification of the excavated structures as ovens resulted from the similarities that can be observed between the remains of the ancient cylindrical fire-installations and the Egyptian iconographic sources. Additional archaeological evidence come from other regions, as well as ethnographic parallels with modern *tannur*-ovens in neighbouring countries, which have similar characteristics (Darby et al. 1977: 512; Samuel 1989: 255; 1994: 276).

## 6. Iconographic sources

The baking process is illustrated on several Ancient Egyptian tombs walls, which show basic daily life activities from the Old Kingdom onwards until the end of the New Kingdom (Vandier 1964: 274-318; Samuel 1994: 17, 296-7; Marchand 2017: 230). The baking scenes in tombs dating to the Old Kingdom show two main methods: either direct baking by placing the bread directly in the fire, or indirect baking by using bread moulds or bread trays made of pottery, which are placed over the fire or hearth (Darby et al. 1977: 512; Jacquet-Gordon 1981: 11; Strouhal 1992: 126; Faltings 1998: 66-88, 125-137, 138-155, 232-241). The latter method was also used during Middle Kingdom (Wreszinski 1923: pl. 217, 220-1; Samuel 1994: 18-19). The New Kingdom scenes show the clear representations of ovens in a conical form. The three most important scenes are located in the tomb of Ramesses III (Rosellini 1834: pl. LXXXV), the tomb of Nebamun (TT 17) (Wreszinski 1923: pl. 125), and the tomb of Kenamun (TT 93) (Davies 1930: 51, pl. 58; Vandier 1964: 313-14, fig. 150-151). Recently, another scene showing this type of oven was identified in the tomb of Nefermenu (TT 184) (Fabian 2011: fig. 9-10). Another example is known from a small ostrakon from Deir el-Medina, now in Leipzig (Inv. 1894), which shows a naked girl blowing air into the ventilation hole of a conical oven that closely resembles the conical ovens depicted on the walls of tombs dating to the New Kingdom (McDowell 1999: 66; Babcock 2014: 2, pl. 1). It seems that representations of this type of oven are not known from sources prior to the New Kingdom, despite the presence of archaeological remains, which date back to at least the Middle Kingdom (Mace 1921: 13-14; Müller 2013: 343).

The scene in the tomb of Ramesses III shows a bakery and patisserie (Fig. 4). In the lower register, a man is leaning over an oven; one of his hands is inserted into the oven and the other is leaning on the rim of the oven. He is raising one leg as he tries to reach into the interior of the oven. He turns his face away to protect himself from the heat (Rosellini 1834: pl. LXXXV; Wreszinski 1923: pl. 374; Davies 1930: 51, pl. 58; Vandier 1964: 317-18). The same scene also shows another conical oven, which has a round-shaped bread on its interior surface. The scenes in the other tombs are similar to the scene in the tomb of Ramesses III, in that they show the baking of bread, mainly rounded loafs in conical installations, and some scenes show the small opening in the lower part of the oven, with a man standing next to it and putting in or taking out the bread (Wreszinski 1923: pl. 125; Davies 1930: 51, pl. 58; Fabian 2011: fig. 9-10).



Figure 4. Conical bread ovens in the bakery , from the tomb of Ramesses III.  
(After Rosellini 1834: pl. LXXXV.

### 6.1. Some Hypotheses on Iconographic Parallels

Through an analysis of the baking scenes mentioned above, researchers were able to formulate hypotheses concerning the identification of the type of conical oven and the technique of baking using this oven. Based on their interpretations, scholars can be divided into three groups. The first group thinks that the scenes depict the process of baking on the outside of the oven (Erman 1894: 191; Ruffer 1919: 46; Wilson 1988: 13, fig. 10; Curtis 2001: 127). The second and third group of scholars agree that the baking took place in the interior of the oven, but the second group hypothesised that the dough was stuck onto the inner walls with the aid of ledges, nails or shelves inside the oven. They supported their hypothesis by evidence showing dark marks on the bread, which are thought to be caused by an interior protuberance (Klebs 1934: 175; Vandier 1964: 311; Strouhal 1992: 127). The third group of scholars proposed that the inner wall surface was used directly, but that milk or water was added to the loaves and that the soot was cleaned using a wet brush or cloth before inserting the dough into the oven. Once the loaves began to peel away from the sides, the baker lifted them out of the oven (Wild 1975: 597; Darby et al. 1977: 512, fig. 12.8a-b; Samuel 1989: 255; Samuel 1994: 276-277; Samuel 2000: 566). The depiction on the ostrakon from Deir el-Medina (Fig. 5) clearly shows that the Ancient Egyptians tried to visualize every aspect of the bread baking process, including those aspects that may have been hidden from sight. The rounded and semi-rounded shapes that cover the surface of the oven in fact represent the loaves inside the oven rather than on its exterior surface, and the breath of the girl blowing into the oven is also clearly depicted. This method of illustration is well known from Ancient Egyptian art as an attempt to show every aspect of a subject (Schäfer 1974).



Figure 5. A naked girl blowing into a conical oven. (After McDowell 1999: 66).

Some ovens show an inclination in their walls (Elnagar 2018: 20, fig. 46). The inclination of the oven's body was probably made to help the baker to easily insert his or her hand inside, in order to slap the bread against the walls, as it is still done today by female bakers in the rural areas of the Middle East (Mulder-Heymans 1997: 51).

A figurine from Tunisia represents a woman leaning into a cylindrical oven and placing disc-shaped loaves onto the interior surface of the oven, with her son beside her peering into the oven and observing the baking process (Sghaïer 2017: 214-215, fig. 2, 3) (Fig. 6). This figurine shows a similarity to the present-day technique of baking in the tannur ovens, and it also shows similarities with the Egyptian tomb scenes of baking bread, which show the baker depicted next to the oven.



Figure 6. Terracotta model showing the baking process inside the *tabun*-oven. (After Sghaïer 2017, fig. 2).

## 7. Ethnographic Evidence: North Sinai

Several Egyptian excavation missions have been conducting fieldwork in North Sinai since 1983 (Abd-el-Maksoud 1998). The main working area at Tell Heboua includes a series of sites. During the excavation in Tell Heboua I, the archaeologists gained valuable information from Bedouin workers at the site, who brought delicious home-made bread. When we asked for the recipe, they told us that the bread was called *khobz el-meefa* or *meefa*-bread.

Bread is a staple in the diet of the Bedouins of Sinai, as they are capable of transporting wheat and grains during their travel and work. In North Sinai — in a village called el-Masaa'id in el-Qantara, Sharq — we found a fire-installation similar to the *tannur*, with a similar function, technique and physical cylindrical structure to the ovens depicted in the New Kingdom tombs.

### 7.1. The Meefa-Oven

The term *meefa* refers to a particular type of oven that is well known among the Bedouins of Sinai and some Arab countries such as Yemen (Behnstedt 2009: 70). The women are exclusively responsible for making the ovens in their homes, similar to the practice in neighbouring countries (Mulder-Heymans 1997: 50-51; Mulder-Heymans 2002, 209-211; Rova 2014: 123). A mixture of local clay, straw and crushed pottery vessels is used to shape the body of the oven.

The *meefa*'s physical characteristics are similar to those of the *tannur*-oven, but differ slightly as being less in height and having a larger opening to the side near the bottom (ca. 15 to 20 cm in diameter larger than the *tannur*-oven), which is used mainly for inserting the fuel. The opening is shaped like an upside-down horseshoe (Fig. 7). The rim is built with three applied protrusions which are equally spaced from each other and which function as a placement for cooking pots. This



Figure 7. A *meefa*-oven, North Sinai.  
(Photograph by Abu Emeira).

prevents the vessel from completely closing off the upper opening and blocking ventilation. We believe that the difference between the Middle Eastern *tannur* and the *meefa* of Sinai could be explained by the preference of the Bedouin women for having an installation for both baking and cooking at the same time.

The time to build a *meefa*-oven ranges from two hours to a full day, depending on the builder, but most importantly, the oven should not dry before being completed, in order to prevent it from cracking during use. After the structure is completed, it is implanted in the ground to about half its height, so that the side opening is situated slightly above the ground. Then a fire is lit inside the oven for several hours until the structure is hardened. This process is called *kaddah*, and the bread baking process can be start directly afterwards. The average bread baking time ranges between 20 and 30 minutes, depending on the quality and type of fuel used. There is also a portable version of the *meefa* that can be placed directly on top of the ground (Fig. 8). The *meefa*-ovens are usually

Figure 8. Heating the *meefa*-oven before its use, photograph by Abu Emeira.



placed outside the houses in the courtyards as they produce a lot of smoke, and they need air for circulating the smoke and fire inside them.

### 7.2. Using the Meefa-Oven

Women at home or men at work use the *meefa*-oven. They gather the fuel, which consists of wood and tree branches, and place it inside the oven through the side opening. After igniting the fuel, the fire is left until the ember is glowing red and no smoke is emitted. They proceed by sticking the unleavened thin round loaf on the inner surface of the oven. No additional milk or water is necessary, due to the high temperature of the inner side of the oven. The effectiveness of sticking the loaves to the wall without them falling depends on the skill of the user. After the loaves are baked, the women usually use the remaining heat to cook their daily meals or to heat water.

The physical shape of the *meefa* is similar to a portable stove (three legged stand) that is known from many Late Period contexts (Aston & Aston 2010: 148, pl. 42. n. 364, 365; Spencer, J. 2014: 111, British Museum EA 23671, pl. 62). This shape of stand was illustrated on tomb walls since the Middle Kingdom as for example in the tomb of Baket II in Beni Hassan (Newberry 1893: pl. XXXVI; Abbady 2017: 211). The form of the *meefa*-oven is a combination between an oven and stove or *kannun*.<sup>1</sup>

One of our local sources, the Bedouin man Abu Emira,<sup>2</sup> said that despite the good taste of *meefa*-bread, the number of Bedouins that use this kind of oven in el-Massaa'id village is gradually decreasing because of the growing preference for modern gas ovens that facilitate the baking process, as solid fuel is not always available, gas ovens are easier to use (Abu Emira, pers. comm).

The word *meefa* is known also in Saudi Arabia, which is situated to the east of the Sinai. It is believed that this kind of oven was traditionally used by Bedouins throughout Egypt as another

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1. *kannun* is a well-known name for a type of stove in Upper Egypt that is built usually with bricks or stones to hold the cooking pots over it, either by using the bricks or stones against a wall, or by using three elements of bricks together of the same type to support the vessel (personal experience of the authors).
  2. Abu Emira is one of the Bedouin workmen that work with the Egyptian team in Tell Heboua I and Heboua II. He is a *fani*, and he offered us *meefa*-bread during a workday at the site. Abu Emira provided us with all the information concerning the *meefa*-when we started our research into this type of oven and its technique for producing the bread. He provided us with some photos of their oven and he invited us to come to his house to study the oven. Due to the security circumstances in North Sinai, however, we were not able to visit the village in order to interview the villagers or to obtain scientific photos. Abu Emira thinks that the use of the *meefa* will soon be abandoned in his village, and that the traditional ovens will be replaced by the modern *furn* which are widely used nowadays among the Bedouins.

example was found in Damietta<sup>1</sup>, but further research is needed to support this hypothesis and to document the available evidence.

## 8. Conclusion

The type of oven discussed in this paper is still being used today in some countries of the Middle East and North Africa, and it is known by a variety of names including tannur, meefa, and tabun, all of which descend from the same ancient origin. The physical structure of the oven as well as the baking technique used today matches with the historical evidence from Ancient Egypt. The use of these ovens allowed the ancient people to fulfill their need of staple food. The continued use of this type of oven until today, whether in Egypt or elsewhere, makes it a good example of the longevity of human heritage and of culture inheritance. These traditions are passed down through generations, resisting global change.

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ورشة عمل المسح الأثري في الدلتا

الأوراق العلمية لمؤتمر الإسكندرية (٢٠١٧)  
ومؤتمر المنصورة (٢٠١٩)

تحرير  
أيمن وهبي  
بينلوبي ويلسن

Archaeopress Egyptology 41

## المجموعات الخاصة لدى حائزي الآثار فى مدينة الإسكندرية

"متحف مدرسة كلية سان مارك"

Private Collections in Alexandria: Saint Mark College Museum

Hany Ahmed Abu El-Azem

Ministry of Tourism and Antiquities

### Abstract

The antiquities trade was associated with a group of families which had licenses for selling antiquities from the Antiquities Authority, such as the family of Zaki Mohareb, Muhammad Hassani, Abdul Rasul, and Hassan Mahmoud; those families continued to sell antiquities and trade until the year 1983 when the sale of antiquities was banned and prohibited. According to the article no 6 of the law No. 117 of 1983 amended by law No.3 of 2010 and 91 of 2018 Trade, "All real-estate and movable antiquities and lands which are considered as archaeological lands are considered public property except the wakfs and private properties. The ownership, possession or disposal of them is not permitted except under the terms and conditions stipulated in said law and its executive regulation". Article No. 8 notes that the sale or commerce in antiquities including all antiquities held as private property shall be prohibited and the Council, in all cases, has the priority to obtain the antiquity from its owner or possessor in return for a fair compensation. Anyone who owns any archaeological object in accordance with the provisions of this law must notify the council of such an object within six months. Moreover, the council may replace, from its owners or possessors, antiquities taken from architectural elements whenever the Board of Directors find a national interest and upon recommendation from the competent Permanent Committee in return for a consideration. Therefore, most of the owners must undertake the necessary procedures to take care of such antiquities.

This paper is about the private collections in Alexandria, in order to register and study real-estate antiquities and to consider the ownership of the antiquities. It contains a catalogue of the objects in St Mark's College Museum, Alexandria.

### ملخص

ارتبطت تجارة الآثار بمجموعة من العائلات التي حصلت على تراخيص لبيع الآثار من هيئة الآثار ، مثل عائلة زكي محارب ، ومحمد حسني ، وعبد الرسول ، وحسن محمود. استمرت تلك العائلات في بيع الآثار والتجارة حتى عام 1983 بعد حظر بيع الآثار وحظرها. وفقا للمادة رقم 6 من القانون رقم 117 لسنة 1983 المعدل بالقانون رقم 3 لسنة 2010 وقانون التجارة 91 لسنة 2018 "تعتبر جميع العقارات والآثار المنقولة والأراضي التي تعتبر أراضى أثرية ملكية عامة ما عدا الأوقاف والخاصة. ولا يجوز التملك أو التصرف فيها إلا بالشروط المنصوص عليها في القانون المذكور ولائحته التنفيذية". في المادة رقم 8 ، يحظر بيع الآثار أو الاتجار بها بما في ذلك جميع الآثار المحتفظ بها كملكية خاصة ، وللمجلس في جميع الأحوال أولوية الحصول على الآثار من مالكيها أو حائزها مقابل تعويض عادل. يجب على كل شخص يمتلك أي قطعة أثرية وفق أحكام هذا القانون إخطار المجلس بذلك خلال ستة أشهر .

علاوة على ذلك ، يجوز للمجلس أن يعيد إحالة الآثار المأخوذة من عناصر معمارية من أصحابها أو مالكيها متى وجد مجلس الإدارة مصلحة وطنية وبناءً على توصية اللجنة الدائمة المختصة التي يكون لأصحابها اعتبارات مميزة فى المقابل. لذلك يجب على معظم المالكين اتخاذ الإجراءات اللازمة للعناية بهذه الآثار . تتناول هذه الورقة المجموعات الخاصة بالإسكندرية "بهدف تسجيل ودراسة الآثار العقارية والنظر فى ملكية الآثار .

## مقدمة

لم يكن هناك أي تشريع يخص الآثار بمصر حتى منتصف القرن التاسع عشر<sup>1</sup>. وأقبل الأجانب على تهريب الكنوز الأثرية خارج البلاد بدعوى الحفاظ عليها، وتبنى هذه الفكرة "واليس بدج" أمين المتحف البريطاني<sup>2</sup>. وعلى الرغم من وجود صيحات من بعض علماء الآثار الأوربيين للمحافظة على الآثار<sup>3</sup>، إلا أن هذه الصيحات أتت ضمن القاعدة المنتشرة في ذلك الوقت والتي تتلخص في "من الممكن أن تندد كما شئت - بعد أن تستوفي نصيبك من الآثار المصرية - بطمع وشراهة المنقبين وتطالب بوقف السطو والتخريب لهذه الآثار"<sup>4</sup>.

دفعت الصيحات المتعددة للمحافظة على الآثار "محمد على باشا" إلى إصدار مرسوم عام 1835 للمحافظة على الآثار<sup>5</sup>، كما شهد عصر عباس الأول ظهور تشريعين جديدين عام 1849 ساهم الأول في تشديد العقوبات على من يتسبب في الإضرار بالآثار، والثاني في عمل أول إحصاء وتسجيل لآثار الوجه القبلي<sup>6</sup>، وكانت النقلة الكبرى عندما صدق سعيد باشا في عام 1858م على إنشاء مصلحة الآثار التي كان اسمها الرسمي آنذاك مصلحة الآثار<sup>7</sup>.

سمحت القوانين بحيازة الآثار عندما ظهر نظام القسمة لأول مرة في عهد الخديوي محمد توفيق في 1891/11/17<sup>8</sup>. أما الإتجار في الآثار فظهر في القانون رقم 14 لعام 1912<sup>9</sup>. كما تعاضمت حيازة الآثار في ضوء القانون رقم 215 لسنة 1951 وأصبح حائزي الآثار في وضع متساوٍ مع الدولة في ملكية الآثار<sup>10</sup>. وأخيراً حظر القانون رقم 117 لسنة 1983 الإتجار في الآثار، ومنح التجار الحاليين مهلة قدرها سنة لترتيب أوضاعهم<sup>11</sup> ومنح الحائزين ستة أشهر لتسجيل ما لديهم حتى يستفيدوا من أحكام الحيازة المقررة بالقانون<sup>12</sup>. وضع القانون رقم 117 لسنة 1983 المعدل بالقانون رقم 3 لسنة 2010 ولائحته التنفيذية الأسس القوية للحفاظ على الآثار وتقنين حيازتها من المادة رقم(8) حتى المادة رقم(29).

<sup>1</sup> Siliotti 1988: plate 9(right).

<sup>2</sup> أشرف محمد حسن(2016) ص 215: 244

<sup>3</sup> بريان م . ف(2013)" نهب آثار وادي النيل ودور لصوص المقابر" ترجمة أحمد زهير أمين ، مكتبة الأسرة- مهرجان القراءة للجميع ، 167

<sup>4</sup> أشرف محمد حسن(2016) ص 215: 244

<sup>5</sup> Thompson 2020

<sup>6</sup> فاروق فايق أرمانبوس(1982) "التشريعات المتعلقة بالآثار" القاهرة ، 258

<sup>7</sup> رزق حسن نوري(2018) "قوانين ولوائح الآثار المصرية (من عصر محمد علي حتى ثورة يوليو 1952م)" دار الكتب والوثائق القومية ، الإدارة المركزية للمراكز العلمية، مركز تاريخ مصر المعاصر ، 2018، القاهرة، 18-33

<sup>8</sup> أشرف العشماوي(2011)"سراقات مشروعة (حكايات عن سرقة آثار مصر وتهريبها ومحاولات استردادها)" الدار المصرية اللبنانية ، 2011، ص22

<sup>9</sup> Abo el- Azam 2013: 201-214.

<sup>10</sup> فاروق فايق أرمانبوس (1982) 79-8

<sup>11</sup> قانون رقم 117 لسنة 1983 ، القاهرة، الهيئة العامة لشئون المطابع الأميرية ، 1985،

<sup>12</sup> قانون رقم 117 لسنة 1983 ، القاهرة، الهيئة العامة لشئون المطابع الأميرية ، 1985،

بلغ عدد حائزي الآثار في مصر 27 حائزاً منتشرين في أنحاء مصر منهم من كان مسجلاً كتاجر للآثار ومنهم من قام بتسجيل الآثار الموجودة لديه بصور قانون حماية الآثار<sup>13</sup> وتضم مجموعة الحائزين بمدينة الإسكندرية:

- 1- ماري ليليان قنوتي بالأسكندرية بعدد 694 قطعة مسجلة بأرقام تبدأ برقم 1: 694
- 2- متحف كلية سان مارك بالأسكندرية بعدد 775 قطعة مسجلة بأرقام تبدأ برقم 1: 695
- 3- هنري وصفي يعقوب بالأسكندرية بعدد 85 قطعة مسجلة بأرقام تبدأ برقم 1 حتى 76
- 4- كنيسة دير سابا بالأسكندرية قطعة واحدة

### نبذة تاريخية عن متحف كلية سان مارك بالأسكندرية

تقع مدرسة سان مارك في منطقة الشاطبي، تطل على شارع بورسعيد، وهي عبارة عن مبنى من الحجر الأحمر الوردي تعلوه قبة ضخمة، تم وضع حجر الأساس في ١٦ مايو ١٩٢٦ وتم افتتاحها في ٦ أكتوبر ١٩٢٨. تم نقل المتحف الموجود في مدرسة "سانت كاترين" إلى مدرسة سان مارك عند افتتاح المدرسة عام 1928 حيث تم وضع المتحف في الطابق الأول في قطاع الفيزياء والكيمياء، مع المجموعة التي آلت للمدرسة ناتج الحفائر التي تمت بموقع المدرسة طبقاً للقانون، بالإضافة إلى كثير من الإهداءات من أولياء الأمور للمدرسة ويوجد المتحف حالياً في الطابق الثاني<sup>14</sup>. بدأت إجراءات حيازة المتحف في 1981/3/26 وتمّ التسجيل في 18/8/1981 في سجل يبدأ برقم 1 حتى 695 بعدد 775 قطعة تنتمي إلى عصور مختلفة وأنواع مختلفة. وفي عام 1991 تبين فقد عدد 21 قطعة أثرية أرقام 2/248، 256، 293، 295، 297، 300، 330، 430، 460، 353، 354، 356، 361، 384، 406، 423، 425، 490 وتتم تحرير القضية رقم 1541/1991 جنایات باب شرق، وتمّ حفظ القضية في 1992/6/20.

### وصف متحف كلية سان مارك بالأسكندرية وعرض الآثار به

كان المتحف يقع بالطابق الثاني، ويضم مقتنيات الرهبان في أثناء رحلاتهم لأفريقيا ودول العالم، من حيوانات محنطة وتذكارات عاجية وخشبية وغيرها، بالإضافة إلى مجموعة من التماثيل وأجزاء منها متعددة العصور، مسارج من العصر الهلينستي حتى العصر الإسلامي، أواني فخارية مختلفة الأشكال والأحجام، أدوات حجرية، أواني زجاجية مختلفة الأشكال، عملات بطلمية ورومانية وبيزنطية، أجزاء من أعمدة وغيرها من القطع الأثرية<sup>15</sup>. حيث تم وضع الآثار في فتارين زجاجية (صورة رقم 11).

بدأت المدرسة في 2011 عملية ترميم شاملة للمدرسة وخاصة قبة المدرسة الأثرية حيث تم ترميم كافة القطع الأثرية وتجميعها وتخزينها في إحدى القاعات بالمدرسة، وذلك في 2011/12/14 وما زالت مشونة حتى الآن<sup>16</sup>.

<sup>13</sup> سجلات الحيازة بالعباسية

<sup>14</sup> <http://www.saint-marc.ws/index.php/musee/access> in 14/10/2019

<sup>15</sup> ملفات إدارة الحيازة بوزارة الآثار – بالعباسية

<sup>16</sup> <http://www.saint-marc.ws/index.php/musee/access> in 14/10/2019

## تصنيف الآثار بمتحف كلية سان مارك بالأسكندرية داخل فترات الدراسة

1- تمثال تناجرا وهي من التماثيل التي تُصنع من الطين المجوف وبعد تشكيلها يتم إدخالها الفرن للحرق واكتمال صناعتها، ويحمل التمثال كل سمات العصر اليوناني التي تتمثل في الامتلاء والتكويرات في الجسم، التمثال لسيدة، ترتدي رداءً يمتد حتى أسفل القدمين، وقد برع الفنان في تمثيل التفاصيل الأنثوية للتمثال، كما ظهرت طيات وثنايا الملابس، ويحيط بالرأس هالة، يوجد كسور وتلف ببعض أجزاء الظهر (صورة رقم 1/1).

رقم السجل 35 المادة: صلصال أصفر 8سم بيزنطي

2- تمثال صغير من البرونز للإلهة فينوس واقفة ، التمثال مؤكسد والجزء الأيمن من الصدر به تلف (صورة رقم 1/2 )

65 برونز الطول 4سم روماني

3- تمثال صغير للإله أوزيريس من البرونز غير واضح المعالم من شدة التأكسد (صورة رقم 1/3 )

68 برونز الطول 4,5سم متأخر

4- جزء علوى من تمثال لشخص ذو وجه مشوه الملامح يبدو أنها تميمة يوجد خلف الرقبة ثقب للتعليق (صورة رقم 1/4 )

132 قيشاني أخضر فاتح 3,4سم روماني

5- تمثال ناقص من الرخام الأبيض لشخص نصف عاري يرتدي الهيماتيون الإغريقي<sup>17</sup> وهو عبارة عن عباءة فضفاضة ذات طيات (ثنايا) تُرتدى فوق الخيتون، يلبسها الرجال ملاصقة لأجسادهم، وتكون من قطعة قماش مستطيلة أيضاً، يُلف بها الجسم بدون وسائل تثبيت بحيث يكون أحد طرفيها على الكتف اليسرى من الخلف إلى الأمام منسدلاً، أما الطرف الثاني فيلف الوسط من اليمين إلى اليسار مغطياً البطن ثم تتلقفه (أي يُلقى على) الذراع اليسرى أو الكتف الأيسر تاركاً الكتف الأيمن عارياً، وهذه العباءة يمكن ارتدائها بمفردها حيث يظهر الكتف الأيمن والذراع الأيمن عاريين، وكذلك الجزء الأعلى من الصدر كما في حالة الفلاسفة، وأتباعهم والحكماء، وهذا يبين بساطة حياتهم، وفي هذه الحالة تكون العباءة كبيرة الحجم بحيث تسمح بأن تغطي الجسم حتى الأقدام. يبدو الرداء هنا بكسرات متتالية منمقة مائلة وطولية، وانسدلت طرفا العباءة على الذراع اليسرى، والتي تنتهي بفجوة ناتجة من كسر قديم لليد، والذراع اليمنى والرقبة مفقودتان، الجزء الأعلى من الصدر به تلف وكذا أطراف الثوب المتدلّية من اليد اليسرى (صورة رقم 1/5).

161 رخام أبيض يشوبه الرمادي الطول 67سم عرض 40سم يوناني

166 رأس Attis كبير نائم<sup>18</sup> يرتدى القبعة الفريجية ( من أوائل القبعات في التاريخ عندما كان الرقيق المحررون يرتدونها في اليونان وروما القديمتين رمزاً للحرية) تتدلى من أسفلها خصلات شعره ، مسطحات القلنسوة غير مصقولة يوجد تلف بالوجنتين يمر بأعلى الذقن والرأس (صورة رقم 1/6 ) رخام الإرتفاع 45,5سم روماني

<sup>17</sup> سلوى هنري جرجس (2001) "طرز الأزياء في العصور القديمة: فرعوني- يوناني - روماني - بيزنطي - قبطي"

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Vermaseren 1986.<sup>18</sup>

177 تمثال لحربوقراط فاقد الرقبة، جالس على قاعدة خلت من النقوش، القدم اليسرى مضمومة نحو جسمه منبسطة على الأرض، أما اليمنى فهي مثنية ومرتفعة إلى أعلى ويداه مضمومتان (ربما يمسك بجرة، يشرب منها)، يظهر ذيل حيوان بالقرب من القدم اليسرى (صورة رقم 1/7)

178 رخام أبيض إرتفاع 8,5سم روماني

6- رأس تمثال ربما كان جزءاً من تمثال أكبر، به انحراف طفيف نحو اليسار<sup>19</sup>، معالم الوجه مطموسة في معظم أجزائها، يوجد ثقب في مؤخرة الرأس (وربما يكون الرأس لتمثال لملكة بطلمية فأسلوب نحت هذه الرأس يذكرنا أساليب فن النحت في القرن الثاني قبل الميلاد) (صورة رقم 1/8) 178 رخام أبيض 16سم هليينستي

7- النصف العلوي لتميمة لأنوبيس -الجزء الايمن الخلفي من القاعدة متآكل، به آثار للون الأزرق (صورة رقم 1/9)

186 قيشاني أخضر 2.5سم عصر متأخر

8- تمساح على قاعدة برونزية مستطيلة ومجوفة من الداخل (صورة رقم 1/10)

187 برونز طول القاعدة 7.6سم الإرتفاع 1.9سم متأخر

9- تمثال صغير لجرادة كان تميمة أو جزء من قلادة لوجود ثقب أسفله، توجد بقايا أرضية عالقة بالأثر (صورة رقم 1/11)

188 قيشاني أخضر الطول 1.8سم متأخر

10- رأس دمىة يحيط بها هالة وذات أنف مدبب (صورة رقم 1/12)

190 صلصال أصفر إرتفاع الرأس 7.5سم بيزنطي

11- دمىة من الفخار الأحمر، يوجد كسور وتلف ببعض أجزاء الظهر ويحيط بالرأس هالة (صورة رقم 1/13)

191 فخار أحمر فاتح الإرتفاع 18سم بيزنطي

12- النصف الاعلى لتمثال حربوقراط، به ثقب وأجزاء مفقودة (صورة رقم 1/14)

192 فخار بني فاتح الإرتفاع 9.6سم روماني

13- تمثال أوشابتي على هيئة مومياء يرتدي باروكة الشعر المستعار (صورة رقم 1/15)

690 الخشب المطلي بالقار الأسود 21,5سم متأخر

14- تمثال أوشابتي صغير على هيئة مومياء، مرتديا باروكة شعر مستعار طويلة وقد تقاطعت أذرعته فوق صدره، عليه حروف هيراطيقية، التمثال مكسور من نصفه العلوي وتم لصقه (صورة رقم 1/16)

691 فخار أحمر 21,5سم دولة حديثة

15- تمثال للمعبود حورس، بجسم إنسان ورأس صقر واقف على قاعدة مربعة، يرتدي نقبة طويلة ويرتدي غطاء الرأس النمس وذراعيه ممدودتان على الجنب، يده مقبوضتان<sup>20</sup>، ملون بالألوان الحمراء والسوداء والبيضاء والنقبة قد زال منها اللون الأبيض تقريباً (ربما كان يمسك بيده اليمنى الصولجان وباليسرى علامة العنخ) (صورة رقم 1/17)

<sup>19</sup> Kiss 1988: 27-28.

<sup>20</sup> ربما كان يمسك بيده اليمنى الصولجان وباليسرى علامة العنخ

- 692 خشب 25 سم دولة حديثة  
 16- تمثال لأحد العمال واقف ، ذو ذراعين متحركين ويرتدى النقبة البيضاء<sup>21</sup> (صورة رقم 1/18 )
- 693 خشب 24,5سم دولة حديثة  
 17- تمثال أوشابتي خشبي يمثل الوضع الأوزيري، يرتدي باروكة الشعر المستعار، خالٍ من النقوش والكتابات ويوجد خلفه ساند بطول الجسم به تشققات وتلف ظاهر وفاقد القاعدة (صورة رقم 1/19 )
- 694 خشب 44سم متأخر  
 18- تمثال خشبي للآلهة باستت تركز علي قوائمها الخلفية ، القائمتان الأماميتان مفقودتان والطلاء الأبيض والأسود على بدن التمثال متآكل(صورة رقم 1/20 )
- 695 خشب 12,5سم متأخر

<sup>21</sup> كان العمال شأنهم شأن غيرهم من فئات الموظفين يتسلمون ملابس خاصة بالعمل وهي: السروال (مس)، والنقبة

القصيرة (روجو)، أما الرؤساء فيرتدون نقبة طويلة أو شالاً كبيراً يُسمى (دابو)

عبد الحليم نور الدين(2009) "الملابس والأزياء في مصر القديمة " مجلة تاريخ وأثار وتراث مصر العدد الرابع مايو ،



صورة رقم 1/4



صورة رقم 1/3



صورة رقم 1/2



صورة رقم 1/1



صورة رقم 1/8



صورة رقم 1/7



صورة رقم 1/6



صورة رقم 1/5



صورة رقم 1/12



صورة رقم 1/11



صورة رقم 1/10



صورة رقم 1/9



صورة رقم 1/16



صورة رقم 1/15



صورة رقم 1/14



صورة رقم 1/13



صورة رقم 1/20



صورة رقم 1/19



صورة رقم 1/18



صورة رقم 1/17

صورة رقم 1 توضح مجموعة التماثيل بمدرسة كلية سان مارك

19- عدد 397 عملة من العملات اليونانية والرومانية وتم تسجيل هذه العملات في 397 رقم:-

عدد 36 عملة بطلمية من البرونز على النحو التالي:

- معظم العملات عبارة عن عملة بطلمية من عهد الملك بطليموس الثاني (فيلاذلفوس)(285 - 246 ق.م) أو بطليموس الثالث يورجيتيس الأول(246 - 221 ق.م) على الوجه رأس آمون زيوس مُكَلل بالعصبة الملكية Diadem التي تُضفي عليه ملامح الهيبة والوقار حيث تظهر العصبة الملكية على هيئة شريط عريض يدور حول رأسه ومربوط من الخلف، وعلى الظهر، صورة نسرين<sup>22</sup> بالوضع الجانبي باتجاه اليسار، يأخذ الشكل الثلاثي الأبعاد الذي يميز الطابع الفني للعصر الهلينيستي، ويفتح النسر جناحيه وينظر للأمام بقوة وثبات، ويقبض بمخالبه على صاعقة الإله زيوس Thunderbolt<sup>23</sup>. ومكتوب على الظهر عبارة "الملك بطليموس" ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ.

- العملات من 294: 299 عملة بطلمية من عهد بطليموس الخامس (ابيفانيس) (204 - 180 ق.م) على الوجه زيوس آمون وعلى الظهر نسر يتجه بوجهه ناحية اليمين.

- العملات من 305: 310 عملة بطلمية من عهد بطليموس السادس (فيلوميتور) (176 - 145 ق.م) على الوجه صورة والدة الملك كليوباترا الأولى وعلى الظهر النسر :-

أولاً - التشابه الواضح بين هذه العملات، ذلك أن الوجه (obverse) في كافة هذه العملات يتميز بتصوير رأس ملكة بطلمية بالوضع الجانبي باتجاه اليمين، في شكل الربة إيزيس، ذات عنق طويل، يتدلى من رأسها خُصَلات شعر طويلة عُصبت بسنابل القمح، رأسها مُكَلل بالعصبة الملكية Diadem التي تُضفي عليها ملامح الهيبة والوقار حيث تظهر العصبة الملكية على هيئة شريط عريض يدور حول رأسها ومربوط من الخلف، وعلى الظهر (reverse) صورة نسر "زيوس" بالوضع الجانبي باتجاه اليسار، يأخذ الشكل الثلاثي الأبعاد الذي يميز الطابع الفني للعصر الهلينيستي، ويفتح

<sup>22</sup>كان أول ظهور للنسرين على ظهر العملات البطلمية في عام (262 ق.م) واستمر يُستخدم على فترات حتى نهاية العصر البطلمي . ويتبين من دراسة القرائن التاريخية المُستمدة من البردي والنقوش وخرائطيش الملوك البطالمة ، أن اتخاذ النسرين شعارًا لدولة البطالمة وتصويرها على العملة يشير إلى مشاركة أكثر من ملك في الحكم ، مثل مشاركة الملك وولي عهده كما حدث في عهد بطليموس الثاني أو اشتراك الملك وأمه الملكة الوصية عليه في الحكم كما حدث في بداية حكم بطليموس السادس أو مشاركة أكثر من ملك كما حدث عندما أشرتك كل من الملك بطليموس السادس وزوجته وشقيقته كليوباترا الثانية وشقيقهما الملك بطليموس الثامن. كما ظهر النسرين على العملات البطلمية في عهدي بطليموس التاسع وبتليموس العاشر ، أغلب الظن عندما كان كل منهما يتولى الحكم بمشاركة الملكة الأم ،وربما كانت بعض عملات بطليموس التاسع تمثل الفترة الثانية من حكمه (88-80 ق.م) عندما انفرد بحكم كل من مصر وقبرص . وكانت آخر العملات البطلمية التي حملت صورة النسرين تتسب بطريق الخطأ إلى بطليموس الثاني عشر (80-51 ق.م) ، والأرجح أنها ترجع إلى فترة حكم ابنته الملكة كليوباترا السابعة ،عندما أشركت معها في الحكم بأنها "بتليموس قيصر" (47-30 ق.م) ، أغلب الظن بعد مقتل يوليوس قيصر ،وتخلصها من شقيقها الأصغر بطليموس الرابع عشر في عام (44ق.م) وحتى نهاية حكمها في عام (30 ق.م).

Svoronos 1904; Strack 1897: 21-2; Kromann and Mørkholm 1977: 674; Cox 1959: 14-15, 105; Nicolaou 1990: 112-113.

<sup>23</sup>كان النسر وصاعقة " زيوس " الشعار المميز لعملات الملوك البطالمة منذ تأسيس دولتهم في عام (323 ق.م) وحتى سقوطها في عام (30 ق.م)، وكان هذا الشعار يرمز إلى قوة هؤلاء الملوك .

Poole 1883: 78-87; cf. 2-3, 8-39, 43, 46-8, 52-3, 55-7, 62-76, 116-124.

النسر جناحيه وينظر للأمام بقوة وثبات حيث تظهر تفصيلات ريشه في الجناحين وصدرة بارز للأمام ورقبته طويلة تنتهي برأس له منقار، ويلامس ريشه قطر العملة الأيمن، ويقبض بمخالبه على صاعقة الإله زيوس Thunderbolt، وبجانب القدم اليسرى للنسر نُقش حرف الألفا ( A ) اليوناني، رمز الدار التي سُكَّت فيها هذه العملة . ويحيط بظهر العملة نقش باللغة اليونانية عليه اسم الملك بطليموس ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ .

ثالثاً – أن هذه العملات، على الأرجح سُكَّت بعد وفاة الملكة كليوباترا الأولى؛ وذلك لأن عملاتها التي سكنتها خلال فترة وصايتها على ابنها "بطليموس السادس" عقب وفاة زوجها بطليموس الخامس عام (181 ق.م)، كانت تحمل على وجه العملة اسم الملكة كليوباترا<sup>24</sup> ، بينما نُقش علي ظهر العملة اسم ΒΑΣΙΛΙΣΣΗΣ ΚΛΕΟΠΑΤΡΑΣ الملك بطليموس ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ ، وصورة نسرين في دلالة واضحة على مشاركة الملكة وابنها في الحكم، وتشير المصادر التاريخية إلى أن الملكة كليوباترا الأولى كانت الحاكم الفعلي للبلاد خلال هذه الفترة وهو ما تدعمه دراسة عملاتها<sup>25</sup>. بيد أنه بعد تولي الملك "بطليموس السادس" الحكم<sup>26</sup> سك عملات تحمل علي وجهها صورة أمه "كليوباترا الأولى"، ونُقش علي ظهرها اسم الملك بطليموس، وربما صدرت هذه العملات لتخليد ذكرى الملكة الأم التي كانت تتمتع بمكانة كبيرة وسمعة طيبة داخل مصر، وفي الوقت نفسه للحفاظ علي العلاقات الطيبة مع شقيقها أنطيوخوس الرابع ملك الدولة السلوقية.

القطعة 316 من عهد بطليموس الثالث يورجيتيس الأول (246 – 221 ق.م) على الوجه صورة الأسكندر الأكبر بقربي آمون يرتدي جلد الفيل ودرع على الظهر نسر يفتح جناحيه وينظر للأمام باتجاه اليسار مكتوب على الظهر عبارة "الملك بطليموس" ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ وبين ساقى النسر يوجد حرف Δ (صورة 2/أ21).

عدد 331 عملة رومانية من البرونز حيث أصدر الرومان عملات من البرونز احتوت على نسبة عالية من القصدير بلغت حوالي ١٢ : ٢٩ % وفي العصر الإمبراطوري قلت هذه النسبة حتى استوفت مرة ثانية في عصر ماركوس أوريليوس. وأظهر الوجه الأمامي للعملات المراحل العمرية للأباطرة وساعدت الأحجام الكبيرة للعملة على الإبداع والإتقان في تصوير الموضوعات على العملة. أما ظهر العملة فكان يحمل أفكار وعقائد دينية، وأفرزت فئاتها النقدية كافة التيارات الدينية بمدينة الإسكندرية كالألله اليونانية والألله المصرية كما ظهرت مجموعة من الألله تحمل في طياتها الطابع الهلينيستي مثل الإله سيرابيس (صورة 2/ب21)

عدد 28 عملة من البرونز ترجع للعصر البيزنطي<sup>27</sup> (صورة 2/ج21)

20- إلبسترون<sup>28</sup>، ذو حافة دائرية، البدن ممتد في استطالة، القاعدة غيرمستوية، المقبض جانبي عبارة عن نتوء صغير، وهو من الأواني الخاصة بحفظ المواد العطرية، والتي تتمثل عادةً في ثلاثة أشكال هي: الأونجونتاريا والألبسترون

24. Poole 1883: lix.

25. Hölbl 2001: 140-143.

26. تولى بطليموس السادس الحكم تحت وصاية أمه الملكة كليوباترا الأولى خلال الفترة من (181 – 174 ق.م)، وتولى الحكم تحت وصاية يولايوس ولينايبوس خلال الفترة من (174-170 ق.م)، وتحت حماية خاله أنطيوخوس الرابع خلال عام (170 ق.م)، وأشترك مع أخيه بطليموس الثامن في الحكم خلال الفترة من عام (168-3/164 ق.م)، وانفرد بالحكم من عام (3/164 – 146 ق.م)، وقبل وفاته أشرك معه ابنه بطليموس السابع خلال عام (146ق.م)

26. Poole 1883: lix, xciv.

27. Grierson 1999.

واللكيثوس، كانت هذه الأواني خاصة بحفظ العطور والزيوت العطرية كما لعبت دوراً رئيسياً في زينة النساء، فاستخدمت كأوانٍ لحفظ العطور، كما كانت تستخدم هذه الأواني في الطقوس الجنائزية، ولما كان سمك هذه الأواني رقيقاً مما يعرضها للكسر بسهولة، فإن أمر العثور عليها في المناطق السكنية إنما يعد أمراً صعباً للغاية، يوجد بالداخل بقايا طفيفة لمادة؟ (صورة رقم 1/22)

- 184 ألباستر الطول 10.5سم متأخر
- 21- عدد 3 أجزاء من أطباق فخارية عليها زخارف من خطوط ووحدات نباتية (صورة رقم 2/23)
- 2 (طول 9,5سم العرض 10سم) 69 ( قطر الفوهة 17,5سم الإرتفاع 7,5سم ) 70 (القطر 16سم) فخار هليستي
- 22- طبق فخاري ذو قاعدة حلقية<sup>29</sup> وحافته على شكل شريط بارز توجد على أسطح وقاع الطبق بقايا لون إسود وأبيض (صورة رقم 2/24)
- 64 فخار أحمر الفوهة 19سم الإرتفاع 8سم بيزنطي
- 23- عدد 4 طبق عليها آثار ألوان بيضاء وحمراء (صورة رقم 25أ،ب/2)
- 85 ( القطر 7سم) 108 (القطر 13,9سم) 143 (القطر 11,6سم الإرتفاع 4,8سم ) 144 (القطر 11,3سم الإرتفاع 6,5سم) فخار روماني
- 24- عدد 4 وعاء ذو قاعدة حلقية - يوجد على البدن وأسفل القاعدة علامات دائرية (صورة رقم 2/26)
- 81 (إتساع الفوهة 14,5سم إرتفاع 8,5سم ) 109 ( القطر 6,3سم ) 110 ( القطر 7,5سم) 142 ( 6,5×10,4سم) فخار روماني
- 25- عدد 3 بوتقة صغيرة صغيرة قاعدتها حلقية بها آثار ألوان سوداء (صورة رقم 2/27)
- 82 (القطر 6,6سم ) 83 (القطر 5,2سم) 93 (قطرها 4سم ) فخار روماني
- 26- عدد 5 قارورة القديس سان مينا صور على أحد جانبيها واقفاً بين جملين وعلى الجانب الآخر علامة الصليب داخل دائرة، تحيط به دوائر من زخارف نباتية (صورة رقم 2/28)
- 12 (إرتفاع 7,9سم) 19 (8,4سم ) 21 (8,7سم ) 39 (16سم ) 289 ( الطول 7.3سم ) فخار وردى بيزنطي
- 27- قارورة على أحد وجهيها نحت بارز داخل إطارين بروفائل لوجه شخص غليظ القسما وذو شعر أشعث وتحيط به دائرتين بداخلها زخارف على شكل نقط بارزة الفوهة مفقودة تماما (صورة رقم 2/29)
- 290 فخار أبيض الطول 7.4سم بيزنطي
- 28- قارورة غير جيدة الصنع والمقبضين بيززان عن البدن وتوجد زخارف على الجانبين على شكل دوائر - معظم سطح القارورة متآكل (صورة رقم 2/30)
- 55 فخار بني الفوهة 3سم الطول 15سم بيزنطي

<sup>28</sup> سلوى حسين محمد (2013) دراسة أثرية لمجموعة الأواني الفخارية من الميناء الشرقي بالأسكندرية موسم حفائر ٩٩ -

٢٠٠٠م : دراسات في آثار الوطن العربي ٤، 121: 133

<sup>29</sup> Peet 1933: 62.

- 29- عدد 3 قنينة صغيرة الأولى ذات مقبض واحد وقاعدة حلقيّة والثانية بدون مقابض ، الثالثة قاعدتها مفقودة(صورة رقم 2/31)
- 57 (الفوهة 2,3سم الطول 11سم) 58 (الطول 12,6سم الفوهة 2,3سم) 124 (الفوهة 1,7سم الطول 6,4سم ) فخار روماني
- 30- عدد 10 أمفورة<sup>30</sup> ذات فوهة صغيرة وقاعدة مدببة ليسهل وضعها على قاعدة مثبتة في الأرض للحفاظ عليها ضد الكسر ورقبة قصيرة، ومقابض منحنية (صورة رقم 2/32)
- 49 ( قطر الفوهة 4,5سم الطول 38سم) 50 (قطر الفوهة 10,5سم الطول 47,5سم ) 61 (الفوهة 3, 5سم الطول 20سم) 62 ( قطر الفوهة 9,3سم الطول 44,5سم) 156 (الطول 122سم الفوهة 13سم) 266 ( الفوهة 14سم الارتفاع 68سم) 267 (الطول 53,5سم ) 268 (الفوهة 13,3سم الارتفاع 104,5سم) فخار روماني
- 31- عدد 7 مقابض أمفورا تحوي ختماً<sup>31</sup> مستطيلاً بها نقوش(صورة رقم 2/33)
- 77 (الطول 10,5سم) 80 (الطول 14سم) 84 (الطول 9,2سم) 94 (الطول 4,8سم) 95 (الطول 6,6سم) 98 (الطول 10,5سم إتساع الفوهة 2سم ) 99 (الطول 9سم ) فخار أحمر روماني
- 32- عدد 3 جزء صغيرة من مقبض أمفورا عليه ختمه دائري(رشدى.أ.م: 2008: ص 11-15 ) بداخله نقوشاً لزهرة اللوتس<sup>32</sup> ويحوى سطرًا من الحروف الأغرقيّة -الختم كامل. (صورة رقم 2/34) 96 (الطول 5,9سم ) 97 (الطول 6سم ) 100 (الطول 10,5سم ) فخار روماني
- 33- قارورة المقبض ملتصق بحافة الفوهة من أسفل به كسر مستطيل بأحد جوانبه(صورة رقم 2/35)
- 52 فخار أحمر الفوهة 3سم الطول 13,3سم روماني
- 34- عدد 3 قدر فوهتهما متسعة والجسم والمقبضين يحيطان بالرقبة والبدن وقاعدته حلقيّة(صورة رقم 2/36)
- 53 ( الفوهة 6سم الطول 9سم) 56 ( الفوهة 10,5سم الطول 15,5سم) 119 (الفوهة 4,4 سم الطول 5,5سم) فخار روماني
- 35- عدد 2 قدر ذو فوهة متسعة الأول قاعدته على هيئة أربعة قوائم ويوجد حول الرقبة تمثيلاً لمقبضين ، والثاني بدون مقابض (صورة رقم 2/37)
- 54 (الفوهة 10سم الطول 13,7سم) 74 ( الفوهة 5,3سم الطول 11سم) فخار روماني
- 36- أنية ذات فوهة مبنورة وقاعدة حلقيّة بارزة المقبض مفقود ويوجد تآكل بأجزاء كبيرة على البدن(صورة رقم 2/38)
- الفوهة 2,8سم الطول 10,5سم فخار أحمر روماني
- 37- عدد 2 إبريق صغير ذو مقبض واحد وقاعدة حلقيّة بارزة (صورة رقم 2/39)
- 60 ( الفوهة 4سم × 15,5سم) 76 (الطول 15سم إتساع الفوهة 4,5سم) فخار أحمر روماني
- 38- إناء من أواني الحضرة ، لحفظ رماد المتوفى<sup>33</sup> تغطي الفوهة كتلة من الجص الأبيض والمقبضين يعلون كتف الإناء من الجانبين وتوجد داخل الأنية عظام محترقة - بها كسور جسيمة على أحد جانبيها ومرممة قديماً(صورة رقم 2/40)

<sup>30</sup> Grace 1935: 428.

<sup>31</sup> Monachov 2005: 70-72.

<sup>32</sup> Koehler 1992: 223.



صورة رقم (21) ج/2



صورة رقم (21) ب/2



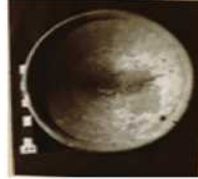
صورة رقم (21) أ/2



صورة رقم (21) أ/2



صورة رقم (25) أ/2



صورة رقم (24) 2/2



صورة رقم (23) 2/2



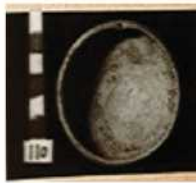
صورة رقم (22) 2/2



صورة رقم (28) 2/2



صورة رقم (27) 2/2



صورة رقم (26) 2/2



صورة رقم (25) ب/2



صورة رقم (32) 2/2



صورة رقم (21) 2/2



صورة رقم (30) 2/2



صورة رقم (29) 2/2



صورة رقم (36) 2/2



صورة رقم (35) 2/2



صورة رقم (34) 2/2



صورة رقم (33) 2/2



صورة رقم (40) 2/2



صورة رقم (39) 2/2



صورة رقم (38) 2/2



صورة رقم (37) 2/2

صورة رقم 2 لمجموعة من العملات والأواني الحجرية والفخارية

عدد 7 أنية قارورة لحفظ الزيوت العطرية أو الدموع<sup>34</sup> ذات حافة دائرية، الرقبة إسطوانية ، البدن ممتد في إستطالة يرتكز على قاعدة دائرية صغيرة يوجد حز دائري أعلى البدن (صورة رقم 3/41)

86 ( الطول 7,3 سم ) 87 (الطول 13,7 سم سعة الفوهة 5,5 سم) 88 (الطول 15,4 سم إتساع الفوهة 2,9 سم) 101 (الطول 9,1 سم إتساع الفوهة 3,2 سم) 102 (الطول 10,5 سم الفوهة 2,2 سم ) 106 ( الطول 19,6 سم ) فخار روماني

40- عدد 3 قارورة صغيرة من الأواني الخاصة بالمائدة لحفظ المياه والنبيد ، الحافة مستديرة ويحيط بها من أسفل حز ، الرقبة تتسع كلما اتجهنا لعلی ، البدن مسحوب نحو القاعدة الحلقية ، غير جيدة الصنع (صورة رقم 3/42)

103 ( الطول 7,7 سم إتساع الفوهة 2,3 سم) 104 (الطول 6,6 سم) 105 (الفوهة 2,2 سم الطول 7 سم)

فخار روماني

41-قارورة ذات مقبض واحد ، الحافة دائرية ،الرقبة قصيرة ، البدن دائري، المقبض مفقود والرقبة والفوهة مرممة (صورة رقم 3/43)

107 فخار برتقالي الطول 10,12 سم إتساع الفوهة 3,5 سم روماني

42- مقبض لإناء على شكل رقبة حيوان ، العيون واللجام مرسومة عليه باللون البني (صورة رقم 3/44)

45 فخار أصفر 4,3 سم بيزنطي

43- مقبض وعاء عبارة عن وجه آدمي مثلث ملامحه بخطوط بارزة ، به كسور (صورة رقم 3/45)

46 فخار برتقالي 3,3 سم بيزنطي

44- عدد 2 عنصر فخاري من إناء ينتهي أحدهم بوجه كبش والآخر بوجه أحد الضواري وبه كسور من أحد طرفيه (صورة رقم 3/46)

91 ( طوله 10,5 سم ) 92 (الطول 13,6 سم) فخار برتقالي روماني

45- إناء إسطواني والبدن مسحوب لأسفل متأثر بالرطوبة (صورة رقم 3/47)

145 فخار أحمر الفوهة 11,5 سم الإرتفاع 14,7 سم روماني

46- إناء لحفظ السوائل، ذو فوهة جانبية مهشمة ، الرقبة قصيرة تنتهي بشباك مكون من ثلاث ثقوب ، يوجد بزبور على أحد جوانبه ، يوجد بالقاعدة كسر ومسطحاته متأثرة بالعوامل الأرضية (صورة رقم 3/48)

146 فخار أحمر الفوهة 1,5 سم الإرتفاع 13 سم روماني

47- عدد 2 دورق ذو فوهة ضيقة ومقبض واحد أسفل الفوهة (صورة رقم 3/49)

147 (الفوهة 7,3 سم الطول 19 سم) 149 ( 3,1 سم×17 سم) فخار روماني

48- وعاء فخاري ذو فوهة حاكية والقاعدة غير مستديرة والبدن يحيط به خطوط دائرية بارزة ،الشفة بها كسور ويوجد ثقب على أحد جوانب الإناء (صورة رقم 3/50)

148 فخار برتقالي 3,1 سم×17 سم روماني

49- إناء كبير الحجم ذو مقبض واحد وقاعدته حلقية بارزة توجد كسور بالفوهة ويوجد آثار مادة بيضاء وسوداء على البدن المتأثر بالرطوبة (صورة رقم 3/51)

150 فخار بني فاتح مطلى باللون الأحمر الفوهة 9,5 سم الطول 19 سم روماني

- 50- دورق من الفخار يشبه القلة الحديثة وتوجد زخارف نباتية باللون البنى على البدن والعنق وقاعدته غائرة للداخل -  
المقبض مكسور والإناء جيد الصنع (صورة رقم 3/52)
- 151 فخار أبيض 4,8سم×18,7سم بيزنطى
- 51- دورق فخارى ذو مقبضين على هيئة الضفيرة وقاعدته حلقيه صغيرة توجد تلف ببعض مسطحات الإناء(صورة رقم 3/53)
- 152 فخار بنى الفوهة 5,5سم الإرتفاع 16,5سم بيزنطى
- 52- عدد 2 قنينة فخارية ذات مقبض واحد البدن مسحوب من أعلى لإسفل ينتهى بقاعدة حلقيه الأول ملون بلون لطوبى من أعلى - الفوهة بها كسور(صورة رقم 3/54)
- 153 (الفوهة 4,2سم الطول 16,4سم) 154 ( الطول 13,8سم الفوهة 4سم) فخار رومانى
- 53- إناء فخارى ذو رقبة قصيرة تنتهى بفوهة واسعة- الفوهة ممرمة حديثاً - المقبض مفقود(صورة رقم 3/55)
- 155 فخار أحمر رومانى
- 54- دورق فخارى ذو مقبضين عند العنق وبزبور جانبي لصب الماء مندمج فى أحد المقبضين الفوهة والعنق مهشمتين ويوجد آثار تلف وبدن الإناء متأثر بعوامل القدم(صورة رقم 3/56)
- 270 فخار أحمر الإرتفاع 22سم الفوهة 5,5سم رومانى
- 55- مسرحة بدون يد، ذات فوهة قصيرة وبارزة عن جسم المسرحة، الكتف مستدير ويفصله عن الصحن شريط دائري مكون من ثلاثة خطوط غائرة، ذات سطح مجوف مزخرف بزخرفة نباتية، يتوسطه فتحة الزيت، وهي ضيقة جداً، بدن المسرحة بها كسور في أحد جوانبها وتوجد بقايا مادة بيضاء كانت تغطى سطح المسرحة (صورة رقم 3/57)
- 13 فخار أصفر 5,3سم رومانى
- 56- مسرحة برميلية الشكل تقريباً وقمتها هي فتحة الزيت وفتحة الفتيل توجد في أحد جوانبها على هيئة حوض صغير يعلوها خمسة ثقوب - توجد كسور بفوهة الزيت وأحد جوانب المسرحة وقاعدتها بها آثار احتراق(صورة رقم 3/58)
- 14 فخار أحمر 8سم بيزنطى
- 57- مسرحة دائرية توجد فتحة الزيت بالمركز داخل منخفض يحيط بها العديد من الدوائر وتوجد على قاعدتها عبارة لاتينية بالحروف البارزة- فتحة الفتيل مفقودة تماماً وتوجد على بدن المسرحة بقايا مادة بيضاء(صورة رقم 3/59)
- 15 فخار أحمر 5,6سم رومانى
- 16 مسرحة على سطحها منخفض على شكل زهرة ذات ثمان فصوص مركزها هو فتحة الزيت ، فوهة الفتيل مفقودة تماماً ومغطى ببقايا مواد أرضية مؤكسدة (صورة رقم 3/60)
- 17 فخار أبيض 7سم رومانى
- 18 قنينة صغيرة لحفظ الدموع - الفوهة والرقبة مهشمتان(صورة رقم 3/61)
- 133 زجاج أبيض 3,5سم رومانى
- 19 عدد 2 قطعة من مقبض زجاجى أحدهما مجوفة من الداخل وتوجد بقايا مادة بيضاء مختلطة بمادة ترابية على مسطحات المقبض (صورة رقم 3/62)
- 134 زجاج أخضر 4سم ، 2سم رومانى
- 20 عدد 2 قارورة زجاجية ذات قاعدة مخروطية (صورة رقم 3/63)
- 135 ( إتساع الفوهة 3,3سم الطول 9,8سم ) 136 ( الطول 7,3سم) زجاج أخضر رومانى

- 21 إناء زجاجى صغير - الفوهة وجزء من الرقبة مفقودة - بدن الدورق به شروخ داخلية (صورة رقم 3/64)  
137 زجاج أخضر طول 6,7 سم رومانى
- 22 قناع مسرحى صغير الجانب الأيسر من الشعر - الرقبة والحواف مفقود (صورة رقم 3/65) 71  
زجاج رومان



صورة رقم 3 مجموعة من الأواني الفخارية والمشغولات الزجاجية

- 23 قطعة من أرضية فسيفساء من الأبيض والأسود بها خمس صفوف من المكعبات - المكعبات متأثرة بالعوامل الأرضية (صورة رقم 4/66) 111 الطول 6 سم رومانى
- 24 قطعة فسيفساء بها ثلاثة مكعبات من الزجاج والرخام (صورة رقم 4/67)  
127 مكعبات الزجاج والرخام 5,5 سم رومانى
- 25 2 قطعة فسيفساء صغيرة متأثرة أثر طفيف بالعوامل الأرضية (صورة رقم 4/68)  
128 عجينة جصية مكعبات من الرخام الأخضر والثانية مكعبات فقط  
الطول 3,2 سم رومانى
- 26 وجه تابوت من الفخار ملون بالألوان الأبيض والأحمر والأسود وتوجد بقايا زخرفة نباتية على بعض جوانبه - الجزء الأيسر من القناع مرمم والجزء الأيمن به أجزاء مفقودة (صورة رقم 4/69)

179 فخار أحمر محروق إرتفاع القناع 42سم عرض القناع 41سم متأخر  
27 وجه تابوت من الفخار الأذن اليمنى مفقودة واليسرى بها تلف، وعلى الوجه بقايا قليلة لطلاء أصفر اللون زال مع الزمن والأنف مشوه، وكذا أسفل الفم (صورة رقم 4/70)

180 فخار أحمر الإرتفاع 17,5سم متأخر  
28 وجه تابوت ملون باللون الاحمر، ويوجد ثقب أسفل الذقن لتثبيت اللحية وغطاء الرأس ملون باللون الاخضر الذي تتوسطه زهرة اللوتس مرسومة بالألوان الأحمر والأخضر والأبيض (صورة رقم 4/71).

185 خشب الجميز الإرتفاع 25.5سم دولة حديثة  
29 مومياء لطائر الأيبس<sup>35</sup> محاط بلفافف كتانية والجانب الأيمن من الطائر لفافف بها عطب(صورة رقم 4/72)

181 الطول 33سم الإرتفاع 16سم متأخر  
30 مومياء لطائر الأيبس واللفافف الكتانية التى على الظهر والجانب الأيسر بها عطب(صورة رقم 4/73)

182 الطول 41سم الإرتفاع 15,5سم متأخر  
31 مومياء لصقر صغير - اللفافف الكتانية تحولت للون الداكن نظرا لتشبعها بالمادة الراتنجية(صورة رقم 4/74)

183 الطول 28سم متأخر  
32 مجموعة من الأدوات الحجرية(صورة رقم 4/75) تتمثل فى عدد 43 رأس سهم ، عدد 32 فأس بدائى ، عدد 42 مكشط ، عدد 11 منحت صوان ، عدد 4مبرد صغير من 195 : 274 صوان مختلفة المقاسات  
المصدر : الفيوم وسيناء

33 عدد 2 عنصر زخرفى على شكل الإلهة إيزيس ترضع حربوقراط (ماريو توسي - كارلو ريوردا: ص ٢٠٠٨ )  
وجالسة على عرش(العبادي،م.: ١٩٩٢، ص ٢٧٥)(صورة رقم 4/76)

17 ( الأرتفاع 7,9سم ) 42 ( إرتفاع 6,4سم ) فخار رومانى  
34 عنصر زخرفى على شكل تمثال صغير لشخص عادى ومنتشج بعباءة تغطى أكتافه ويسند وجهه على يده اليسرى (صورة رقم 4/77)

18 فخار بنى اللون 8,5سم رومانى

35 عدد 7 أجزاء من تيجان أعمدة كورنيثية والتي تتميز بالزخارف النباتية (صورة رقم 4/78)

157 (إرتفاع 36سم العرض 46سم التاج من أسفل 30,5سم) 58 (عرض 39سم إرتفاع 25,5سم) 162 شكل ورقة الأكانتوس بتوزيقاتها المختلفة وأشكالها المتعددة<sup>36</sup> (الطول 17سم إرتفاع 6سم) 163 (إرتفاع 21,5سم عرض 16,5سم)

<sup>35</sup> Abdul Qader, M. 1987: 121-123.

<sup>36</sup> مايسة، أ" تطور الملامح التشكيلية لنبات الأكننتس ودورها فى النحت التطبيقي" مجلة العمارة والفنون العدد الثاني

عشر - الجزء الثاني ص 348

165 ( عرض 64سم إرتفاع 36سم) 167 ( عرض 28سم إرتفاع 15سم ) 168 (إرتفاع 28سم عرض 19سم) رخام أبيض  
مائل للرمادى بيزنطى  
36 عدد 2 من تاج أعمدة أيونية(صورة رقم 4/79).

159 (عرض 62سم إرتفاع 14,5سم ) 171 ( 45×21سم) رخام أبيض بيزنطى  
37 تاج عمود مكون من وحدات زحف النخيل ينتهى ب volutes ( حلية حلزونية ظهرت فى تاج العمود الأيونى ثم  
أندمجت فى تاج العمود الكورنثى وربما كانت مستوحاة من منحنى قرون الكباش) فى كلا من زواياه الأربعة ، جزء كبير منه  
مفقود وحدات زحف النخل مغطاة ببقايا لون أسود واضح(صورة رقم 4/80)

164 رخام أبيض إرتفاع 28سم عرض 47سم بيزنطى  
38 عدد 5 عنصر زخرفى مجوف (جروتسك) رأس كاريكاتيرية حوافه السفلية مهشمة(صورة رقم 4/81)

72 (الطول 17سم العرض 13,5سم) 73 (الطول 12,5سم العرض 14,5سم) 75 ( الإرتفاع 9,5سم) 78 ( الطول  
14,5سم عرض 14سم) 79 (الطول 12سم العرض 10,5سم)  
فخار أحمر رومانى  
39 الجزء الأيسر العلوى من لوح جنائزى عليه ستة أسطر باللغة القبطية(صورة رقم 4/82)

63 حجر جيرى طول 31سم العرض 24,7سم بيزنطى  
83- شريحة رخامية عليها صفيين من النقوش وبالطرف الأيسر علامة صليب على هيئة علامة عنخ ، خشنة  
الصنع(صورة رقم 4/83)

67 رخام أبيض الطول 17,5سم العرض 7سم بيزنطى  
84- لوح جنائزى مسيحي يشغل الجانب الأكبر منه الصليب يحيط به من أعلى ومن الجوانب أعلام أخرى للصليب ونقوش  
نبطية وقمته تنتهى على شكل مثلث يحيط بنصف الدائرة(صورة رقم 4/84)

174 حجر جيرى عرض 37,6سم إرتفاع 56,5سم بيزنطى  
85- عدد 6 مثقال (صورة رقم 4/85) من البازلت دائرى مبطن حالتها جيدة( أحمد،م، ص1980 )  
112 (محيط الدائرة 24,5سم) 113 (محيط الدائرة 11,5سم) 114 (محيط الدائرة 12سم) 115 (محيط الدائرة 11,5سم)  
116 (محيط الدائرة 8سم) 131 (قطر الدائرة 7,5سم) رومانى



صورة رقم 69



صورة رقم 68



صورة رقم 67



صورة رقم 66



صورة رقم 73



صورة رقم 72



صورة رقم 71



صورة رقم 70



صورة رقم 77



صورة رقم 76



صورة رقم 75



صورة رقم 74



صورة رقم 81



صورة رقم 80



صورة رقم 79



صورة رقم 78



صورة رقم 85



صورة رقم 84



صورة رقم 83



صورة رقم 82

صورة رقم 4 لمجموعة من القطع الأثرية بكلية سان مارك

86- متقال إسطواني غير منتظم الشكل بقاعدة (صورة رقم 5/86).

117 رخام قطرها 7,8 سم الإرتفاع 3,8 سم روماني

87- متقال مبسط به ثقبان على أحد طرفيه (صورة رقم 5/86).

125 حجر برتقالي القطر 7,9 سم روماني

88- متقال ذو حافة مقوسة غير كاملة الإنحناء يوجد به ثقب كبير (صورة رقم 5/86).

- 126 حجر أبيض إرتفاع 6,5سم روماني
- 89- عدد أربعة أقماع مخروطية(صورة رقم 5/89)
- 3/90 ، 139 فخار أبيض روماني
- 90- عدد 3 مخروط قمتها مثقوبة قاعدتها بها تآكل بسيط (صورة رقم 5/90)
- 121 ، 122 ، 123 حجر برتقالي إرتفاع 8,8سم ، 6,5سم ، 4,9سم روماني
- 91- سدادة من الجص بيضاء اللون منقوش عليها ما يشبه الطائر ناشراً جناحيه وأسفله علامة الصليب من اليمين وبعض الحروف الإغريقية ، جزء من الجانب والقاعدة مفقود (صورة رقم 5/91)
- 28 جص 10سم بيزنطي
- 92- سدادة جصية عليها علامة الصليب داخل دائرة توجد في أركانه الأربعة حروف إغريقية(صورة رقم 5/90).
- 32 جص 10,2سم بيزنطي
- 93- كتلة مستطيلة من البرونز تمثل جزء من مزلاج ، ينتهي أحد طرفيه برأس والقوائم الأمامية لأسد والطرف الآخر به ثقب مأكسد ومجوف(صورة رقم 5/93).
- 47 برونز الطول 38,4سم متأخر
- 94- قرص دائري مصور بالبارز على أحد جانبيه كاهن يمسك بيده طائرويميل فوق مائدة قربان ويوجد خلف هذه المائدة آنية الأمفورة ويعلو المشهد ما يشبه الدرع(صورة رقم 5/94).
- 89 فخار أحمر داكن قطرها 13سم روماني
- 95- قرص دائري مبطن من الفخار المائل للحمرة به ثقبان على أحد جوانبه أحد الأحرف اليونانية(صورة رقم 5/95)
- 118 فخار أصفر القطر 7,3سم روماني
- 96- مسمار خشبي لتابوت ،المسمار به تآكلاً ومغطى بمواد من صدأ الحديد(صورة رقم 5/96)
- 129 خشب طول 9سم
- 97- مسمار حديد ذو رأس كبيرة ، عليه طبقات من الصدأ (صورة رقم 5/97)
- 130 حديد 6,2سم
- 98- أحد شقى رحي للطحن به ثقب بالمنتصف في حالة غير جيدة ومليئة بالشقوق والفجوات(صورة رقم 5/98)
- 173 صوان أسود قطر 38,2سم روماني
- 99- مسند للرأس مكون من ثلاثة أجزاء: الأعلى ويأخذ الشكل الهلالي، الأوسط عبارة عن شكل أسطواني ، الجزء الأسفل قاعدة مستطيلة الشكل. (صورة رقم 5/99)
- 189 خشب الطول 15.7سم متأخر
- 100- كرة من الرخام ،غير مصقولة(صورة رقم 5/100)
- 172 رخام أبيض قطره 49سم روماني



صورة رقم 5 / 89



صورة رقم 5 / 88



صورة رقم 5 / 87



صورة رقم 5 / 86



صورة رقم 5 / 93



صورة رقم 5 / 92



صورة رقم 5 / 91



صورة رقم 5 / 90



صورة رقم 5 / 97



صورة رقم 5 / 96



صورة رقم 5 / 95



صورة رقم 5 / 94



صورة رقم 5 / 100



صورة رقم 5 / 99



صورة رقم 5 / 98

### صورة رقم 5 لمتنوعات من مدرسة سان مارك

### الخلاصة

ضمت مجموعة كلية سان مارك عدد 775 قطعة تم تسجيلها في سجل من رقم 1 حتى 695 منها عدد 710 قطعة تُؤرخ منذ قبل التاريخ حتى نهاية العصر الروماني أما بقية القطع وعددها 65 قطعة فهي تنتمي للعصر الإسلامي وشملت عدد (20) تماثيل وأجزاء من تماثيل، (397) عملة، (1) إناء حجري، (80) إناء فخاري، (4) مسارج، (9) مشغولات زجاجية، (3) أجزاء من توابيت، (3) طيور محنطة، (146) أدوات حجرية، (18) عناصر معمارية وزخرفية، (3) مخروط جنائزي، (9) موازين، (7) أقماع جنائزية، (2) سدادات جصية، (1) مزلاج، (1) مسمار خشبي، (1) مسمار حديد، (1) رحي، (1) مسند رأس، (1) كرة من الرخام.

- 1- قانون رقم 117 لسنة 1983 ، القاهرة، الهيئة العامة لشئون المطابع الأميرية ، 1985،
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## الخريطة الأثرية لمنطقة بحيرة مريوط :

مبادئ وطرق وإمكانات نظم المعلومات الجغرافية

إسماعيل عوض<sup>1</sup>

Archaeological Map of the Lake Mariut region : principles, methods and potential of GIS

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### Abstract

The Project GEOMAR led by ANR the French scientific research organisation, studied the archaeological and historical cultural evidence at lake Mariut which lies to the west of Alexandria. The project studied old maps of the area and focused on the water wells. By using modern Geographic information systems and technology, the project could identify 16 new archaeological sites.

### ملخص

سعى مشروع GEOMAR برعاية مؤسسة ANR التابعة للبحث العلمي الفرنسي دراسة الأدلة الثقافية والأثرية والتاريخية التي تركت في بحيرة مريوط الواقعة غرب الإسكندرية ، ودرس المشروع الخرائط القديمة للموقع وركز على منطقة آبار المياه ، باستخدام النظم الجغرافية الحديثة والتكنولوجيا ، تمكن المشروع من تحديد 16 موقعًا أثريًا جديدًا.

يعد مشروع إنشاء الخريطة الأثرية الكاملة لمنطقة بحيرة مريوط مشروعًا علميًا وبحثيًا تم وضعه بواسطة المركز الفرنسي للدراسات السكندرية بالاشتراك مع وزارة الآثار المصرية منسبًا على منطقة الإسكندرية وما حولها لما لها من تاريخ طويل. وقد تمت الموافقة على المشروع واعتباره جزء من برنامج البحث العلمي الفرنسي ANR والذي سمي بمشروع GEOMAR<sup>2</sup> ما بين عام 2013 و2019، بناءً على الخبرة التي اكتسبها المركز الفرنسي للدراسات السكندرية على مدار عدة سنوات في المنطقة. يهدف المشروع، الذي نسعى إلى استكماله خلال السنوات المقبلة، إلى إنشاء خريطة أثرية وبيئية كاملة لمنطقة بحيرة مريوط<sup>3</sup>، تتضمن نهجًا متعدد التخصصات يجمع ما بين علماء الآثار، علماء البيئة، متخصصي المساحة والخرائط والمؤرخين.

تشكل منطقة مريوط واجهة مائية تتميز بالتنقل ما بين البيئة الدلتاوية الزراعية في الشرق والبيئة الشبه صحراوية والصحراوية في الغرب. فمنذ تأسيس مدينة الإسكندرية تم استغلال الكثير من المساحات الخاصة بالبيئتين للأغراض الزراعية. تحتل "منطقة مريوط ذات القنوات" الجزء الشرقي من منطقة الدراسة، الواقعة على الطرف الغربي من حزام البحيرات في دلتا النيل، كانت تتم تغذية البحيرة بالماء عن طريق الفرع الكانوبي الغربي لنهر النيل وكذلك تغمر بمياه البحر المتوسط على فترات

<sup>1</sup> أخصائي مساحة وخرائط وباحث بالمركز الفرنسي للدراسات السكندرية، التابع للمركز القومي للدراسات العلمية بفرنسا.

<sup>2</sup> يتضمن هذا المشروع العلمي ثلاث شركاء من داخل المركز القومي للدراسات العلمية بفرنسا: المركز الفرنسي للدراسات السكندرية بالإسكندرية، مختبر الدراسات البيئية الوظيفية بتولوز ومختبر الدراسات البيئية الزمنية ببيزنسون.

<sup>3</sup> Shalaan et al. 2018

وينسب متفاوتة خلال عصر الهولوسيني<sup>4</sup>. أما "منطقة مريوط ذات الآبار"، وهو الجزء الغربي من منطقة الدراسة، فيعتبر هامشاً شبه صحراوي يتم توفير موارد المياه بها بواسطة طبقات المياه الجوفية، مع وجود مساهمة قليلة من خلال هطول الأمطار في فصل الشتاء.

تعتبر تلك المنطقة الأخيرة المحور الرئيسي لاهتمامنا ولأبحاثنا نظراً للنمو السريع الذي تتعرض له تلك المنطقة، وبالتالي الدمار للمناطق الأثرية<sup>5</sup>، مما يؤدي إلى فقدان التراث الإنساني والأثري بسرعة كبيرة.

الهدف الرئيسي من هذا البحث هو تمثيل اخر تطورات وضع العمل الحالي في مشروع GEOMAR، من ناحية، وإظهار مدى امكانات الدراسات الخرائطية ونظم المعلومات الجغرافية في خدمة علم الآثار، من ناحية أخرى.

### منطقة مريوط ورسم الخرائط

من خلال أقدم الخرائط المعنية بمنطقة مريوط، التي تم العثور عليها حتى الان، والتي رسمت ما بين القرنين السادس عشر والثامن عشر، نجد أن بحيرة مريوط كانت في الكثير من الاحيان يتم تمثيلها فقط كاسم مكتوب على هامش الخريطة دون الاهتمام بإظهار أبعادها أو توضيح مصادر مياهها المختلفة الآتية من نهر النيل أو من البحر الأبيض المتوسط أو من البحيرات الأخرى.

ذلك الإهمال يرجع لتأثير أهمية مدينة الإسكندرية بالنسبة لصانع الخريطة، حيث انها كانت تستوعب كل الاهتمام والعناية بتفاصيلها على حساب ما حولها، أو ربما كان ذلك بسبب زيارة أو إقامة المؤلف اثناء نقص المياه أو جفاف بحيرة مريوط، والتي تتزامن مع موسم ركود فيضان النيل<sup>6</sup>. ولذلك نجد في بعض الخرائط، تجاهل بعض المؤلفين تماماً لوجود هذه البحيرة.

تعود أقدم خريطة وجدت حتى الان والتي تُظهر اجمالي بحيرة مريوط إلى بداية القرن السادس عشر. يميل كل مؤلف إلى تمثيل البحيرة بطريقة مختلفة، بحيث يختلف شكل البحيرة وروابطها من خريطة إلى أخرى، حتى وان كانت تواريخ نشر الخرائط متقاربة. تحدث تلك الاختلافات نتيجة أن الخريطة مرآة لما يراه المؤلف، معتمدة على وجهة نظر المؤلف وأهدافه وخلفيته العلمية والفنية، وكذلك معتمدة على حالة بحيرة مريوط، سواء كانت جافة أو ممتلئة، ووفقاً لحالة نهر النيل أو الموسم الذي زار فيه المؤلف منطقة مريوط<sup>7</sup>.

أما مع نهاية القرن الثامن عشر وبداية القرن التاسع عشر، فقد بدأت تتمثل منطقة مريوط في الخرائط الحديثة بصورة أكثر دقة وأقرب الى الواقع. مستندة على التوقيع والمسح الطبوغرافي التفصيلي باستخدام الأجهزة المساحية الدقيقة، مما يجعلها أكثر أهمية بالنسبة للمنطقة الغربية من الدراسة "منطقة مريوط ذات الآبار" لأنها المنطقة ذات الطبيعة الصحراوية الصعبة والتي استمرت طبيعة هذه المنطقة ثابتة منذ القرن التاسع تقريباً دون تغيير الا قليلاً حتى النصف الأول من القرن العشرين عندما تم تنفيذ سياسة الدولة المصرية لإعادة تطوير المنطقة زراعياً وصناعياً<sup>8</sup>.

Flaux et al. 2012 <sup>4</sup>

Awad 2010 <sup>5</sup>

Flaux et al. 2012 <sup>6</sup>

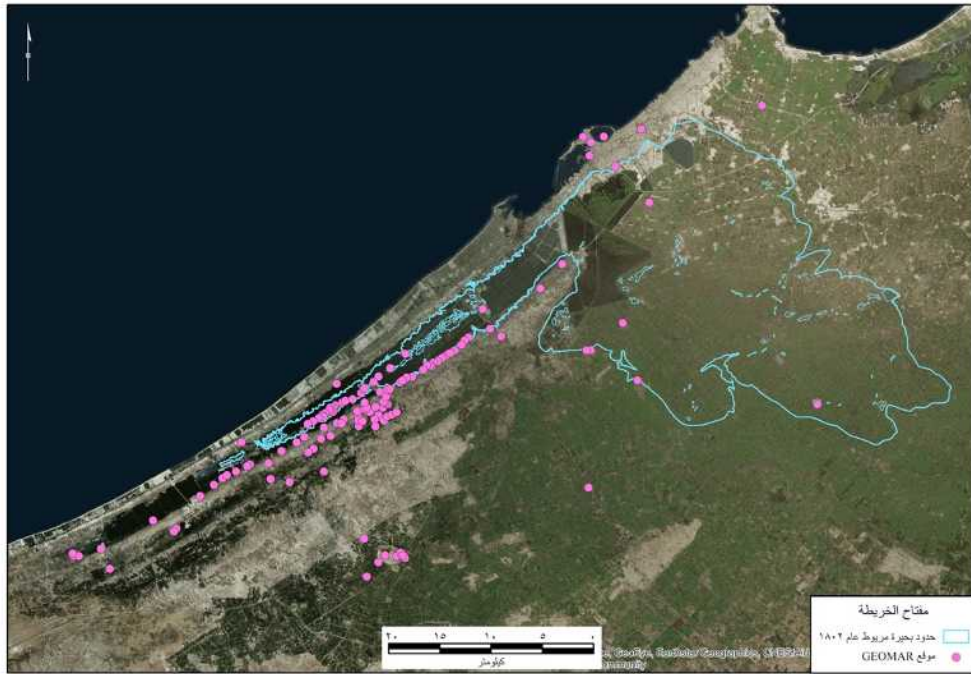
Awad 2009 للاطلاع على تلك الخرائط، <sup>7</sup>

Pichot 2017: 253 <sup>8</sup>

سيساعد تطبيق نظم المعلومات الجغرافية (GIS) على منطقة مريوط، استنادًا على العديد من الخرائط الطبوغرافية الدقيقة لمنطقة الدراسة بدأ من بداية القرن التاسع عشر وحتى احدث المرئيات الفضائية، بإنشاء أساس شامل للبيانات لإدارة التراث الأثري والتاريخي للمنطقة وبالتالي سيؤدي إلى امكانية عمل تحليل دقيق مكاني ووظيفي وزمني لجميع البيانات الجغرافية والاجتماعية والبيئية.

### مصادر بيانات نظم المعلومات الجغرافية

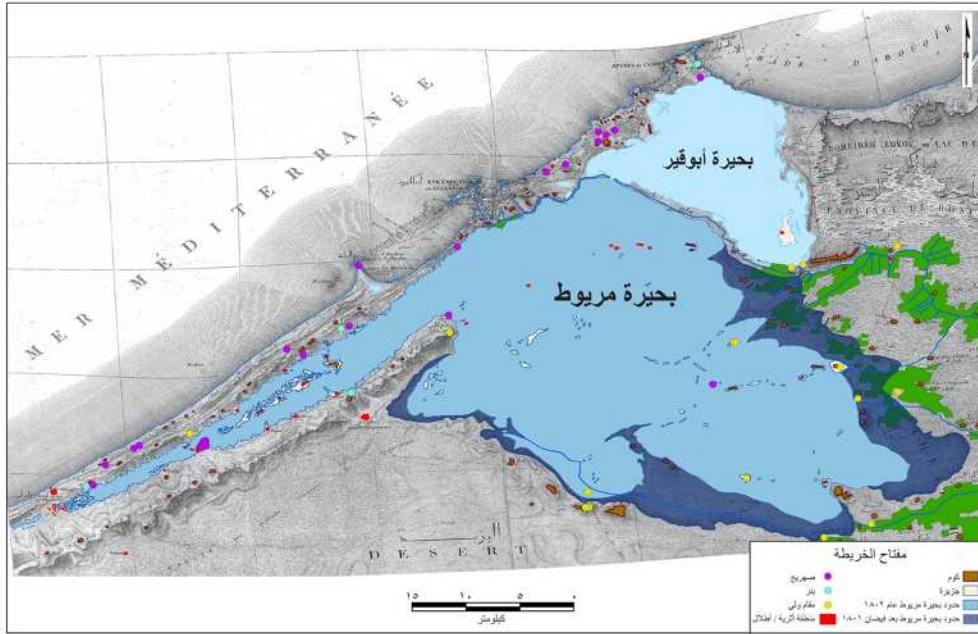
يستمد المصدر الأول لبيانات نظم المعلومات الجغرافية من المعلومات الأثرية التي يتم الحصول عليها من المصادر والمراجع والكتب و تقارير الحفائر الأثرية والمسح الأرضي. يتم جمعها في قاعدة بيانات تم انشاءها من خلال برنامج FileMaker Pro من أجل بناء أساس صلب لتطبيق نظم المعلومات الجغرافية. بين عامي 2013 و2019 تم تحديد 186 موقعًا، أغلبها عبارة عن مواقع أثرية، بالإضافة الى بعض مواقع أخذ العينات الأساسية للتربة المستخدمة للدراسات الجيومورفولوجية (الشكل 1).



الشكل 1 . خريطة المواقع الأثرية ومواقع أخذ عينات التربة للدراسات الجيومورفولوجية الخاصة بمشروع GEOMAR، مع تطابق حدود بحيرة مريوط لعام 1802 على مرئية فضائية حديثة.

أما المصدر الثاني لبيانات نظم المعلومات الجغرافية فهي الخرائط. تم اختيار الخرائط وفقًا لثلاثة معايير أساسية: دقة المسح الطبوغرافي، تاريخ النشر واجمالي المساحة المغطاة لمنطقة الدراسة.

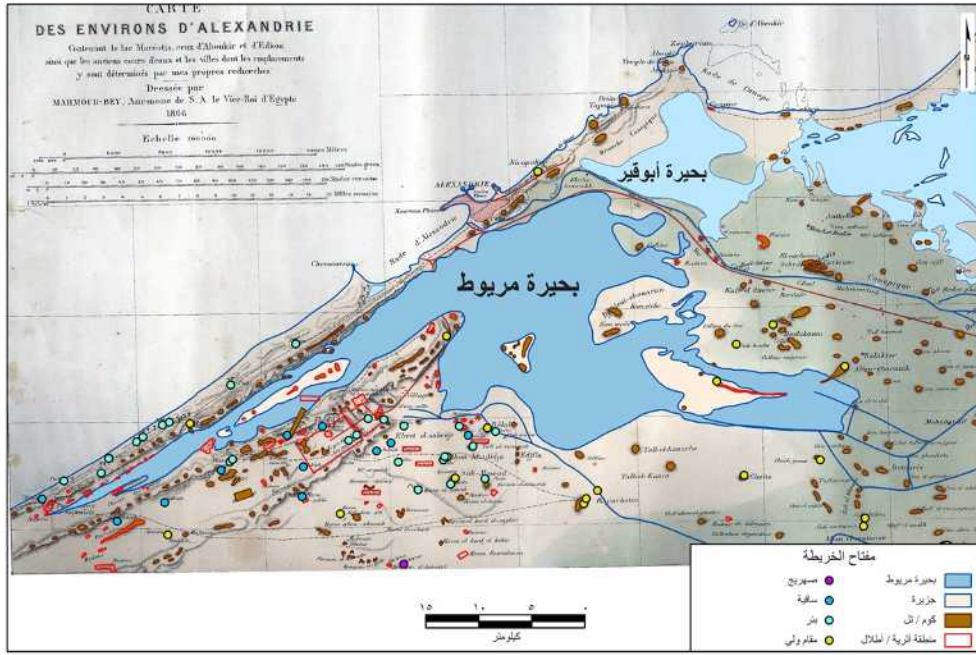
أول خريطة طبوغرافية تم اختيارها لهذه المنطقة هي خريطة "الاسكندرية" التي رسمت من قبل مهندسي الحملة الفرنسية بمصر<sup>9</sup> في الفترة ما بين عامي 1798 و1802 بمقياس رسم 1 إلى 100 000، هذه الخريطة هي أول خريطة لمنطقة بحيرة مريوط تم الاستعانة فيها بالأجهزة المساحية و تطبيق الأسس العلمية السليمة لرسمها، كما تكمن أهمية تلك الخريطة في انها حددت الحدود القصوى لبحيرة مريوط أثناء الفيضان الذي حدث في أبريل 1801 بعد أن قام الجيش البريطاني بقطع السد الفاصل بين بحيرة أبوقير و بحيرة مريوط. ونظرًا لأن الأخيرة تقع على مستوى أكثر انخفاضاً، فإن مياه بحيرة أبوقير قد تدفقت إلى حوض مريوط لتغمر كل الأراضي الواقعة تحت مستوى سطح البحر. أما بالنسبة لدراستنا، فقد تم الاستفادة من هذه الخريطة لتحديد مواقع التلال الأثرية (الأكوام)، المواقع الأثرية، مقامات الأولياء والشيوخ، الصهاريج والآبار (الشكل 2).



الشكل 2. خريطة منطقة بحيرة مريوط عام 1802. خريطة الأساس: "الاسكندرية"، لوحة رقم 37، من أطلس الخرائط الطبوغرافية لمصر، سلسلة كتب وصف مصر، عام 1818، مقياس رسم 1 إلى 100 000. بالإضافة الى البيانات الجغرافية المستخرجة باستخدام برنامج ArcGIS.

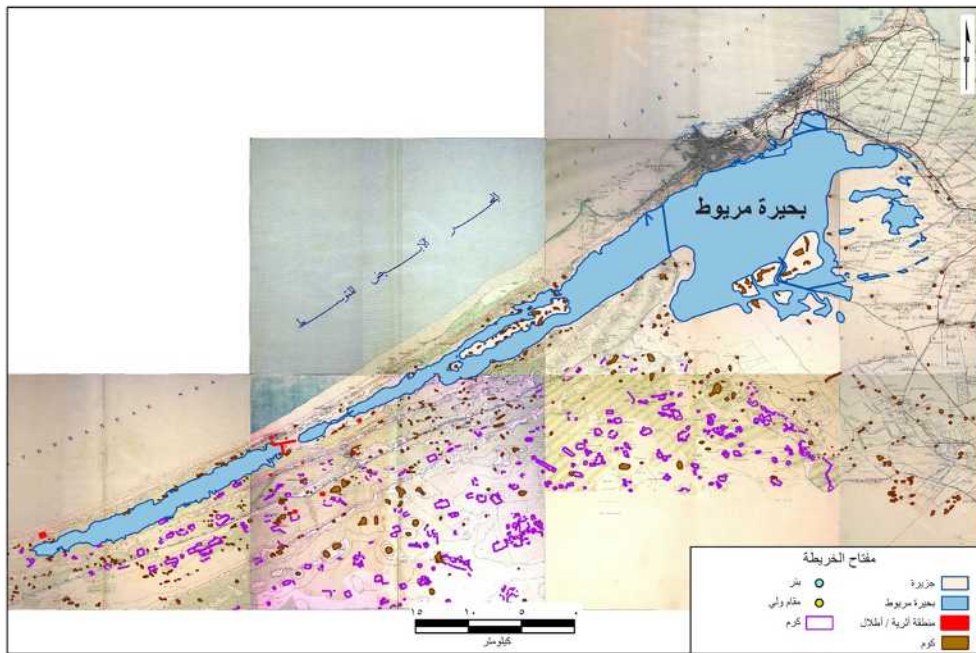
الخريطة الثانية التي تم اختيارها هي خريطة "ضواحي الاسكندرية"، التي صاغها محمود بك الفلكي عام 1866 بمقياس رسم 1 إلى 200 000. على الرغم من مقياس رسمها الصغير، الا أن هذه الخريطة تعتبر مفصلة ودقيقة للغاية فيما يتعلق بالأسماء الجغرافية وتحديد موقع وحجم المواقع الأثرية، التلال الأثرية (الأكوام)، الكروم، بالإضافة إلى مقامات الأولياء والشيوخ، الصهاريج، الآبار والسواقي (الشكل 3).

<sup>9</sup> الخريطة رسمت نتيجة للمسح الطبوغرافي للمنطقة من قبل جغرافي ومساحي الحملة الفرنسية في الفترة ما بين 1798 و1801. كما تم إضافة حدود بحيرة مريوط بعد حدوث الفيضان عام 1802 للخريطة، والتي مسحت طبوغرافيا عن طريق المهندس البريطاني مستر. تاويلاند، التابع لشركة الهند الشرقية والجيش البريطاني. (JACOTIN 1818: 79-84)



الشكل 3. خريطة منطقة بحيرة مريوط عام 1866. خريطة الأساس: "خريطة ضواحي الاسكندرية"، محمود بك الفلكي، عام 1866، مقياس رسم 1 الى 200 000. بالإضافة الى البيانات الجغرافية المستخرجة باستخدام برنامج ArcGIS.

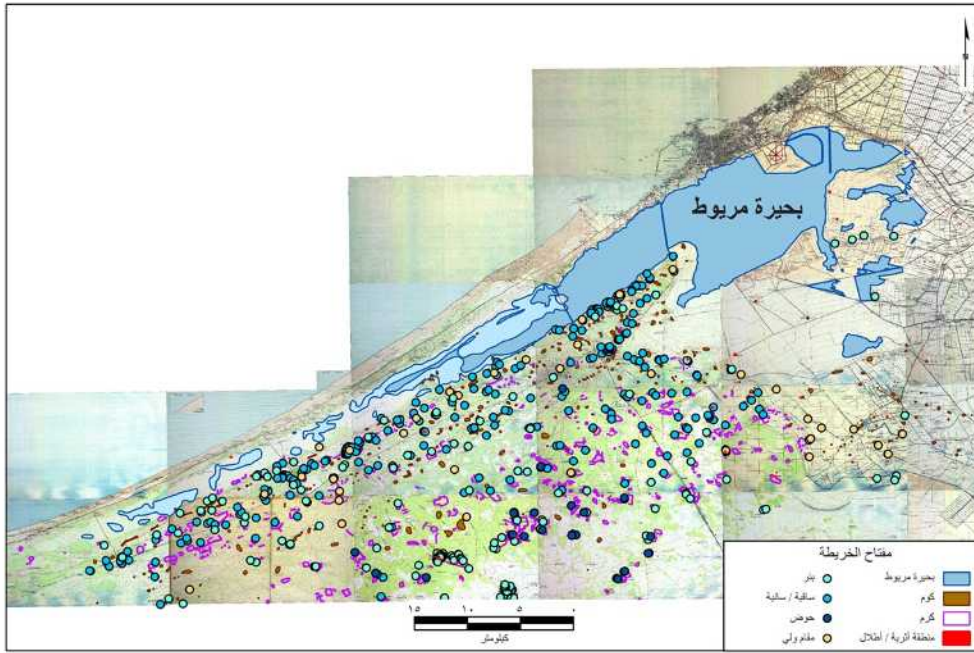
الخريطة الثالثة المستخدمة هي مجموعة خرائط أطلس مصر السفلى ذات مقياس رسم 1 الى 50 000، التي أصدرتها إدارة المساحة التابعة لوزارة المالية المصرية في عام 1914، ومن خلالها تمكنا من التعرف على مواقع الكروم، التلال الأثرية (الأكوام)، المواقع الأثرية، مقامات الأولياء والشيخ والأبار (شكل 4).



شكل 4. خريطة منطقة بحيرة مريوط عام 1914. خريطة الأساس: مجموعة الخرائط ذات مقياس 1 الى 50 000، أطلس مصر، الجزء الأول "مصر السفلى"، إنتاج مصلحة المساحة المصرية، عام 1914. بالإضافة الى البيانات الجغرافية المستخرجة باستخدام برنامج ArcGIS.

الخريطة الرابعة المستخدمة هي سلسلة الخرائط التي أنتجتها مصلحة المساحة المصرية في الفترة ما بين 1920 و1930، بمقياس رسم 1 إلى 100 000. كان الهدف من دمج هذه المجموعة الخرائطية في المقام الأول هو محاولة استكمال الجزء الجنوبي من منطقة الدراسة، التي لم يتم مسحها بمجموعة خرائط أطلس مصر السفلى عام 1914.

أما آخر الخرائط التي تم استخدامها في الدراسة فهي مجموعة الخرائط ذات مقياس رسم 1 إلى 25 000 التي أصدرتها مصلحة المساحة والتعدين المصرية في الأربعينيات من القرن الماضي. وتعتبر هذه المجموعة الخرائطية هي الأكثر دقة والتي تم العثور عليها خاصة بمنطقة الدراسة وتشكل مصدرًا مهمًا للمعلومات للتوقيع الدقيق للكروم، التلال الأثرية (الأكوام)، المواقع الأثرية، مقامات الأولياء والشيخ، الآبار والسواقي (الشكل 5).



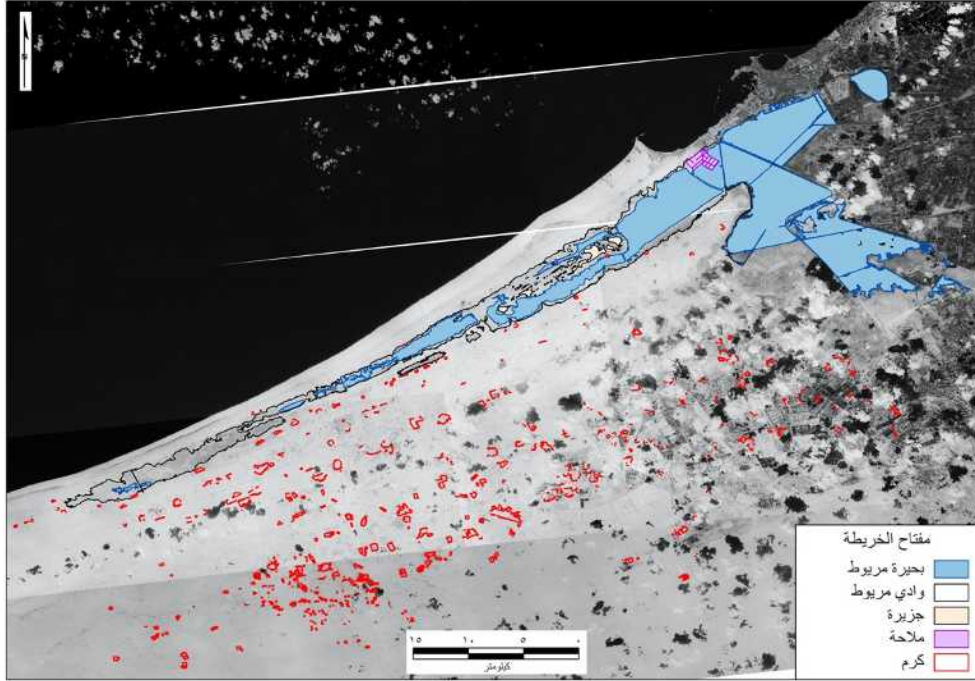
الشكل 5 . خريطة منطقة بحيرة مريوط عام 1940. خريطة الأساس: مجموعة الخرائط ذات مقياس 1 إلى 25 000، إنتاج مصلحة المساحة والتعدين المصرية، خلال فترة الأربعينيات. بالإضافة إلى البيانات الجغرافية المستخرجة باستخدام برنامج ArcGIS.

بعد المجموعة الخرائطية التي صدرت في الأربعينيات من القرن العشرين، أصدرت هيئة المساحة المصرية طبعة جديدة بنفس مقياس الرسم 1 إلى 25 000 في الفترة ما بين 1970 و1980. لكن لسوء الحظ، هذه المجموعة، التي من المفترض أن تغطي منطقة الدراسة بأكملها، لم تتوفر لنا بعد بشكل كامل. وبالتالي، كان لابد من العثور على طريقة أخرى للتعويض عن نقص وجود بيانات خرائطية لتلك الفترة.

تم توفير الحل من خلال المرئية الفضائية<sup>10</sup> CORONA التي يرجع تاريخ التقاط صورها في منطقة الدراسة إلى يوم التاسع من نوفمبر 1968 بدقة 1.8م / بكسل (شكل 6). وعند تحميل وتوقيع المرئية من المصدر، التي تكون على شكل شرائط

<sup>10</sup> تم تحميل المرئية الفضائية CORONA مجاناً في مارس 2015 من موقع مركز التقنيات المكانية المتقدمة CAST التابع لجامعة أركنساس الأمريكية. <http://corona.cast.uark.edu>

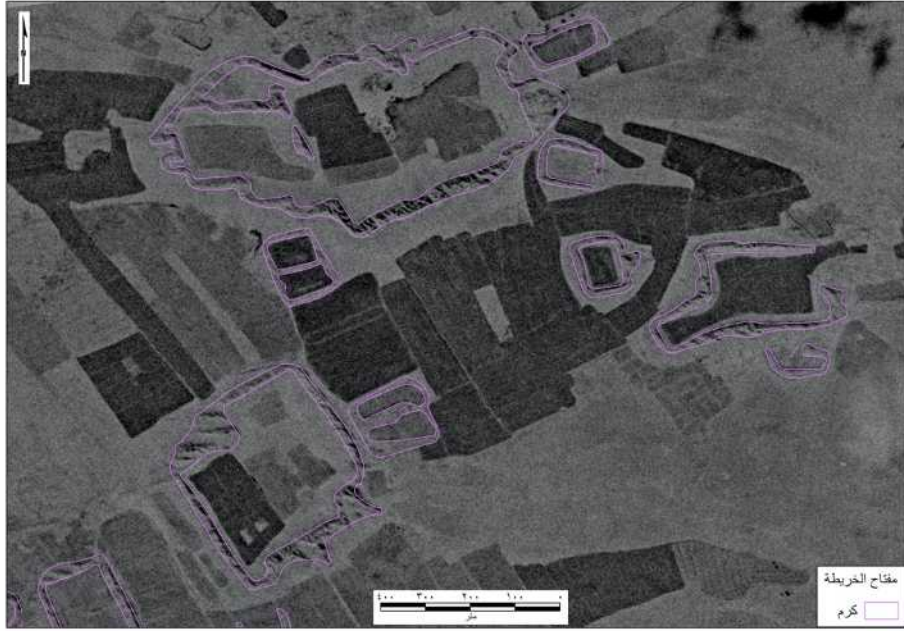
عرضية، ظهرت لنا في بعض المناطق فجوات بين كل شريط وآخر تصل اتساعها في بعض الأحيان الى 100م، لذا لزم الأمر أن نقوم بتصحيح احداثياتها عن طريق ربطها بمراجع جغرافية جديدة وأكثر دقة<sup>11</sup>.



شكل 6. خريطة منطقة بحيرة مريوط عام 1968. خريطة الأساس: المرئية الفضائية CORONA، مركز التقنيات المكانية المتطورة CAST، جامعة أركنساس الأمريكية، نوفمبر 1968. بالإضافة الى البيانات الجغرافية المستخرجة باستخدام برنامج ArcGIS.

بالرغم من ان هذه الصور تم استخراجها من شريط لوني واحد، الا اننا قد تمكنا من رسم حدود البحيرة بدقة، بالإضافة الى معظم استخدامات الأرض المختلفة بمنطقة بحيرة مريوط، مثل المناطق السكنية، المناطق الصناعية، الأراضي الزراعية، المحاجر، الطرق، الترعة والمصارف الرئيسية. علاوة على ذلك، تعتبر تلك المرئيات الفضائية ذات قيمة كبيرة للبحث الأثري لأنها تساعدنا على التعرف على الأشكال والأبعاد الدقيقة للكروم وتحديدتها، ومقارنتها مع الكروم المذكورة مسبقاً في مجموعات الخرائط المستخدمة في الدراسة (الشكل 7).

<sup>11</sup> تم تقليل متوسط مقدار الفجوات بين كل شريط وآخر، المقدر بأكثر من 100م، الى عدة أمتار فقط (5-10 أمتار)، بعد توقيع نقط مرجعية جديدة وتحسين دقة الاحداثيات الجغرافية لكل شريط على حدة، وذلك من خلال برنامج ArcMap عام 2016.



الشكل 7. صورة مقربة لشكل الكروم في منطقة بحيرة مريوط من خلال المرئية الفضائية CORONA، وتحديدًا بالرسم الرقمي باستخدام برنامج ArcGIS.

أما آخر مصدر للبيانات الخرائطية المستخدمة فهي المرئيات الفضائية SPOT<sup>12</sup> الملتقطة في عامي 2004 و2011. ترجع أهمية الاستعانة بتلك المرئيات إلى دراسة استخدام الأرض في منطقة بحيرة مريوط، إلا أنها ليست مفيدة في تحديد المواقع الأثرية ذات الأبعاد الصغيرة بسبب محدودية دقة الصورة، والتي تصل إلى 2.5 م / بكسل فقط.

تم تحديد ورسم البيانات الطبوغرافية والأثرية والتاريخية ذات الصلة من المجموعات الخرائطية الخمس ومن المرئيات الفضائية باستخدام برنامج ArcGIS.

يرجع اختيار البيانات المراد رسمها إلى عنصرين هامين، العنصر الأول يعتمد على طبيعة تلك البيانات وأهميتها في فهم تاريخ تطور المنطقة، والعنصر الثاني هو تكرار وجود الخرائط المختلفة للدراسة. يتم تحديد البيانات الأكثر أهمية بعد تبادل الآراء بين الخرائطين وعلماء الآثار.

تلعب البيانات المستخرجة من على الخرائط دورًا في إعادة تنظيم وفهم المنطقة بطريقة أكثر وضوحًا، وذلك بناءً على دراسة موقع ووظيفة كلا منها. لذا فقد أظهرت لنا الدراسة الخرائطية وجود العديد من البيانات الجغرافية المحددة من على الخرائط والمهمة في الدراسة الأثرية لمنطقة بحيرة مريوط:

الأكوام: "الكوم" عبارة عن تلال أثرية اصطناعية تكونت عبر العصور بفعل تراكم طبقات متتالية من الأطلال والأنقاض القديمة.

<sup>12</sup> قام المركز الفرنسي للدراسات السكندرية بشراء تلك المرئيات الفضائية من المركز القومي الفرنسي للدراسات الفضائية CNES، في إطار مشروع ISIS، وذلك عام 2014.

الكروم: "الكرم" كلمة عربية تعني العنب او مزارع العنب لإنتاج النبيذ<sup>13</sup>. تظهر الكروم في الطبيعية كمساحة واسعة تتخذ أشكال هندسية وقد تتألف من عدة حقول محاطة بمرتفعات رملية اصطناعية قليلة الارتفاع. مصطلح "الكرم" في دراسة أسماء المواقع الجغرافية المصرية هو سمة مميزة "لمنطقة مربوط ذات الآبار"<sup>14</sup>.

الآبار: الموضحة على الخرائط تكون آبارًا حديثة أو قديمة. يساعد وجودها في تحديد الطرق القديمة التي كانت تمر عبر المنطقة، كما قد تشير تجمعاتها بشكل مكثف في مكان معين إلى وجود مراكز سكنية قديمة كانت تتقاطع فيها تلك الطرق.

الأحواض: مذكورة في مجموعة خرائط 1920 و1940، ترجع أهميتها الى انها دليل على وجود آثار خاصة بصناعة النبيذ (خزانات التخمر أو أحواض الكبس) متصلة بشكل منهجي بالكروم<sup>15</sup>.

السواقي: تتكون "الساقية" من عجلة مائية مدفوعة بواسطة الجر الحيواني لرفع المياه من الآبار لري الأراضي الزراعية أو لتوفير مرافق الاستحمام في الحمامات الرومانية القديمة. ونجد في "منطقة مربوط ذات الآبار"، أنه أحياناً ما يتم استبدال مصطلح "ساقية" بكلمة "سانية"، وهي كلمة من أصل بربري تحمل نفس المعنى والوظيفة<sup>16</sup>.

مقامات الأولياء: عبارة عن قبر ذات شكل مميز لشيخ مسلم أو رجل ذو كرامات (ولي) تم تكريمه أو تقديسه عند وفاته من قبل سكان المنطقة ببناء مقامه على مناطق مرتفعة نسبياً حتى يكون ظاهراً للجميع، وهنا تكمن أهمية دراسة تلك المقامات من الناحية الأثرية حيث ان سكان المنطقة لم يجدوا افضل من الكوم كموقع لبناء مقامات للأولياء وللشيوخ، وكنوع من التبرك بهذا الولي، يفضل السكان ان يدفن موتاهم بجانب مقامه، لذا نجد العديد من الأكوام الأثرية قد تحولت الي مقابر كاملة للمسلمين، مما ساهم في الحفاظ عليها بصورة أو بأخرى. وقد انتشرت ظاهرة بناء المقامات خلال القرن الثامن في مصر خلال العصر الفاطمي وأيضاً مع دخول البدو و استقرارهم في منطقة بحيرة مربوط.

المناطق الأثرية: بعض الخرائط تم الإشارة الى المواقع الأثرية تحت مصطلح "أطلال" وقت اصدار الخريطة.

### الصعوبات المرتبطة بالخرائط

لقد واجهنا العديد من التحديات أثناء إعداد المجموعات الخرائطية والمرئيات الفضائية كي تكون خرائط الأساس لنظم المعلومات الجغرافية لمنطقة الدراسة:

أولى تلك الصعوبات كانت مشكلة ربط الخرائط الطبوغرافية القديمة جغرافياً بنظام الاحداثيات الجغرافية الموحد (WGS84)، مثل خرائط 1801 و1866، والتي تطلبت تحديد الكثير من النقاط المرجعية في كل خريطة، وذلك من أجل الحصول على نتيجة دقيقة تسمح بمقارنتها بالخرائط الحديثة، حتى لو تم تشويهِ شكل الخريطة الناتجة. كما انه كان لا بد من تحويل كل الأنظمة الجغرافية لباقي الخرائط الأحدث وتوحيدها إلى نظام جغرافي واحد هو النظام العالمي (WGS84) كي يسمح لتطابق

<sup>13</sup> Décobert 2002: 139

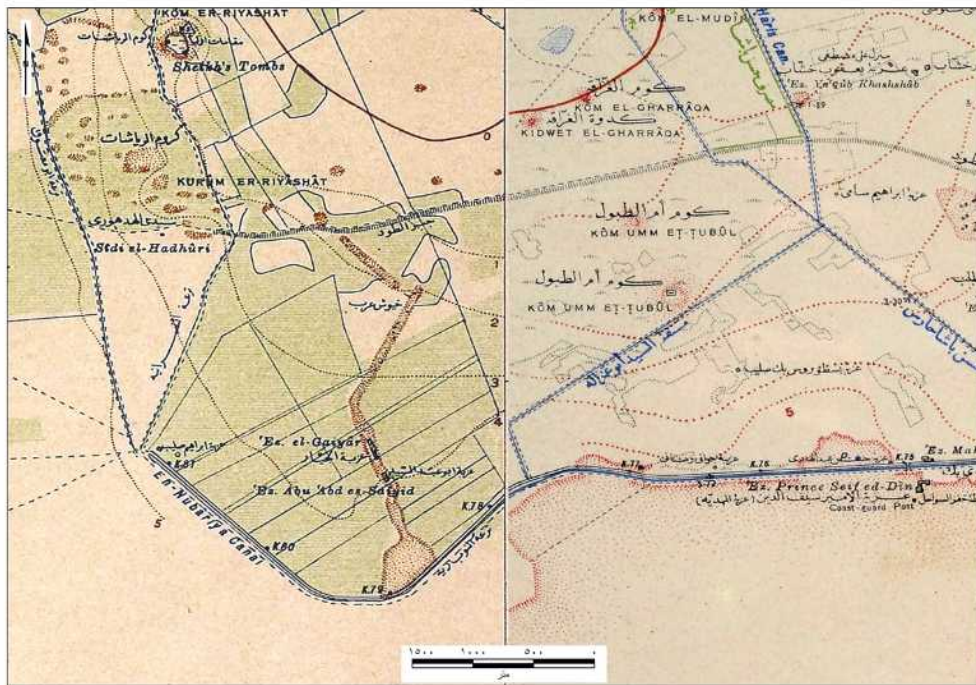
<sup>14</sup> تم التعرف على أكثر من 300 كرم حتى الان في منطقة بحيرة مربوط.

<sup>15</sup> Pichot 2017: 222

<sup>16</sup> Pichot 2017: 220-221

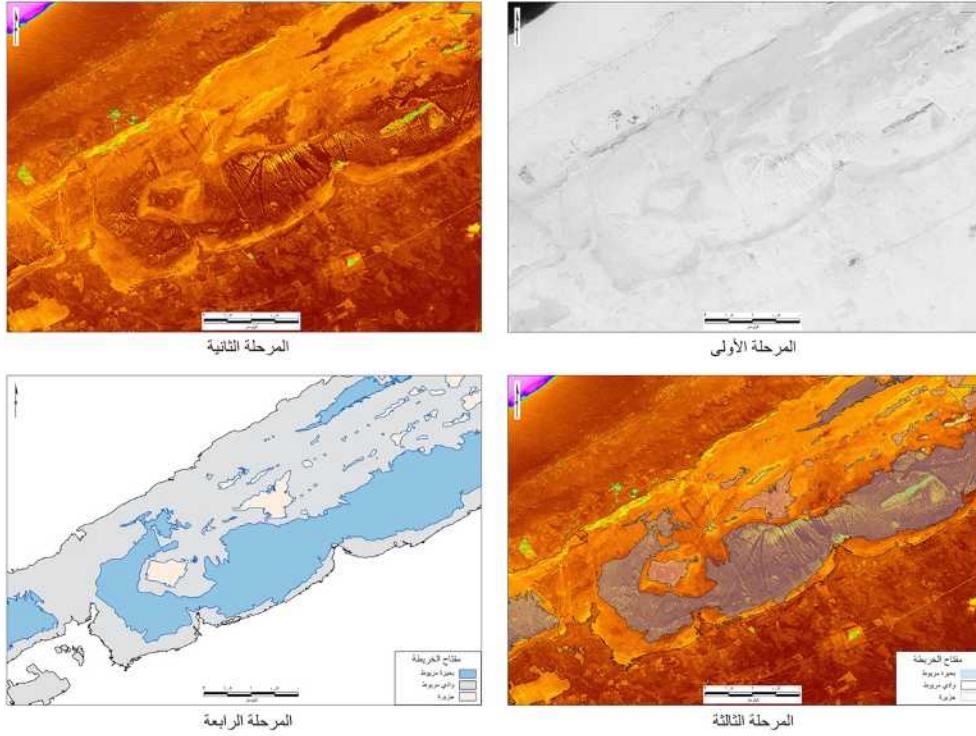
جميع الخرائط الطبوغرافية القديمة منها والحديثة، إلا أنه أثناء القيام بعملية التحويل، قد ينتج عنه بعض الفوارق بخصوص الموقع الحقيقي لبعض البيانات الجغرافية.

أيضا، أدى وجود تباين كبير لمقياس الرسم الخاص بكل مجموعة خرائطية الى وجود تباين في دقة الرسم الرقمي للبيانات الجغرافية، خاصة ذات المساحة الصغيرة منها، مثل المواقع الأثرية، الأكوام والكروم. كما نجد أحيانا أنه في المجموعة الخرائطية الواحدة، لم يلتزم بعض الخرائطين المسؤولين عن رسم واعداد بضع خرائط بتطبيق النظام العام أثناء تمثيل ورسم البيانات الجغرافية للمجموعة الخرائطية اجمالا، كمثال (الشكل 8) لخريطين من المجموعة الخرائطية لعام 1914، نجد الاختلافات في طريقة تمثيل الأكوام: فعلى الخريطة اليمنى تم تمثيلها كنقاط حمراء مشتتة بدون تحديد؛ أما على الخريطة اليسرى فرسمت كمساحات محددة بنية اللون ومنقطعة. علاوة على ذلك، ظهرت مساحات خضراء تمثل الأراضي الزراعية الموسمية المعتمدة على هطول الأمطار على الخريطة اليسرى وغير متواجدة على الخريطة اليمنى، أما بالنسبة لتمثيل المناطق الصحراوية فتظهر أسفل الخريطة اليمنى بنقاط ترمز لوجود الرمال، في حين أن هذا التمثيل لا يظهر من الأساس على الخريطة اليسرى.



الشكل 8. مقارنة بين خريطين متجاورتين من نفس المجموعة الخرائطية ذات مقياس الرسم 1 الى 50 000، انتاج عام 1914، خريطة "الغيتة" على اليمين وخريطة "ايكيني مريوط" على اليسار.

في حالة المرئية الفضائية CORONA، للتغلب على صعوبة رسم البيانات الجغرافية من هذه الصور الغير ملونة، قمنا بإعادة تصنيف ألوان التدرج الرمادي الأصلي للمرئية من خلال برنامج ArcGIS إلى 32 طبقة ملونة: يمثل كل لون احدي البيانات الجغرافية، مما أدى الى توفير رؤية أفضل و أكثر وضوحا أثناء إجراء عملية الرسم والتحويل الرقمي (شكل 9).



شكل 9 . مراحل التحضير والرسم الرقمي للمرئية الفضائية CORONA من خلال برنامج ArcGIS.

### تأسيس قاعدة نظم المعلومات الجغرافية

تم ادخال كل بيان جغرافي تم رسمه رقميا من المجموعات الخرائطية المختلفة في جداول خاصة بنظم المعلومات الجغرافية. وبالتالي، فإن كل بيان جغرافي أصبح يحمل رقم هوية، اسم (إذا كان مكتوبا على الخريطة)، إحداثيات جغرافية، منسوب (إذا كان موضعا على الخريطة)، أبعاد طولية وعرضية، اجمالي المساحة المسطحة بالإضافة إلى خانة للملاحظات الخاصة و خانة أخرى لتحديد الروابط المختلفة مع البيانات الجغرافية الأخرى، على سبيل المثال الروابط بين الأطلال والمواقع الأثرية مع السواقي، الابار، الأكوام أو الكروم.

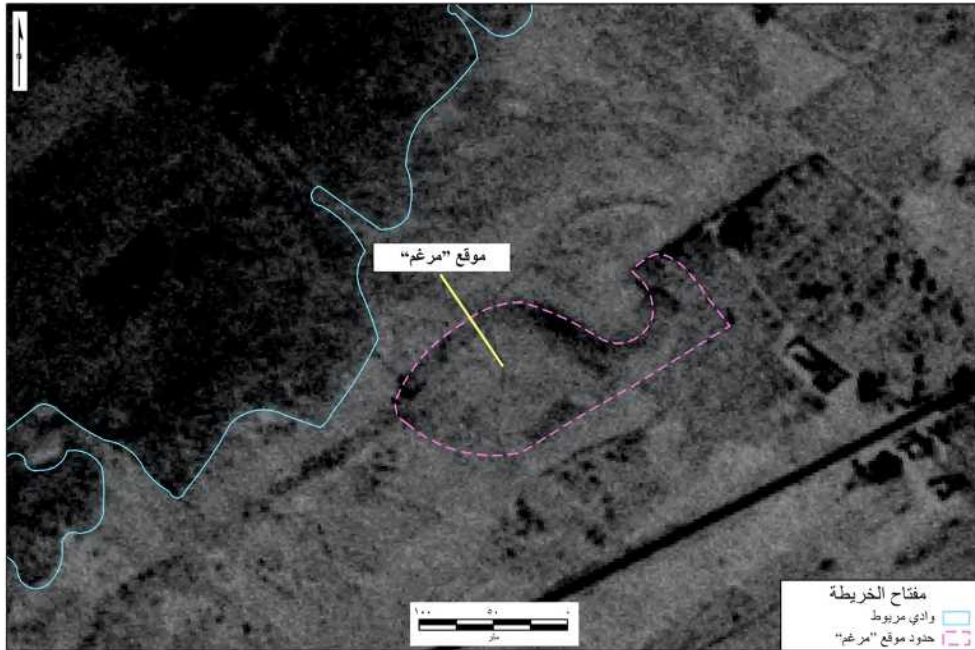
في اطار مشروع GEOMAR منذ عام 2016، تمت الزيارة الميدانية للكثير من تلك البيانات الجغرافية، والتي تم رسمها ودمجها مسبقا في نظم المعلومات الجغرافية، ويتم البحث عنها بمساعدة احداثياتها المستخرجة مسبقا من على الخرائط. أثناء البحث الميداني، يتم تحديد أبعاد الموقع بجهاز التوقيع العالمي GPS، وكذلك توقيع المباني الأثرية بدقة مع تصويرها ووصف حالتها الراهنة وقت الزيارة، كما يتم دراسة تاريخ الموقع بشكل ممنهج من خلال دراسة الفخار وشكل الأحجار ان وجد على الطبقة السطحية بالموقع أو عن طريق أخذ عينات للتربة وتحليلها في المعامل الخاصة. ثم يتم تسجيلها كموقع من مواقع GEOMAR الجديدة (GMR)، ومن خلال التعرف على ابعادها الحقيقية المستخرجة من البحث الميداني يمكننا دراسة تطورها عبر الزمن من خلال الخرائط والمرئيات ذات الدقة العالية المحفوظة على موقع Google Earth.

## النتائج الأولية وإمكانات دراسة رسم الخرائط

لقد أتاحت لنا الدراسة الخرائطية أن نتابع تطور بحيرة مريوط عبر الزمن من خلال رسم حدود البحيرة عبر جميع الخرائط المتاحة منذ عام 1801 وحتى آخر مرئية فضائية من SPOT لعام 2011. وقد أظهرت لنا نتيجة هذه الدراسة أن مساحة بحيرة مريوط قد انخفضت بصورة كبيرة من 980 كم مربع في عام 1801 إلى 180 كم مربع فقط في عام 2011، أي أنها فقدت ما يقرب من 82% من مساحتها خلال قرنين فقط<sup>17</sup>.

يمكن إعطاء ثلاث أمثلة لإظهار أهمية وجدوى دراسة الخرائط والمرئيات الفضائية في علم الآثار:

موقع مرغم (GMR0002): تم اكتشاف كوم كبير في الثمانينيات من قبل جان إيف إمبرور وموريس بيكون<sup>18</sup> وتم وصفه كمكب لمخلفات ورشة فخار AE4، وكان قد تم التنقيب به جزئياً في عام 1988 بواسطة وزارة الآثار. تم تقدير مساحة الكوم في ذلك الوقت بحوالي هكتار واحد (10 آلاف متر مربع) وارتفاع يصل إلى حوالي 10 أمتار. إلا أنه خلال زيارة للموقع في عام 1998، تبين أنه لم يتبق منه سوى عُشر الكوم الأصلي. وفي زيارة أخيرة عام 2013، كان الموقع قد اختفى تماماً. وللأسف لم نتمكن من العثور على أي إشارة إلى هذا الموقع على خرائط الدراسة، إلا أنه ومن خلال المرئية الفضائية CORONA، عن طريق تقريب الصورة وتغيير تباين الألوان، تمكنا من رصد هذا الكوم الكبير من خلال اكتشاف سطح لبيان جغرافي أعمق عما يحيطه و أيضاً من خلال وجود ظلال لمسطح ذات ارتفاع في الجزء الشمالي منه والتي نشأت بفعل زاوية ضوء الشمس وقت النقاط المرئية الفضائية. ساعد هذان العاملان على تحديد أبعاد الكوم بدقة كما هو موضح في (الشكل 10)، وكذلك حساب المساحة الاجمالية، وهو ما يتماشى مع تقدير إمبرور في الثمانينيات.



الشكل 10. تحديد موقع GMR0002 "مرغم" من خلال المرئية الفضائية CORONA.

Awad 2018: 42 <sup>17</sup>

Empeur & Picon 1998: 85 <sup>18</sup>

موقع تبة سويحة (GMR0001): الذي تم التنقيب عنه من قبل وزارة الآثار في نهاية الثمانينيات وبداية التسعينيات، أظهرت الدراسة الأثرية عن وجود ورشة فخار AE3 يرجع الى العصر الروماني وكذلك حمامات رومانية ترجع الي العصر الروماني المتأخر. من خلال الدراسة الخرائطية للموقع، لم نجد أي أثر للموقع سوى على خريطين، الأولى مثلت ككوم متوسط الحجم على خريطة عام 1914، وفي الثانية، على خريطة الفلكي لعام 1866 (الشكل 11)، ظهر لنا ان الموقع الحالي لا يمثل سوى جزء صغير من أطلال لمنطقة أثرية كبيرة سميت على الخريطة باسم "المدينة"<sup>19</sup>، بمساحة تصل الى 100 فدان. وعند وضع حدود تلك المنطقة الأثرية الكبيرة على Google Earth أو على مرئية فضائية حديثة، نستطيع بسهولة تحديد المساحات والأراضي الفارغة والتي لم يتم استغلالها كي تصبح مناطق محتملة للتنقيب الأثري مستقبلا.



الشكل 11. المناطق المحتملة للتنقيب والكشف الأثري في المستقبل حول موقع GMR0001 "تبة سويحة"، المستنتجة من تطابق حدود أطلال "المدينة" المستخرجة من خريطة محمود الفلكي عام 1866 على مرئية فضائية حديثة.

جزيرتي مريوط الصغيرتين (GMR0119 - GMR0120): فيعتبرنا مثالاً آخر لكيفية الاستفادة من استخدام المرئية الفضائية CORONA. فخلال المسح الميداني GEOMAR لعام 2016، قمنا بزيارة هاتين الجزيرتين الصغيرتين الواقعتين في حوض شبه جزيرة ماريا، وجدنا بها الكثير من أطلال لمباني أثرية مثيرة للاهتمام.

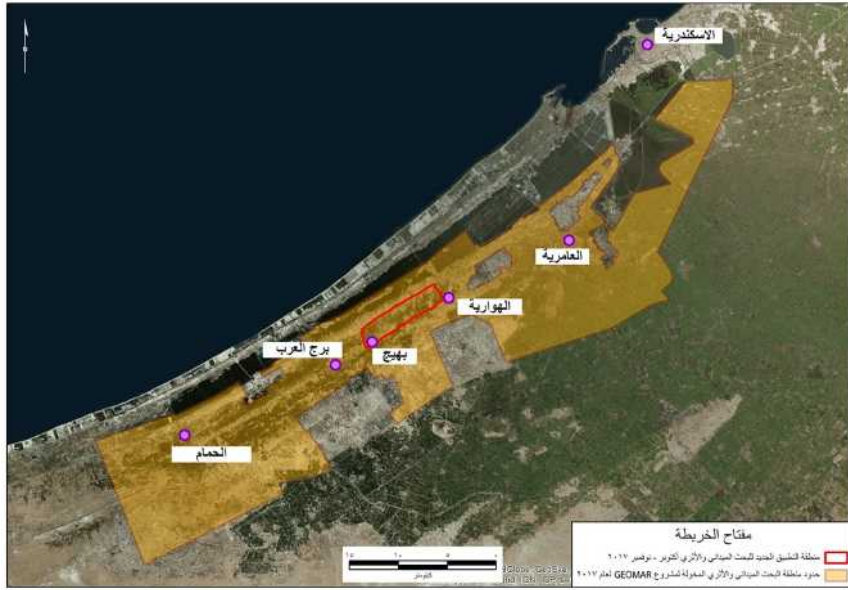
وبمقارنة حدودها الفعلية مع حدودها لعام 1968 على مرئية CORONA، نجد أن تلك الجزر ليست الا بقايا لجزيرتين أكبر بكثير، فالجزيرتين الشرقية والغربية لا تمثلا اليوم سوى 2% و 43% فقط على التوالي من حجمهما في عام 1968، أما الباقي فقد تم غمره بمياه بحيرة مريوط. أما اذا عكسنا العملية ووضعنا حدود هذه الجزر القديمة الكبيرة على المرئيات الفضائية الحديثة، فيمكننا اكتشاف بعض المناطق التي لا تزال موجودة وتعتبر جزء من الجزيرة القديمة مثل ما نلاحظه في الجزء الشمالي الشرقي للجزيرة الشرقية والتي ينبغي زيارتها وضمها لحدود موقع الجزيرة الصغيرة الشرقية GMR0120 (الشكل 12).



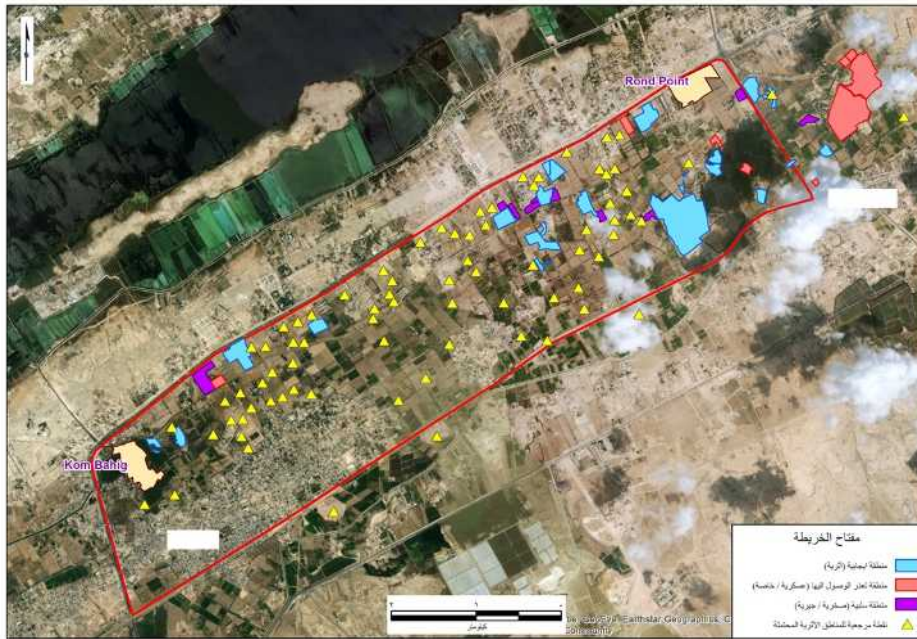
الشكل 12. خريطة مقارنة ما بين حدود الجزيرة الصغيرة الشرقية لبحيرة مريوط GMR0120 في حوض شبه جزيرة ماريا لعام 2016 مع حدودها لعام 1968، والمستخرجة من المرئية الفضائية CORONA.

### المسح الميداني والأثري عام 2017

في إطار مشروع GEOMAR، تم الحصول على موافقة وزارة الآثار منذ عام 2017 على عمل المسح الميداني والأثري في مساحة أكبر عما كانت في السنوات السابقة وذلك بجنوب بحيرة مريوط، مع تجنب جميع المناطق العسكرية والصناعية (الشكل 13). لذا اتبعنا طريقة جديدة للبحث الأثري أثناء حملة أكتوبر - نوفمبر 2017، وذلك بتحديد منطقة بجنوب بحيرة مريوط من خلال موقع Google Earth، تبلغ مساحتها 18 كم مربع، وتقع المنطقة ما بين قرية الهوارية شرقا وقرية بهيج غربا، وتحدها من الشمال طريق الاسكندرية - برج العرب ومن الجنوب خط سكة حديد الاسكندرية - مطروح، ثم دراسة تلك المنطقة خرائطيا بوضع وتطابق المجموعات الخرائطية المختلفة على المنطقة ومحاولة البحث عن أي مؤشرات محتملة لبيانات جغرافية ذات الاهتمام الأثري، مثل الكروم، الأكوام، الآبار، السواقي ومقامات الأولياء. وبالفعل، تم تحديد هذه المواقع المحتملة المستخرجة من الخرائط المختلفة، ثم تحويلها ورفعها على موقع Google Earth لدراسة ما ألت اليه تلك المواقع في الوقت الحالي. كما ساعدت دراسة المرئيات الفضائية المتواجدة على Google Earth منذ عام 2004 للمنطقة بالتفصيل على العثور على مواقع أثرية أخرى محتملة لم تظهر على الخرائط قيد الدراسة (ظهرت كلون مختلف أو كشكل غير اعتيادي للمناطق غير الحضرية) وبالتالي تمت إضافتها إلى باقي النقاط والمؤشرات الأثرية المحتملة.



الشكل 13. حدود منطقة البحث الميداني والأثري لمشروع GEOMAR المصرح بها من قبل وزارة الآثار منذ عام 2017، مع تحديد منطقة التطبيق الجديد للبحث الميداني والأثري بها خلال حملة أكتوبر - نوفمبر 2017.



الشكل 14. منطقة تطبيق البحث الميداني والأثري GEOMAR لعام 2017، الناتج عنه الكشف عن 16 موقع أثري جديد.

تلك الطريقة الجديدة في البحث الأثري وفرت لنا 126 نقطة مرجعية للمناطق الأثرية المحتملة التي لا تزال ظاهرة على المرئيات الفضائية الحديثة (الشكل 14). ومنها خلال حملة عام 2017، تم زيارة 38% من تلك النقاط: أثبتت أكثر من نصف النقاط المحتملة (58%) أنها كانت إيجابية (أي تم العثور على بقايا و مباني اثرية بها)، وأقل من ربعها (23%) جاءت سلبية (مناطق صخور طبيعية أو تلال جيرية)، كما تعذر الوصول الى الباقي (19%) لأنها تتبع لمناطق عسكرية

أو تعتبر ممتلكات خاصة. والمحصلة النهائية كانت ضم 16 موقع أثري جديد ودمجها في خريطة GEOMAR الأثرية لمنطقة بحيرة مريوط.

في النهاية، نستطيع أن نقول أن البحث الخرائطي يمكنه المساهمة بصورة أساسية في الدراسة الأثرية والتاريخية بشكل عام. وعلى الرغم مما نواجهه من صعوبات سواء على صعيد البحث الخرائطي أو المسح الميداني والأثري. إلا أننا نعتزم الاستمرار في تلك الدراسة والبحث خلال الأعوام التالية واستكمال الخريطة الأثرية لبحيرة مريوط.

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## المواقع الأثرية فى وادى الطميلات

### Archaeological Sites in Wadi Tumilat

Mustafa Nour el-Din

#### Abstract

Wadi el Tumilat is located at the West side of the Gulf of Suez, beginning from a village called El Abassa until Ismalia, a distance of about 52km. Its importance comes from a reference in the Bible when it was called the land of Gosan or Goshen. Many archaeological surveys have been made in the Wadi el Tumilat and they identified about 71 sites, of which only 42 had archaeological material. This paper divides the sites into three groups: the first group has 39 sites and are the sites under the complete control of the SCA; the second group of sites have been given to the inhabitants; the third group lists the archaeological sites that have been mentioned before in references.

#### ملخص

يقع وادى الطميلات على الجانب الغربى لخليج السويس ويبدأ من قرية العباسة حتى الإسماعيلية لمسافة حوالى 52 كم 'ترجع أهميته من خلال الإشارة له فى التوراه حيث أشير إليه بإسم أرض جاسان أو جوشن. جرت العديد من أعمال السح الأثرى لوادى الطميلات وتم الكشف عن حوالى 71 موقع فقط يحتوى منهم 42 موقع على قطع أثرية.

تحاول هذه الورقة البحثية تقسيم هذه المواقع إلى مجموعات 'المجموعة الأولى تضم 39 موقع تحت إدارة الآثار بالكامل والمجموعة الثانية تم مسحها أثريا وتم تسليمها للأهالى 'والمجموعة الثالثة هى تلك المواقع الأثرية التى وردت عنها إشارات قديمة.

#### أولاً: مواقع القسم الشرقى

وادى الطميلات هو وادٍ طبيعى طوله 52كم وعرضه يتراوح بين كيلومترين وتسعة كيلومترات, وهو عبارة عن اخدود من الدلتا إلى خليج السويس بين طبقة من الرمل والحصى ترجع لعصر البلايستوسين<sup>1</sup> 'إن ما يعرف حالياً بوادى الطميلات هو ارض خصبة بفعل شق ترعة الإسماعيلية لتوصيل المياه النقية لعمال حفر قناة السويس ( 1859 - 1869 م) ويقع فى الحدود الإدارية لمحافظة الإسماعيلية عدا قرية العباسة فتتبع محافظة الشرقية, وتقع قرية العباسة ومدن التل الكبير, القصاصين, أبو صوير, الإسماعيلية وما يتبعها من قرى وتجمعات سكنية فى حوض الوادى القديم أو على أطرافه<sup>2</sup>. يمتد وادى الطميلات من العباسة غرباً حتى الإسماعيلية شرقاً, وتنتشر المواقع الأثرية بطول الوادى وإن تركزت على حافته الجنوبية, ومن الشرق تمتد تلك المواقع حول مصبات الوادى وهى بحيرة التماسح ( شرق - جنوب شرق) وبحيرة البلاح (شرق - شمال شرق) حيث تعتبر بحيرة البلاح جزءاً من وادى الطميلات<sup>3</sup>. وقد أثرت أعمال التنمية على طبوغرافيا الوادى, حيث زاد الإستيطان البشرى ونمت عملية الزراعة واستصلاح أراضي الوادى, مما أدى إلى ضياع كثير من شواهد الإستيطان القديم<sup>4</sup>.

<sup>1</sup> Redmount 1989:18

<sup>2</sup> مصطفى نور الدين 2017: 11

<sup>3</sup> مصطفى نور الدين 2019: 26

<sup>4</sup> هشام حسين 2013: 59

حظى وادي الطميلات باهتمام الدارسين أواخر القرن التاسع عشر والقرن العشرين بهدف ديني وتاريخي وهو تحقيق الأماكن التي وردت في التوراة ومنها جاسان أو جوشن فقد ذكر الإسم في التوراة 11 مرة حيث ورد في سفر التكوين 9مرات، وورد في سفر الخروج مرتان، ويرى لينانت دى بلفوند وكليدا أن وادي الطميلات هو أرض جاسان<sup>5</sup>، بينما يرى نافيل ورت وروبينسون وادي الطميلات جزء من أرض جاسان<sup>6</sup>. كانت أهمية أرض جاسان في شرق الدلتا ترجع إلى شهرتها كأرض للمراعى، بالإضافة إلى موقع الوادي الإستراتيجي في مدخل مصر الشرقي<sup>7</sup>.

وقد قامت عدة بعثات بأعمال مسح أثرى في وادي الطميلات، ففي عام 1930 قامت بعثة ألمانية<sup>8</sup> بمشروع للمسح، وفي عام 1977 قامت بعثة المجلس الأعلى للآثار بمسح أثرى للوادي<sup>9</sup>، ثم خلال الفترة من 1977 حتى ( الأثرى 1983 قامت بعثة كندية بأكثر من مشروع لمسح الوادي أهمها بعثة عام 1983 بدراسة ومسح عدد 71 موقع<sup>10</sup> . وخلصت النتائج إلى شواهد أثرية مؤكدة في 42 موقعاً بالإضافة إلى موقعي المكفر وأبو نشابة.

حدد محمد الحنجوري التلال والمواقع الأثرية بوادي الطميلات وأحساها بترتيب جغرافي بداية من الغرب<sup>11</sup>، كما خصص خالد الطلي الفصل الرابع من رسالته للمواقع الأثرية بالإقليم الثامن<sup>12</sup>، وقد حدد التلال وأسمائها بدون ترتيب جغرافي ولكن على ما يبدو وفقاً لأهميتها من وجهة نظره، ونلاحظ بعض الاختلافات فيما ورد في كلا الرسالتين رغم أن الفاصل الزمني بينهما عامين فقط.

وفي حصرنا التالي لمواقع الآثار بوادي الطميلات تم تقسيم المواقع الأثرية إلى ثلاثة مجموعات، المجموعة الأولى للمواقع تحت إشراف وزارة الآثار، المجموعة الثانية للمواقع التي أجريت بها أعمال تنقيب وخرجت من عداد المناطق الأثرية، المجموعة الثالثة للمواقع التي وردت بتقارير أثرية وسيراعي البدء من الغرب في توصيف المواقع.

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<sup>5</sup> Linant de Bellefonds 1872, Clédat 1923: 68

<sup>6</sup> 1887: 24 Naville 1887:24; Ritt 1869, Robinson 1865

<sup>7</sup> محمود عمر 2010: 195

<sup>8</sup> Schott et al., 1932

<sup>9</sup> محمد الحنجوري 1977

<sup>10</sup> Redmount 1989: 71

<sup>11</sup> محمد الحنجوري 2003: 15

<sup>12</sup> خالد الطلي 2001

جدول رقم 1: المجموعة الأولى

المواقع تحت إشراف وزارة الآثار

م	رقم الموقع	اسم الموقع	الموقع الجغرافي
1	1 - 1	الشفافية	مركز أبو حماد
2	2 - 1	البحر	قرية الظاهرية
3	3 - 1	منصور عوض	قرية الملاك
4	4 - 1	التل الصغير	قرية أبو عاشور
5	5 - 1	الجزيرة الخضراء 1	قرية الجزيرة الخضراء
6	6 - 1	الجزيرة الخضراء 2	قرية الجزيرة الخضراء
7	7 - 1	حسن داوود	قرية القصاصين القديمة
8	8 - 1	ابونشاب	قرية القصاصين القديمة
9	9 - 1	تل الحطب	قرية القصاصين القديمة
10	10 - 1	المنشية	قرية الشروق
11	11 - 1	الكوع	قرية الشروق
12	12 - 1	أم مشاق	قرية الشروق
13	13 - 1	الجبل	قرية الوادي الأخضر
14	14 - 1	الرطابي	قرية أم عزام
15	15 - 1	أبو السيد	قرية أم عزام
16	16 - 1	أم زينة	قرية المحسمة القديمة
17	17 - 1	السويدات	قرية المحسمة القديمة
18	18 - 1	طقيطق	قرية المحسمة القديمة
19	19 - 1	أم بردى	قرية المحسمة القديمة
20	20 - 1	الشيخ سليم	قرية المحسمة القديمة
21	21 - 1	العمدة والشقائق	قرية المحسمة الجديدة
22	22 - 1	المسخوطة	قرية المحسمة الجديدة
23	23 - 1	العزبة 16	قرية المحسمة الجديدة
24	24 - 1	الصحابية	قرية المحسمة الجديدة
25	25 - 1	روض إسكندر	أبو صوير
26	26 - 1	أبو صوير	أبو صوير
27	27 - 1	أبو خطاب	أبو صوير
28	28 - 1	السعادات	قرية السبع أبار
29	29 - 1	الشيخ شعيب	قرية السبع أبار
30	30 - 1	أبو حلمي	قرية المنايف
31	31 - 1	الكرنك	قرية المنايف
32	32 - 1	سرايوم 1	قرية سرايوم
33	33 - 1	سرايوم 2	قرية سرايوم
34	34 - 1	الهواشمة	قرية سرايوم
35	35 - 1	حنيدق	قرية عين غصين
36	36 - 1	أبو جمعان	قرية الضبعية
37	37 - 1	التل الأحمر	قرية الضبعية
38	38 - 1	جبل مريم	قرية الضبعية
39	39 - 1	الكفرية	قرية أبو خليفة

جدول رقم 2: المجموعة الثانية

(المواقع التي أجريت بها أعمال تنقيب وخرجت من عداد المناطق الأثرية)

م	رقم الموقع	اسم الموقع	الموقع الجغرافي
1	1 - 2	المجاهدين العرب	قرية الجزيرة الخضراء
2	2 - 2	أبو نصار	قرية المحسمة القديمة
3	3 - 2	النجار	قرية المحسمة القديمة
4	4 - 2	أبو سريع	قرية المحسمة القديمة
5	5 - 2	الجمالين	السبع آبار
6	6 - 2	النعائمة	السبع آبار
7	7 - 2	أبو شحاته أ	قرية المنايف
8	8 - 2	أبو شحاته ب	قرية المنايف
9	9 - 2	بئر فرج	قرية المنايف
10	10 - 2	الصعايدة	قرية أبو خليفة
11	11 - 2	البلاح	قرية أبو خليفة

جدول رقم 3: المجموعة الثالثة

(مواقع ورد ذكرها فى مراجع وتقارير أثرية)


م	رقم الموقع	اسم الموقع	الموقع الجغرافي
1	1 - 3	العباسة	أبو حماد
2	2 - 3	النوبرى	أبو حماد
3	3 - 3	أبو حامد	قرية الظاهرية
4	4 - 3	موقع 27	أبو حماد
5	5 - 3	التل الكبير	التل الكبير
6	6 - 3	ثمود	قرية الشروق
7	7 - 3	السيد الشافعى	قرية الشروق
8	8 - 3	العزازى	قرية الوادى الأخضر
9	9 - 3	موقع 7	قرية الوادى الأخضر
10	10 - 3	موقع 8	قرية الوادى الأخضر
11	11 - 3	موقع 5	قرية أم عزام
12	12 - 3	موقع 23	قرية أم عزام
13	13 - 3	روض رزق الله	قرية المحسمة الجديدة
14	14 - 3	الشهداء	؟
15	15 - 3	المكفر أو الموكل	قرية السبع آبار
16	16 - 3	موقع Riff Site 1866 – 1928	شرق سرايبوم ؟

## المواقع الأثرية فى القسم الشرقى من وادى الطميلات

ينقسم وادى الطميلات الى ثلاثة اقسام وفقاً لطبيعته الجيولوجية والجغرافية وتلك الاقسام هى القسم الغربى من العباسية غرباً حتى تل الرطابي شرقاً بطول 24 كيلومتر، القسم الأوسط يمتد حوالى 13 كيلومتر من الرطابي غرباً حتى المسخوطة شرقاً، ثم القسم الشرقى طوله حوالى 15 كيلومتر ويمتد من تل المسخوطة غرباً حتى بحيرة التمساح<sup>13</sup>.

### 1 - 22: المسخوطة

يقع غرب مدينة الإسماعيلية بحوالى 18 كم<sup>14</sup>، وقد شقت ترعة الإسماعيلية وطريق الإسماعيلية الزقازيق الزراعي فى وسط الموقع الأثري والتاريخي فقسمته قسمين الشمالي يعرف بروض اسكندر فى جزء منه وآخر يعرف بأبوصوير أما الجنوبي فهو المسخوطة.

ومدينة "سكوت" او "تكو" او "تكو"  هى تل المسخوطة الحالية، وقد ورد ذكرها فى التوراة 15 مرة بإسم

سكوت، حيث تقص علينا التوراة أنها المدينة التى أقام فيها سيدنا يعقوب بعد قدومه إلى مصر، وأن كلمة سكوت تعنى مظلات<sup>15</sup>.

(وَأَمَّا يَعْقُوبُ فَأَرَتَّحَلَ إِلَى سَكُوتَ، وَبَنَى لِنَفْسِهِ بَيْتًا، وَصَنَعَ لِمَوَاشِيهِ مِظَلَّاتٍ. لِذَلِكَ دَعَا اسْمَ الْمَكَانِ سَكُوتَ)

خلال حفر قناة السويس (1859-1869م) كان موقع تل المسخوطة مقراً لمعسكر العمال واكتشف به عدد كبير من القطع الأثرية هى نتاج حفر ترعة الإسماعيلية فى شمال المسخوطة ومنها آثار ضخمة سواء توابيت أو تماثيل معروضة بمتحف الإسماعيلية (شكل 1)

شهد التل نشاطاً كبيراً لأعمال الحفائر بدءاً من القرن التاسع عشر، بل أيضاً تعرض لكثير من أعمال الحفر خلسة، وتعمل عن مقابر ومساكن من عصر<sup>16</sup> الإنتقال الثانى، وكشفت البعثة بالموقع حالياً بعثة إيطالية، كشفت أعمال البعثة الكندية المصرية عام 2002<sup>17</sup>، والبعثة المصرية عام 2010<sup>18</sup> عن مساكن ترجع للعصر المتأخر والعصر الرومانى فى الجزء الغربى والجزء الجنوبى من تل المسخوطة، وقد عثر على إسم أحمر الثانى داخل خرطوش على قطعة صغيرة من الألباستر كالسيت<sup>19</sup> (شكل 2). كما كشفت البعثة المصرية عام 2019<sup>20</sup> عن الركن الجنوبى الشرقى من حصن العصر المتأخر بتل المسخوطة

لقد ازدهر الإستيطان البشرى فى تل المسخوطة خلال فترات تاريخية محددة هى عصر الإنتقال الثانى، الأسرة التاسعة عشر، العصر المتأخر، العصر الفارسى، العصر البطلمى، العصر الرومانى<sup>21</sup>.

<sup>13</sup> Redmount 1989: 27

<sup>14</sup> إبراهيم كامل 1985: 26

<sup>15</sup> سفر التكوين 17-33

<sup>16</sup> Holladay 1982: 44-50

<sup>17</sup> نصر الله الكيلانى 2002

<sup>18</sup> مصطفى نور الدين 2010

<sup>19</sup> El Elemy, Nour eldin 2012: 60

<sup>20</sup> مصطفى حسن 2019

<sup>21</sup> مصطفى نور الدين 2017: 291



شكل ١. صورة لوحة مستخرجة من تل المسخوطة ومعروضة بحديقة متحف الإسماعيلية تظهر رمسيس الثانى يتعبد للإله رع حور أختى



شكل 2. مجموعة مقابض أواني فخار عليها أختام، العصر الرومانى، حفائر الباحث 2010

### 3 - 12: روض رزق الله

يقع على بعد 1 كم جنوب المسخوطة، وهو عبارة عن ربوة مرتفعة عثر فوقها على لوحة المسخوطة وهي واحدة من لوحات القناة التي أقامها داريوس ليخلد حفرة للقناة، اللوحة من الجرانيت الوردي ومحفوطة بالمتحف المصري، عثر عليها على بعد 350 متر من القناة القديمة<sup>22</sup>، كشف عنها كازو المهندس الفرنسي عام 1864، وأعاد جولنشييف اكتشافها عام 1899 وقام بترجمتها ونشرها<sup>23</sup>.

### 1 - 23: العزبة 16 - 1 - 24: الصحابة

يقع جنوب غرب مدينة أبو صوير بحوالي 3 كم، بين عزبتين هما أبو منصور من ناحية الشرق والعزبة 16 تحيط التل من ناحية الشمال والغرب والجنوب، ويشغل مسطح كبير من تل الصحابة جبانة مسلمين قديمة ولا تزال تستخدم، يغلب على تل الصحابة التربة الرملية الحمراء المخلوطة بحصى صغير وكبير، وفي بعض الأجزاء توجد تربة طينية من طمي النيل، في عام 1972 كشف عن ثمان مقابر مستطيلة من الطوب اللبن متجاورة، محورها شمالي جنوبي وترجع إلى عصر الإنتقال الثاني، حيث عثر بداخلها على قنينات من الفخار الأسود والأحمر المصقول، أيضا جعارين أهمها جعران عليه نقش لحمار، كما عثر على أدوات من البرونز عبارة عن حراب وبلط وخناجر وجدت بجانب الهياكل العظمية<sup>24</sup>

في عام 2002 أجريت حفائر في موقع مسجد الصحابة<sup>25</sup> كما أجرت بعثات من منطقة آثار الإسماعيلية حفائر أثرية عامي 2012 - 2013<sup>26</sup> ولم تظهر أية شواهد أثرية ثابتة أو منقولة، ونستطيع القول أن ما يعرف بتل الصحابة ملك الآثار لم يكشف به عن أية آثار ولكن ما حدث أن تل العزبة 16 كان في الأساس جزء من تل الصحابة تم بناء مساكن عليه من جانب الأهالي من عشرات السنين وهو المنطقة حيث كشف عن مقابر ترجع لعصر الإنتقال الثاني.

### 1 - 25: روض اسكندر 1 - 26 أبو صوير

يقع على الطريق الزراعي الإسماعيلية الزقازيق شمال المسخوطة و ترعة الاسماعيلية، (شكل 3). بدأت الحفائر عام 1989، وكشف عن منازل مشيدة بالطوب اللبن تضم عدد كبير من الحجرات بها أواني من الفخار علي مقابض بعضها كتابات يونانية كما عثر على جعارين وتمائم و عملات برونزية<sup>27</sup> وعثر به على جبانة تضم عشرة مقابر متجاورة مشيدة بالطوب اللبن يرى الحنجوري أنها تعود إلى عصر الإنتقال الثاني<sup>28</sup>.

<sup>22</sup> سليم حسن 2000: 88-94

<sup>23</sup> Cédric 2016: 171

<sup>24</sup> محمد الحنجوري 2003: 47

<sup>25</sup> سليمان محمود: 2002

<sup>26</sup> خالد فريد، سامح أحمد: 2013/2012

<sup>27</sup> محمد الحنجوري 2003: 32

<sup>28</sup> محمد الحنجوري 2003: 47-48



شكل 3. صورة من جوجل إيرث للمواقع حول المسخوطة – إعداد الباحث

عام 2010 كشف عن مقبرة من عصر الأسرة 19 تخص (قني أمون ) مسؤول (حامي) السجلات الملكية، المقبرة مستطيلة الشكل لها سطح جملوني، نقوشها وكتاباتها غائرة وبها كتابات ونقوش من كتاب الموتى يحدها من ثلاث اتجاهات دفنات من العصر اليوناني الروماني،<sup>29</sup> وخلال الفترة من 2010 حتى 2019 عملت عدة بعثات لتصفية تل روض اسكندر حيث اكتشفت مئات المقابر التي ترجع للفترة من العصر المتأخر حتى العصر الروماني، بعض المقابر لها أكثر من حجرة دفن وبها عشرات من الدفنات الأدمية،<sup>30</sup> كما اكتشفت مقبرة كبيرة أثناء بناء مدرسة الإمام الشافعي بتل أبو صوير.<sup>31</sup>

### 1 - 27: أبو خطاب

يقع على بعد حوالي 3 كم شمال - شمال شرق مدينة أبو صوير ولا توجد تقارير تفيد العثور على آثار به، وقد زرت المنطقة ولم أعثر على أية شواهد أثرية.

### 3- 14: الشهداء

ورد في قائمة خالد الطلي لمواقع الإقليم الثامن موقع تل الشهداء وقد ذكر أنه يقع بالقرب من مدينة أبو صوير ويحيط به من جميع الجهات وحدات للقوات المسلحة ومن الجنوب مقابر الشهداء، ومساحته كانت 14 ف - 21 ط - 3س، وعثر به على كسر من الفخار تؤرخ بالعصر اليوناني الروماني<sup>32</sup>، لم يتأكد من مصادر أخرى وجود موقع بنفس الاسم والوصف.

<sup>29</sup> كشفت بعثة برئاسة نصر الله الكيلاني المقبرة عام 2010 وقد شارك الباحث في الكشف وحاليا المقبرة مغطاه بالكامل برمال نظراً لتعرضها للعبث وقت الثورة عام 2011.

<sup>30</sup> سامح أحمد 2018

<sup>31</sup> سامح أحمد 2019

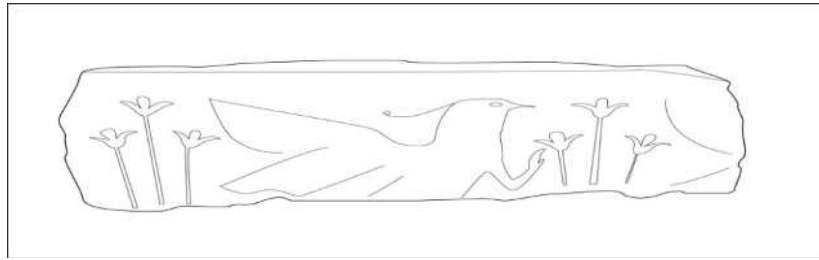
<sup>32</sup> خالد الطلي 2001: 401

يقع على بعد 4 كم شرق - جنوب شرق المسخوطة، وهو عبارة عن أرض مرتفعة تربتها حصوية حمراء تشغل بعض أجزائها وحدة للقوات المسلحة، ولا توجد تقارير تفيد العثور على آثار بها، وقد زرت المنطقة ولم أعثر على أية شواهد أثرية.

## 1 - 29: الشيخ شعيب

يقع شرق المسخوطة بحوالى 5 كم، عند كوبري عزبة شعيب جنوب ترعة الإسماعيلية، وكانت تنتشر على سطحه كسر من الفخار مختلطة بطمي من فيضان النيل ولكن التل الذى كانت مساحته تبلغ 7 فدان - 12 قيراط<sup>33</sup>، قد انتهى والموقع بالكامل مشغول بمساكن وجبانة مسلمين كبيرة، وأخرى صغيرة يفصلهما مصرف مائي.

تم القبض عام 2010 على أحد الأشخاص أثناء قيامه بالحفر خلسة بجوار مقام الشيخ شعيب بالجبانة الصغيرة وقد ضبط المواطن وفى حوزته عدد من القطع الحجرية، وقد قمت واللجنة المشكلة بقرار النيابة العامة بمعاينتها فوجدنا بعضها عليه نقوش وكتابات مصرية قديمة منها قطعة عليها رسم لصقر مجنح وجزء سفلي لإناء حجري بجانب قطع أخرى وبالتجول فى الجبانة كشفنا وجود مقابر مشيدة من قوالب الطوب اللبن أسفل مقابر المسلمين كما رصدنا انتشار قطع من الحجر الجيري ( الأثرى ) داخل الجبانة وحولها (شكل 4, 5).



شكل 4. رسم أثرى لحجر جيري من موقع الشيخ شعيب



شكل 5. صورة لمقابر أثرية تحت مقابر جبانة الشيخ شعيب الصغيرة

### 3-15: المكفر (أو الموكل)

يقع المكفر (أو الموكل) شرق أبو صوير بحوالي 5كم، وكان يقع على الطريق القديم القادم من القاهرة صوب الشرق وقال الحموي أن في عصره كان يوجد بقايا القناة التي يمكن رؤيتها بالعين المجردة، ذكر علماء الحملة الفرنسية أنه كان يوجد بالمكفر مبنى مربع كبير يقع شمال القناة القديمة مباشرة، المبنى على طراز الخان الإسلامي عبارة عن فناء كبير تحيط به غرف<sup>34</sup>، وقد ذكر الحموي في القرن الثالث عشر الميلادي البناء باسم الخشابي وأن الموقع كان نقطة حدودية في نهاية وادي الطميلات في الطريق إلى سوريا، وكان على مسيرة ثلاثة أيام من الفسطاط في طريق الحج<sup>35</sup>، والموقع كان في مكان ما بالقرب من منطقة الشيخ شعيب.

### 2-5: النعائمة

يقع على بعد 2 كم تقريباً غرب - شمال غرب، تل الجمالين وكان ينتشر على سطحه كسر لفخار بكثافة متوسطة إلى ضعيفة، كما عثر أيضاً على بقايا بيض نعام، وقطعة من الجرانيت الوردي، ويؤرخ بالعصر الروماني - الروماني المتأخر<sup>36</sup>، والعصر الإسلامي، وهو الموقع رقم 29 في تقرير بعثة المسح الأثري الكندية.

### 2-6: الجمالين

يقع على بعد 2،5 كم جنوب قرية نفيشة، وكان عبارة عن مساحة واسعة من تكاسير الفخار على سطح تربة رملية جرداء إلا من بعض الحشائش القليلة، وكان يمكن رؤية ضفتي القناة القديمة من على بعد، حيث كانت المسافة بين ضفتي القناة (عرض القناة) تتسع ما بين 15 إلى 20 متراً، والفخار المنتشر يعود إلى العصر الروماني والعصر الروماني المتأخر، الإسلامي، والعصر الحديث، كما كان يوجد قطع من الزجاج والطين المحروق، الجمالين هو الموقع رقم 28 في تقرير بعثة المسح الأثري الكندية<sup>37</sup>.

### 2-7: أبو شحاته أ، 2-8: أبو شحاته ب، 2-9: بئر فرج

تقع تلك المناطق غرب طريق الإسماعيلية السويس الصحراوي عند مفارق سرايوم، و قد تم جسها ولم يثبت أثرية أيا منها، حيث كانت تقع ضمن الأرض المخصصة لإحدى الجمعيات الزراعية لإستصلاح الأراضي والتي قامت بعمل إجراءات تنقيب الأرض للإستغلال، وقامت أكثر من بعثة أثرية بحفر مجسات وكانت النتيجة واحدة وهي عدم العثور على أية شواهد أثرية ثابتة أو منقولة.

<sup>34</sup> Devilliers 1829: 148

<sup>35</sup> Redmount 1989:172- 173

<sup>36</sup> Redmount 1989:166

<sup>37</sup> Redmount 1989:166

يقع فى منطقة غرب طريق الإسماعيلية السويس الصحراوى جنوب وصلة سراييوم وهى أرض تتبع القوات المسلحة وخاضعة للآثار والشواهد الأثرية ضعيفة جداً.

## 1- 31: الكرنك

يقع غرب طريق الإسماعيلية السويس الصحراوى عند مفارق سراييوم جنوب غرب الغابة الشجرية، وقد أشارت إليه بعثة المسح الأثرى الكندية باسم ( Site 46 ) Quadrant 6، وهو عبارة عن موقع صغير فى أرض ضحلة ومنخفضة، ينتشر على سطحه كسر فخار تؤرخ بالعصر الروماني، الإسلامي، بالإضافة إلى العثور على لقى أثرية عبارة عن قرص من الألباستر مستوي السطح، بقايا اسورة من الزجاج الأسود، جزء من كأس من البازلت، طوب محروق<sup>38</sup>، وقد أجرت منطقة آثار الإسماعيلية حفائر إنقاذ فى جزء منه ولم تسفر عن أى آثار ثابتة أو منقولة.

## 1 - 32: سراييوم 1 - 33: سراييوم 2

يقع بقرية سراييوم، يحده جنوباً ترعة سيناء، وشرقاً خط سكك الحديد الإسماعيلية السويس، وشمالاً طريق، وقد أطلق (لوبيير) اسم سراييوم للموقع لاعتقاده بوجود معبد للإله سراييس وهو غير صحيح<sup>39</sup>، الجزء الشرقى (سراييوم 2) خاضع للآثار ومشغول بجبانة ومنازل وأرض زراعية، تم إجراء حفائر ومجسات به عام 2001 - 2002 ولم تسفر عن العثور على أية آثار ثابتة أو منقولة، ويلاحظ أن تلك المنطقة كانت تجرى فيها القناة بحدود شمال غرب - جنوب شرق، وكان مجرى القناة على بعد حوالى 200 متر من التبة العالية التى نصبت فوقها لوحة داريوس<sup>40</sup>.

والجزء الغربى (سراييوم 1) ملك الآثار وتشغله وحده عسكرية، فى عام 1884 قام كليرمونت جانو بالحفر فى تل سراييوم حيث كشف عن بعض القطع التى ترجع إلى لوحة من لوحات القناة من عهد داريوس، حيث تم إرسال تلك القطع إلى متحف اللوفر عام 1886 ولكنها فقدت بعد عامين<sup>41</sup>.

## 1 - 34: الهواشمة

تقع الهواشمة شرق سراييوم على بعد حوالى 2 كم بالقرب من المجرى الملاحي الحديث لقناة السويس، والموقع بالكامل مشغول بمنازل عزبة الهواشمة، وهو الموقع رقم 66 فى بعثة المسح الأثرى الكندية، وقد تم تأريخ الفخار المنتشر على السطح بالعصر البطلمي والروماني، أيضاً عثر على قطع من الحجر الجيري منتشرة على السطح<sup>42</sup>.

فى عام 2001 تم عمل مجسات بتل آثار الهواشمة فى مساحة أبعادها 15م × 26م على الحافة القبلىة لعزبة الهواشمة بجوار الأرض الزراعية من الجنوب وبمحاذاة الكتلة السكنية شمالاً حيث كشف عن بقايا مبنى

Redmount 1989:167<sup>38</sup>Le Peire 1829: 327<sup>39</sup>

40 سليمان محمود، مصطفى نور الدين 2001 - 2002

Redmount 1995: 128<sup>41</sup>Redmount 1989:170<sup>42</sup>

من الحجر الجيري من 12 مدماك، ويمتد تحت منازل الأهالي فى الشمال، كما كشف عن عدد 6 أمفورات كبيرة من الفخار مصفوفة بشكل منتظم من الشرق إلى الغرب، وكشف أيضا عن فرن إرتفاع جدرانته 110سم وقطره 160سم، ويعتقد أنه موقع ميناء من العصر اليوناني الروماني<sup>43</sup>.

### 1928 - 1866 Riff Site 3 - 16: موقع

يقع على بعد 3500 متر جنوب شرق جبل سراييوم بجوار الكيلو 14 "89" بين الإسماعيلية والسويس، وهو الموقع الوحيد شرق قناة السويس به آثار ربما تعود إلى عصر الرعامسة، هذا الموقع تم فحصه بواسطة المسيو ليلموند Lallemande عام 1866 م حيث أشار إلى مكتشفاته فى خريطة توضيحية تلك التى نشرها فيما بعد مسيو برويير Bruyère 1951 حيث تشير إلى منطقة مستطيلة من قوالب الطوب اللبن<sup>44</sup>.

الموقع يتكون من مستويين متباعدين من الإستيطان، الأول منهما عصر الرعامسة حيث يتمثل فى مبنى ضخ من الطوب اللبن مشيد على الرمال، فى حين أن الجزء العلوي " عصر روماني متأخر - بيزنطى - أوائل العصر الاسلامي " ويتكون من عناصر فى مكانها وأخرى مبعثرة ( قواعد أعمدة - أعتاب - تيجان - أجزاء من أعمدة ) من الحجر الجيري<sup>45</sup>.

### 1 - 35: حنيدق

يقع على بعد حوالى 10 كم جنوب مدينة الإسماعيلية على قناة السويس مباشرة، وهو تل يرتفع لأكثر من 20 متر وبه مقام للشيوخ حنيدق، ومشغول بالكامل بجبانته حديثة، وتنتشر على سطحه فى الناحية الشمالية كسر من الفخار بكثافة ضعيفة ويؤرخ بالعصرين الروماني والإسلامي، أسفل تل حنيدق من الشمال مباشرة كانت تصله ماء فيضان النيل كما ذكرت تقارير الحملة الفرنسية أثناء فيضان عام 1801<sup>46</sup>.

### 1 - 36: أبو جمعان

يقع شرق طريق الإسماعيلية السويس وحوالى 2500 متر تقريبا شرق - جنوب شرق تل الجمالين، وسطح التل عبارة عن كتبان رملية تتخللها منخفضات وبرك مياه، وقد قمت بعمل مجسات بالموقع ولم تسفر عن العثور على آثار ثابتة أو منقولة، ومن الواضح أن تل أبو جمعان كان موضع لمجرى القناة القديمة.

### 1 - 37: التل الأحمر

يقع على بعد 6 كم جنوب مدينة الإسماعيلية، جنوب - جنوب غرب جبل مريم، حيث كانت تشغل الموقع إبان حرب أكتوبر معسكر للجيش وكانت توجد جنوب الموقع بحيرة، وكان يمكن ملاحظة جدران قوالب من الطين، وكثافة الفخار عالية ويؤرخ بالعصر الروماني، القبطي، والعصر الإسلامي، ولوحظ وجود كسر فخار لأوانى طهى كبيرة، أيضا بعض العملات الرومانية التى تؤرخ ببداية القرن الرابع الميلادى، وقد تم ذكر الموقع من قبل علماء الحملة الفرنسية<sup>47</sup>.

<sup>43</sup> إيناس وجيه، فراج الشاذلى 2001

<sup>44</sup> Mumford 1998: 537

<sup>45</sup> Mumford 1998: 538

<sup>46</sup> Le Peire 1829

<sup>47</sup> Redmount 1989:168

## 1 - 38: جبل مريم

يقع جنوب مدينة الإسماعيلية وغرب قناة السويس، وقد كان الموقع أكبر من مساحته الحالية، في 17 فبراير 1866م أرسل السيد M. Guiter خطاب يصف فيه جبل مريم (وصلت إلى أنقاض جبل مريم على بعد ثلاثة كيلومترات جنوب شرق مدينة الإسماعيلية على حافة البحيرة، وهي عبارة عن هضبة شاسعة بيضاوية الشكل مغطاة بالسيليكات) تقع على ارتفاع 15 متراً فوق مستوى سطح البحر، وآثار النار واضحة في كل النقاط، التربة القديمة هي أقل من 3 إلى 4 أمتار من التربة الحالية، لذلك فهي مليئة بالبقايا الأثرية مثل الجرار، الأمفورات، والعملات اليونانية والرومانية و شظايا من الفسيفساء والتمثال<sup>48</sup>، توجد بعض القطع الأثرية المستخرجة من جبل مريم (مجموعة Paul Companyo) بمتحف التاريخ الطبيعي بمدينة برينان (Perpignan) بفرنسا منها تمثال نصفى لسيرابيس، وتمثال لإمرأة ترضع طفلاً من التراكتا، وتمثال لأفروديت من التراكتا<sup>49</sup> أجرى فى عام 1904 الأمير أرنبيرج Le Prince d'Arenberg حفائر لمدة 15 يوماً بجبل مريم كشف فيها عن حمام روماني من الحجر الجيري الأبيض له سور خارجي ومزود بقناة لتوصيل المياه<sup>50</sup>. والموقع مشغول حالياً بمقابر جنود الكومنولث للحرب العالمية الأولى وبه نصب تذكاري ووحدة للجيش المصري.

## 2- 10: الصعايدة

يقع شمال قرية أبو خليفة، ومثله مثل تلال البلاح والكفرية كان يقع فوق جزيرة رملية بمنخفض البلاح حيث كان بحيرة كبيرة قديماً، وكان التل خاضعاً للآثار حتى عام 2010 حيث قامت بعثة من منطقة آثار الإسماعيلية بتصفية ما تبقى من التل حيث لم تظهر آثار ثابتة أو منقولة<sup>51</sup>.

## 1 - 39: الكفرية

يقع شمال غرب قرية أبو خليفة، وتنتشر كسر الفخار التي ترجع للعصر اليوناني الروماني على سطح الأرض كانت معظم مساحات التل عام 2000 قد تم زراعتها وحاليا لا يوجد سوى قطعة صغيرة ترتفع عن الأرض الزراعية (شكل 6).



شكل 6. صورة للجزء المتبقى من تل الكفرية

<sup>48</sup> Clédat 1910: 196

<sup>49</sup> Clédat 1910: 200

<sup>50</sup> Clédat 1910: 201

<sup>51</sup> مصطفى نور الدين، فراج الشاذلي 2010

## 2- 11: البلاح

يقع على جزيرة رملية ترتفع عن الأرض المجاورة في منخفض البلاح الممتد من جنوب القنطرة شمالاً حتى شمال الإسماعيلية، في الفترة من 2005 إلى 2007 أجريت أعمال مسح جيولوجي لمنخفض البلاح أثبتت أنه كان يشغله عدد من البحيرات يتخلله أراض مرتفعة جفت حالياً ولم يتبق منها إلا بعض البرك الصغيرة المتناثرة، وأن عمق بعض البحيرات كان يصل إلى 7 أمتار<sup>52</sup>.

وقد أكدت الحفائر الأثرية أن تل البلاح هو مدينة صغيرة محصنة ترجع إلى العصر البطلمي واستمرت حتى العصر الروماني يحيط بها سور عرضه حوالي متر كشف عن جزء منه من الشمال بطول 70 متر تقريباً<sup>53</sup>، منازلها مشيدة من الطوب اللبن ويمر بوسطها شارعان متقاطعان يقسمان المدينة إلى أربعة أحياء وتحيط بها مخازن من الشمال والغرب، والمنازل جدرانها سميكة حيث تبلغ 60سم وبعض الجدران تبلغ 80 سم وقد عثر في هذه المنطقة على العديد من الأواني الفخارية ومسرجة من الفخار وعملات برونزية<sup>54</sup>، (شكل 7، 8، 9) وتل البلاح كجزيرة إرتبط استغلاله خلال العصر البطلمي والعصر الروماني بالقناة التي كانت تمتد من بحيرة التمساح حتى ميناء أبو صيفي حيث أن هناك تطابق بين طبقات الإسطيطان بكلاهما ومن المؤكد أنه كان لهما دور كبير خلال تلك الحقبة الزمنية<sup>55</sup>.



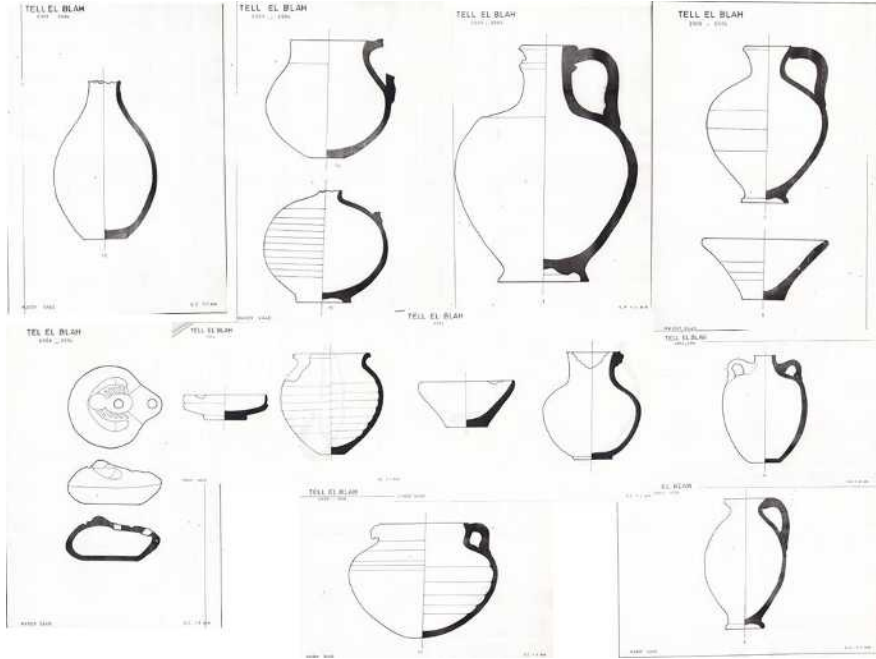
شكل 7. صورة أثناء الكشف عن المخازن الغربية بتل البلاح - حفائر الباحث عام 2002

Moshier & Gayed 2019: 5<sup>52</sup>

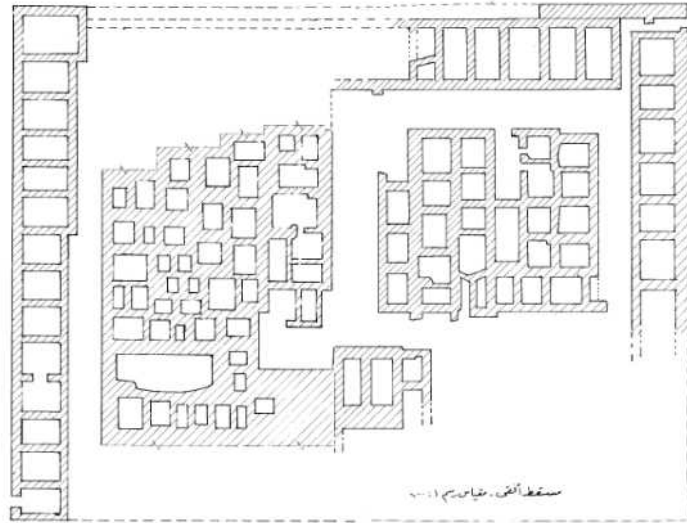
مصطفى نور الدين، فراج الشاذلي 2002<sup>53</sup>

مصطفى نور الدين، فراج الشاذلي 2004<sup>54</sup>

مصطفى نور الدين 2019: 143-144<sup>55</sup>



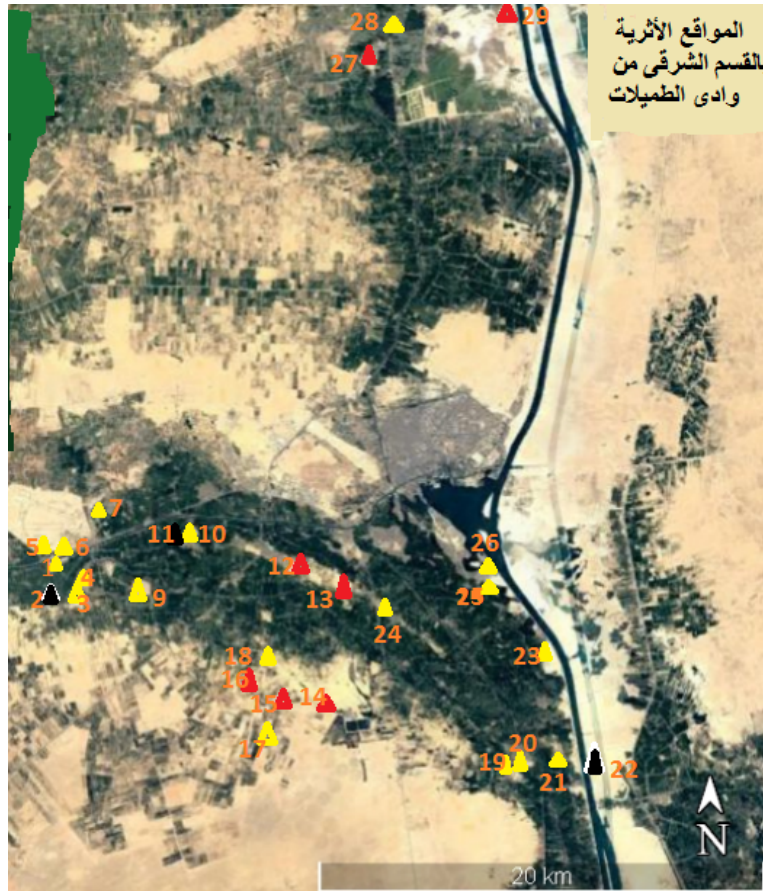
شكل 8. رسم أثري لأواني فخارية من تل البلاح



شكل 9. خريطة لمنشآت من الطوب اللبن بتل البلاح

ونخلص مما سبق 29 موقعاً أثرياً بالقسم الشرقي بوادي الطميلات (جدول رقم 4) تبدأ من تل المسخوطة غرباً، وقد ألحقت مواقع خليج السويس وهي مواقع سرايوم أ و ب والهواشمة و موقع Riff Site 1866 - 1928 بمواقع الوادي حيث أنها متصلة بالوادي عن طريق القناة القديمة كما وأن الإستيطان البشري بها مرتبط بوادي الطميلات، أيضا مواقع بحيرة البلاح وهي الصعايدة والكفرية والبلاح تقع في حوض الوادي حيث كانت مصباً له. (شكل 10)

المواقع الأثرية بالوادي في معظمها ترجع للعصرين اليوناني والروماني وبعضها للعصر الإسلامي أو الفارسي وموقع المسخوطة فقط هو ما يرجع تاريخياً لأقدم من العصر الفارسي ونضيف إليه موقع Riff Site 1866 - 1928, وهو ما يبرز طبيعة القسم الشرقي من الوادي حيث كان بحيرة كبيرة تتخللها جزر متناثرة خصوصاً في أعوام الفيضانات العالية حيث كانت مصرفاً لماء نهر النيل، وتمتد على هيئة دلتا رأسها في الغرب عند تل المسخوطة وقاعدتها ما بين شمال سرايوم وجنوب القنطرة، ولكن تلك البحيرة بدأت تنقلص مساحتها في العصر المتأخر بالتزامن مع إنحسار ماء البحر عن خليج السويس مما أدى إلى ظهور أراضي وجزر مثالية للإستيطان وهو ما أدى لنشأة تلك المواقع بالإضافة إلى أن معظمها يتصل بالقناة القديمة.



شكل 10. صورة من جوجل إيرث لمواقع القسم الشرقي من وادي التميميات (1 المسخوطة،

10) السعدت، (9) أبو خطاب، (7) أبو صوبر، (6) روض إسكندر، (5) الصحابة، (4) العزبة (16)، (3) روض رزق الله (2) أبو حامد، (17) بئر فرج، (16) أبو شحاته ب، (15) أبو شحاته أ، (14) الجمالين، (13) النعايمة، (12) المكفر، (11) شعيب، حنيديق، (23) Riff Site 1866 - 1928 موقع (22) الهواشمة، (21) سرايوم ب، (20) سرايوم أ، (19) الكرنك، (18) البلاح) إعداد الباحث. (29) الكفرية، (28) الصعايدة، (27) جبل مريم، (26) التل الأحمر، (25) أبو جمعان، (24)

ترجع المواقع الأثرية بالوادي في معظمها للعصرين اليوناني والروماني وبعضها للعصر الإسلامي أو الفارسي وموقع Riff Site 1866 - 1928 المسخوطة فقط هو ما يرجع تاريخياً لأقدم من العصر الفارسي ونضيف إليه موقع يبرز طبيعة القسم الشرقي من الوادي حيث كان بحيرة كبيرة تتخللها جزر متناثرة خصوصاً في أعوام الفيضانات العالية حيث كانت مصرفاً لماء نهر النيل، وتمتد على هيئة دلتا رأسها في الغرب عند تل المسخوطة وقاعدتها ما بين شمال سرايوم وجنوب القنطرة، ولكن تلك البحيرة بدأت تنقلص مساحتها في العصر المتأخر بالتزامن مع إنحسار ماء البحر عن خليج

السويس مما أدى إلى ظهور أراضي وجزر مثالية للإستيطان وهو ما أدى لنشأة تلك المواقع بالإضافة إلى أن معظمها يتصل بالقناة القديمة.

#### جدول رقم 4: المواقع الأثرية بالقسم الشرقى من وادى الطميلات

م	رقم الموقع	اسم الموقع	التأريخ
1	22 - 1	المسخوطة	هكسوس - عصر الرعامسة - عصر متأخر - عصر فارسي - عصر يوناني وروماني
2	12 - 3	روض رزق الله	فارسي
3	23 - 1	العزبة 16	هكسوس
4	24 - 1	الصحابة	هكسوس
5	25 - 1	روض إسكندر	عصر الرعامسة - عصر متأخر - يوناني روماني
6	26 - 1	أبو صوير	عصر الرعامسة - عصر متأخر - يوناني روماني
7	27 - 1	أبو خطاب	؟
8	14 - 3	الشهداء	؟
9	28 - 1	السعادات	؟
10	29 - 1	الشيخ شعيب	يوناني روماني
11	15 - 3	المكفر أو الموكل	إسلامي
12	5 - 2	النعايمة	يوناني روماني
13	6 - 2	الجمالين	يوناني روماني
14	7 - 2	أبو شحاته أ	؟
15	8 - 2	أبو شحاته ب	؟
16	9 - 2	بئر فرج	؟
17	30 - 1	أبو حلمي	؟
18	31 - 1	الكرنك	يوناني روماني
19	32 - 1	سرابيوم 1	فارسي
20	33 - 1	سرابيوم 2	جسور القناة القديمة
21	34 - 1	الهواشمة	فارسي - يوناني روماني
22	16 - 3	موقع Riff Site 1866 - 1928	عصر الرعامسة - يوناني روماني
23	35 - 1	حنيدق	يوناني روماني
24	36 - 1	أبو جمعان	جسور القناة القديمة
25	37 - 1	التل الأحمر	يوناني روماني
26	38 - 1	جبل مريم	يوناني روماني
27	10 - 2	الصعايدة	؟
28	39 - 1	الكفرية	يوناني روماني
29	11 - 2	البلاح	يوناني روماني

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