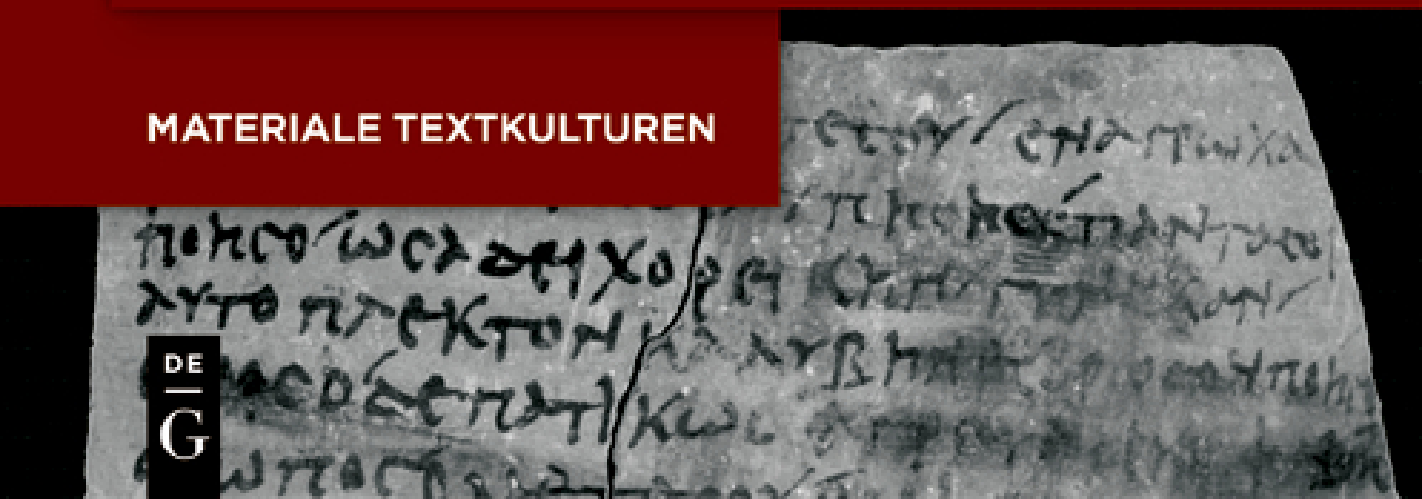
DE GRUYTER

USING OSTRACA IN THE ANCIENT WORLD

NEW DISCOVERIES AND METHODOLOGIES

Edited by Clementina Caputo and Julia Lougovaya

MATERIALE TEXTKULTUREN



Using Ostraca in the Ancient World

Materiale Textkulturen

Schriftenreihe des Sonderforschungsbereichs 933

Band 32

Using Ostraca in the Ancient World

New Discoveries and Methodologies

Edited by
Clementina Caputo and Julia Lougovaya

DE GRUYTER

ISBN 978-3-11-071286-5
e-ISBN (PDF) 978-3-11-071290-2
e-ISBN (EPUB) 978-3-11-071295-7
ISSN 2198-6932
DOI https://doi.org/10.1515/9783110712902

Library of Congress Control Number: 2020947108

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.dnb.de.

Typesetting: Sonderforschungsbereich 933 (Nicolai Schmitt), Heidelberg
Cover: Ostracon from the *praesidium* of Didymoi, O. Did. inv. 445; © Adam Bülow-Jacobsen.
Printing and binding: CPI books GmbH, Leck

www.degruyter.com

Contents

Clementina Caputo and Julia Lougovaya

Introduction

The word ὄστρακον, 'ostracon', seems to have originally designated the shell of a shell-animal, be it a turtle or a clam;[1] from the apparently related word ὄστρεον (for 'oyster'), the English 'oyster', German 'Auster', Dutch 'oester', and Russian 'устрица' ultimately derive. Eventually, ὄστρακον came to mean any shell or sherd, in particular a sherd of a ceramic vessel.[2] In Aristophanes' *Frogs* the poet Aeschylus mocks the music in the plays of Euripides by saying that in place of a lyre the Muse of Euripides "is striking pottery sherds", ἡ τοῖς ὀστράκοις / αὕτη κροτοῦσα (ll. 1305–1306). The word could also mean the ceramic vessel itself: annotations on jars from the Athenian Agora feature the genitive ὀστράκου in combination with a weight or volume designation,[3] while in the same Aristophanic play Aeschylus narrates a story of the wretched Oedipus, who as a baby was exposed 'in a pot', ἐν ὀστράκῳ (*Frogs*, l. 1190). In modern languages, however, 'ostracon' usually refers not just to a potsherd, but to an inscribed sherd. Thus, the Oxford English Dictionary states under 'ostracon': "A potsherd (or occasionally: a piece of limestone) used in the ancient world as a writing surface, esp. for votive or hieratic purposes or (in Greek cities) for voting in an ostracism. Frequently in *plural*."

The practice of using sherds in the procedure of ostracism in Classical Athens of the fifth century BCE is of course what made the word 'ostracon' famous. There, when a man of standing was perceived as potentially dangerous for the democracy, he could be voted into a ten-year exile through a procedure in which pottery sherds with the names of such individuals scratched on them were used as ballots. The material used for the ballots, the ostraca, gave the name to the voting process, *ostracophoria*, literally 'carrying of the sherds', and to the practice of temporary banishment, 'ostracism'.[4] Thousands of such ballot-ostraca were discovered during excavations both in the Agora and especially in the Kerameikos in Athens, and they tend to be studied as a separate and peculiar category of inscribed objects associated exclusively with Classical Athens.[5]

1 Chantraine 1974, s. v. ὄστρακον et ὄστρειον.

2 For the meaning 'shell', cf., above all, numerous instances of the term in Oppian's *Halieutica*, but also already the *Homeric Hymn to Hermes*, l. 33.

3 See, for example, Lang 1990, 65, for a discussion and list of references to twelve such items from the Agora, which date from the 2nd through the 6th c. CE.

4 There is a vast amount of scholarly literature on ostracism in Athens; for a brief description of the practice, cf. Kristensen 2013, with further references to major works.

5 For the finds from the Athenian Agora, cf. Lang 1990; for those in the Kerameikos, see now the spectacular edition of Brenne 2018.

This publication originated in the Collaborative Research Centre 933 "Material Text Cultures. Materiality and Presence of Writing in Non-Typographic Societies" (subproject A09 "Writing on Ostraca in the Inner and Outer Mediterranean"). The CRC 933 is funded by the German Research Foundation (DFG).

https://doi.org/10.1515/9783110712902-001

Using pieces of broken pottery for scratching a few words was not a novel idea in the Mediterranean brought to life by the practice of ostracism: sherds with short messages incised with a sharp object and dating from the sixth century BCE to late antiquity are known from Athens and elsewhere, even if not in great numbers.[6] In order to avoid confusion with 'classical' ostraca used in ostracism, these inscribed sherds have been commonly, though rather misleadingly, called not 'ostraca', but graffiti.[7] The latter term refers to the method of inscribing, by scratching, and is conventional in describing various marks made on complete vessels by scratching as opposed to those done in ink and known as *tituli picti* or *dipinti*. Since marks on complete vessels are much more numerous than messages on sherds in the Mediterranean outside Egypt, extending the terminology used for jar-marks to texts inscribed in the same way on sherds seemed unproblematic, especially for those scholars who dealt primarily with Aegean Greece.

In Egypt, however, sherds of broken pottery or pieces of limestone served as a writing surface for short-form writing or drawing since the Old Kingdom (ca. 2600–2200 BCE). Papyrologists dealing with such texts from Egypt became accustomed early on to calling them 'ostraca'.[8] Thousands were and continue to be found inscribed in the multitude of languages in use in Egypt over its long history, from Egyptian Hieratic, Demotic, and Coptic to Aramaic, Hebrew, Greek, Latin, Meroitic, Arabic, and more. Increasingly, however, short-form texts on sherds are coming to light outside Egypt, especially from such areas as North Africa or Palestine. Most of them are written in ink, but there are occasional examples of incised sherds; irrespective of the mode of their inscribing it has become common in modern scholarship to call them ostraca, as long as a sherd was used, or rather recycled, as a writing support for the text it bears.[9]

It is the relationship of the text to the ceramic support that distinguishes ostraca from jar inscriptions: While jar inscriptions, which are also often referred to as *dipinti*, *tituli picti*, or dockets, are directly connected to the production of the vessel or its content,[10] texts on ostraca are secondary to the vessel's original function. Material aspects of sherds used as ostraca, such as their source, context, or fabric can thus be relevant

6 E. g., Lang 1976, 8–11, B1–B21; Johnston 1985.

7 Thus, Mabel Lang's 1976 catalogue is entitled "Graffiti and Dipinti" and includes both inscriptions on complete jars and short-form texts inscribed on sherds.

8 For the best surveys of the practice of using pottery sherds and limestone flakes as a writing material in Egypt, see Wilcken 1899, 3–19; Bülow-Jacobsen 2009, esp. 15–18; Bagnall 2011, 117–137.

9 Cf. P. Gascou 16 or O. Brit. Mus. Copt. 1, p. 17, pl. 13.3, just to give a few examples of incised ostraca from areas where the majority are written in ink. For the use of the term 'ostraca' in the papyrological sense for messages inscribed on sherds irrespective of their origin and method of inscribing, see, for example, Dana 2015; Kashaev/Pavlichenko 2015; Sarri 2018.

10 Scholarship on jar inscriptions, especially for those outside Egypt is vast; for brief general surveys, see, for example, Berdowski 2003 or Edmondson 2014; for material from Egypt, cf. foremost Fournet 2012 with further bibliography.

for elucidating the circumstances of inscribing the texts that they bear.[11] Complementing textual data with information derived from the material and the archaeological context of an ostracon might allow a researcher to tell more about the person who chose the sherd, his or her writing skills, the purpose for which the ostracon was produced, as well as about the wider social, cultural, and historical context in which it was used.

Recognizing the value of studying ostraca for understanding past societies and seeing it as a distinct subject requiring specific methodological approaches, we arranged an international conference in Heidelberg from 12–14 October 2017, *Using Ostraca in the Ancient World: New Discoveries and Methodologies*. Scholars with expertise in various areas of ancient studies— archaeology, papyrology, ceramology, Egyptology, Semitic studies, and imaging technologies—whose research involves working with ostraca were invited to share their experiences in dealing with this particular writing support and to explore the question of using ostraca as a cultural practice. This volume is the result of this meeting.

The book collects nine papers, in which various aspects of research related to ostraca come into focus and intertwine, from documentation and interpretation of the archaeological context to examination of their physical characteristics to investigation of the types of texts and peculiarities of their content. Most of the material discussed originates in Egypt, albeit from different historical periods; texts from North Africa, Greece, and the Near East receive only limited attention. Ostraca discussed in detail include those inscribed in Aramaic, Greek, and in Egyptian Hieratic, Demotic, and Coptic. Chronologically, they span the Pharaonic to Arabic period. Some papers give a glimpse into current excavations and discuss very recent discoveries, while others apply a modern interdisciplinary approach to long excavated material with the aim of contextualizing earlier findings. While all the papers explore specific features of ostraca as a writing material and of communication practices associated with them, they fall in terms of their focus and coverage into three sections.

Contributions in the first section, "Documentation and Interpretation of Ostraca as Archaeological Objects", are devoted to the methodology of studying and documenting ostraca in general. It opens with the paper by Paola Davoli "Papyri and Ostraca as Archaeological Objects: The Importance of the Context", in which she discusses the very principle of viewing papyri and ostraca as archaeological objects, a seemingly obvious approach that, however, has been only recently developed as more scientific and collaborative methods of excavations have become widespread. Since most ostraca finds occur in secondary contexts, frequently dumps, and only in rare

11 Cf. Caputo 2019 on the systematic study of material aspects of sherds used as ostraca and on the question of the possible relationship between the type of sherd chosen and the text written on it. See also The Heidelberg Ostraca Project (HOP) database, which aims to collect and make available information on material aspects of ostraca, https://ostraka.materiale-textkulturen.de/index.php (last accessed: 14.2.2020).

cases in primary contexts, the work of an archaeologist in documenting their location is crucial. On several examples, Davoli elucidates the process of understanding the depositional context of ostraca, in which distinct human and non-human actions, positive and negative, need to be determined in order to produce meaningful archaeological stratification, within the matrix of which individual objects could be located.

The insights from Davoli, a field archaeologist, are followed by a ceramological contribution by Clementina Caputo, "Pottery Sherds for Writing: An Overview of the Practice". Caputo turns her attention to the analysis of types of sherds used as writing supports. Ceramological analysis of inscribed sherds against the background of pottery production and circulation in a given area does not only help identify the vessels from which ostraca originate, but also sheds light on questions of their provenance, chronology and technical production. Caputo surveys the practice of writing on ostraca in different areas of Greco-Roman and Late Roman Egypt (332 BCE–642 CE), while taking into account their physical properties, types of texts inscribed and languages used, as well as the social and historical circumstances in which they originated. This comprehensive approach allows her to make progress in understanding the technology of production of some ostraca as artifacts and to define its characteristics and evolution.

The last paper in the section, "Photography of Papyri and Ostraca", by Adam Bülow-Jacobsen, provides an overview of the whole range of modern imaging techniques for recording and studying ancient texts on different writing supports (papyri, ostraca, wood, parchment, wax-tablet). While describing a variety of methods that have given good results for documenting and deciphering ancient writing, such as Multispectral Imaging (MSI) or Reflectance Transformation Imaging (RTI), Bülow-Jacobsen devotes particular attention to infra-red photography, a comparatively cheap and easy method that has proved exceptionally fruitful in imaging ostraca. In the space of just a few pages, he manages to explain in a language comprehensible to non-initiated the physics of the discussed methods and to provide guidelines for photographing ostraca in various conditions, including less ideals ones such as those found in archaeological excavations.

Contributions in the next section, "Cultural Contexts and Practices", look at contexts and practices in association with which ostraca were used as writing material. In "The Survival of Pharaonic Ostraca: Coincidence or Meaningful Patterns?" Ben Haring first gives a bird's-eye view of limestone and ceramic ostraca and their typology from pre-Hellenistic Egypt. Starting with the first known specimens of pictorial Predynastic and Hieratic ostraca from the Old Kingdom, he discusses the geographical distribution of the finds as well as the relation of their texts to those on papyri, and then focuses on ostraca from New Kingdom Thebes (ca. 1550–1070 BCE). While from most periods of Pharaonic history fewer texts survive on ostraca than on papyrus, many thousands of New Kingdom ostraca produced by both the administrators and the workmen of the royal necropolis have been found in Western Thebes. Haring ponders possible factors that may account for this spike in the evidence while also mapping

the apparent increase and subsequent decrease in production of ostraca within the Ramesside Period (the 19th and 20th Dynasties).

Julia Lougovaya's contribution "Greek Literary Ostraca Revisited" offers an updated survey of the somewhat unexpected use of sherds for literary texts from the Hellenistic to the early Byzantine period (ca. 3rd c. BCE–6th c. CE). It takes as its starting point an overview of such ostraca carried out by Paul Mertens 45 years earlier[12] and outlines rapid gains in the volume of Greek literary ostraca over recent decades as well as changes in scholarly views on what kind of texts could be inscribed on a sherd. It then reviews various cultural contexts in which ostraca inscribed with non-documentary texts are attested, from magic rituals to educational settings to possible theatrical performances. In conclusion and as an example of a type of text that has emerged only recently, an edition of a literary ostracon from the military fort at Didymoi in the Eastern Desert of Egypt is given. Such texts offer us insight into literary tastes and activities of a wider strata of population than those preserved in the literature transmitted by the manuscript tradition.

The importance of the archaeological context and the find location as well as of the juxtaposition of texts of similar typology but inscribed on different supports are at the center of the contributions in the final section of the volume, "Ostraca in Context: Case Studies", which comprises four papers devoted to ostraca from particular areas or archaeological sites.

Margaretha Folmer's contribution "Hi Aḥuṭab: Aramaic Letter Ostraca from Elephantine", examines the body of ostraca that were found, along with numerous papyri, inscribed in Aramaic and dating mostly to the fifth century BCE on the island of Elephantine at the beginning of the last century. Unlike the papyri, however, ostraca waited a century to be studied and published, a situation that reflects well the long-standing underprivileged position of ostraca in scholarship, further aggravated here by the fact that the Elephantine ostraca are fragmentary and difficult to read. Most of the ostraca concern private matters and served communication between those on the island and on the mainland. Building upon detailed analysis of a few examples, Folmer outlines epistolary characteristics of the letters inscribed on ostraca and compares them with those of letters preserved on papyri. She concludes that letters on ostraca were used between people who appear to know each other well and demonstrates that the messages were concerned mostly with immediate affairs, somewhat akin to modern WhatsApp messages.

Moving on to the Ptolemaic period, the contribution of Marie Pierre Chaufray and Bérangère Redon "Ostraca and *Tituli Picti* of Samut North and Bi'r Samut (Eastern Desert of Egypt). Some Reflections on Find Location" offers an example of scientific collaboration during the excavation and publication of written material. The paper presents ostraca and *tituli picti*, inscribed in Greek and Demotic, from two Ptolemaic

12 Mertens 1975/1976.

sites in the Eastern Desert. One is a short-lived gold mine in Samut North dated to the late fourth century BCE, very beginning of the Hellenistic period, and the other is the large fortress of Bi'r Samut, located on the road leading from Edfu on the Nile to the Red Sea port of Berenike and occupied until the end of the third century BCE. Through more detailed case studies Chaufray and Redon show that analysis of the connection between the findspots and the content of ostraca or *tituli picti* may bring tangible results by helping not only to determine a date for the texts but also to identify the functions of the rooms where they were found. Yet, as they also demonstrate, in other instances even a well-preserved archaeological context may fail to yield any conclusive stratigraphic information.

Comparison of the types and possible usages of ostraca from two Egyptian temples complexes of the Greco-Roman period form the subject of Sandra Lippert and Maren Schentuleit's contribution "Demotic Ostraca and Their Use in Egyptian Temple Context from the Greco-Roman Period: Soknopaiou Nesos and Hut-Repit." While most of the ostraca from Soknopaiou Nesos in the Fayum come from century-old excavations, recent archaeological exploration of the site has shed some light on possible contexts of the earlier findings; ostraca from the temple complex of Hut-Repit in Middle Egypt, on the other hand, originate in excavations that are still ongoing. The two roughly contemporary sets of material allow the scholars to investigate the forms and types of texts for which ostraca were used and to draw meaningful comparison with the texts inscribed on other writing supports. This leads to some conclusions about the reasons for using ostraca for certain types of texts and about the function of these texts.

The last contribution in the volume, "'Forgive Me, Because I Could Not Find Papyrus': The Use and Distribution of Ostraca in Late Antique Western Thebes", by Jennifer Cromwell, brings us back to the area of Western Thebes investigated in Haring's paper, but focuses on the late antique ostraca inscribed mostly in Coptic. The Theban area provides an excellent opportunity to examine the distribution and use of ostraca from a clearly defined region and chronological period. Yet, as Cromwell points out, despite the wealth of material, the study of ostraca from Thebes is not unproblematic. Many items are given a broad 'Theban' provenance, and one aim of her study is to refine such provenances, with the help of the material properties and content of the ostraca. She examines tendencies in the distribution and use of ostraca by sites and in relation to the text types, with particular consideration given to school texts and specific writers. The contribution concludes with an edition of three Coptic ostraca found at Deir el-Bahri during the Metropolitan Museum of Art's excavations in the early part of the last century, which reflects some of the methodological problems involved in determining the provenance of texts in Western Thebes and in understanding how they circulated.

Acknowledgements

Our special thanks go to the Collaborative Research Centre (CRC) 933 for the opportunity to carry out the conference. We also thank the CRC's spokesman Ludger Lieb and the scientific advisory board of the publication series "Material Text Cultures". The CRC and its publication series are funded by the German Research Foundation (DFG).

We are grateful to the anonymous reviewer for insightful suggestions and corrections, and are indebted to Rodney Ast for help in editing the volume and Andrea Bernini for assistance with the index, as well as to the production team of the MTK series in Heidelberg.

International conference *Using Ostraca in the Ancient World: New Discoveries and Methodologies*, held in Heidelberg, 12–14 October 2017. Photo © by Adam Bülow-Jacobsen.

Bibliography

Berdowski, Piotr (2003), "*Tituli picti* und die antike Werbesprache für Fischprodukte", in: *Münstersche Beiträge zur antiken Handelsgeschichte* 22.2, 18–55.

Brenne, Stefan (2018), *Die Ostraka vom Kerameikos* (Kerameikos 20), 2 vols., Wiesbaden.

Caputo, Clementina (2019), "Looking at the Material: One Hundred Years of Studying Ostraca from Egypt", in: Cornelia Ritter-Schmalz and Raphael Schwitter (eds.), *Antike Texte und ihre Materialität: Alltägliche Präsenz, mediale Semantik, literarische Reflexion* (Materiale Textkulturen 27), Berlin/Boston, 93–117.

Chantraine, Pierre (1974), *Dictionnaire étymologique de la langue grecque. Histoire des mots*, Vol. III (Λ-Π), Paris.

Dana, Madalina (2015), "Connecting People: Mobility and Networks in the Corpus of Greek Private Letters", in: *CHS Research Bulletin* 3, no. 2. http://nrs.harvard.edu/urn-3:hlnc.essay:DanaM.Connecting_People.2015 (last accessed: 30.1.2020).

Edmondson, Jonathan (2014), "Economic Life in the Roman Empire", in: Christer Bruun and Jonathan Edmondson (eds.), *The Oxford Handbook of Roman Epigraphy*, New York/Oxford.

Fournet, Jean-Luc (2012), "La 'dipintologie' grecque: une nouvelle discipline auxiliaire de la papyrologie?" in: Paul Schubert (ed.), *Proceedings of the 26th International Congress of Papyrology, Geneva 2010*, Geneva.

Johnston, Alan W. (1985), "A Fourth Century Graffito from the Kerameikos", in: *Mitteilungen des Deutschen Archäologischen Instituts, Athenische Abteilung* 100, 283–307.

Kashaev, Sergey V./Pavlichenko, Natalia (2015), "Letter on an Ostracon From the Settlement of Vyshesteblievskaya-3" in: *Hyperboreus* 21.1, 61–79.

Kristensen, Karen Rørby (2013), "Ostracism", in Roger S. Bagnall, Kai Brodersen, Craige B. Champion, Andrew Erskine, and Sabine R. Huebner (eds.), *The Encyclopedia of Ancient History*, Chichester, 4965–4966.

Lang, Mabel (1976), *The Athenian Agora XXI. Graffiti and Dipinti*, Princeton.

Lang, Mabel L. (1990), *The Athenian Agora XXV. Ostraka*, Princeton.

Mertens, Paul (1975/1976), "Les ostraca littéraires grecs", in: *Orientalia Lovaniensia Periodica* 6–7, 398–409.

Sarri, Antonia (2018), *Material Aspects of Letter Writing in the Graeco-Roman World, 500 BC–AD 300* (Materiale Textkulturen 12), Berlin/Boston.

I Documentation and Interpretation of Ostraca as Archaeological Objects

Paola Davoli

Papyri and Ostraca as Archaeological Objects: The Importance of Context

1 Introduction

When in 1996 I started recording the physical properties of the ostraca found in the excavation at Bakchias/Kom Umm el-Atl in the Fayum as field archaeological director of the Joint Archaeological Mission of Bologna and Lecce Universities, I strongly believed that ostraca and papyri were archaeological objects and that they must be documented as such.[1] While these objects are important because of the texts written on them, they also have material properties, which should not be ignored since they are an integral part of the object and of its production process. An ostracon consists of a pottery support, a fragment of a vessel, on which someone wrote a text: in modern archaeological perspective, every object is part of production and consumption processes that are strictly linked with manufacturing technology and with personal, social, and cultural uses. This kind of cultural contextualization of objects allows us to study them as an integral part of life of the society that produced and used them, and not only as single items, pieces of art or texts.

In the process of recording ostraca I became fascinated by a very basic question to which I did not have an answer: was the pottery fragment simply a piece of garbage found and used by chance by the scribe or, on the contrary, was it a purposeful choice? At that time, I had only a vague vision of the potential advantage of recording information about the material support of ostraca and would not imagine that it would become an important topic in papyrology, as Roger Bagnall pointed out in a recent article.[2] I continued documenting ostraca supports also in my other field engagements with the help of ceramologists and registrars, in the hope to collect, sooner or later, a data-set that would be large and representative enough for a statistical analysis to try to answer my question. And the time and the persons did arrive, with Clementina Caputo's PhD research and now with the project directed by Julia Lougovaya.[3] The recording of the ostraca supports went far beyond my first experience and has produced impressive results reflected in recent publications and in several contributions in this volume.[4]

1 The documentation of ostraca supports was still not common in the 1990s: see Caputo 2018, 677–701; Caputo 2019. The data concerning the supports of Bakchias ostraca are included in M. Capasso's annual reports published in several volumes edited by Pernigotti/Capasso 1996–1999, 2000–2003.
2 Cf. Bagnall 2016, 79–87.
3 Caputo 2014, "Per una nuova interpretazione culturale della ceramica vascolare nell'Egitto Greco-Romano," unpublished PhD dissertation defended at the University of Salento in a *cotutelle* program with the University of Poitiers.
4 Caputo/Cowey 2018, 62–75.

https://doi.org/10.1515/9783110712902-002

As archaeological finds ostraca (and papyri) need to be recorded as objects found in specific archaeological contexts, the interpretation of which is crucial for a correct understanding of the use of the items. In this paper, I will focus my attention on the importance of the correct documentation and interpretation of the contexts *vs* ostraca.

2 Theoretical Approach

My field approach to ostraca and papyri is mainly archaeological. They are archaeological objects just as all the other potsherds and objects found during the excavation and they must be processed, recorded, and studied as such. However, they also bear additional information by the virtue of being inscribed with texts which can tell us more about people involved, or dates and events concerned, or some economic parameters.[5] This information can clarify the context of the excavation, and give it a more precise sense[6] and, vice versa, the archaeological context can add valuable information to the texts. This, however, should not be viewed as an easy equation because any archaeological context is the result of a long and complex formation process.

In the last decades there has been a growing interest in combining textual and archaeological data in different geographical areas and historical periods, and consequently discussions of the theoretical approach have been on the rise, too.[7] The "archaeology of texts" or "texts in context" have become familiar topics also in the field of papyrology, where they entail studying papyri in their archaeological find contexts, when these are documented.[8] So far, it has been rather papyrologists than archaeologists (or papyrologists in collaboration with archaeologists) who practice this kind of approaches in the analysis of the materials from excavations that are particularly interesting for the rich papyrological evidence in context, like those carried out between 1924 and 1934 by the University of Michigan at Karanis/Kom Aushim, or more recently by Monash University at Kellis/Ismant el-Kharab.[9] Naturally, these

5 This is also true for all the objects with inscriptions.

6 The term "context" can have a variety of meanings, from material to cultural and historical, from local to global. Here "archaeological context" refers to physical entities, from the entire building with the stratigraphy found in it as a whole, to a single Stratigraphic Unit. For an overview of the use of this term in literature, see Carandini 2017; Gagos/Gates/Wilburn 2005, 171–173.

7 This trend can be considered as part of a wider scholarly debate about the necessity of integrating historical and archaeological data: see at least the first issue of *Archaeology and Text: A Journal for the Integration of Material Culture with Written Documents in the Ancient Mediterranean and Near East* 1 (2017). On a wide perspective: Moreland 2006, 135–151. See also Wilburn/Cook/Gates-Foster 2014, 157–160; Davoli 2001.

8 For a useful overview, see Gagos/Gates/Wilburn 2005, 171–188.

9 Minnen 1994, 227–251; Stephan/Verhoogt 2005, 189–201; Cuvigny 2009, 30–58. T. G. Wilfong has successfully re-contextualized Coptic ostraca from Medinet Habu House 34 and identified a family archive, but could not carry out a more precise study of the house and its content because of the very poor

studies focus on the texts and the contexts tend to be described vaguely, with other items found there only listed and not studied in detail, especially in the cases when the documentation of earlier excavations is the base of the research. While these attempts show the importance of such an integrated approach, they also reveal the difficulties of interpreting archaeological data sets. As a result, two main views have prevailed, an optimistic and a pessimistic one. Holders of the first[10] tend to assume that the presence of texts, and especially of a coherent cluster of them (like ancient archives) must have something to do with the place where they are found and with the people that produced or used those texts. Other objects found in the same context are considered and interpreted in the light of the texts and not by themselves, in their materiality and typology.[11]

The pessimistic[12] view, on the contrary, holds that although texts may help a little in the interpretation of the archaeological context in which they were found, they cannot be used to date the other artefacts from the same context. In this kind of theoretical frame, a wide-scale approach to texts and contexts from the same settlement is the only possible attempt that can give a chance to achieve general or "ideal" results.[13]

Both positive and negative arguments adduced by scholars in particular study-cases might be convincing,[14] but the results are not fully satisfactory because texts bring into mute contexts very detailed data, like names of people and dates, which find no correspondence, and some time are, or seem to be, in contrast with the find place and the other items.

What should we think then about the feasibility of combining archaeological and textual data? Can we consider this opportunity as a real chance to enhance our

documentation from the 1929 excavations: Wilfong 1990, 169–181. Th. Landvatter's study of Karanis House B224 and its papyri reveals a theoretically correct archaeological approach in examining the problems of the interpretation of papyri found in archaeological contexts. However, it seems that the archaeological situation, and thus the reasons of the "mistake" made by the Michigan archaeologists in attributing the same bunch of papyri to two different levels, has not been completely understood. See Landvatter 2016, 1493–1518. On Kellis, see Nevett 2011, 15–31; Bowen 2015, with previous bibliography.

10 Minnen 1994; Stephan 2010, 92–131.

11 See for example Minnen 1994.

12 Husselman 1971, 9; Nevett 2011, 15–31.

13 For an example of reconstructing an "ideal type house" in Mesopotamia on the basis of archaeological, textual, and ethnographical sources, see Faivre 2015, 293–309. Visual reconstruction techniques can be employed to integrate archaeological and textual data in creating an ideal image of the past, cf. Pavel 2017, 67–94.

14 Nevett 2011 does not seem to take into account the fact that the buildings found are just the ruins of the original buildings and that, for example, roofs and upper stories are missing. The materials once stored above the ground floor ceiling may have disappeared due to the erosion or to human activities; alternatively, they may have fallen on the floors of the ground floor or collapsed into the filling of the rooms. In other words, objects found in the ruins of the ground floor rooms could have been stored originally on the upper stories and consequently they would not be necessarily associated with the people that once lived in the ground floor.

knowledge of the past or is it, due to the practical constraints, simply wishful thinking? Generalization is always a mistake, particularly in archaeology, where an unpredictable number of actions, positive and negative, natural and anthropic, may have affected the artefacts and their contexts, both during and after their life span. While I share the general pessimism that comes from some of the attempts already made to combine textual and archaeological data, especially those from old excavations, I nevertheless believe that there is a possible, alternative way to use the data more consistently. The way to proceed must be from the archaeological study of the context, such as by the stratigraphic units, to the texts, and not the other way around, from the texts to the context.

From an archaeological perspective, the findspot of an object is not a sufficient reason to assign it to the people that lived in the context or building where it was found, even if it is in a primary deposition. A good example is the famous bunch of papyri reused as filling in a threshold in House C 5026 at Karanis: they are certainly in primary deposition, but this was not their primary use.[15] Understanding and interpreting archaeological contexts is a very difficult task because it starts from the very moment of the excavation and continues during the study of all the data recovered and the documentation produced during the excavation. To be able to use and understand the detailed information from texts found in context, we must first of all distinguish between primary deposition and primary use of the objects and of the texts, while remembering that there may be more than one possible explanations for the formation of a context because the evidence is not necessarily all consistent.

As renowned archaeologists once stated, we have to keep in mind that "archaeologists do not discover the past as it was; they work on what becomes of what was."[16] With this limitation in mind, it is therefore possible to investigate the past through the combination of what remains of it. In particular, the identification of the stratigraphy and the interpretation of its formation[17] are essential for the following contextual study. In this perspective, the materials found in single layers/stratigraphic units will gain a meaning, which is not necessarily their primary use (although it may be), but is mainly related to the dynamics that led individual objects to share a common deposition or context with other objects. As an example, we can mention an assemblage of objects found on the floor of a *laconicum*, a part of the *thermae* building, excavated in Trimithis/Amheida (Fig. 1). There were several bowls, pigments and lumps of gypsum, iron nails and mud bricks, all materials not strictly related to the use of the *thermae* and not coherent with each other. Taken one by one, they can be defined and assigned a function, which may even fit—one way or another—the function of the room: the plaster may have been used to renovate the room, while the bowls may have served

15 Claytor 2014, 161–164.
16 Rathje/Shanks/Witmore 2013, 5.
17 Schiffer 1987.

Fig. 1: Amheida area 2.1. Abandoned *laconicum* of a public bath of Roman period with waste on its floor.

for drinking water or to mix the colors during the renovation works. However, studied all together in their context they reveal a specific formation process of the deposit and a completely different meaning of simply being waste, objects thrown out in an abandoned and partly demolished room, the *laconicum*. It is therefore evident that in order to establish the relationship of an object, or of a text, with its find context, it is essential to understand the nature and the formation process of the archaeological deposit, and not just the place, in which it was found.[18] The correct evaluation of the nature of the stratigraphic unit is thus crucial for the interpretation of the texts and the objects found in it and for defining their relationships with the context. In other words, it is important to understand whether the objects are found in their primary deposition and whether they can be considered in their primary-usage context.

This approach to considering texts in contexts differs from the methods practiced so far, and it is certainly more complex. Yet, the stratigraphic unit context and the dynamics of its formation are the starting point for a correct interpretation of the text

18 Archaeological reports often refer to buildings and their content while analyzing mainly the floor level and without taking into consideration the original volume of the building. In these cases, the spatial analysis of the objects distribution is limited to a small part of the original living space and is thus often untenable, cf. Margueron/Gransard Desmond 2012, 397–410.

in context and vice versa.[19] This is feasible for the excavations with detailed documentation of the stratigraphy.

I must say that interpreting the stratigraphy is not as easy as it may appear and that, alas, the ideal excavation with perfect documentation does not exist, because the work is done by people and people can make various mistakes. An archaeological excavation is not an easy undertaking and the archaeologist is not a technician who applies mechanical rules in the action and in recording data.[20] A proper archaeologist is more than a technician as well as a papyrologist is more than a translator. These basic and banal considerations are worth repeating to avoid potential misunderstandings in both fields. Interpretation is a key word for both disciplines, and in archaeology it comes with a good eye to identify stratigraphic units in the field. Mistakes in definition and identification of stratigraphic units are always possible, but proper documentation can usually help catch and resolve errors during the study process with all the data available and through a constant exchange of knowledge and opinions with specialists, including papyrologists. Such collaborative work leads to a better understanding of the stratigraphy and consequently of the general context, of the dynamics and chronology of construction, renovation, abandonment and post-abandonment phases of the excavated buildings.[21] The role played by the artefacts in this process of comprehension is important inasmuch as they are related to the formation of the layers. In this respect, the texts can gain extra information from the archaeological context, and vice versa.

Among the most critical factors for the correct evaluation and interpretation of the contexts is the identification of the occurred negative actions, often not clearly recognizable, and of the post-abandonment events, which may have altered at different times the original state of things.[22] The continuous transformation of buildings and of their contents in time must always be present in the mind of the scholar. Rarely do we find situations where settlements ceased to live suddenly and were then sealed, as in the case of Herculaneum and Pompeii. And even if the last stage of habitation was "frozen" and therefore offers us the possibility of a complete contextual study of

19 Nevett 2011, 24 suggests a similar approach: "[...] archaeology can be used more effectively by analyzing it independently of the texts, rather than as a supplement to try to fill in details which the documentary sources omit."

20 Very interesting for the methodology and the results is Stephan 2010; however, the author assumed that the data set produced by the University of Michigan Excavation in Karanis is reliable in attributing papyri to levels. There is no discussion about reliability of the data set and about the fact that the pattern distribution resulting from composed GIS is mainly accidental because of the numerous variable that cause the disappearance or the conservation of the papyri. Nevertheless, the general overview of the distribution of the papyri in a settlement is an interesting perspective, even if the relativity and the accidental nature of the data preservation must never be forgotten.

21 The members of the two excavation teams I have the opportunity to direct, in Soknopaiou Nesos/Dime and Trimithis/Amheida work in strict synergy. For the so-called reflexive method, see Hodder 2000.

22 See at least Cameron/Tomka 1993.

buildings, people and objects, previous phases of habitation must be recognized and their interaction in the sequence/evolution of the buildings/settlement evaluated. The very life of the building and of the people who lived there entails continuous changes—sometimes irrelevant, other times important—even within a limited time frame.

The dynamism of a residential context, in which ostraca and papyri can be found, is very high in terms of time and space. Materials and objects found inside a room did not necessarily belong to the life of that building, and even if they did, they may or may not have been original belongings of the inhabitants: they might have been collected to be reused, for example, and then left behind. Among possible reasons for an object to be in a certain context is the reuse of materials, a very common practice in Antiquity, much more frequent and extensive than commonly thought.

3 Practical Approach: A Case Study

As examples, I will refer to my own experience in excavating Greco-Roman settlements located in the western desert of Egypt, like Soknopaiou Nesos/Dime in the Fayum and Trimithis in Dakhla Oasis, contexts in which ostraca and papyri are preserved. The fairly good state of preservation of the two settlements is due to their original and current position in the desert; sand is the basic matrix of the stratigraphy together with mud used to made bricks and buildings, as well as floors. One of the main character of these settlements is their long life, from pre-Ptolemaic to Late Roman periods, which has led to the formation of artificial hills (*kiman*) formed by sequences of superimposed layers of anthropic and natural deposits, where positive actions acted together with negative ones, meaning, for example, construction and demolition of buildings or production and reuse of materials. Beside actions purposefully carried out by people living there in the past, we have to take into consideration natural phenomena as well as recent anthropic tampering, which all play a role in the formation of the current state of an archaeological site. In this kind of environment, natural phenomena that could affect a settlement during its habitation phase as well as after its abandonment consist mainly of sand accumulation and erosion, both caused by the desert winds, but there also occur earthquakes, subsidence and rains. The post-abandonment period up to present day has been about fifteen centuries, during which changes in natural, social and economic environment occurred and affected directly or indirectly the preservation of the sites.[23] The dynamics that form the current state of the archaeological sites are complex and deserve much attention, because the correct interpretation of the archaeological remains can depend on a general understanding of these dynamics. In this kind of environment identification, interpretation and understanding of changes can be a challenge.

23 See Davoli 2015, 87–112.

Fig. 2: Amheida area 2.1. The house of Serenos (B1).

The excavation of the fourth-century house of Serenos and its surroundings at Trimithis in the Dakhla Oasis has been, in my opinion, a successful example of the contextualization of texts according to the "alternative method" I described above. The archaeological Mission of New York University, directed by Roger Bagnall and myself as field director, found many Greek texts on more than one thousand ostraca and on walls (but no papyri) in the areas excavated so far.

The house of Serenos is completely preserved at ground floor and up to about 2.5 m in height (Fig. 2). The destruction of the upper part was due to erosion because it was exposed and not protected by the desert sand, which invaded the interior of the ground floor shortly after the house was abandoned. Mixed into the 2.5 meters of windblown sand were the collapses of walls and ceilings (Figs. 3 and 4). We could ascertain that the filling of the rooms was not recently disturbed, except for a few centimeters on top surface and for parts of room 1, where a rich painted decoration was repeatedly exposed. The majority of the stratigraphic units excavated were thus reliable: ostraca, other potsherds, and small objects were recovered at different elevations within the rooms and basically in four different kinds of deposits: single objects scattered in windblown sand, groups of objects mixed with collapsed walls or ceilings, scattered objects in the dust covering the floor, and objects below the floors. The subsequent question was whether we could consider all the ostraca found in the filling of one room as part of the life of that room. In most cases we could ascertain that this was not the case. The identification and separate excavation of each stratigraphic unit, mainly identified by materials and position, gave us the possibility to keep apart

Fig. 3:
Amheida: filling of room 4 in Serenos's house: windblown sand and collapsed ceiling.

Fig. 4:
Amheida: filling of room 8 in Serenos's house. The collapse of the ceiling.

Fig. 5: Amheida: detail of the vault of room 14 in Serenos's house with chinking sherds.

the objects found in them and to study the dynamics of formation of the deposits. The study of all materials forming the stratigraphic unit is necessary to determine its nature and possibly the date of its formation, while the study of single objects gives us better clues about the overall significance of the context. Thus, objects found mixed in a collapsed roof can be explained as part of the original upper story, whether a terraced roof or another room. However, this is not always the case with potsherds, as we have seen at Trimithis, where they are frequently used in mud brick masonry as chinking sherds or filling (Fig. 5). Accordingly, we have at least two explanations for the original provenance of the objects found in a collapse: they could have been objects used in the house but in a different room or area, or they were waste reused as building material. I will refer to these objects as "cluster type 1".

Single objects floating in windblown sand filling are probably intrusions and it is impossible to know how, why, and when they ended up there. Their connection with the house or the room is therefore uncertain ("cluster type 2").

On the floor, we would expect to find the furniture of the room or whatever was left of it. The house of Serenos must have been richly furnished judging from a group of bronze lamps and vessels hidden in a pit in the floor of room 4 and the expensive painted wall decoration in four rooms, but apart from this, nothing relevant has been found. At a first glance, it looked like the abandonment was a slow process during which the family transferred all they could. However, the presence of that bronze treasure and of a couple of possible coin hoards hidden in rooms 4 and 14 suggests that

Fig. 6: Amheida: collapse of a wall on the floor of room 1 in Serenos's house caused by the robbery of the wooden lintels of the two doors.

the family intended or hoped to return.[24] One would expect that in this case at least some pieces of furniture should have been left *in situ*, too. However, shortly after the abandonment, the house must have been entered by people who probably ransacked the furniture and removed all the wood elements, like the lintels and jambs of the doors and from the flat roofs, which caused at the same time abrupt collapses and the destabilization of walls and of the other ceilings (Fig. 6). As a result, what we have found on the floor are the ostraca and objects collapsed from the top of the room (with the same distinction as we have seen for "cluster 1") mixed with *de facto* refuse left behind on the floor by the family and by the robbers (Fig. 7).[25] All these refuses are in their primary deposition, but among them only a few can be ascribed to the last phase of occupancy of Serenos's family and thus considered as of primary use (I will refer to this group of objects as "cluster type 3"). Again, it was not simply the position within

24 The hypothesis that the coins found in these two rooms belonged to hoards is supported by the fact that they were numerous and scattered at floor level. In both cases the mud floors were not preserved and they turned into powder because of the collapse of the ceilings. The collapses may have crashed the pots or containers where the coins were collected, presumably hidden in pits below the mud floors.

25 On definition of *de facto* refuse, cf. Schiffer 1987, 89–96.

Fig. 7: Amheida: ostraca on the floor in room 2 in Serenos's house.

the room that implied a connection between the objects and the original family living there. Rather, to determine whether there was a connection, we needed first to analyze and interpret the dynamics of the formation processes of every stratigraphic unit and to identify, when possible, which materials were in their context of primary use.

On the basis of several ostraca found on the floor in the house and identified as *de facto* refuse, the team's papyrologists were able to attribute the house to Serenos and his family.[26] These ostraca provide a series of names of people belonging to the same family and of related persons, whose activities span the period from about 330 to 370 CE. Serenos, a member of the city council, is the central figure in these texts.[27] Business letters and delivery orders, some of which were written and signed by Serenos himself, reveal a circle of individuals engaged in estate activities centered around him.[28] Most of these names appear also on ostraca found in a small dump accumulated just outside the house, in a narrow alley (room 43), and composed of domestic waste. The origin of this waste was thus recognized as the house of Serenos. Other ostraca identified through their names as related to the family were found in ceiling collapses ("cluster 1") and attributed to the upper story of the house.

26 Bagnall/Ruffini 2012; Ast/Bagnall 2016.
27 Bagnall et al. 2015, 87.
28 Ast/Davoli 2016, 1458.

Fig. 8: Amheida: the powdered floor in room 4 in Serenos's house.

Ostraca and objects found at floor level in room 4, of clearly mixed dates, suddenly disrupted our puzzle of the evidence (Fig. 8). In a closer examination of the room and its filling, we observed that the floor, made of common compacted mud, disintegrated under the weight of the collapse of the ceiling and became powder. As a consequence, the materials on the floor were comprised of those originally imbedded in the floor and of those below it, which belonged to the filling of the foundation of the room. Since they all came to be mixed together, they were collected by the archaeologists as one stratigraphic unit. In this case, we could go back to the original deposits of the objects thanks to a very accurate documentation of the elevation and position of single ostraca and coins and of most of the other diagnostic pieces, which allowed us to identify the materials originally buried below floor. The objects imbedded in the foundation filling ("cluster type 4"), which had been sealed by the mud floor, were not part of room 4 habitation phases even though they were found there. This was the first time we encountered a dump underlying this area and we continued to find the same dump below the other floors of the house, as well as below the floor in the streets (Fig. 9). In the latter area we found hundreds of ostraca predating the foundation of Serenos's house, which had nothing to do with this family. Several years of excavations and of studying the stratigraphy, with its features and objects, in a constant exchange of information with the colleagues of the team allowed us to reach a quite

Fig. 9: Amheida: waste filling the foundations below floor in room 4 in Serenos's house.

clear view of the formation and reuse of this dump.[29] The stratigraphic excavation of the dump and the subsequent study of the materials found there allowed us to understand its peculiar formation. It turned out that it was formed not where it was found, but was spread out on purpose over the area. Pottery, objects, and ostraca found in the different layers of the dump were in fact mixed and are not chronologically stratified, with twin ostraca found in different places and deposits.[30] We came to the conclusion that a dump (or more than one) was used to flatten the area where Serenos's house was built. The materials found in it date mainly from the second to the end of the third century CE, with a few pre-Dynastic and pre-Roman items. In this case, the connection between the texts and their find contexts is not significant at all, as they come from artificially displaced waste. Nonetheless, significant data were recovered concerning the original use of a certain type of small ostraca with short texts: for the first time, we found some of them still embedded in the mud stoppers sealing jars and realized that they were tags (Fig. 10). The purpose and meaning of these short texts became clear because of the recovery of their primary context of use: the mud stopper. They supply information on the origin of the content of the jar through the mention of a plot of

29 Ast/Davoli 2016, 1447–1471.

30 A good example of twin ostraca (ostraca with the same shape and text) are inv. 11699 from below room 4 and inv. 14089 from below Street 2 (= O.Trim. 1.123 and O.Trim. 2.599). On methods of dump interpretations, see at least Sosna/Brunclíková 2017.

Fig. 10: Amheida: tag-ostracon on a mud stopper.

land named after the well, as well as the name of the tenant. The texts close with the regnal year of production.[31]

These jar-tags are common finds in Trimithis in the excavated areas, and their use is attested in the third and fourth century CE. Their texts produced a good deal of information about economic activities and personal names, while the study of the pottery supports by Clementina Caputo opened new perspectives on the way these tags were produced.[32] Moreover, their connection with the stratigraphy and contexts allowed us to define better their chronology and expand our knowledge of different networks of people. The personal names mentioned on them, for example, can be assigned to two groups, one with traditional Egyptian names and the other comprised of Greek, Roman and Christian names. The two groups are also chronologically distinct as belonging to pre- and post-Diocletian (284–305) periods.[33]

31 Ast/Davoli 2016, 1459.
32 Caputo 2016, 62–88.
33 Bagnall 2015, 116–118.

The texts of the ostraca studied according to their archaeological contexts are published in two volumes in the Amheida series publications,[34] and the impact of the stratigraphic study on the comprehension of the texts and vice versa is immediately evident. Although in our excavations we never use ostraca and coins as chronological markers of stratigraphic units, in some cases we were able to refine the contexts' date to specific years thanks to ostraca and coins, a precision that would not be possible on solely the basis of typology of pottery and objects. Thanks to our reliable contexts, the richness of data recovered in different excavated areas, the fairly precise chronology of the various occupation phases, our ceramologists were able to establish good chronologies for the use and production of several types of vessels.[35] This important contribution was made possible by the precision in dating the stratigraphy, which is based on its careful multidisciplinary study and on analysis of texts in their archaeological context.

The case study presented here, as far as archaeological situation is concerned, is of average complexity. The results of the multidisciplinary study of the evidence collected according to the stratigraphic unit method allowed us to distinguish among events that occurred at different times in the past and to assign the texts, ostraca in this case, to their proper phase of use rather than to the building or the place where they were found. As we have seen, ostraca from clusters 1 to 4 have different provenance, dates and use even though they were found in the same room or building. Furthermore, we learned that ostraca, like other potsherds, may have had many lives as a durable material well suited to be reused several times and for different purposes. For this reason, ostraca can be found in contexts and deposits of a later date than those of their primary use and thus we must be very cautious in their evaluation within the find contexts. Their identification and dating independently from those of the archaeological context is thus essential to avoid misinterpretations. However, the possibility to study the archaeological context in its entirety, that means in its stratigraphic sequence and with the data coming from all the materials and objects found in it, can explain the "function" of the ostraca within the context.

4 Conclusions

Beside deficiency of documentation of earlier excavations, there seem to have been two main problems in the past studies concerned with re-contextualization of papyri and ostraca that prevented satisfactory results. Firstly, attempts to study texts within their findspots tend to pay little to no attention to the formation processes that brought them to those spots. Secondly, such studies are usually carried out by specialists of

34 Bagnall/Ruffini 2012; Ast/Bagnall 2016.

35 Bagnall et al. 2017, 195–211; Caputo/Marchand/Soto 2017, 1011–1026.

a single discipline, such as papyrology, even when a need for an interdisciplinary collaboration is acknowledged. While a good knowledge of archaeological theories about data interpretation is certainly a good starting point, archaeological skills and field experience, in particular of the kind and nature of the archaeological remains we are dealing with, is crucial for a reliable critical approach to the data and to the records produced by the archaeologists. A multidisciplinary approach in the true meaning of the term, which entails a collaboration of different specialists in the field, in which archaeologists are no less important than papyrologists or historians,[36] is surely the best way to make sense of our data. I am well aware that this is not an easy task, especially when we have to deal with earlier excavations, yet it can be aimed for when circumstances allow it. The integrated multidisciplinary approach adopted by the Amheida team[37] has produced highly satisfactory results. There, papyrologists, historians, ceramologists, and archaeologists, all with their own skills, were essential in building the complex picture and none of them would have reached the same result without the others. Studying the texts within their contexts and studying the archaeological contexts with texts in them are a very complex matter that no single specialist can afford, as already noted some years ago by the late Traianos Gagos and his collaborators.[38]

Bibliography

Ast, Rodney/Bagnall, Roger S. (2016), *Amheida III. Ostraka from Trimithis,* Volume 2: *Texts from the 2008–2013 Seasons,* New York.

Ast, Rodney/Davoli, Paola (2016), "*Ostraka* and Stratigraphy at Amheida (Dakhla Oasis, Egypt): a Methodological Issue", in: *Proceedings of the 27th International Congress of Papyrology, Warsaw, 29 July–3 August 2013* (The Journal of Juristic Papyrology Supplements 28), 1447–1471.

Bagnall, Roger S. (2015), "Onomastics", in: Roger S. Bagnall, Nicola Aravecchia, Raffaela Cribiore, Paola Davoli, Olaf E. Kaper and Susanna McFadden (eds.), *An Oasis City*, New York, 116–118.

Bagnall, Roger S. (2016), "Materializing Ancient Documents", in: *Daedalus* 145 (2), 79–87.

Bagnall, Roger S./Aravecchia, Nicola/Cribiore, Raffaella/Davoli, Paola/Kaper, Olaf E./McFadden, Susanna (2015), *An Oasis City*, New York.

Bagnall, Roger S./Caputo, Clementina/Casagrande-Kim, Roberta/Soto, Irene (2017), "New Evidence from Ostraka for the Dating of 4th-century CE Ceramic Assemblages", in: *Bulletin de la liaison de la Céramique Egyptienne* 27, 195–211.

Bagnall, Roger S./Ruffini, Giovanni R. (2012), *Amheida I. Ostraka from Trimithis,* Volume 1: *Texts from the 2004–2007 Seasons,* New York.

Bowen, Gillian E. (2015), "The Environment Within: the Archaeological Context of the Texts from House 3 at Kellis in Egypt's Dakhleh Oasis", in: Andrea A. Di Castro and Colin A. Hope (eds.),

36 Multidisciplinary approach is traditionally difficult within humanities, see Pavel 2017, 71.

37 See also Bagnall et al. 2017.

38 Gagos/Gates/Wilburn 2005, 186.

Housing and Habitat in the Ancient Mediterranean, Cultural and Environmental Responses, Leuven/Paris/Bristol, 231–241.

Cameron, Catherine M./Tomka, Steve A. (eds.) (1993), *Abandonment of Settlements and Regions. Ethnoarchaeological and Archaeological Approaches*, Cambridge.

Caputo, Clementina (2016), "Ceramic Fabrics and Shapes", in: Rodney Ast and Roger S. Bagnall, *Amheida III. Ostraka from Trimithis,* Volume 2: *Texts from the 2008–2013 Seasons,* New York, 62–88.

Caputo, Clementina (2018), "Gli *ostraka* e l'importanza del supporto scrittorio: evoluzione delle metodologie di studio", in: Paola Davoli and Natascia Pellé (eds.), *Polymatheia. Studi classici offerti a Mario Capasso*, Lecce, 677–701.

Caputo, Clementina (2019), "Looking at the Material: One Hundred Years of Studying Ostraca from Egypt", in: Cornelia Ritter-Schmalz and Raphael Schwitter (eds.), *Antike Texte und ihre Materialität: Alltägliche Präsenz, mediale Semantik, literarische Reflexion* (Materiale Textkulturen 27), Berlin/Boston, 93–117.

Caputo, Clementina/Cowey, James M. S. (2018), "Ceramic Supports and Their Relation to Texts in Two Groups of Ostraca from the Fayum", in: Francisca A. J. Hoogendijk and Steffie van Gompel (eds.), *The Materiality of Texts from Ancient Egypt: New Approaches to the Study of Textual Material from the Early Pharaonic to the Late Antique Period* (Papyrologica Lugduno-Batava 35), Leiden/Boston, 62–75.

Caputo, Clementina/Marchand, Julie/Soto, Irene (2017), "Pottery from the 4th-century house of Serenos in Trimithis/Amheida (Dakhla Oasis)", in: Delphine Dixneuf (ed.), *LRCW 5. Late Roman coarse wares, cooking wares and amphorae in the Mediterranean* (Études Alexandrines 43/2), Alexandria, 1011–1026.

Carandini, Andrea (2017), *La forza del contest*o, Bari.

Claytor, W. Graham (2014), "The Threshold Papyri from Karanis", in: Terry G. Wilfong (ed.), *Karanis Revealed*, Ann Arbor, 161–164.

Cuvigny, Hélène (2009), "The Finds of Papyri: the Archaeology of Papyrology", in: Roger S. Bagnall (ed.), *The Oxford Handbook of Papyrology*, Oxford, 30–58.

Davoli, Paola (2001), *Archeologia e Papyri*. Gli Album del Centro di Studi Papirologici dell'Università degli Studi di Lecce 2, Napoli.

Davoli, Paola (2015), "Papyri, Archaeology, and Modern History: A Contextual Study of the Beginnings of Papyrology and Egyptology", in: *Bulletin of the American Society of Papyrologists* 52, 87–112.

Faivre, Xavier (2015), "Inventaires des maisons", in: Cécile Michel (ed.), *De la maison à la ville dans l'Orient ancien: la maison et son mobilier* (Archéologies et Sciences de l'Antiquité, Cahiers de Thèmes Transversaux ArScAn XII), 293–309.

Gagos, Traianos/Gates, Jennifer E./Wilburn, Andrew (2005), "Material Culture and Texts of Graeco-Roman Egypt: Creating Context, Debating Meaning", in: *Bulletin of the American Society of Papyrologists* 42, 171–188.

Hodder, Ian (ed.) (2000), *Towards reflexive method in archaeology: the example of Çatalhöyük*, Ankara.

Husselman, Elinor M. (1971), *Papyri from Karanis*, 3rd series (Michigan Papyri IX), Ann Arbor.

Landvatter, Thomas (2016), "Archaeological and Papyrological Inquiry at Karanis: Problems and Potentialities", in: *Proceedings of the 27th International Congress of Papyrology Warsaw, 29 July-3 August 2013*, Warsaw, 1493–1518.

Margueron, Jean-Claude/Gransard Desmond, Jean-Olivier (2012), "From Plan to Volume: the Need for Archaeological Analysis in 3D Modeling", in: *Archeologia e Calcolatori*, Suppl. 3, 397–410.

Minnen, Peter van (1994), "House-to-House Enquiries. An Interdisciplinary Approach to Roman Karanis", in *Zeitschrift für Papyrologie und Epigraphik* 100, 227–251.

Moreland, John (2006), "Archaeology and Texts: Subservience or Enlightenment", in: *Annual Review of Anthropology* 35, 135–151.
Nevett, Lisa (2011), "Family and Household, Ancient History and Archaeology: A Case Study from Roman Egypt", in: Beryl Rawson (ed.), *A Companion to Families in the Greek and Roman World*, Oxford, 15–31.
Pavel, Catalin (2017), "Visual Models in Archaeology and Harmonization of Archaeological and Literary Data", in: *Archaeology and Text* 1, 67–94.
Pernigotti, Sergio/Capasso, Mario (eds.) (1996–1999) and (2000–2003), *Bakchias III–IX*, Pisa and Imola.
Rathje, William L./Shanks, Michael/Witmore, Christopher (eds.) (2013), *Archaeology in the making. Conversations through a discipline*, New York/London.
Schiffer, Michael B. (1987), *Formation Processes of the Archaeological Record*, Salt Lake City.
Sosna, Daniel/Brunclíková, Lenka (eds.) (2017), *Archaeologies of Waste. Encounters with the Unwanted*, Oxford.
Stephan, Robert P. (2010), "Texts and Artifacts: A Spatial Analysis of Papyri at Karanis", in: *Past Imperfect* 16, 92–131, DOI: https://doi.org/10.21971/P75017.
Stephan, Robert P./Verhoogt, Arthur (2005), "Text and Context in the Archive of Tiberianus (Karanis, Egypt; 2nd Century AD)", in: *Bulletin of the American Society of Papyrologists* 42, 189–201.
Wilburn, Andrew T./Cook, R. James/Gates-Foster, Jennifer (2014), "The Karanis Housing Project: a New Approach to an Old Excavation", in: Terry G. Wilfong (ed.), *Karanis Revealed*, Ann Arbor, 157–160.
Wilfong, Terry G. (1990), "The Archive of a Family of Moneylenders from Jême", in: *Bulletin of the American Society of Papyrologists* 27, 169–181.

Photo Credits

Fig. 1–10: © Amheida Project.

Clementina Caputo

Pottery Sherds for Writing: An Overview of the Practice

> Two materially oriented revolutions have transformed the study of ancient documents in recent decades: first, a new interest in the ancient production of written artifacts; and second, the concern with the archaeological contexts [...]. Interest has undeniably shifted in the direction of the broader cultural horizons of the ancient world in their embodied form, and away from disembodied canonical texts.[1]

In 2016, Roger S. Bagnall used these words to acknowledge the growing interest in the ancient production of written artifacts. Ostraca provide us with two sets of information: first, the written record which changes a common sherd into an ostracon; second, the material record which inform us on the technical process of production and the support's previous life. We should never forget that the environment in which texts are produced is a vital factor in influencing the use of material on which scribes wrote. An equally important role is played by the available technological knowledge and the degree to which this permeated the communities producing the ostraca.

It is unquestionable that for a long time the complex nature of the ostraca has not been fully appreciated in scholarship. Philologists, mostly concerned with the written texts, did not always reached out to ceramologists and archaeologists who, in turn, showed some degree of interest in such a complex topic only in the last few decades.[2] I fully agree with Bagnall when he affirms that we should recognize that we are witnessing not a "neutral and accidental" revolution but a gradual development: the process is neither linear nor sudden.[3] This was triggered by circumstances in which, at the 'signals' emitted by someone, the others were tuned to the same frequency, creating a resonance phenomenon.

Ostracon, like any other artifact, must be considered as a *memory storage tool*.[4] It represents the materialization of the way of thinking and communicating of an

1 Bagnall 2016, 79 and 87.
2 Caputo 2019a.
3 Bagnall 2016, 86.
4 Pollock 2016, 282.

This publication originated in the Collaborative Research Centre 933 "Material Text Cultures. Materiality and Presence of Writing in Non-Typographic Societies" (subproject A09 "Writing on Ostraca in the Inner and Outer Mediterranean"). The CRC 933 is funded by the German Research Foundation (DFG). I would like to acknowledge Dr. Roberta Casagrande-Kim's assistance in the copyediting of this article. Ostraca and papyri published in corpora are cited in accordance with the *Checklist of Editions of Greek, Latin, Demotic, and Coptic Papyri, Ostraca, and Tablets*, http://papyri.info/docs/checklist (last accessed: 30.1.2020).

https://doi.org/10.1515/9783110712902-003

individual or a group of individuals at a specific time and place. The writer has used a precise technology and practice to create it, choosing among those at his or her disposal, and applying it to the ostraca. This action created an entanglement between producer and product which was maintained throughout the life of the artifact, and many more connections were established as more individuals came into contact with it. Keeping in mind that the final goal of our studies is to reconstruct history,[5] every artifact must be considered not as a mere object but as an agent, a small, single unit or 'node' inside a big network, a dynamic entity capable of influencing and be influenced in turn.[6]

The vast majority of ostraca were produced on ceramic. This is not surprising because ceramic was one of the most commonly used, recycled, and reused materials in the ancient world, so much so that it appears to be omnipresent, inexpensive, and always available.[7] Because of this view of the ceramic material, scholars often consider it superfluous to investigate the reasons for the ancients' choice of ceramic as an alternative writing support. Although the data collected systematically from the archaeological excavations, combined with the study of different corpora of ostraca, reveals a much more nuanced picture, many publications still state that the use of sherds for producing ostraca is always accidental, that the fragments come almost exclusively from amphorae, and that ostraca are always small sherds used for short texts. These assumptions may have been valid, had they been scientifically demonstrated, but this is not the case. Until a few decades ago, systematic study of the materiality of ostraca had been sporadic and ostraca had been hardly considered an important part of the contexts and place in which they had been found or produced. Therefore, it is ultimately impossible to prove that containers such as amphorae were used more commonly than other ceramic forms, or that the fragments chosen to be written upon were randomly picked up. Furthermore, were ostraca consistently in the shape of small sherds or is this only a commonly held belief derived from the lack of systematic investigations for different places and periods?

I believe it is necessary to provide and discuss a few case-studies which might help answer some of these questions. Although the following examples cannot be considered as illustrative for the whole ostraca production in the ancient world, they are among the best documented to date and they are based upon systematic ceramological classifications of the ostraca as well as an extensive study of the site's ceramic productions. This precision of documentation allows one to draw meaningful comparisons between the frequency of text-bearing fragments and that of uninscribed sherds.

5 Cuvigny 2018.

6 Olsen 2003, 96.

7 Peña 2007, 160; Bülow-Jacobsen 2009, 15.

1 Counting Sherds: Some Key Case Studies from Egypt

When examining the main settlements of Greco-Roman and Late Antique Egypt that have yielded large numbers of texts on potsherds, we immediately turn our attention to regions such as the Fayum (Table 1),[8] the Eastern and Western Deserts,[9] the Theban area, and the Aswan region in Upper Egypt.

One of the most representative examples from the Fayum is the Greco-Roman site of Soknopaiou Nesos, modern Dime, located at the northern border of the lake Qarun. It functioned as a religious center around the oracle temple of the god Soknopaios.[10] Papyrological evidence attests to the foundation of the *kōmē* in the third century BCE, and suggests that the site was abandoned in the third century CE.[11] The Soknopaiou Nesos Project (SNP), directed by Mario Capasso and Paola Davoli, began excavations in 2003, and by the 2014 season had uncovered the area of the main temple (known as ST20) and completed the topographical and ceramological surveys of the settlement and the surrounding territory.[12]

I have been working as the site ceramologist since 2006. The research conducted in the field and the ceramological survey have resulted in a chrono-typological catalogue of the main ceramic types and in a classification of the petro-fabrics associated with these types. The ceramological repertory for the site extends chronologically from the Ptolemaic period through the seventh–early eighth century CE.[13] According to the type and fabric/ware classification system,[14] the morphological repertoire consists mainly of Egyptian productions utilized in religious practices and for daily life.

8 For most of the sites mentioned in the table, the figures do not include the unpublished results of recently resumed excavations. See also Bagnall 2011, 119, Table 6.

9 For the updated number of texts inventoried by site, see Cuvigny 2018, 195. The numbers indicated in the table comprise both ostraca and *dipinti*. See also Brun et al. 2018.

10 Capasso 2015. See also Chaufray et al. 2018.

11 In general, the excavations of the last 14 years produced a lot of material dating to the earlier phases, i. e., third century BCE to third century CE ceramics, objects and texts. However, there is also evidence of activities beyond this period, at least from the fourth to the early eighth centuries CE. See Davoli 2015; Caputo/Davoli (forthcoming).

12 Marchand 2012. See also Chiesi et al. 2012. A detailed and complete analysis of the archaeological contexts and a report on the quantities and types of written materials found in the excavated areas was published in the 2012 volume *Soknopaiou Nesos Project* I, see Capasso/Davoli 2012.

13 See Dixneuf 2012.

14 The term 'fabric' is employed for the basic clay body with inclusions, either naturally occurred or intentionally added by the potters, and characteristics of the fired product, such as hardness, degree of porosity, and color. The term 'ware' identifies a specific combination of one fabric with one surface treatment or combination of treatments, such as pale surface coating, or pale surface coating with polish, etc. For the preliminary fabric classification system for the site, see Dixneuf 2012, 317–318. For more detailed descriptions and comparisons with other Greco-Roman Egyptian productions see The Levantine Ceramic Project, https://www.levantineceramics.org (last accessed: 29.1.2020).

The categories of transport containers are the most attested in Soknopaiou Nesos' assemblages (19.7 %), together with bowls (21.3 %), cooking pots (13.5 %), and jars (13.3 %). These forms are largely made of alluvial Nile clay (F1). The recognized imports represent a small percentage and they consist mostly of amphorae coming from the Mediterranean basin and the Aegean area, dated between the third century BCE and the seventh century CE. The closest parallels for Soknopaiou Nesos' ceramic comes from the corpora of other sites in the Fayum, such as Tebtynis,[15] Bakchias,[16] Medinet Madi,[17] Karanis,[18] and Hawara.[19]

The ceramic field catalogue is used to identify all ceramic fragments found at the site as well as to classify the inscribed sherds. Around 600 ostraca were found by the SNP during the 2003 to 2017 stratigraphic excavation seasons.[20] Most of the ostraca, dated to the Roman period and mainly written in Egyptian Demotic (91.7 %),[21] come from inside the *temenos*, where they were concentrated at the east and west ends of the courtyard (C1), between the Ptolemaic Temple ST18 and the Roman Temple ST20, in two dump layers. Additionally, 28 ostraca were found in modern dumps, resulting from the 1910 excavation by Friedrich Zucker and Wilhelm Schubart, and located at the *temenos*'s western outer side.[22] Before the 2000s excavations, the most significant discovery of ostraca (228 in total) was made during the expedition of the Königliche Museen of Berlin directed by Zucker and Schubart and carried out in 1909–1910 (O. Dime I).[23] The corpus of ostraca found to date at Soknopaiou Nesos comprises mainly documentary texts, such as accounts related to the economic activities of the temple, and various lists (lists of names, *Phylai* lists, and food provisions). Most common are name-ostraca, recording one or two personal male names, possibly related to the priests at Soknopaiou Nesos.[24] These short texts are written on rather small, roughly quadrangular, sherds (ranging from 3.5 to 8 cm in width, from 3.5 to 9 cm in

15 Ballet/Południkiewicz 2012.

16 Gasperini 2014.

17 Bartoli 2006. For the report of the ceramic materials found during the several years of excavation (1984–2005), see also Bresciani et al. 2006.

18 Johnson 1981.

19 Marchand 2009.

20 All the ostraca are kept in the general storehouse for the Fayum in Kom Aushim, ancient Karanis.

21 A limited number of ostraca are written in Greek (3.7 %), Greek/Demotic (0.2 %), Demotic/Greek (0.5 %) and Coptic (0.8 %). The rest are pictorial (1.7 %) and unknown texts (1.5 %).

22 On Zucker's excavation, see Zucker/Schubart 1971, 5–55, especially 14. All the ostraca found during the 2003–2014 Soknopaiou Nesos excavations are at present under study by M. Capasso (Università del Salento-Lecce), M. A. Stadler, and C. Arlt (Würzburg University). A comprehensive study of all the written materials from the recent excavations, including the ostraca, will appear in the volume *Soknopaiou Nesos Project* II (forthcoming). For a preliminary study, see Capasso 2012; Stadler 2012. See also Arlt 2013.

23 These ostraca were published in 2006 by Sandra Lippert and Maren Schentuleit (O. Dime I), see Lippert/Schentuleit 2006. See also Lippert/Schentuleit in this volume.

24 Arlt 2013.

length, and from 0.6 to 1.6 cm in thickness), whereas lists and accounts are generally written on large potsherds or even almost complete containers.[25] In order to integrate the ostraca's textual information with their physical properties, the entire corpus from Soknopaiou Nesos has been analyzed according to the newly compiled ceramological data for the site.[26] The great majority of the ostraca are from Egyptian early-Roman amphorae AE 2/3 and AE 3 (96.2%), while the rest is divided among bowls, pots, jars, and unclassified forms. So far, no ostraca in calcareous clay have been found.

Although I compared the data from the analysis of the fragments used as writing supports at Soknopaiou Nesos with the results available for the published groups of ostraca from other sites located in the Fayum,[27] the research has encountered significant difficulties. For most ostraca, it is possible to deduce from the photos, often in black and white, or from basic published information that amphorae fragments were used as writing supports. However, in these publications the descriptions of the vessel types to which the inscribed sherds belong are often not specific enough for a more precise identification, and, most importantly, the data coming from the ostraca study are almost never compared to a systematic quantification of the ceramics available from the sites where they were found. Therefore, it is evident that without in-depth analyses of large assemblages of ostraca (containing the largest possible number of statistical units) and ceramic materials from various archaeological sites it is impossible to determine the trends that favored the choice of a specific vessel for writing a specific type of text or if this was ever considered important. Furthermore, apart from the accurate study and classification conducted on ceramic materials for some of the abovementioned settlements, there are no systematic studies of pottery from many other excavated sites: in most instances, it is impossible to compare the frequency of text-bearing fragments to that of uninscribed sherds.

25 The study of the Berlin pieces, conducted in 2016, revealed that for certain types of texts, such as name lists and accounts, large parts or even almost complete amphorae were used. This is the first attestation of this practice at the site. A detailed description of the reassembled fragments and re-edition of their texts can be found in Caputo/Cowey 2018.

26 A detailed study of the materiality of the ostraca found during the SNP recent excavations will be published in the volume *Soknopaiou Nesos Project* II, cf. Capasso/Davoli (forthcoming).

27 For an overview of the publications concerning the ostraca from Bakchias/Kom Umm el-Atl, visit the page http://papyri.info/bibliosearch and search for 'Bakchias' and 'ostraca' (last accessed: 24.1.2020); Reiter 2007; Caputo 2018, 687, fn. 59. For an overview of the published ostraca from Karanis/Kom Aushim, visit the page http://papyri.info/bibliosearch and search for 'Karanis' and 'ostraca' (last accessed: 24.1.2020). The edition of the ostraca from Narmouthis/Kom Medinet Madi (O.Medin.Madi, O.Narm. I–II, and O.Narm.Dem. I–III) was the goal of a research program developed by the Department of Egyptology at Pisa University under the direction of Edda Bresciani. A digital photographic archive of the ostraca was created for the originals kept in the Egyptian Museum in Cairo; see Bresciani et al. 2002; http://www.egittologia.unipi.it/pisaegypt/BibMedinet.htm (last accessed: 4.2.2020). For the ostraca from Philadelphia/Kom el-Kharaba el-Kebir (Darb Gerza) see also Caputo 2018, 2019; Lougovaya 2018. For the ostraca from Tebtynis/Kom Umm el-Boreigat, see Gallazzi 1998, 185–207; Litinas 2008b; Gallazzi 2018; consult http://papyri.info/bibliosearch with the search terms 'Tebtynis' and 'ostraca' (last accessed: 24.1.2020).

Tab. 1: Ostraca from Fayum. Source: Trismegistos Database, https://www.trismegistos.org, searched on February 4, 2020.

Place	Ostraca (TM)
Bakchias	39
Dionysias	30
Euhemeria	31
Karanis	1058
Krokodilopolis	29
Magdola	4
Naqlun	2
Narmouthis	708
Philadelphia	137
Philoteris	3
Soknopaiou Nesos	252
Tebtynis	140
Theadelphia	68

If we turn to the sites of the Eastern Desert, remarkable case studies are presented by the ostraca from the Roman *praesidia* of Krokodilô, on the Koptos to Myos Hormos road, and from Didymoi, located on the Koptos to Berenike road.[28]

The stratigraphic excavations at Krokodilô/Al-Muwayh carried out by the team of the *Institute français d'archéologie orientale* (Ifao) in 1996–1997 yielded 772 ostraca (O.Krok. I–II).[29] All of them were found in the southwest dump, near the fortress's southern gate. This dump was formed by the discarded materials produced by the renovation of the camp during the reign of Trajan.[30]

According to the ceramic analysis made by Jean-Pierre Brun,[31] among the materials recovered in the ancient dump of Krokodilô, amphorae came from a context positively

28 Another *praesidium* with well-preserved dumps rich in ostraca is Maximianon, see Cuvigny 2005, 1; Brun 2007, 505; Cuvigny 2018. On some ostraca and ceramics from Maximianon, see Bülow-Jacobsen/Cuvigny/Fournet 1994, 27–42; Brun 1994, 7–26. Furthermore, over 9.000 ostraca, mostly Greek, were found during the excavations carried out at Mons Claudianus, see Bingen et al. 1992; Bingen et al. 1997; Cuvigny 2000; Bülow-Jacobsen 2009. See also Bingen 1996, 29–38; Maxfield/Peacock 2006.

29 Cuvigny 2018, 195. Not all ostraca have been published yet. The first volume of ostraca from Krokodilô (O.Krok. I), published by Hélène Cuvigny in 2005, consists of the editions of 151 Greek and Latin texts, mainly military correspondence; the second volume (O.Krok. II), published by Adam Bülow-Jacobsen, Jean-Luc Fournet, and Bérangère Redon in 2019, contains the edition of further 189 texts, which are private letters exchanged between the inhabitants of Krokodilô and the neighboring forts, Phoinikon and Persou.

30 Both stratigraphical and textual data indicate that ostraca found in the early layers of the dump date to the beginning of Trajan's reign, while the foundation of the *praesidium* probably goes back to at least the Flavian period. The documents are associated with the military presence in the camp and in the Eastern Desert in general, and date to the early second century CE, see Cuvigny 2003, 83–90; Cuvigny 2005, 2.

31 Brun 2003, 503–513; Brun 2007, 505–523, especially 516–517.

dated to the first quarter of the second century CE. 2048 amphorae were found in this dump, which was in use for about twenty years. Of these, 95.6 % (1957 out of 2048) are Egyptian amphorae, mainly wine Egyptian amphorae-type 3 (AE 3-Form 1);[32] while 47 are Dressel 2/4 amphorae from the Mariout (2.3 %). Among the imports there are 20 Dressel 2/4 from Laodicea in Syria (1 %, and 51 % of imports attested in the dump), 8 Dressel 2/4 from Italy (0.4 %, and 20 % of imports attested in the dump), 6 flat-bottomed amphorae from Campania Type *Formiche* (0.3 %), 2 examples of Galois 4 amphora (0.1 %), one Cretan amphora, and 7 unknown eastern amphorae (0.3 %).[33] Other 1572 vessels found in this dump are common ware, produced either in Tôd-Koptos calcareous clay (35 %), alluvial clay (mainly cooking pots, 24 %), Aswan ceramic (16 %),[34] thin-walled vessels from Aswan (5 %), or Early Egyptian Ware (0.5 %).

Among the fragments that were used as ostraca, at least three different typologies of vessels were identified.[35] The first group includes fragments from the AE 3-Form 1 (66.4 %). Among the texts inscribed on these fragments is the dossier of Capito, the curator of Krokodilô during the prefecture of Cosconius, which comprises private documents and copies of official correspondence.[36] Large fragments or even entire AE 3 amphorae had been also used for the so-called Amphora of the Barbarians, other ostraca inscribed with related documents, and some *dipinti*.[37] The second group comprises fragments of Aswan amphorae (28.6 %). Inscribed on these large fragments are postal daybooks on couriers who left Krokodilô for nearby *praesidia* and copies of circulars sent by the Prefect of Berenike (Artorius Priscillus) to various curators of the Myos Hormos road during his prefecture.[38] Two hands, one of which has been called 'hand Ephip', because of the writer's propensity to misspell the name of the month Epeiph, are responsible for most documents in this group.[39] The third and the least attested type, comprised fragments of calcareous clay, with yellow or white slipped surfaces (5 %), inscribed mostly with letters.[40]

The archaeological methodology used in the study of the inscribed materials from Krokodilô has been applied for another *praesidium* of the Eastern Desert, Didymoi/

32 They are made of alluvial clay, with an average height of 90 cm. This type of AE 3, classified by Dixneuf as variant 5.2 – C, was produced in the area between el-Kab and Koptos between the late first–early third centuries CE and spread mainly in the Eastern Desert and the Theban region, see Dixneuf 2011, 128 and 340, fig. 111. See also Lawall 2003, 172–177; Brun 2007, 507–508, Fig. 3.1 and Fig. 4.

33 Brun 2003, 508; Brun 2007, 516–517.

34 On the *ateliers* and the productions of the amphorae from Aswan, see Ballet/Vichy 1992, 113–116.

35 Cuvigny 2005, 8. The percentage is based only on the data published in the first volume of the ostraca from Krokodilô.

36 Cuvigny 2005, 9–32 and 33–52.

37 Cuvigny uses the term *dipinto* to indicate a jar label, see Cuvigny 2005, 135–158 and 173–175.

38 Cuvigny 2005, 53–75 and 77–112.

39 The second hand is characterized by a bilinear script, which is described as regular but without elegance; see Cuvigny 2005, 99.

40 Cuvigny 2005, 114–115 and 132–133.

Khashm al-Minayah.[41] According to Brun's ceramic analysis,[42] the outer dump (Phases 1–11) has yielded Egyptian and imported amphorae (57.6 % in total),[43] and other vessels (42.4 %). In particular, 2954 are Egyptian amphorae AE 3-Form 1 in alluvial clay (55.58 %), 54 are amphorae from Aswan (1.19 %), 9 are Egyptian amphorae AE 4 from Mariout (0.17 %), and 41 are imported amphorae (0.79 %). To this are added the containers in calcareous clay (12.49 %); common wares and thin walled wares from Aswan (12.30 %); cooking pots (9.39 %); Eastern *Sigillata* A productions (around 0.9 %); and the rest are other vessels (7.27 %). These percentages are consistent with those from the ceramic materials found inside the fort (Phase 12).[44]

The ostraca (O.Did.), mostly in Greek, but also some in Latin, form the largest part of the written material (970 pieces).[45] The texts are mainly daily journals, messages, accounts, orders of delivery of goods transported through the Desert of Berenike, and texts on the organization and life within the fort.[46] The ostraca were found in the fort's inner and outer dumps. The dating of the texts shows that the occupants of the *praesidium* after its reconstruction in 176/177 CE continued to dispose of their waste both inside and outside the fort at least until 210–220 CE.[47] After this period, the external dump ceased to be used in favor of the intramural one. This interpretation is supported by the different ceramic types used for writing during the two periods,[48] such as fragments of Aswan amphorae for the ostraca dated to 76/77–150 CE (13 %) as opposed to fragments of bottles from Aswan (*gourde*) for those dated to 176/177–250 CE (0.7 %).[49] In general, the great majority of the ostraca are from Egyptian amphorae-type 3 (AE 3-Form 1, 76.6 %); 5.7 % are on calcareous clay sherds; 2.3 % are on thick pink unpitched fragments; 13.7 % are on Aswan clay (of which 0.7 % are

41 The *praesidium* of Didymoi is one of the main fortresses on the road from Koptos to Berenike. The two volumes devoted to the site, published by Cuvigny in 2011 and 2012, contain the results of the archaeological excavations and the study of objects (vol. I) and the editions of the texts (vol. II), see Cuvigny 2011, 2012. See also Brun et al. 2018.

42 Brun 2011, 115–119, 2007, 505–516.

43 3.058 amphorae have been counted in this dump.

44 Cuvigny 2011, 54. This is detectable also for the ostraca from Mons Claudianus and Maximianon, see Brun 2007, 517–521.

45 510 ostraca out of 970 are published in volume II, Cuvigny 2012. For the images of the ostraca from Didymoi, cf. http://www.ifao.egnet.net/bases/publications/fifao67 (last accessed: 24.1.2020).

46 Cuvigny 2012, 2–3.

47 In particular, the ostraca dated to the *Première période* were in the earliest layers of the external dump, while those of the *Seconde période* were all concentrated in the internal landfill and, in smaller quantities, in the later layers of the outer dump. The dates of the ostraca found within the fort are all after 176 CE, Cuvigny 2012, 2–3.

48 This is also supported by the hands of the scribes that are different for the two periods and by the terminology used in the texts, see Cuvigny 2012, 4.

49 Among the Egyptian productions, the Aswan wine amphorae disappeared from the reign of Marcus Aurelius on, to be replaced by the *gourdes*, which had the same function (possibly for *passum*), see Brun 2007, 513; Brun 2011, 115–129. See also Ballet 2001, 120–122.

gourdes); 1 % are on Eastern amphorae. The remaining 0.6 % is divided between light unpitched and calcareous amphorae fragments.

In the sites examined above, both from the Fayum and the Eastern Desert, an extensive use of amphorae is evident. However, when looking carefully at the percentages of containers for each site, amphorae do not show an overwhelming frequency when compared to other vessels. On the contrary, it is undeniable that amphora fragments are the most common sherd/support in the production of ostraca, and therefore it can be concluded that in these areas during the Roman period there was a deliberate choice of amphora fragments as a writing support.

A different picture arises from the analysis of some ostraca-groups found in the Western Desert. I will focus my attention on two sites located in the Dakhla oasis: Trimithis/Amheida and Kellis/Ismant el-Kharab.

In 2015, I completed the study of the sherds used as ostraca that were discovered at the site of Amheida.[50] Nearly 900 inscribed fragments (O.Trim.)[51] were found during the 2004–2013 stratigraphic excavations conducted by "The Amheida Project", under the general direction of Roger S. Bagnall and the field direction of Paola Davoli. The contexts in which the ostraca were found are for the most part consistent with dump layers and occupational deposits (75 %).[52] The Greek texts, dated to the fourth century CE, form the largest part of the corpus (91.5 %). The remaining sherds are inscribed with Egyptian Demotic (2.8 %) and Hieratic texts (1.5 %); there also 12 pictorial ostraca (1.3 %) and 26 unidentified pieces (2.9 %). The subjects covered by the Greek texts include distributions of food, administration of wells, the commercial life of the oasis and its inhabitants' education, and other aspects of everyday life. The most common category of texts is that of little labels or tags (344 examples, or 36 % of the total). Generally, the tags provide us with three pieces of information: a year; the name of the place from which the product comes (usually a well name); and the name of an individual. In a few cases, the name of a vineyard replaces the personal name.[53] The ostraca used as tags are rather consistent in shape and size, with rectangular and triangular outlines that range from 1.4 to 6.1 cm in width and 1.9 to 7.1 cm in height. The remaining texts (i. e., letters, accounts, etc.) are written on fragments of irregular quadrangular shapes, at most 6 cm in width and 18.5 cm in height. The thickness of these sherds is between 0.5 and 1 cm.

50 The results of this work have been published in Caputo 2016; see also Bagnall 2016, 81.

51 See Bagnall/Ruffini 2012 (O.Trim. I) and Ast/Bagnall 2016 (O.Trim. II); Hope 2004, 5–28 (O.Kellis).

52 The dump layers are primarily foundation fills or dumped waste, but ostraca were also found on the surface or embedded in the walls as building material, see Ast/Davoli 2016.

53 The use of these ostraca has been clarified thanks to the excavation of the house B10, in which R1 yielded eighty-one ostraca, all of them small tags or labels. Some of these were found still inserted into the top of a mud jar stopper, and a few of these stoppers were still in situ on top of their jars, showing exactly how the tags were used, see Bagnall et al. 2017. See also Bagnall/Ruffini 2012, 120–143; Ast/Bagnall 2016, 89–91; Ast/Davoli 2016, 1458–1467.

Most of the ostraca from Amheida are from locally produced vessels (common wares): 604 from jars (65.3 %), 43 from kegs (4.6 %), 35 from jugs (3.8 %), 28 from basins, craters, and large bowls (3.0 %), 17 from small bowls (1.8 %), 10 from cooking pots (1.1 %), and 6 from lids (0.6 %).[54] An additional 182 ostraca are made from locally produced vessels, for which it was not possible to define the shape. The analysis of main fabrics of the ostraca is based primarily on the *Dakhleh Oasis Fabric System* classification by Colin Hope.[55] The highest percentage (96.5 %) belongs to fragments in iron-rich clay body Group A fabrics (i. e., A1a/A2a fired red-brown, A1b/A2b fired grey, and A5), the same used in the production of the majority of containers found at the site. 1.6 % is fine iron-rich, dense-bodied, brittle fabric (A11 fired light grey), used in the production of containers known as Christian Brittle Ware. 1.04 % is in open-textured calcareous local clay (B10 fired pale green) used mainly for jugs. Only 0.86 % is in B3, a medium- to dense-bodied fabric, fired orange/pink or yellow/brown, associated with the yellow slipped productions from Kharga Oasis. There are no ostraca in Fine Oasis Red Slip Ware (A27), amphorae, or imports from other areas of Egypt and the Mediterranean.

A similar situation emerges from Kellis/Ismant el-Kharab, a site in the Dakhla oasis. The volume edited by Klaas A. Worp contains the edition and study of 293 Greek texts of which 234 are ostraca (O. Kellis).[56] The ostraca were recovered during excavations directed by Colin A. Hope over a period of fifteen years.[57] They comprise a variety of text types, including tax and other receipts, orders for deliveries of various commodities, accounts, private letters, lists of names, contracts, memoranda, school and astrological texts, and jar dockets. Chronologically, they range from the second to the fourth centuries CE.[58]

Most of the texts are written in black ink on quite small ceramic fragments that were reused from the vessels' bodies. Hope's ceramological study of the O. Kellis ostraca is based on the surface color (ware) of the sherd/support. According to his results, the most common wares used for inscribing are P1a (27.98 %) and P1b (31.65 %) that correspond to fabrics A1a and A1b. Sherds from other wares were rarely used. The percentages calculated on the basis of wares show that *Reddish-brown uncoated*

54 See Caputo 2016.

55 For the fabric description, see Hope et al. 2000; Hope 2004, 7–9; Gill 2016, 49–51. The characteristic of the clays and the classification of the main oasis fabrics and wares have been the subject of a number of studies. For the clays and ceramic materials of the oasis, see Soukiassian et al. 1990, 75–85; Marchand/Tallet 1999; Hope 1999; Patten 2000, 87–104; Eccleston 2006.

56 Worp 2004, 1–4 and 169–178. For the edition of the Coptic ostraca, see Gardner/Alcock/Funk 1999, 280–281 (= P. Kellis V, O. KellisCopt. 1–2); Gardner 1999.

57 Excavation reports can be accessed at https://www.monash.edu/arts/philosophical-historical-international-studies/dakhleh-oasis-project/excavations (last accessed: 31.1.2020). See also Bagnall/Davoli 2011, 140 fn. 270–273.

58 The latest date so far attested by texts either on ostraca or on papyri from Kellis is the fourth century CE; see Worp 2004, 1 and 220–226.

surfaces (33.486 %) and *Grey uncoated* surfaces (39.449 %) were used more frequently than *Cream-coated* surfaces (17.890 %), *Greenish uncoated* surfaces (8.256 %), and *Red-coated* surfaces (0.917 %).[59]

This confirms the data obtained from the Amheida ostraca, where fabrics A1a/b (ware P1a/b) and A2a/b (ware P2a/b) were recognized in 85 % of ceramics produced locally. The containers made of these fabrics are mainly bowls, basins, craters, cooking vessels, jars, and kegs. In both sites, and in the Great Oasis in general, the transport containers used for the trade of local products were mostly of local production, such as jars, kegs,[60] and flasks/bottles[61]: the presence of amphorae—not only from the Nile Valley, but also from the Mediterranean basin—is quite rare.[62]

That the use of ostraca was not confined to Greco-Roman period is evidenced by a large number of Byzantine/early Islamic Coptic examples.[63] In particular, several thousand of Coptic ostraca were found during the archaeological campaigns carried out in the Theban area of Upper Egypt from the late nineteenth century to the present.[64] There, ostraca both in limestone and pottery were used from the Pharaonic through Byzantine period.[65] Since I am interested in case studies with good documentation of both ostraca and ceramic production, I will focus just on one such site, that of the Theban Tomb (TT) 29 at Sheikh Abd el-Gurna.[66]

Over 800 ostraca (O.Frange) from TT29 were published by Anne Boud'hors and Chantal Heurtel in 2010.[67] The monk Frange settled in tomb TT29, originally the Eighteenth Dynasty tomb of Amenemope, during the first half of the eighth century CE. Frange is the main protagonist of this corpus, as the majority of ostraca were either written by him (86.1 %) or to him (13.9 %).[68] Texts related to the previous occupants of the cell and dated to the seventh century are also included among the published material

59 Hope 2004, 7–9.

60 On the kegs in the Great Oasis, see Henein 1997, 161–166; Hope 2000; Marchand 2000; Rougeulle/Marchand 2011, 443, fn. 13. See also Ballet 2019, 155–160; Soto Marín 2019, 192–200; Chevalier 2019, 203–206, Figures 12.1–12.2.

61 Ballet/Vichy 1992, 119; Ballet 2004, 221–225.

62 Hope/Ross 2007. See also Ballet 2019, 162–165; Caputo 2019b; Chevalier 2019.

63 Brooks Hedstrom 2017, 25, fig. 7; Wipszycka 2009, 2018.

64 Krause 2010.

65 For the use and distribution of ostraca in Late Antique Western Thebes and updated bibliography, see Cromwell in this volume.

66 The archaeological mission of the Université Libre of Bruxelles (ULB) in the Theban necropolis was directed by Roland Tefnin from 1999 to 2006, and later by Laurent Bavay, see Boud'hors/Heurtel 2010, 7.

67 Boud'hors/Heurtel 2010. According to Bavay, a group of more than 1200 ostraca on ceramic and limestone fragments was found in TT 29, see Bavay 2007, 389.

68 Letters written in the hand of Frange have been found also at Djeme, MMA 1152, Monastery of Epiphanius, Ramesseum, Topos of Saint Mark, and TT 85.

(53 ostraca).[69] All the texts, mainly letters and exercises or drafts, are written primarily on potsherds (85.1 %), while a smaller number is on limestone flakes (14.9 %).[70]

According to Laurent Bavay's preliminary study of the ceramic material found in TT29,[71] the assemblage consisted mostly of complete vessels (ca. 80 complete profiles where initially counted), consistent with ceramic types generally used in a two-to-three person household.[72] Fine tableware is largely attested by red slip productions of the Aswan workshops (*Egyptian Red Slip* A), while the Nile clay imitations (*Egyptian Red Slip* B) are very poorly represented. Among the regional productions, flasks decorated with spiral patterns and pots with white/brown painted decorations, probably from the workshops installed in the funerary temple of Seti I in Gournah, have been found. Cooking ware made of alluvial clay includes various plates and thin-walled pots (all handleless), as well as curved bowls used in food preparation. While storage jars are very rare, at least five *qawadis* (pots used for water wheels) have been identified as part of Frange's assemblage.[73]

The most common Egyptian amphorae identified in this assemblage are the Late Roman Amphora 7 type. At least five main different types are reported, all dated to the first half of the eighth century and probably reflecting the use of different supply sources.[74] Aswan wine amphorae made of kaolinitic clay are particularly rare: only two diagnostic fragments have been attributed to this production.[75] The Egyptian brown amphorae, characterized by a thick red/pink slip covering the outer surface and called 'pseudo-Aswan' amphorae because they imitate those of Aswan, are attested only by a single diagnostic fragment.[76] Finally, Bavay describes at least six examples of North African amphora.[77] The dating of the ceramic materials confirms the assignment of the presence and activity of Frange in TT29 to the second half of the seventh century–first half of the eighth century.

69 Heurtel 2008; Boud'hors/Heurtel 2010, 397–432 (O. Frange 752–805).

70 According to Boud'hors and Heurtel, some of the limestone ostraca can be dated to the first half of the seventh century, thus belonging to the predecessors of Frange, see Heurtel 2008; Boud'hors/Heurtel 2010, 22–23. For the different use of the writing support see Boud'hors/Heurtel 2010, 15.

71 Bavay 2007, 2008.

72 Because of the preliminary nature of the study, precise numbers of vessels and amphorae which constitute the assemblage are only seldom provided in Bavay's article.

73 According to Bavay it is unlikely that a *saqqiyeh* was installed in the Theban mountain in the immediate vicinity of the TT 29, so possibly these containers were used as storage jars.

74 Bavay 2007, 391–393.

75 The fragments correspond to Gempeler K715 type, with narrow and elongated shape and pitched internal surface. Gempeler 1992, 191–192; Bavay 2007, 394–395.

76 They are identical in shape to Gempeler K715 type. A dump of these amphorae was identified during the survey carried out by P. Ballet near a workshop installed on the west side of the settlement of Edfu, see Ballet et al. 1991, 140.

77 Bavay 2007, 393–394.

Among the ceramic ostraca found in TT29, 89.7 %, there are texts inscribed on fragments of Egyptian amphorae: 8.2 % are sherds from other vessels, 1.8 % are sherds from table wares, and only 0.3 % are fragments from imported amphora.[78] If we look only at the ostraca written by Frange, 58.2 % are from LRA 7, 22.1 % are from 'pseudo-Aswan' amphora, 8.4 % are on common wares in Marl and Nile clays, 7.5 % are on Aswan amphora, 2 % are on Egyptian Red Slip A, 1.5 % are on other vessels, and 0.4 % are on LRA 1. It should be noted that among the ostraca addressed to Frange, 76 ostraca are written by his sister Tsié. Tsié used mainly two types of supports: 37 of the ostraca are from LRA 7, 31 are from 'pseudo-Aswan' amphora, 7 are from Aswan, and only one is on common Nile clay ware. Therefore, both Frange and Tsié seemed to favor sherds from the same categories of vessels, mostly LRA 7 and 'pseudo-Aswan' amphorae. However, while the use of fragments from LRA 7 is understandable, since these containers were the commonest containers during this period and most prominent in Frange's ceramic assemblage (nothing can be speculated about Tsié's), the use of 'pseudo-Aswan' amphora fragments seems to be less instinctive and more deliberate. As stated by Bavay, the small number of written fragments from Aswan amphora compared to the 'pseudo-Aswan' productions could be due to the fact that while the Aswan amphorae were hardly distributed in the north of the country, the 'pseudo-Aswan' amphorae from Edfu may have covered the whole Theban region, extending northward as far as Medamoud, where Tsié lived. This could reflect Tsié's preference for these red/pink sherds which, when not available from the Aswan amphora, were replaced by fragments of amphora imitating them.[79]

Lastly, I would like to turn my attention to another group of Coptic ostraca (65 in total) found at the beginning of the twentieth century at Elephantine and now in the Louvre Collection in Paris.[80] This small group of ostraca, dated between the sixth and seventh centuries CE, comprises mostly incomplete texts (only 1 out of 65 is complete). They are debt recognition, military accounts, texts related to the economic and commercial activities, and name lists.[81] During a visit to the Collection in September 2018, I had the opportunity to analyze and draw all 65 fragments.[82] The great majority of the texts are written on originally complete large plates and bowls (72.3 %), 21.6 % are fragments from lids and casseroles, and only 6.1 % are on undefinable sherds from closed forms. Generally, the texts cover the inner and outer surfaces and are arranged

78 The percentages have been calculated on the basis of Bavay's ostraca description made in Boud'hors/Heurtel 2010. Similar proportions are reported for the ceramic ostraca on pottery discovered in the MMA 1152, another Coptic hermitage at Sheikh Abd el-Gurna, see Górecki/Łajtar 2012, 138 fn. 5.

79 Bavay 2007, 396.

80 Bacot/Heurtel 2000, 17–45.

81 Bacot/Heurtel 2000, 41–43.

82 I would like to thank Dr. Marc Etienne, Curator of the collection in the Département des Antiquités Égyptiennes du Musée du Louvre, for allowing me to study these ostraca.

according to a circular layout, following the vessel's shape. The identified types are made in Pink Aswan clay and can be dated to the sixth–seventh century CE.[83]

The data collected from analysis of the written sherds from Trimithis and Kellis, on the one side, and Elephantine, on the other, clearly shows that in all three cases fragments from the containers available on the sites are used (which, as we have seen, are not necessarily amphorae).[84] However, it is extremely interesting that although, in contrast to the Great Oasis, amphorae were produced in Elephantine and consequently their fragments should have been easily available for writing there, complete open shapes belonging to table ware were evidently preferred as writing supports.

2 Possible Criteria of Selection

All the examined case-studies indicate that while the choice of writing materials was generally dictated by practical needs, including the immediate availability of certain ceramic types versus others, it is evident that specific selection criteria were also at play. Indeed, even when amphorae were not the most commonly used containers, still their fragments could be preferred as writing supports (e. g., in the Fayum, Eastern Desert, or Theban area). On the other hand, it is clear that in other areas (e. g., in the Dakhla oasis) amphora fragments were far from ubiquitous and thus the choice of supports was made among other categories of containers, which were also selected to respond to specific needs (e. g., in Elephantine). Thus, the use of certain sherds or shapes as writing supports may have depended not only on the availability of certain ceramic types but also on the intentions and experience of each writer. In this section I examine possible criteria which may have influenced the selection of a sherd for writing, while refraining from translating modern perceptions into ancient practices.

For example, one might wonder if the fragments were chosen because of the color or treatment of their surfaces or if they were selected according to their sizes or shapes.

Regarding the issue of surface color, light-colored surfaces seem a logical choice, as the ink would have been easier to read. However, this criterion does not seem to have played a consistent role in the supports' selection. Indeed, while for the Greek documents written by the 'hand Ephip' in Krokodilô, for the Coptic letters between

83 I am very grateful to Nicole High-Steskal, Denise Katzjäger, and Laura Rembart for their precious advice and for sharing with me the results of their work on Elephantine's ceramic materials. Denise Katzjäger, and Laura Rembart have just completed their dissertations on the Hellenistic, Roman, Byzantine, and early Islamic pottery from Aswan and Elephantine (around 250,000 pottery fragments from the recent German-Austrian-Swiss excavations both on Elephantine and in Syene) and completely revised Gempeler 1992. Furthermore, Lisa Peloschek studied the petro-fabrics of the Syene/Elephantine material for her dissertation (completed in 2015), see Katzjäger/Peloschek/Rembart 2016.
84 The assemblage is small and is not representative of all the contemporaneous ostraca production in the area.

Tsié and Frange, and the Coptic ostraca from Elephantine the red/pink color of the Aswan or 'pseudo-Aswan' ceramics was favored, at Trimithis and Kellis darker surfaces were preferred over lighter ones, which were completely ignored. Where available, amphora fragments characterized by brown surfaces were normally used for ostraca and were chosen over other common vessels with red or orange surfaces such as bowls, dishes, basins, etc. In all these instances, surface color does not seem to constitute a main determinant in the selection process.

When looking at some categories of ostraca, one detects the systematic use of fragments from a specific category of vessels, the consistency in shape, and overall similarities in dimensions. This is true particularly for groups of ostraca that were meant to be serial rather than isolated or occasional, such as receipts, tags, name-ostraca, and most of the administrative or documentary ostraca. It seems logical to assume that any individual who had the necessity to produce dozens of ostraca, all similar in size and content, would have secured the fragments in advance possibly by drawing them from private or public landfills that could have been located in the proximity, both *intra* or *extra moenia*.[85]

For example, during labeling in Trimithis or balloting in Soknopaiou Nesos,[86] scribes would have needed, for practical reasons, to keep all the fragments ready for use. This does not imply that scribes were routinely or personally surveying the grounds to find the most appropriate fragments to write on. The process of obtaining writing supports must have started with the breaking of a ceramic vessel, a common occurrence due to high daily usage. The larger-bodied sherds were selected and collected for reuse as ostraca; this selection could have taken place immediately after a vessel broke within the house, or later on, once the sherds had been discarded in an open dump. At present, it is impossible to ascertain if one of these two practices was favored over the other. Possible attendants or the writer himself may have broken larger fragments into smaller ones by using a sharp tool to hit their surfaces, most likely a flint or a hammer. Such a blunt stroke would have produced a group of smaller and differently shaped sherds. Only those of a predetermined size would be kept, and the rest would be discarded.

In January–February 2014, I conducted a series of experiments using ceramics from Trimithis/Amheida to test my theory (Table 2). Large-sized, flat-walled sherds of the most common fabrics, which were used in antiquity as writing supports for the ostraca, were collected on site.

85 Anyone who knows an ancient Egyptian trash dump, regardless of the time of formation and its size, is well aware of the quantity and variety of ceramic materials that can be found there. For an overview of the Egyptian dumps during the Roman period, see Ballet/Cordier/Dieudonné-Glad 2003. See also Dupré Raventós/Remolà 2000.

86 Name-ostraca, close in shape and layout to those found in Soknopaiou Nesos, and generally attested in Fayum, have been also found at Tel Arad. Only eight ostraca can be ascribed to this category of texts. They are dated to the 8th century BCE, see Aharoni 1968, 29, Figure 17.

Tab. 2: Characteristics of the fabrics and sherds used for the experiment.

Fabric	A1a	A1b	A5	A11	B10
Description	Medium to coarse textured ferruginous fabric. It is fired red to brown/orange.	Medium to coarse ferruginous fabric. It is fired grey to dark grey.	Medium to coarse ferruginous fabric (quartz/sand-rich variant of A1). It is fired over-fired purple-brown to grey in color.	Fine dense-bodied mudstone/shale fabric. It is fired light grey to grey, with grey core and orange/pink zones.	Open-bodied, medium to coarse quartz marl fabric. It is fired to cream to pale green.
Ware	Uncoated	Uncoated	Cream coated	Uncoated	Cream coated
Shape	Storage jar; Keg	Storage jar; Keg	Storage jar; Jug	Thin-walled cooking pot	Filter jug
Wall thickness	0.7–1 cm	0.7–1 cm	0.5–0.8 cm	0.5–0.7 cm	0.5–0.9 cm

For these experiments, I utilized tools that were common in Roman house building, carpentry, or other daily tasks, such as small picks and pounders, as well as unworked stones and flints, available and in use in ancient times (Fig. 1). The sherds of different fabrics were tested with each tool, and the results of how the tools affected the ways in which the sherds broke were recorded (Table 3).

Fig. 1: Tools used during the experiment (from left to right): Small Pick, Flint, Stone, Pounder.

Tab. 3: Test results with the different tools on the different fabrics.

Tools	A1a	A1b	A5	A11	B10
Small pick	*Regular break, defined edges.*	*Regular break, defined edges.*	Irregular break, indented edges.	*Regular break, defined edges.*	Irregular break, indented edges. The hits damage the surface of the ceramic material.
Flint	*Regular break, defined edges. Not effective on thicker wall fragments (0.9–1 cm); more suitable for breaking walls with a thickness between 0.7–0.9 cm.*	*Regular break, defined edges.*	Irregular break, indented edges.	*Regular break, defined edges.*	Irregular break, indented edges. The hits damage the surface of the ceramic material.
Stone	Regular break, indented edges. The tool damages the surface of the ceramic material.	Regular break, indented edges.	Irregular break, indented edges.	Irregular break, indented edges. The hits damage the surface of the ceramic material.	Irregular break, indented edges. The hits damage the surface of the ceramic material.
Pounder	Regular break, indented edges. The hits damage the surface of the ceramic material.	Regular break, indented edges.	Irregular break, indented edges.	Irregular break, indented edges. The hits damage the surface of the ceramic material.	Irregular break, indented edges. The hits damage the surface of the ceramic material.

The experiment demonstrated that, when hit with sharp tools such as small picks and flints, sherds in A1a and A1b fabrics, as well as half of the A11 samples, had a better resistance to the impact: the breaks were more regular and the newly cut sherds were characterized by defined edges (indicated in the Table 3 in *italics*) (Fig. 2). Tools with flatter surfaces broke the sherds very irregularly and made them unusable. The thickness of the sherds turned out to be a very important requisite (< 0.9 cm), since thicker walls did not break easily. Finally, body sherds were preferable to rims, bases, or handles, as these three parts of a vessel, with their thicker sections, did not result in regularly-shaped cuts. Also in antiquity, at Trimithis/Amheida, sherds from Group A vessels were preferred in ostraca making. While it is true that this ceramic type was

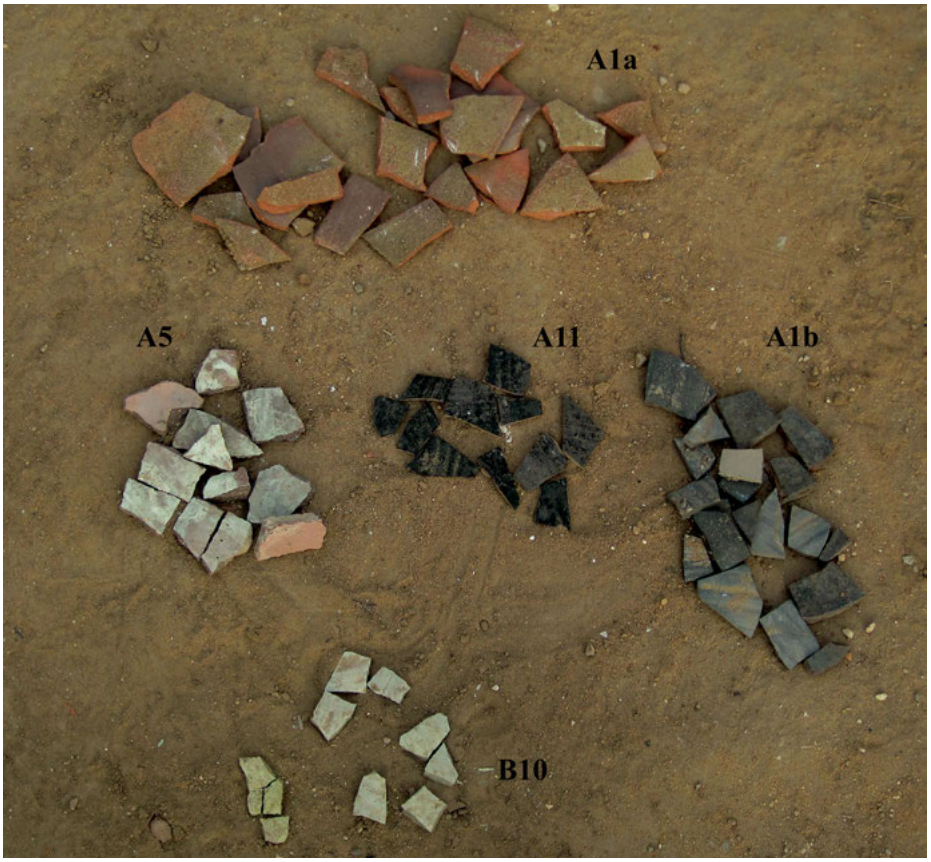


Fig. 2: Sherds resulting from the experiment.

the most common at the site and thus readily available, the choice of these fragments for ostraca was possibly also influenced by the intrinsic qualities of the fabric. Indeed, Group A sherds are characterized by a crystallized fabric that facilitates sharp breaks. This is, in contrast, not true for B10 and A11 fabrics: during the experiment, B10 sherds were almost completely pulverized when hit by any of the available tools, while A11 sherds shattered when hit by flat surface tools such as stone and pounder. In these instances, the ceramic fragments could not be reused as writing surfaces.

These experiments gave insights on the process of creation of specific types of ostraca such as well tags. These tags were produced in the hundreds from common wares and they needed to be roughly similar in shapes and sizes as they had to be fitted on the top of mud stoppers.[87] It is highly improbable that scribes would scout the open dumps to find hundreds of small sherds of the same size and fabric when they could have easily made them out of larger fragments readily available in the

87 Bagnall et al. 2017.

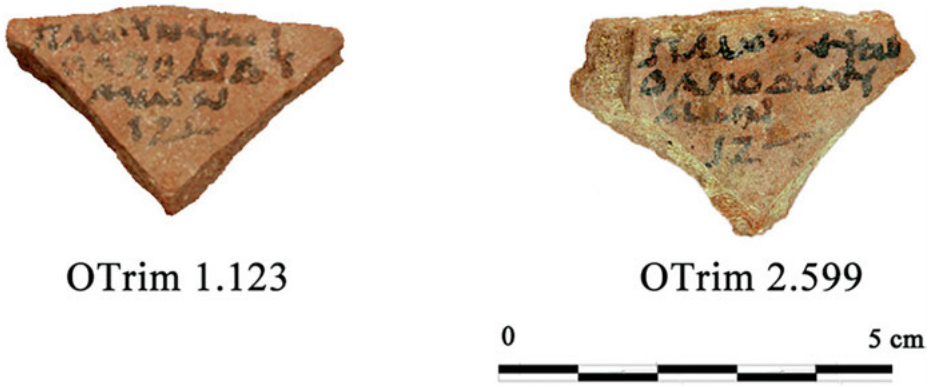


Fig. 3: Two identical Well Tags with Pmoun Formula.

households. The suggested scenario is also corroborated by the well-attested ancient practice of reuse of ceramics through cutting, drilling, and reshaping.[88]

Two ostraca (O.Trim. I 123 and O.Trim. II 599) found at the site confirm this argument in that they share fabric, size, shape, and identical text, both in words and layout (Fig. 3).[89] While this theory currently lacks systematic study and comprehensive archaeological data, its preliminary results are promising and could indicate a way forward in the investigation of the practice of producing ostraca in series.

In the case of longer texts, such as letters, lists, and memoranda, the writing support needed to be bigger, in order to accommodate more lines of writing, and flatter, in order to facilitate the process of writing. Large-bodied containers and vessels, like amphorae, jars, basins, and *sigas* seem to have been preferred since they provided a wider field to fit one or multiple texts.[90]

The results of my experiments suggest that scribes were probably keeping at hand large pieces of broken pots to use as writing material; pieces of the same pot, once broken up in smaller fragments, could have been used on different days and by different scribes, for multiple messages. This is confirmed by two ostraca from Amheida that could be joined together: for example, two Greek ostraca (O.Trim. II 806+807) dated to the second half of the fourth century CE with two separate texts written at different angles by the same hand, were clearly cut out from the same container.[91] Both texts are memoranda for delivery of hay, and they were written on two joining sherds with part of the rim (diameter 25.6 cm) of a large bowl (Fig. 4). The same practice has been recognized for two Greek ostraca, dated to the third century CE, from Chersonesos on the northern coast of Crete (O.Cret.Chers. 4+71 and O.Cret.Chers. 7+61),[92] and at least

88 Peña 2007.
89 Ast/Davoli 2016; Caputo 2016, 83, Figure 17.
90 Peña 2007, 162.
91 Ast/Bagnall 2016, 250–251.
92 Litinas 2008a, 10, 41–42, 61 and 63, Plate XLV.

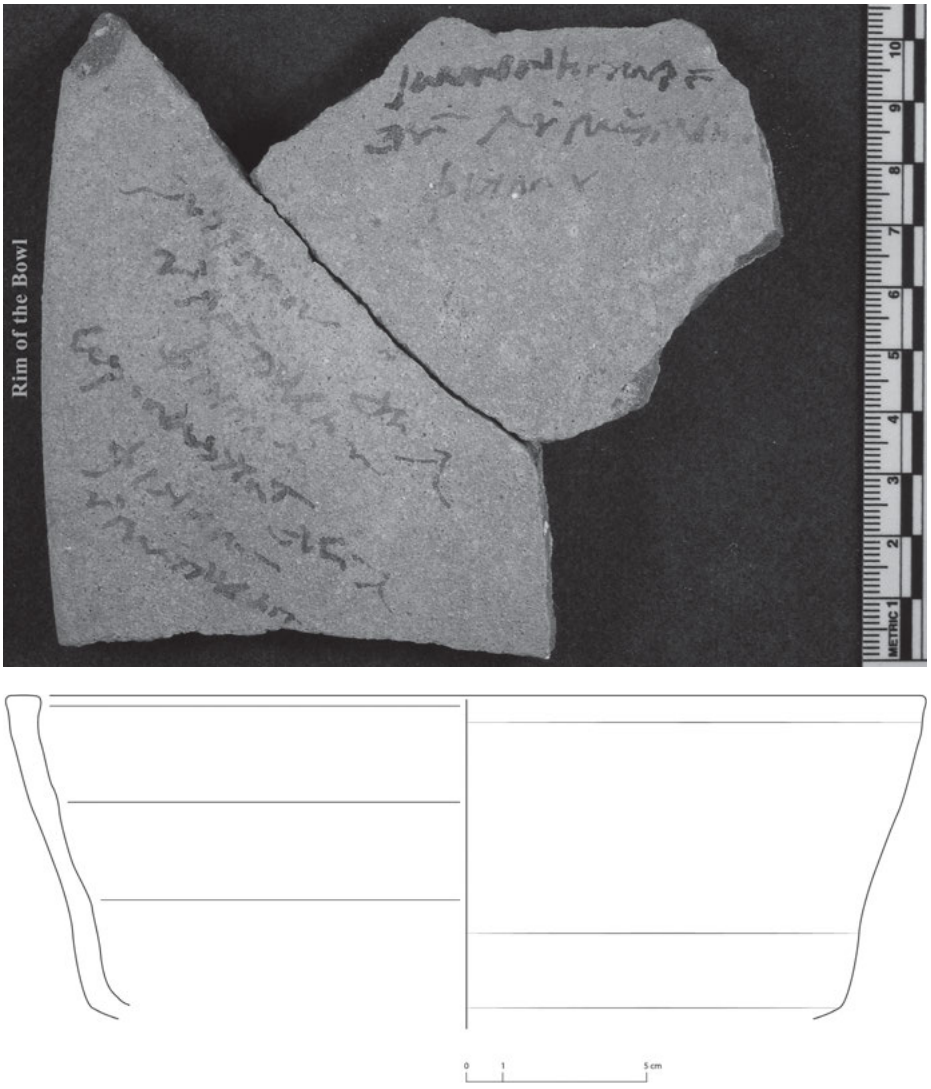


Fig. 4: Two separate texts, written at a different angle on the same broken large bowl (O.Trim. II 806+807).

for one Hebrew ostracon from the Israelite Samaria, dated to the eighth century BCE.[93] It is also worth mentioning some examples from the Athenian Agora and the Kerameikos.[94] It has been argued that these ostraca, among which scholars recognized

93 Tappy 2016, 198, Plate IV (Nos. 45+46). See also Niemann 2008.

94 For the ostraca from the Agora, see Giugni 2001, 66–70, Figures 5–8. For the ostraca from the Kerameikos, see Brenne 2018.

several written sherds as coming from the same broken vessel, were 'prefabricated' by the scribes to have them on the ready during the ostracism votes.

The practice of reshaping ceramic fragments is well attested in other groups of ostraca in Egypt, such as Greek ostraca from Philadelphia in the Fayum,[95] Greek ostraca from Mons Claudianus in the Eastern Desert,[96] as well as in other regions, e. g. in Latin ostraca from Carthage in North Africa[97] or in the Hebrew ostraca from Tel Arad in the Negev.[98] The standardized, roughly rectangular, shapes, with long, straight sides and short, curved ends, was evidently suitable in that they could easily fit in one hand and could be efficiently archived in the manner of card files. Their overall appearance indicates an obvious attention in their production and suggests the existence of a manufacturing process that preceded the actual writing on the support. Furthermore, scribes or their attendants cut the sherds not only in rectangular shapes, a rather demanding task, but also as rounds.[99] At Mons Claudianus, in the Eastern Desert, where stonemasons were at work, these cutting techniques resulted in oval or round ostraca.[100] The same practice, this time not directly related to stonemasons, has also been found at Trimithis, where some sherds were first cut as circular stoppers to seal containers, and only after the containers were opened and the lids disposed of, they were repurposed as writing supports (O.Trim. I 287 and O.Trim. I 300). The opposite process is also attested: a sherd could first be used as an ostracon and only later be recut, partially obliterating the written text, to become a stopper (O.Trim. I 60).[101]

It is important to mention here the recent lithic analysis performed on a group of Hieratic and pictorial limestone ostraca from Deir el-Medina, dated to the New Kingdom and now in the Collection of the Département des Antiquités égyptiennes in the Louvre. These Pharaonic limestone ostraca have been studied and restored by a team of specialists in 2012–2013. The autoptical examination of the pieces has allowed the scholars to identify and distinguish between natural flakes and reshaped exemplars and to highlight the phases of preparation of the limestone that preceded the actual tracing and writing.[102]

All these instances show that the technique of reshaping can be connected with the ability of the ancients to work and rework materials according to their needs.

95 See Lougovaya 2018, 55–61; Caputo/Cowey 2018, 62–65.

96 Bülow-Jacobsen 2009, 15–16.

97 Peña 1998 and 2007, 162–163.

98 Aharoni 1966, Plate 1, 1968.

99 Even if it is not an ostracon, an interesting example of a round-shaped cut of a sherd is attested at Berenike on the Red Sea Coast of Egypt. It is a circular lid found during the 2019 excavation season. It was cut from the body of a Cypriot LRA 1 amphora, and the working marks are still perfectly visible.

100 Bülow-Jacobsen 2009, 15–16, Figure 1.8.

101 Circular ostraca are in any case very rare. Caputo 2016, 75 and 81, Figures 15–16.

102 Pelegrin/Andreu-Lanoë/Pariselle 2015. See also Haring in this volume.

3 Conclusions

As I hope to have demonstrated in this paper, scholars should implement a more systematic study of the material, where each pottery or limestone ostracon is checked and compared against others in the same corpus, in order to be able to understand the practice of producing ostraca. For ceramic ostraca in particular, one should also focus on the classification of the supports according to their morphology, fabrics, and surface treatments. This is only possible when examining the ostraca in the light of the material culture and the ceramic production of the sites where they were produced. The study and analysis of ceramics constitutes a fundamental step in this process, starting from the classification of thousands of excavated ceramic fragments and the selection of those that could contribute to the refinement of a catalogue of forms, functions, and chronologies, while also providing data for the reconstruction of the historical sequence of a site and/or culture.[103] Generally, scholars use 'diagnostic' parts of the vessel, such as rims, handles, and bases to identify the original form of a container. Unfortunately, but (as we have seen) for good reasons, most of the texts on ostraca were written on non-diagnostic, body fragments. However, the classification of ceramic shapes and their associated fabrics, and areas of production and distribution have allowed researchers to identify certain types of containers even in the absence of diagnostic sherds. Roberta Tomber writes:

> Source identification of pottery can be determined in a number of ways, with the best results through the combination of vessel form and clay fabric. The study of the clay fabrics, borrowed from geology, is based on the identification of aplastic inclusions in the clay, either by eye or using a binocular or petrological microscope. Especially, the last enables the most precise classification of rocks and minerals. Sometimes sources can be assigned by matching the fabric with geological deposits, for which a geological map is invaluable. However, many mineral inclusions—such as quartz—are ubiquitous. In these cases, typology is essential, for source areas can be suggested through distribution, with the greatest concentration likely to be in the home area. Nevertheless, pottery shapes are imitated outside their region for a variety of reasons, and detection of this relies on fabric analysis.[104]

As for the examples mentioned in this article, I would like to emphasize that considering the production of these artifacts as merely the result of chance and contingency would be misleading.[105] The real goal is to understand the technology that was behind the production of ostraca as artifacts, and to define its evolution and characteristics.[106]

103 Orton et al. 1993; Marchand 2013.

104 Tomber 2008, 38–39.

105 The present article addresses a series of issues related to the practice of writing on ostraca in the ancient world. These issues will be further explored in an upcoming monograph that will summarize the results of my research.

106 Giannichedda 2006.

Bibliography

Aharoni, Yohanan (1966), "Hebrew Ostraca from Tel Arad", in: *Israel Exploration Journal* 16 (1), 1–7.

Aharoni, Yohanan (1968), "Arad: Its Inscriptions and Temple", in: *The Biblical Archaeologist* 31 (1), 1–32.

Arlt, Carolin (2013), "The Name Ostraka from Soknopaiou Nesos. Office Lottery or Ostracism in the Fayyûm?", in: Caroline Arlt and Martin A. Stadler (eds.), *Das Fayyûm in Hellenismus und Kaiserzeit. Fallstudien zu multikulturellem Leben in der Antike*, Wiesbaden, 7–17.

Ast, Rodney/Bagnall, Roger S. (eds.) (2016), *Amheida III. Ostraka from Trimithis*, vol. 2: *Greek Texts from 2008–2013 Seasons*, New York.

Ast, Rodney/Davoli, Paola (2016), "Ostraka and Stratigraphy at Amheida (Dakhla Oasis, Egypt): A Methodological Issue", in: Tomasz Derda, Adam Łajtar and Jakub Urbanik (eds.), *Proceedings of the 27th International Congress of Papyrology, Warsaw, 29 July–3 August 2013* (The Journal of Juristic Papyrology Supplements 28), Warsaw, 1447–1471.

Bacot, Seÿna/Heurtel, Chantal (2000), "Ostraca coptes d'Éléphantine au Musée du Louvre", in: Nathalie Bosson (ed.), *Études coptes VII. Neuvième journée d'études, Montpellier 3–4 juin 1999* (Cahiers de la Bibliothèque copte 12), Paris, 17–45.

Bagnall, Roger S. (2011), *Everyday Writing in the Graeco-Roman East*, Berkeley.

Bagnall, Roger S. (2016), "Materializing Ancient Documents", in: *Daedalus* 145 (2), 79–87.

Bagnall, Roger S./Caputo, Clementina/ Casagrande-Kim, Roberta/Soto, Irene (2017), "New Evidence from Ostraca for the Dating of 4th Century CE Ceramic Assemblage", in: *Bulletin de la liaison de la Céramique Egyptienne* 27, Cairo, 195–211.

Bagnall, Roger S./Davoli, Paola (2011), "Archaeological Work on Hellenistic and Roman Egypt, 2000–2009", in: *American Journal of Archaeology* 115 (1), 103–157.

Bagnall, Roger S./Ruffini, Giovanni (eds.) (2012), *Amheida I. Ostraka from Trimithis,* vol. 1: *Texts from the 2004–2007 Seasons*, New York.

Bagnall, Roger S./Tallet, Gaëlle (eds.) (2019), *The Great Oasis of Egypt: The Kharga and Dakhla Oases in Antiquity*, Cambridge.

Ballet, Pascale (2001), "Céramiques hellénistiques et romaines d'Égypte", in: Pierre Lévêque and Jean-Paul Morel (eds.), *Céramiques hellénistiques et romaines,* III, Paris, 105–144.

Ballet, Pascale (2003), "Dépotoirs cultuels, domestiques et 'industriels' dans la chôra égyptienne à l'époque romaine," in: Ballet/Cordier/Dieudonné-Glad 2003, 219–230.

Ballet, Pascale (2004), "Jalons pour une histoire de la céramique romaine au sud de Kharga. Douch 1985–1990", in: Michel, Reddé (ed.), *Douch III. Kysis. Fouilles de l'Ifao à Douch oasis de Kharga (1985–1990)* (Documents de Fouilles de l'Ifao 42), Cairo, 209–240.

Ballet, Pascale (2019), "And the Potsherds? Some Avenues of Reflection and Synthesis on the Pottery of the Great Oasis", in: Bagnall/Tallet 2019, 152–167.

Ballet, Pascale/Cordier, Pierre/Dieudonné-Glad, Nadine (eds.) (2003), *La ville et ses déchets dans le monde romain: rebuts et recyclages. Actes du Colloque de Poitiers (19–21 Septembre 2002)* (Archéologie et histoire romaine 10), Montagnac.

Ballet, Pascale/Mahmoud, Fatma/Vichy, Michèle/Picon, Maurice (1991), "Artisanat de la céramique dans l'Égypte romaine tardive et byzantine. Prospections d'ateliers de potiers de Minia à Assouan", in: Pascale Ballet (ed.), *Cahiers de la céramique égyptienne* 2, Cairo, 129–143.

Ballet, Pascale/Południkiewicz, Anna (2012), *Tebtynis* V. *La céramique des époques hellénistique et impériale: Campagnes 1988–1993. Production, consommation et réception dans le Fayoum méridional* (Fouilles de l'Ifao 68), Cairo.

Ballet, Pascale/Vichy, Michèle (1992), "Artisanat de la céramique dans l'Égypte hellénistique et romaine. Ateliers du Delta, d'Assouan et de Kharga", in: Pascale Ballet (ed.), *Atelier de potiers*

et productions céramiques en Égypte. Actes de la Table Ronde, Le Caire, 26–29 novembre 1990 (Cahiers de la céramique égyptienne 3), Cairo, 109–119.

Bartoli, Giovanna (2006), "La ceramica del tempio C di Medinet Madi", in: Bresciani/Giammarusti/Pintaudi/Silvano 2006, 167–221.

Bavay, Laurent (2007), "Les amphores d'un anachorète copte de la montagne thèbaine", in: Sylvie Marchand and Antigone Marangou (eds.), *Amphores d'Égypte de la Basse Époque à l'époque arabe* (Cahiers de la céramique égyptienne 8.1), Cairo, 389–399.

Bavay, Laurent (2008), *Dis au potier qu'il me fasse un kôtôn. Archéologie et céramique de l'Antiquité tardive à nos jours dans la TT29 à Cheikh Abd el-Gourna, Égypte*, PhD Thesis, Université libre de Bruxelles.

Bingen, Jean (1996), "Dumping of Ostraca at Mons Claudianus", in: Donald M. Bailey (ed.), *Archaeological Research in Roman Egypt. The Proceedings of the Seventeenth Classical Colloquium of the Department of Greek and Roman Antiquities, British Museum, held on 1–4 December, 1993* (Journal of Roman Archaeology Supplement 19), 29–38.

Bingen, Jean/Bülow-Jacobsen, Adam/Cockle, Walter E. H./Cuvigny, Hélène/Rubinstein, Lein/Van Rengen, Wilfried (eds.) (1992), *Mons Claudianus. Ostraca graeca et latina I. (O.Claud. 1–190)* (Documents de fouilles de l'Ifao 29), Cairo.

Bingen, Jean/Bülow-Jacobsen, Adam/Cockle, Walter E. H./Cuvigny, Hélène/Kayser, François/Van Rengen, Wilfried (eds.) (1997), *Mons Claudianus. Ostraca graeca et latina II. (O.Claud. 191–414)* (Documents de fouilles de l'Ifao 32), Cairo.

Boud'hors, Anne/Heurtel, Chantal (2010), *Les ostraca coptes de la TT29: Autour du moine Frangé*, 2 vols. (Études d'archéologie thébaine 3), Bruxelles.

Brenne, Stefan (2018), *Die Ostraka vom Kerameikos* (Kerameikos 20), Wiesbaden.

Bresciani, Edda/Giammarusti, Antonio/Pintaudi, Rosario/Silvano, Flora (eds.) (2006), *Medinet Madi. Venti anni di esplorazione archeologica (1984–2005)*, Pisa.

Bresciani, Edda/Menchetti, Angiolo/Messeri, Gabriella/Pintaudi, Rosario (2002), "The Publication Project of the Ostraka from Medinet Madi (Cairo Museum J. E. 8/4/48/1)", in: Mamdouh Eldamaty and Mai Trad (eds.), *Egyptian Museum Collections around the World: Studies for the Centennial of the Egyptian Museum*, vol. 1, Cairo, 163–174.

Brooks Hedstrom, Darlene L. (2017), *The Monastic Landscape of Late Antique Egypt. An Archaeological Reconstruction*, Cambridge.

Brun, Jean-Pierre (1994), "Le faciès céramique d'Al-Zarqa. Observations préliminaires", in: *Bulletin de l'Ifao* 94, 7–26.

Brun, Jean-Pierre (2003), "Typologie de la céramique: un aperçu", in: Cuvigny 2003, 503–513.

Brun, Jean-Pierre (2007), "Amphores égyptiennes et importées dans les praesidia romains des routes de Myos Hormos et de Bérénice", in: Sylvie Marchand and Antigone Marangou (eds.), *Amphores d'Égypte de la Basse Époque à l'époque arabe* (Cahiers de la céramique égyptienne 8.2), Cairo, 505–523.

Brun, Jean-Pierre (2011), "Le dépotoir", in: Cuvigny 2011, 115–156.

Brun, Jean-Pierre/Faucher, Thomas/Redon, Bérangère/Sidebotham, Steven (eds.) (2018), *The Eastern Desert of Egypt during the Graeco-Roman Period: Archaeological Reports*, Paris. DOI: 10.4000/books.cdf.5230.

Bülow-Jacobsen, Adam (2009), "Writing Materials in the Ancient World", in: Roger S. Bagnall (ed.), *The Oxford Handbook of Papyrology*, Oxford, 3–29.

Bülow-Jacobsen, Adam/Cuvigny, Hélène/Fournet, Jean-Luc (1994), "The identification of Myos Hormos. New Papyrological Evidence", in: *Bulletin de l'Ifao* 94, 27–42.

Bülow-Jacobsen, Adam/Fournet, Jean-Luc/Redon, Bérangère (2019), *Ostraca de Krokodilô II*: *La correspondence privée et les réseaux personnels de Philoklès, Apollôs et Ischyras* (Fouilles de l'Ifao 81.1), Cairo.

Capasso, Mario (2012), "I papiri e gli ostraka greci, figurati e copti (2001–2009)", in: Capasso/Davoli 2012, 231–247.

Capasso, Mario (2015), "Soknopaios. Il tempio, il culto e i sacerdoti: il contributo dei papiri", in: Mario Capasso and Paola Davoli (eds.), *Soknopaios: The Temple and Worship. Proceedings of the First Round Table of the Centro di Studi Papirologici of Salento University, October 9th 2013* (Edaphos 1), Lecce, 33–116.

Capasso, Mario/Davoli, Paola (eds.) (2012), *Soknopaiou Nesos Project I (2003–2009)*, Pisa/Rome.

Capasso, Mario/Davoli, Paola (eds.) (forthcoming), *Soknopaiou Nesos Project II. Greek and Egyptian Texts from the Excavations of the University of Salento (2003–2014 Seasons)*.

Caputo, Clementina (2016), "Ceramics Fabrics and Shapes", in: Ast/Bagnall 2016, 62–88.

Caputo, Clementina (2019a), "Looking at the Material: One Hundred Years of Studying Ostraca from Egypt", in: Cornelia Ritter-Schmalz and Raphael Schwitter (eds.), *Antike Texte und ihre Materialität: Alltägliche Präsenz, mediale Semantik, literarische Reflexion* (Materiale Textkulturen 27), Berlin/Boston, 93–117.

Caputo, Clementina (2019b), "Egyptian and Imported Amphoras at Amheida", in Bagnall/Tallet 2019, 168–191.

Caputo, Clementina/Cowey, James M. S. (2018), "Ceramic Supports and Their Relation to Texts in Two Groups of Ostraca from the Fayum", in: Francisca A. J. Hoogendijk and Steffie van Gompel (eds.), *The Materiality of Texts from Ancient Egypt: New Approaches to the Study of Textual Material from the Early Pharaonic to the Late Antique Period* (Papyrologica Lugduno-Batava 35), Leiden/Boston, 62–75.

Caputo, Clementina/Davoli, Paola (forthcoming), "Byzantine Pottery from Soknopaiou Nesos (Fayyum, Egypt)", in: *Proceedings of the 6th International Conference on Late Roman Coarse Ware, Cooking Ware and Amphorae in the Mediterranean: Archaeology and Archaeometry. Land and Sea: Pottery Routes. Agrigento, 24–28 maggio 2017* (Roman and Late Antique Mediterranean Pottery – RLAMP).

Chaufray, Marie-Pierre/Guermeur, Ivan/Lippert, Sandra/Rondot, Vincent (eds.) (2018), *Le Fayoum. Archéologie – Histoire – Religion. Actes du sixième colloque international, Montpellier, 26–28 octobre 2016*, Wiesbaden.

Chevalier, Yaël (2019), "El-Deir as a Switching Point", in: Bagnall/Tallet 2019, 201–215.

Chiesi, Ivan/Davoli, Paola/Occhi, Simone/Raimondi, Nicola (2012), "I rilievi topografici del sito", in: Capasso/Davoli 2012, 56–66.

Cuvigny, Hélène (2003), *La route de Myos Hormos. L'armée romaine dans le désert Oriental d'Égypte*. 2 Vols. (Praesidia du désert de Bérénice I–II, Fouilles de l'Ifao 48/1–2), Cairo.

Cuvigny, Hélène (2005), *Ostraca de Krokodilô. La correspondance militaire et sa circulation, (O. Krok. 1–151)* (Praesidia du desert de Bérénice II, Fouilles de l'Ifao 51), Cairo.

Cuvigny, Hélène (ed.) (2011), *Didymoi. Une garnison romaine dans le désert Oriental d'Égypte*). Vol. I. *Les fouilles et les matériel* (Praesidia du désert de Bérénice IV, Fouilles de l'Ifao 64), Cairo.

Cuvigny, Hélène (ed.) (2012), *Didymoi. Une garnison romaine dans le desert Oriental d'Égypte*. Vol. II. *Les Textes* (Praesidia du désert de Bérénice IV, Fouilles de l'Ifao 67), Cairo.

Cuvigny, Hélène (2018), "Les ostraca sont-ils solubles dans l'histoire?", in: *Chiron* 48, 193–217.

Davoli, Paola (2015), "The Temple as A Spatial and Architectural Reality", in: Mario Capasso and Paola Davoli (eds.), *Soknopaios: The Temple and Worship. Proceedings of the First Round Table of the Centro di Studi Papirologici of Salento University, October 9th 2013* (Edaphos 1), Lecce, 117–154.

Dixneuf, Delphine (2011), *Amphores égyptiennes: production, typologie, contenu et diffusion (III^e siècle avant J.-C.–IX^e siècle après J.-C.)* (Études alexandrines 22), Alexandria.

Dixneuf, Delphine (2012), "Introduction à la céramique de Soknopaiou Nesos", in: Capasso/Davoli 2012, 315–361.

Dupré Raventós, Xavier/Remolà, Josep-Anton (eds.) (2000), *Sordes Urbis. La eliminación de residuos en la ciudad romana. Actas de la reunión de Roman (15–16 de novembre de 1996)*, Rome.

Eccleston, Mark A. J. (2006), *Technological and Social Aspects of High-Temperature Industries in the Dakhleh Oasis, Egypt, during the Ptolemaic and Roman Periods*, PhD Thesis, Monash University.

Gallazzi, Claudio (1998), "Lo scavo di una discarica a Umm-el-Breigât (Tebtynis), ovvero, le sorprese del pattume", in: *Numismatica e Antichità Classiche. Quaderni Ticinesi* 27, 185–207.

Gallazzi, Claudio (ed.) (2018), *Tebtynis VI. Scripta Varia. Textes hiéroglyphiques, hiératiques, démotiques, araméens, grecs et coptes sur différents supports* (Fouilles de l'Ifao 78), Cairo.

Gardner, Iain (1999), "An Old Coptic Ostrakon from Ismant el-Kharab?", in: *Zeitschrift für Papyrologie und Epigraphik* 125, 195–200.

Gardner, Iain/Alcock, Anthony/Funk, Wolf-Peter (eds.) (1999), *Coptic Documentary Texts from Kellis, Volume I: P. Kell. V Copt. (P. Kell. Copt. 10–52; O. Kell. Copt. 1–2)* (Dakhleh Oasis Project Monograph 9), Oxford/Oakville.

Gasperini, Valentina (2014), "I materiali ceramici e vitrei di Bakchias", in: Enrico Giorgi and Paola Buzi (eds.), *Bakchias. Dall'Archeologia alla Storia*, Bologna, 243–367.

Gempeler, Robert D. (1992), *Elephantine X. Die Keramik römischer bis früharabischer Zeit* (Archäologische Veröffentlichungen 43), Mainz.

Giannichedda, Enrico (2006), *Uomini e cose: appunti di archeologia*, Bari.

Gill, James C. R. (2016), *Dakhleh Oasis and the Western Desert of Egypt Under the Ptolemies* (Dakhleh Oasis Project Monograph 17), Oxford.

Giugni, Erica (2001), *I nuovi ritrovamenti di ostraca nell'Agorà e nel Ceramico*, Florence.

Górecki, Tomasz/Łajtar, Adam (2012), "An Ostracon from the Christian Hermitage in MMA 1152", in: *The Journal of Juristic Papyrology* 42, 135–164.

Henein, Nessim Henry (1997), *Poterie et potiers d'Al-Qasr* (Bibliothèque d'Études 116), Cairo.

Heurtel, Chantal (2008), "Les prédécesseurs de Frangé: l'occupation de TT29 au VII^{e} siècle", in: Anne Boud'hors and Catherine Louis (eds.), *Études coptes X. Douzième journée d'études (Lyon, 19–21 mai 2005)* (Cahiers de la Bibliothèque copte 16), Paris, 167–178.

Hope, Colin A. (1999), "Pottery Manufacture in Dakhleh Oasis", in: Charles S. Churcher and Antony J. Mills (eds.), *Reports from the Survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987* (Dakhleh Oasis Project Monograph 2), Oxford, 215–243.

Hope, Colin A. (2000), "Kegs and Flasks from the Dakhleh Oasis", in: Pascale Ballet (ed.), *Atelier de potiers et productions céramiques en Égypte. Actes de la Table Ronde, Le Caire, 26–29 novembre 1990* (Cahiers de la céramique égyptienne 3), Cairo, 189–234.

Hope, Colin A. (2004), "The Ostraka and the Archaeology of Ismant el-Kharab", in: Worp 2004, 5–28.

Hope, Colin A./Ross, Andrew (2007), "Imported Amphorae from Dakhleh Oasis", in: Sylvie Marchand and Antigone Marangou (eds.), *Amphores d'Égypte de la Basse Époque à l'époque arabe* (Cahiers de la céramique égyptienne 8.2), Cairo, 463–480.

Johnson, Barbara (1981), *Pottery from Karanis. Excavations of the University of Michigan*, Ann Arbor.

Katzjäger, Denise/Peloschek, Lisa/Rembart, Laura (2016), "The Multiplicity of Aswan Pink Clay Pottery (Roman Times to Late Antiquity). Synchronising shape repertoire, clay pastes and firing properties", in: *Rei Cretariae Romanae Fautorum Acta* 44, 731–736.

Krause, Martin (2010), "Coptic Texts from Western Thebes: Recovery and Publication from the Late Nineteenth Century to the Present", in: Gawdat Gabra and Hany N. Takla (eds.), *Christianity and Monasticism in Upper Egypt. Volume 2. Nag Hammadi–Esna*, Cairo, 63–78.

Lawall, Mark (2003), "Egyptian and Imported Transport Amphoras", in: Sharon C. Herbert and Andrea Berlin (eds.), *Excavations at Coptos (Qift) in Upper Egypt 1987–1992* (Journal of Roman Archaeology Supplement 53), Portsmouth, 157–191.

Lippert, Sandra L./Schentuleit, Maren (2006), *Demotische Dokumente aus Dime* I. *Ostraka*, Wiesbaden.

Litinas, Nikos (2008a), *Greek Ostraca from Chersonesos. Ostraca Cretica Chersonesi (O.Cret.Chers.)* (Tyche Supplementband 6), Wien.

Litinas, Nikos (2008b), *Tebtynis III. Vessels' Notations from Tebtynis* (Fouilles de l'Ifao 55), Cairo.

Lougovaya, Julia (2018), "Writing on Ostraca: Considerations of Material Aspects", in: Francisca A. J. Hoogendijk and Steffie van Gompel (eds.), *The Materiality of Texts from Ancient Egypt: New Approaches to the Study of Textual Material from the Early Pharaonic to the Late Antique Period* (Papyrologica Lugduno-Batava 35), Leiden/Boston, 52–61.

Marchand, Sylvie (2009), "Appendix 2. Hawara 2000 – The pottery from Hawara", in: Inge Uytterhoeven (ed.), *Hawara in the Graeco-Roman Period. Life and Death in a Fayyum Village* (Orientalia Lovaniensia Analecta 174), Leuven, 685–813.

Marchand, Sylvie (2012), "Prospection céramique de 2010 des environs du site de Dimeh (Fayoum). Habitats et nécropoles de l'Ancien Empire à la Basse Époque", in: *Bulletin de la liaison de la Céramique Egyptienne* 23, Cairo, 63–75.

Marchand, Sylvie (2013), "Céramiques d'Égypte de la fin IV^{e} siècle av. J.-C. au III^{e} siècle av. J.-C.: entre tradition et innovation", in: Nina Fenn and Christiane Römer-Strehl (eds.), *Networks in the Hellenistic World. According to the pottery in the Eastern Mediterranean and beyond* (BAR International Series 2539), Oxford, 239–253.

Marchand, Sylvie/Tallet, Pierre (1999), "Ayn-Asîl et l'oasis de Dakhla au Nouvel Empire", in: *Bulletin de l'Ifao* 99, 307–352.

Maxfield, Valerie A./Peacock, David P. S. (eds.) (2006), *Survey and Excavation. Mons Claudianus III. Ceramic Vessels and Related Objects* (Fouilles de l'Ifao 54), Cairo.

Niemann, Hermann Michael (2008), "A New Look at the Samaria Ostraca: The King-clan Relationship," in: *Tel Aviv* 35, 249–266.

Olsen, Bjørnar (2003), "Material Culture after Text: Re-Membering Things", in: *Norwegian Archaeological Review* 36.2, 87–104.

Orton, Clive/Tyers, Paul/Vince, Alan (1993), *Pottery in Archaeology*, Cambridge.

Patten, Shirley F. (2000), *Pottery from the Late Period to the Early Roman Period from Dakhleh Oasis, Egypt* (PhD Dissertation), Macquarie University.

Pelegrin, Jacques/Andreu-Lanoë, Guillemette/Pariselle, Christine (2015), "La production des ostraca en calcaire dans la nécropole thébaine. Étude préliminaire", in: *Bulletin de l'Ifao* 115, 325–352.

Peña, John Theodore (1998), "The Mobilization of State Olive Oil in Roman Africa: The Evidence of Late Fourth Century Ostraca from Carthage", in: John Theodore Peña, Jeremy J. Rossiter, Andrew I. Wilson, Colin Wells, Maureen Carroll, Joann Freed and David Godden (eds.), *Carthage Papers. The Early Colony's Economy, Water Supply, a Public Bath, and the Mobilization of State Olive Oil* (Journal of Roman Archaeology Supplementary Series 28), Portsmouth, R. I., 116–238.

Peña, John Theodore (2007), *Roman Pottery in the Archaeological Record*, Cambridge.

Reiter, Fabian (2007), "Ostraka di Bakchias dalle campagne di scavo 1999–2003", in: *New Archaeological and Papyrological Researches on the Fayyum. Proceedings of the International Meeting of Egyptology and Papyrology, Lecce, June 8th–10th, 2005* (Papyrologica Lupiensia 14/2005), 265–281.

Soto Marín, Irene (2019), "Kegs from Amheida", in: Bagnall/Tallet 2019, 192–200.

Soukiassian, Georges/Wuttmann, Michel/Pantalacci, Laure/Ballet, Pascale/Picon, Maurice (1990), *Les ateliers de potiers d'ʿAyn-Asīl* (Fouilles de l'Ifao 34), Cairo.

Stadler, Martin A. (2012), "Demotica aus Dime: ein Überblick über die in Dime während der Kampagnen 2001–2009 gefundenen demotischen Texte", in: Capasso/Davoli 2012, 254–263.

Tappy, Ron E. (2016), *The Archaeology of the Ostraca House at Israelite Samaria: Epigraphic Discoveries in Complicated Contexts* (American Schools of Oriental Research 70), Boston.

Tomber, Roberta (2008), *Indo-Roman Trade. From Pots to Pepper*, London.
Wipszycka, Ewa (2009), *Moines et communautés monastiques en Égypte (IVe–VIIIe siècles)* (The Journal of Juristic Papyrology Supplements 11), Warsaw.
Wipszycka, Ewa (2018), *The Second Gift of the Nile. Monks and Monasteries in Late Antique Egypt* (The Journal of Juristic Papyrology Supplements 33), Warsaw.
Worp, Klaas A. (ed.) (2004), *Greek Ostraca from Kellis: O.Kellis, Nos. 1–293* (Dakhleh Oasis Project, Monograph 13), Oxford.
Zucker, Friedrich/Schubart, Wilhelm (1971), "Die Berliner Papyrusgrabungen in Dîme und Medînet Mâdi 1909/10. Das Grabungstagebuch. Herausgegeben von Wolfgang Müller", in: *Archiv für Papyrusforschung* 21, 5–55.

Photo Credits

Fig. 1–2: © Clementina Caputo.
Fig. 3–4: © Amheida Project.

Adam Bülow-Jacobsen

Photography of Papyri and Ostraca

This paper is based on many years of experience with photography of papyri and ostraca. Since 1970 I have regularly photographed papyri both for my own work and that of others, using a variety of cameras and techniques. At the beginning, I used 35 mm black-and-white film, but during my doctoral studies in UCL I graduated to 4 × 5 inch sheet-film which remained my favorite medium until digital photography became good enough to be applied.

I am not a professionally trained photographer, but have followed courses[1] and worked in professional environments, not least in London where, for one year, I took care of all the photography for the Oxyrhynchus Papyri edition.[2] For several years I took part in the missions for the AIP photographic archive in Cairo, and later I photographed ostraca during excavations of Mons Claudianus 1987–1993 and all the excavations in the Eastern Desert under the project *Les praesidia du Désert Oriental*, from 1994 to the present.[3]

What can be read in the following pages is thus based on the experiences of a practical field photographer, rather than of a scientist working in a laboratory. Equally, it is meant more for the benefit of papyrological colleagues than for scientists working on "imaging".

1 The Problem

Whether the object is a papyrus, an ostracon, or a wooden tablet with writing in ink, the problem is basically that of *legibility*. 2000 years in the ground have left their mark on these originals and they are nearly always discolored and the ink will often have faded, most often because of water. Besides, the writing may be obscured by dirt or salt-incrustations.

Stone-inscriptions and wax tablets present different problems inasmuch as they are incised. This will be dealt with later.

I begin with a summary of the types of problems that the photographer will encounter. The list will necessarily contain words and concepts that will only be defined later in this paper.

1 Notably a course of applied technical photography given by P. B. Schimdt, Skovshoved, in 1970.

2 This took place in the Central Photographic Unit, University College London, for one day a week in 1972–1973 under the leadership of Mr. Eric Hitchcock.

3 Directed by Hélène Cuvigny, and financed partly by Ministère des affaires étrangères, partly by Institut français d'archéologie orientale, Cairo.

https://doi.org/10.1515/9783110712902-004

1.1 Types of Papyri: Normal Brownish and Carbonized

Papyri are flat, two-dimensional, objects and from a photographic point of view they are treated like ordinary reproductions. They need even, flat light. The background color will mostly be brownish and the ink, if it is a carbon-ink, will be black. All such papyri will respond to the standard-treatment, either a color photograph or a black-and-white, if necessary with some red-filtering. They will normally respond well to infrared.

Papyri written with metallic, ferro-gallic ink, which is often brownish, are much more difficult since the ink also responds to lightening of red and brown and may disappear, or at least not be improved under infrared treatment.

Carbonized papyri are much more difficult and do not all present the same problem. Some are just vaguely discolored while others are almost totally black, so that the ink is hardly visible. Some respond well to infrared others almost not. Some are under glass which makes it very difficult to do anything with them. Others again, especially those that have been unrolled by the Piaggio-method,[4] are so brittle and warped that they must be treated as three-dimensional with the added consideration of depth of field.

Common to most papyri is that they are often mounted under glass. In most cases this does not bother the photographer if he positions his lights at an angle of 45° to the surface and can avoid the problem of a reflection of the camera in the glass.[5] If photographing papyri under glass, be sure to look for the reflection of overhead light. This is easily missed when you are concentrating on the papyrus under the lens, but the white spot may ruin the whole photo.

1.2 Types of Ostraca: Limestone, Calcareous Clay, Brownish Clay

Ostraca from the Pharaonic period are often written on limestone flakes, i. e. on a totally white background. If the ink is well preserved, it should make for a good photo. If the ink is rubbed or otherwise damaged there is no help in infrared and generally little that can be done to save the text. The same is true of ostraca written on whitish ceramics.

Ostraca on brown ceramics, written with black carbon-ink, are common in the Greco-Roman period and make up the large majority of those found in the Eastern Desert. If they are badly darkened, they can be quite forbidding at first sight, but, like

4 See Sider 2009, 307–308.

5 This depends on the presence of extraneous light and the amount of silver or chrome on the front of the camera. If the problem persists, it may be necessary to cut a hole in a sheet of black carton and place this in front of the camera, so that only the lens opening is visible. In any case, avoid more light than strictly necessary falling on the camera, the photographer or wherever, outside of the object.

most papyri, they respond very well to red filtering and infrared treatment. The black ink will stay black on the photograph, but the reddish background can be lightened and the contrast thus enhanced.

1.3 Wood, Parchment

Both wood and parchment normally respond well to red or infrared procedure. When dealing with parchment, it is further advisable to consider the use of ultraviolet fluorescence, see Section 6, below. This method does not work on papyri and ostraca, and I have had little occasion to use it. Since the method further demands a special ultraviolet light-source (e. g., a so-called Wood's lamp) and a darkened room, it can be difficult to use under primitive conditions.

1.4 Types of Ink: Red, Carbon, "Mixed", Iron-gall

Red ink is fairly common on Pharaonic papyri, but almost totally absent from documents of the Greco-Roman period. The presence of red ink precludes the use of red filtering or infrared which will make reds disappear from the photo, and other methods, like DStretch or in some cases just a green filtering to darken the reds, must be used. Although it is not an ostracon, but a dipinto on a wall, a good example of what DStretch can do is from the sanctuary at Sikayt (Fig. 1).[6] See more in 5.7.1 below.

Carbon ink does not reflect red or infrared and thus gives the best results with red filtering or infrared, as the ink stays black regardless of what photographic effects can be brought to bear on the color of the background.

Iron-gall inks are often brownish and do, to a greater or lesser extent, reflect red and infrared and must therefore be treated differently.

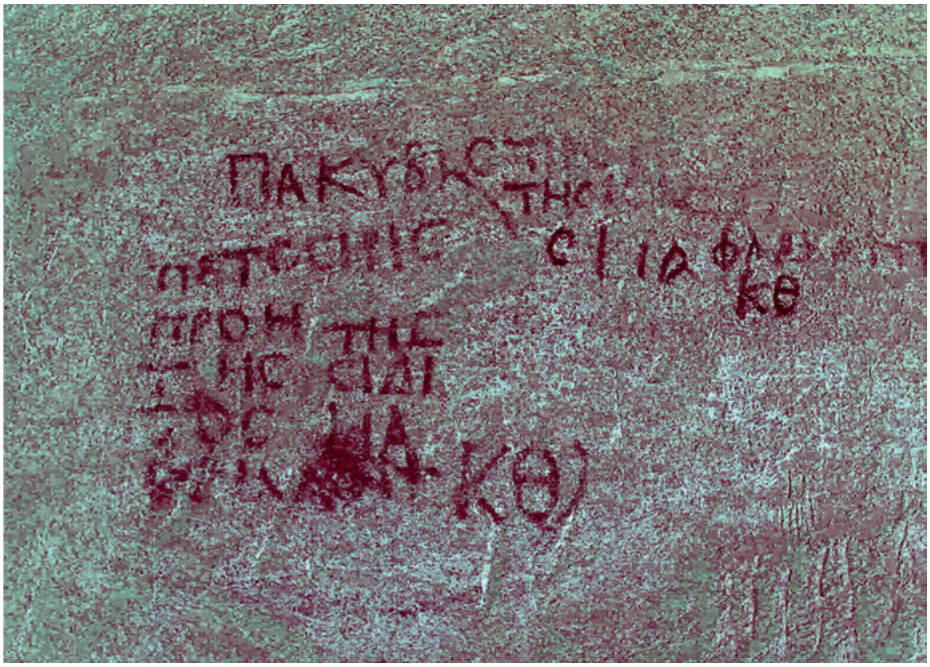
Since we are on the subject of ink, a special variety must be mentioned, although it does not have any practical relevance for photography, namely inks that contain lead.[7] Another special case are the "mixed inks"[8] which show characteristics of both carbon and ferro-gallic ink. The photographic treatment of such inks must depend on their color.

6 See Cuvigny 2007, 342–343.

7 Brun et al. 2016 and Tack et al. 2016 both describe and analyze a surprisingly high concentration of lead on two fragments (the same in both articles) of carbonized Herculaneum papyrus. This does not seem to be what we normally call "metallic ink", since these are understood as mordant, ferro-gallic inks. The analysis does not mention iron and copper is not found in the ink. No explanation of the presence of lead is found.

8 See Christiansen 2017.

a



b

Fig. 1: (a) A color slide of a red-paint inscription in Sikayt (Smaragdus) and (b) a DStretch treatment of the same.

1.5 Incised Texts

Incised texts include what we normally call inscriptions on stone, but also scratchings on walls and ostraca. Common to these is that color is irrelevant, and the only way to enhance them is by raking light. Such directional light at a low angle to the surface is easily arranged on a flat, even surface, but very tricky if the written surface is curved, waving or otherwise uneven.

Another problem is that such light will often be too close to the object and thus be uneven across the photograph. If possible, sunlight or directional daylight, e. g. from a window, is very good, if the object can be turned to an ideal angle to the light. With stone inscriptions this will often be impossible, and you may have to wait until the sun is in the right position, if you are working outdoors. When conditions allow, a flash is ideal for raking light, but be sure to have it far enough away, so that the light across the object is as even as possible. Of course, you need to be able to detach the flash from the camera and to have a synchronization cable long enough (and somebody to hold the flash). Also, the flash needs to be fairly powerful, so that it will give sufficient light at a distance of several meters. Depending on circumstance, the ideal solution for incised objects may be the RTI (reflectance transformation imaging).[9]

1.5.1 Wax Tablets

Wooden tablets covered with a layer of wax into which letters were scratched were a very common support for writing in antiquity. They present numerous problems for the photographer: the wax has in some cases completely disappeared, and only the scratches of the hard stylus into the wood below remain. In other cases some wax is preserved. The wax will mostly be black, so even if you can get good shadow-effects with raking light, you will be trying to make contrast between black and black. RTI will often be the best (or only) way to handle wax tablets. The RTI-technique consists in making several (e. g. 12 or more) exposures with the object and the camera in exactly the same position while moving the light-source. The exposures are then processed in a program which will choose the optimal lightening for every pixel.[10] (Fig. 2)

See more on RTI below, 5.7.3. Advice: If you want to use RTI, be sure to try it out first. The program and the procedure take some getting used to.

9 See 5.7.3 below. RTI photography is described at http://culturalheritageimaging.org/Technologies/RTI/ (last accessed: 16.1.2020) where the necessary software (free) and various accessories (not free) can be obtained, as well as courses in the use of RTI.

10 The example shown in Fig. 2 is published in Redon 2016.

a

Fig. 2: RTI of a wax tablet in Musée des Beaux-Arts in Lyon. The two photos show the same set of exposures in default treatment (a) and in the specular enhancement mode (b, opposite page). Notice the brilliant black ball which indicates the direction of the light in the individual exposures.

b

2 Objectives: What Is It We Want?

First of all, we do not want a photograph that looks like the original. We want it better than the original from the point of view of reading. This means that we want the highest possible contrast between the ink and the support/background, while we normally have to give a lower priority to the fiber-structure. Of course we want a sharp picture of high resolution which will permit enlargement. Those who work with flat-bed scanners normally set the resolution to 600 dpi, which is not always possible to obtain when working with a camera, if the original is big. But the minimum requirement is 300 dpi at natural size, which permits printing, and which also permits 4-times enlargement on the screen. A scale next to the papyrus is essential.

You can work in color, but with all the necessary manipulations, the colors become an embarrassment. So, unless the original is perfect and needs no treatment, I normally try to produce a good black-and-white print.

3 Set-up

3.1 Staging Your Object

In the technical literature on imaging the aesthetic aspect of our photographs is understandably neglected and the papyrologist-photographer will most often think only of legibility. There is a distinction often made in archaeological photography generally, between field-photography and publication photography. The thinking behind this distinction is valid enough and very clear in archaeology: In the course of the excavation the archaeologist will want to document details of his work, but from time to time a publishable photo is needed. Foot-prints are removed, scales are put in place, and one waits for the moment when the light is at its best, often early morning or late afternoon, when the sun is not directly on the scene. Perhaps a larger camera with better resolution is used. Until recently this meant a view-camera operated by a professional photographer, but most archaeologists nowadays are able to take such photographs with a medium or high-end digital camera. Ceramics and small finds are a different proposition and will mostly demand some staging, light-setting, and close-up work that the archaeologists may not have the time or the patience to do properly.

The papyrologist will mostly be interested in legibility. He/she will often have access to the piece in a collection where conditions for photography are less than optimal, and with few exceptions the papyrologist will not bring with him the necessary equipment nor be welcome to set it up in the middle of a reading room. So papyrologists often use hand-held cameras and available light, which may solve the immediate problem of getting a useable record, but not necessarily make a publishable photograph.

The set-up, lighting, background etc. are treated below. Papyri are easy since they are two-dimensional: place them squarely under the lens and do not waste too much space around the edges (i. e. get close enough), remember the scale and be sure it is parallel to the edge. Labels for identification must not overlap the object.

Ostraca are three-dimensional and more complicated. You will need an arsenal of small props to place the text to its best advantage. Plasticine is useful, but also empty film-canisters, small blocks of wood, and rings cut from transparent plastic tubes make good props. Whatever is small enough to hide behind the object, so that it is not seen in the photograph.[11] Stopping down to get depth of field may be necessary, but see Section 4.1 below about hot spots when working in infrared. Do not stop down more than necessary since few lenses are at their best at *f*16 or 22. Depth of field and optimal sharpness are not the same.

Do not forget to prop up the scale and the label so that they are at the same level as the surface of the object. A scale placed too high or too low will not show the true size of the object and may be out of focus.

Since ostraca are curved, small ostraca are much easier than big ones. Text on the edge of a big ostracon can be extremely tricky to place so that it is at best visibility to the camera. In extreme cases it may be necessary, as a last resort, to hold the fragment in position by hand.

3.2 Copy-stand

In most cases we want a dead vertical image in order to avoid distortion. For this, the use of a copy-stand is essential for precise focusing and control of movement. The copy stand allows adjustment of the scale of reproduction in relation to the size of the object and assures that the axis of the camera is at 90° to the surface where the object is placed. It is thus much faster and more flexible to work with than whatever solutions can be created with a tripod. Furthermore, it leaves you free to illuminate your object from whatever side you want except where the column is, and you do not risk shadows from the legs of the tripod. But reproduction stands are heavy and cumbersome and extremely difficult to transport.[12] Some tripods can be inverted so that the ball-head points downwards and the height over the object can be adjusted while preserving the vertical alignment. This may work well for a few shots, but must be considered a make-shift solution. The legs of the tripod will get in the way of the light, and if you are photographing a series of objects of varying size, it is very tiresome and time consuming.

11 The first year of working at Mons Claudianus I was not prepared for this and had to use a selection of stones—the only thing available in the desert.

12 In 1978, when I first went to photograph papyri in Egypt, I managed to get a copy-stand there with such difficulty that I left it and profited from it on all the excavations in which I subsequently participated.

Fig. 3: Typical set-up when photographing ostraca in the storeroom in Egypt: A copy-stand and two flashes with umbrellas, to give even, diffused light. If you are photographing papyri under glass, you will need to remove the umbrellas and turn the flashes directly onto the reproduction-surface, since the umbrellas will almost certainly make reflections in the glass. Here the lights are set at a higher angle than 45° (*c.* 70°) since there is no risk of reflections.

3.3 Hand-held

Because of the difficulty of transporting copy-stands many papyrologists prefer to hold the camera free hand. This is of course possible and has yielded good results, but there are limitations. The very high ISOs that can be obtained with modern digital cameras permit short exposures with available light. If you are working a whole day taking photographs like this, you will find that it strains your back and that a certain number of your pictures are less good than they would have been if you had used a copy-stand.

4 Focusing and Exposure

With the advances of auto-focusing on modern digital cameras, the art of focusing has been all but forgotten. Furthermore, papyri are flat, two dimensional objects and depth of field is not really important. Ostraca, being three-dimensional, present more of a problem: they are most often curved and need depth of field, and often you need to take several shots to get a good view of all the writing. Depth of field will normally be a simple question of stopping down. But see 4.1 on stopping down when working in infrared.

4.1 Focus and Exposure with Infrared

Focusing when working with infrared used to be a problem in the days when you used a special infrared film and a normal camera. Infrared light has longer wave-length than the visible rays and focusses at a point behind the film/sensor. In other words, if you focus on the visible image on the mat screen of your SLR or view-camera, the infrared picture that you take will be out of focus, and to correct this you must either extend the focal distance (between the lens and the film) or the distance between the lens and the object. Knowing how much to increase was a matter of experience unless you had experimented and made yourself a scale of how much to correct at any given distance. All this is now history, since digital cameras, when they are converted to infrared use, are also adjusted to focus correctly for infrared. The new mirrorless cameras solve the problem, since they focus, not on a screen, but on the infrared image itself, and so get the focus right. Another difficulty with infrared is exposure, since infrared light is invisible to the naked eye and also to the light-meter. Visible light may contain more or less, or no infrared light, so there may be surprises. The most important sources of such surprises are treated below in Section 5.

If you are working with infrared, be aware of the risk of hot spots: some lenses will give a white spot, mostly hexagonal or octagonal depending on the number of blades in your iris-diaphragm. The more you stop down, the more pronounced this becomes. Some lenses are worse than others and if the lens you are using makes unacceptable hot-spots at the aperture you want to use, you must use another lens.[13]

13 The Canon 50mm Compact Macro Lens, which I normally use, cannot be stopped down further than *f* 5,6 before the problem appears. This lens is no longer available Alternatively, I sometimes use a Leitz 60mm Macro-Elmarit-R (fully manual) which can be stopped down further before showing hot spots. There is some information on the subject and the reasons on https://www.lifepixel.com/lens-considerations (last accessed: 16.1.2020). A database concerning the performance of many different lenses may be found at https://kolarivision.com/articles/lens-hotspot-list/ (last accessed: 16.1.2020).

5 Light

5.1 Co-axial or Angled Light

Normally reproduction photography, and so papyri, demand even light from both sides. Such light will flatten shadows and will not bring forward e. g. the fiber-structure in a papyrus. In some cases when shadowless light is especially wanted, you can even use co-axial light, e. g. from a ring-flash or by putting your light-source very close to the camera.[14] Surprisingly such light is often used for coins when they are properly cleaned and on occasion it has worked well on incised wax tablets. In any case, if the object is under glass, co-axial light cannot be used.

Papyri under glass must be illuminated with light at 45° so that reflections are not seen by the camera.

Incised objects may often come out well just by turning off one of the lamps, but may require that the light be set at a lower angle. Remember to adjust the exposure.

5.2 Flash, Umbrellas or Not

If you illuminate by flash, as I mostly do, it gives a softer light if you bounce the flashes into an umbrella or through a soft-box. This can be highly recommended for ostraca. If the object is a papyrus under glass, you will find it difficult or impossible to avoid visible reflections in the glass, and you must remove the umbrellas and point the flashes directly at the papyrus. Flash illumination has several advantages:

1) It gives you a very short exposure and thus eliminates any risk of a shaken picture.
2) It has a daylight quality and can be used without correction for color film or digital color exposures.
3) It contains plenty of infrared rays.
4) And it does not give off heat. This latter point will be appreciated if you have ever worked with 500W lightbulbs in a confined space or a hot climate.

5.3 Tungsten

Incandescent glow-lamps are excellent for illuminating a photograph. The ordinary, household variety give a reddish light (2800K°) and are not ideal for color photography, but hypertension lamps, so-called B-lamps (3200K°) or A-lamps (3400K°) used with calibrated film could give excellent results. All this is now history. Incandescent lightbulbs are being phased out since 2009 because of new regulations, and specially

14 The use of co-axial light is treated at length, and in very technical language, in Nurminen 2011.

calibrated film is no longer produced for lack of need. On a digital camera, one just has to set the white balance. If you work in color with incandescent light-bulbs and set the white-balance accordingly (i. e. on white paper illuminated by the incandescent bulbs), remember that you must exclude ambient (day)light. If you do not, you will get blue shadows because the shadows receive a higher percentage of ambient light than the highlights. But in the modern world this situation is unlikely to occur.

5.4 LED, Fluorescent Tubes, Economy Bulbs

The disappearing glow-lamps are being replaced by a variety of excellent new forms of light. Flash has been mentioned, but is of course not useable for moving pictures. You will often find that fluorescent tubes are used for reproduction, and in scientific set-ups for RTI or multispectral photography LEDs are now widely used. Halogen lights are excellent for photography, while the economy-bulb, in spite of much improvement, is still not useful for photography. Excellent LED-arrays are commercially available for moving pictures and can also be used for stills. Common to all these light-sources is that they are meant to give visible light. In fact, the economy for which they are designed is obtained because they do not emit infrared light and heat. So, especially if you are working with infrared, whenever you use light-sources that you do not know in advance, be careful to test how they work with infrared. The lights may emit much less infrared than you expect, and very often none at all.

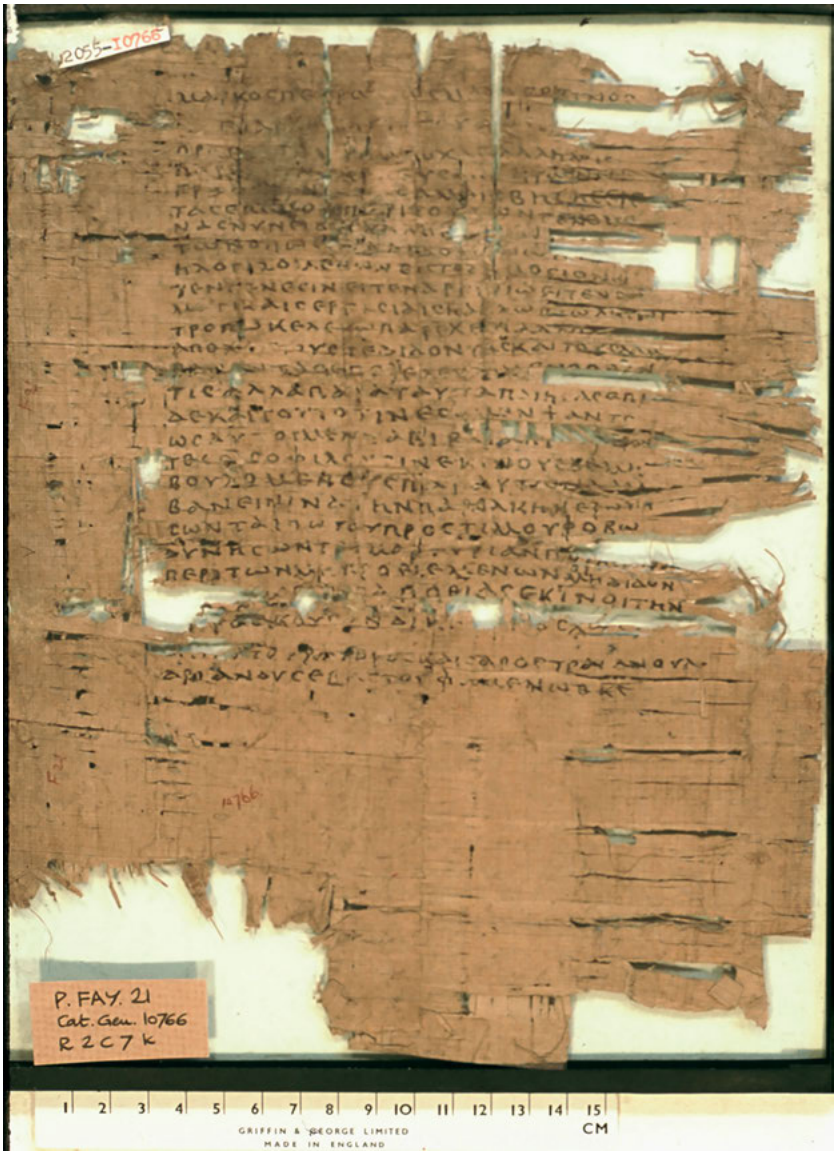
Infrared LEDs exist, but will not normally be part of an off-the-shelf array. Fluorescent tubes never, in my experience, emit infrared rays. So, if you are working in infrared, use flash or old-fashioned incandescent bulbs, if you can find them, or halogen lights.

5.5 Daylight

Daylight is excellent for all kinds of work including infrared. Try to avoid direct sunlight which throws very hard shadows. The drawback with daylight is that it is often found out of doors, where there is also the wind that blows away your labels, and that you cannot direct or regulate it.

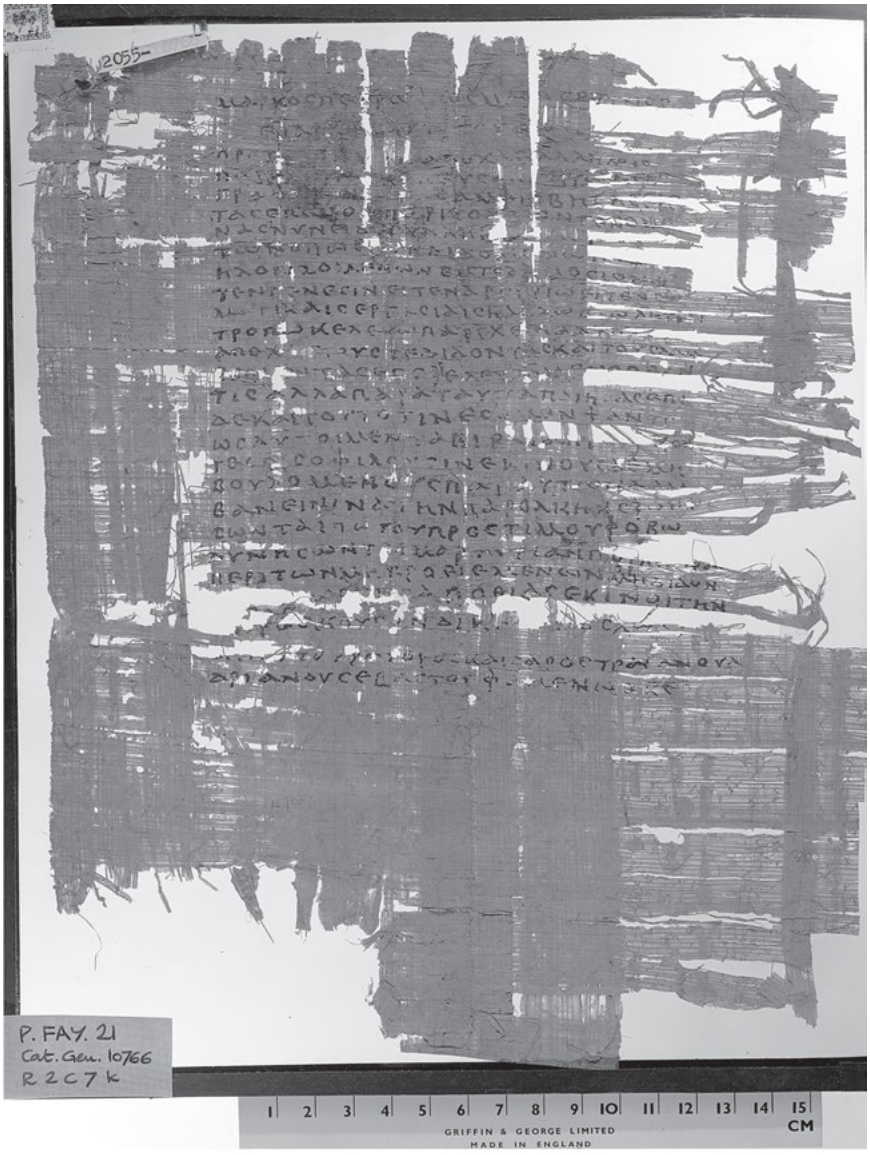
5.6 Background

When a photograph of a papyrus or an ostracon is published, it is normally “scraped free” (in French: *détouré*) which means that anything around the object, especially shadows, has been removed. In the days of film, this was done by the print-shop: the graphic negative with screen from which the printing plate would be made was placed on a light-table and the craftsman would paint around the object with red paint, thus



a

Fig. 4: These two photographs of P. Fay. 21 will illustrate the issue. The papyrus is mounted "clear". The color photo (a) was taken directly on a white background (on 35 mm film) while the black-and-white (b, opposite page) was lifted from the surface below (4″×5″, with orange filter, not on a light-box which I did not have in Cairo, but the effect is similar). The difference is striking: on (a) you do not see that the vertical fibers on the back are completely stripped away on the right side of the papyrus. All the holes and cracks are seen as black and are indistinguishable from ink. Both photos are from the AIP archive, downloadable from the Centre for the Study of Ancient Documents http://ipap.csad.ox.ac.uk/4DLink4/4DACTION/IPAPwebquery?vPub=P.Fay.&vVol=&vNum=21 (last accessed: 16.1.2020).



b

painstakingly blocking out everything but the papyrus (or whatever). On a torn and holed papyrus this was a lengthy and difficult job that was open to many errors. Nowadays this is all done electronically, but still involves a certain amount of manual work. Whether it is done with a brush on a light-table or on a computer screen, the operator (or the computer-program) needs to follow the circumference of the object as it is defined by the contrast between background and papyrus. Since a good black-and-white photograph of a papyrus shows the papyrus as light grey, the ink as black

and the background white, this can be tricky where there are frayed edges and holes. The easy way for the photographer is to place the papyrus on a black background.[15] While the black background eliminates shadows, it also makes it impossible to distinguish the difference between a small hole and a speck of ink. So, in spite of some advantages, *the use of a black background must in all circumstances be avoided*.

The best way to obtain a good reproduction of a papyrus is to place it on white blotting paper between two sheets of glass. The reason why this is not always done is that the back of the papyrus is invisible, and most papyri are therefore mounted "clear" between two sheets of glass. When a papyrus mounted this way is photographed on a white background there will be shadows around the edges due to the distance (normally 2–3 mm) between the papyrus and white paper which is created by the lower sheet of glass.

5.6.1 Light-box?

The obvious solution to the problem of the background is to photograph your object on a light-box, and this can work well, but great care is needed. If you work with still lights (i. e. not flash) the light from the light box will very often be too strong and the result will be an underexposed, transparent image of the papyrus. Except for the transparency, the result will be the same with an ostracon. Some light-boxes can be dimmed which offers a solution: start at minimum and increase the light until the shadows begin to disappear. If your light-box cannot be dimmed, you may put sheets of white paper on the light-box under the object. To decide the exposure, turn off the light-box and measure either by incident light or on an 18 % reflection grey card.

If you are working with flashes, you can profit from the fact that the exposure is dependent on the aperture only. Do as follows: turn off the light-box and determine your aperture. Then, without changing this aperture, make a series of test shots at various exposure times until you find the ideal combination where the papyrus is well lit, but not transparent, and the white background does not show any shadows. Once you have this worked out, note it down and use the same set-up next time. As an example, I used to have a set-up where the exposure was *f* 11 and the time $1/30$ or $1/15$ depending on the thickness of the papyrus.[16]

If you are working in color, the mixture of the flash-light and the fluorescent tubes of the light-box may be a problem if you are very critical.

---

15 Regrettably this is still done by some collections, not least the British Library.

16 This was working with large-format film where one often uses smaller apertures. Theoretically you may find yourself needing a shorter exposure-time than the flash-synchronization of your camera allows. Turn up the power of the flashes, if this is possible; if not, move your flashes closer (not too close), or dim the light-box with paper.

And then the great drawback: All light-boxes I have ever known are illuminated by fluorescent tubes or similar light, which has no infrared emission.[17] So, if you are working with infrared, you must forget all about light-boxes. They just do not work.

5.7 Special Tricks

5.7.1 Photographing Ostraca Wet or Immersed

If you have ever treated ostraca on an excavation, cleaning and restoring them, you will know that they often become more legible when wet, whether from water or alcohol. It is tempting to try to use this effect when photographing, but you will find that it is almost impossible to avoid hot-spots from reflections. A work-around is to place the ostracon in a shallow dish—e. g. a deep development dish—and cover it completely with water. This way you will get the effect of the wetness, while the surface of the water will act in the same way as glass, i. e. the reflections can be avoided with lights at 45°. The method has many drawbacks. (1) You must make sure that the ink does not run or dissolve in the water. (2) The mud and sand that will remain on the ostracon will dissolve and dirty the water, and bubbles will develop on the surface of the ostracon. You may have to change the water several times before it stays clear, and wait for the ostracon to be completely water-logged so that there are no more bubbles. (3) Placing scale and labels next to your object is not possible. (4) It is disagreeable to work the camera with wet fingers. (5) Any museum curator who hears what you are about to do will send you packing.

So this method can only be attempted for site photography where you may still have control over the finds, and only when you have checked that the ink is stable enough to support the treatment. The method can of course be combined with infrared photography.

5.7.2 Diffused Light for Carbonized Papyri

Many carbonized papyri are slightly brilliant, while the ink is mat. This can be exploited to make the text legible.[18] You need to illuminate the papyrus with diffused light directly from above, e. g. by pointing your lights at a low white ceiling. What you get, in reality, is a reflected image of the white surface above, broken by the mat ink. The image is in black and white and it is unnecessary to use infrared procedure. The method cannot be used on papyri under glass.

17 There is no intrinsic reason and it would be possible construct an infrared light-box e. g. with IR-LEDs. It may even exist already without my knowledge. But the market for such a box would be very limited.

18 Nurminen 2011 concerns this as well.

5.7.3 RTI

Reflectance Transformation Imaging[19] is an effective way of bringing out surface-structure in anything incised, like inscriptions or graffiti, amphora stamps, coins, wax tablets[20] and can also be used to enhance fiber-structure in a papyrus. The method is technically rather demanding, since you must have a completely stable setup, perfect control of the light and you must also have the necessary brilliant black balls by which the direction of the light in each shot is determined by the software.

The procedure is as follows: place the object, the scale, and the black ball(s) on the base-board of your copy-stand. Focus and set the aperture. A single light (flash can be used) is then placed at various angles and directions around the object. In practice, you either need a remote release or an assistant to press the button, while you manipulate the lighting. Depending on the nature of the object, eight to twelve exposures should be enough. Place the light from four or more different directions around the object and from very low, raking light to oblique from a higher position. Since it is important that the aperture stays the same, remember that the lower the light, the less it illuminates. At angles lower than 45° (i. e. lights are placed lower relative to the illuminated surface), you may need to add one or two light-values (don't touch the aperture!). In practice, working with flash, measure your light with the flash in a low position and place it farther away from the object when it is at in high position. If you are using still light, you can set your camera on "aperture priority" and let the shutter decide the exposure. In this case, you need to make sure that ambient light does not interfere. When you have acquired your images, you load them into the RTI-builder program (free, from CHI) and the program will analyze, pixel by pixel, where the best angle of light is. You may thus see that certain parts of the finished image seem to be illuminated from the right, others from the left. The images can be viewed in the (free) program RTI-viewer which allows you to move the light virtually and to take snapshots in jpg of your preferred results.

The RTI-procedure needs practice, so make sure that you master it before finding yourself in need of it. Make sure that you have the brilliant black balls (can be purchased from CHI) since they are difficult to improvise.[21]

I have described here how to use RTI on objects that are best treated on a copy-stand, but of course it can equally well be used on walls or bigger inscriptions or reliefs with the camera on a tripod.[22]

---

19 http://culturalheritageimaging.org/Technologies/RTI/ (last accessed: 16.1.2020).

20 See Section 1.5.1, above.

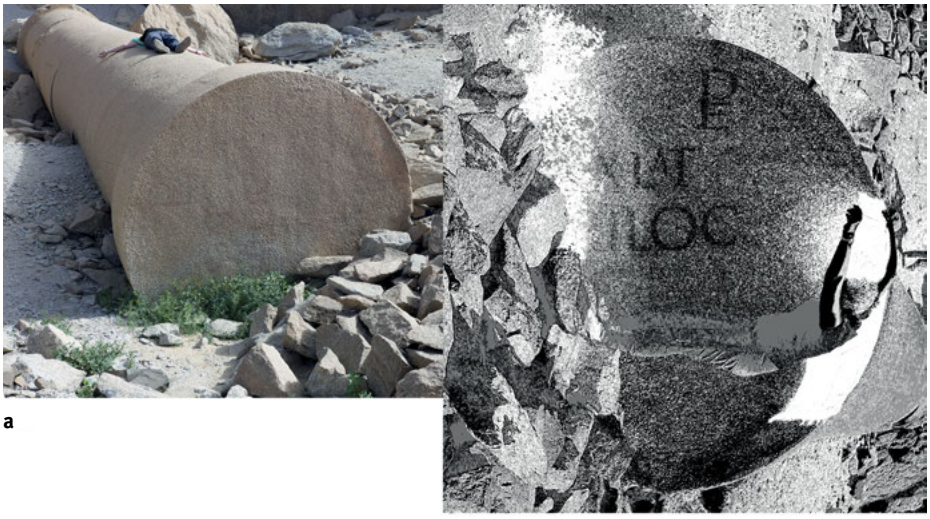
21 I have once used the bottom of a round pipe, and have seen results (unsatisfactory) from using a ball of plasticine.

22 The kit that you buy from CHI contains various means of placing the black ball relative to a vertical surface.

I have never had occasion to try, but there is no reason why RTI should not be combined with infrared or any other filtering, if e. g. the object is an ostracon with both incisions and ink.

5.7.4 DStretch

An entirely different approach is DStretch which is a plugin to be installed in the specialized image-treatment program ImageJ.[23] Both the program and the plugin are free. The plugin is designed for enhancing paintings on rock-faces that are very often extremely faded, and its most spectacular results are obtained with red or yellow pigments. Contrary to Pharaonic papyri, red colors are fairly rare in the Greco-Roman papyri and ostraca, but there are cases when DStretch becomes indispensable. In fact, whenever infrared is worse than useless, i. e. when the details you want are red. The example shown here (Fig. 5) is from the big column on Mons Claudianus, where we had always been aware that there was something written in red on the end, but could never really work it out.



a

b

Fig. 5: The end of the giant column at Mons Claudianus. Ordinary color (a) and DStretch (b).

23 See http://www.dstretch.com (last accessed: 16.1.2020) for instructions, description, and the address where you can obtain it.

Using a green filter to darken the red helped a little, but not enough. A photo was taken with the inscription shaded from direct sunlight. This was turned 90° to get the text the right way up and put through DStretch (the LRE button[24]). This brought out the reds very nicely. Then the green channel was extracted from the photo to darken the red and finally the contrast was raised considerably. As a result we can now read what is left of the inscription

[c(aesura)]? *Ep͡h(aphroditi)*
[e]x lat(omia)
[P]ḥiloc( )

[The *caesura*?] of Epaphroditus
from the quarry
of Philoc(---)[25]

Another example of wonders worked by DStretch is a dipinto in the rock-sanctuary at Sikayt (Smaragdus)[26] which is illustrated in Fig. 1, for which see above Section 1.4. From a practical point of view, DStretch is interesting also because it can be applied to already existing color-images. Thus, the original photograph from Sikayt is a slide from 2001. There even exists an app that lets you treat photos directly on your telephone.

6 Infrared, Red, Color, Blue, UV

Infrared photography of papyri and ostraca has long been known to be useful. Infrared film was available, notably from Kodak, and "black" filters[27] to cut out the visible light were put in front of the lens after framing and focusing. In practice, this meant that images were captured at wavelengths between *c.* 780 nm and as far as the film was sensitive, mostly to *c.* 900 nm. Digital cameras are sensitive beyond this, up to *c.* 1100–1200 nm, but in most cameras a filter is built in to block out the infrared rays. Your cameras must therefore be converted by taking out this filter and replacing it with one that cuts out all visible light and transmits only infrared.[28] There are several types of conversion on offer for landscape-photography, false color and so on, but for ostraca and papyri you want *deep infrared black and white*. This conversion filters out

24 This will mean something when you have installed the program.
25 Cuvigny 2018, Section IV.1.90.
26 See fn. 6 above.
27 I mostly used a Wratten 87.
28 Conversions are made by several firms. I have personal experience with: Lifepixel (https://www.lifepixel.com [last accessed: 16.1.2020]) in Mukilteo, WA, USA, and Optic Makario (http://www.optic-makario.de [last accessed: 16.1.2020]) in Mönchengladbach, Germany.

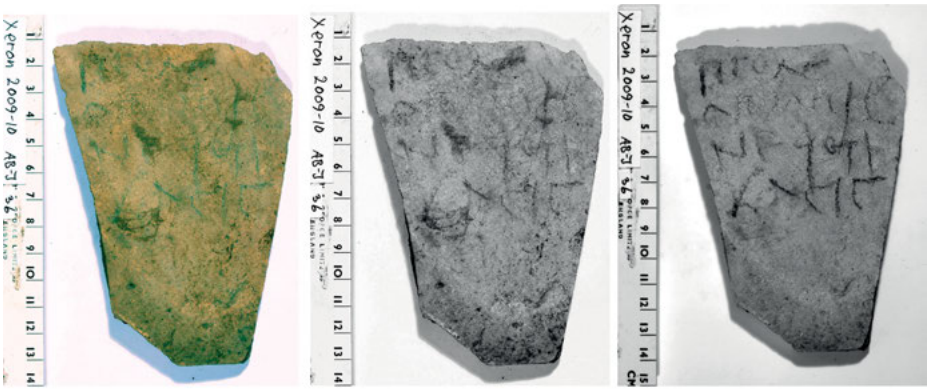


Fig. 6: O.Xer. inv. 36: (a) color, (b) red-channel, (c) infrared.

any light-rays shorter than 830 nm, i. e. ultraviolet and the whole visible spectrum and the nearest part of infrared.

The reason for using infrared on papyri and ostraca is the same as for using a red or orange filter, only more so: the brownish-red surface reflects red only, while the black ink stays black, so the support is rendered lighter, almost white in some cases, and the contrast between ink and background is raised.[29] While infrared demands special procedure when taking the photo, you will often find yourself with a color-photo of a papyrus or an ostracon sent by a colleague. Such photographs can be improved substantially by making a tricolor separation and discarding the blue and the green channels. Most image-treatment programs can do this. I myself mostly use Graphic Converter,[30] which has direct application of such a separation, but Adobe Photoshop will also do it, although I find it more complicated there.

The method is simple, fast and in many cases as effective as infrared, as shown by a random example in Fig. 6. The text (a list of names, unpublished) is written in charcoal and is almost invisible to the naked eye. The red channel brings out the ink, while the infrared makes it legible.

The other two channels, green and blue, are not very useful for ostraca and papyri. Green can sometimes help in bringing out red ink, but the price is that the support is darkened. DStretch is much better for such cases (see Section 5.7.4, above).

The blue channel is not useful in any cases that I can think of. If you look at old plates or photographs of papyri, you will often find them unsatisfactory even if they are perfectly sharp. This is due to the sensitivity of old films, which were not red sensitive at all. Compare, as an example, the plate of BGU II 628 (Tafel I, published in

29 For a more technical description, see Bülow-Jacobsen 2008. A much more technical description is Bearman/Christens-Barry 2009.

30 https://www.lemkesoft.de/en/ (last accessed: 16.1.2020) much cheaper than Photoshop.

1898) with the color scan available at the web-site of the Berlin Museum;[31] if you save this image and treat it as described above by separating out the red channel, the difference becomes obvious. The photograph was undoubtedly exposed on orthochromatic emulsion, sensitive only to blue and green. Panchromatic film, i. e. sensitive to all colors including red, became available only in 1906.

Ultraviolet light is not interesting in connection with papyri and ostraca, but will be mentioned here anyway, since a certain number of misunderstandings are sometimes encountered. For there are two completely different applications of ultraviolet light in relation to manuscript-photography.

1) For reflected ultraviolet photography you place in front of the lens a "black" filter (Wratten 18A) that permits only ultraviolet light between 300 and 400 nm (and a small percentage of infrared) to pass. The filter is made of Wood's glass and is quite expensive, and you do not need to buy one. Results are of low contrast and the surface of the papyrus/ostracon becomes rather dark.[32]

2) Ultraviolet fluorescence is quite different. In a darkened room, you illuminate your manuscript with ultraviolet light. It does not have any useful effect on papyri, but is often used on parchment manuscripts. The parchment (or paper) lights up, the ink stays black and legibility is much improved. Many manuscript collections have a small cell screened from daylight and equipped with a Wood's lamp. What happens is that the ultraviolet rays activate the parchment which emits light of a longer wavelength, i. e. in the visible region. To photograph this, you need to place a UV filter in front of the lens to *exclude* ultraviolet light which would otherwise expose the film or the digital sensor. In some cases it is further useful to add e. g. a green or yellow filter in order to refine the fluoresced light. The fluorescent-light is quite faint and long exposures will be necessary. In any case, neither papyri nor ostraca fluoresce, so I mention the method here only for the sake of completeness.

7 Multispectral

Multispectral Imaging, MSI, has been much talked about during the last twenty years. It has also created a good deal of misunderstanding because it has been confused with infrared photography. The principle is that you make a number of exposures of your object with different filters, or better with LEDs of different wavelengths. These images can then be electronically arranged in layers to form a "cube". With the proper

31 P. 7815 R, http://berlpap.smb.museum/02270/ (last accessed: 16.1.2020).

32 Some experiments on parchment are published in Bülow-Jacobsen 1979, Appendix 3, 102–104 and Plates 4–8, available on http://cimagl.saxo.ku.dk/download/30/30Bulow-Jacobsen91-104.pdf (last accessed: 16.1.2020).

software you can then mix the layers, adopting or excluding wavelengths, even give them negative values, and obtain the most extraordinary results.

The most spectacular results of MSI known to me is the *Archimedes Palimpsest*, on which all the tools of scientific imagery were brought into action.[33] But this is a medieval parchment codex.

Papyrus, which reflects only red and infrared, is less responsive to MSI which has mostly been tried on carbonized papyri from Herculaneum.[34] In fact, as far as papyri are concerned, MSI is often used to mean infrared photography at several narrowly defined wavelengths, sometimes no wider than 10 nm. Among the results the best one is chosen, often around 950 nm. Since 950 nm nearly always gives the best result, it is thought that if the exposure is made at 830–1100 nm it will contain both the ideal data, but also others that slightly obscure the best image.[35] Theoretically, this is certainly true. In practice, it will be important only in very critical cases.

The constituent photographs can be acquired in several ways. The most simple is a digital camera without any filters in front of the sensor, i. e. sensitive to all visible wavelengths plus ultraviolet and infrared, but with a filter wheel in front of the lens. In this wheel you can set filters for the wavelengths you wish to acquire. More sophisticated setups vary the illumination with LED arrays and the whole process can be more or less automated. Whatever method is used, you need a large hard-disk for storing the mass of data. I shall not go into further detail with the image acquisition since I have never personally done it, and anyway, if you are going to try MSI, you will need more specialized information than is within the scope of this article.[36]

Common to all the procedures for acquiring MSI that I have seen is that the image field is quite small, which means that most papyri are much too large to fit into a single image. The problem is solved by "stitching" the individual images, including their possible hot spots. This stitching can be done automatically and should normally not be a problem, but we must not forget Murphy's Law—if anything can go wrong, it will—with the rider that we may never notice that something has gone wrong. In fact, I have always wondered why MSI never seems to be done with a decent field of vision.

33 Netz et al. 2011. A very informative and well-made site is http://www.archimedespalimpsest.org (last accessed: 16.1.2020). Easton/ Christens-Barry/Knox 2011 and Bergmann 2011 concern this project, too.

34 See Bülow-Jacobsen 2008 and the answer to it, Bay et al. 2010. This paper nicely illustrates the terminological confusion around the concept of multispectral photography: Multispectral is here understood as imaging in a very narrow bandwidth around 950 nm, while monospectral is the word used for a broader application of infrared, between 830 and 1100 nm. The two papers are extensively summarized in Macfarlane et al. 2011.

35 See Bay et al. 2010, 215–216.

36 There are several specialized appliances for industrial use of MSI. Just to mention a few that I have seen in action: VideometerLab from Videometer, Denmark, and XpeCam from Xpectraltek, Portugal.

8 Cameras and Lenses

Everyone has his preferences, and the choice of camera and lens may depend on what you happen to have already. If you are thinking of having a camera converted to infrared, look at the list provided by the firm of what cameras they will convert. In any case, if you can, go for a full frame sensor (24 × 36 mm) with sufficient pixels. Most such cameras will nowadays have sensors of 24MP or more, which is sufficient for a 1:1 print (300 dpi) of an original just over A3 size. If the original is bigger than this, it will probably be a roll with several columns and will be reproduced on several plates. Regardless of the number of pixels of a given sensor, remember that a smaller sensor with many pixels is more likely to produce electronic noise.

As for the lens, if you are buying one, choose a "normal" focal length from a respectable brand. Zoom-lenses have become very good, but lenses with a fixed focal length (for some reason usually called prime lenses) are better still. So, go for a 50–60 mm lens which permits close-up focusing, perhaps a so-called Macro lens. A shorter focal length, e. g. 35 mm for a full-size sensor, can be used, but is more likely to distort the object. This is not a fault in the lens, but a simple optical fact, that the closer you are, the greater will be the difference of distance (percentage-wise) between the center and the edge of the reproduced areas, so along the edges letters, or whatever, will be smaller on the photograph. Many Macro lenses have a longer focal length, e. g. 100 mm. While this is useful in many contexts, it will also force you to increase the distance between the camera and the object and you may find yourself having to climb a ladder to focus the camera.

I myself mostly use a Canon Compact-Macro 50mm which is no longer available. It is a good lens, but it does make hot spots on infrared when stopped down, see Section 4.1 above.

And finally, when considering the overall quality of your images, it must be kept in mind that there is a normal, basic rule of photography that does not apply when reproducing manuscripts, namely the viewing distance. A normal photograph, e. g. of a landscape, will be viewed by the spectator at the distance where he can take in the whole of it without moving the head. In other words, big prints are seen from farther away than small ones. This implies that we accept that small details, which are not perceived by the human eye at the optimal viewing distance, are not rendered with perfect sharpness. Equally, the human eye accepts that details toward the edges are less sharp than in the center as is the case with all lenses, but the better (and more expensive) the lens, the less pronounced is the difference.

These considerations do not apply to the reproductions of manuscripts: regardless whether the original is an A3 size or a tiny fragment, we look from the same distance and with the same attention at the individual details (e. g. letters), be they in the center or at the edge of the image. So, if you are buying a lens, chose the best one that your budget permits.

9 After-treatment of IR Photographs

Once you have uploaded your photograph to your computer you may be disappointed. Your white background is probably grey and the object (papyrus or ostracon) is probably too dark, and though improved, the contrast between ink and support leaves to be desired. The reason for this is that the infrared uses only a small part of the available contrast span, and, consequently, the correct exposure of an infrared image is more flexible than when you use the whole contrast span. The tool you want to use is called "levels" in your image-treatment program.

Three stages of a randomly chosen photograph with the relevant levels-window will illustrate the procedure:

a) The raw photo before any treatment (Fig. 7).
b) The same, but after standard treatment (Fig. 8).
c) The photo after the final touches (Fig. 9). For aesthetic reason the hard-black shadow has been removed—here done simply with the eraser—and the contrast has been touched up a little.

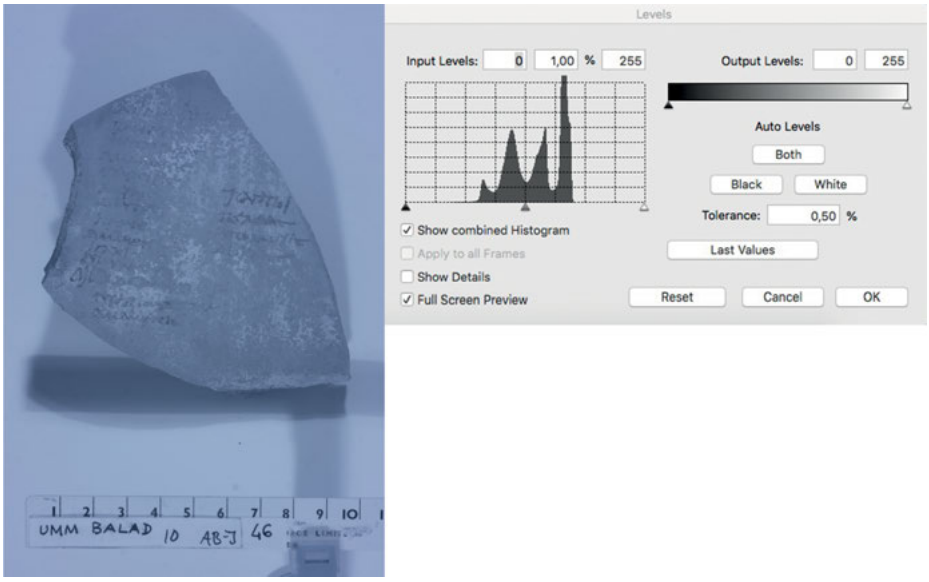


Fig. 7: The exposure is set in the middle of the contrast span. The four peaks represent, from right to left, the white background, the light shadows around the ostracon, the surface of the ostracon, and the hard shadow under the ostracon.

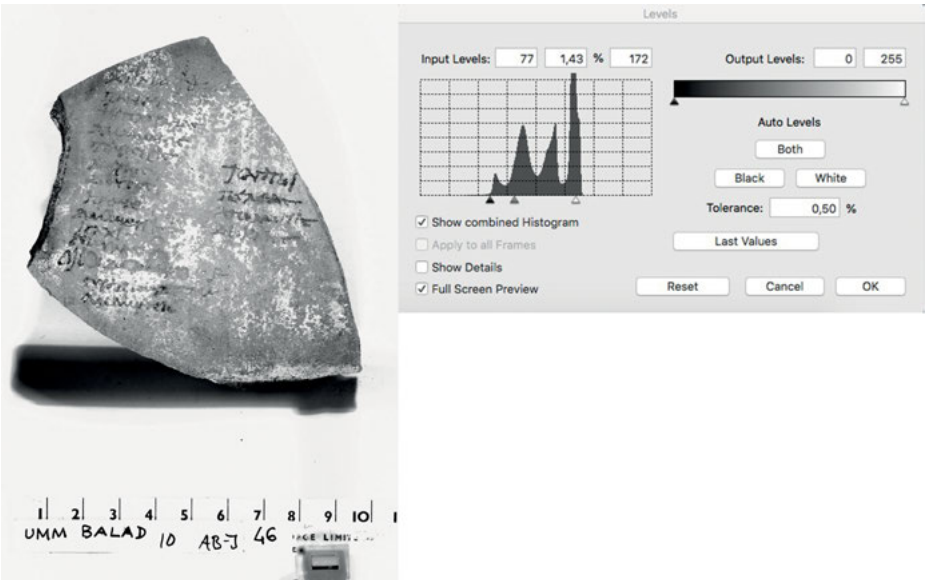


Fig. 8: In most case, just clicking the button "both" will be enough, but you may also move the triangles under the graph. The background is now clear, and the contrast between support and ink is satisfactory. The blue cast, which may be red in other cases, has been removed by reducing the photo to 8-bit greyscale, removing all color.

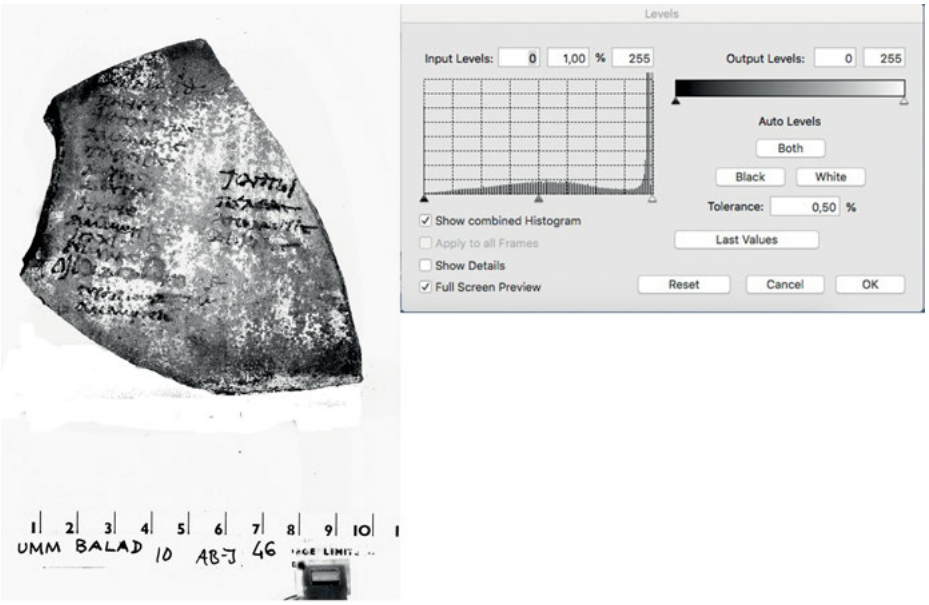


Fig. 9: The levels graph now shows only the white background as a peak to the right. The contrast span has been adjusted to the span of the photograph.

Bibliography

Bay, Stephen/Bearman, Gregory/Macfarlane, Roger/ Wayment, Thomas (2010), "Multi-Spectral Imaging vs. Monospectral Infrared Imaging", in: *Zeitschrift für Papyrologie und Epigraphik* 173, 211–217.

Bearman, Gregory/Christens-Barry, William A. (2009), "Spectral Imaging of Ostraca", in: *PalArch's Journal of Archaeology of Egypt/Egyptology* 6 (7), 1–20.

Bergmann, Uwe (2011), "Synchrotron Rapid-Scan X-ray Fluorescence Imaging of Ancient Documents", in: Vena Vahtikari, Mika Hakkarainen and Antti Nurminen (eds.), *EIKONOPOIIA. Digital Imaging of Ancient Textual Heritage. Proceedings of the International Conference, Helsinki, 28–29 November, 2010* (Commentationes Humanarum Litterarum 129), Helsinki, 51–64.

Brun, Emmanuel/Cotte, Marine/Wright, Jonathan/Ruat, Marie/Tack, Pieter/Vincze, Laszlo/Ferrero, Claudio/Delattre, Daniel/Mocella, Vito (2016), "Revealing metallic ink in Herculaneum papyri", in: *Proceedings of the National Academy of Sciences* 113 (14), 3751–3754.

Bülow-Jacobsen, Adam (1979), "Some Considerations on the Quality of Microfilms of Manuscripts", in: *Cahiers de l'Institut du Moyen Âge Grec et Latin* 30, 91–104.

Bülow-Jacobsen, Adam (2008), "Infra-red Photography of Papyri and Ostraca", in: *Zeitschrift für Papyrologie und Epigraphik* 165, 175–185.

Christiansen, Thomas (2017), "Manufacture of Black Ink in the Ancient Mediterranean", in: *Bulletin of the American Society of Papyrologists* 54, 167–195.

Cuvigny, Hélène (2007), "Appendix: Dipinto rouge dans le *pronaos* du grand temple rupestre de Sikait", in: Steven A. Sidebotham and Willeke Wendrich (eds.), *Berenike 1999/2000*, Los Angeles, 342–343.

Cuvigny, Hélène (2018), "La toponymie du désert Oriental égyptien sous le Haut-Empire d'après les ostraca et les inscriptions", in: Jean-Pierre Brun, Thomas Faucher, Bérangère Redon and Steven Sidebotham, (eds.), *The Eastern Desert of Egypt during the Graeco-Roman Period: Archaeological reports*, Paris, https://books.openedition.org/cdf/5154 (last accessed: 16.1.2020).

Easton, Roger L., Jr./Christens-Barry, William A./Knox, Keith T. (2011), "Ten Years of Lessons from Imaging of the Archimedes Palimpsest", in: Vena Vahtikari, Mika Hakkarainen and Antti Nurminen (eds.), *EIKONOPOIIA. Digital Imaging of Ancient Textual Heritage. Proceedings of the International Conference, Helsinki, 28–29 November, 2010* (Commentationes Humanarum Litterarum 129), Helsinki, 5–33.

Macfarlane, Roger T./Wayment, Thomas/Bay, Stephen M./Bearman, Gregory (2011), "Exploring the Limitations and Advantages of Multi-Spectral Imaging in Papyrology: Darkened, Carbonized, and Palimpsest Papyri", in: Vena Vahtikari, Mika Hakkarainen and Antti Nurminen (eds.), *EIKONOPOIIA. Digital Imaging of Ancient Textual Heritage. Proceedings of the International Conference, Helsinki, 28–29 November, 2010* (Commentationes Humanarum Litterarum 129), Helsinki, 107–121.

Netz, Reviel/Noël, William/Tchernetska, Natalie/Wilson, Nigel (eds.) (2011), *The Archimedes Palimpsest*, Vol. 1: *Catalogue and Commentary*, Vol. 2: *Images and Transcription*, Cambridge.

Nurminen, Antti (2011), "Illumination Issues in Digitizing Ancient Carbonized Papyri", in: Vena Vahtikari, Mika Hakkarainen and Antti Nurminen (eds.), *EIKONOPOIIA. Digital Imaging of Ancient Textual Heritage. Proceedings of the International Conference, Helsinki, 28–29 November, 2010* (Commentationes Humanarum Litterarum 129), Helsinki, 89–106.

Redon, Bérangère (2016), "Retour sur l'école de tachygraphie d'Antinooupolis. Édition de la tablette MBA-Lyon 1969.487–489 et réédition de la tablette Louvre MND 552J (face avant)", in: *Zeitschrift für Papyrologie und Epigraphik* 200, 495–510.

Sider, David (2009), "The Special Case of Herculaneum", in: Roger S. Bagnall (ed.), *The Oxford Handbook of Papyrology*, Oxford, 303–319.

Tack, Peter/Cotte, Marine/Bauters, Stephen/Brun, Emmanuel/Banerjee, Dipanjan/Bras, Wim/Ferrero, Claudio/Delattre, Daniel/Mocella, Vito/Vincze, Laszlo (2016), "Tracking Ink Composition on Herculaneum Papyrus Scrolls: Quantification and Speciation of Lead by X-ray Based Techniques and Monte Carlo Simulations", in: *Scientific Reports* 6, DOI: 10.1038/srep20763.

Photo Credits

Fig. 1–3, 4(b), 5–9: © A. Bülow-Jacobsen.
Fig. 4(a): © R. A. Coles.

II Cultural Contexts and Practices

Ben Haring

The Survival of Pharaonic Ostraca: Coincidence or Meaningful Patterns?

The legacy of Pharaonic Egyptian written culture is dominated by the monumental record. Hieroglyphs are usually the first signs that spring to mind for Egyptologists and non-specialists alike, and with these signs come the images of the monuments and objects they are written on. Papyri make a good 'secondary' type of record, although they may come first in the opinion of specialists of cursive Pharaonic scripts: hieratic and Demotic. And it is only to the latter group of Egyptologists that textual ostraca represent an important additional source of information on Ancient Egyptian life and culture, and on the practice of writing itself.

For the relatively small group of people who mastered writing to any degree in Pharaonic times, the situation must have been the reverse entirely. Casual writing, as well as practical notations closely related to writing (such as marks and tallies), are usually found on pottery sherds and stone fragments, both called 'ostraca' by Egyptologists.[1] These types of writing and other notations,[2] as well as the material they were written on, were available to a wide group of people ranging from the professionally literate to the semi-literate and even the illiterate. Papyrus would mainly have been used for the production of administrative, literary and religious texts by professional scribes. Hieroglyphs, being a monumental script using archaic graphs and mostly expressing older, classical stages of the Egyptian language, were the products of specialized scribes and draftsmen.

1 Types and Purposes of the Ostraca

As will be shown further below, Ancient Egyptian ostraca display a wealth of written and pictorial information, the range of which by far exceeds that of papyri, and even that of monuments. It is necessary to emphasize from the start that Pharaonic ostraca are not merely a textual genre. The types of text and image on pottery and stone

1 The earliest use of the word 'ostracon' in Egyptological publications was in the 1880s, for textual ostraca, and from the start these were specified as being either limestone or pottery; see Černý/Gardiner 1957, v, note 1.

2 'Writing' is here understood in a strict linguistic sense, the visual and/or material notation of human language as different from other notation systems.

I wish to thank Rob Demarée and Koen Donker van Heel for reading a draft of this paper and for supplying me with additional references. Helen Richardson-Hewitt has kindly corrected my English.

https://doi.org/10.1515/9783110712902-005

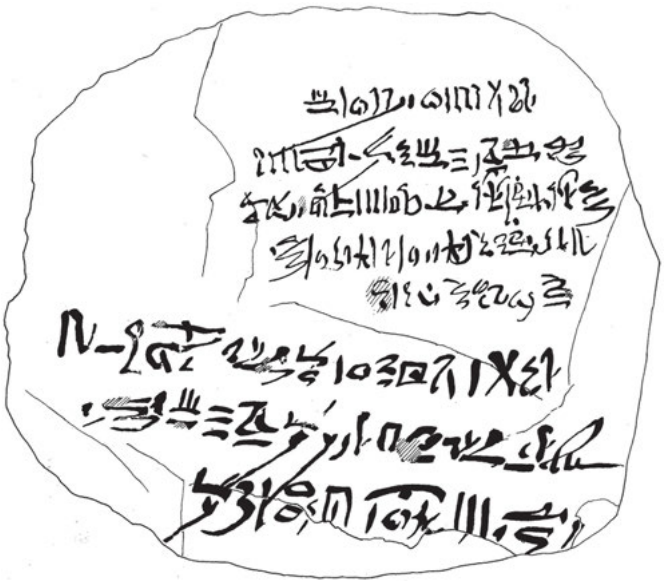


Fig. 1: Reverse of ostracon Ashmolean Museum 1933.810. Lines 1–5 were written in the regnal year 31 of Ramesses III, on the first month of *peret*, day 24; lines 6–8 four months later, on day 1 of the 2nd month of *shemu*, year 31. See also Allam 1968, 126–127.

fragments are many (especially in the case of New Kingdom ostraca from Thebes), and sometimes difficult to classify. Indeed, the range of textual and pictorial modes used on these fragments makes it difficult even to define the very notion of 'ostracon'. Dictionaries define ostraca as inscribed potsherds, sometimes mentioning their specific use in the ancient Greek voting procedure called ostracism. Such definitions imply that ostraca were always textual, and that the texts were of a casual nature or of short-term importance only. But in Ancient Egypt, pottery and limestone fragments were often inscribed or decorated for long-term use: well-documented examples include legal records with additional entries made months after their initial text was written (Fig. 1), excerpts from literary texts on large chunks of limestone deposited in tombs as burial gifts (Fig. 2), and miniature stelae, sometimes crudely made, and kept as votive monuments in houses and huts (Fig. 3). These very different objects are all commonly classified as ostraca by Egyptologists, and published together in catalogues,[3] although usually subdivided by genre: textual and pictorial ostraca tend to be in separate publications, and textual ostraca are further subdivided into hieroglyphic, hieratic and Demotic (and Aramaic, Greek, etc.).

The same catalogues may include inscriptions once made on intact pottery vessels and bowls, which were broken afterwards, leaving only inscribed or decorated fragments. On the one hand, there are jar inscriptions, such as hieratic texts mentioning the content of vessels, with date and provenance. On the other hand, execration texts, letters to the dead, and literary compositions were written on intact vessels of which

3 The 'ostraca' depicted in Figures 2 and 3 have been given that name in their editions.

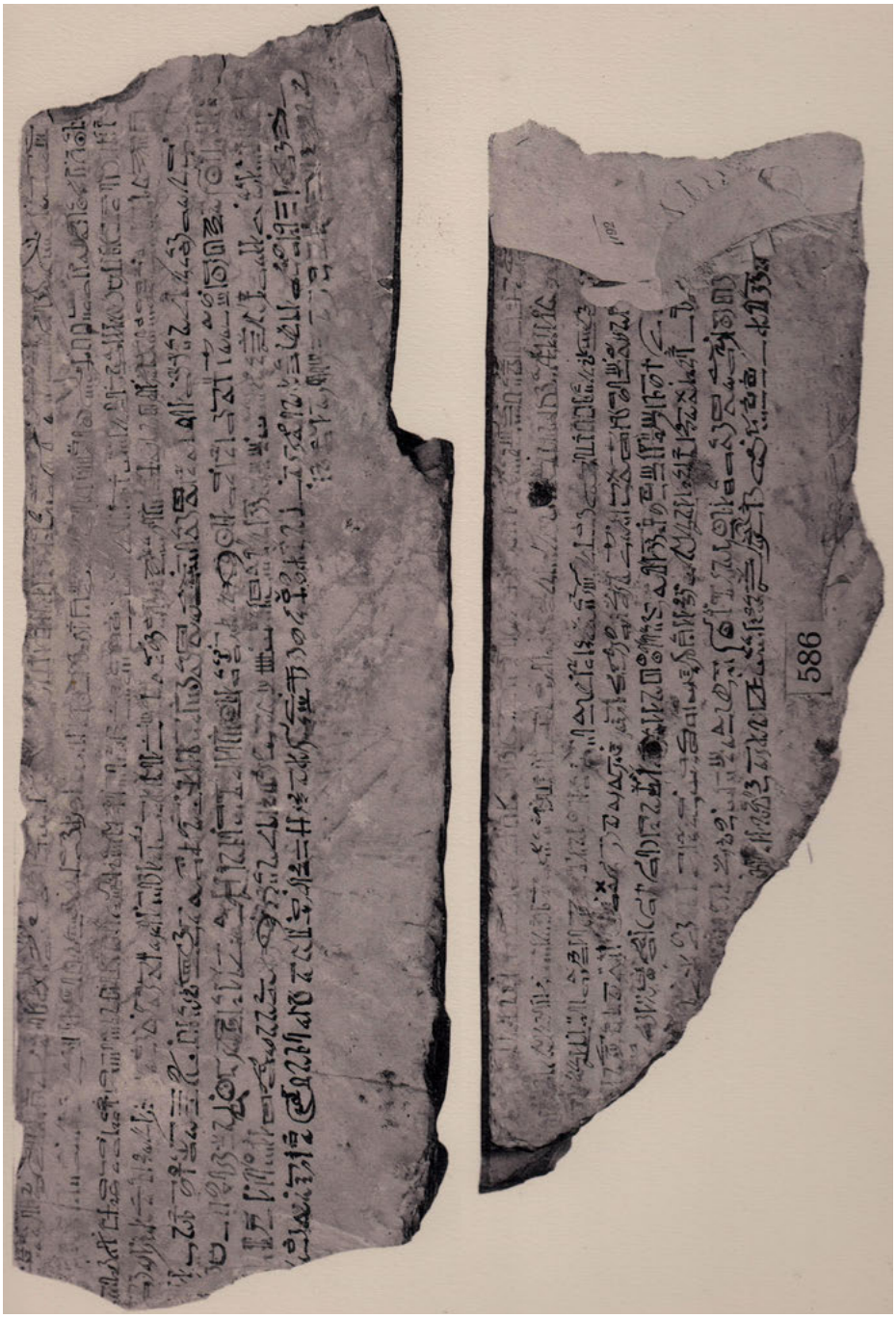


Fig. 2: Excerpt from the story of Sinuhe on limestone ostracon Cairo CG 25216, found among the tomb equipment of the workman Sennedjem at Deir el-Medina, early Nineteenth Dynasty. The ostracon consists of two joining fragments, together having a width of 106 cm.

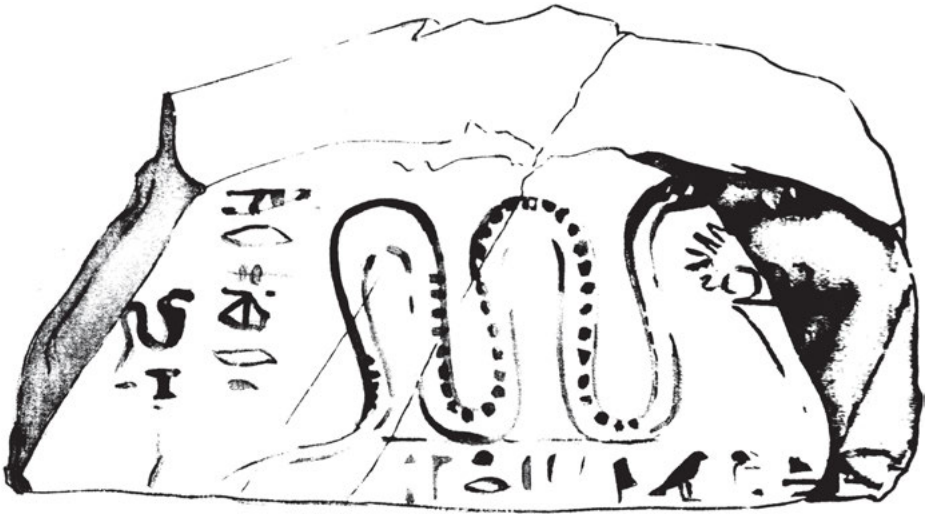


Fig. 3: Ramesside 'ostracon' (in fact, miniature stela) Louvre E 25320 dedicated to the cobra goddess Meresger.

we now only have fragments.[4] Whereas the former are more properly designated as 'dockets' by Egyptologists, and usually catalogued as such, the latter are sometimes called 'ostraca'. What all the above examples of ostraca do seem to have in common, then, is the secondary use of the support. Including secondary use of a medium in the definition of ostraca, we can exclude dockets (which are related to the initial use of a pottery vessel), but can include inscribed vessels when the texts are not connected with the vessels themselves or their contents. However, the notion of secondary use may be problematic in cases where sherds or stone fragments have been (re)shaped for the very purpose of being inscribed. Recent lithic analysis indicates that this was sometimes the case with Ramesside limestone ostraca.[5]

In addition to the problems of definition, the modern classifications of ostraca and their publication in separate catalogues tend to obscure the fact that different types of ostraca were once part of the same archaeological deposits, hence possibly (though not necessarily) came from the same context of original production and use.[6] Excavation reports and find publications from before the mid-twentieth century often

4 For letters to the dead and execration texts see note 10 below.

5 Pelegrin/Andreu-Lanoë/Pariselle 2015. Ceramic ostraca could also be reshaped into neat rectangular forms but as such they would still, of course, represent reuse of the material. See note 11 below for an example from the Predynastic Period. The same is the case with some types of ceramic ostraca from Hellenistic Egypt and fourth-century CE Carthage; see the contribution by Clementina Caputo to this volume.

6 As Paola Davoli points out in her paper, the context of primary deposit is not the same as the context of primary use.

leave out information on archaeological context; sometimes it was not even recorded in the field. Recent excavations, however, present much better documentation. An excellent example for the purpose of the present paper is the work of the 'Mission Siptah-Ramses X' of the University of Basel in the Valley of the Kings. Among the remains of necropolis workmen's huts of the mid-Twentieth Dynasty (ca. 1150–1130 BCE) were found 831 ostraca of various types, textual and pictorial, together with many pottery items and other objects. The catalogue of ostraca neatly distinguishes pictorial ostraca (arranged by subject matter, such as sketches of human beings, deities, animals, flowers, architectural and decorative elements) and textual ones (subdivided into hieroglyphic texts, tallies, identity marks, and hieratic ostraca arranged by subject matter).[7] At the same time, it is made clear which ostraca were found together, and the deposits in individual huts typically show a mixture of different types.[8] Inscribed objects even enable to identify the users of some of the huts, who in some cases were also the producers of the ostraca.[9]

2 Finds of Pre-Hellenistic Egyptian Ostraca

With the exception of New Kingdom Thebes, the numbers of surviving ostraca from pre-Hellenistic Egypt are modest, but the available material allows us to say that ostraca were used throughout Ancient Egyptian history and in many different places.[10] Pictorial ostraca even go back to Predynastic times, that is, to before ca. 3000 BCE. Excavations at the site of Nekhen/Hierakonpolis (nowadays Kom el-Ahmar, 'The Red Mound', the name of which is owed to the tons of pottery deposited there in antiquity) yielded several sherds with animal figures, which were engraved after the vessels they were once part of were broken. One of these sherds was even reshaped to a more or less rectangular form before receiving decoration.[11]

7 Dorn 2011, 223–484 and plates.

8 Ibid., 33–72: "Befundvorlage und -auswertung".

9 Individual huts typically appear to have been inhabited, during work in the valley, by a workman and his son(s). For instance, one of the 'ostraca' found in hut no. 31, actually a scribal palette made of limestone, bears a hieroglyphic text mentioning a workman called Wennefer and his sons Khaemwaset and Penamun: Dorn 2011, 52–54, 353–354, pl. 412–413. Being specialists in monumental tomb construction, many of the necropolis workmen were literate to some degree in hieroglyphic and/or hieratic; see Baines/Eyre 2007, 89–94.

10 The following survey does not include inscriptions on unbaked clay (execration figures and tablets, the hieratic clay tablets of the Old Kingdom found at Balat); nor does it include dockets, execration texts and letters to the dead on ceramic bowls and vessels, which have survived in considerable numbers, and are sometimes called 'ostraca' (Helck 1982, 636, note 1; Andrássy 2012, 25–26). The references given concentrate on presentations of the material, not on subsequent discussions.

11 Published in Friedman 1997. Other sherds with animal figures from the same site: Hendrickx/Friedman 2003; Pyke/Colman 2006.

The Old Kingdom (ca. 2600–2200 BCE) has left several limestone ostraca bearing hieratic text; some were found at Helwan, others are thought to be either from there or from Saqqara.[12] Eight Helwan ostraca were found in tombs, near the legs of the deceased or among fragments of pottery jars, and the same may be true for the others. All of the better preserved pieces seem to mention deceased persons with filiation, and in some cases with their titles and the names of their superiors, and may well have served as labels identifying the deceased, perhaps even as 'burial licenses'.[13] The depiction of a curve with measurements on a limestone flake from Saqqara, Third Dynasty, was probably for architectural purposes.[14] Remarkably, ostraca surviving from this remote period are scarcer than the more fragile papyrus documents, quite substantial (though in fact chance) finds of which were made in Abusir, Gebelein and Wadi al-Jarf.

Finds of ostraca from the First Intermediate Period and Middle Kingdom (ca. 2100–1650 BCE) include a group of ceramic drinking bowls inscribed with ration lists in hieratic, which are possibly connected with the administration of an Upper-Egyptian province.[15] Another account of rations is preserved on a chunk of limestone from Deir el-Bahri.[16] A sherd with only a personal name is perhaps from Elephantine.[17] A group of over twenty ceramic ostraca inscribed in hieratic, chiefly accounts, was found at Wadi Gawasis at the Red Sea coast; it is to be connected with an expedition sent by Senusert III to faraway Punt.[18] Lahun, where an exceptionally large number of papyri from the same reign were excavated, has yielded only a few Middle Kingdom hieratic ostraca, both pottery and limestone.[19] Three textual ostraca from the Second Intermediate Period were found at Buhen (Nubia),[20] and "a large corpus of administrative ostraca" from the same period and the beginning of the New Kingdom are reported to have been excavated at Tell Edfu.[21]

Thousands of ostraca survive from the New Kingdom (ca. 1550–1070 BCE), but almost all of them come from the Theban necropolis and will be discussed in the

12 Saad 1947, 106–107, pl. XLII; Goedicke 1968, 1983.

13 See Goedicke 1968, 29–30; 1983, 158–159. Note that two of these ostraca are actually stones split into halves; the uninscribed halves serving as covers of the inscriptions (ibid., 23–24, 27). The Helwan ostraca come in pairs, each pair consisting of two inscribed ostraca of more or less identical shape (Saad, loc. cit.).

14 Clarke/Engelbach 1930, 52–53.

15 O.Berlin P 9983–10000 (lists written on complete bowls): Andrássy 2012, 25–46.

16 James 1962, 85–87, pl. 23.

17 Koenig 1997, 9: O.Strasbourg H 104.

18 Mahfouz 2008 (including a number of sherds bearing pot marks only, which are therefore not ostraca, nor are they counted as such by Mahfouz).

19 Some pottery and ostraca from Middle Kingdom Lahun can be found in Petrie/Brunton/Murray 1923, 13–14, pl. XLIX and LXX—I suspect that the ostracon on pl. XLIX and no. 2 on LXX are one and the same.

20 Smith 1976, 30, pl. X and LIIA.

21 Moeller 2012, 124.

next section. Outside Thebes, the most substantial finds of New Kingdom ostraca, all limestone flakes, were made at Abydos. Four were discovered in the sloping passage of the Osireion; three of them are hieratic texts related to local construction work; the fourth has cursive hieroglyphs in columns.[22] A Ramesside hieratic ostracon was found among the remains of a workmen's village of the early Eighteenth Dynasty.[23] Workmen of that early period already were accustomed to leave limestone flakes with rows of dots (presumably tallies) and some with hieratic notes.[24] The Pennsylvania-Yale excavations at the Osiris temple enclosure (Kom es-Sultan) yielded another twenty-three hieratic ostraca (literary texts and building accounts) and a pictorial one of satirical/erotic nature, with hieratic captions.[25] Literary ostraca include excerpts from famous compositions such as the Satire of the Trades and the Teaching of Amenemhet. Although these texts are of Middle Kingdom origin and known from Middle Kingdom papyri, excerpts on ostraca all seem to date from the New Kingdom— as do several copies on papyrus. The types and contents of Abydos ostraca are remarkably similar to Theban ones. A prime topic of documentary ostraca from both places is monumental construction work, which was carried out by very similar workforces divided in 'right' and 'left' sides. It comes as no surprise that, in the absence of reliable archaeological documentation, the two provenances are sometimes mixed up.[26]

Stray finds from other sites include documentary ostraca from El-Amarna,[27] excerpts from the Teaching of Amenemhet found at El-Lisht[28] and Amara West (Nubia),[29] a section of the didactic text known as *Kemit* from the tomb of Horemheb

22 Frankfort/de Buck/Gunn 1933, 92–94, pl. XC and XCII.

23 O. Cairo CG 25670: Černý 1935, 55, 75*, pl. LXXII.

24 So far unpublished; they were reported in a paper by Stephen Harvey at the conference "Non-Textual Marking Systems in Ancient Egypt", University of Warsaw, Institute of Archaeology, December 16th–18th 2011.

25 Simpson 1995, 13–24, 31.

26 Three limestone ostraca are said to be from Abydos in Daressy 1901, 55 (no. 25227), 60 (no. 25237), 61 (no. 25241). The first may rather be connected with Theban necropolis workforce; the second (even more specifically said to be from Shunet es-Zebib!) is certainly from the Theban necropolis (see Janssen 1997, 147, note 1; Davies/Toivari 1997, 69); the third may well be from Abydos, since it is concerned with temple rather than tomb building; its formula (*mì.t.t n tз*) *rḫ.t bзk.w ỉry* "(copy of the) account of work done" appears to be characteristic of that place (see also Simpson 1995, 17–19, 22) and is rare in Thebes. The same formula occurs in O. UC 31931 (UCL 1); this and another UC ostracon (31930/UCL 2) are connected with Deir el-Medina in Kitchen 1989, 181 and 187, but may well be from Abydos. For both pieces see Petrie Museum Catalogue http://petriecat.museums.ucl.ac.uk/search.aspx (last accessed: 17.1.2020). For all ostraca mentioned in this footnote, see The Deir el-Medina Database http://dmd.wepwawet.nl (last accessed: 17.1.2020).

27 These ostraca were found together with numerous jar dockets, cf. Fairman 1933, 103–104, pl. LVII; Fairman 1951, 160–162, pl. LXXXIV–LXXXV. The ostraca include literary texts, cf. Köhler/Jancziak 2017.

28 Lansing 1933, 6 and 8.

29 Parkinson/Spencer 2009. More literary and documentary ostraca, as yet unpublished, have been found there as well (communication by Rob Demarée).

at Saqqara,[30] two accounts from the Old Kingdom pyramid complex of Pepi II,[31] and a potsherd from the Fayum mentioning a "chief of the workshop Panakht" and the number 100.[32]

Finds of hieratic ostraca of the Third Intermediate Period (ca. 1070–664 BCE)[33] include one in uncial hieratic from a Saqqara tomb[34] and one from Dra Abu el-Naga.[35] Uncial hieratic came to be reserved for religious and literary texts in this and later periods (an excerpt from the Satire of the Trades is found on an ostracon of the Saite Period);[36] its cursive counterpart in the Third Intermediate Period is known as cursive or abnormal hieratic. This script, which was replaced by Demotic in the subsequent Late Period, is mostly preserved on papyri, but also on several complete jars and dishes, as well as on fragments of pottery and (lime)stone.[37]

The Late Period (i. e. Saite and Persian periods and the Thirtieth Dynasty) has left groups of Demotic documentary ostraca (pottery and limestone), but at the majority of sites they are vastly outnumbered by Demotic and Greek ostraca from the Greco-Roman Period.[38] Apart from considerable groups of ostraca from the Kharga and Dakhla Oases,[39] published finds are rather modest, including two from the Valley of the Kings at Thebes[40] and one from Karnak.[41] Several ostraca from the Thirtieth Dynasty were found at Tanis together with charred papyri among the remains of a building that must have housed an archive.[42]

30 Martin 1976, 12.

31 Dated to Eighteenth Dynasty by Jéquier 1940, 44 and 46.

32 Černý/Gardiner 1957, 6 and pl. XVIII, no. 4.

33 I do not include here Theban ostraca from the very beginning of the Twenty-First Dynasty that are still related to the royal necropolis workforce; see the following section.

34 Sherif Ali 2015, 160–163.

35 If the dating of O. Strasbourg H 69 in Koenig 1997, 6, is correct.

36 Altenmüller/El Bialy 2009.

37 For notable finds in the Dakhla Oasis, see e. g. Vittmann 2012, 20–21; Vittmann 2015, 404, 407–408; for finds at other sites, see Vittmann 2015, 400–401 (Qurna); Jasnow/Pouls Wegner 2006/2007, 40 (Abydos); Donker van Heel 2016 (Assasif, tomb TT 279 of Pabasa); those with unknown provenance include Bouvier 2001; Bouvier/Demarée/Donker van Heel 2001 (possibly Thebes).

38 See Depauw 1997, 77–78. The Trismegistos database of Demotic and Abnormal Hieratic Texts (DAHT), https://www.trismegistos.org/daht/ (last accessed: 17.1.2020), currently lists for the Late Period 576 ceramic ostraca inscribed with Demotic (most of which are from Manawir—see the next footnote), and 232 limestone.

39 Ayn Manawir/Douch (Kharga), see Chauveau 2003 and 2004. DAHT (see the previous footnote) currently lists 507 ceramic ostraca for this site; further seven early Demotic ostraca from the Kharga Oasis are published in Kaplony-Heckel 2000. For over 500 ostraca from Mut al-Kharab (Dakhla), some abnormal hieratic but mostly Demotic, cf. Vittmann 2012, 21–30. Late Period ostraca continue to be found in the oases west of the Nile Valley; according to Vittmann (2015, 404) the fact that most Egyptian ostraca of the period are from there is historically significant.

40 Cruz-Uribe/Vinson 2005–2006.

41 Devauchelle 1987, 138–139, no. 6, pl. II (there no. 7; see Depauw 1997, 77).

42 Bovot/Ledain/Roussel 2000, 248 and 273.

For Late Period pictorial ostraca we have to turn to Thebes. The Saite tomb of Nespakashuty at Deir el-Bahri (TT 312) is the findspot of groups of limestone pictorial ostraca, the dates of which range from the Ramesside through the Ptolemaic periods. One group, which is probably connected with the construction of the tomb itself, includes drawings of a calf, a harpist, and architectural sketches of liliform capitals possibly envisaged for the (now destroyed) tomb.[43]

The above survey is certainly not exhaustive. It concentrates on published corpora with known provenance and aims merely to give an impression of the quantity and variety of preserved material. Yet, one is struck by the modest numbers of ostraca found at most sites, from any period, even when taking into account that relatively few of the texts produced in antiquity were preserved, many fewer have been found, and fewer still have been published or mentioned by Egyptologists. Moreover, contrary to what one might expect, ostraca seem to be less numerous than the papyri preserved from the same periods—with the single exception of New Kingdom Thebes. A considerable number of Old Kingdom papyri comes from Abusir, but no ostraca of that period are known from there, and Old Kingdom ostraca from any site are rare. Only a few Middle Kingdom ostraca are reported from Lahun, where substantial finds of papyri were made. And abnormal hieratic papyri from the Third Intermediate Period seem to have survived in greater numbers than ostraca.

3 New Kingdom Ostraca from the Theban Necropolis

The exceptional character of textual output of the Theban necropolis during the New Kingdom has already been mentioned and is well known as such among Egyptologists. Pessimistically speaking, this means that observations made on the basis of New Kingdom Theban material are not necessarily valid for other Egyptian places and periods. On a more optimistic note, one might suggest that the wealth of written material from Thebes provides a better basis for quantitative assessments of the production of texts in antiquity than the material found elsewhere in Egypt. The major corpus of this material is comprised of the vast number of ostraca and papyri produced by the scribes and draftsmen involved in royal tomb construction, who were based at the site now called Deir el-Medina. The number of known Ramesside documentary ostraca with this particular background exceeds 11,000, and the number of literary ostraca (the Egyptological designation literary also comprises religious and magical texts) is equally substantial. In addition, several hundred papyri have been preserved.[44]

43 Pischikova 2002, 197.

44 The most important collection of Deir el-Medina ostraca is kept in the Institut Français d'Archéologie Orientale (IFAO) in Cairo; see the institute's online catalogue, http://www.ifao.egnet.net/bases/archives/ostraca (last accessed: 17.1.2020). It includes over 8,000 documentary and over 7,000 literary

Much smaller numbers of ostraca are associated with the New Kingdom temples constructed on the desert edge (the so-called mortuary, funerary, or memorial temples). Most substantial of these is the corpus produced by the scribes of the Eighteenth-Dynasty building projects at Deir el-Bahri (the temples of Hatshepsut and Thutmosis III and the nearby tomb of Senmut).[45] Smaller numbers come from other temples, such as that of Ramesses II (the Ramesseum). The ostraca found there notably include literary pieces from a location now thought to have been a temple school.[46] The site of this temple is also the provenance of numerous jar dockets.[47] Ostraca and dockets have been found, and continue to be found, even if in smaller amounts, at other temple sites. Considerable numbers of dockets also come from Deir el-Medina,[48] and from the site of the palace of Amenhotep III (Malkata).[49] Theban private tombs are also among the recorded findspots of many different types of ostraca, which range from copies or drafts of tomb inscriptions and decorations[50] to literary texts, the latter including the world's earliest known alphabetic word list.[51]

The following paragraphs concentrate on the ostraca produced in the context of royal tomb construction. On several occasions I have argued that the numbers of documentary texts preserved, and especially the changes in these numbers throughout the New Kingdom, have important implications.[52] The following trends are particularly striking. (1) Textual ostraca connected with royal tomb construction are known only for the Ramesside period, not for the Eighteenth Dynasty, whereas hundreds of hieratic ostraca can be connected to West-Theban temple building of that earlier period. (2) The number of documentary ostraca produced by the royal necropolis administration appears first to rise gradually and then explosively, in the course of the

ostraca. The classifications into documentary and literary are not always quite precise, however, and include some diverse material. Most Deir el-Medina papyri are in the Museo Egizio, Turin, and are currently being processed for online publication under the supervision of Susanne Töpfer. Data on a significant part of the documentary texts can be found in The Deir el-Medina Database http://dmd.wepwawet.nl (last accessed: 17.1.2020). Sections C–F in the Systematic Bibliography of that database include titles on documentary practice and on individual ostraca and papyri, both documentary and literary. Section X is on pictorial ostraca.

45 Much of which, again, is unpublished. Principal editions: Hayes 1942, 1960. Current work on the unpublished ostraca by Malte Römer; see most recently Römer 2017.

46 Barbotin 2013.

47 Ostraca and dockets together amount to some 3,000 items, by far the most of which are dockets. The majority of these are now in the Institute of Egyptology of the University of Strasbourg, and have been edited by Guillaume Bouvier; see the synthesis in Bouvier 2003. Many other dockets, as well as ostraca, have already been published by Spiegelberg 1898.

48 For which see, in general, Tallet 2003.

49 Hayes 1951.

50 See Haring 2015a for the problems of interpretating ostraca as drafts or copies, and Lüscher 2015 for the spectacular case of a complete *Vorlage* of a tomb inscription on ostraca.

51 Haring 2015b.

52 Haring 2003, 2006, 2018b.

late Nineteenth and early Twentieth Dynasties. (3) The production of hieratic ostraca apparently declined after the early Twentieth Dynasty, while the production of documentary papyri seems to have been rising.

The words 'appear' and 'seem' are in order because observation of these trends largely depends on the material preserved, nevertheless the corpus of documents available shows meaningful patterns. Thus, the contrast between the absence of hieratic documentary ostraca associated with royal tomb construction of the Eighteenth Dynasty, on the one hand, and the considerable production of such ostraca in connection with temple building at Deir el-Bahri in the same period, as well as the massive production of ostraca related to royal tomb building in the Nineteenth and Twentieth Dynasties, on the other, can probably be accounted for by differences in administrative practices in these periods and contexts.[53] The beginning of the production of hieratic ostraca and the gradual increase in their output in the community of royal necropolis workmen in the Nineteenth Dynasty could be explained by the permanent presence of scribes in the workmen's settlement (the present site of Deir el-Medina) and in their work spots (the Valley of the Kings and the Valley of the Queens).[54] Scribes may not have been permanently based there during the Eighteenth Dynasty or at least their hieratic documents were not kept or discarded locally.

What we find instead is a considerable number of ostraca inscribed, not in hieratic, but with a series of identity marks representing individual workmen, sometimes with the addition of strokes or dots, perhaps representing days of presence or absence (Fig. 4). The same marks appear in graffiti and as ownership marks on pottery and other objects.[55] Ostraca inscribed with marks appear to be administrative records in a semi-literate mode, probably lists of workmen present or absent, and accounts of tools or supplies. The style of many of these pieces betrays hands unfamiliar with hieratic writing, so that their producers may very well have been the workmen themselves or their semi-literate superiors, rather than scribes. This type of ostracon, of which more than a thousand survive, continued to be produced during the entire Ramesside Period, together with the written ostraca and papyri of that period.[56] The growth in the production of hieratic documentary ostraca in the late Nineteenth, and especially in the early Twentieth Dynasty, is paralleled by the growing numbers of ostraca inscribed with marks. Many of such ostraca show combinations of marks, hieratic numbers, and pictograms referring to supplies. Together, these notations make up a pseudo-script that gives information similar to administrative hieratic records. Indeed, many examples can be given of matches between hieratic texts and pseudo-script ostraca, both referring to the same deliveries on the same days.[57]

53 Haring 2006, 107–108.
54 Haring 2006, 108–110.
55 For which see now Haring 2018a, 158–168.
56 Haring 2018a, 169–206.
57 Haring/Soliman 2014.

Fig. 4: Limestone ostracon Cairo CG 24105 bearing workmen's identity marks, strokes and dots, Eighteenth Dynasty.

There seems to have been an increasing tendency to have things written down, both in connection with royal tomb construction and with the personal and community life of the workmen and their families.[58] Exactly who or what stimulated this development is difficult to say. Literacy appears to increase in the community in the early Twentieth Dynasty.[59] Furthermore, this period saw the appearance, for the first time, of a local dynasty of scribes: Amennakht son of Ipuy and his descendants, who would be the senior administrators of the royal necropolis workforce until the end of the New Kingdom, and even some time beyond it.[60] These 'inside' administrators appear to have had, or to have aspired to have, a firm grip on the local community.

The quite sudden decrease in the production of documentary ostraca after the reign of Ramesses IV remains somewhat of a mystery. The fact that a considerable number of documentary papyri survive from the following period, especially from the late Twentieth Dynasty, has been seen as related to the decrease in ostraca. The hypothetical emerging preference for papyri over ostraca has been explained in different ways, mainly by the (equally hypothetical) resettlement of the workmen from Deir el-Medina to the temple precinct of Medinet Habu, where papyri would be more readily available than ostraca,[61] and also by the increasing need for authenticated legal documents, that is, sealed papyri.[62] In a recent assessment, I argue that the sudden increase of documentary papyri in the late Twentieth Dynasty is in fact illusory, an impression created by the loss and reuse of earlier papyrus documents.[63] Notwithstanding loss and reuse, almost every individual regnal year of the Twentieth Dynasty is attested in one or more documentary papyri. And while the number of documentary

58 Haring 2003.
59 Haring 2003, 250, 259–264.
60 Haring 2018a, 141–145. For Amennakht himself, see Dorn/Polis 2016. Before Amennakht, the local senior scribes for whom we have sufficient background information were not fathers and sons and some of them were appointed from outside.
61 Eyre 2013, 249.
62 Haring 2003, 264–266.
63 Haring 2018b.

hieratic ostraca declined after Ramesses IV, their production did not cease altogether: some were still produced at the very end of the Twentieth Dynasty, and even beyond. Two important groups of ostraca have been identified as products of the late Twentieth and early Twenty-first Dynasty. One group of approximately a hundred ostraca is related to the Deir el-Medina workforce, and does not seem to be about the construction of royal tombs, but rather about emptying them and reburying the royal mummies.[64] The other is a group of over seventy ostraca mentioning an entirely different group of workmen, who constructed the tomb of the Theban high priest Amenhotep in the late Twentieth Dynasty.[65] The same late years have left us several ostraca inscribed with marks and discarded at Deir el-Medina, the site of the workmen's settlement.[66]

Although a chronological pattern of increase and subsequent decrease in the production of Ramesside documentary ostraca seems clear, the explanations offered for this pattern remain hypothetical. It would help if the pattern, so far clear only for documentary hieratic ostraca and for those bearing pseudo-script, would also be detectable in other types of ostraca. Apart from documentary ostraca, the most substantial corpora are those of literary hieratic and of pictorial ostraca. If the growth of documentary ostraca in the late Nineteenth and early Twentieth Dynasty were the result of increasing literacy in the workmen's community, one would expect the same pattern to emerge in the corpus of literary ostraca. Dating literary ostraca more precisely than to the Ramesside Period, however, is extremely difficult. Whereas documentary texts often mention regnal years, calendar dates and (most importantly) real-world persons, literary texts do so very rarely. Literary excerpts on ostraca seldom have colophons mentioning dates and/or scribes.[67] Unless other historical data are provided,[68] nothing but paleography remains to help date an ostracon.[69] Specialists of hieratic are commonly of the opinion that paleographic dating to specific reigns or generations is extremely tricky. For this reason, editions of literary ostraca rarely give precise dates.[70] The available research of individual scribal hands in Deir el-Medina ostraca

64 Demarée 2003.

65 Burkard 2018, 44–84. These ostraca, most of which mention only single names, were actually part of the fill of the pyramidion crowning the high priest's tomb (K93.12 at Dra Abu el-Naga). Burkard 2018 also includes other ostraca from the tomb and its surroundings, with datings from the Second to Third Intermediate Period.

66 Haring 2018a, 202–203.

67 O.DeM 1721 (Gasse 1990) mentions a chief workman Nekhemmut and a scribe Wennefer, and can therefore be assigned to the reign of Ramesses III (Fischer-Elfert 1993, 128). O.DeM 1782 mentions the chief workman Qaha and is therefore dated to Ramesses II in Gasse 2005, 19.

68 'Literary' O.DeM 1725 (Gasse 1990) bears no text except the names of three kings, the latest of which is Seti II, whose reign must then be the *terminus a quo*. O.DeM 1787 (Gasse 2005, 25) also has royal names; the name of the latest king (Ramesses IV) provides the earliest possible dating.

69 Three ostraca are dated by their paleography in terms of (early or late) Dynasty XIX or XX, and one to the reign of Ramesses II, in Gasse 2005, 17, 20, 23, 43 (O.DeM 1781, 1783, 1785, 1796).

70 No dates are offered in Posener 1938, 1972, 1980; Fischer-Elfert 1997. This survey is limited to the main catalogues; for the publication of smaller groups and individual ostraca see the Systematic Bib-

and papyri is still limited; the best case study as far as literary ostraca are concerned is that of the senior necropolis scribe Amennakht of the Twentieth Dynasty.[71]

With pictorial ostraca (also called figured ostraca by Egyptologists), the situation is no better. When the principal catalogues of pictorial ostraca from the Theban necropolis assign any dates at all,[72] these are often no more precise than New Kingdom or Ramesside. Slightly more precise datings to either Nineteenth or Twentieth Dynasty may sound more promising, but must be regarded with caution if not distrust. Editions assigning such dates suggest that there is (slightly) more material from the Nineteenth than from the Twentieth Dynasty.[73] Although some of the ostraca in these groups bear hieratic or hieroglyphic texts that help to date them even more precisely (such as the names of kings or other known individuals), most of the datings are based on style and on the subject matter represented. That basis, in turn, depends on comparison with similar imagery on monuments (tomb and temple walls). The fact that actual monumental imagery is better represented for the Nineteenth than for the Twentieth Dynasty may very well account for some of the attributions to the former. While there can be no doubt that the production of pictorial ostraca in the Twentieth Dynasty was considerable,[74] the true chronological distribution of most Ramesside pictorial ostraca from the Theban necropolis still escapes Egyptologists. It may, of course, be entirely different from the distribution of hieratic ostraca, since pictorial ostraca are not necessarily dependent on the extent and historical development of local literacy.

Moreover, the corpus we call pictorial (or figured) ostraca is typologically speaking a mixed lot that includes pieces with very different functions and backgrounds, ranging from finely decorated miniature stelae to very rough sketches, and some catalogues even add ostraca bearing identity marks and tallies of strokes or dots. This means that our perceived genre of pictorial ostraca, if a genre at all, should be broken down in typological and functional subtypes, whose production and use had different reasons (although in the end they were often deposited together with other types of ostraca) and whose chronological distribution might therefore theoretically be different as well.

---

liography of The Deir el-Medina Database, http://dmd.wepwawet.nl, sections D and E (last accessed: 17.1.2020).

71 See most recently Dorn/Polis 2016.

72 No dates are given in Vandier d'Abbadie 1936, 1937, 1946, 1959; Peterson 1973; Gasse 1986. For the publication of smaller groups and individual ostraca see the Systematic Bibliography of The Deir el-Medina Database, http://dmd.wepwawet.nl, section X (last accessed: 17.1.2020).

73 Brunner-Traut 1956: 39 from Dynasty XIX and 34 from Dynasty XX; Brunner-Traut 1979: 7 from Dynasty XIX and 1 from Dynasty XX; Page 1983: 5 from Dynasty XIX and 5 from Dynasty XX. Brunner-Traut's suggestion (1956, 12–13) that most material is from the reigns of Ramesses III and IV is not supported by the catalogue in the same publication. Larger groups in the catalogues here referred to are dated more broadly, to the New Kingdom or the Ramesside Period.

74 A well-presented case is that of the draftsman Amenhotep, son of the senior scribe Amennakht; see Keller 2003.

4 Conclusion

The previous sections have provided a rough outline of the different types of ostraca preserved and their chronological distribution, from pre-Hellenistic Egypt in general and from New Kingdom Thebes in particular. Finds of ostraca from Egypt's long Pharaonic history are surprisingly modest. Notwithstanding their supposedly more durable support, fewer hieratic texts on ostraca than on papyrus survive from the Old and Middle Kingdoms, Third Intermediate and Late Periods. The mass of New Kingdom ostraca from the Theban necropolis dwarfs the finds made at other sites from the same period as well as those of other periods at any other site. This state of affairs allows little more by way of conclusion than that "(Western) Thebes was exceptional". It remains to be investigated, therefore, why Thebes was so exceptional. The enormous tomb and temple construction activity in the Theban mountains and the ensuing production of limestone flakes must be among the important factors; local literacy in the Ramesside Period may well have been another. Within the Ramesside Period itself, a chronological development of increasing and decreasing production can be discerned, at least as far as the documentary ostraca bearing hieratic text and identity marks are concerned. It remains to be seen if and to what extent the production of other types of ostraca can be linked with this development.

Postscript

After submitting the manuscript of this contribution, my attention was drawn, by Matthias Müller, to a largely unpublished group of ostraca from Deir el-Ballas, Upper Egypt. In a paper presented at the conference 'Ägyptische Binsen-Weisheiten IV' (Mainz, 9–12 December 2019), Müller identified approximately 110 ostraca (all pottery) from the late Second Intermediate Period and/or early New Kingdom in several European and American collections, including Berlin, Strasbourg, Boston, and New York. Many were acquired on the art market, but the whole lot probably came to light during or after excavations by W. M. F. Petrie and/or G. A. Reisner at Deir el-Ballas.[75] The entire group is currently being prepared for publication by Niv Allon, Matthias Müller, and Stephen Quirke. Rob Demarée informs me that the Deir el-Ballas ostraca are very similar to those found at Tell Edfu (see section 2 above).

75 Brief references to these ostraca, including an excerpt of Sinuhe, can be found in Quirke 1996, 392; Parkinson 2009, 174–175 (with photo fig. 7.1).

Bibliography

Allam, Schafik (1968), "Sind die nichtliterarischen Schriftostraka Brouillons?" in: *The Journal of Egyptian Archaeology* 54, 121–128.

Altenmüller, Hartwig/El Bialy, Mohamed (2009), "Eine spätzeitliche Topfscherbe aus Saqqara mit dem Anfang der 'Lehre des Dua-Cheti'", in: Dieter Kessler, Regine Schulz, Martina Ullmann, Alexandra Verbovsek and Stefan Wimmer (eds.), *Texte –Theben – Tonfragmente. Festschrift für Günter Burkard* (Ägypten und Altes Testament 76), Wiesbaden, 21–26.

Andrássy, Petra (2012), "Ein Archiv von Wirtschaftstexten auf kalottenförmigen Trinknäpfen des Mittleren Reiches. Ein Vorbericht", in: Verena M. Lepper (ed.), *Forschung in der Papyrussammlung. Eine Festgabe für das Neue Museum* (Ägyptische und Orientalische Papyri und Handschriften des Ägyptischen Museums und Papyrussammlung Berlin 1), Berlin, 25–46.

Baines, John/ Eyre, Christopher J. (2007), "Four notes on literacy", in: John Baines, *Visual and Written Culture in Ancient Egypt*, Oxford, 63–94.

Barbotin, Christophe (2013), "Les ostraca hiératiques de l'école du Ramesseum", in: *Memnonia* XXIV, 73–79.

Bouvier, Guillaume (2001), "Un ostracon hiératique inédit de Leyde RMO F. 1980/3.7", in: *Bulletin de l'Institut Français d'Archéologie Orientale* 101, 87–97.

Bouvier, Guillaume (2003), *Les étiquettes de jarres hiératiques de l'Institut d'Égyptologie de Strasbourg* 5 (Documents de fouilles de l'IFAO 43), Cairo.

Bouvier, Guillaume/Demarée, Rob/Donker van Heel, Koen (2001), "An Ancient Egyptian 'CD-ROM': Ashmolean Museum HO 1256", in: *The Journal of Egyptian Archaeology* 87, 93–101, pl. XII.

Bovot, Jean-Luc/Ledain, Caroline/Roussel, Dominique (2000), "Un aménagement du temple d'Amon sous la XXXe dynastie. Le bâtiment aux papyrus et son secteur", in: Philippe Brissaud and Christiane Zivie-Coche (eds.), *Tanis. Travaux récents sur le Tell Sân el-Hagar* 2, Paris, 243–320.

Brunner-Traut, Emma (1956), *Die altägyptischen Scherbenbilder (Bildostraka) der deutschen Museen und Sammlungen*, Wiesbaden.

Brunner-Traut, Emma (1979), *Egyptian Artists' Sketches. Figured Ostraka from the Gayer-Anderson Collection in the Fitzwilliam Museum, Cambridge*, Istanbul.

Burkard, Günter (2018), *Dra' Abu el-Naga* II. *Hieratische Ostraka und Namensteine aus Dra' Abu el-Naga* (Archäologische Veröffentlichungen 129), Wiesbaden.

Černý, Jaroslav (1935), *Ostraca hiératiques* (Catalogue Général des antiquités égyptiennes du Musée du Caire nos. 25501–25832), Cairo.

Černý, Jaroslav/Gardiner, Alan H. (1957), *Hieratic Ostraca*, Oxford.

Chauveau, Michel (2003), "The demotic ostraca of Ayn Manawir", in: *Egyptian Archaeology* 22, 38–40.

Chauveau, Michel (2004), "Inarôs, prince des rebelles", in: Friedhelm Hoffmann and Heinz J. Thissen (eds.), *Res Severa Verum Gaudium. Festschrift für Karl-Theodor Zauzich zum 65. Geburtstag am 8. Juni 2004* (Studia Demotica VI), Leuven, 39–47.

Clarke, Somers/Engelbach, Reginald (1930), *Ancient Egyptian Masonry. The Building Craft*, London.

Cruz-Uribe, Eugene/Vinson, Steven (2005–2006) "Two Early Demotic Ostraca from the Valley of the Kings", in: *Journal of the American Research Center in Egypt* 42, 113–117.

Daressy, Georges (1901), *Ostraca* (Catalogue général des antiquités égyptiennes du Musée du Caire nos. 25001–25385), Cairo.

Daressy, Georges (1902), *Fouilles de la Vallée des Rois* (Catalogue général des antiquités égyptiennes du Musée du Caire nos. 24001–24990), Cairo.

Davies, Benedict G./Toivari, Jaana (1997), "Misuse of a Maidservant's services at Deir el-Medina (O. CGC 25237, recto)", in: *Studien zur Altägyptischen Kultur* 24, 69–80.

Demarée, Rob J. (2003), "Quelques textes de la fin de la XXe et du début de la XXIe dynastie", in: Guillemette Andreu (ed.), *Deir el-Médineh et la Vallée des Rois. La vie en Égypte au temps des pharaons du Nouvel Empire. Actes du colloque organisé par le musée du Louvre les 3 et 4 mai 2002*, Paris, 235–251.

Depauw, Mark (1997), *A Companion to Demotic Studies* (Papyrologica Bruxellensia 28), Brussels.

Devauchelle, Didier (1987), "Cinq ostraca démotiques de Karnak", in: *Cahiers de Karnak VIII 1982–1985*, Paris, 137–142.

Donker van Heel, Koen (2016), "An Enigmatic Ostracon from the Metropolitan Museum of Art and Some Other Things", in Sandra L. Lippert, Maren Schentuleit and Martin A. Stadler (eds.), *Sapientia Felicitas. Festschrift für Günter Vittmann zum 29. Februar 2016* (Cahiers de l'ENiM 14), Montpellier, 107–121.

Dorn, Andreas (2011), *Arbeiterhütten im Tal der Könige. Ein Beitrag zur altägyptischen Sozialgeschichte aufgrund von neuem Quellenmaterial aus der Mitte der 20. Dynastie (ca. 1150 v. Chr.)* (Aegyptiaca Helvetica 23), Basel (3 vols).

Dorn, Andreas/Polis, Stéphane (2016), "Nouveaux textes littéraires du scribe Amennakhte (et autres ostraca relatifs au scribe de la Tombe)", in: *Bulletin de l'Institut Français d'Archéologie Orientale* 116, 57–96.

Eyre, Christopher J. (2013), *The Use of Documents in Pharaonic Egypt* (Oxford Studies in Ancient Documents), Oxford.

Fairman, Herbert W. (1933), "Chapter VI. The Inscriptions", in: Henri Frankfort and John D. S. Pendlebury, *The City of Akhenaten II*, London, 103–109.

Fairman, Herbert W. (1951), "Chapter X. The Inscriptions", in: John D. S. Pendlebury, *The City of Akhenaten III*, London, 143–223.

Fischer-Elfert, Hans-Werner (1993), review of Gasse 1990, in: *Bibliotheca Orientalis* 50 (1/2), 125–130.

Fischer-Elfert, Hans-Werner (1997), *Lesefunde im literarischen Steinbruch von Deir el-Medineh* (Kleine ägyptische Texte 12), Wiesbaden.

Frankfort, Henri/de Buck, Adriaan/Gunn, Battiscombe (1933), *The Cenotaph of Seti I at Abydos I* (Egypt Exploration Society Memoir 39), London.

Friedman, Renée (1997), "When is a Potsherd not a Potsherd?", in: *Nekhen News* 9, 10.

Gasse, Annie (1986), *Catalogue des ostraca figurés de Deir el-Médineh* V (Documents de fouilles de l'Ifao 23), Cairo.

Gasse, Annie (1990), *Catalogue des ostraca hiératiques littéraires de Deir el Médina* IV (Documents de fouilles de l'Ifao 25), Cairo.

Gasse, Annie (2005), *Catalogue des ostraca hiératiques littéraires de Deir al-Medîna* V (Documents de fouilles de l'Ifao 44), Cairo.

Goedicke, Hans (1968), "Four Hieratic Ostraca of the Old Kingdom", in: *The Journal of Egyptian Archaeology* 54, 23–30.

Goedicke, Hans (1983), "Two Lost Old Kingdom Ostraca", in: *Papyrus Erzherzog Rainer (P. Rainer Cent.). Festschrift zum 100-jährigen Bestehen der Papyrussammlung der Österreichischen Nationalbibliothek*, Vienna, 155–164.

Haring, Ben (2003), "From Oral Practice to Written Record in Ramesside Deir el-Medina", in: *Journal of the Economic and Social History of the Orient* 46, 249–272.

Haring, Ben (2006), "Scribes and Scribal Activity at Deir el-Medina", in: Andreas Dorn and Tobias Hofmann (eds.), *Living and Writing in Deir el-Medine. Socio-historical Embodiment of Deir el-Medine Texts* (Aegyptiaca Helvetica 19), Basel, 107–112.

Haring, Ben (2015a), "Hieratic Drafts for Hieroglyphic Texts?", in: Ursula Verhoeven (ed.), *Ägyptologische "Binsen"-Weisheiten I–II: Neue Forschungen und Methoden der Hieratistik. Akten zweier Tagungen in Mainz im April 2011 und März 2013*, Mainz, 67–84.

Haring, Ben (2015b), "*Halaḥam* on an Ostracon of the Early New Kingdom?", *Journal of Near Eastern Studies* 74, 189–196.
Haring, Ben (2018a), *From Single Sign to Pseudo-Script. An Ancient Egyptian System of Workmen's Identity Marks* (Culture and History of the Ancient Near East 93), Leiden/Boston.
Haring, Ben (2018b), "Material Matters. Documentary Papyri and Ostraca in Late Ramesside Thebes", in: Franciska A. J. Hoogendijk and Steffie M. T. van Gompel (eds.), *The Materiality of Texts from Ancient Egypt. New Approaches to the Study of Textual Material from the Early Pharaonic to the Late Antique Period* (Papyrologica Lugduno-Batava 35), Leiden/Boston, 43–51.
Haring, Ben/Soliman, Daniel M. (2014), "Reading Twentieth Dynasty Ostraca with Workmen's Marks", in: Ben J. J. Haring, Olaf E. Kaper and René van Walsem (eds.), *The Workman's Progress. Studies in the Village of Deir el-Medina and Other Documents from Western Thebes in Honour of Rob Demarée* (Egyptologische Uitgaven 28), Leiden/Leuven, 73–93.
Hayes, William C. (1942), *Ostraka and Name Stones from the Tomb of Sen-Mūt (no. 71) at Thebes*, New York.
Hayes, William C. (1951), "Inscriptions from the Palace of Amenhotep III", in: *Journal of Near Eastern Studies* 10 (2), 82–112.
Hayes, William C. (1960), "A Selection of Tuthmoside Ostraca from Dēr el-Baḥri", in: *The Journal of Egyptian Archaeology* 46, 29–52.
Helck, Wolfgang (1982), "Ostrakon", in: Wolfgang Helck and Wolfhart Westendorf (eds.), *Lexikon der Ägyptologie* IV, Wiesbaden, 636–637.
Hendrickx, Stan/Friedman, Renée (2003), "Chaos and Order: A Predynastic 'Ostracon' from HK29A", in: *Nekhen News* 15, 8–9.
James, Thomas G. H. (1962), *The Ḥeḳanakhte Papers and Other Early Middle Kingdom Documents* (Publications of the Metropolitan Museum of Art. Egyptian Expedition 19), New York.
Janssen, Jac. J. (1997), *Village Varia. Ten Studies on the History and Administration of Deir el-Medina* (Egyptologische uitgaven 1), Leiden.
Jasnow, Richard/Pouls Wegner, Mary-Ann (2006/2007), "Demotic Ostraca from North Abydos", in: *Enchoria. Zeitschrift für Demotistik und Koptologie* 30, 21–52.
Jéquier, Gustave (1940), *Le monument funéraire de Pepi II, Tome III. Les approches du temple*, Cairo.
Kaplony-Heckel, Ursula (2000), "Die 28 demotischen Hibis-Ostraka in New York", in: *Enchoria. Zeitschrift für Demotistik und Koptologie* 26, 59–83.
Keller, Cathleen A. (2003), "Un artiste égyptien à l'oeuvre: le dessinateur en chef Amenhotep", in: Guillemette Andreu (ed.), *Deir el-Médineh et la Vallée des Rois. La vie en Égypte au temps des pharaons du Nouvel Empire. Actes du colloque organisé par le musée du Louvre les 3 et 4 mai 2002*, Paris, 83–114.
Kitchen, Kenneth A. (1989), *Ramesside Inscriptions. Historical and Biographical* VII, Oxford.
Koenig, Yvan (1997), *Les ostraca hiératiques inédits de la Bibliothèque Nationale et Universitaire de Strasbourg* (Documents de fouilles de l'IFAO 33), Cairo.
Köhler, Ines/Jancziak, Jessica (2017), "Ostrakon Amarna 297. Kein medizinischer Text, sondern der früheste Beleg des großen Nilhymnus", in: *Zeitschrift für ägyptische Sprache und Altertumskunde* 144, 61–64.
Lansing, Ambrose (1933), "The Egyptian Expedition 1931–1932. The Museum's Excavations at Lisht", in: *The Bulletin of the Metropolitan Museum of Art* 28, section II, 3–22.
Lüscher, Barbara (2015), "Kursivhieroglyphische Ostraka als Textvorlagen: Der (Glücks-) Fall TT 87", in: Ursula Verhoeven (ed.), *Ägyptologische "Binsen"-Weisheiten I–II. Neue Forschungen und Methoden der Hieratistik. Akten zweier Tagungen in Mainz im April 2011 und März 2013*, Mainz, 85–117.
Mahfouz, El-Sayed (2008), "Les ostraca hiératiques du Ouadi Gaouasis", in: *Revue d'Égyptologie* 59, 267–286.

Martin, Geoffrey T. (1976), "Excavations at the Memphite Tomb of Ḥoremḥeb, 1975: Preliminary Report", in: *The Journal of Egyptian Archaeology* 62, 5–13.
Moeller, Nadine (2012), "Unsealing Tell Edfu, Egypt: Who Was a Local Official and Who Was Not?", in: *Near Eastern Archaeology* 75, 116–124.
Page, Anthea (1983), *Ancient Egyptian Figured Ostraca in the Petrie Collection*, Warminster.
Parkinson, Richard B. (2009), *Reading Ancient Egyptian Poetry Among Other Histories*, Chichester/Malden, MA/Oxford.
Parkinson, Richard B./Spencer, Neil (2009), "The Teaching of Amenemhat at Amara West", in: *Egyptian Archaeology* 35, 25–27.
Pelegrin, Jacques/Andreu-Lanoë, Guillemette/Pariselle, Christine (2015), "La production des ostraca en calcaire dans la nécropole thébaine. Étude préliminaire", in: *Bulletin de l'Institut Français d'Archéologie Orientale* 115, 325–352.
Peterson, Bengt (1973), *Zeichnungen aus einer Totenstadt. Bildostraka aus Theben-West, ihre Fundplätze, Themata und Zweckbereiche mitsamt einem Katalog der Gayer-Anderson-Sammlung in Stockholm* (Medelhavsmuseet Bulletin 7–8), Stockholm.
Petrie, William M. F./Brunton, Guy/Murray, Margaret A. (1923), *Lahun II* (British School of Archaeology in Egypt and Egyptian Research Account, Twenty-sixth Year), London.
Pischikova, Elena (2002), "Two Ostraka from Deir el-Bahri and the Lily Flower Motif in Twenty-sixth Dynasty Theban Tombs", in: *Journal of the American Research Center in Egypt* 39, 197–206.
Posener, Georges (1938), *Catalogue des ostraca hiératiques littéraires de Deir el Médineh* I (Documents de fouilles de l'Ifao 1), Cairo.
Posener, Georges (1972), *Catalogue des ostraca hiératiques littéraires de Deir el Médineh* II (Documents de fouilles de l'Ifao 18), Cairo.
Posener, Georges (1980), *Catalogue des ostraca hiératiques littéraires de Deir el Médineh* III (Documents de fouilles de l'Ifao 20), Cairo.
Pyke, Gillian/Colman, Rick (2006), "An Enigmatic Bird from HK25", in: *Nekhen News* 18, 6.
Quirke, Stephen G. (1996), "Archive", in: Antonio Loprieno (ed.), *Ancient Egyptian Literature. History and Forms* (Probleme der Ägyptologie 10), Leiden/New York/Cologne, 379–401.
Römer, Malte (2017), "Bauarbeiten der 18. Dynastie in Deir el-Bahri: Bausteine. Arbeiten im Steinbruch und Schiffstransporte. Andere Transportmittel", in: *Göttinger Miszellen* 252, 119–134.
Saad, Zaki Y. (1947), *Royal Excavations at Saqqara and Helwan (1941–1945)* (Supplément aux Annales du Service des Antiquités de l'Égypte 3), Cairo.
Sherif Ali, Mohamed (2015), "Das hieratische Schriftmaterial aus den Grabungen der Kairo Universität in Saqqara", in: Ursula Verhoeven (ed.), *Ägyptologische "Binsen"-Weisheiten I–II: Neue Forschungen und Methoden der Hieratistik. Akten zweier Tagungen in Mainz im April 2011 und März 2013*, Mainz, 157–173.
Simpson, William K. (1995), *Inscribed Material from the Pennsylvania-Yale Excavations at Abydos* (Publications of the Pennsylvania-Yale Expedition to Egypt 6), New Haven/Philadelphia.
Smith, Harry S. (1976), *The Fortress of Buhen. The Inscriptions* (Egypt Exploration Society Excavation Memoir 48), London.
Spiegelberg, Wilhelm (1898), *Hieratic Ostraka & Papyri Found by J. E. Quibell, in the Ramesseum, 1895–6* (Egyptian Research Account Extra Volume), London.
Tallet, Pierre (2003), "Les circuits économiques selon les étiquettes de jarres de Deir el-Médineh", in: Guillemette Andreu (ed.), *Deir el-Médineh et la Vallée des Rois. La vie en Égypte au temps des pharaons du Nouvel Empire. Actes du colloque organisé par le musée du Louvre les 3 et 4 mai 2002*, Paris, 253–278.
Vandier d'Abbadie, Jeanne (1936), *Catalogue des ostraca figurés de Deir el-Medineh* I (Documents de fouilles de l'Ifao 2.1), Cairo.

Vandier d'Abbadie, Jeanne (1937), *Catalogue des ostraca figurés de Deir el-Médineh* II (Documents de fouilles de l'Ifao 2.2), Cairo.
Vandier d'Abbadie, Jeanne (1946), *Catalogue des ostraca figurés de Deir el-Medineh* III (Documents de fouilles de l'Ifao 2.3), Cairo.
Vandier d'Abbadie, Jeanne (1959), *Catalogue des ostraca figurés de Deir el-Médineh* IV (Documents de fouilles de l'Ifao 2.4), Cairo.
Vittmann, Günter (2012), "Demotische und kursivhieratische Ostraka aus Mut al-Kharab", in: Roger S. Bagnall, Paola Davoli and Colin A. Hope (eds.), *The Oasis Papers 6. Proceedings of the Sixth International Conference of the Dakhleh Oasis Project* (Dakhleh Oasis Project Monograph 15), Oxford, 19–31.
Vittmann, Günter (2015), "Der Stand der Erforschung des Kursivhieratischen (und neue Texte)", in: Ursula Verhoeven (ed.), *Ägyptologische "Binsen"-Weisheiten I–II: Neue Forschungen und Methoden der Hieratistik. Akten zweier Tagungen in Mainz im April 2011 und März 2013*, Mainz, 383–433.

Photo Credits

Fig. 1: Černý/Gardiner 1957, pl. LXXIa.
Fig. 2: Daressy 1901, pl. XLI.
Fig. 3: Vandier d'Abbadie 1959, pl. CLII.
Fig. 4: Daressy 1902, pl. XVIII.

Julia Lougovaya

Greek Literary Ostraca Revisited

In 1976 Paul Mertens produced a survey of previously published Greek literary ostraca, arranging them chronologically and indicating their provenance.[1] In his selection Mertens followed the catalogue of literary papyri compiled by Roger Pack, who defined literary texts as "most or all of the texts that were intended to reach the eyes of a reading public or at least possessed a more than ephemeral interest or usefulness."[2] Although, as Pack noted, in practice this selection meant that only documents and private letters ought to be excluded; however, with some exceptions, he also left out magical as well as "Biblical and other Jewish and Christian" texts, not because they were deemed not literary, but because separate catalogues existed or were being prepared for them.[3] Exclusion of these kinds of texts from Mertens' survey in turn had consequences for both his statistical observations on the chronological distribution of literary ostraca (because a lot of specimens from the Byzantine period were left out) and for his discussion of practices associated with them (because the notion of a Christian text does not correspond to any single distinct practice). Yet Mertens' short study has remained the sole attempt at a comprehensive approach to Greek literary ostraca, and many of his observations have been further supported by new findings and publications.

Mertens lists 143 ostraca, both pottery sherds and limestone fragments inscribed mostly in ink but also incised. He observes that, of the approximately datable ostraca, Ptolemaic pieces comprise 24 %, while Roman and Byzantine amount to 35 % and 41 %, respectively. Upper Egypt is clearly the source of the majority of extant finds: 84 % of ostraca with attested or determinable provenance come from that part of Egypt. In terms of text types, most could be associated with educational contexts, but Mertens also points out that medical recipes and drafts of inscriptions are also recognizable categories, while a few more literary texts, including five 'lyriques et épigrammatiques', remain outside of these categories. Furthermore, Mertens makes an interesting observation that the share of *adespota* among literary ostraca is much higher than it is in the overall papyrological evidence.[4]

1 Mertens 1975/1976.
2 Pack 1965, 1.
3 Pack 1965, 1.
4 Mertens 1975/1976, 403–409.

This publication originated in the Collaborative Research Centre 933 "Material Text Cultures. Materiality and Presence of Writing in Non-Typographic Societies" (subproject A09 "Writing on Ostraca in the Inner and Outer Mediterranean"). The CRC 933 is funded by the German Research Foundation (DFG). Ostraca and papyri published in corpora are cited in accordance with the *Checklist of Editions of Greek, Latin, Demotic, and Coptic Papyri, Ostraca, and Tablets*, http://papyri.info/docs/checklist (last accessed: 30.1.2020).

https://doi.org/10.1515/9783110712902-006

The task of surveying literary ostraca is much easier now than it was in Mertens' days because of the existence of online catalogues and other kinds of registries. The third iteration of the Mertens-Pack catalogue (MP³) exists in electronic form. It is based at CEDOPAL (*Centre de Documentation de Papyrologie Littéraire* at the University of Liège) and provides bibliographic and other information for literary texts attested in papyri, ostraca, and other supports; as with its printed predecessors, however, it does not include biblical or magical texts.[5] A very helpful resource for gathering primary textual evidence is the Trismegistos Texts initiative, which assigns unique identifiers to published or described papyrological documents dating between 800 BCE and 800 CE from Egypt and the Nile valley, and increasingly to those from outside Egypt as well.[6] Its subset, the Leuven Database of Ancient Books (LDAB), brings together "information on all ancient literary texts, as opposed to documents",[7] which date from the fourth century BCE to ca. 800 CE while also incorporating or linking to the data in other catalogues such as Mertens-Pack or Joseph van Haelst's catalogue of Jewish and Christian literary papyri.[8] LDAB thus allows for the widest approach to the subject of literary ostraca, and it has been used to compile the evidence discussed here.

A search run in LDAB in May 2018 for "Material" = "ostracon" and "Language/script" = "Greek" alone or along with other ancient languages, such as Egyptian Demotic or Coptic, but not "Greek *or* another language",[9] resulted in a pool of 501 ostraca, that is more than three times the number of Greek literary ostraca in Mertens' survey. This drastic difference is explained largely by the kinds of text that Mertens left out (e. g. Biblical etc.), but also by new findings and publications. The biggest gains since 1976, when Mertens published his catalogue, have been seen in the Eastern and Western Deserts and in the Fayum. The material from the two deserts comes primarily from excavations conducted since the 1980s in the Roman military camps and mining sites of the Eastern Desert and in the settlements of the Great Oasis in the West.[10]

5 http://web.philo.ulg.ac.be/cedopal/database-mp3/ (last accessed: 30.1.2020).

6 For a brief description, cf. https://www.trismegistos.org/tm/about.php (last accessed: 30.1.2020); on the crucial importance of unique identifiers, cf. also Reggiani 2017, esp. 56–58.

7 See the description at https://www.trismegistos.org/ldab/about.php, where the issue of what is considered a literary text in the database is also addressed (last accessed: 30.1.2020).

8 Haelst 1976; for the description of LDAB and its relation to other catalogues of literary papyri, cf. Reggiani 2017, 47–56. The Digital Corpus of Literary Papyri (DCLP), which draws on metadata in LDAB, provides transcriptions for a growing number of literary texts; it can be accessed at papyri.info.

9 This is mostly the case with Greek *or* Coptic texts; the exclusion is somewhat arbitrary, since a fair number of texts designated as Greek *and* Coptic or even Greek alone could be categorized as Greek *or* Coptic.

10 A list of literary ostraca from the Eastern Desert, though with some omissions, can be found in Ast/Lougovaya 2015, 676–678. For editions and descriptions, cf. above all Cuvigny/Wagner 1986, 71–72, no. 13, with Handley 1987; Fournet 2003; Cuvigny 2010; Bülow-Jacobsen 2011, with Benelli/Lucarini 2017; and editions in O. Claud. I and II; further literary ostraca from Didymoi, Um Balad, Xeron, and Maximianon await publication. For the Western Desert, consult the series O. Douch, O. Kellis, and O. Trim.

Conversely, the increase in literary ostraca from the Fayum is due largely to the publication of earlier excavated finds. Most significant in this respect is the site of Medinet Madi, ancient Narmouthis, where in 1938 Achille Vogliano found 1,555 ostraca, which did not begin to be edited until the 1980s, and over half of which remain unpublished. The LDAB currently gives information for 47 literary ostraca, with 29 of them featuring Greek.[11]

Ostraca from outside Egypt deserve a separate mention because of their heterogeneous character. While it has increasingly become apparent that they should not be ignored, it remains unclear whether and how to integrate them in papyrological studies. To begin with, there is a problem of definition: ostraca used in the procedure of ostracism in ancient Athens are traditionally not considered ostraca in a papyrological sense. When Mabel Lang edited pottery sherds inscribed with alphabets or messages from the Athenian Agora—precisely the type of material that would be deemed ostraca had it been found in Egypt—she included them in the volume of *Graffiti and Dipinti*,[12] while keeping the volume *Ostraca* for the sherds used in ostracism.[13] Whereas this kind of categorization may be useful for the classification of finds from the Athenian Agora, it is less so for a study of writing practices in Athens or in the larger Hellenic world.

A seemingly obvious difference between sherds inscribed with texts in Egypt and in Hellenic Greece is that the former tend to be written with ink, while the latter are more often scratched.[14] Yet, when the same type of text (e. g. a receipt, a letter, or letters of the alphabet) is inscribed on the same type of portable support (a sherd) for the same purpose (e. g. communication between two parties or learning to write and read), one wonders whether a distinction based upon the mode of inscribing does more to obscure than to elucidate.[15] Moreover, more sherds inscribed in ink are gradually coming to light from outside of Egypt, a fact that highlights further the artificial nature of separating documents from Egypt from those in the rest of the ancient Mediterranean. Yet, it remains difficult to gain an overview of texts on sherds found outside Egypt and, consequently, to develop a more meaningful classification. Trismegistos

11 Not all of these are published. For the summary of findings in the House of Ostraca (TM ArchId 534) and further bibliography, consult Vandorpe/Clarysse/Verreth 2015, 395–400, available also online at https://www.trismegistos.org/arch/archives/pdf/534.pdf (last accessed: 30.1.2020). There, the number of ostraca inscribed with texts vaguely described as school texts or writing exercises and featuring Hieratic, Old Coptic, or Greek, is said to be 76.

12 Lang 1976. This volume also includes jar inscriptions, that is, inscriptions written not on sherds but on complete vessels.

13 Lang 1990.

14 It would perhaps be more accurate to say that those that survive tend to be incised rather than inscribed with ink, because ink may have a smaller chance of survival outside of Egypt.

15 A good illustration of the arbitrariness of this distinction is provided by the sherds published under the heading "Messages and Lists" in Lang 1976, 8–11, B1–B21, or an account published in Johnston 1985, which would most likely be included among ostraca in the papyrological sense had they been found in Egypt. They are all, however, documentary, and thus not of immediate concern here.

now aims to extend its coverage to "all texts from antiquity",[16] but relatively few texts of non-Egyptian origin have so far been added. At present, only sherds from outside Egypt inscribed in ink, that is, ostraca in the traditional papyrological sense, tend to be consistently included in both TM and LDAB, and the latter has about half a dozen of them, not many, but enough to indicate that the practice of writing literary texts on sherds was not confined to Egypt.[17] LDAB also includes a few incised ostraca from outside Egypt,[18] but those form just a fraction of the total surviving. Thus it seems wise to postpone any generalizations about this data.

Recent discoveries and publications have also contributed to changes in how scholars view the possible circumstances in which literary ostraca were produced and circulated. Earlier certainty regarding what could or could not be inscribed on a piece of broken pottery has yielded to appreciation of hitherto unattested functions of literary ostraca, as well as to the possibility of their multi-functionality. The story of one ostracon, O. Florida inv. 21,[19] is illustrative of this change. In the fall of 1973, the Strozier Library of Florida State University acquired 32 ostraca, which had come to the Netherlands in the early twentieth century, reportedly from Edfu. When the ostraca arrived in Tallahassee, they were accompanied by notes of the Dutch papyrologist P. J. Sijpesteijn, who labeled one of the pieces, an erotic text with orthographic mistakes inscribed in an unskilled hand, as a "fake?" Roger Bagnall, the editor of the batch, saw no reason to doubt Sijpesteijn and left the ostracon out, since it indeed looked like no other piece known at the time.[20] Thirty years on, and after hundreds of documentary and a handful of literary ostraca from the Eastern Desert were published, Bagnall realized that the piece was no forgery. Working together with Raffaella Cribiore, he concluded that the sherd likely originated in one of the military forts in the Eastern Desert, possibly Maximianon, and that a text that seemed so outlandish just a few decades earlier could in fact be associated with other pieces of erotic musings in the desert. What originally seemed to be a fake was now recognized as a type.[21]

All these developments warrant taking stock of literary ostraca with a view to the circumstances in which they were produced and used, to the extent that these

16 https://www.trismegistos.org/about.php (last accessed: 30.1.2020).

17 Remarkable is an ostracon inscribed with an erotic epigram found on Rhodos and dated to mid-3rd–mid-2nd c. BCE, cf. Dreliosi-Irakleidou/Litinas 2009–2011; those from Palestine display either abecedaria or disparate letters, cf. for example, O. Masada 782 and 783 (before 74 CE), O. Maresha 3 and 4 (336–27 BCE); an ostracon from Elousa (5th–7th c. CE) in Verreth/Goldfus 1999, discussed below, may be magical.

18 For example, two sherds found in Lattes (ancient Lattara) on the outskirts of Montpellier, and incised with letters of the alphabet in the conventional as well as permuted order, Py/Adroher Auroux/Sanchez 2001, 555–556, nos. 2932–2933, are taken up by LDAB under nos. 322171 and 322172 correspondingly; for these ostraca, cf. also Lougovaya 2017.

19 Bagnall/Cribiore 2010.

20 Bagnall in O. Florida, p. 1; Bagnall/Cribiore 2010, 213.

21 For the possible context and provenance of the ostracon, cf. Bagnall/Cribiore 2010, 217–223.

processes can be discerned. Since a type of text does not necessarily entail a certain practice and the same type can be associated with various circumstances of usage, the survey is not intended as a means of classification, nor does it aim to be exhaustive. It rather offers a set of examples of distinct practices in which ostraca bearing literary texts are attested; these are meant both to illustrate the range of possible usages of literary ostraca and to highlight instances of their liminal or multifunctional character.

1 Magic

For some of the practices in which ostraca were used the very distinction between documentary and literary texts is difficult to make. Magic is a good example: magical formularies or handbooks are conventionally grouped with literary texts and included in LDAB, but magical texts whose "aim is purely practical" are not taken up by the database.[22] Ostraca appear to be occasionally used for both types of texts, and as I am concerned here with activities and practices in which sherds could be used as writing material, my survey straddles this distinction.

Magic may well be the only area where we find explicit instructions for using a pottery sherd for writing. The reasons for such instructions lie in the fact that manuals for performing magic, themselves most often written on papyrus, routinely specify which material to choose for various actions related to the ritual performance. They might say what shape an ostracon should be (triangular),[23] or what the contents of the vessel that produced the ostracon should have been (salted fish).[24] They might also require instructions to be written on an 'unbaked ostracon', presumably meaning a clay vessel or plaque that has not been fired.[25] Several further formularies prescribe using a sea-ostracon, which is commonly understood to mean a seashell, but there has so far been no archaeological evidence to illustrate the use of this material.[26] Magic manuals may then include an instruction for what should be done with the inscribed ostracon, as, for example, in the following entry of a formulary on a papyrus in Suppl.Mag. 2.97.7–9:

22 Cf. https://www.trismegistos.org/ldab/about.php (last accessed: 30.1.2020), where it is acknowledged that "the dividing line is often subjective" (last accessed: 30.1.2020). For the distinction between magical handbooks and texts used in actual rituals, see in particular the recent study of the use of ostraca in magical practice in Martín Hernández/Torallas Tovar 2014, esp. 788–799.

23 Cf. Pap.Graec.Mag. 36.256–257 for an invocation aimed to dissolving any adversary enchantments, and Suppl.Mag. 2.97.7–9, for an invocation of uncertain nature, see below.

24 Cf. Pap.Graec.Mag. 12.365–366, for a spell for separation.

25 Cf. Pap.Graec.Mag. 36.187–188, for a love spell for attraction, and 46.6, for a spell to silence.

26 Cf. Pap.Graec.Mag. 7.300a, 7.374, 7.467, and 4.2220; for a discussion, cf. Martín Hernández/Torallas Tovar 2014, 784–786.

7 κατακλητικόν. ἔμᾳ ποντυκοῦ κὲ γρά-
ψον τρήγονον ὤστρακον κ(αὶ) χῶσον
εἰς τὸν εἶκον· θραξ τραξ: βραξ.

7 l. αἵμα ποντικοῦ καὶ **8** l. τρίγωνον ὄστρακον **9** l. οἶκον, dicolon in pap.

Invocatory[27] spell: [sc. take] blood of a mouse and write on a triangular potsherd and bury it in the house: *thrax trax brax*.

Despite occasional prescriptions to use ostraca for magic spells, the number of actual examples is not large. It could be that the instructions to use sherds for magic spells were only seldom followed or that the inscribed spells were not likely to endure the subsequent handling of the sherd. One can presume, for example, that mouse blood would fade relatively quickly from a buried ostracon. All in all, Raquel Martín Hernández and Sofia Torallas Tovar compile a list of 13 ostraca inscribed in Greek and Coptic, which were produced specifically for being used in an act of magical performance,[28] and argue that ostraca were used mainly for aggressive magic.[29] Love charms and binding spells comprise the main types of texts in this category. Among particularly interesting examples I would point out an ostracon from Oxyrhynchus, now in Oslo, P.Oslo 2.15 (2nd c. CE).[30] It is a roughly triangular sherd, perhaps deliberately chosen for that shape, on which lines of *voces magicae* are written, followed by a spell aimed to ensure separation of Allous from her husband Apollonios.

Binding spells of the silencing type can be illustrated by an ostracon in the Bodleian Library, Suppl.Mag. 2.58 recto (4th–5th c. CE). It is a sherd of a ribbed vessel, the concave side of which (verso) bears an account of wheat and wine, while the convex side (recto) has a spell meant to silence and subdue all adversaries.[31] It invokes the

27 In Suppl.Mag. 2.97 Robert Daniel translates "spell for calling in customers (?)" on analogy with Pap.Graec.Mag. 4.2373, καταπρακτικὸν καὶ κατακλητικόν ἐργαστηρίου ἢ οἰκίας ἢ ὅπου ἐὰν αὐτὸ ἱδρύσῃς, "Charm for acquiring business and for calling in customers to a workshop or house or wherever you put it" (trans. Betz 1986, 81). The original editor of the papyrus, Franco Maltomini (1979, 102), suggests that κατακλητικόν may be a misspelling for κατακλιτικόν, that is, a spell to cause illness, but concedes that there is not enough evidence to decide between the two possibilities. I thus opt for the vaguer translation.

28 The list excludes ostraca whose association with magic cannot be unambiguously ascertained, such as, for example, those inscribed with citations from Psalms, which could serve as amulets but also be school exercises, cf. Section 3.1 entitled "Dubious Material", 789–794, and below.

29 Aggressive magic is defined as "every charm that intends to manipulate and control someone, his/her belongings, and his/her feelings, usually by inflicting damage to him or her in every sense", Hernández/Torallas Tovar 2014, 781–782, fn. 7.

30 The image is available at http://ipap.csad.ox.ac.uk/4DLink4/4DACTION/IPAPwebquery?vPub=P.Oslo&vVol=2&vNum=15 (last accessed: 30.1.2020).

31 It is conventional to describe the convex and concave sides of an ostracon as the recto and verso, a designation that implies that the writing on the convex side precedes that on the concave, even if this is not always the case.

voiceless and speechless 'stone' on which it is written as a comparison to the voicelessness and speechlessness called upon the opponents (lines 7–11):

Ἴαω Σαβαωθ Αδωναϊ Αβρασαξ,
ὡς ὠ λίθως οὗτος ἄφονος
καὶ ἄλαλος, οὕτω καὶ πάντες
οἱ κατ᾽ ἀμαι ἄφονοι καὶ ἄλαλοι
καὶ ἐπήκωοί μοι γένωνται.

8 l. ὁ λίθος, ἄφωνος **10** l. κατά με, ἄφωνοι **11** l. ἐπήκοοί

Iao Sabaoth Adonai Abrasax, just as this stone is voiceless and speechless, so let also all who are opposed to me be voiceless and speechless and obedient to me.[32]

The performer of the ritual may have felt that a clay sherd was no different from a stone as far as its voice and speech were concerned and so chose a material easier to write on.

Whereas extensive manuals concerned with various rituals were written on papyri, formularies concerned with particular needs could apparently be inscribed on ostraca, too. Thus, we find two binding spells against a scorpion's bite, a significant concern in the desert, inscribed on a sherd now in the Ashmolean Museum, Suppl.Mag. 2.89 (4th c. CE). The charms are separated from each other by a horizontal stroke and by the heading ἄλλο, and one of them preserves a place-holder reference, τοῦ δ(εῖνα), 'of NN', to be substituted with the name of the actual victim of the bite. These features show that the texts are formularies to be invoked when needed, and it could be that carrying them inscribed on an ostracon was considered practical.[33]

There also survive instances of what appear to be magic texts, although their exact purpose is unclear. Thus, a sherd found in the sanctuary in Narmouthis bears on its concave side (A) one of the most frequent magical palindromes αβλαναθαναλβα in a symmetrical *Schwindeschema*.[34]

2 Medicine

Most examples of ostraca associated with medical practices are recipes for drug composition, which are also preserved on papyrus. They usually list ingredients, with indication of their weight, for one or more remedies, sometimes under a heading.

32 Trans. Daniel, Suppl.Mag. 2.58, p. 44.

33 There is one further example of a spell against a scorpion's bite among unpublished ostraca from Didymoi in the Eastern Desert.

34 Suppl.Mag. 2.67 (1st–2nd c. CE). The text on the concave side (B) might be related to magic, but it also could be an independent medical prescription, see below.

About a dozen such ostraca have been published to date. Of these, O. Bodl. 2.2182 (2nd–3rd c. CE), is a good example:

στακ(τὸν) . [. . .] . ( )
καδμεία (δρ.) ιβ
ἀκακίας (δρ.) ιβ
χαλκοῦ κ(εκευμένου) (δρ.) η
αἰρίκα κ̣α̣ρ̣π̣(οῦ) (δρ.) η
ὀπίου (δρ.) δ
ζμ̣[ύρ(νης) (δρ.)] δ
κόμε̣(ως) (δρ.) ς

2 l. καδμεία **5** l. ἐρείκης **8** l. κόμμεως

A runny ointment. Of calamine 12 dr., acacia 12 dr., burnt copper 8 dr., erica fruit 8 dr., opium 4 dr., myrrh 4 dr., gum 6 dr.[35]

The recipe comes from a cache of nine prescriptions, all likely from Dios Polis in the region of Eastern Thebes. These have been published as O. Bodl. 2.2181–2189.[36] Six of them, including the one just cited, are for an eye-salve.[37]

O. Stras. 1.619 (2nd c. CE), O. Leid. 2 (1st–3rd c. CE), or O. Trim. 2.536 (ca. 350–370 CE) all contain lists of ingredients used in medicine and are likely to be medical recipes, too, as is the much later and poorly preserved P. Mon. Epiph. 622 (6th–7th c. CE).[38] A special case is that of an ostracon from Narmouthis, Suppl. Mag. 2.67 (1st–2nd c. CE), mentioned earlier, which bears a magical palindrome on one side and a list of ingredients on the other, all in the same hand. Whether the latter is an instruction for a magical potion or a medical recipe, is perhaps the wrong question to pose, as the ostracon rather makes manifest how porous the line between medicine and magic could be.

35 Text and translation after Youtie 1977, 39–40.

36 Revised in Préaux 1956 and Youtie 1977.

37 These are O. Bodl. 2.2181 (2nd–3rd c. CE), 2182 (2nd–3rd c. CE), 2184 (4th c. CE?), 2185 (4th c. CE?), 2187 (3rd c. CE?), and 2188 (4th c. CE?). For basic ingredients of an eye-salve, cf. Youtie 1976. The frequency of prescriptions for eye-treatments is surely explained by the fact that ophthalmia, an eye-disease characterized by running or bleary eyes and probably caused by *Chlamydia trachomatis*, was prevalent in antiquity; for a medical overview of eye diseases in ancient Egypt in particular, see Andersen 1997.

38 P. Mon. Epiph. 574 and 575 (7th c. CE) are medical prescriptions in Coptic, which also contain instructions for preparation of the medicine.

3 Oracle Consulting

As with magic, the consultation of oracles presents an interesting case because texts associated with it also straddle the divide between literary and documentary. Conventionally, questions to an oracle are considered as documentary, since they were not meant "to reach the eyes of a reading public" and pertained to concerns of a particular individual on a certain occasion.[39] While many survive, written on thin sheets of lead or, in Egypt, on small pieces of papyrus, sometimes recycled,[40] ostraca do not seem to have been used for the purpose.[41]

Oracular responses, one may expect, should likewise be considered documentary since a response would have been drawn for a concrete situation, in which the particular question was asked, and it generally would not have been meant for the eyes of "a reading public." In practice, however, responses surviving in papyrological or epigraphical evidence seem to be drawn from chresmologies, that is, from set series of oracular responses, and such series are reasonably counted with literary or paraliterary texts.

Oracular responses survive either as individual answers, which were presumably handed out to the inquirer, or as chesmologies, which probably were consulted by those in charge of the oracle. Four papyri have so far been assigned to the former category,[42] and it is possible that a Roman-period ostracon from the sanctuary of Amenhotep in Deir el-Bahri also bears an individual oracular response.[43] The upper part of the text on the ostracon is lost and its precise meaning is unclear:

[- - -] . ΚΑΙΤΟΙ
[- - -] . του πᾶσι
[.] . αιρετως τὸν
πατέρα[[ν]] εἰς
Κῶνα $^{\nu}$ ὧδε
παρὰ τοῦ κυρί-
ου Ἀμενώ-
θου θεοῦ

39 Cf. LDAB: "we have excluded . . . oracle questions (e. g. Pack² 2492–2493, Van Haelst 954, 958) and horoscopes, which we consider documentary texts," https://www.trismegistos.org/ldab/about.php (last consulted: 30.1.2020).

40 For a recent survey of Greek oracle questions, or 'tickets', preserved on papyri with further bibliography, see P. Ripat's introduction to texts 5017–5019 in *The Oxyrhynchus Papyri* LXXIV (2009), 157–158. For texts outside Egypt, see foremost the corpus of lead tablets from Dodona, Dakaris/Vokotopoulou/Christidis 2013.

41 Perhaps, the impossibility to keep information confidential prevented the use of sherds for this type of communication.

42 Cuvigny 2010, 273–275. The four are P.Vindob.Sal. 1 (1st–2nd c. CE), P.Aberd. 14 (3rd c. CE?); P.Yale 2.131 (2nd–3rd c. CE), and SB 14.11658 (4th–6th c. CE).

43 Most recent edition of the ostracon is Łajtar 2006, 403–405, no. A 3.

μεγίσ-
του.

3 [ἐ]ξαιρέτως?

. . . to (or, 'for') all . . . especially (?) the father to Kos. Here, by the Lord Amenothes, the greatest God.

It is plausible that the ostracon records an oracular response of Amenhotep (Amenothes) in which someone's father is perhaps told to go to Kos. The toponym Κῶς might refer to one of at least three known places in Egypt. One of them, also known as Apollonopolis Parva (modern Qus), is located relatively close to the sanctuary—about 30 km north of Deir el-Bahri—rendering it an attractive possibility.[44]

Most preserved chresmologies are inscribed on papyrus and contain a variety of possible answers to pre-existing questions. The oracle book known as the *Sortes Astrampsychi* is the best example of this kind of chresmology. In addition, there survive collections of pronouncements that could be interpreted in various ways, in order to answer almost any question.[45] To this latter group belong nine ostraca found in the military station of Dios in the Eastern Desert and dated to ca. 200 CE.[46] All of them contain headings featuring a number and an indication of when the oracle is to be consulted or an instruction to refrain from consultation (μὴ χρῶ, "Do not consult!"). Since in some cases the same sherd is inscribed with entries for several consecutive numbers and some entries have an indication of the auspiciousness of the consultation expressed through the adverb ὁμοίως ('the same'), it is certain that the sherds were not meant to be given out to the inquirers in response to their queries. Rather, they formed a continuous series in which the prophecy was dispensed through some mechanism of allotment. The texts vary in length and style, and some are metrical. I reproduce one of the best preserved below, which consists of pronouncements of both Apollo and Leto. That of Apollo features three iambic verses; the beginning of the oracle of Leto was apparently also meant as an iambic trimeter:

β̄ Ἀπόλλωνος. ὁμ(οίως).
πύλας ἄνοιγε εὐλύτους
τε ἀτραποὺς ἔχεις· πορεύ-
ου τὴν προκειμένην ὁ-
5 δόν, ταχέως δὲ ἔργοις
μὴ λόγοις γείνου βροτοῖς.
γ̄ μὴ χρῶ. Λητοῦς.
ἄπελθε· λοιπὸν μηδὲν ἀ᾽ν΄τεί-

44 For other possible interpretations of the toponym, cf. Łajtar 2006, 404–405.
45 For a brief survey with further bibliography, cf. Hoogendijk 2016, esp. 595–597, and Cuvigny 2010, esp. 273–275.
46 Cuvigny 2010, 258–276.

πης θεῷ ἰς ὃ ἐπιβάλλῃ· τοῦ-
το οὐχ ὅτι τῳ [..].[...].[..].[

6 l. γίνου **9** l. εἰς

2. (Oracle) of Apollo. The same. Open the doors and you have paths that are easy. Walk the road which is before you, be quick in deed, not words, with mortals.
3. Don't consult. (Oracle of) Leto. Go away, and from now on don't object to the god concerning what you undertake. Not only [...][47]

The choice of sherds as opposed to papyrus for the chresmological series in Dios may have been owed to the common practice of using ostraca for various types of texts in the Eastern Desert, or perhaps also to the ease of filing the sherds (one can think of a comparison with modern index cards).

A small set of three chits found in Xeron, another *praesidium* in the Eastern Desert, may have been associated with the process of consulting an oracle.[48] Two of the sherds contain a number and the name of a god in the genitive, presumably designating the oracle,[49] while only the reference to the "underworld deity" is preserved on the third one.[50] Hélène Cuvigny, who edited both the Dios and Xeron sets, suggests that the ostraca from Xeron may have served as allotment tokens referring to oracular responses in a series such as those from Dios.

4 Christian Worship

Ostraca inscribed with texts related to Christian worship are particularly heterogeneous in their content and appearance. They comprise passages both from the Old Testament, especially the Psalms, and from the New Testament, as well as prayers, hymns, and moralizing maxims, often in various combinations and featuring both Greek and Coptic. Some are inscribed in a fluent professional hand abounding in diacritical signs, while others are written in clumsy and uneven script; both pottery sherds and limestone ostraca are attested, and their sizes vary.

While it is often difficult to ascertain the function of a certain ostracon, some potential contexts present themselves. Large, sometimes reworked sherds with smooth surfaces inscribed in neat and rapid hands with texts meant for recitation or singing,

47 Text and slightly modified translation after Cuvigny 2010, 258–259, no. 15.
48 Cuvigny 2013, 418–421, presents an edition of the set.
49 α | Ἑρμοῦς, l. Ἑρμοῦ, "1. (Oracle) of Hermes", (O.Xer. inv. 809) and ιδ | Ἄρεως, "14. (Oracle) of Ares", (O.Xer. inv. 810), cf. Cuvigny 2013, 419–420.
50 O.Xer. inv. 829, cf. Cuvigny 2013, 421.

such as hymns or prayers, could be envisaged as being used in the liturgy.[51] Among examples, one can point to P.Mon.Epiph. 600 (6th c. CE), an ostracon bearing a hymn to Mary (*Theotokion*),[52] or P.Mon.Epiph. 598 (6th c. CE), with the Trisagion prayer and three short hymns (*troparia*),[53] both from Cell A in the Monastery of Epiphanius in Thebes. It has been argued that the accentuation-like marks employed on these two pieces served as rhythmic separations between textual units to help the singer at the service to align them with the melody.[54] Another example is a spectacular ostracon datable to the sixth or seventh century, now in the British Library, inscribed with the Greater Doxology, which would be at home at a matins service.[55]

Other sets of ostraca may have been produced for personal study or perhaps as preparatory material for composing larger works or sermons. This may have been the case with a series of twenty ostraca inscribed with passages from the Gospels, which were bought in Upper Egypt by Urbain Bouriant in the late nineteenth century and published by Gustave Lefebvre in 1904.[56] Most of the sherds have a reference to the Gospel from which the text comes and a number; ten of them (nos. 7–16) are numbered consecutively from one to ten and contain passages from Luke 22.40–71, with the text continuing from one sherd to the next. While Lefebvre opined that the ostraca belonged to a series that originally encompassed the entire text of the four Gospels and constituted a library of a man who could not afford other writing materials,[57] Cornelia Römer demonstrates that the Luke series is rather a product of excerpting than a part of the complete Gospel.[58] A similar, although small, set of only two ostraca, P.Naqlun 2.16 and 17 (6th–7th c. CE), was found in Naqlun in the Fayum; the pieces have almost contiguous passages from Matthew (7.18–20 and 7.29–8.4) and at least one of them seems to have a number, 21.[59] Tomasz Derda, the editor of the pieces, supposes that they were written by a monk for personal use, perhaps for studying.[60]

Particularly interesting are two related sets of ostraca, probably from Dendera, dated to the fifth century, now kept in the Petrie Museum. The groups A and B are distinguished on the basis of paleography, with each apparently forming a library of

51 For the use of texts inscribed on limestone or pottery sherds in liturgy or as "aids for performing the service", see now Mihálykó 2019, esp. 166–167, 188–190, and 210–219.

52 Photos of the ostracon are available at https://www.metmuseum.org/art/collection/search/473397 (last accessed: 30.1.2020).

53 A black and white photo can be found in Gampel 2012, 15.

54 Gampel 2012, esp. 14–18.

55 The ostracon, inv. 5878, is unpublished, but a 3D image is available at https://sketchfab.com/models/d70e0bf6cd0b47f4a5a0df77fa69acfb (last accessed: 30.1.2020).

56 Lefebvre 1904; the actual pieces appear to have long gone missing. For this series and other ostraca inscribed with passages from the New Testament, see Head 2013, 433–438.

57 Cf. Lefebvre 1904, 1–2.

58 Römer 2003, 186–187.

59 Derda 1995, 42–44.

60 Derda 1995, 42.

related sherds.[61] Ostraca in group A are inscribed with texts ranging from the liturgical, such as prayers or excerpts from Psalms, Acts, or Epistles, to passages from Homer and gnomic anthologies. In her discussion of the possible *Sitz im Leben* of these ostraca, Cornelia Römer suggests that the context that best explains the presence of both Christian and pagan texts would be an educational environment. Römer proposes that the texts were not part of copying exercises, an educational process so often postulated, but were rather used for memorization training.[62] Since Homer was memorized in ancient schools and there is evidence that monks were expected to learn by heart passages from the scriptures, this is a compelling proposition. Yet it is also conceivable that the same person (such as the one designated as Hand A in the Petrie ostraca) inscribed different texts for different purposes.

The hypothesis that ostraca were used for texts meant for training in memorization was also proposed by Lisa Ullmann in an edition of two unrelated sherds inscribed with the Niceno-Constantinopolitan creed.[63] Ullman suggests that they were produced to help a convert memorize the creed, which was an essential part of the catechism. She adds by way of explanation that "ostraca, as the cheapest writing material and the easiest to come by, were well suited for writing out copies of the text to be learned."[64] In this particular case, however, it may be countered that the choice of material would suit well the purpose of propagating the creed, since a sherd would be a fitting support for an important text meant to be passed around and consulted by many without risk of being easily damaged.[65] Furthermore, since from the sixth century the creed was incorporated into the liturgy, ostraca bearing it, all of which date to the sixth through the eighth century, could be used directly in the service, even if reciting by heart was common.[66] Or, the situation could well have been all of the above: the ostraca were created to disseminate an essential matter of belief, for which they had to be memorized by some, consulted by others, or recited from during the mass or in a private act of devotion. Scott Bucking's exploration of the multifunctional character of at least some ostraca from the Monastery of Epiphanius, where, he suggests, "a text produced as a result of private study or devotion could also be used as recitation material for monks engaged in weaving or other industrial activity", seems to be a more promising

61 Group A includes ostraca O.Petrie Mus. 21–31, while O.Petrie Mus. 40, 41, 43, 45–49 have been assigned to group B. Cf. Funghi/Martinelli 2003, esp. 142, Funghi/Martinelli 2008, 63–64.

62 Römer 2003, 189–190; Römer 2008, 53–54.

63 Ullmann 1996; cf. Römer 2003, 190.

64 Ullmann 1996, 194.

65 For the use of liturgical papyri and ostraca for performing the service, cf. Mihálykó 2019, 210–219. Ostraca inscribed with the creed in Greek (Nicene or Niceno-Constantinopolitan) include P.Gen. 4.154 (first half of the 8th c. CE), O.Heid. 437 (6th–7th c. CE), Ullman 1996, 191–194, no. 1 (6th–7th c. CE), 195–196, no. 2 (7th c. CE); four more ostraca preserve it in Coptic: O.Sarga 14 (4th–6th c. CE), O.CrumST 15 (6th–8th c. CE), O.Crum 19 (5th–6th c. CE), and Delattre 2011 (6th–7th c. CE).

66 Cf. Derda's remarks in P.Naqlun 2.18.

interpretive approach to the study of late antique ostraca than attempts at defining more narrow contexts of their usage.[67]

5 Drafts and Preparatory Material

Although it is rarely possible to ascertain whether a text preserved on a movable writing support was a final or a preliminary version, a draft can sometimes by recognized through a combination of textual and extra-textual features. Thus, a presence of several iterations of the same text, deletions and corrections, or marginal notes can all be signs of an authorial revision; marginal marks indicating passages to be excerpted as well as compilations of excerpts may document preparatory stages in the composition of a literary or scholarly work.[68] Although these stages were perhaps usually carried out on papyrus, there survive several ostraca that reveal an editing process. For example, two ostraca from Saqqara preserve successive drafts of a composition based upon an oracle of Hermes Trismegistos apparently given to Horus, a pastophoros of Isis in the city of Isis in the nome of Sebennytos. The last of the five drafts takes the form of a letter from Horus to "King Ptolemy, King Ptolemy the Brother, and Queen Cleopatra the Sister," that is, the joined rulers Ptolemy VI Philometer, Ptolemy VII, and Cleopatra II.[69]

A limestone ostracon from the sanctuary of Amenhotep in Deir el-Bahri contains an account of a miraculous cure of an illness experienced by a certain Polyaratos.[70] It opens with a regnal date corresponding to 261/260 BCE, and its content and phrasing make it clear that the text was meant for inscribing on a stele to be set up as evidence of the powers of the god. Numerous corrections, erasures, and changes, however, indicate that the version written on the ostracon is a working draft, possibly to be followed by a 'clean' copy. Another limestone ostracon from the same sanctuary and of similar appearance lists moral maxims under the heading "The Precepts of Amenothes (sc. Amenhotep)."[71] These maxims, variously ascribed, circulated all over the Greek world, and are attested in the form of monumental inscriptions in several sanctuaries. Thus, it is a distinct possibility that this ostracon was a draft for an inscription, too.

As with the texts related to magic and oracles, the cases just described call into question the traditional divide between literary (including para-literary) and documentary texts. Should the revised versions of a divinatory dream eventually incorporated

67 Bucking 2007, 36.
68 For a discussion of signs of revision and composition, see Dorandi 1991; Cribiore 2019; for the mechanics of composition in antiquity in general, cf. Dorandi 2000.
69 Skeat/Turner 1968; Ray 1976, 1–3. Cf. also Renberg 2017, 439–443.
70 Łajtar 2006, 393–399, no. A 1.
71 Łajtar 2006, 399–403, no. A 2.

into an apparent letter be classified as literary or documentary? And what about the detailed list of woes suffered by Polyaratos? Does the very process of reworking and editing a text bring it into the realm of literary? As my concern here is a general survey of the use of ostraca for writing literary texts, I take the easy path of following the choices made by LDAB, while hoping that more thought will be given in the future to the production, use, and perception in antiquity of these kinds of 'liminal' texts.

Besides drafts of inscriptions, ostraca appear to have been occasionally used at a preliminary stage of collecting or studying passages for a future work. Their distinctive features include confident and fast handwriting, which is too professional for a student, yet too fluid for a teacher's model; revisions and corrections; visual signs of text organization; the choice of excerpts from texts not associated elsewhere with, or difficult to relate to, a school environment.[72] A case in point is the set of three anthologies and a composition on advantageous behavior found in Philadelphia in the Fayum, all of which give the impression of preliminary material assembled for some future work.[73] A somewhat mysterious text on the convex side of O.Leid. 1 (2nd c. BCE), which the editors call "a prescription for calming a distressed mind," might be another example:

> Whenever you wish to be calmed in spirit and you know what is troubling you, drink before dinner, and when you eat dinner, eat eggs together with your dinner, and vomit up most of your dinner, and on the next day perform an examination.[74]

The passage may have come from a treatise of the medico-philosophical tradition,[75] and one can imagine that writing it down on a sherd was done in the process of taking notes while reading or listening to it read. This practice, albeit perhaps at a higher socio-economic and intellectual level, is described by Pliny the Younger when he narrates the habits of his uncle: "in summer when he was not too busy he would often lie in the sun, and a book was read aloud while he made notes and extracts. He made extracts of everything he read, and always said that there was no book so bad that some good could not be got out of it."[76]

---

72 Cf. Lougovaya 2019 with further bibliography.

73 For the ed.pr. of two of the anthologies, P.Berol. 12310 and 12311, see Viereck 1925, 254–257, nos. 1–2; for that of the third anthology, P.Berol. 12319, cf. Wilamowitz-Moellendorff 1918, 742–743; and of the ostracon inscribed with the composition on the advantageous behavior, P.Berol. 12318, see Kühn 1921, and consult Berliner Papyrusdatenbak for the photographs and main bibliography, http://berlpap.smb.museum/ (last accessed 30.1.2020). All four ostraca date to 193–187? or 210–204? BCE. On taking notes and excerpting as the initial stage of a composition, cf. Dorandi 2000, esp. 27–50.

74 Translation is that of the ed.pr., adjusted to reflect the corrections of the text by Daniel 1984, 416.

75 Cf. Daniel 1984, 416.

76 ... *aestate si quid otii iacebat in sole, liber legebatur, adnotabat excerpebatque. Nihil enim legit quod non excerperet; dicere etiam solebat nullum esse librum tam malum ut non aliqua parte prodesset*. Plin. ep. 3.5.10, trans. Betty Radice.

To a scholarly rather than a school context one should perhaps also assign a series of ostraca found in Elephantine and dated to the third century BCE, which are inscribed with geometrical explications related to topics discussed in Book XIII of the *Elements* of Euclid.[77] These include the construction of the icosahedron enclosed in a given sphere, the subject of Proposition 16, and the relationship between an equilateral pentagon, hexagon, and decagon inscribed in a given circle, expounded in Proposition 10.[78] The explications on the ostraca may have been an original work or a set of notes, which someone wrote out in an effort to understand a difficult subject.[79]

6 Education

Although far from pandemic, sherds were often used for writing in an educational context. In some cases, this usage is made manifest by the types of text inscribed, the exclusive purpose of which was learning to read and write or to calculate. In other cases, when the type of the text is more ambiguous, an educational environment might be suggested by other features, such as handwriting, extra-textual marks, or certain kinds of mistakes.[80] The following types of texts associated with school and learning are well represented by ostraca:

a) Letters of the alphabet, inscribed either in alphabetic order or in various permutations of the alphabet, and pangrams.[81]
b) Syllabaries.[82]
c) Lists of words.[83]

77 For the ed.pr., see Mau/Müller 1962.

78 Mathematical texts inscribed on the ostraca are concerned with complicated formal proofs and could hardly serve any practical purpose, such as to make an actual icosahedron. The latter is not difficult—can be done with a bunch of sticks of the same length and requires little or no understanding of geometry—and must have been routine since numerous examples of dice in the shape of icosahedra (and other regular polyhedra) survive, used probably for both divination and games in the Greco-Roman world, cf. Chaniotis 2006; Minas-Nerpel 2007; Platz-Horster 2017.

79 Cf. David Fowler's remark that "the fact that the texts are on potsherds and are not the received text of the *Elements* suggests that this may be an attempt to understand the mathematics, and not a slavish copying or learning of the material", Fowler 1999, 209.

80 For a detailed overview of distinguishing characteristics of school exercises, cf. Cribiore 1996, 75–96.

81 E. g. O. Claud. 1.179 (2nd c. CE), O. Kellis 157 recto (3rd–4th c. CE), or O. Bachit 21 (6th–8th c. CE), and cf. Cribiore 2008.

82 E. g. Milne 1908, 122–123, no. 3 (4th–5th c. CE), with the image available at http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=259226001&objectId=399930&partId=1 (last accessed: 30.1.2020), or MPER N. S. 18.77 (7th–8th c. CE).

83 E. g. P. Bagnall 10 (4th c. CE) with a list of three-syllabic words; O. Claud. 2.415 (2nd c. CE), a part of an amphora inscribed with a long list of disyllabic words all starting with the letter *pi*; or Milne 1908, 122, no. 2, an alphabetic list of mythological names (2nd c. CE).

d) Maxims or *sententiae*.[84]
e) Anecdotes, fables, or *chreiai*.[85]
f) Elementary arithmetical tables or calculations.[86]
g) Glossaries or other auxiliary material.[87]
h) Quotations or excerpts from larger literary texts often used as educational material.[88]

While syllabaries, elementary arithmetical tables, or *chreiai* may have been used exclusively in educational contexts, the function of other types of texts on the list was not confined to a school environment. Even letters of the alphabet, the most elementary units of a language, could be inscribed as a school exercise, but also as a pen trial,[89] a magic spell,[90] or for some other purpose, as writers of Greek, from the archaic to the Byzantine period, seem to have had some remarkable affinity for penning the alphabet and its various permutations.[91] Most lists of words were probably connected to school, but a list of martyrs' names, in particular of the Forty Martyrs of Sebaste, could also be apotropaic. At least seven ostraca with their names survive; five of them are likely to have been amulets, but in two other cases the names are inscribed along with texts of an educational nature.[92] The same is true for quotations from the scrip-

84 E. g. P. Koeln 2.66 (2nd c. CE) containing two *sententiae* ascribed to Antisthenes, or O. Narm. 1.129 (mid 2nd–early 3rd c. CE), a list of alphabetically arranged maxims.
85 E. g. O. Claud. 2.413 (2nd c. CE) inscribed with a fable and two anecdotes about Diogenes, or Jouguet/Lefebvre 1904, 201–205, with a *chreia* about the philosopher Anacharsis (3rd–4th c. CE).
86 E. g. O. Claud. 2.416 (2nd c. CE), elementary additions, or O. Sarga 22, with multiplication tables for 6 and 7 (5th–7th c. CE).
87 E. g. MPER N. S. 18.261 (4th or 6th–8th c. CE), a Greek-Coptic glossary; MPER N. S. 18.265 (7th–8th c. CE), two glossary entries and 2 names of martyrs.
88 E. g. an ostracon from Elephantine, now in Berlin, inscribed with a passage from Isocratean *Ad Demonicum* 28 (2nd–3rd c, CE), cf. Lenaerts 1975 and consult the record in the Berliner Papyrusdatenbank for the image and further bibliography, https://berlpap.smb.museum/02878/ (last accessed: 30.1.2020); or an ostracon with a passage from the Gospel of Matthew 1.19–20 (5th–6th c. CE), apparently written as a school exercise, cf. Sijpesteijn 1984.
89 E. g. MPER N. S. 18.7 (8th c. CE).
90 This function has been suggested for a bizarre ostracon inscribed with disparate letters and found in Elousa in Israel, Verreth/Goldfus 1999. For discussion of a cryptographic alphabet inscribed along with other sequences of letters of the alphabet on O. Bachit 21, see especially Dieleman 2010, and cf. an ostracon inscribed with a collection of quotations from the Old and New Testament and a diagram explaining the Coptic cryptographic alphabet (550–650 CE), which the editors interpret "as a didactic aid for advanced students," Górecki/Łajtar 2012, 164. Cf. also Martín Hernández/Torallas Tovar 2014, 789–790, on the difficulty of determining the function of such ostraca.
91 Cf., for example, Looze 2016, a recent discussion of the role of the alphabet in the shaping of western thought, where the first two chapters are devoted to the Greco-Roman world.
92 See Delattre 2010, 363–366, no. 1, where the ostracon published earlier as O. Eleph. DAIK 322 (6th c. CE) is identified as recording the names of the Forty Martyrs of Sebaste, and a survey of attestations in Egypt across materials and further bibliography are provided. Four further ostraca inscribed

tures: ostraca featuring citations from the Psalms along with apparent school texts likely come from an educational environment; yet, others could have been amulets, while those inscribed with longer passages might have been used for recitation.[93]

A few tendencies in the usage of ostraca in connection with education can be observed. There are few, if any, ostraca dated to the Ptolemaic period that can be unambiguously identified as school exercises. Alphabets are rare,[94] and there are no ostraca inscribed with syllabaries, lists of words, *sententiae* or anecdotes that date to before the Roman period. Current evidence thus suggests that ostraca were not used, or at least not widely used, in the Ptolemaic period at the level of elementary education.[95]

Starting in the Roman period, however, the numbers of ostraca inscribed with apparent school exercises begin to rise and they become easy to identify both by the type of inscribed texts and by formal aspects of writing. Also from the Roman period on, the chronological distribution of the ostraca associated with education follows the overall distribution of literary ostraca and papyrological evidence in general: there seems to be a peak in the second century and then again in the late antique period.[96] Yet, while there is general agreement about which ostraca from the Roman period constitute school texts, classification of the late antique ones is often a matter of dispute, as has been indicated above in the discussion of the Christian material.[97] As religion permeates education, the distinction between, for example, artifacts inscribed with texts for learning and those meant as expressions of devotion, may not be obvious to the modern observer from their texts and physical parameters; in fact, such a distinction might not have existed for those who inscribed and used them either.[98]

---

with the names of these martyrs and considered Christian amulets are P.Leid.Inst. 12 (7th–8th c. CE); an ostracon from Upper Egypt published in Gallazzi 1988 (7th–8th c. CE); SB 28.17249 (6th–7th c. CE); and O.CrumST 443 (6th–8th c. CE). Curiously, the two ostraca interpreted as coming from educational settings, MPER N. S. 18.248 (7th–8th c. CE) and MPER N. S. 18.265 (7th–8th c. CE), are limestone ostraca.

93 Cf. Martín Hernández/Torallas Tovar 2014, 790–794; Bucking 2007.

94 Possible examples are an ostracon from Karanis, O.Mich. 3.1099, dated to the Ptolemaic period; O.Bodl. 2.2191 (1st c. BCE–1st c. CE); and a piece found in Bakchias and said to be dated by its archaeological context to 150–50 BCE, cf. Cribiore 2006.

95 Cf. Lougovaya 2019.

96 Cf. Habermann 1998 for the chronological distribution of papyrological evidence. Ostraca inscribed with educational texts are difficult to date, so it is also possible that the overall distribution of the papyrological evidence influences the dating of the ostraca, especially those whose provenance is unknown.

97 For an overview of the disputes regarding the classification of the late antique educational material, cf. especially Larsen 2018 and Maravela 2018, with further bibliography.

98 Cf. Bucking 2007; Bruyn/Dijkstra 2011; Maravela 2015; Maravela 2018, 147–149.

7 Performance and Occasional Poetry

The possibility that a literary text inscribed on an ostracon might have been meant for performance has been intimated by the editors of O. Florida inv. 21, the erotically themed piece once thought to be a fake (see above). Considering its genre, they suggest that "the mime may be a possibility" or else "but perhaps less convincingly, erotic epistolary fiction."[99] The sherd, as Bagnall and Cribiore demonstrate, likely comes from a military camp in the Eastern Desert, with Maximianon being a particularly suitable candidate. Notably, it was in Maximianon that a set of ostraca associated with a soldier named Sosianos and inscribed with what Jean-Luc Fournet has called "essais érotico-bacchiques" was found.[100] Fournet prints an excerpt from one such composition:

φειλῶ, καίομαι
καὶ οὐκ ἐστέναζμε·
φανερῶς πορνεύω δει<ὰ>
4 τὸν ὑπορήφονον Ἔρωτα.
κα[[ι]]λὲ Δεινυσ<ί>αι Βάκχαι
[ἰλ]αρέ, εἰ στεφανώσεται
[σ]τεφάνους ῥεδείους
- - - - - -

1 l. φιλῶ **2** l. ἐστέναγμαι **3** l. διὰ **4** l. ὑπερήφανον **5** l. καλαὶ Διονυσίαι **6** l. ἱλαραί, στεφανώσετε **7** l. ῥοδέος

I love, I burn and I don't moan about it: I fornicate openly because of overwhelming Eros. And you, Dionysiac Bacchants, merry and beautiful, if you crown [...] with crowns of roses [...][101]

The first person speech and exuberant emotionality of this text, which is similar to the Florida ostracon, may fit well the discourse of an exaggerated theatrical performance. Roman-period mimes were not the witty verse compositions of the Hellenistic era, but rather lowbrow *paignia*, performance pieces marked by "a combination of indecency and sweetness"[102] and played without masks by a few performers or even by a single actor. An interesting attestation of such skits in association with entertainment of the Roman army comes from Dura Europos, where a series of *dipinti* listing names of performers was discovered.[103] There are both men and women, though more women, and most of them bear epithets likely related to the roles they played, for example μωραί,

99 Bagnall/Cribiore 2010, 219.
100 Fournet 2003, 466. Apparently, about half a dozen of such ostraca might be associated with the soldier.
101 Text and interpretation after Fournet 2003, 467, inv. M 361.
102 Davidson 2000, 55.
103 The *dipinti* come from House G5C and date to the mid-3rd c. CE, see Immerwahr 1944.

must have played parts in which they were ridiculed; καλαί could be dancers; and the παλαιοπόρνη was probably an old hetaera; there is also a reference to mimes.[104] Some of the records register the arrivals and departures of the performers, suggesting that there was a business in supplying the army with small troupes of itinerant entertainers. Perhaps something similar was taking place in the Eastern Desert, too, even if on a smaller scale. Curiously, in the *praesidium* of Dios a letter of a certain Serapias, a prostitute, was found, in which she complains that the soldiers in the camp hassle her demanding her services, behaving *as if in a theater*, so much so that the horsemen coming through the camp have *mimes* to watch.[105] The comparison that Serapias draws between her bickering with the soldiers and a scene in a mime may have fallen flat had the mimes never been performed in the camps.[106]

Several further literary ostraca inscribed with excerpts from dramatic works might have been also associated with performance. Thus, an ostracon published as P. Reinach Gr. 1 (2nd–1st c. BCE) bears a dialogue in verse in which one speaker is in love, and the other seems to warn him to be careful; the passage has been attributed to Herodas (Herod. Fr. 3 Cunningham). Although the ostracon is sometimes classified as a school text,[107] there is no evidence for similar texts in educational settings to support this; it is conceivable that it was a draft or an excerpt, but a performance context is also a possibility. Similarly unclear is the function of an ostracon inscribed on both sides with a dialogue between Antigone and the old servant from Euripides' *Phoenissae,* lines 106–118 and 128–140,[108] or of PSI 13.1300, an ostracon bearing verses of Sappho. Dated approximately to the 2nd c. BCE, both are inscribed in confident but not easy to read cursives, and while quotations from Euripides are attested in school texts on papyri and ostraca, poetry of Sappho does not seem to be associated with education.[109]

In a few instances a literary text on an ostracon appears to have an immediate connection to the surroundings in which it was produced. For example, the ostracon inscribed with an obscene epigram, which is styled as an epitaph for a man named Kleitorios, mocks a real person who is mentioned in several documents found along with it.[110] Was it just for fun that the person responsible for the archive composed

104 Immerwahr 1944, 217–218, Fr. V, col. 2 l. 8.

105 Cuvigny presented the ostracon in her talk delivered in Collège de France on March 30, 2016. The recording of her talk can be accessed at https://www.college-de-france.fr/site/jean-pierre-brun/symposium-2016-03-30-11h30.htm (last accessed: 30.1.2020).

106 In the Appendix, I present an edition of an ostracon found in Didymoi, which also may have been associated with a mime performance.

107 Cf. Cribiore 1996, 233, no. 252.

108 Mastronarde 1982.

109 Cf. Cribiore 1997.

110 Viereck 1925, 257–259, no. 3 (P. Berol. 12309). The same stash of ostraca (TM ArchId 160) includes three with anthologies and one with an excerpt from political protreptics (cf. fn. 73 above), as well as about 60 documentary texts. For this peculiar assemblage of texts, cf. also Lougovaya 2018, 55–61, and 2019, 277, with further bibliography.

or copied the epigram? Perhaps the ostracon was easy to pass around to others who might have shared the author's feelings about Kleitorios.

From the Eastern Desert, we have an ostracon with a poem celebrating Athena and the waters of Xeron found at the site of Xeron Pelagos.[111] Another ostracon from the same site, O.Xer. inv.995, is said to contain a verse narrative of a trip from Koptos to Berenike; it is apparently spoken in the first person and describes stations on the route, listing their natural resources, with each vignette separated from the next by an oblique stroke.[112] Was there a poet stationed at Xeron? Or perhaps someone travelled through the desert and composed as he went through the stations? And were these poems written down on the sherds for a performance there? It might become easier to address these questions when more material from the Eastern Desert is published, a slow going work precisely because it is often difficult not only to decipher but even to interpret the typology of a literary text inscribed on an ostracon.[113] I take the opportunity to include in the Appendix below an edition of one such piece, which was found at Didymoi, another *praesidium* in the Eastern Desert. It appears to be similar to the two Xeron ostraca as well as to O.Florida inv.21.

This survey of literary ostraca is not exhaustive and there remain plenty of texts that elude unambiguous classification even more than some of the typologically ambiguous cases discussed above. What is clear, however, is that ostraca were used for writing a wide variety of literary, or non-documentary, texts and that many of these texts may have originated and circulated differently than those inscribed in and transmitted as books. Mertens' observation on the particularly high percentage of *adespota* among literary ostraca continues to be borne out as more examples are being found and published: occasional pieces rooted in the immediate surroundings, passages unparalleled by anything transmitted in the manuscript tradition, or simply strange compositions grow in numbers, whereas attestations of known authors do not. Using sherds for writing thus seems to have played a significant role in production of what Luigi Enrico Rossi defines as "submerged literature", that is, texts which may have been composed for immediate consumption but were not meant for wider transmission or were simply ignored by the tradition.[114] Consequently, literary ostraca may provide a window to the tastes, abilities, and aspirations of a larger strata of people than those professional and well-educated writers whose works have been enshrined in the literary tradition, while also offering a modern observer an opportunity of looking at texts that must have been enjoyed without being meant for preservation.

111 For ed.pr., see Bülow-Jacobsen 2011, who dates it to 175–225 CE; cf. also Benelli/Lucarini 2017.

112 The ostracon, which has not been published yet, is mentioned in Cuvigny 2013, 410–412.

113 It is perhaps no coincidence that most of the published literary ostraca from the Eastern Desert are school texts from Mons Claudianus, that is, texts of fairly clear typology.

114 Cf. "texts which were mistreated from the very beginning of their transmission, and even texts which were not transmitted at all," as cited in Ercolani 2014, 7.

Appendix

A Bucolic Scene on an Eastern-Desert Sherd

D 445 – CSA 476 W. 14 × H. 13 cm discarded c. 250–c. 270
Fort SW – US 13501
TM 827752

The ostracon published here (Fig. 1) was found in the fort of Didymoi, which lies on the Koptos to Berenike road.[115] It was unearthed in Room 35a in the south-west part of the fort, in a stratigraphic unit that yielded several literary pieces, as well as documentary ostraca and *tituli picti*.[116] These findings are dated to the last phase of occupation and are believed to be discarded sometime between c. 250 and c. 270, when this part of the fort was being gradually filled by dumped material.[117]

The sherd was probably chosen for its form and further shaped into an approximately rectangular, slightly widening towards the bottom, format. The person who inscribed it must have been accustomed to writing, as his (or her?) hand is rapid and fluent, even if not particularly nice, but the spelling is poor. The writing on the right-hand side of the sherd is smeared and very difficult to make out, and the lower right-hand corner is missing. All this makes understanding the text challenging and interpretations offered below are far from certain.

Both the genre and the content of the text are puzzling. The first 11 lines seem to belong to a monologue directed to a male character who is addressed as a country-dweller in l. 1 and a shepherd in l. 10; although the epithet ἀγρότης is often applied to Pan (see note ad loc.), and Pan, identified with Egyptian Min, was the patron of Koptos and the Eastern Desert, I hesitate to see him as the addressee here because his cult in the area had declined by the time our ostracon was written.[118] Perhaps it is likelier to be a man, whose name, Lykon, appears in l. 8. The speaker, who, I think, is a woman at least in this part of the text, implores the man to lead her away to dwell with him in the country and makes a slew of promises. She begins by declaring that she would do everything for him, whatever a woman is to supply. The language of this general promise and of its further specifications is reminiscent of that in which

115 The excavations of the fort were undertaken in 1998 and 1999 within the project *Les praesidia du désert Oriental* and directed by Hélène Cuvigny, to whom I am grateful for the invitation to work on literary pieces from the fort and for sharing her field notes with me.

116 For Room 35a, cf. Didymoi I, 29–30. The documentary ostraca found in the same stratigraphic unit as the piece published here include documents related to official correspondence, O.Did. 24, 25, 30 (descr.); those connected to administrative and legal matters, O.Did. 62, 126–129, 135; and *tituli picti*, O.Did. 238, 249, 267.

117 For this revised dating of the abandonment of the forts on the Koptos to Berenike road, including Didymoi, see Brun 2018, §§ 27–31 with fn. 62.

118 Cf. Cuvigny 1997.

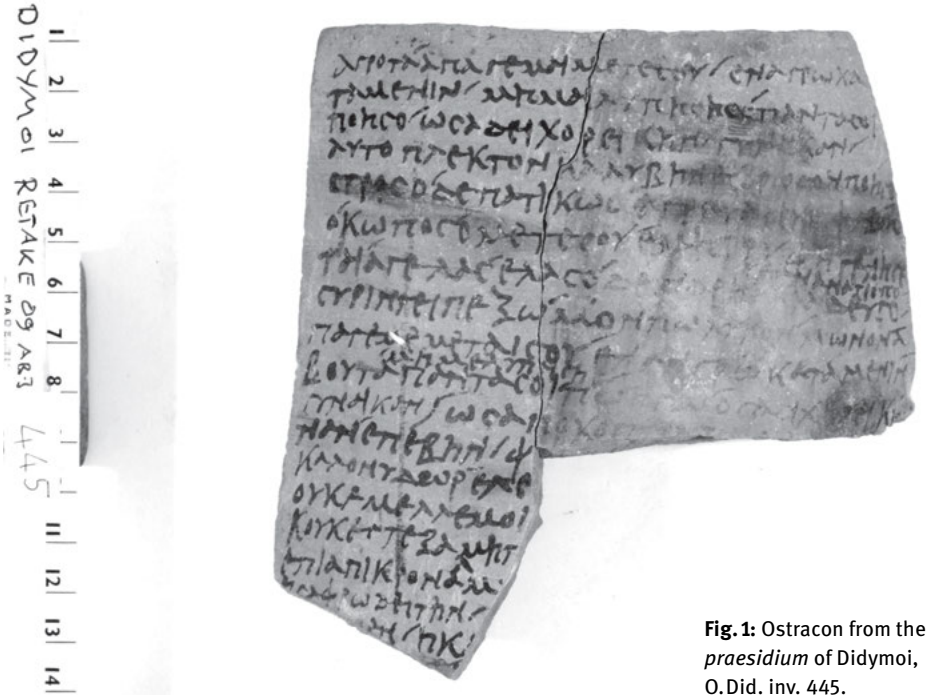


Fig. 1: Ostracon from the *praesidium* of Didymoi, O. Did. inv. 445.

obligations of a party in a contract can be stated, in particularly, those of a husband to a wife in a marriage contract (see note ad loc.). Here, however, the roles are reversed since it is the woman who lists what she will provide her addressee with. The promises seem to pertain to the man's shed and bed, to taking care of the flocks, and to making a syrinx, but since many readings are uncertain, the details remain unclear.

In line 11, there is a slash-mark which appears larger than similar marks elsewhere in the text, raising a possibility that what follows belongs to a different unit of text, for example, a part spoken by another person. Since the sherd breaks off on the right at the level of line 11, only parts of that and the following seven lines survive, making it very difficult to gain any continuous sense. There is a verb of motion, ἐπέβην, in line 13, and if line 11 should be restored as containing ἀπὸ Κόπτου, then perhaps we are dealing with an account of a journey from the valley down the Berenike road. In this case, εἰς Ἀφρωδείτην in line 17 is likely to indicate another station on this road, Aphrodite of the Desert, Ἀφροδίτη(ς) Ὄρους. 'Good water', mentioned in line 13, would be of paramount importance for the traveler of the desert road, whereas the adjectives in line 16, 'bitter' and 'salty', which are often used of sea-water, might perhaps also describe brackish water available at some of the stations.[119]

119 Cf. the poem about the waters of Xeron, which seems to refer to means of improving bitter or brackish water, Bülow-Jacobsen 2011, esp. 6–7; cf. also Benelli/Lucarini 2017.

The first-person speech and general erotic theme of the first part of our ostracon suggest that it may belong to the same genre as O.Florida inv. 21, though the language of the Didymoi piece is not nearly as crude as that of the Florida ostracon; it also features a somewhat more literary bucolic vocabulary. Although the monologue does not appear to be metrical, it may have some rhythmical pattern, set off in units of six to seven syllables (cf. ἄπαγέ με μετ' ἐσοῦ, ἐν ἀγρῷ καταμένειν, μή με λυπήσῃς, etc.). Slashes, or tick-looking marks, used throughout the text may have been meant to help articulate these and other textual units, particularly if the piece was meant for a performance.[120] Although the sizes and position of these marks vary, I render them all with the same tick ´, except for a large sinusoidal stroke (ʃ) in line 11.

1 ἀγρότα´ ἄπαγέ μαι μετ' ἐσοῦ ´ ἐν ἀγρῷ χα-
ταμένιν´ μή μαι λυπήσῃς´ πάντα σοι
ποήσο´ ὥσα δεῖ χορεικῆν´ γυναῖκαν´
αὐτόπλεκτον καλύβην ἐς´ βρώδ̣ον ποήσο
5 στρόσο´ δὲ πατικῶς´ αγρότ̣α . ι̣κ . φ . βοη´.
ο´κ'ωποσ´ο μετ' ἐσοῦ´ ἐμ̣ὴ τ̣ρυφὴ γενήσε-
ται´ ἀγέλας´ ἐλάσο´ δέ̣νδρη´. κλαδεύσο´ ʽ . . ε̣ᾳν ἀνατρε̣ίσο´´
συρίνγει πέξω´ μονηωλυκον´ μώνον ᾱ̄-
παγέ με μετ' αἰσοῦ´ ἐν ἀ{ν̣}γρῷ καταμένιν´
ʽμή με λυπήσῃς´´
10 βοῦτα´ πάντα σοι πωήσω´ ὅσα δῖ χ̣ορειικῖ̣ν´
γυναῖκαν ʃ ὡς ἀπὸ Κόπτ̣ο̣υ̣ . . . . [
τ̣ι̣αν´ ἐπέβην´ φ[
καλὸν ὕδωρ´ ἐχε[
οὐκ ἔμελλέ μοι[
15 κοὐκ ἐστεξάμη̣ν̣[
ἔπια πικρὸν ἀʽλ'μυ̣[ρ
εἰς Ἀφρωδείτην´ [
]αν´ ηκᾳ̣[
].[
- - - - - -

1 l. με, l. καταμένειν **2** l. με **3** l. ποιήσω, l. ὅσα, l. χορηγεῖν, l. γυναῖκα **4** l. βρόδον, l. ποιήσω **5** l. στρώσω, l. παθικῶς? **6** l. ὃ καὶ ὁπόσο(ν)? **7** l. ἐλάσω, l. κλαδεύσω, intr. l. ἀνατρήσω? **8** l. συρίγγι, l. ὦ Λύκων, l. μόνον? **9** l. μετ' ἐσοῦ, l. καταμένειν **10** l. ποιήσω, l. δεῖ χορηγεῖν **11** l. γυναῖκα **12** or ν̣αν? **14** l. οὐκ ἔμελέ μοι? **17** l. Ἀφροδείτην

120 For the slashes as possible stage directions for performance of a mime, cf. Tsitsiridis 2011, based on a detailed study of P.Oxy. 3.413.

Country-dweller, lead me away to live with you in the country. Do not let me down! I will do everything for you, whatever a woman is to provide. I will transform your hut into a rambling-rose and make a bed for you *pathically* (?), country-dweller, [...] whatever and however much with you, will become luxury for me. I will drive herds, I will cut off wooden sticks and those that I make hollow (?) I will fasten into a panpipe, all alone, o Lykon, only lead me away to dwell with you in the country! Herdsman, do not let me down! I will do everything for you, whatever a woman is to provide [...] When from Koptos [...] I went [...] good water [...] I did not care to [...] (or, 'he/she/it was not to [...] to me'?) and I have not covered (?) [...] I drank bitter and salty [...] in Aphrodite [...]

1 ἀγρότα: 'country-dweller' or 'hunter', a poetic word often used of Pan, cf. among others, AP 6.13, 188 (Leonidas of Tarentum), 16.231 (Anyte).
ἄπαγέ μαι (l. με): the unprefixed verb, especially in the middle voice, can refer to marrying a woman; for the prefixed verb in sexual contexts, cf. especially Arist. *Thesm.* 914–915, where Euripides embraces his kinsman who, pretending to be a woman, spurs him φέρε σε κύσω. ἄπαγέ μ' ἄπαγ' ἄπαγ' ἄπαγέ με / λαβὼν ταχὺ πάνυ, "Come, I will kiss you! Lead me away, oh take and lead me, lead me away, posthaste!"
μετ' ἐσοῦ: the disyllabic form of the second personal pronoun formed on analogy ἐγώ, ἐμοῦ, etc., in particular in the genitive following a preposition, is common in papyri of the Roman and late antique periods, cf. Gignac, II, 163–165.
χαταμένιν (l. καταμένειν): followed by ἐν + a toponym, a form of the verb is regularly used to indicate one's residence.

2–3 πάντα σοι | ποήσο᾽ ὥσα δεῖ χορεικῆν᾽ γυναῖκαν (l. πάντα σοι ποιήσω ὅσα δεῖ χορηγεῖν γυναῖκα): marriage contracts employ similar language to spell out a husband's obligations to provide for his wife, cf. BGU 4.1054 (Alexandria, 14–13 BCE), lines 12–15, ἀπὸ τοῦ νῦν τὸν Ἀπολλώνιον Πτολεμαίου | χο[ρηγ]ε[ῖ]ν τῇ Θερμίῳ τὰ δέοντα πάντα | καὶ τὸν ἱματισμὸν ὡς γυναικὶ γαμετῇ | κατὰ [δ]ύναμιν τῶν ὑπαρχόντων, "and from now on Apollonios son of Ptolemaios is to provide Thermion with whatever is necessary and clothing, as befits a married woman, according to his means."[121]

4 αὐτόπλεκτον καλύβην ἐς᾽ βρώδ̣ον ποήσο: after the general promise to do all what a woman should, the speaker begins to list the envisaged undertakings. The verb ποήσο (l. ποιήσω) probably governs καλύβην, 'a shed', while βρώδ̣ον (l. βρόδον), 'rose'

121 It seems that from the second century on, a construction with the third person imperative becomes common, at least in Oxyrhynchus, cf., for example, καὶ χορ[η]γείτω ὁ γαμῶν τῇ γαμουμένῃ τὰ [δ]έοντα κατὰ δύν[α]μιν (P.Oxy. 3.496, Apr 19, 127 CE) or ὁ δὲ [γαμῶ]ν|καὶ ἐπιχορηγ[εί]τω τῇ γυναικὶ τὰ δέοντα | πάντα κατὰ δ[ύ]ναμιν (P.Oxy. 49.3500, 3rd c. CE). The verb itself, χορηγεῖν, is attested in the Eastern desert ostraca, O.Did. 382.11, O.Claud.1.126.10; 4.786.2, always with the meaning 'to provide' or 'to supply'.

goes with αὐτοπλέκτον ‘self-twined’, thus, ‘a rambling-rose’. Is she promising to have a rose entwine the shed? Epsilon in what I transcribe as ἐ̣ς is quite clear, but the letter afterwards is less so; it might be compatible with a sigma.

αὐτόπλεκτον: the only other attestation of the word occurs in the description of a squid entangling its body into a specially devised snare in Oppianus, *Hal*. 4.449.

βρώ̣δον (l. βρόδον): what I transcribe as beta is not incompatible with this letter in general, but does not look like other instances of it on the ostracon; one can best describe it as a dollar-sign. If it is a beta, the Aeolic form suggests literary ambitions on behalf of the author.

5 στρόσο (l. στρώσω): the verb is usually transitive, but for an absolute construction, cf. Hom. *Od*. 19.599, χαμάδις στορέσας, “having made his bed on the floor”.

πατικῶς: the adverb, which here must describe how the speaker will make the bed, is otherwise attested only by O.Florida inv. 21, lines 7–9, δώσω πατικῶς (l. παθικῶς?), ὡ|ς οὐκ οἶδες, νὴ τὴν σὴν κε|παλὴν (l. κεφαλὴν), καὶ ξένως, which the editors translate “I’ll give (myself) pathically, in a way you don’t know, by your head, and in a strange way” and interpret—in sum—as an offer of sex by the speaker who seems to be a woman, though a man cannot be excluded.[122] While the interchange of theta with tau is *per se* not uncommon,[123] the Florida text has no other instance of such an exchange, although it has four words featuring theta (θέλω in l. 5–6, ἄνθροπε for ἄνθρωπε in l. 6, πθάσω for φθάσω in l. 9, and αἰσθάνομαι in l. 13); there is no theta in the Didymoi ostracon, and it is not clear whether there is any word that would require it, but see 7n. Despite the parallel phrasing and the similar erotic overtones in the two ostraca, the meaning of the adverb is no clearer.

.̣ι̣κ .̣ φ .̣: kappa is fairly certain, but the rest is difficult. What I transcribe as a dotted iota can also be an epsilon because the lower end of the vertical bends to the right, somewhat like the first epsilon of the γενησε in l. 6; phi may be perhaps a psi, which does not otherwise appear on the sherd.

βοη΄̣: it is not clear whether there is another letter squeezed in after the eta, perhaps a sigma or a nu. It is possible, though perhaps less likely, that the word continued in the next line, βοησ|ο for βοήσω, even if such a word division is not conventional.

6 ο΄κ’ωποσ΄ο: if the first omicron does not belong to the last word of the previous line, then perhaps ὃ καὶ ὀπόσο(ν)? Is the general meaning of this sentence that whatever there is for the speaker at the country-dweller’s side, it will be luxury for her?

122 Bagnall/Cribiore 2010, 216–219.

123 A search in the Text Irregularities database in Trismegistos on April 10, 2019, produced 398 results for ‘τ instead of θ’ in various positions; for the interchange in the intervocalic position in particular, cf. Gignac I, 92.

7 δέν̣δρη´ ̣κλαδεύσο ` ̣ ̣ε̣α̣ν ἀνατρε̣ί̣σο´´: δέν̣δρη is quite certain, as is κλαδεύσο, but it is not clear whether there is a letter in between; the space suggests that there might be one, but no trace of it can be made out; if there was one, one can think of the relative ἅ. The interlinear insertion is partially illegible; traces on the photo are compatible with one or two letters followed by ε̣α̣ν ἀνατρε̣ί̣σο, while Cuvigny's field notes suggest τ̣ε̣α̣ν or α̣γ̣εαν. Thus, we have 'trees' and two verbs, one of which derives from the word for a branch or twig (κλάδος) and usually means 'to prune' (κλαδεύω), and the other 'to bore through' or 'perforate' (ἀνατιτράω or ἀνατετραίνω). What immediately follows, συρίνγει πέξω "I will fasten into a syrinx," suggests the making of the panpipe is described here, yet it is difficult to reconstruct the text. Firstly, panpipes were normally made from rushes or reeds, not wood; then, pipes in a syrinx, unlike those of an aulos, are not perforated. Could it be that δένδρη refers to twigs or even stick which the speaker will cut off (κλαδεύσω) and then make hollow (ἀνατρήσω)? If so, perhaps one can entertain a restoration like δέν̣δρη´ [ἅ] κλαδεύσο `τ̣ε̣ ἄ̣ν ἀνατρε̣ί̣σο´´ | συρίνγει πέξω, "twigs that I cut off and make hollow, I will fasten them into a panpipe," though this is not graceful Greek.

8 μονηωλυκον: l. μόνη, ὦ Λύκων? If so, the line confirms the gender of the speaker and supplies the name of her addressee. A Lykon is mentioned in Theocritus *Idyll* 5, where he is said to have given the shepherd Lakon a syrinx, which the latter accuses the goatherd Komatas of stealing from him (lines 3–10), a conflict that serves as the starting point for the ensuing singing competition.
μωνον: presumably, the adverbial μόνον, "only take me […]".

10 βοῦτα: similar to ἀγρότης, which is mostly poetic, βούτης seems to be confined to poetry.

11 ὡς ἀπὸ Κόπτ̣ο̣υ̣: letters beyond tau are hardly visible. The toponym would make sense in connection with the verb ἐπέβην in the next line and would fit well with the provenance of the find.

12 ἐπέβην: the verb has a range of possible meaning, but can indicate simply coming, cf. ἀπὸ πρώτης ἡμέρας ἀφ' ἧς ἐπέβην εἰς τὴν Ἀσίαν […] "from the first day when I came into Asia […]" (Acts 20:18).
φ[: if the speaker now indeed is describing a journey through the desert, one wonders whether the letter phi belongs to Φοινικών, a *praesidium* that lies at the point where the road from Koptos splits into two, one leading to Myos Hormos and the other to Berenike.

14 οὐκ ἔμελλέ μοι: perhaps likelier that the double lambda is due to dittography and we are to read οὐκ ἔμελέ μοι, "I did not care," cf. e. g. Hom. *Od.* 16.465, οὐκ ἔμελέν μοι ταῦτα μεταλλῆσαι, "I did not care to ask about this", than a construction with μέλλω, "he (or she, or it) was not about […]" with μοι depending on the lost verb in the lacuna.

16 ἔπια: cf. Hesych. π (1527) πέπωκα· ἔπια, and also Johannes Malalas's (*Chronographia* 10.10) story of Alexander's visit to Antioch where, having drunk from the

spring of Olympias, he allegedly said, ἔπια γάλα τῆς ἐμῆς μητρός, "I've drunk the milk of my mother."

πικρὸν ἀ̣λ̣μ̣υ̣[ρ: lambda is inserted between alpha and mu, leaving little doubt that the word should be a form of ἀλμυρός, 'salty' or 'briny', though ἀλμυρίς, 'salty land' might also be a possibility. Both adjectives can describe the seawater, cf., e. g., Arist. *Pr.* 935a, διὰ τί ἡ θάλαττα ἁλμυρὰ καὶ πικρά ἐστιν; "Why is the sea salty and bitter?" The dactylic poem about the waters of Xeron inscribed on an ostracon found at that *praesidium* seems to speak of the bitterness of the water, πικρία (l. 5), that comes to the surface there.[124]

17 εἰς Ἀφρωδείτην: l. εἰς Ἀφροδείτην. Ἀφροδίτη(ς) Ὄρους, Aphrodite of the Desert, was the *praesidium* located after Didymoi going from Koptos to Berenike. Although the full toponym appears to be Ἀφροδίτη (or Ἀφροδίτης) Ὄρους (cf. O.Did. 430.7–8, ἐν πραισειδίῳ Ἀφροδίτης Ὄρους), Cuvigny reports that it is listed simply as [Ἀφ]ροδίδη in the list of *praesidia* on O.Dios inv. 18. It might be particularly significant that the unpublished poem about wells on the Koptos to Berenike road apparently also points to the station as ἰς Ἀφροδείτην (O.Xer. inv. 995 fr.c, l. 5; early 3rd c.).[125]

Concordance of Papyrological Sources

MPER N. S. 18.7 = TM 105772 = LDAB 10864
MPER N. S. 18.77 = TM 65429 = LDAB 6676
MPER N. S. 18.248 = TM 61737 = LDAB 2889
MPER N. S. 18.261 = TM 64423 = LDAB 5647
MPER N. S. 18.265 = TM 65871 = LDAB 7135
O.Bachit 21 = TM 128462 = 128462
O.Bodl. 2.2181 = TM 63911 = LDAB 5125
O.Bodl. 2.2182 = TM 63912 = LDAB 5126
O.Bodl. 2.2183 = TM 64502 = LDAB 5728
O.Bodl. 2.2184 = TM 64507 = LDAB 5733
O.Bodl. 2.2185 = TM 64503 = LDAB 5729
O.Bodl. 2.2186 = TM 64504 = LDAB 5730
O.Bodl. 2.2187 = TM 64214 = LDAB 5433
O.Bodl. 2.2188 = TM 64505 = LDAB 5731
O.Bodl. 2.2189 = TM 64506 = LDAB 5732
O.Bodl. 2.2191 = TM 65578 = LDAB 6829
O.Claud. 1.179 = TM 63421 = LDAB 4629
O.Claud. 2.413 = TM 59051 = LDAB 413
O.Claud. 2.415 = TM 63424 = LDAB 4632
O.Claud. 2.416 = TM 63419 = LDAB 4627
O.Crum 19 = TM 111263 = LDAB 111263
O.CrumST 15 = TM 111154 = LDAB 111154
O.CrumST 443 = TM 83728 = LDAB 83728
O.Heid. 437 = TM 65232 = LDAB 6474
O.Kellis 157 recto = TM 74686 = LDAB 10755
O.Leid. 1 = TM 65613 = LDAB 6864
O.Leid. 2 = TM 63311 = LDAB 4517
O.Maresha 3 = TM 754321 = LDAB 754321
O.Maresha 4 = TM 754322 = LDAB 754322
O.Masada 782=TM 74924 = LDAB 10757
O.Masada 783=TM 74925 = LDAB 74925
O.Mich. 3.1099 = TM 65794 = LDAB 7048
O.Narm. 1.129 = TM 63869 = LDAB 5083
O.Petrie Mus. Ostraca, Group A = TM 61028 = LDAB 2161

124 See fn. 119 above.
125 Cuvigny 2018, §§125–126.

O. Petrie Mus. Ostraca, Group B = TM 68816 = LDAB 10087
O. Sarga 14 = TM 108458 = LDAB 108458
O. Sarga 22 = TM 89508 = LDAB 10643
O. Stras. 1.619 = TM 63705 = LDAB 4915
O. Trim. 2.536 = TM 372154
O. Xer. inv. 995 = TM 369028 = LDAB 369028
P. Aberd. 14 = TM 63944 = LDAB 5159
P. Bagnall 10 = TM 175275 = LDAB 175275
P. Gen. 4.154 = TM 128550 = LDAB 128550
P. Koeln 2.66 = TM 59137 = LDAB 232
P. Leid. Inst. 12 = TM 65420 = LDAB 6667
P. Mon. Epiph. 574 = TM 87110
P. Mon. Epiph. 575 = TM 87111
P. Mon. Epiph. 598 = TM 65213 = LDAB 6455
P. Mon. Epiph. 600 = TM 61459 = LDAB 2605
P. Mon. Epiph. 622 = TM 65226 = LDAB 6468
P. Naqlun 2.16–17 = TM 61815 = LDAB 2969
P. Oslo 2.15 = TM 63587 = LDAB 4796
P. Oxy. 3.413 = TM 63690 = LDAB 4899
P. Reinach Gr. 1 = TM 65662 = LDAB 6915
P. Vindob. Sal. 1 = TM 25158 = LDAB 25158
P. Yale 2.131 = TM 64256 = LDAB 5476
Pap. Graec. Mag. 4 = TM 64343 = LDAB 5564
Pap. Graec. Mag. 7 = TM 60204 = LDAB 1321
Pap. Graec. Mag. 12 = TM 55954 = LDAB 5669
Pap. Graec. Mag. 36 = TM 64479 = LDAB 5704
Pap. Graec. Mag. 46 = TM 64775 = LDAB 6013
PSI 13.1300 Sappho = TM 62716 = LDAB 3904
SB 14.11658 = TM 32941 = LDAB 32941
SB 28.17249 = TM 68822 = LDAB 10093
Suppl. Mag. 2.58 recto = TM 92334
Suppl. Mag. 2.67 = TM 92330 = LDAB 92330
Suppl. Mag. 2.89 = TM 69046 = LDAB 10337
Suppl. Mag. 2.97 = TM 65848 = LDAB 7107
TM 369028 = LDAB 369028
TM 827752 = LDAB 827752

Bagnall/Cribiore 2010 = TM 129728 = LDAB 129728
Bülow-Jacobsen 2011 = TM 143318 = LDAB 143318
Cribiore 2006 = TM 105653 = LDAB 105653
Cuvigny 2010, no. 15 = TM 130163 = LDAB 130163
Cuvigny 2013, 419–420, O. Xer. inv. 809 = TM 369038
Cuvigny 2013, 419–420, O. Xer. inv. 810 = TM 369039
Cuvigny 2013, 420–421, O. Xer. inv. 829 = TM 369040
Delattre 2010, no. 1 = TM 34326 = LDAB 34326
Delattre 2011 = TM 140550 = LDAB 140550
Dreliosi-Irakleidou/Litinas 2009–2011 = TM 217929 = LDAB 217929
Fournet 2003, 467, inv. M 361 = TM 128467 = LDAB 128467
Gallazzi 1988 = TM 65450 = LDAB 6697
Górecki/Łajtar 2012 = TM 244127 = LDAB 244127
Jouguet/Lefebvre 1904, 201–205 = TM 63398 = LDAB 4605
Kühn 1921 = TM 65666 = LDAB 6919
Łajtar 2006, no. A 1 = TM 6312 =LDAB 6937
Łajtar 2006, no. A 2 = TM 68650 = LDAB 9922
Łajtar 2006, no. A 3 = TM 40603
Lefebvre 1904 = TM 61837 = LDAB 2991
Lenaerts 1975 = TM 61352 = LDAB 2496
Mastronarde 1982 = TM 59912 = LDAB 1022
Mau/Müller 1962 = TM 65672 = LDAB 6925
Milne 1908, no. 3 = TM 64580 = LDAB 5810
Milne 1908, no. 2 = TM 63910 = LDAB 5124
Py/Adroher Auroux/Sanchez 2001, no. 2932 = TM 322171 = LDAB 322171
Py/Adroher Auroux/Sanchez 2001, no. 2933 = TM 322172 = LDAB 322172
Sijpesteijn 1984 = TM 61800 = LDAB 2954
Skeat/Turner 1968 = TM 44758 = LDAB 44758
Ullmann 1996, no. 1 = TM 65186 = LDAB 6428
Ullmann 1996, no. 2 = TM 65317 = LDAB 6562
Verreth/Goldfus 1999 = TM 66064 = LDAB 7310
Viereck 1925, no. 1 = TM 62823 = LDAB 4013
Viereck 1925, no. 2 = TM 59946 = LDAB 1058
Viereck 1925, no. 3 = TM 65673 = LDAB 6926
Wilamowitz-Moellendorff 1918 = TM 62676 = LDAB 3864

Bibliography

Andersen, Sigurd Ry (1997), "The Eye and Its Diseases in Ancient Egypt", in: *Acta ophthalmologica Scandinavica* 75, 338–344.

Ast, Rodney/Lougovaya, Julia (2015), "Cybele on the Red Sea: New Verses from Berenike", in *Greek, Roman, and Byzantine Studies* 55, 654–678.

Bagnall, Roger S./Cribiore Raffaella (2010), "O.Florida inv. 21: An Amorous Triangle," in: *Chronique d'Égypte* 85, 213–223.

Benelli, Luca/Lucarini, Carlo Martino (2017), "Note a O.Xer. inv. 48 (ottonari dattilici catalettici *in syllabam*) su Pallade, il Nilo e l'Oceano", in: *Zeitschrift für Papyrologie und Epigraphik* 201, 47–58.

Betz, Hans Dieter (1986), *The Greek Magical Papyri in Translation, Including the Demotic Spells*, Chicago/London.

Brun, Jean-Pierre (2018), "Chronology of the Forts of the Routes to Myos Hormos and Berenike during the Graeco-Roman Period", in: Jean-Pierre Brun, Thomas Faucher, Bérangère Redon and Steven Sidebotham (eds.), *The Eastern Desert of Egypt during the Greco-Roman Period: Archaeological Reports*, Paris. DOI: 10.4000/books.cdf.5239.

Bruyn, Theodore S. de/Dijkstra, Jitse H. F. (2011), "Greek Amulets and Formularies from Egypt Containing Christian Elements: A Checklist of Papyri, Parchments, Ostraka, and Tablets", in: *Bulletin of the American Society of Papyrologists* 48, 163–216.

Bucking, Scott (2007), "Scribes and Schoolmasters? On Contextualizing Ostraca Excavated from the Monastery of Epiphanius", in: *Journal of Coptic Studies* 9, 21–47.

Bülow-Jacobsen, Adam (2011), "Den syngende corporal", in: *Festskrift til Chr. Gorm Tortzen* (Aigis Supplementum I) no. 7, København, 1–9.

Chaniotis, Angelos (2006), "A Dodecahedron of Rock Crystal From the Idaean Cave and Evidence for Divination in the Sacred Cave of Zeus", in: Eirene Gabrilake and Yannis Tzifopoulos (eds.), *Actes of the International Symposium 'Mylopotamos, from Antiquity to Our Days'*, vol. 3, Rethymno, 205–216.

Cribiore, Raffaella (1996), *Writing, Teachers, and Students in Graeco-Roman Egypt* (American Studies in Papyrology 36), Atlanta.

Cribiore, Raffaella (1997), "Literary School Exercises", in *Zeitschrift für Papyrologie und Epigraphik* 116, 53–60.

Cribiore, Raffaella (2006), "A Ptolemaic School Ostracon", in: *Fayyum Studies* 2, 91–93.

Cribiore, Raffaella (2008), "Fun with the Alphabet", in: *The Journal of the History of Childhood and Youth* 1.2, 165–168.

Cribiore, Raffaella (2019), "Genetic Criticism and the Papyri: Some Suggestions", in: Reggiani, Nicola (ed.), *Greek Medical Papyri: Text, Context, Hypertext. Proceedings of the Final DIGMED-TEXT Conference (Parma, 2–4 November 2016)*, Berlin/Boston.

Cuvigny, Hélène (1997), "Le crépuscule d'un dieu. Le déclin du culte de Pan dans le désert Oriental", in: *Bulletin de l'Institut Français d'Archéologie Orientale* 97, 139–147.

Cuvigny, Hélène (2010), "The Shrine in the *praesidium* of Dios (Eastern Desert of Egypt): Graffiti and Oracles in Context", in: *Chiron* 40, 245–299.

Cuvigny, Hélène (2013), "Hommes et dieux en réseau. Bilan papyrologique du programme 'Praesidia du Désert Oriental Égyptien'", in: *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres* 1, 405–442.

Cuvigny, Hélène (2018), "A Survey of Place-Names in the Egyptian Eastern Desert during the Principate According to the Ostraca and the Inscriptions," in: Jean-Pierre Brun, Thomas Faucher, Bérangère Redon and Steven Sidebotham (eds.), *The Eastern Desert of Egypt during the Greco-Roman Period: Archaeological Reports*, Paris. DOI: 10.4000/books.cdf.5231.

Cuvigny, Hélène/Wagner, Guy (1986), "Ostraca grecs du Mons Claudianus", in: *Zeitschrift für Papyrologie und Epigraphik* 62, 63–73.
Dakaris, Soterios/Vokotopoulou, Iulia/Christidis, Anastasios-Phoibos, *Τα Χρηστήρια Ἐλάσματα της Δωδώνης των ἀνασκαφών Δ. Ευαγγελίδη*, 2 volumes, Athens, 2013.
Daniel, Robert W. (1984), rev. of "*Greek Ostraka. A Catalogue of the Collection of Greek Ostraka in the National Museum of Antiquities at Leiden* by Roger S. Bagnall, Pieter J. Sijpesteijn and Klaas A. Worp", in: *Gnomon* 56.5, 415–419.
Davidson, James (2000), "*Gnesippus Paigniagraphos*: The Comic Poets and the Erotic Mime", in: David Harvey, John Wilkins and Kenneth James Dover (eds.), *The Rivals of Aristophanes: Studies in Athenian Old Comedy*, London, 41–64.
Delattre, Alain (2010), "Noms rares et noms fantômes dans trois ostraca grecs d'Éléphantine", in: *Chronique d'Égypte* 85, 363–373.
Delattre, Alain (2011), "Un symbole de Nicée en copte sur ostracon. Édition de O.Berol. Inv. 20892", in: *Journal of Coptic Studies* 13 (2011), 113–115.
Derda, Tomasz (1995), "Some Non-Documentary Texts from Deir el-Naqlun", in: *Journal of Juristic Papyrology* 25, 41–48.
Dieleman, Jacco (2010), "Cryptography at the Monastery of Deir el-Bachit", in: Hermann Knuf, Christian Leitz and Daniel von Recklinghausen (eds.), *Honi soit qui mal y pense. Studien zum pharaonischen, griechisch-romischen und spatantiken Agypten zu Ehren von Heinz-Josef Thissen* (Orientalia Lovaniensia Analecta 194), Leuven, 511–517.
Dorandi, Tiziano (1991), "Den Autoren über die Schulter geschaut: Arbeitsweise und Autographie bei den antiken Schriftstellern", in: *Zeitschrift für Papyrologie und Epigraphik* 87, 11–33.
Dorandi, Tiziano (2000), *Le stylet et la tablette: Dans le secret des auteurs antiques*, Paris.
Dreliosi-Irakleidou, Anastasia/Litinas, Nikos (2009–2011), "Ροδιακό όστρακο με ερωτικό επίγραμμα", in: *Eulimene* 10–12, 135–155.
Ercolani, Andrea (2014), "Defining the Indefinable: Greek Submerged Literature and Some Problems of Terminology", in: Giulio Colesanti and Manuela Giordano (eds.), *Submerged Literature in Ancient Greek Culture: An Introduction*, Berlin/Boston.
Fournet, Jean-Luc (2003), "Langues, écritures et culture dans les praesidia", in: Hélène Cuvigny (ed.), *La Route de Myos Hormos: L'armée romaine dans le desert Oriental d'Égypte. Praesidia du désert de Bérénice* II, Le Caire, 427–500.
Fowler, David (1999), *The Mathematics of Plato's Academy*, 2nd ed., Oxford.
Funghi, Maria Serena/Martinelli, Maria Chiara (2003), "Ostraca letterari inediti della collezione Petrie", in: *Zeitschrift für Papyrologie und Epigraphik* 145, 141–182.
Funghi, Maria Serena/Martinelli, Maria Chiara (2008), "Ostraca letterari inediti della collezione Petrie: Un Addendum", in: *Zeitschrift für Papyrologie und Epigraphik* 164, 63–73.
Gallazzi, Claudio (1988), "O.Mil.Vogl. Inv. Provv. CE 2: Amuleto coi nomi dei Martiri di Sebastia", in: *Zeitschrift für Papyrologie und Epigraphik* 75, 147–149.
Gampel, Alan (2012), "Papyrological Evidence of Musical Notation from the 6th to the 8th Centuries", in: *Musica Disciplina* 57, 5–50.
Górecki, Tomasz/Łajtar, Adam (2012), "An Ostracon from the Christian Hermitage in MMA 1152", in: *Journal of Juristic Papyrology* 42, 135–164.
Habermann, Wolfgang (1998), "Zur chronologischen Verteilung der papyrologischen Zeugnisse", in: *Zeitschrift für Papyrologie und Epigraphik* 122, 144–160.
Haelst, Joseph van (1976), *Catalogue des papyrus littéraires juifs et chrétiens*, Paris.
Head, Peter M. (2013), "Additional Greek Witnesses to the New Testament (Ostraca, Amulets, Inscriptions, and Other Sources)", in: Bart D. Ehrman and Michael W. Holmes (eds.), The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis, 2nd ed. (New Testament Tools, Studies, and Documents 42) Leiden, 429–460.

Handley, Eric W. (1987), "O. Mons Claudianus 13 (ZPE 62, 1986, 71ff.)", in: *Zeitschrift für Papyrologie und Epigraphik* 68, 11–13.
Hoogendijk, Francisca A. J. (2016), "Page of an Oracle Book: Papyrus Kellis 96.150", in: Tomasz Derda, Adam Łajtar and Jakub Urbanik (eds.), *Proceedings of the 27th International Congress of Papyrology, Warsaw, 29 July–3 August 2013*, Warsaw, 595–622.
Immerwahr, Henry R. (1944), "Appendix II. Dipinti from G5, C2", in: Michael I. Rostovtzeff, Alfred R. Bellinger, Frank E. Brown and Charles B. Welles (eds.), *The Excavations at Dura Europos. Preliminary Report of the Ninth Season of Work*, Part 1. *The Agora and Bazaar*, New Haven, 203–265.
Johnston, Alan W. (1985), "A Fourth Century Graffito from the Kerameikos", in: *Mitteilungen des Deutschen Archäologischen Instituts, Athenische Abteilung* 100, 283–307.
Jouguet, Pierre/Lefebvre, Gustave (1904), "Deux ostraka de Thèbes (Égypte)", in: *Bulletin de correspondance hellénique* 28, 201–209.
Kühn, Ernst (1921), "Ein Antiker Schulaufsatz", in: *Berliner Museen* 42, 102–104.
Łajtar, Adam (2006), *Deir el-Bahari in the Hellenistic and Roman Periods: A Study of an Egyptian Temple Based on Greek Sources* (The Journal of Juristic Papyrology Supplements 4), Warsaw.
Lang, Mabel (1976), *The Athenian Agora XXI. Graffiti and Dipinti*, Princeton.
Lang, Mabel L. (1990), *The Athenian Agora XXV. Ostraka*, Princeton.
Larsen, Lillian I. (2018), "'Excavating the Excavations' of Early Monastic Education", in: Lillian I. Larsen and Samuel Rubenson (eds.), *Monastic Education in Late Antiquity*, Cambridge.
Lefebvre, Gustave (1904), "Fragments grecs des Évangiles sur ostraka", in: *Bulletin de l'Institut Français d'Archéologie Orientale* 4, 1–15.
Looze, Laurence de (2016), *The Letters & the Cosmos. How the Alphabet Has Shaped the Western World View of the World*, Toronto.
Lougovaya, Julia (2017), "A Perfect Pangram: A Reconsideration of the Evidence", in: *Greek, Roman, and Byzantine Studies* 57, 162–190.
Lougovaya, Julia (2018), "Writing on Ostraca: Considerations of Material Aspects", in: Francisca A. J. Hoogendijk and Steffie van Gompel (eds.), *The Materiality of Texts from Ancient Egypt* (Papyrologica Lugduno-Batava 35), Leiden, 52–61. Doi: 10.1163/9789004375277_007.
Lougovaya, Julia (2019), "Literary Ostraca: Choice of Material and Interpretation of Text", in: *Proceedings of the 28th International Congress of Papyrology, Barcelona 2016, Universitat Pompeu Fabra*, Barcelona.
Maltomini, Franco (1979), "I papyri greci", in: *Studi Classici e Orientali* 29, 55–122.
Maravela, Anastasia (2015), "Alphabetic Verses and Cipher Alphabets from Western Theban Monasteries: Perspectives on Monastic Literacy in Late Antique Egypt", in: Erika Juhász (ed.) *Byzanz und das Abendland III. Studia Byzantino-Occidentalia*, 67–83.
Maravela, Anastasia (2018), "Homer and Menandri Sententiae in Upper Egyptian Monastic Settings", in: Lillian I. Larsen and Samuel Rubenson (eds.), *Monastic Education in Late Antiquity*, Cambridge, 125–150.
Martín Hernández, Raquel/Torallas Tovar, Sofía (2014), "The Use of the Ostracon in Magical Practice in Late Antique Egypt Magical Handbooks vs. Material Evidence", in: *Studi e Materiali di Storia delle Religioni* 80 (2), 780–800.
Mastronarde, Donald J. (1982), "The London Ostrakon of Eur. Phoin. (P.Lit.Lond. 75)", in: *Zeitschrift für Papyrologie und Epigraphik* 49, 7–14.
Mau, Jürgen/Müller, Wolfgang (1962), "Mathematische Ostraka aus der Berliner Sammlung", in: *Archiv für Papyrusforschung* 17, 1–10.
Mertens, Paul (1975/1976), "Les ostraca littéraires grecs", in: *Orientalia Lovaniensia Periodica* 6–7, 398–409.
Mihálykó, Ágnes T. (2019), *The Christian Liturgical Papyri: An Introduction* (Studien und Texte zu Antike und Christentum 114), Tübingen.

Milne, J. Grafton (1908), "Relics of Graeco-Egyptian Schools", in: *The Journal of Hellenic Studies* 28, 121–132.
Minas-Nerpel, Martina (2007), "A Demotic Inscribed Icosahedron from Dakhleh Oasis", in: *Journal of Egyptian Archaeology* 93, 137–148.
Pack, Roger (1965), *The Greek and Latin Literary Texts from Greco-Roman Egypt*, 2nd ed., Ann Arbor.
Platz-Horster, Gertrud (2017), "Antike Polyeder: Vom Spiel mit Form und Zahl im ptolemaïschen Ägypten zum Kleinod im römischen Europa", in: *Jahrbuch des Deutschen Archäologischen Instituts* 132, 107–185.
Préaux, Claire (1956), "Les prescriptions médicales des ostraca grecs de la Bibliothèque Bodléenne", in: *Chronique d'Égypte* 31, 135–148.
Py, Michel/Adroher Auroux, Andrès M./Sanchez, Corinne (2001), *Corpus des céramiques de l'âge du Fer de Lattes* I (Lattara XIV), Lattes.
Ray, John D. (1976), *The Archive of Hor*, London.
Reggiani, Nicola (2017), *Digital Papyrology I. Methods, Tools and Trends*, Berlin/Boston.
Renberg, Gil H. (2017), *Where Dreams May Come: Incubation Sanctuaries in the Greco-Roman World* (Religions in the Graeco-Roman World 184), Leiden/Boston.
Römer, Cornelia (2003), "Ostraka mit christlichen Texten aus der Sammlung Flinders Petrie", in: *Zeitschrift für Papyrologie und Epigraphik* 145, 183–210.
Römer, Cornelia (2008), "Das zweisprachige Archiv aus der Sammlung Flinders Petrie", in: *Zeitschrift für Papyrologie und Epigraphik* 164, 53–62.
Sijpesteijn, Pieter J. (1984), "Matthäus 1,19–20 auf einem Ostrakon" in: *Zeitschrift für Papyrologie und Epigraphik* 55, 145.
Skeat, Theodore C./Turner, Eric G. (1968), "An Oracle of Hermes Trismegistos at Saqqara", in: *Journal of Egyptian Archaeology* 54, 199–208.
Vandorpe, Katelijn/Clarysse, Willy/Verreth, Herbert (2015), *Graeco-Roman Archives from the Fayum*, Leuven.
Verreth, Herbert/Goldfus, Haim (1999), "A Greek magical (?) Ostrakon from Elousa (Haluza)", in: *Zeitschrift für Papyrologie und Epigraphik* 128, 150–152.
Viereck, Paul (1925), "Drei Ostraka des Berliner Museums" in: *Raccolta di scritti in onore di Giacomo Lumbroso*, Milan, 255–257.
Tsitsiridis, Stavros (2011), "Greek Mime in the Roman Empire (P. Oxy. 413: *Charition and Moicheutria*", in: *Logeion* 1, 184–232.
Ullmann, Lisa (1996), "Two Ostraca with the Niceno-Constantinopolitan Creed in the Israel Museum", in: *Zeitschrift für Papyrologie und Epigraphik* 113, 191–196.
Youtie, Louise C. (1976), "A Medical Prescription for an Eye-Salve (P. Princ. III 155 R)", in: *Zeitschrift für Papyrologie und Epigraphik* 23, 121–129.
Youtie, Louise C. (1977), "O. Bodl. II 2182 and 2185", in: *The Bulletin of the American Society of Papyrologists* 14, 39–43.
Wilamowitz-Moellendorff, Ulrich von (1918), "Dichterfragmente aus der Papyrussammlung der Kgl. Museen", in: *Sitzungsberichte der Preussischen Akademie der Wissenschaften*, Jahrgang 1918, Juli bis Dezember, 728–751.

Photo Credits

Fig. 1: © Adam Bülow-Jacobsen.

III Ostraca in Context: Case Studies

Margaretha Folmer

Hi Aḥuṭab: Aramaic Letter Ostraca from Elephantine

1 Introduction

This contribution is devoted to the Aramaic letter ostraca from Elephantine.[1] These letters form part of a larger body of Aramaic ostraca from the Achaemenid period (ca. 550–330 BCE) which derive primarily from Elephantine and southern Palestine.[2] Elephantine, an island on the Nile located on ancient Egypt's southern border and opposite modern-day Assuan, is well-known for its colony of Judean mercenaries.[3] These mercenaries left behind an impressive body of written documents, datable for the most part to the fifth century BCE. The most famous of these are the Aramaic papyri which refer to a temple on the island dedicated to their God YHW.[4] In other legal documents on papyrus, contract partners with Yahwistic names are usually specified with the ethnicon "Judean" (Aram. *yhwdy*), though "Aramean" (Aram. *'rmy*) also occurs. It seems, at least in some cases, that the term "Aramean" in these papyri refers to the language used by the person mentioned, especially where individuals

1 Aramaic was the lingua franca of the Achaemenid period and an important administrative language. It was used for all kinds of written communications, while potsherds were used for both brief messages and administrative purposes (mostly name-lists and accounts). Its rise as an important language of communication and administration began in the 8th century BCE under the Neo-Assyrian administration. After the fall of the Assyrian empire and the accession of Nebuchadnezzar it continued to be used by the Neo-Babylonian administration. The Achaemenids in turn continued to use the administrative languages used in the Neo-Babylonian empire, i. e. Aramaic, Akkadian, and Elamite. On this, see Folmer 2011.

2 A large number of illegally retrieved ostraca from southern Palestine (Idumea) have flooded the market in recent decennia. They are currently being published by Bezalel Porten and the late Ada Yardeni (Porten/Yardeni 2014; 2016; 2018; a fourth volume is in preparation; Yardeni 2016; these volumes should be consulted for references to previous scholarship on these texts). Most of the ostraca from Idumea are administrative in content.

3 In the Aramaic texts, Elephantine is referred to as *yb* and Assuan as *swn*. The name Elephantine reflects the Greek translation of the name *yb* (which in turn reflects the ancient Egyptian name of the island). The name Assuan reflects the ancient Egyptian, Aramaic, and Greek forms of the name. In this contribution, I will use the conventional names Elephantine and Syene, which both arose in the Hellenistic period.

4 The divine name is generally spelled YHH in the ostraca (cf. YHWH in the Hebrew Bible). The spelling YHH is otherwise found only twice in legal documents from Elephantine (*TAD* B2.7:14 and 3.3:2).

Abbreviations used in this article: Aram. = Aramaic; Cl.-G. = Clermont-Ganneau; f. = feminine; Hebr. = Hebrew; m. = masculine; pl. = plural; PN = personal name; sg. = singular; *TAD* A = Porten/Yardeni 1986; *TAD* B = Porten/Yardeni 1989; *TAD* D = Porten/Yardeni 1999.

https://doi.org/10.1515/9783110712902-007

are identified on one occasion as "Judean" and on another as "Aramean".[5] Nevertheless, ethnic and religious affiliations at Elephantine/Syene are notoriously difficult to determine on the basis of the evidence in the Aramaic papyri.

The ostraca from Elephantine that were found at the beginning of the twentieth century are not as well-known as the papyri. A century after their discovery, their publication was finally completed with the appearance of Hélène Lozachmeur's edition of the Collection Clermont-Ganneau.[6] The reading of these ostraca is very difficult, as most are broken and the ink with which they were written has often faded away. Furthermore, the precise archaeological context of the ostraca is not known, as their findspots were not properly documented by the excavators.

Most of the ostraca from Elephantine are letter ostraca. They are examples of short-distance, intercommunal communications between the population on the island and the population on the mainland. Like the Aramaic papyri, they make it clear that the Judeans living on the island had family members and acquaintances on the main land. They also shed important light on the daily life of the Judean community on the island, as well as their interactions with their neighbors on the mainland. (Ferry boats made travel between the island and the mainland possible, as well as the quick exchange of goods and messages.) However, they have not attracted the attention they deserve; only a few scholars have dealt specifically with the ostraca, while their focus has largely comprised the letter formulae and the religious aspects of these ostraca. Substantial contributions to the discussion (subsequent to Lozachmeur's publication) are the contributions by André Lemaire and Dirk Schwiderski.[7]

5 E. g. Maḥseyah son of Yedaniah, who has a typical Yahwistic name (with the ending *-yh*). In *TAD* B2.6:2 and 2.7:2, a document concerning his property at Elephantine, he is referred to as "an Aramean of Syene" (Aram. *'rmy zy swn*). In *TAD* B2.2:3 and *TAD* B2.4:2, he is referred to as "a Judean" and associated with Elephantine (*TAD* B2.4:2 "a Judean of Elephantine" [Aram. *yhwdy zy yb*]; *TAD* B2.2:3 "a Judean who is in the fortress of Elephantine" [Aram. *yhwdy zy bbyrt yb*]; *TAD* B2.3:2 "a Judean, holding hereditary property at Elephantine" [Aram. *yhwdy mhḥsn byb byrt'*]). For other examples, see Porten 2011, 155, n. 4. In addition, an Aramean community existed in Syene on the mainland. This community appears most clearly in the Hermopolis papyri (named after their findspot at Hermopolis Magna). These private letters are addressed in part to persons living in Syene (*TAD* A2.1–2.4). The names of the persons addressed in these letters are clearly Aramean/Babylonian, while the temples mentioned in the letters are dedicated to Aramean/Babylonian deities: Nabu, the Queen of Heaven (Aram. *mlkt šmyn*), Bethel and Banit.

6 Lozachmeur 2006.

7 Lemaire 2011; Schwiderski 2000, 2013.

2 Elephantine Papyri and Ostraca: Short History of their Discovery

Incidental Aramaic finds from Egypt have been known to us since the early eighteenth century, while Elephantine emerged as a findspot for Aramaic papyri at the beginning of the nineteenth century. The earliest of the Aramaic finds known to us is the so-called "Carpentras stele", a funerary inscription of unknown provenance. Giovan Battista Belzoni was the first to acquire Aramaic papyri during his travels in Egypt between 1815–1819. These letters were published by Edda Bresciani in 1960.[8] In 1893, Charles Edwin Wilbour acquired the Ananyah archive, which was published by Emil Kraeling six decades later.[9] The acquisition of this archive was followed by the acquisition of the Mibṭaḥyah archive in 1904 by Lady William Cecil and Sir Robert Mond. This archive was promptly published by Archibald Sayce and Arthur Cowley, in addition to several ostraca.[10]

The content of these documents, which mention a temple at Elephantine devoted to YHW among other things, provided a strong incentive for German and French excavations at Elephantine at the beginning of the twentieth century. The excavations by the French excavators in particular were motivated by their ambition to find the remains of the Judean temple as well as new Aramaic papyri.

The different sectors allotted to the German and French excavators yielded different textual materials.[11] The first German excavation was led by Otto Rubensohn in 1906–1907; this was followed by an excavation led by Friedrich Zucker and Walter Honroth in 1907–1908.[12] During these excavations, several major papyrus finds were made, including the Yedanyah archive, the Aramaic version of the Bisitun inscription by Darius the Great, and the Aḥiqar text. Numerous legal documents, lists, and accounts on papyrus were also found, as well as a handful of ostraca, all rapidly published by Eduard Sachau.[13]

The French excavations were led by Charles Clermont-Ganneau (1906–1911).[14] Instead of papyri, the French excavators found hundreds of ostraca. Most of the Aramaic ostraca known to us were found or acquired during these four campaigns. The

8 Bresciani 1960.

9 Kraeling 1953.

10 Sayce/Cowley 1906.

11 The German excavators received a concession for the south-west area and the French for the south-east area of the antique town located in the southern part of the island.

12 See Honroth/Rubensohn/Zucker 1909–1910; see also Müller 1980.

13 Sachau 1911. In the following, personal names from Elephantine are transliterated according to Porten/Lund 2002.

14 First season in 1906–1907; second season in 1907–1908. Successive French excavations were led from a distance by Clermont-Ganneau; the task of daily supervision was undertaken by Joseph-Étienne Gautier (third season in 1908–1909) and Jean Clédat (fourth season in 1910–1911).

ostraca were brought to the Musée du Louvre in Paris and are known as the Collection Clermont-Ganneau. This collection consists of administrative texts and short messages, mostly incomplete and/or written on broken ostraca, a factor which may have contributed to the slow publication of these texts.

As no published reports of the French excavations exist, scholars are entirely dependent on the succinct descriptions and sketches/plans that accompany these finds in five of Clermont-Ganneau's notebooks. It is clear from the notes and sketches that the ostraca were found in the Judean quarter located in the north-east of the excavated antique town. References to their findspots are usually vague ("quartier [araméen]", "extrême nord", "nord", "nord E", "région E", "contre limite allemande" [the area where the dividing line between the French and German excavations ran], "au fond de la longue ruelle SN", "au sud de la grande rue", "la grande rue OE", "place"). Only in rare cases is a slightly more specific findspot given, such as "petit silo, a moitié détruit, au centre de l'éperon", "dans l'éperon" (Cl. G. nos. 28–44).[15] However, we do know which ostraca were found in the same environment, as the ostraca are numbered in the order in which they were found.

Initially, only a few of the better preserved and more interesting letter ostraca discovered by the French were published, at first by André Dupont-Sommer (Cl.-G. nos. 16, 44, 70, 152, 169, 186, 277), and later on by his pupil, Lozachmeur (Cl.-G. nos. 125, 228).[16] Most of the ostraca remained unpublished until Lozachmeur's publication of the entire collection in 2006. A relatively small number of ostraca were also found or acquired by persons without a connection to the French excavations. These ended up in several museum collections in Europe (Berlin, Münich, Cambridge, London, Oxford, Vienna) and in Egypt (Cairo). These ostraca were published over the years in several periodicals.[17] In the late 1990s, these ostraca were brought together and reread by Bezalel Porten and Ada Yardeni in their fourth and final volume of *The Textbook of Aramaic Documents from Ancient Egypt* (*TAD* D7.1–54[18]). Porten and Yardeni also included seven previously unpublished letter ostraca,[19] while the section *TAD* D7 also includes nine letter ostraca from the Collection Clermont-Ganneau that had already been published by Dupont-Sommer and Lozachmeur.[20] In recent years, additional ostraca have been discovered during excavations under the auspices of the joint mission of the *Deutsches Archäologisches Institut Kairo* and the *Schweizerisches*

15 See Lozachmeur 2006, vol. 1, 76, and vol. 2 (plate 28–76).

16 For bibliographic references, see *TAD* D, XXIX–XXX.

17 For the *editio princeps* of these ostraca, see the bibliographic references in *TAD* D, XXIX–XXX.

18 *TAD* D7.55–57 are from the Hellenistic period (probably from Edfu).

19 *TAD* D7.27, 7.28, 7.34, 7.47, 7.48, 7.50 (Berlin) and *TAD* D7.42 (Oxford Bodleian no. 6).

20 Dupont-Sommer: Cl.-G. no. 16 (=*TAD* D7.7), Cl.-G. no. 44 (=*TAD* D7.10), Cl.-G. no. 70 (=*TAD* D7.21), Cl.-G. no. 152 (=*TAD* D7.16), Cl.-G. no. 169 (=*TAD* D7.2), Cl.-G. no. 186 (=*TAD* D7.35), Cl.-G. no. 277 (=*TAD* D7.30); Lozachmeur: Cl.-G. no. 125 (=*TAD* D7.44), Cl.-G. no. 228 (=*TAD* D7.5). For bibliographic details, see *TAD* D, XXIX–XXX.

Institut für Ägyptische Bauforschung und Altertumskunde in Kairo. These ostraca will be published in the near future by Porten and Lemaire.

The publication by Lozachmeur contains 259 letter ostraca from fifth century Elephantine.[21] To this number should be added the 45 letter ostraca in *TAD* D that do not belong to the Clermont-Ganneau collection.[22] This adds up to a total of 304 letter ostraca from Elephantine; as has been mentioned already, however, most of these are incomplete. There are only ten letter ostraca that are incontrovertibly complete (Cl.-G. nos. 16, 70, 169, 239, *TAD* D7.6, 7.8, 7.9, 7.17, 7.20, 7.29). To these ten ostraca, three additional items should probably be added (Cl.-G. nos. 42, 152, 223).[23] Most of these complete pieces were published prior to the edition of the Collection Clermont-Ganneau in 2006.[24]

3 The Letter Ostraca: General Information

Many individual names in the letter ostraca also appear in the papyri, but it is generally not possible to link these names across the two corpora.[25] This is mostly because the patronymic—which occurs frequently in the papyri—is rarely mentioned in the ostraca. The ostraca are also not dated, whereas our main source of personal names—legal documents from Elephantine—are dated. As a result, names that occur in the ostraca may in theory refer to several individuals in the papyri. Sometimes a name that appears frequently in the letter ostraca is not mentioned in the papyri at all. One such case is that of Aḥuṭab, a woman who emerges in the letter ostraca as an active individual within the Elephantine community; the fact that she does not appear in the papyri may be entirely incidental.

The letter ostraca were sent from Elephantine to Syene on the eastern bank of the Nile, and from Syene to Elephantine. Both Elephantine (*yb*) and Syene (*swn*) are mentioned frequently in the ostraca (ex. nos. 1–4). The ostraca were sent by ferry boats. These ferry boats, which transported both persons and goods, are also mentioned regularly in the ostraca (Aram. *ʾlp* "ferry") (ex. nos. 4–5). Below are some examples:

---

21 From a total number of 280 ostraca in the main collection.

22 From 54 letter ostraca in *TAD* D7.1-54.

23 Cl.-G. no. 277—neatly inscribed on a rectangular fragment of the rim of a cooking-pot—is a complete ostracon, but it differs from the other pieces in that it probably represents a scribal exercise or draft. It includes an address and the beginning of a wish for well-being: "To my brother Ḥaggai, your brother Jarḥu. The welfare of my brother Bel and Nabu, Shamash and Ner_{gal}" (Aram. *ʾl ʾḥy ḥgy ʾḥwk yrḥw šlm ʾḥy bl wnbw šmš wnr*$_{gl}$). Here the text breaks off, even though there is space left for more writing. Both the type of address and the wish are unusual for letter ostraca from Elephantine.

24 With the exception of Cl.-G. nos. 42, 223, 239. It is unfortunate that there is no edition at present of the ostraca from Elephantine which includes all the ostraca that are known today.

25 See Lozachmeur 2006, vol. 1, 463–493.

Fig. 1: Drawing of letter ostracon Cl.-G. no. 239 by Hélène Lozachmeur (taken from Lozachmeur 2006, vol. 2, plate 254).

1) *TAD* D7.4:2f. "Let not Nathan go to Syene" (Aram. *'l yšg' ntn lswn*)
2) *TAD* D7.24:2f. "I will go to (lit. "enter") Syene today" (Aram. *'l swn ym' znh*)
3) *TAD* D7.1:5f. "Go, stand with him in Syene this day" (Aram. *'zly qwmy 'mh bswn ywm' znh*)
4) *TAD* D 7.2:4f. "Buy from the boats of grain which are in Yeb" (Aram. *zbnw mn 'lpy 'bwr' zy byb*)
5) *TAD* D7.16:2 "Meet the boat tomorrow on Sabbat" (Aram. *'rqy 'lp' mḥr bšbh*)

The messages were borne by messengers. Several letter ostraca refer to the fact that the documents were sent "by the hand (=through) of" (followed by a PN).[26] In one case, the sender specifically refers to his daughters as the message-bearers (ex. no. 6):

6) *TAD* D7.20 conv. l. 10f.[27] "Send me (a message) by the hand of my daughters" (Aram. *byd bnty šlḥ l*[*y*])

Most of the letter ostraca consist of short messages that detail only essential information. At the beginning of the twentieth century they were compared to telegrams; at the start of our millennium, to SMS messages.[28] Today, they might best be compared

26 In the expression "to send a message by the hand of PN" (Aram. *šlḥ byd* PN). The verb *šlḥ* "to send" is specifically used for the sending of messages. For the sending of goods another verb is normally used. See Folmer 1995, 657.

27 Alternatively, the following reconstruction and interpretation is possible: "I have sent you (a message) by the hand of my daughters" / "Herewith, I send you (a message) by the hand of my daughters" (10. *byd bnty šlḥ*[*t*] 11. *l*[*k*]).

28 See Lozachmeur 2006 vol. 1, 86.

Fig. 2: Drawing of letter ostracon *TAD* D7.8 by Ada Yardeni (taken from *TAD* D, 160).

to WhatsApp messages. Several of the ostraca are quite sizeable and include longer messages or even two different messages, such as the one cited below (*TAD* D7.8, ex. no. 7). This ostracon, like many other ostraca, bears writing on both concave and convex sides; usually, the scribe began on the concave and continued on the convex. The first of the two messages in *TAD* D7.8 is addressed to Uriyah, the second one to Aḥuṭab.[29] The second message starts on the convex in the middle of line 12 (ex. no. 7):

7) *TAD* D7.8 (Fig. 2):

	concave	
Hi Uriyah! Now:	1	*šlm ’wryh k‘n*
look, your big ewe	2	*hlw t’t’ zy lk*
is ready[30] for shearing.	3	*rbt’ mṭ’t lmgz*
Its first wool	4	*‘mr’ zylh qdm’*
is being torn away by the thorns. Now:	5	*mtmrṭ bkb’ k‘n*
come and shear it. On the day	6	*’th wgzh bywm*
you will wash it	7	*zy trḥ‘nh*
you will shear it.	8	*tgznh*

29 Aḥuṭab is one of the individuals most frequently addressed in the ostraca. She is addressed in at least nine letters (Cl.-G. nos. 78, 135, 157, 169 [see ex. no. 20], 202, 228; *TAD* D7.3, 7.4, 7.8 [second message; see ex. no. 7]) and is mentioned in at least thirteen other ostraca. She is also connected to all the other individuals frequently addressed in the ostraca (Yedanyah, Uriyah, Natan, Mikayah). Unfortunately, her name is found only in the ostraca; it does not figure in the Elephantine papyri. Another example of an ostracon with a double message is *TAD* D7.20. In this instance, the two sides of the ostracon are used for two distinct messages. The two messages have the same addressee, but the sender—mentioned in both cases by name—is different.

30 Literally “has reached”.

	convex	
And if you do not go out	9	*whn l' tnpq*
today, send (a message)	10	*ywm' znh šlḥ*
to me, so that I can wash it before	11	*ly w'rḥ'h 'd*
you go out. Hi Aḥuṭab!	12	*tnpq šlm 'ḥṭb*
Now: on (i. e., from) this bread	13	*k'n 'l lḥm' znh*
we can eat until tomorrow	14	*n'kl 'd mḥr*
evening. One ardab of flour	15	*'rwbh ' qmḥ*
is left here.	16	*š'r tnh*

The smallest complete ostracon known to us is a small triangular fragment whose message consists of eight Aramaic words (ex. no. 8). The patronymic in the address here is exceptional (see the beginning of this section):

8) Cl.-G. no. 239 (see Fig. 1)

	concave	
Hi Mešu-	1	*šlm mš*
llam son of	2	*lm br*
Hošea'!	3	*hwš'*
Now:	4	*k'n*
	convex	
send	1	*hwšr*
me a ???-	2	*ly kry*
?	3	*ṣ*

Usually the messages contain requests for (immediate) food supplies (often bread, flour, salt, or vegetables) or they deal with various practicalities (and include directives to take care of someone, to mistrust someone, to look (out) for someone, or to help someone). Notably absent are inquiries about people's welfare, as well as expression of emotions.

Adverbs of time such as "yesterday", "today", and "tomorrow" are frequent in the letter ostraca.[31] They typically refer to a point in time close to the time of writing: the near future, the non-remote past, or the day of the message's delivery. Occasional references to the upcoming Sabbat—as in ex. no. 19 below—or Passover (*TAD* D7.24:5) also occur. These adverbs of time give the letters some sense of urgency and are an indicator of the message's ephemeral character. Some examples follow:

'tml, "yesterday" (ex. nos. 9–11):

9) *TAD* D7.33:1f. "Now: The child came to you yesterday because of a jar" *k'nt wld' 'l lk 'tml 'dbr sp' 1*

10) Cl.-G. no. 125:7–9 "Look, the bread that you sent to me yesterday is im[pure" *h' lḥm' zy hwš*[*rt*]*m ly 'tml ṭ*[*m'*]

11) *TAD* D 7.47 "Now: I have eaten yesterday" [*k*]*'n 'klt 'tml*

31 Cf. also Lemaire 2011, 365, who uses these adverbs of time to adduce the letter ostraca as evidence of "everyday life".

ywm' znh, "today" (ex. nos. 12–16):

12) *TAD* D7.48:2f. "Send me a little bread today" *hwšry ly z'yr lḥm' ywm' znh*
13) *TAD* D7.1:5–7 "Go, stand by him in Syene today" *'zly qwmy 'mh bswn ywm' znh*
14) Cl.-G. no. 169:1f. "Now: send me a little salt today" *k'n hwšry ly z'yr mlḥ ywm' znh*
15) *TAD* D7.3:4 "Go today" [*'z*]*ly ywm' znh*
16) *TAD* D7.8:9–12 "And if you do not go out today, send me a message" *whn l' tnpq ywm' znh šlḥ ly*

mḥr, "tomorrow" (ex. nos. 17–19):

17) *TAD* D7.8:13–15 "Now: on this bread we will eat until tomorrow evening" *kʿn ʿl lḥm' znh n'kl ʿd mḥr ʿrwbh*
18) Cl.-G. no. 152:1f. "Now: look, I will send vegetables tomorrow" *k'nt h' bql' 'wšr mḥr*
19) *TAD* D7.16:2 "Meet the boat tomorrow on Sabbat" *'rqy 'lp' mḥr bšbh*

4 Epistolary Characteristics of the Letter Ostraca

Exemplary of the brief nature of the letter ostraca is their compact epistolary style. The characteristics of most of the ostraca may be summed up as follows:

- "Greetings PN" / "Hi PN" (Aram. *šlm* + PN) form the predominant type of address;
- The wish of well-being is included in the address;
- The patronymic of the addressee is usually not mentioned;
- The sender is usually not mentioned;
- A closing formula is exceptional;
- Sometimes the messages lack an address and begin immediately with an imperative or with the transition marker "now then" (Aram. *k'n* / *k'nt*).[32]

An example of a complete letter ostracon that features many of the epistolary elements indicated above is Cl.-G. no. 169 (ex. no. 20):

20) Cl.-G. no. 169

	concave	
[Gr]eetings Aḥuṭab! Now, send	1	[*š*]*lm 'ḥwṭb k'n hwšry*
me a little salt today.	2	*ly z'yr mlḥ ywm' znh*
And if there isn't salt in the house	3	*whn mlḥ l'yt bbyt'*
buy it from the grain-boats	4	*zbnw mn 'lpy 'bwr'*
which are in Elephantine. Look,	5	*zy byb hlw*
I don't have	6	*l'yty ly*
	convex	
any salt to put in the flour.	7	*mlḥ lmšm bqmḥ* /

32 The transition marker immediately follows the address.

This ostracon adheres to most of the yardsticks mentioned above: it includes the address *šlm* PN; it does not identify the addressee (Aḥuṭab) by her father's name; the sender's name is absent; and there is no closing formula. There are exceptions to these generalizations amongst the ostraca, the most noteworthy of which are listed in table 1, but they are relatively few in number. Many of these exceptions seem to have been introduced in the ostraca from the epistolary conventions in private letters on papyrus.[33]

In several isolated cases, the message begins right off with the transition marker, but these examples are few (*TAD* D7.9 and *TAD* D7.24). The reason for this may be the loss of the original address. In other cases, it is clear that the letter simply begins with the transition marker. Thus, *TAD* D7.9 seems to be a complete ostracon: all its available space was used up by the scribe, while supra-linear additions were made at the end of the line because the scribe ran out of space. The address was plainly omitted from this letter ostracon, as pl. 2m. and sg. 2f. verb forms and pronouns are used to refer to the addressee(s). The person who delivered the messages probably indicated for whom the message was intended orally. The text on the concave side of *TAD* D7.9 reads as follows (ex. no. 21):[34]

21) *TAD* D7.9

	concave	
Now: look (pl. 2m.), the gift (?) which Uriyah gave me for the libation,	1	*kʿnt ḥzw ḫntʾ zy yhb ly ʾwryh lnskʾ*
give (sg. 2f.) it to Gemaryah the son of Aḥio,	2	*hbyh lgmryh br ʾḫyw wyʿrkh mn*
in order that he will prepare it from the beer.	3	*škrʾ wblwh lʾwryʾ ʾp pḥzy tṭwsry*
And carry (pl. 2m.) it to Uriyah. Moreover, look (sg. 2f.), our Tetosiri,		
they should inscribe her on her arm, above the inscription	4	*zyln yktbwh ʿl drʿh ʿlʾ mn ktbtʾ*
which is on her arm. Look, thus he has/it was sent:	5	*zy ʿl drʿh hlw kn šlḫ lʾmr zy*
"they do not find the slave	6	*lʾ yškḫn ʿlymth*
inscribed in	7	*mktbh ʿl*
his name"	8	*šmh*

33 A clear case is Cl.-G. no. 70. This is a very rare example of a letter ostracon with a closing formula: "for your well-being I send the letter" (Aram. *lšlmk šlḥt spr'*). Traces of the same formula are found in another fragmentary ostracon as well: *TAD* D7.48 "for your welfare I send [...]" (Aram. *lšlmkm šlḥt* [...]). Closing formulae like this are common in private letters on papyrus, though the extant examples conclude with "this letter" (Aram. *spr' znh*) (see below, section 5). The same is true for the address in Cl.-G. 70 (l. 1f. "to my lord Mikayah, your servant Gaddul" [Aram. *'l mry mykyh 'bdk gdl*]), which contains the names of the addressee and the sender, both preceded by a noun which indicates the relative social relation between the two correspondents. The wish of well-being that is found in this letter ostracon is also unique for the letter ostraca but common in private letters on papyrus. (l. 2f. "Welfare and life I send you. I bless you by YHH and Khnum" [Aram. *šlm wḥyn šlḥt lk brktk lyhh wlḫnwm*]). The ostracon appears to be complete.

34 Another example is *TAD* D7.24.

The text on the convex of this ostracon also begins with the transition marker. It probably marks the transition to a new topic within the same message (ex. no. 22):
22) "Now: ... and moreover, be careful" (sg. 2f.) *k'n ... ... w'p hzdhry*

The following ostracon (ex. no. 23) begins with an order (imperative pl. 2m.). This ostracon is probably complete, as evidenced by the fact that all the available space has been used for writing.[35] Its first four lines read:[36]
23) *TAD* D7.7

	concave	
Send me	1	*hwšrw ly*
two qabs of salt	2	*mlḥ qbn 2*
fine and coarse	3	*dqq wḥṣp*
the basket on it	4	*qpt' 'lwhy*

5 Comparison with the Epistolary Style in Private Letters on Papyrus

For comparative purposes, the letter ostraca can be contrasted with the letters on papyrus.[37] The Hermopolis papyri and the Padua papyri are particularly suited to this purpose as they represent private letters: they were written by family members and deal with private matters.

Private letters on papyrus were sent over longer distances and were probably delivered by "private messengers", that is, persons who carried these letters along with other stuff. It was thus important to include information about the sender within the letter itself. By contrast, letter ostraca did not travel far and were delivered by family members or acquaintances. Generally speaking, it is safe to say that ostraca primarily served for short distance communications, while papyri were reserved for long distance communications. For the unusual use of an ostracon for a long distance communication, see below, section 7. Letters on papyri also tend to go into more detail

35 The size of the letters on the convex is smaller in the last two lines of the message due to a lack of space.
36 These are followed by a second topic that is introduced with *'p ḥzy* "moreover", "look" (frozen imperative sg. 2m. form) in l. 5 on the concave. This in turn is followed by an order in the sg. 2m. form. As in *TAD* D7.9, singular and plural verb forms are used to refer to the addressees.
37 Official correspondences (such as the Aršama and Akhvamazda correspondences) have been left out of consideration here. For Aršama, see *TAD* A6.1–16; for Akhvamazda, see Naveh and Shaked 2012, nos. A1–8. These originated in satrapal bureaus and their content, outlook, and epistolary conventions differ greatly from private letters on papyrus, and even more so from the ostraca. On these conventions, see Folmer 2017.

about specific issues, and include more room for personal concern, as in the following letter found in Hermopolis Magna (ex. no. 24):

24) *TAD* A 2.5:8f. "And as for me, I was bitten by a snake and I was dying and you did not send (a message to ask) whether I was alive or dead." (Aram. *w'nh nktny ḥwyh whwt myt wlh šlḥtn hn ḥy 'nh whn mt 'nh*)

Apart from differences in content, there are important epistolary differences between letter ostraca and letters on papyrus. One of the most conspicuous differences is that the sender generally remains unmentioned in letter ostraca; in letters on papyrus, however, the sender is always mentioned. Wishes of well-being can also run to some length in letters on papyrus; in the ostraca they are usually included in the address (*šlm* PN). The differences between letters on papyrus and letters on ostraca can be explained by the limited possibilities for writing on potsherds. The main differences in the epistolary style between letter ostraca and letters on papyrus are shown in table 1 (without pretention to completeness). The following are some examples of wishes of well-being in private letters on papyrus (ex. nos. 25–26):

25) *TAD* A2.2 "I bless you by Ptaḥ, may he show me your face in peace" (Aram. *brktky lpṯḥ zy yḥzny 'pyky bšlm*) (= Hermopolis papyrus no. 2)

26) *TAD* A3.3 "[I send you] well-being and strength" (Aram. *šlm wšrrt* [*ḥwšrt lk*]) (= Padua papyrus no. 1)

Many private letters on papyrus also conclude with a formula: "I send this letter for your well-being" (Aram. *lšlmk/ky/km/kn šlḥt spr'/h znh*; for references see table 1). This is extremely rare in letter ostraca (on Cl.-G. no. 70, which shows other characteristics of private letters on papyrus, see n. 33).

Tab. 1: Comparative data: epistolary style in letter ostraca and letters on papyrus (Hermopolis, Padua).

	Ostraca	**Papyri**
Internal address: addressee	– "greetings PN"/"hi PN" (Aram. *šlm* PN) (usual) – "to PN" (Aram. *'l* PN[38] and *'l* PN[39]) (rare) – no patronymic[40]	– "to PN" (Aram. *'l* or *'l* [rare]) – no patronymic
Internal address: sender	– usually not indicated[41] – no patronymic[42]	– always indicated (sometimes preceded by *mn*; no patronymic)

38 Relatively rare: *TAD* D7.1, 7.6, 7.21, 7.30; Cl.-G. nos. 70, 87, 277.

39 Rare: *TAD* D7.13, 7.29; Cl.-G. nos. 144, 277.

40 Notable exceptions: Cl.-G. no. 239 "Hi Mešullam son of Hošea'" (Aram. *'l mšlm mšlm br ḥwš'*); *TAD* D7.13 "to PN son of ..." (Aram. *'l* PN *br*[...]).

Tab. 1: continued.

	Ostraca	Papyri
Nouns giving expression to the social relation between addressee and sender	– usually not indicated[43]	– often indicated: "my/your brother", "my sister", "my mother", "your servant", "my master" etc.
Wish of well-being	– *šlm* PN (incl. in the address) – *šlm* + pron. sf. 2 ("may you be well") (Cl.-G. no. 222; *TAD* D7.5, 7.6) – longer formulae in Cl.-G. nos. 70, 277; *TAD* D7.1[44]	– always present, but never included in the address (i. e. never *šlm* PN at the beginning of a letter) – always present (long or short)[45] – often people make inquiries after s. o. welfare (*š'l šlm* + pron. sf./PN)
Transition marker "now"	*k'n* / *k'nt*[46]	*wk't* (*TAD* A2.7 *wk'n*)
Closing formula	– absent[47]	– present: "for your well-being I send this letter" *lšlmk/ky/km/kn šlḥt spr'/h znh* (*TAD* A2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.4; absent in 3.3)
External address	not applicable	– present (in finalized letters)
Addressee in external address	not applicable	– present – more often without a patronymic (*TAD* A2.1, 2.2, 2.4, 2.5, 2.7) than with a patronymic (*TAD* A2.3, 3.3 and probably in A3.4)
Sender in external address	not applicable	– present – more often with a patronymic (*TAD* A2.1, 2.2, 2.4, 2.5) than without a patronymic (*TAD* A2.3, 2.7)

41 Notable exceptions: *TAD* D7.20 (1st and 2nd message); *TAD* D7.22.
42 Notable exception, with the preposition *mn* "from": *TAD* D7.20 "from PN son of PN" (Aram. *mn ntn br gmryh*).
43 Notable exceptions: *TAD* D7.30 "to my brother PN" (Aram. *'l 'ḫy ḥgy*); *TAD* D7.1 "to my mother PN" (Aram. *'l 'my qwylyh*"); *TAD* D7.21 "to my Lord PN" (Aram. *'l mry mykyh*); Cl.-G. no. 277 "to my brother PN, your brother PN" (Aram. *'l 'ḫy ḥgy 'ḫwk yrḥw*); *TAD* D7.22 "your brother PN" (Aram. *'ḫwk myk*[*yh*]).
44 See n. 23 and n. 33.
45 Even when the tone of the letter is angry or indignant (*TAD* A2.5). Sometimes *šlm* PN follows a wish of well-being (*TAD* A2.1, 2.3, 2.4, 2.7) or appears later in the letter (*TAD* A2.2, 2.6, 3.4).
46 The form *k't* of the transition marker "now" is found only sporadically in ostraca (Cl.-G. no. 240; *TAD* D7.31). The form *wk't*, which is standard in letters on papyrus and leather, is nowhere attested in the corpus of letter ostraca.
47 Notable exceptions: Cl.-G. no. 70 "for your well-being I send the letter" (Aram. *lšlmk šlḥt spr'*); *TAD* D7.48 "for your well-being I send[…" (Aram. *lšlmkm šlḥt*[…).

6 Pottery, Scribal Utensils, and Usage of the Sherds

6.1 Scribes

On the basis of the handwriting on 32 letter ostraca known to him at the time, Joseph Naveh concluded that the letter ostraca from Elephantine were written by the same scribe.[48] Naveh assumed that this scribe worked on the wharf of Syene around 475 BCE (this assumption was adopted in *TAD* D). Lozachmeur has shown that the large majority of ostraca probably come from the first half of the fifth century BCE, but she is reluctant to attribute these ostraca to one hand.[49]

Many people at the time could scribble their own names (as the lists of witnesses at the end of legal documents show) but this does not imply that there was a high rate of literacy at Elephantine. In any case, the presence of one or more (official) scribes who offered their skills and services to the members of the community is more than likely.

6.2 Pottery

Examination of the sherds has led to the conclusion that approximately 80 % of the ostraca derive from large ribbed storage jars with two handles.[50] Most of the ostraca were taken from the belly of these jars; some were taken from other parts, such as the neck, rim, and bottom. The date of this type of pottery is congruent with the date of the script of the majority of ostraca (fifth century BCE).[51]

6.3 Scribal Utensils

As in the Levant, the reed pen was the principal writing instrument of scribes writing in Aramaic in pre-Hellenistic Egypt. These pens were cut from the stems of *juncus maritimus* (and from the local variant *juncus maritimus arabicus* in Egypt).[52] For writing Aramaic on papyrus, a well-cut reed pen from the stem of a sea reed was used.

48 See Naveh 1970, 37 f. Naveh was not sure about Cl.-G. no. 70, as its writing is more formal (see Naveh 1970, 39, n. 89). Several ostraca were later added to Naveh's list of ostraca (for an overview, see Folmer 1995, 22, n. 124).

49 Lozachmeur 2006, 146, 154.

50 On this type of ribbed jar, see David Aston's study of the pottery from Elephantine (Aston 1999). This specific type of pottery was produced in the region of Thebes in the late Saitic and Persian period and is known as Aston type I.

51 Lozachmeur 2006, 133. The pottery that was used for writing has been studied by Pascale Ballet (in Lozachmeur 2006, 106–143 [Étude céramologique]).

52 See Gerrit van der Kooij 1976, 31–35.

The reed pen could also be used as a "brush" (as was customary in Egypt).[53] Among the objects found at Elephantine was a palette which contained several brushes and ink receptacles with traces of black ink; this palette bears an unintelligible Aramaic inscription on one of its sides.[54] Reed pens were probably also used for the writing of the letter ostraca from Elephantine; they were deployed as both a pen and as a brush, but confirmation requires a thorough examination of the ostraca.

6.4 Concave/Convex

Most of the letter ostraca were written on the concave of the ostracon, with the obvious goal of avoiding the ribbed convex as a writing surface. If the scribe needed more space, he continued on the convex. The writing often runs parallel or perpendicular to the ribs, but oblique writing is found as well,[55] even on the convex. In principle, every available space on the sherd could be used, including the fracture surface, rims, and bottom.

6.5 Selection and Reuse of Sherds

It appears that ostraca were not selected at random. Several ostraca have an almost rectangular form (e. g. *TAD* D7.8; see Fig. 2). It may well be that these ostraca were reused due to their form. In fact, many ostraca show traces of earlier writing. At least at Elephantine, it appears to have been common practice to reuse ostraca. Before reuse, the ink would have been washed or rubbed away (at least to some extent). For that reason, the term "palimpsest" is used in literature. The fact that most of the ostraca are incomplete and were further fragmentized after their use as ostracon may be a sign that, at some point, ostraca were cast away, perhaps in garbage pits.

6.6 Flipping the Ostracon

In the majority of cases, if the scribe wanted to continue writing on the convex, he would flip the ostracon over its vertical axis (like a book). Less frequently, the scribe might flip the ostracon over its horizontal axis, which was the normal practice in the papyri (both letters and legal documents).[56] Once the scribe had reached the bottom

53 Lucas/Harris 1989, 365.
54 Acquired by Charles Edwin Wilbour in 1893. For a photo of this palette, see Bleiberg 2002, 25, fig. 12. For the inscription, see *TAD* D13.1.
55 Lozachmeur 2006, 162.
56 See Porten 1979, 80–81, 88–89.

of the papyrus, he would flip it over its horizontal axis to continue writing on top of the verso (coinciding with the bottom of the recto).

6.7 Corrections

Quite often the scribe made corrections on the ostracon. These corrections were usually added by the same hand above the line, as in the papyri. Corrections might appear anywhere in a given line, while additions above the line also appear at the end of lines, but these are of a different nature: they reveal a certain reluctance to start a word at the end of the line and continue the word on a new line. This may well reflect the practice of writing on papyrus, where a word break at the end of the line was avoided. A good example of this is the first draft of the famous petition from the authorities in Palestine for permission to reconstruct the local Temple of YHW (*TAD* A4.7). Only in rare cases in the ostraca were words started at the end of a line and continued at the beginning of the next; this occurs mostly on very small ostraca, such as Cl.-G. no. 239 (see Fig. 1).

7 Other Letter Ostraca

Aramaic was widely used in the Neo-Assyrian empire as an administrative language, though only one letter ostracon in Aramaic is known to have survived from this period, and most of our evidence for the use of Aramaic in this period derives from bilingual Akkadian and Aramaic and monolingual Aramaic inscriptions on clay-tablets. This ostracon is dated to the middle of the seventh century BCE and is known as the Assur ostracon.

The Assur ostracon was written in ink on a very large potsherd preserved in fragments. At its tallest, it is approximately 42 cm high; at its broadest, it is approximately 60 cm wide—all in all, a very unusual size for an ostracon. (The Uriyah ostracon from Elephantine, by contrast, is at its tallest approximately 9 cm high and 7 cm wide at its broadest.) Its correspondents are two high officials with Assyrian names: Bel-eṭir and Pir'-Amur(ru).[57] As such, the ostracon may *possibly* be said to demonstrate that it was not unusual for Assyrian officials to conduct their correspondence in Aramaic (rather than in Assyrian), at least where state affairs (both political and military) were concerned.[58]

57 See Fales 2010, 198.

58 Radner 2014, 85. By contrast, Fales interprets the ostracon as an example of a private communication. In Fales' reading, private problems were resolved in the spoken language (Aramaic) rather than

The place from where this letter was sent—Assur or Babylon—is disputed.[59] As it was found in Assur, many scholars are of the opinion that the text was written in Babylon. Mario Fales, however, has raised the possibility that the Aramaic ostracon is a draft and that the final text was copied onto perishable material and sent from Assur to the addressee in Babylon.[60] This is an attractive theory, as it is difficult to imagine why such a large and heavy potsherd was selected for the purpose of long distance communication.

The survival of only one letter ostracon from Babylon may be down to the disposal of drafts once they had been copied from ostraca onto papyrus or leather. This remains a best guess, however.[61] It is off course possible to imagine that, in the case of the Assur ostracon, the sender preserved the ostracon (i. e. the draft) for his own archive, but this still does not explain why no other similar ostraca have been found.

The Aramaic Assur ostracon is important in its own right, but there exist much closer parallels to the letter ostraca from Elephantine. Ancient letter ostraca written by Judeans were inscribed in other places as well, and the Arad letter ostraca, written in Hebrew, should be mentioned here.[62] These letter ostraca, addressed to a certain Elyašib, were found in a military fortress at Tell Arad, located in the Negev desert of southern Palestine (Arad nos. 1–16, 18). These ostraca are datable to the final days of the Judean monarchy (sixth century BCE).[63] Elyašib was probably an officer in charge of the food supplies for this Judean desert fortress, as the ostraca deal with the distribution of rations. The ostraca commence with the address, which contains the preposition "to" (Hebr. *'l*), followed by the personal name of the person addressed without a patronymic: "to Elyašib" (Hebr. *'l 'lyšb*).[64] The address is immediately followed by the transition marker "now then" (Hebr. *w't*), which is followed by an imperative or equivalent verb form. As in the majority of Elephantine letter ostraca, the name of the sender is omitted in these ostraca. This implies that the sender was known to the addressee or that the sender was made known by the person who delivered the message (ex. no. 27):[65]

---

the official language of the empire (Assyrian) (Fales 2010, 200). The underlying assumption is that private letters were written in the spoken language.

59 That the letter was indeed sent is apparent from l. 19 which mentions a messenger.

60 Fales 2010, 198.

61 Another explanation is found in Radner (2014, 85–86). Radner explains the absence of textual material on potsherds in Assyria by the failure of earlier archaeologists to recognize ostraca inscribed with ink; due to the solubility of ink in water, these texts were subsequently lost.

62 For a convenient edition of these letter ostraca, see Lindenberger 2003. This edition also includes the letter ostraca from Lachish from roughly the same period.

63 Ostraca nos. 1–18 are all from the same locus and belong to stratum VI.

64 Arad no. 17 is addressed to another person, "to Naḥum" (Hebr. *'l nḥm*); this is followed by "and now" (Hebr. *w't*) + imperative form.

65 A similar picture emerges from the so-called Akhvamazda letters on leather, which were addressed to a subordinate named Bagavanta. Only the addressee is mentioned in the external address of these

27) Arad no. 1 "To Elyašib: And now, give to the Kittim …" (Hebr. *'l 'lyšb w't ntn lktym …*)

As in the Elephantine ostraca, the wish of well-being is usually absent from the ostraca addressed to Elyašib, except in one case. In this particular instance, a subordinate uses the title "my lord" [Hebr. *'dny*]) to address himself to Elyašib (ex. no. 28):[66]

28) Arad no. 18 "To my lord Elyašib. May the Lord ask for your welfare" (Hebr. *'l 'dny 'lyšb yhwh yš'l lšlmk*)

These letter ostraca, which deal with rations, can be contrasted with several other letter ostraca from Tell Arad. The ostraca—all from different loci belonging to stratum VI—deal with military matters, and only one is addressed to Elyašib (Arad no. 16). This letter also contains the name of the sender, who identifies himself as "Ḥananyahu, your brother" (Hebr. *ḥnnyhw 'ḥk*). The remaining letter ostraca dealing with military matters are more formally framed and may have been sent over a longer distance.[67] In Arad no. 16, the sender is included in the following formula (ex. no. 29):

29) Arad no. 16 "Your brother Ḥananyahu sends greetings to Elyašib and your house. I bless you by YHWH." (Hebr. *'ḥk ḥnnyhw šlḥ lšlm 'lyšb wlšlm bytk brktk lyhwh*)

8 Conclusions

The letter ostraca from Elephantine represent short distance communications between people who appear to have known each other well. Upon delivery, the messenger communicated to the addressee the name of the sender. The frequent use of adverbs of time in the ostraca, such as "yesterday", "today", and "tomorrow", clearly indicate that these messages were intended for the short-run. Their short length, succinct phrasing, and ephemeral content suggest a parallel with contemporary society's WhatsApp messages. They open up an important window onto the daily life of the fifth century Aramaic-writing population of Elephantine.

---

letters, which would have been the only part of the letter visible after folding and sealing; the sender thus does not appear in the external address. See Folmer 2017. For the *editio princeps* of these letters, see Naveh and Shaked 2012.

66 See also Arad no. 16. On this ostracon, which deals with military matters, see below, ex. no. 29.

67 A similar formula is also found in Arad nos. 21 and 40. Ostracon no. 24, which is also addressed to Elyašib, is from a different locus; it belongs to stratum VI.

Bibliography

Aston, David A. (1999), *Elephantine XIX: Pottery from the Late New Kingdom to the Early Ptolemaic Period*, Mainz.

Bleiberg, Edward (2002), *Jewish Life in Ancient Egypt*, Brooklyn.

Bresciani, Edda (1960), "Papiri aramaici egiziani di epoca persiana presso il Museo Civico di Padova", in: *Rivista degli studi orientali* 35, 11–24.

Fales, Frederick M. (2010), "New Light on Assyro-Aramaic Interference: The Assur Ostracon", in: Frederick M. Fales and Giulia F. Grassi (eds.), *CAMESUD 2007: Proceedings of the 13th Italian Meeting of Afro-Asiatic Linguistics*, Padova, 189–204.

Folmer, Margaretha (1995), *The Aramaic Language in the Achaemenid Period: A Study in Linguistic Variation* (Orientalia Lovaniensia Analecta 68), Louvain.

Folmer, Margaretha (2011), "Imperial Aramaic as an Administrative Language of the Achaemenid Period", in: Stefan Weninger, *The Semitic Languages: An International Handbook*, Berlin, 578–589.

Folmer, Margaretha (2017), "Bactria and Egypt: Administration as Mirrored in the Aramaic Sources", in: Bruno Jacobs, Wouter F. M. Henkelman and Matthew W. Stolper (eds.), *Die Verwaltung im Achämenidenreich – Imperiale Muster und Strukturen / Administration in the Achaemenid Empire – Tracing the Imperial Signature* (Akten des 6. Internationalen Kolloquiums zum Thema "Vorderasien im Spannungsfeld klassischer und altorientalischer Überlieferungen" aus Anlass der 80-Jahr-Feier der Entdeckung des Festungsarchivs von Persepolis, Landgut Castelen bei Basel, 14.–17. Mai 2013; Classica et Orientalia 17), Wiesbaden, 413–454.

Hoftijzer, Jacob/Van der Kooij, Gerrit (1976), *Aramaic Texts from Deir 'Alla*, Leiden.

Honroth, Walter/Rubensohn, Otto/Zucker, Friedrich (1909–1910), "Bericht über die Ausgrabungen auf Elephantine in den Jahren 1906–1908", in: *ZÄS* 46, 14–61.

Kraeling, Emil G. (1953), *The Brooklyn Museum Aramaic Papyri: New Documents of the Fifth Century B. C. from the Jewish Colony at Elephantine,* New Haven.

Lemaire, André (2011), "Judean Identity in Elephantine: Everyday Life according to the Ostraca", in: Oded Lipschits, Gary N. Knoppers and Manfred Oeming (eds.), *Judah and the Judeans in the Achaemenid Period: Negotiating Identity in an International Context*, Winona Lake (IN), 365–373.

Lindenberger, James M. (2003²), *Ancient Aramaic and Hebrew Letters*, Atlanta.

Lozachmeur, Hélène (2006), *La collection Clermont-Ganneau: Ostraca, épigraphes sur jarre, étiquettes de bois*, 2 vols. (Mémoires de l'Académie des inscriptions et belles-lettres 35), Paris.

Lucas, Alfred/Harris, John R. (1989⁴), *Ancient Egyptian Materials and Industries*, London.

Müller, Wolfgang (1980), "Die Papyrusgrabung auf Elephantine 1906–1908: Das Grabungstagebuch der 1. und 2. Kampagne", in: *Forschungen und Berichte* 20, 75–88.

Naveh, Joseph (1970), *The Development of the Aramaic Script* (Israel Academy of Sciences and Humanities Proceedings 5.1), Jerusalem.

Naveh, Joseph/Shaked, Shaul (2012), *Aramaic Documents from Ancient Bactria (fourth century BCE) from the Khalili Collections*, London.

Porten, Bezalel (1979), "Aramaic Papyri and Parchments: a New Look", in: *Biblical Archaeologist* 42, 74–104.

Porten, Bezalel/Yardeni, Ada (1986), *A Textbook of Aramaic Documents from Ancient Egypt*, vol. 1: *Letters*, Jerusalem.

Porten, Bezalel/Yardeni, Ada (1989), *A Textbook of Aramaic Documents from Ancient Egypt*, vol. 2: *Contracts*, Jerusalem.

Porten, Bezalel/Yardeni, Ada (1999), *A Textbook of Aramaic Documents from Ancient Egypt*, vol. 4: *Ostraca and Assorted Inscriptions*, Jerusalem.

Porten, Bezalel/Yardeni, Ada (2014), *Textbook of Aramaic Ostraca from Idumea*, vol. 1: *Dossiers 1–10: 401 Commodity Chits*, Winona Lake (IN).
Porten, Bezalel/Yardeni, Ada (2016), *Textbook of Aramaic Ostraca from Idumea*, vol. 2: *Dossiers 11–50: 265 Commodity Chits*, Winona Lake (IN).
Porten, Bezalel/Yardeni, Ada (2018), *Textbook of Aramaic Ostraca from Idumea*, vol. 3: *Dossiers 51–255a and fragments: 488 Commodity Chits*, Winona Lake (IN).
Porten, Bezalel/Lund, Jerome. A. (2002), *Aramaic Documents from Egypt: A Key-Word-in-Context Concordance* (The Comprehensive Aramaic Lexicon Project Texts and Studies 1), Winona Lake (IN).
Radner, Karen (2014), "An Imperial Communication Network: The State Correspondence of the Neo-Assyrian Empire", in: Karen Radner (ed.), *State Correspondence in the Ancient World: From New Kingdom Egypt to the Roman Empire*, Oxford, 64–93. DOI:10.1093/acprof:oso/9780199354771.003.0004
Sachau, Eduard (1911), *Aramäische Papyrus und Ostraka aus einer jüdischen Militär-Kolonie zu Elephantine* (2 vols.), Leipzig.
Sayce, Archibald H./Cowley, Arthur E. (1906), *Aramaic Papyri Discovered at Assuan*, London.
Schwiderski, Dick (2000), *Handbuch des nordwestsemitischen Briefformulars* (BZAW 295), Berlin.
Schwiderski, Dick (2013), "Epistolographische Elemente in den neuveröffentlichten aramäischen Ostrakonbriefen aus Elephantine (Sammlung Clermont-Ganneau)", in: Alejandro F. Botta (ed.), *In the Shadow of Bezalel: Aramaic, Biblical, and Ancient Near Eastern Studies in Honor of Bezalel Porten* (CHANE 60), Leiden, 159–182.
Yardeni, Ada (2016), *The Jeselsohn Collection of Aramaic Ostraca from Idumea*, Jerusalem.

Photo credits

Fig. 1: © Lozachmeur.
Fig. 2: © Yardeni.

Marie-Pierre Chaufray and Bérangère Redon

Ostraca and *Tituli Picti* of Samut North and Bi'r Samut (Eastern Desert of Egypt): Some Reflections on Find Location

In 2014 the French archaeological mission to the Eastern Desert launched a new program of excavations with the aim to investigate military and economic policies of the Ptolemies in the region. More specifically, it focuses on the military control that the Ptolemies exercised over the commercial road, which once linked Edfu in the Nile Valley to the harbor of Berenike on the Red Sea, as well as on the exploration and management of natural resources of the desert, in particular, gold.[1] The program started in the district of Samut (Fig. 1), which is located approximately half-way between Edfu and Marsa Alam, and focused on two sites dated to the early Hellenistic period (late fourth–third century BCE): Samut North, a gold mining settlement, and the fortress of Bi'r Samut, the largest Ptolemaic fortress of the region. Around 1,230 ostraca written in Egyptian Demotic, Greek and Aramaic have been discovered. The majority come from the dumps outside of the fortress of Bi'r Samut, but a few ostraca were found inside of it, too. A further twenty-five pieces were discovered in the site of Samut North and three more in Abu Garaish, a small satellite site of Bi'r Samut. This article will examine some of the contexts excavated in Samut North and Bi'r Samut that yielded ostraca and *tituli picti* in order to assess if and how analysis of find-locations can help establish dossiers and provide evidence for the occupation of the sites. In other words, the question we want to address is to what degree the findspot of the documents is relevant for their interpretation.

1 The *Tituli Picti* of Samut North

Samut North, located 5 km to the north of Bi'r Samut, lies at the heart of the gold exploitation area of the Ptolemaic period.[2] The archaeological remains of the mining site are situated on both sides of a quartz vein visible from the surface, which was

1 The campaigns of the mission are carried out with the financial support of the French Ministry of Europe and Foreign Affairs and the French Institute of Oriental Archaeology in Cairo, whom we thank deeply.

2 The excavations at Samut North were conducted by J.-P. Brun, Th. Faucher, and B. Redon; the exploration of the vein was carried out by Fl. Téreygeol, A. Arles, and J. Gauthier. For archaeological reports and some general overview, cf. Brun et al. 2013a; Brun et al. 2013b; Redon/Faucher 2014, 2015, 27–29, 2016, 2017; Redon 2016 [2017]. The monograph devoted to the excavations of Samut North, Redon/Faucher (eds.) 2020, has just been published by the IFAO press.

https://doi.org/10.1515/9783110712902-008

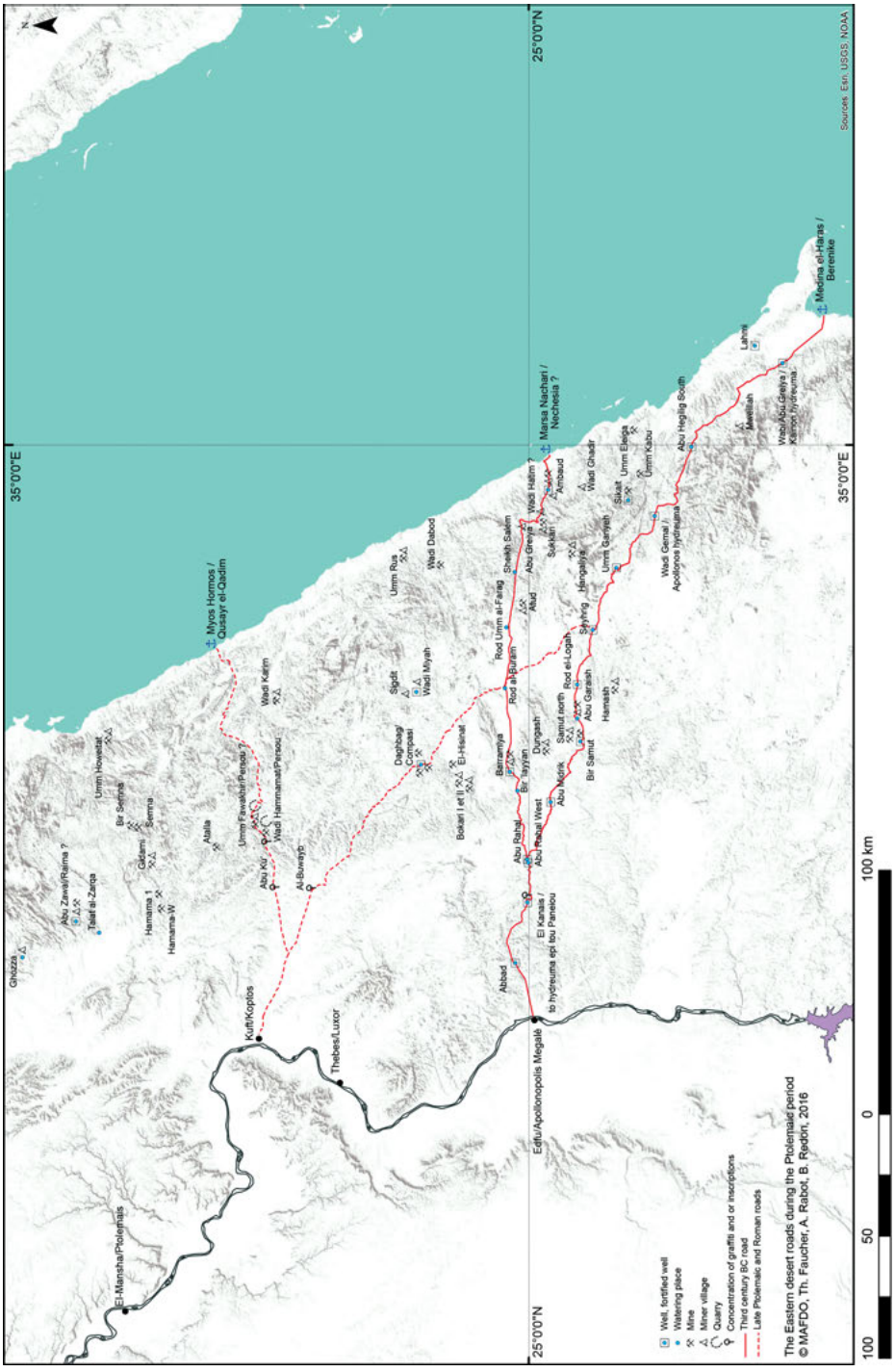


Fig. 1: The Eastern desert sites and roads during the Ptolemaic period.

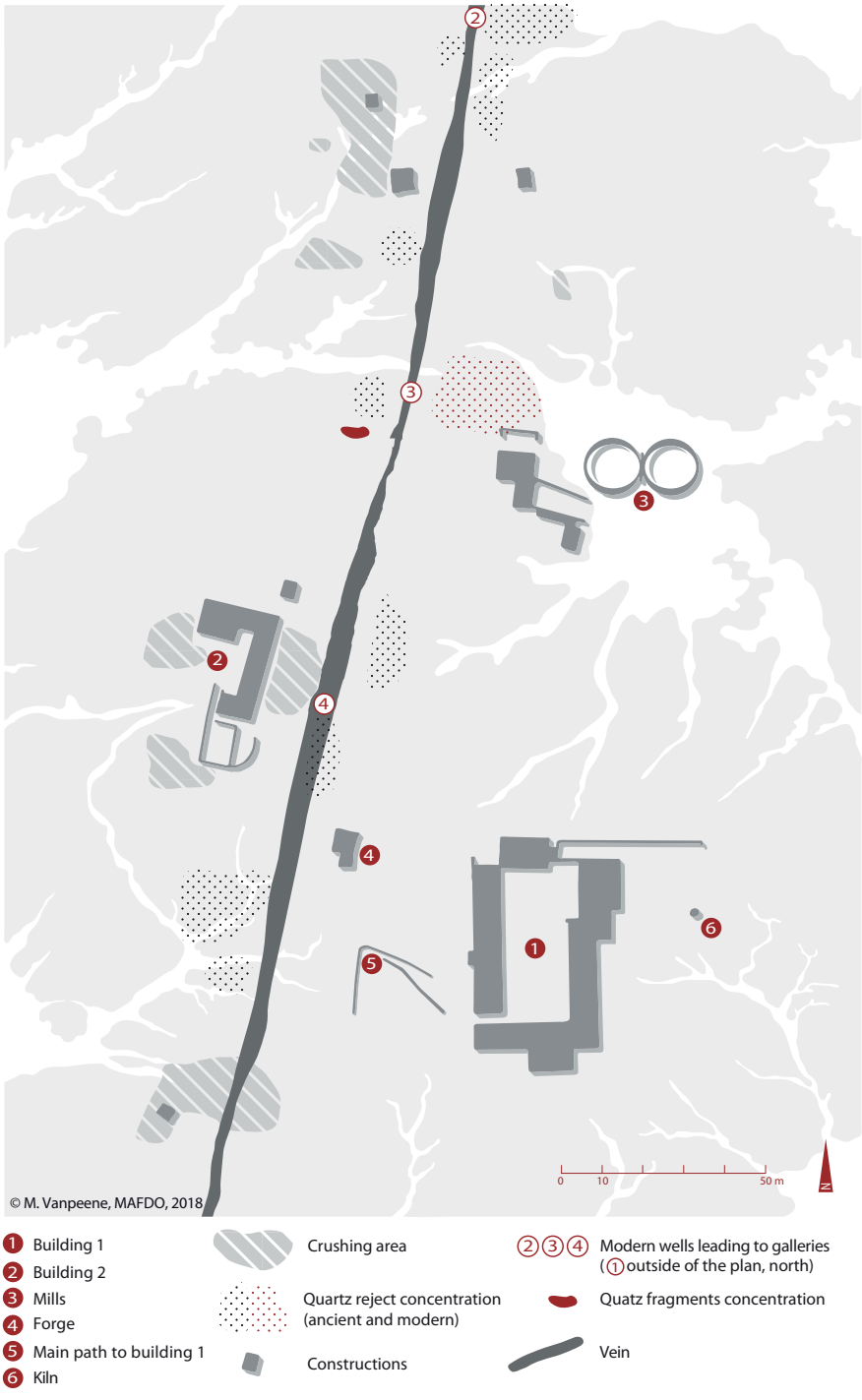


Fig. 2: Samut North, general plan of the Ptolemaic gold mining settlement.

exploited to the length of 277 meters and the depth of 10 meters (Fig. 2). The main structure of the area (Building 1) is located southeast of the main entrance to the vein and measures 58 × 36 m. Its four wings were organized according to the purpose that the space served: the western wing housed a kitchen or bakery with an annex and a possible dining room; the southern wing accommodated several storage rooms for wine and other foodstuffs, as well as a possible chapel with a small altar. The northern wing, equipped with a second floor, hosted a small kitchen on the ground floor; finally, the eastern wing comprised three large rooms, which could be identified as living quarters and dormitories for miners; they were guarded by a gatehouse near their narrow entrances.[3] Building 2, located near the main entrance to the mine and equipped with two working areas, hosted a similar dormitory, which was probably intended to house the miners extracting the quartz from the vein and the workers crushing the quartz after it was carried out of the mine. Finally, a third area was outfitted with two large mills used to reduce the quartz into powder from which the gold was eventually extracted.

The pottery of Samut North is scarce: only 339 pots were registered.[4] Very thin stratigraphy of Buildings 1 and 2 and some aspects observed in the mine itself suggest that Samut North was occupied only briefly, maybe for only two or three campaigns of a few months each. The pottery assemblage and the paleography of the very few texts found at the site have enough distinctive features to indicate that the gold mine was exploited during the last quarter of the fourth century BCE, more precisely around 310 BCE.[5]

Only 25 texts were found in Samut North;[6] this paucity is probably due to the short occupation of the site. Almost all the texts are *tituli picti* except for four owner's marks on bowls and lamps. The *tituli* are brief by nature, usually comprising two or three letters or words. The longest text consists of two inscriptions painted by two different hands, on the neck of an Aegean amphora (possibly from Cnidus):

(first hand)
ἰσχά(δες)
Μυί vac. τξη (sign)
τραπεζίτηι
(second hand)
παρὰ Ἀθην( )
ἰσχά(δες) vac. μέλαιναι

3 A significant number of pottery and trinkets made of quartz and steatite as well as stone tools for the miners were found there, cf. Redon 2016.

4 The pottery was studied by J.-P. Brun; his analysis is published in Redon/Faucher (eds.) 2020, 136–211.

5 See the conclusion of B. Redon in Redon/Faucher (eds.) 2020.

6 The *tituli picti* from Samut North in this article are identified by their edition numbers in Redon/Faucher (eds.) 2020, 101–135, where B. Redon is responsible for the Greek and M.-P. Chaufray for the Demotic ostraca.

368 dry figs for Mys the banker. From Athen( ), dry black figs.

O.Sam. 4 = TM 706211 (found in Room 110; Fig. 4)

The majority of the texts were discovered in the northern and southern wings of Building 1. Sixteen are in Greek, six in Demotic, and two are bilingual; in one case, the language of the writing could not be identified. Eight to ten texts mention people's names: most of the time, they are Egyptian names, but one Carian (the banker Mys, in O.Sam. 4 = TM 706211, cf. supra) and two abbreviated Greek names make an appearance, too. There are also records of the products that the jars once held, such as wine, cheese, figs, honey, bulgur, and *kardamon* (cress, either seeds or oil). They also include numerals, the meaning of which is not always easy to determine (price? capacity? number of the amphora?). Sometimes, the provenance of the product is written. For example, the wine contained in the jar found in Room 115 came from "the vineyard of Pais" (O.Sam. 1 = TM 706208; Fig. 3); the honey stored in Room 120 originated from Lycia (O.Sam. 13 = TM 706220). Seven *tituli* mention the name of the addressee and, for one of them, his function (a banker, on O.Sam. 4 = TM 706211). The location of one of the addressees may be mentioned on the *kardamon*-jar (O.Sam. 8 = TM 706215; Fig. 5), which bears the word "fortress" (the reading *rs*, however, is tentative).

Although the contents of the *tituli* do not give a lot of information, the place of their discovery sheds light on the function of the southern and northern wings (Fig. 6). The south rooms yielded the largest number of amphorae from the site (almost 20 of 96 in total for the whole site), including several imported amphorae (in particular from Cnidus) whose *tituli* include commodities, such as wine and Lycian honey, or a number, which may be the registration number of the vessel in a series,[7] its capacity, or price (see above). This circumstance suggests that these rooms were storerooms, conveniently located near the main entrance of the building and equipped with silos.

Egyptian personal names are attested in the *tituli* in all four wings, while Greek and Carian names are found only in the northern wing. The *tituli* found in the northern wing are also noteworthy in that they mention rare contents or contents one would not expect to find in the context of a mine located in the middle of the desert, such as dry black figs (O.Sam. 4 = TM 706211, cf. supra for the text; O.Sam. 5 = TM 706212) or cress (in whatever form it was sent to Samut North, that is, either as oil or seeds, O.Sam. 8 = 706215).[8] Furthermore, they are distinguished by the fact that these products were sent

7 *t3 mḥ-1*, "the first" (O.Sam. 14 = TM 706221) would mean then the first jar in a group of jars.

8 The recent excavations and analysis of the archaeobotanical remains of the three Ptolemaic settlements of Bi'r Samut, Samut North, and Abbad by the French archaeological mission to the Eastern Desert clearly show that the Roman supply system in the Eastern desert was much more elaborate than the Ptolemaic one and made available a greater variety of foodstuffs to the region's inhabitants. Honey, figs and other non-essential foodstuffs are rare in the Eastern desert during the Ptolemaic period.

to a banker (O.Sam. 4 = TM 706211, cf. supra) and possibly to a "fortress" (O.Sam. 8 = TM 706215). It is noteworthy that the rooms of the northern wing yielded rarer and more varied artifacts than other rooms of Building 1, notably an alabaster plate and a set of complete amphorae (Fig. 7). The material was discovered mainly in the upper layers of the room's filling formed by the destruction of the upper story, which is also a peculiarity of the northern wing. Taken together, this evidence could indicate that the northern wing (with an elevated position, which is also remarkable) accommodated important people, such as the chief of the garrison and the banker responsible for the control of the weights in the mine.

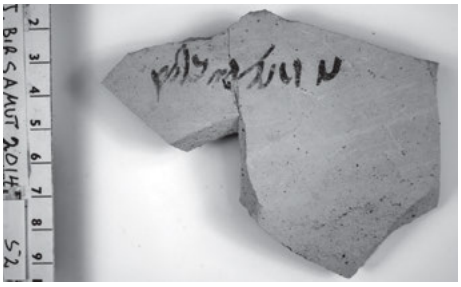


Fig. 3: *O. Sam.* 1 = TM 706208.

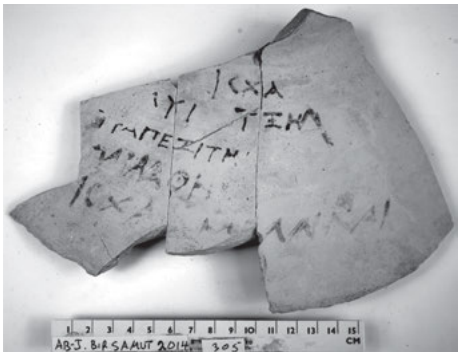
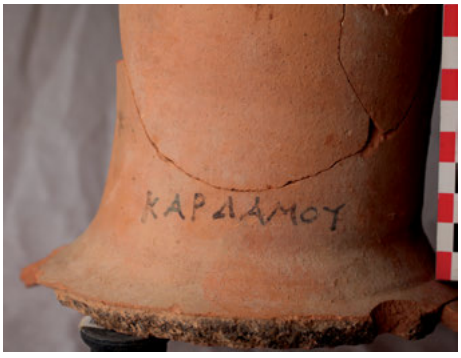


Fig. 4: *O. Sam.* 4 = TM 706211.



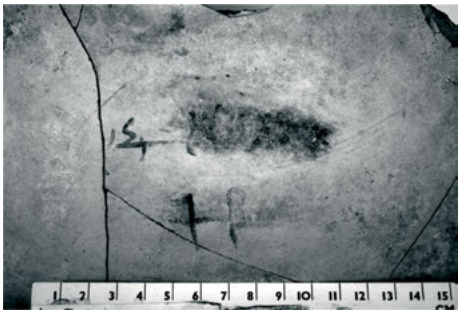
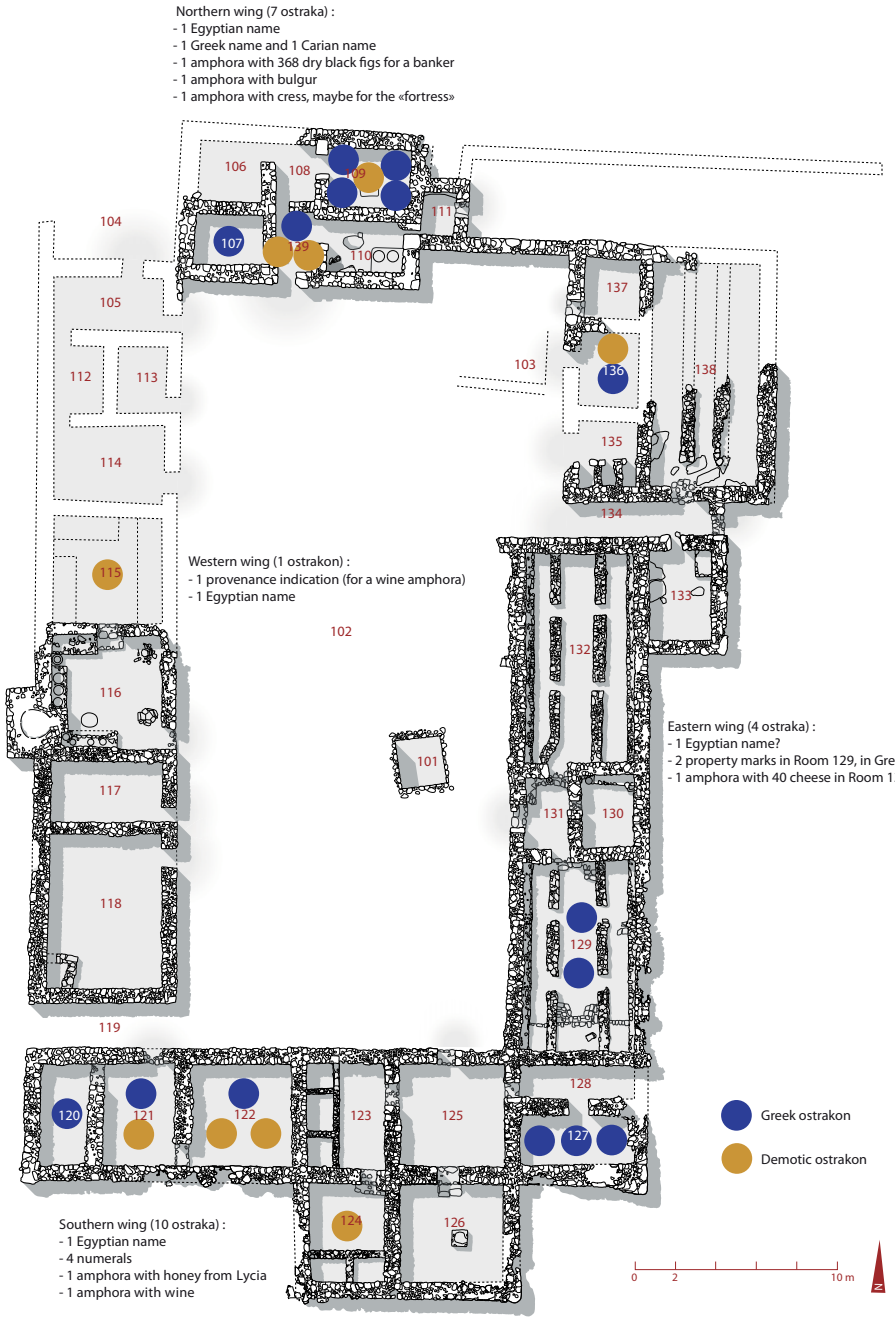


Fig. 5a (left) & 5b (right): *O. Sam.* 8 = TM 706215.



SAMUT NORTH – Find location of the ostraka in building 1 – scale 1/200
Drawing B. Redon, Th. Faucher, J.-P. Brun, Fl. Téreygeol - Photogrammetry G. Pollin (IFAO) – CAD M. Vanpeene, ostraka: B. REDON

Fig. 6: Find location of the texts in building 1 of Samut North.

Fig. 7: The abandonment layer of Room 110 in the northern wing, with a concentration of complete amphora.

2 Ostraca and *Tituli Picti* from Bi'r Samut

2.1 The Fort of Bi'r Samut

Bi'r Samut is a Ptolemaic fortress located in a *wadi* (dry valley), along one of the ancient roads leading from the Nile Valley to the Red Sea; it lies approximately 120 km from Edfu and 200 km from the harbor of Berenike.[9] Despite recent destruction and the disappearance of its eastern corner, the fort is relatively well preserved, and our mission was able to carry out excavations in all but six rooms. Equipped with bastions at the corners and measuring 71.50 by 58 meters, it is the largest Ptolemaic fort in the Eastern Desert. In some places, the curtain wall is still preserved to the height of nearly 2.50 m. The main access (which probably opened onto the caravan track) was in the northeast corner, via a door with a lock; a postern was located on the opposite side.

Our mission found no trace of the well that gave its name to the fort (Bi'r) and was reported until the early twentieth century;[10] it was probably destroyed during

9 Excavations were carried out under the supervision of J.-P. Brun, Th. Faucher and B. Redon. On the remains of Bi'r Samut, cf. Redon/Faucher 2014, 13–14; 2015, 25–27; 2016, 10–14; 2017; Redon 2016 [2017]. H. Cuvigny and M.-P. Chaufray are in charge of the publication of the Greek and Demotic ostraca from Bi'r Samut. Their inventory numbers in the register book of the Ministry of Antiquities storeroom at Quft are given in this article, sometimes followed by the archaeological context in brackets (BS meaning Bi'r Samut).

10 Cf. Hume 1907, 14; Ball 1912, 30.

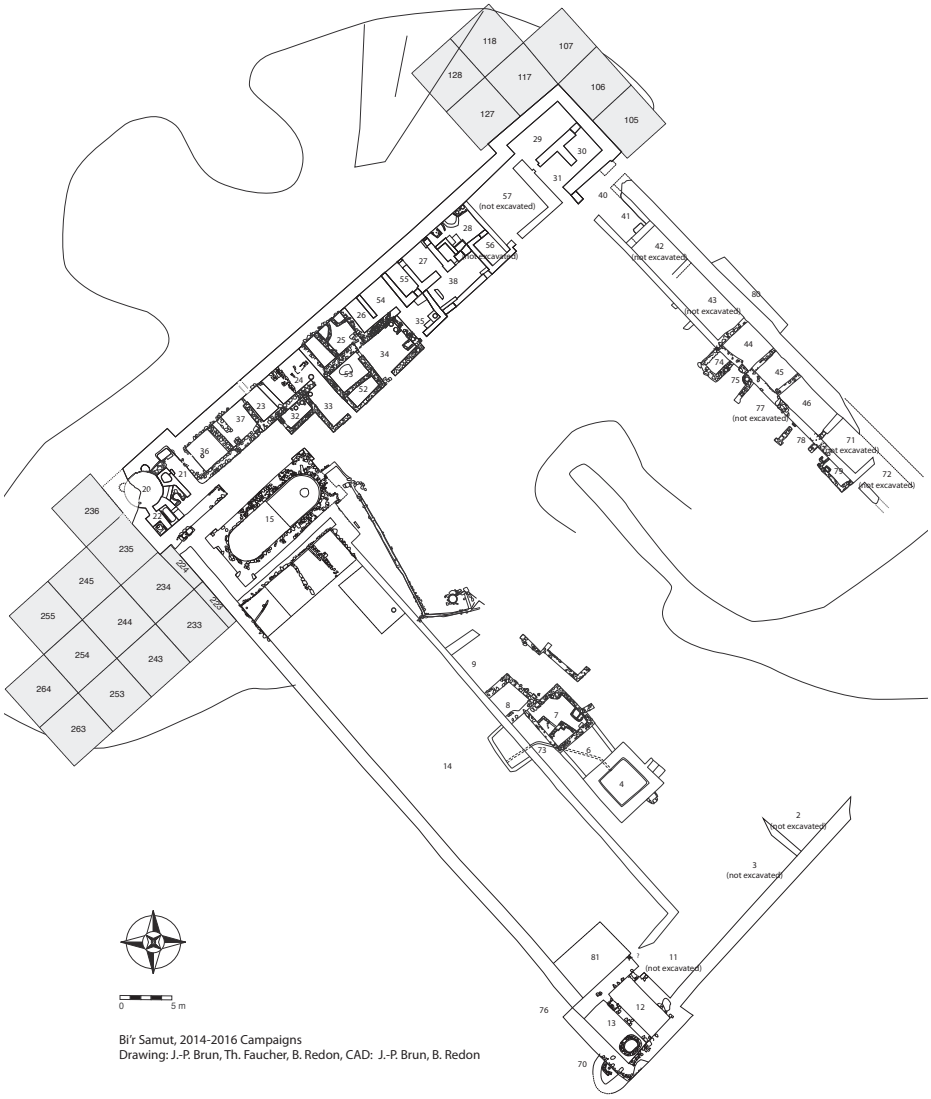


Fig. 8: Bi'r Samut, general plan of the Ptolemaic fort.

recent interventions. The well must have supplied the vast tank (number 15 on Fig. 8) unearthed near the gate. The constructions inside the fort are arranged in a standard way along the curtain wall, in one, two or three rows of rooms. Thanks to the good preservation of the remains, our excavations could determine the function of the majority of the preserved rooms, if not all. The southern bastion housed rooms equipped with silos, while the northern one hosted baths; we found several bakeries and kitchens in the north-west wing and living rooms with textile industry traces (dozens of loom weights and weaving tools) in the eastern wing.

The date of construction of the fort is not entirely certain. Preliminary study of the material suggests that it may have been built around or a little before the middle of the third century BCE.[11] The fort was occupied for several decades, and an intense activity is evidenced during the reign of Ptolemy III Euergetes and the beginning of the reign of his son, Ptolemy IV Philopator. The fort was evacuated suddenly, perhaps violently, most likely following the beginning of the Great Theban Revolt (late third century BCE), and was no longer occupied, except sporadically, during the Roman Empire.[12]

During its occupation, the fort had to be regularly cleared, which led to the formation of two dumps outside the entrances and against the northern and western curtain walls of the fort. The two dumps yielded the majority of the ostraca and *tituli picti* found at Bi'r Samut: 714 came from the western and 244 from the northern dump. In addition to these, 266 were brought to light inside the fortress. Of the 1,224 texts discovered at the site, 542 are written in Greek, 622 in Demotic, 45 are bilingual Greek-Demotic, and 15 are in Aramaic. We present here two dossiers, which illustrate the importance of combining textual and archaeological data, while also exposing difficulty and limitation of this approach.

2.2 The Payba Dossier from Bi'r Samut

Among the 622 Demotic documents found in Bi'r Samut, a dossier of six letters written by a scribe named Payba has been identified. The ostraca bearing them were discovered inside the fortress in different contexts: four letters were found in the tank, which was used as a dump during a later occupation of the fort;[13] one letter was found in room 24 and one letter in room 31.[14] Two letters are concerned with sacks of salt (inv. 998 = TM 818069 and 999 = TM 818070); one with a sack of flour (inv. 996 = TM 818068), one letter is about money (inv. 995 = TM 818067), and one letter mentions a Blemmy (inv. 1041 = TM 818071). These five documents are fragmentary and their content is difficult to understand. A sixth letter is almost complete and records a 'miracle' which happened in the desert (inv. 985 = TM 754181; Fig. 9):[15]

P3y-b3 sm r Mls p3 sẖ-nw (n) p3 3wḳnwms ²*[ḥ]nʿ Pa-bʿr3 Pa-t3.wy P3-dî-B3st.t ḫpr ḥ3.t-sp 7.t îbd-3 šmw sw-13* ³*[n] p3 nw ʿq p3 šw ḥw t3 p.t ḏr=s* ⁴*[îw p3] šy(?) mḥ t3 št.t Ta-ẖ3 p3 mw* ⁵*[i.îr] p3y b3k pḥ r-îr=tn m-îr wrry r-ḥry îrm p3 sp rmṯ* ⁶*[nty îw] îr=tn rḫ în.ṯ=w r-ḥry n-ḏr.t=tn r-ḏb3 (p3 nty) ḫpr (n) t3 št.t* ⁷*[[wʿ]] mḥ 3 mw (m) mn p3y(=y) b3k mtr p3y syḫn* ⁸*r-îny Hrytrs r-ḥry n-ḏr.t=tn my* ⁹*ḥb r Kmy ʿn vacat sẖ*

11 Redon 2018, 18.

12 Redon 2018, 19. On the Theban revolt, see Veïsse 2004, 11–26. See fn. 25 below.

13 Inv. 998 = TM 818069 (BS 15. 36), 995 = TM 818067 (BS 15. 33), 996 = TM 818068 (BS 15. 30), 999 = TM 818070 (BS 15.23).

14 Inv. 1041 = TM 818071 (BS 24.11) and 985 = TM 754181 (BS 31.09).

15 We thank Michel Chauveau for his help in deciphering the text.

Payba greets Melas the control-scribe[16] of the *oikonomos*, and Pabara, Patous, Petoubastis. It happened in year 7, 13 Epeiph, at the start of the drought-season: the whole sky fell [while the] flood[17] has filled up the well[18] of Takha[19] with water. As soon as this letter reaches you, come up there with the rest of the people that you can take with you up there, because what comes in the well, it is ⟦one⟧ three cubits of water per day. My letter bears witness to this wonder.[20] Bring Heliodoros up there with you. May someone write (that) to Egypt too. Written.

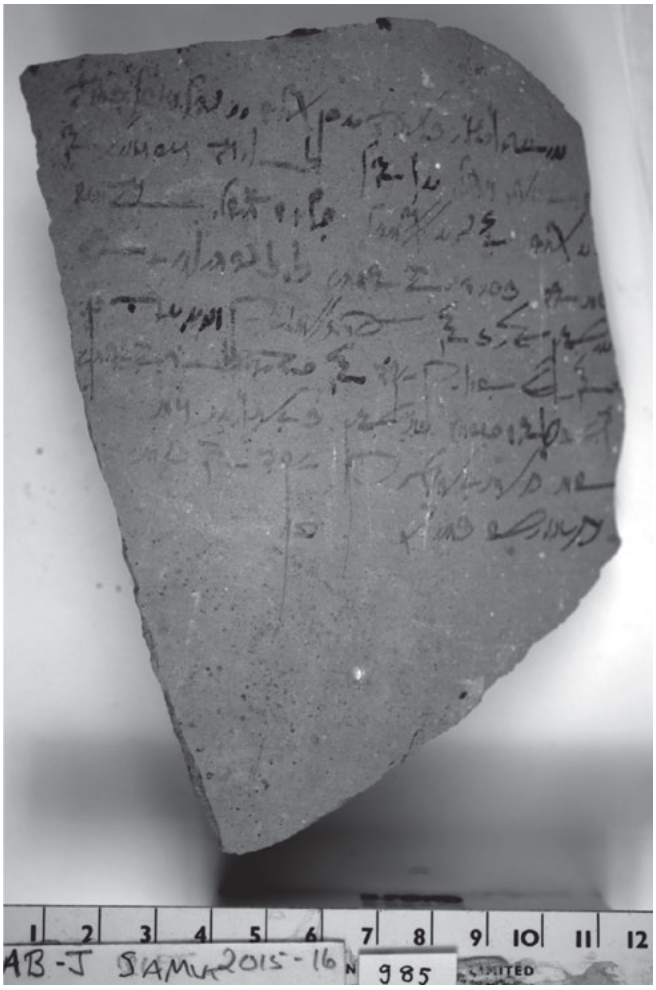


Fig. 9:
BS inv. 985 = TM 754181.

16 This title, not yet attested, is certainly an equivalent of the title *sḫ ỉr.ty*, see Vittmann 1994, 325–338.
17 The word is partly in lacuna and it is not clear whether it must be read *šy* or *my*. The *yod* followed by the water-determinative is certain, and the meaning must thus be connected with water.
18 The word is written with the water-determinative followed by the house determinative.
19 This place has not been identified yet.
20 *syḫn* for *sḫny*.

The letter records a sudden rain, which filled a well with a large quantity of water. This climatic event happened in year 7, either under Ptolemy III, in 240 BCE, or under Ptolemy IV, in 215 BCE. Only the stratigraphy and the close examination of the complete dossier of Payba can help choose between the two reigns.

The six letters were found scattered in the northern part of the fort in Rooms 24 and 31 and in the tank area. Inv. 1041 = TM 818071 comes from a preparation layer (24.10)[21] for the construction of the second floor of room 24 (layer 24.07). Inv. 999 = TM 818070 and 996 = TM 818068 were found in layers 15.23 and 15.30, which are formed by a thick deposit of ashes around two furnaces built against the secondary gate of the fort after it had been blocked. The furnaces were in use during the occupation of the fort, but they date from one of its late phases of occupation. The other two layers excavated near the tank (15.33 and 15.36) come from a small dump that covered the ash layers mentioned above; they are probably associated with the last occupation period of the Ptolemaic fort. Finally, the "ostracon of the miracle" (inv. 985 = TM 754181) was found in layer 31.09, the second occupation layer of Room 31 (after 31.10). Two persons mentioned in this letter are known from other texts: Heliodoros is found on an ostracon coming from layer 253.04 of the northern dump and Melas, the scribe, appears in several ostraca found in layers 12.04 (Room 12) and 254.05+244.03 (northern dump). Layer 12.04 is the last layer of occupation of Room 12 before its abandonment. The layers of the northern midden are all located in the upper layers of the stratigraphy, but not directly before the abandonment of the fort. They are the second to last deposits in these areas.

All these elements show that the Payba ostraca do not come from the first phase of occupation of the fort, just after its construction. Rather, they are all from the last or second to last levels of occupation in the rooms inside the fort. The earliest ostracon could be inv. 985 = TM 754181, coming from layer 31.09, i. e. the second occupation layer of Room 31. However, it is not a reason to assume that this layer dates from the early phases of the fort occupation, since we know that the fort was regularly cleared and emptied, and that the material was thrown outside in the dumps (see below). The fact that the Payba ostraca come from the late layers in the northern dump and in the tank-dump of area 15 is a good clue to indicate that the "ostracon of the miracle" should be assigned to the reign of Ptolemy IV Philopator and dated to August 24, 215 BCE.

21 The first two numbers refer to the room in which the layer was excavated (i. e. layer 24.10 is layer 10 of Room 24). If the layer starts with a 3-digit number, it means that it was excavated in the dumps. The squares of the northern dump begin with 1 while the squares of the western dump start with 2 (i. e. layer 253.04 is layer 4 of the square 253, which was excavated in the western dump).

2.3 The Jar Labels of Storeroom 12

Room 12, in the southern bastion of the fort, was equipped with a set of twelve Egyptian amphorae, which were probably reused as granaries (Fig. 10). Charlène Bouchaud (CNRS, MNHN), the archaeobotanist of the mission, studied the content of the amphorae but, apart from one of them, which was full of charcoal, the amphorae did not yield any meaningful botanical remains. The tops of the amphorae were cut off so that the necks and handles had disappeared. The foot of each was also deliberately broken; Jennifer Gates-Foster (University of North Carolina, Chapel Hill), who is in charge of the pottery study, suggests that it was probably done in order to empty them out or to facilitate their re-use for storage and prevent the retention of moisture in the pot.

All twelve but one of the Egyptian amphorae were labelled. Five bear *tituli* in both Greek and Demotic. The inscriptions are usually written around the pot, which makes it difficult to understand exactly the sequence of the texts. Thus, it is unclear which inscriptions are to be associated with the first use of the jar and which were written afterwards when the jars were refilled and reused as granaries. Five of these amphorae bear regnal years, which are quite close to one another:

- year 10 on inv. 5017 = TM 818075 (BS 12.18.2), 1136 = TM 818073 (BS 12.18.4), 5018 = 818076 (BS 12.18.7);
- year 12 on inv. 5018 = TM 818076 (BS 12.18.7);
- year 14 on inv. 1134 = TM 818072 (BS 12.18.1), 1137 = TM 818074 (BS 12.18.5; Fig. 11).

If we consider that the regnal year is that of the first use of the jar, then it gives a *terminus post quem* for the reuse of the jars as granaries. Only year 12 on inv. 5018 = TM 818076 is not the year of the first use of the jar, since year 10 is also written on it. The question, as with the Payba dossier, is whether the years should be those of the reign of Ptolemy III or Ptolemy IV.

The stratigraphy of Room 12 is simple (Fig. 12): the fort was built on the remains of an earlier occupation, prior to the fort, dated to the early third century BCE according to the pottery. The first preserved floor of the room is 12.07; it is cut by a trench along the southern, eastern and western walls that housed the twelve jars. A second floor (12.04) was built above the occupation layer, and the room was eventually abandoned. The jars thus belong to an early phase of Room 12, and one's first impulse would be to associate the *tituli* of the jars with the reign of Ptolemy III, i. e. from the year 238 (year 10) to 234 BCE (year 14). But if the floor 12.07 was really the first floor of the room, contemporaneous with the construction of the fort, then the construction of the fort itself has to be dated to after 234 (our *terminus post quem* here). This is very unlikely: neither the pottery study, nor the analysis of the coin finds[22] would lend support to

22 16 coins were found at Bi'r Samut. The majority of them belong to series 3 and 4 of the Ptolemaic coinage, dated 261–240 and 240–220 BCE (information by Th. Faucher).

this hypothesis. Rather, they indicate that the fort was built around the mid-third century BCE or possibly a little bit earlier, slightly after the foundation of Berenike and probably simultaneously with other forts and stations equipped under the reign of Ptolemy II.[23]

The stratigraphy of Room 12 illustrates very well a phenomenon that the archaeologists often experience while excavating an Eastern Desert fort: the disappearance of the first levels of occupation inside the building due to systematic clearings.[24] This means that the only complete stratigraphic sequence is to be found outside, in the dumps, and not inside where only the last phases are preserved. In the case of Room 12 of Bi'r Samut, it means that floor 12.07 is not the first, but probably the second to last floor of the room. The earlier ones simply disappeared during the cleaning of the fort. Considering that, the installation of the jars in Room 12 may have occurred after the 14th year of the reign of Ptolemy III (234 BCE) just as well as after the 14th year of the reign of Ptolemy IV (209 BCE).[25] In this case, the find context of the *tituli picti* is unfortunately useless in determining which hypothesis is more likely.

3 Conclusion

To conclude, two of the three case-studies presented here—the *tituli* and owner's marks from Samut North and the Payba-ostraca from Bi'r Samut—show that connections between content and the find location of the objects bring tangible results. Most immediately, this approach can help us not only determine a likely date for the text but also understand the context, as in Samut North, where the function of several rooms has been successfully identified through this method. The third example—Room-12 *tituli* in Bi'r Samut—shows that, even in a well-preserved context of an isolated fortress in the desert, the stratigraphic information can be slim and inconclusive. The same uncertainties can be found in the content and the context of the documents.

23 The Ptolemaic road system is likely to have been created under the reign of Ptolemy II, after the foundation of Berenike. See Redon 2018, 22–24 on the date of construction of the station of Bir Alayyan and the forts of Kanaïs and Abbad.

24 See, for instance, the disappearance (due to cleaning) of the internal occupation levels of the fort of Krokodilo, while the finds in the dumps clearly indicate that the fort was occupied for several decades, from the reign of Vespasian to the reign of Hadrian (Brun 2006b, 83). This phenomenon is well described by Brun 2006a, 61, about the Roman forts of the Myos Hormos road.

25 The fort was probably abandoned at the very beginning of the Theban revolt (see Redon 2018, 19), which broke out between 208/207 and 206/205 BCE; there would be enough time between 209 and that date to have two beaten earth floors in a room (that kind of floor is particularly fragile and it is necessary to redo or reinforce them often; at Samut North, some rooms had three floors, while the site was probably occupied for only two or three campaigns of some months). On the date of the beginning of the revolt, see Veïsse 2004, 11–26 (early date); Depauw 2006, 106 (late date).

Fig. 10: Bi'r Samut, Room 12, with the 12 Egyptian amphorae reused as granaries, view from North.

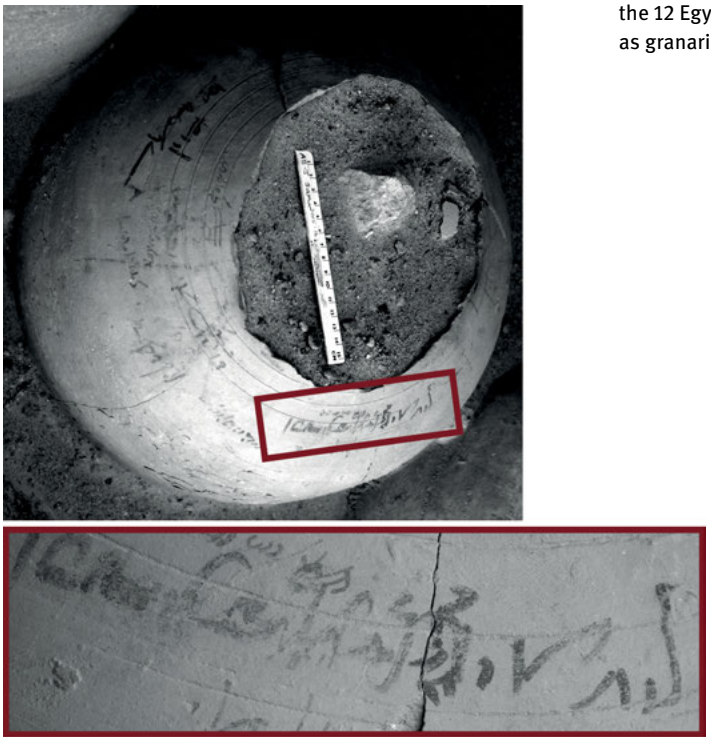


Fig. 11: BS inv. 1137 = TM 818074, with a zoom in on year 14.

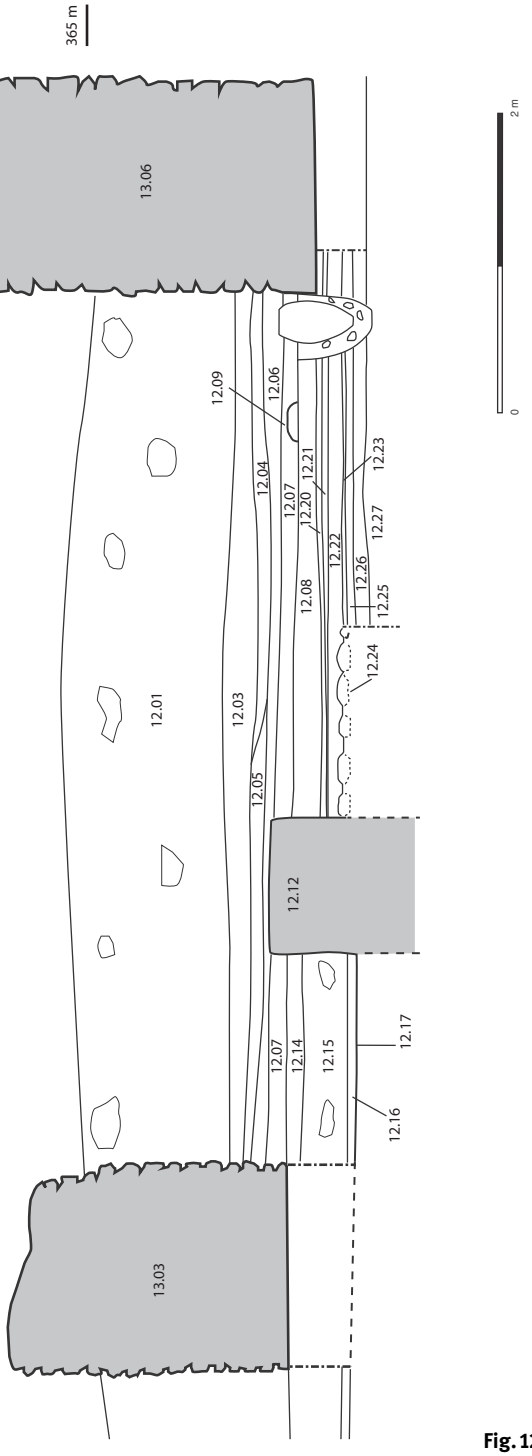


Fig. 12: Bi'r Samut, Stratigraphy of Room 12.

Bibliography

Ball, John (1912), *The geography and geology of south-eastern Egypt*, Cairo.
Brun, Jean-Pierre (2006a), "Méthodes et conditions de fouille des fortins et des dépotoirs ou les affres d'un Gallo-Romain en Egypte", in: Hélène Cuvigny (ed.), *La route de Myos Hormos, L'armée romaine dans le desert Oriental d'Egypte*, Cairo, 61–72.
Brun, Jean-Pierre (2006b), "L'architecture des *praesidia* et la genèse des dépotoirs. II. Al-Muwayh (Krokodilô)", in: Hélène Cuvigny (ed.), *La route de Myos Hormos, L'armée romaine dans le desert Oriental d'Egypte*, Cairo, 77–90.
Brun, Jean-Pierre/Deroin, Jean-Paul/Faucher, Thomas/Redon, Bérangère/Téreygeol, Florian (2013), "Les mines d'or ptolémaïques. Résultats des prospections dans le district minier de Samut (désert Oriental)", in: *Bulletin de l'Institut Français d'Archéologie Orientale* 113, 111–141.
Brun, Jean-Pierre/Faucher, Thomas/Redon, Bérangère/Téreygeol, Florian (2013), "L'or d'Égypte. L'exploitation des mines d'or dans le désert Oriental sous les Ptolémées", in: *L'archéologue* 126, 56–61.
Depauw, Mark (2006), "Egyptianizing the Chancellery during the Great Theban Revolt (205–186 BC): A New Study of Limestone Tablet Cairo 38258", in: *Studien zur Altägyptischen Kultur* 34, 97–105.
Hume, William Fraser (1907), *Topography and geology of the Eastern Desert of Egypt*, Cairo.
Redon, Bérangère (2016 [2017]), "Exploiter et traverser le désert Oriental d'Égypte sous les premiers Ptolémées: recherches récentes dans le district de Samut", in: *Comptes-Rendus de l'Académie des Inscriptions et Belles Lettres*, 1323–1339.
Redon, Bérangère (2018), "La prise en main du désert Oriental par les Lagides: nouvelles données archéologiques", in: Jean-Pierre Brun, Thomas Faucher, Bérangère Redon and Steven Sidebotham (eds.), *Le désert oriental d'Égypte durant la période gréco-romaine: bilans archéologiques*, http://books.openedition.org/cdf/5142 (last accessed: 25.3.2018).
Redon, Bérangère/Faucher, Thomas (2014), "Rapport de la mission française du désert Oriental. Campagne 2014", in: *Rapport d'activités de l'IFAO 2013–2014*, 12–22.
Redon, Bérangère/Faucher, Thomas (2015), "Rapport de la mission française du désert Oriental. Campagne 2015", in: *Rapport d'activités de l'IFAO 2014–2015*, 24–33.
Redon, Bérangère/Faucher, Thomas (2016), "Rapport de la mission française du désert Oriental. Campagne 2016", in: *Rapport d'activités de l'IFAO 2015–2016*, 10–24.
Redon, Bérangère/Faucher, Thomas (2017), "Forts et mines d'or du désert Oriental d'Égypte: découvertes récentes dans le district de Samut", in: *Revue Archéologique, Bulletin de la SFAC* 2017 (1), 101–109.
Redon, Bérangère/Faucher, Thomas (eds.) (2020), *Samut Nord. L'exploitation de l'or du désert Oriental à l'époque ptolémaïque*, Cairo.
Veïsse, Anne-Emmanuelle (2004), *Les "révoltes égyptiennes". Recherches sur les troubles intérieurs en Égypte du règne de Ptolémée III à la conquête romaine*, Leuven/Paris/Dudley.
Vittmann, Günter (1994), "Zwei Spätzeittitel", in: *Studien zur Altägyptischen Kultur* 21, 325–343.

Photo Credits

Fig. 1: © MAFDO, Th. Faucher, A. Rabot, B. Redon, 2016.
Fig. 2: © MAFDO, M. Vanpeene, 2018, after J.-P. Brun, Th. Faucher and B. Redon.
Fig. 3–5, 9, 11: © MAFDO, A. Bülow-Jacobsen.

Fig. 6: B. Redon, Map © MAFDO, M. Vanpeene, 2018.
Fig. 7: © MAFDO, B. Redon, 2014.
Fig. 8: © MAFDO, J.-P. Brun, Th. Faucher and B. Redon.
Fig. 10, 12: © MAFDO, B. Redon, 2016.

Sandra Lippert and Maren Schentuleit

Demotic Ostraca and Their Use in Egyptian Temple Context from the Greco-Roman Period: Soknopaiou Nesos and Hut-Repit

The focus of this article lies on the ostraca from the temple complexes of Soknopaiou Nesos in the Fayum and Hut-Repit in Middle Egypt written in Demotic, a cursive writing system used from the seventh century BCE to the fifth century CE. The two roughly contemporary sets of ostraca provide the opportunity to compare the use of Demotic ostraca for different text forms and text types and the role of potsherds versus other writing materials in the administrative, economic, and cultic life of Egyptian provincial temples in the late Ptolemaic to early Roman period.

1 The Sites and Their Text Material

1.1 Soknopaiou Nesos

The site lies on the northern edge of the Fayum Lake. The name 'Soknopaiou Nesos' is the Greek rendering of the Egyptian name *T3-mȝy(.t)-Sbk-nb-Pay*, 'Island of (the God) Soknopaios'. 'Nesos' (νῆσος) is a literal translation of *t3 mȝy(.t)*, 'the island', from which the designation 'Dime' or 'Dimai' still in use today is derived. The god Soknopaios is a local form of the crocodile deity Sobek, who gave the site its name.[1] The village is mentioned for the first time around 240 BCE, but Dime experienced its heyday, as far as we can tell from the documents thus far found, in the first and second centuries of the Common Era. Around 230 CE, evidence of a continuous settlement at the site breaks off; it was abandoned and no longer inhabited on a permanent basis.[2] The large temple precinct of the god Soknopaios, with its almost 400 meters long *dromos*, remains the most distinct characteristic of the site (Fig. 1). It belonged to the λόγιμα ἱερά, sanctuaries of the first rank,[3] and was the religious, cultic, social, and economic center of Dime and the region.

1 Clarysse 2005, 20–21.

2 Clarysse 2005, 23–26. For possible frequentation of the site in Late Antiquity, see Davoli 2015, 142–145.

3 Cf. BGU XIII 2215, introduction. The oldest evidence for this can be found in BGU III 706 l. 5, 119 CE, Soknopaiou Nesos.

Abbreviations used in this article: BD = Book of the Dead (Totenbuch); DDD I = Lippert/Schentuleit 2006; DDD III = Lippert/Schentuleit 2010; PT = Pyramid Texts (Pyramidentexte).

https://doi.org/10.1515/9783110712902-009

Fig. 1: General plan of Dime/Soknopaiou Nesos (2017).

Texts on papyrus and ostraca were found in large quantities by every expedition since the 1890s, and most of them ended up spread over European and North American collections. Archaeological research at the site began with sporadic visits from scholars such as Richard Lepsius in the years 1842 to 1846.[4] The first excavations, in the years from 1890 to 1910, were scarcely documented. The first scientific excavations in the urban area were conducted and published in the 1930s by the University of Michigan.[5] Since 2001, an Italian expedition, initially a joint undertaking of the universities of Bologna and Lecce, and since 2004 under the leadership of the Center for Papyrological Studies of the University of Lecce, has been working on the site.[6] Besides a small number of texts written in hieratic and hieroglyphs, the evidence is composed essentially of Demotic and Greek and encompasses a broad spectrum of literary, religious, and documentary texts, the bulk of them consisting of all manners of administrative documents.[7] Only a small number of texts stem from the Ptolemaic period, the vast majority can be dated to the Roman period.[8]

With respect to the Demotic material, only 247 of the ostraca, which are the focus of this article, have been published so far (see Tab. 1).[9] Some of them were found within the temple precinct, while others were recovered beyond the town wall to the west of the settlement area in ancient rubble heaps as well as in the dumps formed by the excavations at the beginning of the twentieth century. Stadler speculates that a part of the material might have been deposited in a building between the *temenos* and the town wall.[10] The findspot of the material, as will be argued later on, is crucial for its interpretation.

On the basis of the paleography the material has to be dated to the Roman period.[11] The findspots and content of the ostraca indicate that they are to be associated with the administrative and economic activities at the temple.

4 Capasso/Davoli 2012, 11–18.

5 Boak 1935.

6 The reports of the mission from 2003 onwards are available in Italian and English via the website of the Soknopaiou Nesos Project (SNP): http://www.museopapirologico.eu/sok_rep.htm (last accessed: 14.10.2018).

7 The best and most recent overview can be found via Trismegistos Texts: www.trismegistos.org/tm/index.php (last accessed: 14.10.2018). A series of religious and literary manuscripts in a wider sense that have traditionally been attributed to Soknopaiou Nesos (the so-called Serpot group) are unlikely to have been written by scribes educated there, see Stadler 2015, 189–232.

8 Clarysse 2005, 25–27.

9 DDD I; Pernigotti 2008. In the meantime, Caputo was able to join several of the 227 published fragments of ostraca, cf. Caputo/Cowey 2018, 62–75.

10 Stadler 2012, 266–267.

11 Just a few ostraca show a year date, e. g. DDD I 189 = TM 99501 col. 2 l. 1: regnal year 41 which can refer only to Augustus (= 11/12 CE).

Tab. 1: Texts from Soknopaiou Nesos.

	Status 2018 according to the TM[12] and HGV[13] databases	**Additional unpublished material**
Demotic papyri	332 (TM)	+ ~ 1800[14]
Hieratic papyri	12 (TM)	—
Hieroglyphic papyri	3 (TM)	+ 2[15]
Coptic papyri	—	1[16]
Greek papyri	1107 (HGV)	+ > 89[17]
Demotic ostraca	247 (TM)	+ ~ 600[18]
Greek ostraca	3 (HGV)	+ > 20[19]
Coptic ostraca	–	3[20]
Bilingual papyri (Demotic/Greek)	105 (HGV + TM)	~ 2[21]
Bilingual papyri (Demotic/hieratic)	5 (TM)[22]	—
Bilingual ostraca (Demotic/Greek)	—	1[23]
Demotic *dipinti*	—	6[24]

12 Trismegistos Texts Database, https://www.trismegistos.org/tm/ (last accessed: 17.1.2020).
13 Heidelberger Gesamtverzeichnis der griechischen Papyrusurkunden Ägyptens, http://aquila.zaw.uni-heidelberg.de/texte/HGV-Texte.html (last accessed: 17.1.2020).
14 The number is based on the research of the projects "Soknopaiu Nesos nach den demotischen Quellen römischer Zeit" (Würzburg, from 2000 to 2005) and "DimeData: Online Platform for Editing Roman Period Accounts from the Soknopaios Temple in Dimê (Fayum)" (Bordeaux and Würzburg, ongoing from 2018); on a report of Stadler 2012, 251–254 (mentioning 73 fragments); and on the SNP reports (more than 53 texts, partly overlapping with the material mentioned by Stadler).
15 SNP Reports 2004 and 2012.
16 SNP Report 2006.
17 SNP Reports 2004–2010, 2012, 2014, 2016, and 2017. Cf. Jördens 2005, 42: "Inzwischen wird man zuversichtlich von rund 1100 edierten griechischen Papyri sprechen können, denen eine unbekannte Zahl noch unedierter Texte gegenübersteht".
18 The number is based on a report of Stadler 2012, 255–263 (listing 199 ostraca) + addendum, p. 268 (mentioning another 157 ostraca) as well as on the SNP Reports (listing about 600 ostraca, partly identical to the material mentioned by Stadler).
19 SNP Reports 2003, 2005, 2007, 2009, 2010, 2012, 2014 and 2017. Cf. Jördens 2005, 42 with fn. 7.
20 SNP Report 2008 and 2009.
21 SNP Report 2004 and 2005. Stadler 2012, 251 mentions fragments with Greek (nos. 13 and 19).
22 TM 128430 is strictly speaking Demotic in hieratic script.
23 SNP Report 2010.
24 Stadler 2012, 263–264.

Tab. 1: continued.

	Status 2018 according to the TM and HGV databases	Additional unpublished material
Demotic inscriptions		
– stelae	1 (TM)	
– statue	1 (TM)	
– naoi	—	3[25]
Hieroglyphic inscriptions	—	2[26]
Hieratic inscriptions	—	1[27]
Greek inscriptions	—	> 6[28]

1.2 Hut-Repit

The ancient town of *Ḥw.t-Rpy.t*, the 'House of the goddess Repit', is situated near modern Sohag in Middle Egypt. The site was excavated by Flinders Petrie in 1907.[29] In the 1980s, the Egyptian Antiquities Service re-opened excavations there; since 2003, a German–Egyptian mission under the direction of Christian Leitz, of the University of Tübingen, has been working there for several months a year.[30]

The site (Fig. 2) includes a temple built under Ptolemy XII, which is where the current mission is concentrated. There was another, earlier temple, at right angle to it, which is buried under rubble and nowadays practically invisible. Later, a monastery was built around the temple of Ptolemy XII. The living quarters of the town have not yet been explored.

In the southwest, the site is bordered by the steep cliff of the *gebel* in which ancient quarries, numerous tombs, and a small *speos* (rock-cut temple) had been dug. When in October 2017 S. Lippert presented the Demotic material from Hut-Repit, it comprised almost 400 Demotic ostraca (out of about 550) and roughly 150 *dipinti* and graffiti on the walls of the temple of Ptolemy XII, the façade and walls of the

25 Stadler 2012, 264.
26 SNP Report 2006.
27 SNP Report 2012.
28 SNP Report 2007, 2008, 2011, 2012, and 2017.
29 Results published in Petrie 1908.
30 Abul-Yazid et al. 2019. See also the site of the *Tübinger Tempelprojekt Athribis*, https://www.uni-tuebingen.de/fakultaeten/philosophische-fakultaet/fachbereiche/altertums-und-kunstwissenschaften/ianes/forschung/aegyptologie/projekte/athribis-projekt-dfg.html (last accessed: 17.1.2020).

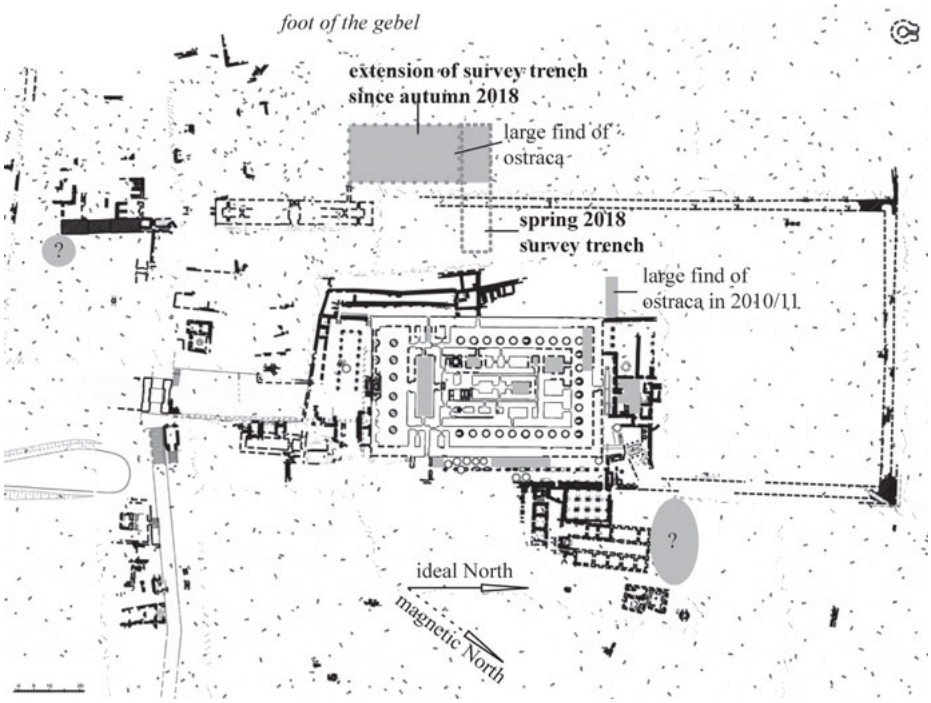


Fig. 2: Map of the site showing the findspots of ostraca in grey.

aforementioned *speos*,[31] as well as on an unfinished reused composite capital. It is interesting to note that the recent excavations did not unearth any Demotic papyri. A large number of ostraca was found within a relatively short period of time at the end of the 2010 campaign and the beginning of the 2011 campaign, in an area which at the time was thought to have been an ancient rubbish dump, at the north-western corner of the temple. Another group came from what is probably the rubble heap of Petrie's 1907 excavation. Cleaning the terrace of the *speos* also brought to light some ostraca, and some more were found inside the temple of Ptolemy XII, but since this area was heavily impacted by later reuse, the ostraca found there were certainly not *in situ*. There were also random surface finds all over the site.

Since then, the situation has changed dramatically. In February and March 2018, further 1,450 ostraca were uncovered in a narrow exploratory trench outside one of the gates in the western enclosing wall of the temple (Fig. 2). It turned out that this area had been used by *sebbakhin* to dump the larger bits and pieces left over from sifting

31 The Demotic inscriptions of this *speos* are mentioned in a report by El-Farag/Kaplony-Heckel/Kuhlmann 1985, 1–4. They are edited by S. Lippert in her Habilitationsschrift (submitted 2018, to be published in the series *Athribis* at the IFAO). For a preliminary report, see Lippert 2014, 145–153, but note that more inscriptions have since been discovered.

decayed mud bricks widely used as fertilizer (*sebbakh*) in the nineteenth and early twentieth centuries. This circumstance makes it likely that the findspot of the mass deposit of ostraca found in 2010 and 2011 is also part of the same *sebbakhin* dump, which probably runs along the whole western side of the temple of Ptolemy XII. The exploration of this dump continues, and by the end of March 2020, over 10,000 new ostraca had been brought to light. This material will be examined and edited by an international research group coordinated by S. Lippert.

The new finds also shift the proportions between the languages, although the most recent finds have not yet been evaluated statistically at the time this article was finished and therefore could not be included.

Tab. 2: Texts from Hut-Repit.

	Found in 2005–2016	Found in spring 2018
Total Ostraca Finds	543	1450
Demotic	378	ca. 1050
hieratic	6	12
hieroglyphic	0	3
Greek	59	139
Coptic	24	9
Greek or Coptic?	48	0
Arabic	9	0
drawings	9	66
unclear	10	ca. 171

The excavation of the *sebbakhin* has removed the original stratigraphy and turned it upside down, bringing the oldest layers above the most recent. The result of this seems to be clearly visible in the table showing the newly found material, which seems to come mainly from older archaeological layers, as there are no Arabic ostraca and very few Coptic. On the other hand, ostraca with drawings, which range from geometric designs such as squares, rectangles, or stars to depictions of animals, persons, and divinities, are much more frequent.

The majority of the Demotic ostraca, perhaps as much as two thirds, clearly belonged to the administration and economy of the temple—there are numerous accounts and lists, as well as some receipts. About 40 currently known Demotic wine jar labels (*dipinti*) also fall into the category of texts from the temple administration and economy.

Another group, already present in the 2005–2016 finds, but noticeably increased through the new finds, is formed by school texts. These include beginners' writing exercises, grammatical and mathematical texts (teacher's models or pupils' copies), and model letters. Incidentally, this increase shows that the temple school, dug up by the *sebbakhin*, was probably situated somewhere in the western or northern part of the temple precinct. The small number of magical, religious and astronomical texts was of course also the result of priestly activities.

2 Text Forms and Text Types

We will start with the text forms that are present in both sites. "Text Form" refers to the larger categories that can be defined through form and function, while "Text Type" refers to sub-groups within these categories.[32]

2.1 Accounts

This group of documents is characterized by a list form with the text in two columns: The one on the right registers individuals and/or institutions and the left one records amounts of money or quantities.

At Soknopaiou Nesos, 37 out of 800 ostraca have already been identified as belonging to this group, usually mentioning either individuals (account Type A[33]) or institutions (account Type B[34]) which are each assigned an amount of money[35] or a quantity of wheat[36] or bread[37]. Professional titles of the individuals are very rare (e. g. DDD I 189 = TM 99501), occasionally we find headings (e. g. DDD I 189 = TM 99501) and dates (e. g. DDD I 192 = TM 99504).

32 An intentional space in the Demotic text is indicated by □; a space line by □□□.

33 E. g. DDD I 182 = TM 99494, DDD I 183 = TM 99495, DDD I 187–190 = TM 99499–99502.

34 E. g. DDD I 181 = TM 99493, DDD I 184 = TM 99496, DDD I 192–193 = TM 99503–99504.

35 E. g. DDD I 176–177 = TM 99488–99489.

36 E. g. DDD I 178–185 = TM 99490–99497, DDD I 186+182 = TM 99494, DDD I 187–192 = TM 99499–99504.

37 E. g. DDD I 193–194 = TM 99505–99506. The correct reading of the group designating the bread loaves is uncertain. Zauzich 1984, 89, had proposed *gʾgʾ*, in DDD I, pp. 5–6, we opted for *gsgs*(?), while Stadler (2012, 258 n. 2) recently suggested *snsn*. Perhaps *sn.wy* as a phonetic writing of *snw* "offering bread" (Wb. IV, 155) is meant.

DDD I 182 (= TM 99494)
Account Type A (wheat)[38]

1	*Pa-Ḥ^{c}py (sꜣ) Nḫt.ṯ-nb=f* ⅒	Paopis (son) of Nestnephis: ⅒ (artabe)
2	*Sṯꜣ.ṯ=w-tꜣ-wty pꜣy=f šr* ⅒	Stothoetis his son: ⅒ (artabe)
3	*Ḫtbꜣ pꜣy=f šr* □ ⅒	Satabus his son □ ⅒ (artabe)
4	*Ḥr (sꜣ) Ḥr-pyt (sꜣ) Wn-nfr$^{c.w.s.}$* ⅒	Horos, (son) of Harpagathes, (son) of Onnophris$^{L.P.H.}$: ⅒ (artabe)
5	*Hr=w (sꜣ) Ḥr-pyt* □ ⌜⅒⌝	Herieus (son) of Harpagathes □ ⅒ (artabe)
6	⌜*Ḥr (sꜣ) Hr=w*⌝ *[…]*	Horos (son) of Herieus […]

DDD I 184 (= TM 99496)
Account Type B (wheat)[39]

col. 2

x+4	*sw 21 tꜣ* ⌜*ḫny(.t)*⌝ *^{c}ꜣ(.t) rtb 4 sw 10[+x …]*	day 21: the big revenue collection: 4 artabai; day 10 [+x …]
x+5	*sw 22 tꜣ ḫny(.t) … sw 12 wḥm 1* □ *sw* ⌜*1*⌝*(?)*	day 22: the revenue collection …; day 12 plus: 1 □ day 17(?)
x+6	*sw 26 tꜣ ḫny(.t) sw 15(?) .. sw 16 sw 17*	day 26: the revenue collection; day 15(?) .. day 16, day 17
x+7	*rtb* ⌜*2*⌝ *jn Ḥr n=y* ⌜*…..*⌝	2 artabai. Horos brought to me …..
x+8	*sw 18 tꜣ ḫny(.t) ^{c}ꜣ(.t) sw 18*	day 18: the big revenue collection; day 18,
x+9	*sw 19 sw 20 sw 21 r rtb 4*	day 19, day 20, day 21: total 4 artabai
	…	…

It is not always clear whether revenues or expenses of the temple treasury are meant, but headings like "the list of the individuals who took wheat" (DDD I 180 = TM 99492), "the list of priests who take wheat in regnal year 41" (DDD I 189 = TM 99501) show that we are at least sometimes dealing with expenses of the temple granary. In contrast to the allocation lists that will be encountered later, these accounts mention specified quantities of money or products and these quantities are not equal in value. Several of these lists show check marks of different kinds: dots, crosses and slashes.[40]

At Hut-Repit accounts are by far the largest group among the Demotic ostraca. As is usually the case with this type of texts, the scribe limited himself to the minimum of information. If, as often, there is no heading such as "what NN has brought" or "for

38 In Soknopaiou Nesos it is customary not to write the unit *rtb* "artabe" when the quantity is below one artabe, cf. DDD I, p. 6. L.P.H. is the abbreviation of "he may live, prosper and be healthy" (*^{c}nḫ wḏꜣ snb*). In Soknopaiou Nesos several personal names show this formula which is otherwise common for *Pr-^{c}ꜣ* "pharaoh".

39 Only a part of the text is presented here. In line x+5, read *sw 22 tꜣ ḫny(.t)* … instead of *sw 22* ..... (ed.pr.).

40 E. g. DDD I 189 = TM 99501 col. 2; 192–193.

the money expense," one wonders whether the listed commodities were paid out or received by the temple. The occasional use of ambiguous prepositions that can mean either "to the hand of someone," that is "for someone," or "from the hand of someone," or even "in the hand of someone," that is, in his/her possession, does not help either. Also, many accounts only give numbers in the second column and thus leave us guessing whether a commodity or money is meant. From those that clearly mention a commodity, we can gather that the temple administration was involved in the stocking and distribution of cereals—usually wheat, but sometimes also barley—, bread, wine and fruit—mainly dates, but also dum palm and argun palm fruits, and possibly carob. Unlike at Soknopaiou Nesos, individuals as well as institutions can be mentioned in one and the same account (account Type C), while in others, commodities or other purposes of payment are listed in the first column (occasionally preceded by "price of" or "for"), and amounts of money in the second (account Type D).

2.2 Lists

This text form lists individuals, entities or items without an amount of money or a quantity of a product. However, sometimes one cannot be sure if the second column with amounts or quantities is just broken off, so that some of the texts may actually belong to the category "accounts".

Three main groups are to be recognized: texts with personal names (list Types A–D), lists of real estate (list Type E), and inventory lists (list Type F). The documents of the first category can be divided into those which show personal names without details about the individuals who are recorded (list Type A), those with names and specification of the *phyle* (list Type B), and those with names and professional titles (list Types C and D). Type A is present at both sites, Type B only in Soknopaiou Nesos, Types C, D, E, and F only in Hut-Repit.

About 80 ostraca from Soknopaiou Nesos belong to lists of Types A[41] and B[42]: (i) Lists with headings like "list of the individuals who took wheat"[43] or "taking wheat"[44] or those identifying the individuals as participants of specific festivals[45] are most likely to be seen as allocation lists (for one possible exception see below). Priests

41 E. g. DDD I 36 = TM 99356, DDD I 37+83 = TM 99357, DDD I 38 = TM 99358, DDD I 39+70 = TM 99359, DDD I 40–46 = TM 99360–99366, DDD I 55–59 = TM 99375–99379, DDD I 62+66 = TM 99386, DDD I 63–65 = TM 99383–99385, DDD I 68 = TM 99388, DDD I 69+73 = TM 99389, DDD I 71 = TM 99391, DDD I 74–82 = TM 99394–99402, DDD I 84–85 = TM 99404–99405.

42 E. g. DDD I 24+27+54+81 = TM 99344, DDD I 25–26 = TM 99345–99346, DDD I 28–34 = TM 99348–99354.

43 E. g. DDD I 34 = TM 99354 l. 8; DDD I 37+83 = TM 99357 l. 1; DDD I 180 = TM 99492 l. 1.

44 E. g. DDD I 56 = TM 99376 l. x+12.

45 E. g. DDD I 31 = TM 99351 col. II l. x+2.

received rations as part of their pay from the temple, and the distribution of these payments in kind might be documented by these lists as part of the temple book keeping. If all individuals were to receive the same amount of money or the same quantity of a product, that could explain absence of their records. This will be discussed later on. (ii) Lists without headings might have served to check the presence of individuals at a certain event within the temple milieu, in which case they could be attendance lists. It is also conceivable that these attendance lists were the basis for the already mentioned allocation lists. Occasionally, we also find day dates and check marks in front of the names; sometimes the number of individuals is summed up. Some of the name lists with specification of the *phyle* could be the Egyptian counterpart to the lists of *phyle*-members written in Greek on papyrus,[46] but unlike the Demotic documents, the Greek ones usually record the father's, grand-father's and mother's names as well as the age of the priest, because these documents were used for control purposes by the Roman fiscal administration.

DDD I 37 (= TM 99357)[47]
List Type A ii

1	*[pꜣ] ⸢ỉ⸣[p] ⸢rmṯ(?)⸣[nb nty] ⸢ṯꜣy⸣ swꜣ*	List of everyone(?) [who] takes wheat
2	*Ḥr=w (sꜣ) ⸢…⸣[…] (sꜣ) Nḫt-nb=⸢f⸣*	Herieus (son) of ...[...] (son) of Nestnephis
3	*Pa-nꜣ-nfr-ỉ-ỉmy (sꜣ) […….] (pꜣ) ḫm*	Panephremmis (son) of [……] the younger
4	*Ḥr=w (sꜣ) [Tše] (sꜣ) ⸢Tše-nfr⸣*	Herieus (son) of [Teses] (son) of Tesenuphis
5	*Nḫt.ṯ-nb=⸢f⸣(sꜣ) Tše (sꜣ) Tše-nfr*	Nestnephis (son) of Teses (son) of Tesenuphis
6	*⸢Tše-nfr pꜣy=f šr⸣*	Tesenuphis, his son
7	*⸢Sṯꜣ.ṯ=w-tꜣ-wty⸣ (sꜣ) Pa-nꜣ-nfr-ỉ-ỉmy (sꜣ) Ḥr-pyt (pꜣ) ḫm*	Stotoethis (son) of Panephremmis (son) of Harpagathes the younger

DDD I 25 (= TM 99345)
List Type B ii

1	*pꜣ sꜣ 5(.nw) Pa-nꜣ-nfr-ỉmy (sꜣ) Ḥr (sꜣ) Wty (pꜣ) ḫm*	The fifth phyle: Panephremmis (son) of Horos (son) of Uetis (the) younger
2	*Ḥr=w (sꜣ) Qr-ḏꜣḏꜣ (sꜣ) Wn-nfr*	Herieus (son) of Kalatytes (son) of Onnophris
3	*Ḫtbꜣ (pꜣ) ⸢ḫm⸣ (sꜣ) Pa-nꜣ-nfr-ỉmy pꜣ ꜥꜣ*	Satabus (the) younger (son) of Panephremmis the elder
4	*Sṯꜣ.ṯ-wty (sꜣ) Gmr*	Stoethis (son) of *Gmr*
5	*Ḥr-pyt (sꜣ) Ḫtbꜣ (sꜣ) Ḥr⸢-pyt⸣*	Harpagathes (son) of Satabus (son) of Harpagathes
6	*Sṯꜣ.ṯ-wty (pꜣ) ḫm (sꜣ) Ḥr ⸢pa⸣ […]*	Stoethis (the) younger (son) of *Ḥr ⸢pa⸣* [...]
7	*⸢Ḫtbꜣ⸣ […]*	Satabus [...]

46 Cf. P.Louvre I 5 and 6 (2nd century CE, Soknopaiou Nesos), labelled as "Priesterliste"; see further references there.

47 In contrast to the *ed.pr.*, I (M. S.) do not any longer interpret the space between l. 1 and 2 as a blank line.

So far, there is only one example in the material that shows the verb *dỉ* "give" instead of *ṯ3y* "take" in the heading. If it is not a mistake, the document could be a delivery list:

DDD I 35 (= TM 99355)
List Type B i "delivery list?"

1	*[p3] ʿỉpʾ p3 rmṯ sp(-2) ỉ.ỉr dỉ sn.wy(?)*[48] *p3 s3 5(.nw)*	The list of the individuals who gave bread. The fifth phyle:
2	*Sṯ3.ṯ=w-t3-wty (s3) Gml*	Stotoethis, (son) of *Gml*
3	*Ḫtb3 (p3) ʿ3 (s3) Qrʿ-ḏ3ḏ3ʾ*	Satabus (the) elder, (son) of Kalatytes
4	*Pa-n3-nfr-ỉmy (p3) ḥm (s3) Qʿr-ḏ3ḏ3ʾ*	Panephremmis (the) younger, (son) of Kalatytes
5	*ʿnḫ=f (s3) Ḫr-pa-ʾIs.t*	Anchopis (son) of Harpaese
6	*Pa-n3-nfr-ỉmy (s3) Ḫr-ʿ…ʾ*	Panephremmis (son) of *Ḫr-ʿ…ʾ*
7	*Ḫr-pyt (s3) Sṯ3.ṯ=w-t3-wty*	Harpagathes (son) of Stotoethis
8	*Ḫtb3 (s3) Hr=w (s3) ʿQl-ḏ3ḏ3ʾ(?)*	Satabus (son) of Herieus (son) of Kalatytes(?)
	□□□	□□□
9	*[sw] 15 □ 7*	[day] 15 □ 7

Lists of individuals without amounts of money or quantities of products from Hut-Repit generally lack clear headings, although some contain day dates as subtitles. The purpose of these lists of persons remains usually obscure, but as in Soknopaiou Nesos, they might have been used to check attendance and/or document eligibility for allocations.

A remarkable feature of the accounts and lists from Hut-Repit is a comparatively large number of female names among the persons mentioned. Not all persons are identified by professional titles (names without titles: List Type A), but we find for example builders and mud carriers, boatmen, weavers, a wet-nurse, and even a eunuch (List Type C: names with professional titles; and Type D: mixed type). On the other hand, there appear practically no priestly titles, perhaps because this was the default anyway.

Only attested in Hut-Repit are lists of real estate, designated as 'houses' (*ʿ.wy*) or 'places' (*m3ʿ* or *s.t*), and identified by their owner (List Type E); one also contains measurements in cubits. In case of the 'places' (*s.t*), this could also mean tombs or *pastophoria*, that is, the small huts inside the *temenos* in which the priests lived during their month of service.[49] It remains unclear what function these lists of real estate served within the temple administration.

Object inventories from Hut-Repit show characteristic features of accounts, namely two columns—sometimes the name of the object, sometimes its material and/or its function is given in the first column and a quantity in the second column

48 Regarding the reading, cf. fn. 37.

49 Cf. the sale of a *pastophorion* DDD III 32 = TM 109362.

(List Type F)—but it is not very likely that they are accounts. Actually, the purpose of these inventory lists can be gathered from Greek texts: The Roman administration obliged temples to hand in yearly statements about their possessions, including cult objects,[50] and it is conceivable that these notes served as basis for these temple reports.

Lists which sum up the members of each *phyle* are not documented anywhere outside Soknopaiou Nesos (*Phyle* Counts: Lists Types G and H). Currently, 24 documents of this kind are known. The most frequently occurring form is the one showing a list mentioning each *phyle* followed by a number either directly or at a distance in a second column (Lists Type G). These numbers represent most likely the number of *phyle* members in the temple of Soknopaios on a specific day, because occasionally we find a day date at the beginning of the text and the word *rmṯ* "person" before the numbers.

DDD I 4 (= TM 99325)
List Type G (Phyle Count)

1	*sȝ ṯp ☐ 21*	First phyle ☐ 21
2	*sȝ 2.nw ☐ ˹..˺*	2nd phyle ☐ ..
3	*sȝ 3.nw ☐ 31*	3rd phyle ☐ 31
4	*sȝ 4.nw ☐ 14*	4th phyle ☐ 14
5	*sȝ 5(.nw) ☐ 18*	5(th) phyle ☐ 18

Less frequent is the type that lists phyle 1 to 5, each followed by one proper name plus filiation, and the number of the members of the phyle; occasionally, these lists are preceded by a day date. The mentioned individual is probably the phylarch (List Type H).

DDD I 3 (= TM 99324)
List Type H (Phyle Count)

1	*sȝ ṯp Pa-nȝ-nfr-ỉmy (sȝ) Ḥr (sȝ) Ḫtbȝ*	First phyle: Panephremmis (son) of Horos (son) of Satabus:
2	*rmṯ 31*	31 persons
3	*sȝ 2.nw Stȝ.{ṯ}ṯ=w-tȝ-wty (sȝ) Ḥr-pa-ʾIs.t rmṯ 1˹4˺*	2nd phyle: Stotoethis (son) of Harpaesis: 14 persons
4	*sȝ 3.nw Ḥr (sȝ) Pȝ-mȝe rmṯ 29*	3rd phyle: Horos (son) of Pmois: 29 persons
5	*sȝ 4.nw Tše (sȝ) Nḫt.ṯ-nb=f rmṯ 26*	4th phyle: Teses (son) of Nestnephis: 26 persons
6	*sȝ 5(.nw) Stȝ.{ṯ}ṯ=w-tȝ-wty (sȝ) Ql-ḏȝḏȝ*	5(th) phyle: Stotoethis (son) of Kalatytes
7	*☐ rmṯ 28*	☐ 28 persons

50 Cf. P.Zauzich 12 = TM 46246: Dousa/Gaudard/Johnson 2004, 184 n. 86. See also ST06/344/1366, an unpublished Greek list of priests and goods of the temple of Soknopaios, dated to the end of 2nd–beginning of 3rd century CE (γραφὴ ἱερέων καὶ χειρισμοῦ): SNP Report 2006, 6 and Capasso 2012, 239, no. 79.

These phyle counts are most likely attendance lists. It is conceivable that they could have been relevant in the context of allocations.

2.3 One-/Two-Name Ostraca

The vast majority of the ostraca from Soknopaiou Nesos, about 400, show one or two proper names with filiation, i. e. the father's and occasionally the grandfather's names (Type A). Titles appear rarely and all are priestly (Type B). We can exclude that these sherds belong to jar labels because their size and format are quite uniform.[51]

DDD I 139 (= TM 99453)
One-Name Ostracon Type A

1	*St̲ȝ.ṯ-wty (sȝ) ʾIw=f-ꜥnḫ*	Stoetis, (son) of Apynchis,
2	*(sȝ) Pȝy-Bs*	(son) of Pibes

DDD I 108 (= TM 99422)
One-Name Ostracon Type B

1	*Hr=w (sȝ) Ḥr (sȝ) Ḥtbȝ*	Herieus (son) of Horos, (son) of Satabus,
2	*(pȝ) wꜥb nty ‹ir› ḥny(.t)*	(the) priest who ‹is› on duty,
3	*(pȝ) ḥm-nt̲r Sbk-nb-Pay*	(the) prophet of Soknopaios,
4	*pȝ nt̲r ꜥȝ*	the great god

The purpose of these ostraca is not known. In DDD I we suggested that they served to select individuals for specific priestly positions. As such one could call them tickets or lots. A lottery is mentioned in the so-called agreements between the temple and priests, *ḥwj qll* "to throw the lot".[52] Zauzich thought that these ostraca could have been used for elections,[53] but in that case, one would expect the same person to appear multiple times, which is not the case, at least in the edited material. During the ostraca workshop, J. Lougovaya suggested another usage of this object type, namely as vouchers with which the individual could obtain a certain quantity of a product, food or similar (cf. the beer ostraca mentioned below). For the interpretation of the usage the original findspot could be crucial. As far as we know, the ostraca published in DDD I were found by Zucker mostly in a rubble heap outside the town wall,[54] and more have been found by the recent Lecce missions on the spoil heap of Zucker's

51 Caputo 2019, 514–515.
52 DDD I, pp. 4, 102.
53 Zauzich 1997, 1060: "positiver Ostrakismus".
54 DDD I, pp. 1–2; Stadler 2012, 265–267 doubts the correctness of the entries in the excavation diaries by Schubart and Zucker and postulates a findspot between the *temenos* and the town wall.

excavation in this area.[55] However, Stadler notes that about 90 one-/two-name ostraca have been discovered in the last years in and around court C 1 of the Soknopaios temple, one of them *in situ* under the paving.[56] Thus, it looks like these ostraca were first used, for whatever purpose, in the vicinity of the temple, and that most of them were later discarded outside the town. There are no indications for storage in an archive, as Stadler[57] speculates.

At Hut-Repit, there are also a certain number of sherds that contain only a name with filiation. However, these fall into two categories: some seem in fact to belong to the same type as the one-name ostraca typical for Soknopaiou Nesos, but at Hut-Repit, there are comparatively few of them. In other cases, the names are written on large sherds and not even placed prominently in the middle: that makes it more likely that those sherds mentioning names with filiation derive from jar labels (see 2.5), indicating the vintner or the provider of the wine, or perhaps the owner of the amphora. The ceramological examination of these sherd is under way and will certainly help us to better understand this issue.

Besides lists with one and two columns and one-name/two-name ostraca, six other text forms can be identified, each attested only at one of the sites: beer ostraca, receipts, letters, school texts, texts with religious, magical and astronomical content and jar labels (*dipinti*).

2.4 Beer Ostraca

The beer ostraca, present only in Soknopaiou Nesos, show a date, one proper name with filiation and a quantity of beer. Given the so-called "Bierscheine" written in Greek from Tebtynis, these ostraca could have served as vouchers with which the individual could obtain the stated quantity of beer for a festival or another event in the temple milieu.[58] However, a use as receipts for beer deliveries cannot be excluded either.

DDD I 198 (= TM 99510)
Beer Ostracon

1	*ỉbd 1 ꜣḫ.t sw 9 Wn-nfr$^{c.w.s.}$ pꜣ ḥm-nṯr n ꜣIs.t*	Month 1 of Akhet day 9: Onnophris$^{L.P.H.}$, the prophet of Isis
2	*ḥnq.t šš̈w 3.t*	beer: 3 jugs

55 Stadler 2012, 266; Chiesi et al. 2012, 47, fig. 34.
56 Stadler 2012, 265–266 and fig. 1.
57 Stadler 2012, 266–267.
58 Reiter 2005, 133–136.

2.5 Jar Labels

The jar labels (*dipinti*) from Hut-Repit are not in fact ostraca, because they were inscribed on complete vessels, not on sherds. Several hundreds of these have been found by now; the largest group comprises labels recording a year date without the name of a sovereign. The date is followed either by the words "the supplies from" or by an ordinal number and then a toponym, or simply by a toponym or a personal name. At least four different places have been identified so far, although only one of them can be located without doubt. Other labels seem to refer to the capacity and/or the content.

2.6 Receipts

Other text types unknown from the ostraca material from Soknopaiou Nesos are receipts for money or grain. Although present at Hut-Repit, these form a comparatively small group which has, however, slightly increased through the newest finds. Among them are some clear tax receipts, mainly for *nḥb.t* tax. Others receipts for payments in money or grain seem connected to the temple administration, and sometimes the boundaries between "grouped receipts" (i. e. a series of receipts on the same ostracon or papyrus) and accounts of payments are difficult to draw. A very interesting type is represented by only four ostraca which seem to be receipts (or certificates?) concerning young red bulls, which probably were offered during funerary ceremonies for deceased persons with a special status.[59]

2.7 Letters

Among the small number of letters preserved on ostraca from Hut-Repit, some could be drafts for real letters or for legal documents written in letter form. Others might be letters to a god, and at least one is clearly a model letter used as a school exercise, as suggested by its extremely large handwriting.

59 Cf. PT 580 where the leg and other parts of a red bull are offered before the seven gates of the underworld, and BD 144, where Horus prepares the offering of a red bull, probably a symbol of Seth, to his father. See also P.Louvre E 7850 = TM 46143 (Cruz-Uribe 1985, 10–11, n° 5 [cited erroneously as Louvre E 7450]; Devauchelle 1987, 154–155; Donker van Heel, 1995, 222, n° 22), a letter by an overseer of the necropolis, acknowledging the receipt of a red bull for the funeral of a fourth prophet of Amon, although the current interpretation of this text seems to be that the bull in question was given as a payment in kind for the fee usually levied by the overseer of the necropolis (533 BCE, Thebes east).

2.8 School Texts

That a school indeed existed at the temple of Hut-Repit is not only highly likely because an Egyptian temple is supposed to have a school,[60] but is also confirmed by sherds with school exercises. Already present in the earlier finds, their number has increased significantly through the recent discoveries, probably because the school was one of the mud brick buildings within the *temenos* which the *sebbakhin* had dug up. Over 100 school ostraca recovered there attest to various stages of teaching and learning. There are sherds entirely covered with C-shapes, loops and zigzag lines, likely the product of the smallest children's efforts to master pen and ink; conjugations of verbs and phrases repeating the same verbal constructions over and over belong to the syllabus of more advanced pupils. There are Greek alphabets, rows of syllables (consonant-vowel and consonant-vowel-consonant combinations), and excerpts that look like Greek literary texts (although not yet identified)[61]; there are also sequences of Demotic and Greek cardinal numbers, arithmetic and perhaps geometric problems in Demotic and even a significant number of sherds with hieratic signs that seem too large to be anything else than a teacher's model or a pupil's copy.

2.9 Texts of Religious, Magical and Astronomical Content

The last, rather small group of ostraca from Hut-Repit contains Demotic (and some hieratic) texts that seem to have a religious or magical content. One seems to invoke Min in his role as a funerary deity, calling him "lord of the sacred land," that is, of the necropolis, and mentions a "chief of the akh spirits" and "the dead." Another example is perhaps magical rather than religious—above a pentagram, one line of Demotic looks at first glance quite unintelligible, but might have to be read backwards, word by word, which then would result in the phrase "It belongs to the god"; the sherd might have been used for a ritual of protection. Finally, there are also some astronomical ostraca with birth notes and horoscopes, that is lists of celestial configurations for a given date.

3 Comparison

A comparison of the ostraca material from Soknopaiou Nesos and Hut-Repit shows that, while accounts at Soknopaiou Nesos are quite homogenous in form, the same text type shows much more diversity in Hut-Repit. One possible explanation could

60 Quack 2002, 159–171.

61 On Greek literary ostraca in general, see Lougovaya in this volume.

be that this is the consequence of different administrative proceedings. While the accounts in Soknopaiou Nesos seem to have been drawn up centrally by one single scribe at a time or, at the most, by a few well-trained individuals, those from Hut-Repit might have been produced by a larger group of people, who were not institutionally trained and thus could not (or did not have to) follow standard layouts.

We are of course aware of the fact that, in Soknopaiou Nesos as well as in Hut-Repit, the ostraca material we can analyze is entirely due to the chance of discovery, as neither of the two places has yet been excavated completely. Further finds could well change the impressions we have from looking at the sources available today. However, some text types from Soknopaiou Nesos seem indeed special: they have either never been found elsewhere, like the phyle counts, or never in such vast quantities, like the one- and two-name ostraca, which supports the idea that the temple administration of Soknopaiou Nesos had its own, very specific procedures.

Another difference is that women do not appear in the ostraca from Soknopaiou Nesos, while they are quite well represented in the material from Hut-Repit, especially as recipients of goods in various types of accounts. The reason for this phenomenon is still unclear.

4 The Use of Ostraca as Writing Material and the Temple Book Keeping

Finally, we should address the question, why these text types were written on ostraca and not on papyrus. All texts from Soknopaiou Nesos on ostraca come from the temple administration, and the majority of the sherds from Hut-Repit are also products of the local temple administration.

One of the characteristics of the ostraca from both sites is the scantiness of recorded information. This is of course only a problem for the modern researcher, since the original scribe and the recipient of the documents naturally had all the supplementary data necessary for understanding the texts, be it that they were common knowledge or that they were transmitted orally. One example is the allocation lists that are attested in Soknopaiou Nesos: in contrast to accounts, they do not give amounts, because all persons involved knew how much the listed people received, and therefore we assume that it was the same ration for everyone. Another example are accounts, which often give only numbers, but no units or measures, and sometimes do not even specify whether money or a product is meant, or whether it is received or given by the persons that are listed. Furthermore, these administrative documents on ostraca generally lack a complete dating—normally, we have either no date at all or just an indication of the day, rarely the month, while a regnal year is practically never mentioned, and when it is, the name of the king/emperor is lacking. This suggests that these sherds had only a limited ‘useful life’: accounts, allocation and attendance lists

were preliminary notes for the temple book keeping and the information they contained was transferred onto papyrus within the next few days or at the most, at the end of the month, after which the ostraca could be thrown away, while the papyrus scrolls were archived. To use papyrus for such short-lived notes and drafts would have been a waste.

How straightened out Demotic accounts covering longer periods of time on papyrus look like is shown by the hundreds of fragments of book keeping records from Soknopaiou Nesos that sometimes are preserved at a length of several meters; a representative number of these texts will be published online in the research project *DimeData* (ANR/DFG) that has started in autumn 2018 in Bordeaux and Würzburg. To fulfill their obligations towards the state administration, the temples then drew up recapitulating accounts in Greek, like P.Louvre I 4 published by Jördens.[62]

In the same vein, drafts of letters could be written on ostraca because the texts were later recopied on papyrus. The astronomical ostraca concern the preliminary notes needed for casting a horoscope for the client, while the predictions themselves were probably given orally. Finally, pupils' exercises were *per se* ephemeral, while the texts the teacher prepared for use in class might have been written on ostraca for various reasons, for example because they were just excerpts from manuals on papyrus kept in the temple library.

62 Lippert 2010, 427–434.

Appendix

Text Forms and Text Types attested on Demotic ostraca from Soknopaiou Nesos and Hut-Repit

	Soknopaiou Nesos		Hut-Repit	
	layout	content	purpose	content	purpose
1. Accounts	lists with two columns (col. b: amount of money or quantity of a product)	(A) names of individuals + amount of money/wheat/bread	revenues or expenses of the temple treasury		
		(B) day date + name of institutions/individuals + quantity of wheat/bread		(C) names and/or institutions + numbers or units with numbers (= amount of commodity, money)	revenues or expenses of the temple treasury
				(D) commodities or other reasons for costs + amount (of money)	expenses (of the temple treasury)

		Soknopaiou Nesos		Hut-Repit	
	layout	content	purpose	content	purpose
2. Lists	lists in one column (without an amount of money or quantity of a product)	(A) names of individuals without further personal details	check lists; allocation lists (lists with heading), attendance lists and/or basis for allocation lists (without headings)	(A) names without further personal details	attendance lists and/or allocation lists
		(B) names and specification of the *phyle* the individuals belong to			
				(C) names and (professional) titles	?
				(D) names with/without (professional) titles	?
				(E) real estate	?
	lists with two columns (col. b: quantity)			(F) object + its material and / or its purpose + quantity	check lists as basis for inventory lists written in Greek for the Roman administration
		(G) phyle 1–5 + (+ "person") sum of individuals (= phyle members)	phyle counts: attendance lists (basis for allocation lists?)		
		(H) phyle 1–5 + name plus filiation + sum of individuals (= phyle members)			

		Soknopaiou Nesos		Hut-Repit	
	layout	content	purpose	content	purpose
3. One-/ two-name ostraca	(short) texts in one column	(A) one or two proper names plus filiation (father's name and occasionally grandfather's name)	lots? vouchers?	(A) one or two proper names plus filiation (father's name and occasionally grandfather's name)	lots? vouchers?
		(B) one or two proper names plus filiation (father's name and occasionally grandfather's name) + title		(B) one or two proper names plus filiation (father's name and occasionally grandfather's name) + title	
4. Beer ostraca	texts in one column	date + proper name plus filiation + quantity of beer	receipts or vouchers for beer		
5. Jar labels	texts in one column			(A) year date + "the supplies from" or an ordinal number + toponym, or year date + toponym/ personal name	indication of vintage and origin
				(B) volume or commodity	indication of content
				(C) name with filiation	indication of the vintner, supplier or proprietor?
6. Receipts	texts in one column			receipts for money or grain	receipts for taxes and other payments

		Soknopaiou Nesos		Hut-Repit	
	layout	content	purpose	content	purpose
7. Letters	texts in one column			letters and letter type legal documents	drafts / school exercises
8. School texts	various (lists, rows of signs etc.)			writing exercises, grammatical paradigms, mathematical problems etc.	teacher's models/pupils' exercises
9. Texts of religious, magical and astronomical content	texts in one column; signs			hymns, prayers(?) and spells(?); birth notes and horoscopes	rituals, personal piety(?), protection(?); preparation for predictions

Bibliography

Abul-Yazid, Mohamed/Hammam, Sayed/Aberrahman, Sayed/El-Qadi, Alaa (2019), "Excavations in the Temple of Repit at Athribis in the 1980s", in: Marcus Müller/Mohamed El-Bialy/Mansour Boraik (eds.), *Athribis V. Archäologie im Repit-Tempel zu Athribis 2012–2016* (Temples 15), Cairo, 427–436.

Boak, Arthur E. A. (1935), *Soknopaiou Nesos: The University of Michigan Excavations at Dimê in 1931–32*, Ann Arbor.

Capasso, Mario (2012), "I papiri e gli ostraka greci, figurati e copti (2001–2009)", in: Mario Capasso and Paola Davoli (eds.), *Soknopaiou Nesos Project I (2003–2009)* (Biblioteca degli studi di Egittologia e di Papirologia 9), Pisa/Rome, 231–247.

Capasso, Mario/Davoli, Paola (2012), "Introduzione: Dime in età moderna", in: Mario Capasso and Paola Davoli (eds.), *Soknopaiou Nesos Project I (2003–2009)* (Biblioteca degli studi di Egittologia e di Papirologia 9), Pisa/Rome, 11–18.

Caputo, Clementina (2019), "Dati preliminari derivanti dallo studio degli ostraca di Berlino (O. Dime) da Soknopaiou Nesos", in: Alberto Nodar and Sofia Torallas Tovar (eds.), *Proceedings of the 28th International Congress of Papyrology (Barcelona 2016)*, Barcelona, 534–539.

Caputo, Clementina/Cowey, James M. S. (2018), "Ceramic Supports and Their Relation to Texts in Two Groups of Ostraca from the Fayum", in: Francisca A. J. Hoogendijk and Steffie M. T. van Gompel (eds.), *The Materiality of Texts from Ancient Egypt. New Approaches to the Study of Textual Material from the Early Pharaonic to the Late Antique Period*, Leiden/Boston, 62–75.

Chiesi, Ivan/Davoli, Paola/Occhi, Simone/Raimondi, Nicola (2012), "I rilievi topografici del sito", in: Mario Capasso and Paola Davoli (eds.), *Soknopaiou Nesos Project I (2003–2009)* (Biblioteca degli studi di Egittologia e di Papirologia 9), Pisa/Rome, 23–81.

Clarysse, Willy (2005), "Tebtynis and Soknopaiu Nesos: The Papyrological Documentation through the Centuries", in: Sandra Lippert and Maren Schentuleit (eds.), *Tebtynis und Soknopaiu Nesos. Leben im römerzeitlichen Fajum. Akten des internationalen Symposions vom 11. bis 13. Dezember 2003 in Sommerhausen bei Würzburg*, Wiesbaden, 19–27.

Cruz-Uribe, Eugene (1985), *Saite and Persian Demotic Cattle Documents. A Study in Legal Forms and Principles in Ancient Egypt* (American Studies in Papyrology 26), Chico.

Davoli, Paola (2015), "The Temple as a Spatial and Architectural Reality", in: Mario Capasso and Paola Davoli (eds.), *Soknopaios. The Temple and Worship. Proceedings of the First Round Table of the Centro di Studi Papirologici of Università del Salento* (Lecce, October 9th 2013) (Edaphos 1), Lecce, 117–154.

Devauchelle, Didier (1987), "Notes sur l'administration funéraire égyptienne à l'époque gréco-romaine", *Bulletin de l'Institut Français d'Archéologie Orientale du Caire* 87, 141–160.

Donker van Heel, Koenraad (1995), *Abnormal Hieratic and Early Demotic Texts collected by the Theban Choachytes in the Reigns of Amasis. Papyri from the Louvre Eisenlohr Lot*. Dissertation thesis, Leiden University, Leiden.

Dousa, Thomas/Gaudard, François/Johnson, Janet (2004), "P. Berlin 6848, a Roman Period Temple Inventory", in: Friedhelm Hoffmann and Heinz Josef Thissen (eds.), *Res Severa Verum Gaudium. Festschrift für Karl-Theodor Zauzich zum 65. Geburtstag am 8. Juni 2004* (Studia Demotica 6), Leuven/Paris/Dudley, MA, 139–222.

El-Farag, Rifaat/Kaplony-Heckel, Ursula/Kuhlmann, Klaus Peter (1985), "Recent Archaeological Explorations at Athribis (*Ḥw.t Rpjj.t*)", in: *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 41, 1–8.

Jördens, Andrea (1998), *Griechische Papyri aus Soknopaiu Nesos (P. Louvre I)* (Papyrologische Texte und Abhandlungen 43), Bonn.

Jördens, Andrea (2005), "Griechische Papyri in Soknopaiu Nesos", in: Sandra Lippert and Maren Schentuleit (eds.), *Tebtynis und Soknopaiu Nesos. Leben im römerzeitlichen Fajum. Akten des internationalen Symposions vom 11. bis 13. Dezember 2003 in Sommerhausen bei Würzburg*, Wiesbaden, 41–56.

Lippert, Sandra (2010), "Seeing the Whole Picture – Why reading Greek Texts from Soknopaiou Nesos is not Enough", in: Traianos Gagos (ed.), *Proceedings of the 25th International Congress of Papyrology, Ann Arbor, July 29–August 4, 2007* (ASP), Ann Arbor, 427–434.

Lippert, Sandra Luisa (2014), "Ostraca, Graffiti and Dipinti from Athribis in Upper Egypt – A Preview", in: Mark Depauw and Yanne Broux (eds.), *Acts of the Tenth International Congress of Demotic Studies. Leuven, 26–30 August 2008* (Orientalia Lovaniensia Analecta 231), Leuven/Paris/Walpole, MA, 145–153.

Lippert, Sandra Luisa/Schentuleit, Maren (2006), *Ostraka* (Demotische Dokumente aus Dime 1), Wiesbaden.

Lippert, Sandra Luisa/Schentuleit, Maren (2010), *Urkunden* (Demotische Dokumente aus Dime 3), Wiesbaden.

Pernigotti, Sergio (2008), "Ostraka demotici da Soknopaiou Nesos", in: *Ricerche di Egittologia e di Antichità Copte* 10, 51–72.

Petrie, William Flinders (1908), *Athribis* (Publication of the Egyptian Research Account and the British School of Archaeology in Egypt 14), London.

Quack, Joachim Friedrich (2002), "Die Dienstanweisung des Oberlehrers im Buch vom Tempel", in: Horst Beinlich, Jochen Hallof, Holger Hussy and Christiane von Pfeil (eds.), *5. Ägyptologische Tempeltagung, Würzburg, 23.–26. September 1999* (Ägypten und Altes Testament 33/3), Wiesbaden 2002, 159–171.

Reiter, Fabian (2005), "Symposia in Tebtynis – Zu den griechischen Ostraka aus den neuen Grabungen", in: Sandra Lippert and Maren Schentuleit (eds.), *Tebtynis und Soknopaiu Nesos. Leben im römerzeitlichen Fajum. Akten des internationalen Symposions vom 11. bis 13. Dezember 2003 in Sommerhausen bei Würzburg*, Wiesbaden, 133–136.

Soknopaiou Nesos Project (SNP) Reports 2003–2017, http://www.museopapirologico.eu/sok_rep.htm (last accessed: 17.1.2020).

Stadler, Martin Andreas (2012), "Demotica aus Dime: Ein Überblick über die in Dime während der Kampagnen 2001–2009 gefundenen demotischen Texte", in: Mario Capasso and Paola Davoli (eds.), *Soknopaiou Nesos Project I (2003–2009)* (Biblioteca degli studi di Egittologia e di Papirologia 9), Pisa/Rom, 249–268.

Stadler, Martin Andreas (2015), "Archeology of Discourse: The Scribal Tradition in Roman Fayyum and the House of Life at Dime", in: Mario Capasso and Paola Davoli (eds.), *Soknopaios. The Temple and Worship. Proceedings of the First Round Table of the Centro di Studi Papirologici of Università del Salento* (Lecce, October 9th 2013) (Edaphos 1), Lecce, 189–232.

Tübinger Tempelprojekt Athribis, https://www.uni-tuebingen.de/fakultaeten/philosophische-fakultaet/fachbereiche/altertums-und-kunstwissenschaften/ianes/forschung/aegyptologie/projekte/athribis-projekt-dfg.html (last accessed: 17.1.2020).

Zauzich, Karl-Theodor (1997), "Demotische Ostraka aus Soknopaiu Nesos", in: Bärbel Kramer et al. (eds.), *Akten des 21. Internationalen Papyrologenkongresses Berlin, 13.–19.8.1995* (Archiv für Papyrusforschung und verwandte Gebiete, Beiheft), vol. II, 1056–1060.

Zauzich. Karl-Theodor (1984), "Die Bedingungen für das Scheiberamt von Soknopaiu Nesos", in: *Enchoria* 12, 87–90.

Photo Credits

Fig. 1: Courtesy of *SNP-Soknopaiou Nesos Project*.
Fig. 2: Modified by S. Lippert on the basis of a map supplied by the *Tübinger Tempelprojekt Athribis*.

Jennifer Cromwell

"Forgive Me, Because I Could Not Find Papyrus": The Use and Distribution of Ostraca in Late Antique Western Thebes

"Forgive me, because I could not find papyrus while I was in the countryside." So starts O.Crum 129, a letter from an unknown sender to his holy father—an unnamed monastic elder—and another monk, Brother Zael.[1] The writer in this instance specifies why he was unable to find papyrus: he was away from town and had no access to a supply. Such an explanation is not typical and most likely reflects the particular circumstances of this writer. Normally, the phrase occurs alone, with some minor modifications, either at the beginning or the end of the letter.[2] Taken literally, it is suggestive of a general lack of papyrus. However, the often wanton use of papyrus in western Thebes indicates that there was no significant problem in this respect in the region.[3] The statement rather reflects the greater status that papyrus held over reused potsherds and limestone flakes, and its inclusion is in turn an acknowledgement of the recipient's status, as somebody deserving of a letter written on papyrus. Materiality was imbued with social connotations, at least ideally. However, in practical terms some materials were simply more convenient, and ostraca were perhaps the most convenient of all.[4] Their abundance made them readily accessible for daily needs and their diverse shapes, sizes, and textures meant that writers could easily find something suitable for their purposes.

Western Thebes is one of the best areas in Egypt to study the issue of the material aspects of texts. From the very late sixth to late eighth centuries, thousands of

1 ⲕⲱ ⲛⲁⲓ ⲉⲃⲟⲗ ϫⲉ ⲙⲡⲓⲟⲛϧⲁⲣⲧⲏⲥ ⲉⲓⲥⲛⲧⲥⲱⲱⲩⲉ (O.Crum 129.1–2). The address at the end of the letter is lost, wherein the writer would have included his name; the recipient's name may also have been included here.

2 For example, O.Crum Ad. 25 begins with the politeness marker ⲁⲣⲓ ⲡⲛⲁ "do the mercy" (which could be translated as "please" in English). This ostracon is also an example in which the phrase is written at the end of a letter rather than at the beginning; see also, e.g., O.Brit.Mus.Copt. 2.31. Förster 2002, 867–868 provides references to a number of other examples, but the list is not exhaustive.

3 Profligate use of papyrus is evident in several ways: Arabic protocols were rarely cut off the beginning of rolls in order to be reused, as was the case in other areas (on the reuse of protocols, with particular focus on the monastery of Apa Apollo at Bawit, see Delattre 2007, and P.Brux.Bawit 55/37; 56/19; 57/44; 58/9; 59/17; 60/14 [in the paired numbers, the first number is the edition of the protocol, the second is that of its reuse])—the only Theban example of which I am aware is a fragment of an account, P.Mon.Epiph. 570; large empty spaces are frequently left within the document, note in particular P.KRU 19, in which there is a vacant space of approximately 30 cm between the final witness statement and the scribe's notation; and large letters and well-spaced lines demonstrate that scribes were not trying to be economic with space.

4 On the role of ostraca in everyday writing, see Bagnall 2011, 132–135.

https://doi.org/10.1515/9783110712902-010

documents survive, written on papyrus, parchment, leather, pottery, limestone, and wood, mainly written in Coptic, with a smaller number of Greek texts.[5] Trismegistos, the online papyrological database, lists 2,499 texts from western Thebes in this period.[6] Of this total, 2,120 items are ostraca, that is, 84.8 percent. This statistic demonstrates that ostraca were the primary vehicle for everyday writing, and a wide range of document types are represented, including accounts, legal contracts, letters, lists, notes, oaths, and receipts. The number of ostraca can further be divided into those written on either pottery or limestone, with the former comprising 81.8 percent, equating to 69.4 percent of all Theban texts in Trismegistos. However, the designation "pottery" in itself is a broad category, containing a variety of ceramic wares, not all of which were contemporary late antique products but dated as far back as the pharaonic period.

Another advantage of focusing on western Thebes, in addition to the sheer number of texts that survive on diverse writing supports, is that the texts were written in several settlements across the area, including monastic, ecclesiastic, and secular communities. Many texts have secure provenance, often precise findspots, others can be confidently assigned to specific sites, while a number have only a general Theban attribution. The goal of this study is to combine the different information that is known for Theban ostraca—their content, material, and provenance—to assess if there are any patterns in material use across these sites and document types. Not only will this contribute to our knowledge of written culture in the Egyptian Chora before and after the Arab conquest of 641, it will help develop criteria upon which documents with insecure or unknown provenance could be assigned to one site.

1 Western Thebes in the Seventh and Eighth Centuries

The pharaonic landscape of western Thebes was reshaped in late antiquity (Fig. 1), with the mortuary temples and royal and private tombs reused as villages, churches, and monastic settlements, the latter ranging in size from single-occupation cells, to small hermitages with a handful of individuals, to sizeable communities of several dozen monks.[7] Textual material has been found across the region and the different settlement types.

5 To date, only two Arabic texts—O. Deir el-Bahari 19 and P. Hal. Inv. DMG 3 (published in Liebrenz 2010 and re-edited in Vanthieghem 2019)—are known from the Theban area.

6 Trismegistos.org (last accessed: 2.5.2018). This figure is correct as of 2nd May 2018, using the parameters "Provenance": Thebes west, and "Date": between 550 and 800 CE (strict). The dates are selected using the 'strict' option in order to exclude material given a very broad date from the third or fourth century and later. If, in future, dates are refined for other material, the numbers used in my discussion will naturally change.

7 On Thebes in late antiquity, see especially O'Connell 2007 and 2010; Wilfong 1989 remains a useful overview; recent work in the region is presented in Choat/Cromwell 2016. A map of late antique remains is provided by Pimpaud/Lecuyot 2013, pl. XXXII.

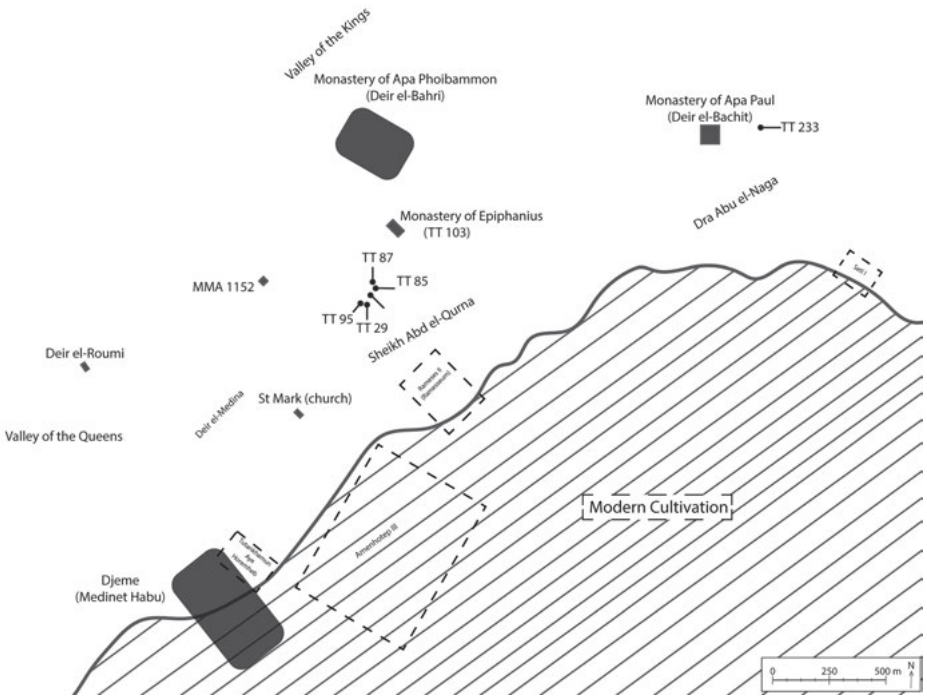


Fig. 1: Map of select monastic and secular communities in western Thebes.

In the early days of excavation, especially the nineteenth and very early twentieth centuries, ostraca were collected en masse without recording their findspot; an example is Naville's excavation of Deir el-Bahri, where he was primarily (if not only) interested in the pharaonic remains of the mortuary temple of Hatshepsut, rather than the Coptic remains of the Monastery of Apa Phoibammon built on top of it.[8] A large number of ostraca were purchased on the antiquity's market and many of these at best have a general "Thebes" provenance. This is not to say that all early excavations did not record such details. Herbert Winlock worked at Theban Tomb (TT) 103—referred to in scholarship as the Monastery of Epiphanius (although never as such in the texts themselves)—between 1912 and 1914 on behalf of the Metropolitan Museum of Art. His goal was to record the location of all documents, but he reports on the difficulties

8 Godlewski 1986, 17 noted "Il est curieux que E. Naville ne dit rien des constructions coptes qui se trouvaient en surface de ces décombres." However, Naville's phrasing in his reports reveals his attitude towards the later remains on top of the temple: "The Copts made such havoc in this beautiful temple, that only the lower part of the walls of the upper platform are left, and the most delicate sculptures were used by them as raw building material" (Naville 1893–1894, 2). His report refers to the size of the rubbish mound left by the Copts and the "layer of Coptic rubbish" and one sentence suffices to describe the ostraca (p. 4: "In this we found ostraca or inscribed pieces of limestone, such as had been unearthed the year before").

faced in trying to achieve this objective.[9] During Uvo Hölscher's work on the late antique remains at Medinet Habu (Djeme) in the 1930s, field numbers for a minority of ostraca were recorded: 55 of the 400 ostraca published in O.Medin.HabuCopt. (13.8 percent). Modern excavations record all material in situ; for example, the texts from TT 29 discovered during work in the tomb by the University of Brussels Expedition in the Theban Necropolis (Mission archéologique dans la Nécropole thébaine) published as O.Frange are accompanied by their field numbers.[10]

The resulting situation is one in which the textual corpus of western Thebes comprises a mix of items (a) with precise findspots within a site, (b) with secure provenance but without in situ information, (c) with uncertain provenance based on information provided by sellers, and (d) with a general—and sometimes tentative—broad Theban provenance. The quantity of items within the first two categories, that is, secure provenance to a specific site (even if the exact location therein is not known), creates a dataset on which observations concerning written culture and material use can be made. For the current study, data will be drawn from six sites, from each of which hundreds of ostraca have been discovered: the monastery of Apa Phoibammon; the monastery at Deir el-Bachit; the monastery of Epiphanius; the cell of Frange; the church of St Mark, and the village Djeme.

The monastery of Apa Phoibammon at Deir el-Bahri was founded in the late sixth century by Abraham, bishop of Hermonthis.[11] Many of the ostraca from the monastery date to the early seventh century and are connected with Abraham himself.[12] Recent excavations on Dra Abu el-Naga / Deir el-Bachit have revealed a complex that rivals the monastery of Apa Phoibammon in size, which has been identified (more or less confidently) as the monastery of Apa Paul that was long-known from written sources.[13] The ostraca found during the excavations are published online.[14] In 1926, several hundred texts (on a variety of supports) from the so-called monastery of Epiphanius were published as P.Mon.Epiph.[15] Thousands of ostraca that were not published at

9 Winlock/Crum 1926, xxii: "Conscientious attempts were made to keep an accurate record of the finding-places of all of the written documents during the excavation of the Monastery, but circumstances were against this record having the value which might be expected." The particular hindrances, described over pp. xxii–xxiii, include the ancient and modern decontextualisation of items and the oversight of diggers who mixed up inscribed sherds with discarded material.

10 The archaeological report on TT 29, by Laurent Bavay, awaits publication, at which time the field numbers published in the text volume can be located on the plan of the tomb (deposition of items within the tomb is discussed further in section 3).

11 Godlewski 1986 is a detailed study of the archaeology and history of the monastery.

12 For Abraham and his associated texts, see Krause 1956.

13 See Beckh 2016; Beckh/Eichner/Hodak 2011; Polz et al. 2012, 127–134.

14 *Koptische Ostraka Online: Koptische nichtliterarische Texte aus dem thebanischen Raum*: koptolys.gwi.uni-muenchen.de (last accessed: 2.5.2018).

15 To date, only Bucking 2007 has attempted to contextualise texts within the monastery based on the information recorded by Winlock.

that time were sold by the Metropolitan Museum of Art to Columbia University. The majority of this large group remain unpublished, but their metadata is available for analysis online.[16] Over 800 ostraca from TT 29 were published in O. Frange. The majority of these ostraca concern the activities of the monk Frange; texts written by him have also been found at several other locations in Thebes.[17] The church (*topos*) of St Mark on Gounet Mourrai was excavated in the 1980s and almost 400 ostraca found at that time have recently been published, as O. Saint-Marc.[18] Finally, the village Djeme built within the remains of Medinet Habu and most likely the largest village in the area has produced a wealth of written evidence, although it is difficult to determine the number of published texts, for reasons that will be discussed in the next section.

2 Methodological Problems

First things first, what is an ostracon? How broad should this category be and does it encapsulate any text—whether in ink or incised—on a sherd, whether limestone, pottery, or wood (a medium that has not heretofore been mentioned, but see Section 3). In the database of the Deir el-Bachit ostraca, two items are included that push this categorisation. O. Bachit 552 is a limestone ball weighing 304.5 grams, bearing two lines of text on one face and a single letter on another: "The grape of weight 9". The text describes the function of the object, it is a label, and the inclusion of O. Bachit 552 in the database of texts from the site reflects the fact that it bears writing, but the text is part of the primary use of the item; it is not the secondary use of a broken sherd. The second item is more difficult to interpret. O. Bachit 1177 is a flat limestone slab with incised lines and two discernible letters; damage to several sides has resulted in the loss of other strokes and it is not possible to determine what purpose the block—and consequently the text—served. For the current purpose, every item published as an 'ostracon' has been included in this study, and the removal of such items from the dataset would have a minor effect on the statistics presented below.

16 The records are accessible via APIS (Advanced Papyrological Information System) at papyri.info (last accessed: 2.5.2018). As they are unpublished (and also have not been integrated into Trismegistos, so do not form part of the statistics concerning Theban ostraca), they do not form part of the current study. It should also be noted that not all the Columbia ostraca derive from the area around TT 103 (the so-called monastery of Epiphanius), but some come from other Theban sites; for their provenance, see O'Connell 2006.

17 A list of these texts is provided in O. Frange pp. 33–35; their provenances include Djeme, the Ramesseum, Deir el-Bahri, the monastery of Epiphanius, the church of St Mark, MMA 1152, TT 85, TT 95, and one ostracon from Karnak on the east bank.

18 In addition to the introduction to O. Saint-Marc, see Ballet 2007, which discusses the ceramic material from the church.

When considering the provenance of texts, one needs to pay attention to where precisely the object was found. The findspot is exactly that, a findspot, and it does not necessarily represent the location in which the text was written or indeed the location to where it was sent. Secondary and perhaps tertiary decontextualization of the object in antiquity and modern times may have moved the item from its authentic place of deposition. Apart from the possibility of multiple recontextualizations of ostraca, a major problem when determining the use of materials at different sites is the issue of where the text was written and where it was sent. This point is clear in the case of letters and possibly legal contracts, in which the two parties do not live in the same place. Some letters preserve the address and in some instances the residence of each party is noted, but these examples are rare.[19] Even when the names and locations of sender and recipient are known, the letter did not necessary stay with the recipient. The archive of the monk Frange, who resided in TT 29, is a case in point. While some of the letters that he wrote stayed with the recipient (for example, O.Medin.Habu-Copt. 139, which he wrote to the well-known Djeme resident Koloje and which was found in the village during the University of Chicago's work at the site), many other had been returned to him and were found in his own cell, together with letters that were written to him.[20] Frange's archive is a good case study of the different ways in which texts circulated and how find spot may or may not indicate writing spot.

A different type of text-movement is witnessed by DRO 3 (Deir el-Roumi ostracon). This money contract was written by Comes son of Pahom to Andreas son of Petros, both of whom are stated as being from Djeme.[21] Taken in isolation, the discovery of this ostracon in Deir el-Roumi, at quite some distance from the village, is quite puzzling. However, it forms part of a small dossier concerning Andreas found at the site.[22] In this instance, the texts were written in one location but transported by their owner, Andreas, as part of his personal property when he moved from the village to pursue a monastic life in the Theban mountain range. Andreas' archive is therefore not representative of writing habits at Deir el-Roumi.

A final word on methodological problems concerns data collection and problems with text editions and online papyrological tools (although future development of the

19 On identifying the location of the two parties, in particular in legal documents and letters, see Burchfield 2016.

20 It is possible that these letters were drafts that Frange wrote but never sent. However, unless duplicate copies of any of these letters are discovered (and no such duplicates are known), it is not possible to determine conclusively that these letters are drafts.

21 ⲁⲛⲟⲕ ⲕⲱⲙⲉⲥ ⲙⲡⲁϩⲁⲙ ⲡⲣⲙⲭⲏⲙⲉ ⲉⲓⲥϩⲁⲓ ⲛ̄ⲁ̣ⲛⲇⲣⲉⲁⲥ ⲙ̄ⲡⲉⲧⲣⲟⲥ ⲡⲣⲙⲭⲏⲙⲉ ⲟⲛ "I, Comes (son) of Pachom from Djeme write to Andreas (son) of Petros also from Djeme." For the edition, see Delattre/Lecuyot 2015, 111–112.

22 Six ostraca were found at Deir el-Roumi (DRO 3, 7, 10, and 83–85), another, SB Kopt. I 46, was not found during the excavation of the site but is attributed to the same Andreas; for his archive, see Delattre/Lecuyot 2015, 109–110.

latter will improve matters). As the aim of the current study is to examine the material aspects of ostraca, the lack of detailed (or indeed any) information about physical features hinders such discussions. For the most part, this lack of information is due to the lack of interest on the side of the editors of the texts in material properties of the objects on which they are written. It is possible to consult published ostraca in museum collections, but such a re-examination of the original items is labor (and cost) intensive and not a pragmatic option. Future digitalization of museum collections will facilitate such studies, but for now there is little that can be done.

Issues with online papyrological tools (Trismegistos, the Brussels Coptic Database, and the Duke Databank of Documentary Papyri) are more easy to resolve, at least in some respects.[23] None of these online databases are complete: the Brussels Database has not been updated since August 2014 (and it only includes non-literary texts, therefore excluding a large number of ostraca) and key recent corpora are yet to be added to Trismegistos, e. g., O. Saint-Marc. Additionally, in Trismegistos—at the time of writing—Djeme is used to refer to all sites in western Thebes and it is difficult to find texts from the village itself; searches for Medinet Habu produce only ca. 400 ostraca, which is much smaller than the actual number of texts (the number of tax receipts from the village alone surpasses that figure). Other problems with quick online searches include the fact that ostraca with different texts on each face, each of which are given different publication numbers, increase the total number count of actual ostraca (producing a total number of texts on ostraca rather than individual ostraca). Careful checking of the data can resolve this point, but with thousands of ostraca from western Thebes, it is a slow process; fortunately, the number of duplicate entries does not significantly affect the final numbers. Minor changes in numbers also result from joins of fragments after their initial publication, as is the case with a small number of Frange ostraca.[24] Consequently, the numbers used in this preliminary study will certainly be modified slightly in the future, but the overall observations presented should remain valid.

23 The Duke Databank (DDbDP) is accessible at papyri.info (see n. 16); the Brussels Coptic Database is accessible at https://dev.ulb.ac.be/philo/bad/copte/baseuk.php?page=accueiluk.php (last accessed: 2.5.2018). Note, though, that the use of these tools is dependent on their long-term sustainability and survival.

24 For example, Delattre/Vanthieghem 2014b, 108–113 joined Frange texts that the original editors had published as separate fragments (O. Frange 385+485 and 442+456), while the original editors assigned individual numbers to three ostraca, O. Frange 452, 461, and 462, before identifying them as part of the same text.

3 Use of Limestone

In the introduction to his 1902 publication of ostraca, O.Crum, Crum noted that "a large proportion of the texts are upon flakes or slices of white limestone so easily obtained in Western Thebes and so admirably adapted for writing purposes. [...] we may suppose some official regulation or fashion to have prescribed the use of pottery for certain classes of records. The subsequent predominance of limestone among the official documents, both ecclesiastical and legal, shows that it was regarded as a material more honourable than pottery." In addition to the observation concerning the sheer volume of texts on limestone, of particular note are Crum's suggestions of the elevated status of limestone over pottery and of an official policy that prevented the use of pottery.[25] Coptic itself makes terminological distinctions between the two materials. Limestone sherds were ⲡⲗⲁⲝ (πλάξ) and pottery sherds were ⲃ̄ⲗ̄ⲭⲉ; each term refers to the material itself, respectively a flat stone or tablet and any ceramic ware. The use of distinct terms indicates that there was a conscious realization of the difference between the two, but does this actually mean that there was a marked split in the categories of texts for which they could be used?

One point about the O.Crum volume, with its high number of limestone ostraca, needs to be stressed: the Theban texts here published come predominantly from the Egypt Exploration Fund excavations at Deir el-Bahri. The question is whether this geographic component skews the perspective of the use of limestone, and consequently whether its use is site specific or the rest of the Theban area exhibits the same tendencies. In order to address this issue, the following analysis focuses on the six sites mentioned in Section 2, and referred to in the table by their location rather than their name: Deir el-Bahri (monastery of Apa Phoibammon), Deir el-Bachit / Dra Abu el-Naga (monastery of Apa Paul), TT 130 (the monastery of Epiphanius), TT 29 (the cell of the monk Frange), Gounet Mourrai (the church of St Mark), and Medinet Habu (Djeme). For current purposes, only ostraca discovered during excavation work are included here, in order to guarantee the provenance of the texts.[26] 'Provenance' here

25 One aspect of the use of limestone that will not be addressed here is whether or not the material is exclusively or predominantly a Theban practice. A limestone ostracon published by Delattre/Vantheighem 2014b, 104, is assigned a Theban provenance on the basis that: "L'usage du calcaire indique qui le texte est de provenance thébaine." The use of limestone is attested elsewhere, e. g., Apollonoopolis (SB Kopt. I 12; SB Kopt. II 1098), Hermonthis (O.Brit.Mus.Copt. 1, p. 32, pl. 24.2), Nagada (O.Brit.Mus.Copt. 1, p. 37, pl. 30.3; p. 48, pl. 37.5; p. 49, pl. 38.3; etc.). At the time of writing, Trismegistos also noted an ostracon from Bawit as on limestone, MPER N. S. 18.222, but this is an error and it is in fact on pottery. All known limestone Coptic ostraca are from the restricted region of Apollonoopolis to Hermonthis, but not only western Thebes. The tendency to ascribe limestone to Thebes based only on material aspects and without further criteria may not be correct.

26 For Deir el-Bahri, the following ostraca are included: those discovered during the EEF excavations by Edouard Naville (published ostraca in O.Crum and O.Brit.Mus.Copt. I); the unpublished ostraca discovered during the Metropolitan Museum of Art's work at the site, all of which are now in the col-

can only mean findspot, and the problem of identifying place of writing as discussed above—and the impact this may have on material selection (especially when pursuing a geographic line of enquiry)—is especially relevant here. In future studies, the difficult task of separating findspot from writing spot will surely modify the following statistics somewhat, but as a starting point, the current figures indicate that location is a vital factor in influencing the material upon which scribes wrote.

Table one presents the statistics for ostraca from each site; wood is also included in the list, although it may be questioned to what extent it can be classified as 'ostraca'. Its presence at several locations is a reminder that its use may have been more extensive, but that it simply has not survived as well as its more durable alternatives.

Tab. 1: Material of Ostraca (by findspot from excavations)

Site	Pottery	Limestone	Wood	Total	% Limestone
Deir el-Bahri	277	516	1	794	65.0
Deir el-Bachit / Dra Abu el-Naga	813 (479 + 334)	3 (3 + 0)	–	816	0.4
TT 103	436	64	2	502	12.7
TT 29	677	124	1	801	15.5
Church of St Mark	397	14	2	413	3.4
Djeme	395	10	–	405	2.5
Total	2,997	731	6	3,732	19.6

Table 1 shows that three sites are of note in terms of their use of limestone: Deir el-Bahri, TT 29, and TT 103. The high percentage of limestone use from the first of these three locations, 65 percent, seemingly corroborates Crum's observations on the use of this material. However, as this figure is over three-times the average use (19.6 percent) of limestone from across the six sites, it is clearly a special case that seriously affects the perception (and statistics) of limestone use in western Thebes. If the data from Deir

lection of Columbia University and are catalogued in APIS (see n. 16); the ostraca discovered during the Polish excavations at the site (O.Deir el-Bahari and SB Kopt. III 1271–1273, 1321–1323, 1658, 1661, 1670–1671, originally published in Markiewicz 1999 and 2000). The resulting number of ostraca is substantially higher than the 379 listed in Godlewski 1986, 153–160. While Columbia University ostraca also derive from TT 103, these statistics have not been included as the sheer number of items (ca. 3,000) renders their examination impractical for the current study. For Djeme, only the published ostraca found during the University of Chicago epigraphic mission at Medinet Habu are included, comprising primarily texts from O.Medin.HabuCopt. with a smaller number of P.Schutzbriefe texts (however, twelve texts in the latter collection are published without description and on the relevant online tools are labelled as limestone *or* pottery, and therefore they are not included in this study).

el-Bahri is removed, only 7.9 percent of ostraca are limestone and the two sites on Sheikh Abd el-Qurna, TT 29 and 103, show above average use of this material.

The texts from TT 29 date to the seventh and eighth centuries and were written to and by several of the cell's occupants, among whom Frange is the best known. As so many texts from TT 29 were written by him (and are either signed or can be attributed to him, with varying degrees of confidence), it is possible to focus on the habits of a single writer.[27] Of the 362 ostraca that he wrote, 73 are on limestone, that is 20.2 percent; this figure is almost 5 percent higher than the overall percentage of limestone ostraca found in the tomb (15.5 percent).[28] Adding the texts written by him that were found elsewhere in western Thebes, the percentage of limestone slightly rises to 22.4 percent.[29] The publication of the TT 29 ostraca is also unusual in that it provides information about the fabric of the pottery sherds. The majority of the 289 sherds were written on fragments from LRA 7 wares (162), after which pseudo-Aswan wares are the most common (80), and then Aswan wares (26); another 18 ostraca were written on sherds of a common but unidentified ceramic type. The majority of potsherds therefore were written on contemporary late antique wares that would have been common in the region. Single texts were written on less common ceramic types: imported LRA 1 (O.Frange 124), Egyptian Red Slip A (O.Frange 54), and New Kingdom Marl D (O.Frange 501); on the use of pharaonic fragments, see the next section.

The editors of the Frange texts, Anne Boud'hors and Chantal Heurtel, pose several possible reasons for Frange's use of limestone: "est-il tombé sur un 'filon' de calcaire qu'il a utilisé pendant un certain temps, jusqu'à ce qu'il s'épuise? A-t-il voulu faire un essai, abandonné ensuite? Préférait-il généralement la terre cuite, plus facile à utiliser sans préparation préalable?"[30] In comparison to the use of limestone from Sheikh Abd el-Qurna, Frange's use is only slightly elevated, but is not exceptional for individuals here.

---

27 This group includes texts that he wrote on behalf of other individuals, although this does raise another issue: when one person was writing for another, who would provide the ostracon? As material was readily available, it was perhaps the writer who supplied the sherd and so the selection reflects writer's preferences.

28 In their discussion of the use of limestone in the Frange dossier, Boud'hors and Heurtel note that "les ostraca de calcaire sont nettement minoritaires (on en compte 84) et il sont presque tous de sa main" (O.Frange p. 15). Their count is different to mine because I only include here the ostraca written in his hand.

29 A new total of 389 ostraca, of which 87 are on limestone. For a list of Frange's texts found at other sites, see O.Frange pp. 33–34; note that I have not included here the texts listed there as unedited, with the exception of the ostracon from the church of St Mark, which has since been published.

30 O.Frange p. 15. On Frange's material preferences, note that Wilfong's comments in his introduction to O.Clackson 34, wherein he notes that most of Frange's ostraca were written on limestone ("which is not surprising given the fact that limestone is the more common medium for monastics living in the west Theban hills"), were made before the publication of O.Frange (and before the publication of the O.Saint-Marc and Deir el-Bachit ostraca).

It is not possible to undertake such an analysis of the use of materials at TT 103: many of the texts comprise letters written to the monastery, and it is frequently not known where they were written; most of the texts cannot be assigned to specific individuals; no description is provided about the material aspects of the sherds, beyond limestone or pottery;[31] a significant number of papyrus documents found at this site show that a diverse range of writing materials were used at the site (and consequently either that writers had different access to resources or different preferences).[32] However, what TT 103 has in common with TT 29 is its general location on Sheikh Abd el-Qurna and its proximity to Deir el-Bahri. At only a few hundred meters from Deir el-Bahri, they are significantly closer than most other sites in western Thebes, especially the church of St Mark and Djeme, both of which are towards the south of the region. The area around this part of the Theban mountain range therefore shows an atypical use of limestone. The question, then, is why?

Rather than reflecting conscious decisions regarding the use of material, the high use of limestone is most likely due to a very pragmatic reason: the presence of the destroyed temple of Thutmosis III. The temple of this 18th Dynasty pharaoh, built in the last decade of his reign (ca. 1435–1425 BCE), was destroyed already only three-hundred years later during the 20th Dynasty (ca. 1189–1077 BCE), seemingly by a rockslide. It was subsequently used by quarrymen, who dismantled the site almost completely for other purposes. This quarrying activity seems to have come to an end during the following 21st Dynasty (ca. 1069–945 BCE) after another rockslide.[33] The result of the destruction and quarrying of the temple's ruins was the creation of a large number of small sherds of worked limestone, which provided a perfect surface for writing and which were easily accessible to scribes and writers in the immediate vicinity. That these sherds are of worked limestone is not unimportant—there was no need for writers to smooth and modify the sherds in order to provide surfaces suitable for writing. This convenience and accessibility must surely have affected the decisions behind the use of limestone.

In light of the observations on the geographic location as affecting the use of material, is it possible to attribute all limestone ostraca from Thebes that do not have secure provenance to these sites, with—on statistical grounds—Deir el-Bahri as the most likely site? Such a proposition is difficult to substantiate, as material may have circulated around the region for a variety of reasons and ostraca sent out from these three sites may have been reused. However, if the ten limestone ostraca from Djeme

31 However, for the material in the collection of the Metropolitan Museum of Art (the majority of the published texts), images of all items are available online and observations on their materiality could be made on the basis of them.

32 There are 111 published papyri from the site, accounting for almost twice the number of texts on limestone sherds.

33 For the destruction and dismantling of the temple, see Lipiński 1977, 10–11. I thank Sandra Lippert (Montpellier) for drawing my attention to the situation of the temple of Thutmosis III.

are examined, it is clear that several of them at least were not written in the village. O.Medin.HabuCopt. 138–140 are letters written from Frange (and so were written at TT 29) and O.Medin.HabuCopt. 145 is a letter from Abraham (at Deir el-Bahri) to Pisentius.[34] In terms of texts written in the village, the removal of these ostraca from the dataset reduces the already small number of limestone sherds, making the total number almost negligible. Similarly, several of the limestone ostraca from the church of St Mark can also be attributed to scribes from other sites: O.Saint-Marc 94 is written by the scribe David from Deir el-Bahri and O.Saint-Marc 168 is perhaps in the hand of Moses from TT 29.[35] Some texts on limestone are in the hand of Mark, though, or can at least be attributed to him: O.Saint-Marc 6, 110, 113, 143, and 160. The overall statistics for limestone use at the church is therefore lower than presented in Table 1, although it was used on rare occasion.

4 Use of Pharaonic Pottery

In 1902, Walter Crum observed that the potsherds upon which tax receipts were written were of a material distinct from the majority of sherds used at Djeme: "the material [...] is always without ribs, glazed and generally of a light yellow color. The shape [...] is usually triangular."[36] The tax receipts in question date to the 710s and 720s, were written by a small number of scribes from the village, are for a number of taxes (of which the poll tax is the most common), and are written primarily in Coptic, although some are written entirely in Greek.[37]

Over the following fifty years, both Walter Till in his publication of a corpus of letters of protection (P.Schutzbriefe) and Elizabeth Stefanski and Miriam Lichtheim in the introduction of their edition of ostraca from Djeme (O.Medin.HabuCopt.) commented on this point, and the nature of the wares upon which tax receipts were written. More recently, Laurant Bavay and Alain Delattre addressed this issue. Their analysis focused on three receipts in the Brussels collection, O.Crum Ad. 37, SB Kopt. III 1423, and SB Kopt. IV 1814, which they concluded to be on sherds from 18th and 19th Dynasty amphorae, produced some 2,000 years before the tax receipts were issued

34 If this Pisentius is the famous bishop of Koptos, who resided in western Thebes during the Persian invasion of the 620s, how the letter arrived in the village of Djeme is unclear, as Pisentius did not reside here; for Pisentius, in particular the re-publication of his dossier of letters, see Vliet 2002 and 2013. Pisentius was certainly part of bishop Abraham's network (see Dekker 2018), but it is a common name, as the number of entries in Till 1962, 166–170 demonstrates.

35 On David (Crum's 'Hand D'), see Garel forthcoming; for Moses, see O.Frange pp. 22–23 and Heurtel 2008.

36 O.Crum p. xi.

37 See Cromwell 2017, chapter 4, and the overview of receipts provided in P.Stras.Copt. pp. 209–239.

(Marl D and F).[38] Their brief consultation of the group of over 50 tax receipts in the Louvre revealed that they are written on the same type of support.[39] Of the 40 tax receipts in Strasbourg (P.Stras.Copt. 27–66), 33 are described as being Marl D sherds, albeit with varying degrees of certainty.[40] Preliminary analysis of the receipts in the Kelsey Museum of Archaeology also corroborates these observations, although the materials are not all of the same kind (for example, a few pieces seem to be Qena wares).[41]

The advantages provided by this type of sherd have already been discussed by Delattre.[42] The flat and smooth surface, often with a polished slip, was perfectly suited for the quick, cursive script employed by the professional scribes who wrote these receipts. Such qualities would be an advantage especially on those days when scribes wrote a large number of receipts.[43] Additionally, the ink was easily readable on these fragments, especially in contrast to the more porous surface of, for example, LRA 7 sherds.

Before stating categorically that all early eighth century tax receipts are written on ancient sherds, it should be noted that a few at least were not, for example P.Stras.Copt. 35 is written on a fragment of a late roman amphora (LRA 7), a dark brown, ribbed ware commonly used for everyday writing in the seventh and eighth centuries.[44] To the best of my knowledge, this is the only tax receipt that is written on such a sherd, although this is difficult to confirm without descriptions or images of

38 Bavay/Delattre 2013, 382–383. The fabric of the sherd on which SB Kopt. IV 1814 was written is the earliest of the three: Marl D is particularly well attested during the reign of Amenhotep III (died ca. 1351 BCE).

39 Bavay/Delattre 2013, 383 (although a systematic report on these ostraca, originally published in Boud'hors 1996 and now bearing the sigla SB Kopt. II 955–1011, is lacking).

40 P.Stras.Copt. pp. 210–211. See also, for example, three of the receipts published in Delattre/Vanthieghem 2014a, which are described as being on New Kingdom sherds: O.Hamb.Copt.inv. V (pp. 96–97) and II (pp. 97–98), and O.Camb. 138 (pp. 99–100); while the other four sherds are described, the type of amphorae from which they derived is not identified.

41 I am currently in the process of editing these receipts for publication; for a preliminary overview of the group, see Wilfong 2004. I thank Clementina Caputo for her comments on the ostraca; her analysis of the fabrics will be included with the text editions.

42 Bavay/Delattre 2013, 384 and P.Stras.Copt. p. 211. More recently, Haensch and Kreuzsaler 2018, 75 n. 6, have also commented on the use of pharaonic amphorae for the writing of tax receipts, noting that material analysis of representative examples is still pending.

43 For the dates of the receipts drawn up by Aristophanes son of Johannes, see Cromwell 2017a, Appendix 3; in particular note Epiph 18, year 11 (12 July 727) and Mesore 27, year 11 (20 August 727), from which dates the largest number of receipts survive (16 and 14 receipts respectively).

44 The receipt is otherwise quite standard. It is written in Greek by the most prolific scribe of tax receipts, Psate son of Pisrael (for whom, see P.Stras.Copt. pp. 231–234 and Cromwell 2017b), who wrote several receipts in Greek. It is for quite a rare tax, the μέρος ναυτῶν (probably used to pay the salary of sailors engaged in the naval duty), which is attested in three other receipts, O.Ashm.Copt. 15, O.Crum 426, and O.Vind.Copt. 96; see Delattre 2002. Based on available images, the first and third of these receipts were written on New Kingdom wares.

all the ostraca.[45] Nevertheless, it can be stated confidently—even at this point in time without examination of all pieces—that tax receipts were typically written on ancient sherds, and this raises two immediate questions: (1) were fragments of pharaonic vessels used for writing other texts in western Thebes? (2) if only tax receipts were written on New Kingdom sherds, what can be inferred from this?

As noted above, a considerable hindrance to addressing the first of these two questions is the lack of information in early publications concerning the material aspects of potsherds. One of the scribes most frequently attested in tax receipts, Aristophanes son of Johannes, wrote two other ostraca: O.Medin.HabuCopt. 88 (which he signed) and O.Medin.HabuCopt. 24 (a list of names, including his own, and in his hand). The first of these is described only as "red pottery" and the second as "red pottery with a reddish slip". A black-and-white image of the former is included among the publication's plates, but it is difficult to identify the ware and consequently whether or not Aristophanes, as a professional scribe, preferred to write only on ancient sherds, because of the properties described above.[46] However, this description stands in marked contrast to the description "brown ribbed pottery" that is used for most of the non-tax receipt sherds, indicating that these are common late antique wares (probably LRA 7).[47] Based on the limited information available, fragments of pharaonic vessels were mostly restricted to use for tax receipts; however, professional scribes—that is, the men who wrote the tax receipts—may also have used such sherds for other purposes.

This observation leads to the second question: it cannot be determined whether tax receipts specifically were written on ancient sherds or if the selection of such sherds in the village was a preferential choice by the scribes who wrote them. In the introduction to the editions of tax receipts in the Strasbourg collection, Delattre and Fournet propose possible reasons behind the use of pharaonic sherds: "on peut imaginer que les scribes n'avaient pas trop de difficultés à se procurer des tessons du Nouvel Empire. Peut-être même travaillaient-ils dans un secteur de la ville riche en restes céramiques, par exemple une zone de magasins. Par ailleurs, le caractère inhabituel du support conférait peut-être un caractère plus officiel au reçu."[48] The second of these points, the conferment of an official character, as just discussed may simply be

45 In this respect, it will be difficult to examine the fabric of many receipts— the largest single group of tax receipts were found during Hölscher's work at Medinet Habu and after being studied in Chicago were returned to Cairo, where their current location is uncertain (they are presumed to be still in storage in the Egyptian Museum, rather than the Coptic Museum). Negatives of photographs taken of the ostraca are held in the archives of the Oriental Museum, Chicago, but these may not be sufficient for determining the nature of the support.

46 For Aristophanes' career, see Cromwell 2017a.

47 This identification of LRA 7 seems to be confirmed by what plates are available in the volume; see, for example, the images of O.Medin.HabuCopt. 50, 56, 58, 61, 69, 73, 82, 134, 136, 142, 150, 144.

48 P.Stras.Copt. p. 211.

a coincidence.[49] The first point, that New Kingdom sherds were relatively easy to procure and that scribes may have worked in an area of the town rich in ceramic remains, raises questions about the physical reality of the village itself in the early 8th century.

In brief, after its construction as the mortuary temple of Ramesses III, Medinet Habu was reoccupied already during the 21st to 24th Dynasties (ca. 1069–720 BCE), at which time little survived of the original buildings.[50] After this time, until the end of the Ptolemaic Period (30 BCE), there is no indication of habitation of the village, but there are traces of ancient *sebbakh*-digging in sectors of the site.[51] The desertion of Medinet Habu came to an end during the Roman period, when new houses were built at the site. The Roman period floor level was approximately 1.9 meters above the original Ramesside level; by the time of the latest phase of occupation, the floor level was between 2.5–4 meters above that of the Ramesside period in the north and west of the temple area. Regardless, therefore, of where the 8th century scribes worked (at the site of an ancient storeroom or elsewhere), it is unlikely that a ready surface deposit of pharaonic sherds was available for their use within the confines of the ancient temple's perimeter wall. As over 500 tax receipts are known, which date from a relatively short period of time (the 710s and 720s), there must have been an easy availability of pharaonic sherds. However, it is unlikely that they were picked up within the packed confines of Djeme. Rather, a New Kingdom dump outside the village was more likely the source. If correct, scribes must have made a conscious effort to collect the sherds.[52] Is such effort indicative of an official policy to use specific sherd-types for tax receipts, or is it again down to personal preference? As has been stated several times above, defining the motivation for the use of New Kingdom sherds is difficult. However, the reuse of these ancient wares seems to be particular to scribes working in Djeme.

49 It is difficult to see how such a conferment could be confirmed. If tax receipts from other sites in Thebes are also written on pharaonic sherds, this would lend support to such a suggestion. Examination of three tax receipts from Deir el-Bachit (O.Bachit 1550 and 1843, and O.Dan kopt. 209) may prove helpful; unfortunately, no analysis of the wares of these items is provided currently on the database (for which, see n. 14).

50 Hölscher 1954, 3: "The entire area was covered with new structures, whose builders showed little regard for earlier walls but rather cut through them arbitrarily."

51 Hölscher 1954, 34 and 56. Debris and Roman constructions on top of the digging indicates that it occurred already in antiquity.

52 Alternatively, these scribes worked outside the limits of the ancient temple where such a source of sherds was available. However, working outside the village proper seems less practical than making periodic journeys to collect more ostraca.

5 Future Work

In addition to the number of ostraca already published and those that await study in collections around the world, new texts are still being discovered in western Thebes.[53] The body of texts available for study—and texts with secure provenance—will therefore increase over the coming years. By necessity, the current paper has only focused on texts found at a small number of Theban sites, but future work will aim to include all texts from the region. Such an expansion would allow the study of the range of dispersal of materials that, as has been proposed above, are particular to certain places, e. g., limestone at Deir el-Bahri and its immediate area, and pharaonic sherds to Djeme. Apart from the ability to expand this analysis, future work on the materiality of Theban ostraca can address other questions.[54]

One of the gifts to scholars interested in written culture is the high number of identifiable writers in western Thebes, ranging from individuals who could barely manage to sign their names to professional scribes. Personal preference has been mentioned several times, regarding the use of limestone and New Kingdom sherds, but this could be expanded to cover a range of physical features. Examination of the dossiers of individuals may reveal personal preferences, for example in the shape, size, and surface treatment of ostraca, and potentially whether writers modified the sherds on which they wrote (evidence for which from other sites is presented by Caputo in the current volume).

In the absence of substantial amounts of ceramic material from western Thebes, which was not reused as ostraca, analysis of the fabrics of the sherds may contribute to the knowledge of what wares were circulating around western Thebes.[55] For example, the presence of non-locally produced wares may provide evidence for regional and supra-regional trade networks. The publication and study of ostraca has the potential to contribute to the work of ceramicists rather than just papyrologists and philologists. However, the usefulness of ostraca publications to neighboring disciplines requires either collaboration with ceramicists from the beginning or—and as this is not always possible or practical[56]—the provision of high-quality images and descriptions that are

53 For preliminary reports on new ostraca, as well as editions of new material, see: Antoniak 2010, Boud'hors 2017, and Garel 2016 (MMA 1152—note that these ostraca, following Boud'hors 2017, are now to be referred to as O.Gurna Górecki); Behlmer 2007 (TT 85 and 87); Behlmer/Underwood 2010 and Choat 2016 (TT 233); Müller 2016 (TT 223 and 390); Underwood/Behlmer 2016 (TT 95).

54 I do not include here the improvements that will be implemented over time regarding the online papyrological databases (updates to which occur regularly); the methodological problems outlined in Section 2 are the least insurmountable issues.

55 A rare example of the study of ceramic material in late antique western Thebes is Beckh's work on the pottery from Deir el-Bachit (see Beckh 2007 and 2010), and Ballet's examination of the ceramic material from the church of St Mark (Ballet 2007).

56 Time restrictions, scheduling, working from originals or photographs, etc., can easily derail the best intentions for collaborative work; attention to material aspects is certainly something to which

useful to those interested in more than the preserved text. Ideally, all text editions should include information on the size, shape, and surface and surface treatments of the ostracon; more detailed data requires the assistance of ceramicists, for example, the portion of the original vessel from which the fragment comes, its fabric, and possibly even the original vessel type.

Paying attention to the material aspects of ostraca can help to identify patterns in the production and circulation of texts, but this is not to say that it can be used to determine provenance in every case. Many ostraca are simply of wares too common to have diagnostic features. However, as has hopefully been demonstrated, examination of physical elements can provide new understandings into written culture and the pragmatics of writing.

Appendix

Three Unpublished Ostraca from Deir el-Bahri

The three ostraca published here for the first time reflect some of the methodological problems discussed in Section 2 concerning determining provenance and the circulation of texts around western Thebes. All three letters were found at Deir el-Bahri during the Metropolitan Museum of Art's excavations in western Thebes and are now part of the collection of Columbia University.[57] Two of the texts are incomplete, yet all provide at least some information regarding the sender or recipient of the letter. Images of all three ostraca are available for download on APIS.[58]

1 Letter to Bishop Abraham Concerning Ordination (Fig. 2)

O. Col. inv. 192 | 17.5 × 9 cm | 590–610/620
TM 317914

Description: Pottery sherd, brown, ribbed; LRA 7. This broad, rectangular sherd is broken at the lower left and right corners. It is possible that some lines are lost from the bottom.

I have not been able to give attention in the past. What I propose is an ideal situation, if the ideal is ever attainable.

57 The three ostraca have the accession numbers 64.11.164 (O. Col. inv. 192, http://papyri.info/apis/columbia.apis.192), 64.2.393 (O. Col. inv. 574, http://papyri.info/apis/columbia.apis.574), and 64.2.401 (O. Col. inv. 582, http://papyri.info/apis/columbia.apis.582) (last accessed: 16.1.2020). For the attribution of the ostraca in the sequence 64.2.1–65.3.112 to Deir el-Bahri, see O'Connell 2006, 126–127.

58 See n. 16.

Content: The name of the sender is lost, but the recipient is bishop Abraham. Despite loss of some of the text, the request for prayers and ordination as deacon of a third party is clear. This letter is an addition to the body of such requests: O.Crum 29–35 and Ad. 7 are letters regarding ordination of the writers (typically involving the requirements that they need to meet) and O.Crum 36–37 are letters requesting ordination for other men. Few of the letters preserve the location of the parties and where they will become deacon: O.Crum 31 mentions the church of The, 33 the Small Church (in Djeme?), and 36 is written from villagers from Piôhe and concerns the church of St Mary. The letter may, therefore, have been written from anywhere in western Thebes or further afield.

ⲁⲡⲁ ⲁⲃⲣⲁϩⲁⲙ ⲡⲉⲡⲓ̣ⲥ[ⲕⲟⲡⲟⲥ]
☩ ϩⲁ ⲑⲏ ⲙⲉⲛ ⲙ̄ⲡⲁⲱⲁⲭⲉ ⲛⲉⲗⲁⲭ̣(ⲓⲥⲧⲟⲥ)
†ⲱⲓⲛⲉ ⲉⲧⲉⲕⲙ̄ⲛ̄ⲧⲉⲓⲱⲧ ⲉⲧⲟⲩⲁ̣[ⲁⲃ]
ⲉⲧⲫⲟⲣⲉⲓ ⲙ̄ⲡⲉϫ̄ⲥ ϩⲛ̄ ⲟⲩⲙⲉ̄
ⲁⲣⲓ ⲧⲁⲅⲁⲡⲏ ⲛ̄ⲅⲱⲗⲏⲗ ⲉϫⲱⲛ
ⲉⲧⲉⲕⲙ̄ⲛ̄ⲧⲉⲓⲱⲧ ⲉⲧⲟⲩⲁⲁⲃ ϫⲟⲟⲩ
[.2] . . . . ⲧ̣ⲃⲉϩ ⲛⲓ̄ⲧⲟⲱⲩ̄ⲭ̄ ⲛⲁⲛ
[.?]ⲇ̣ⲓⲁⲕⲟⲛⲟⲥ ⲕⲁⲓ̈ ⲅ̣[ⲁⲣ .?]
[.?] ⲛ̣̄ⲩ̄ⲙⲁ̣[.?]
- - - - - -

1 ἐπίσκοπος **2** μέν, ελαχ̣/ *ostr.* **4** φορεῖν **5** ἀγάπη **8** διάκονος, καὶ γάρ

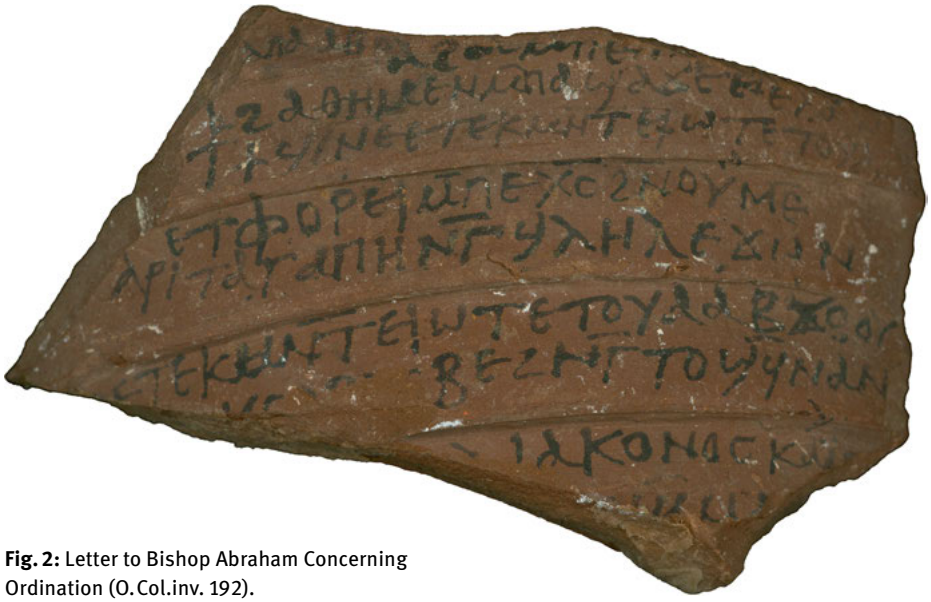


Fig. 2: Letter to Bishop Abraham Concerning Ordination (O.Col.inv. 192).

"Bishop Apa Abraham. ☩ Before my humble matter, I greet your holy paternity, which truly bears Christ. Please pray for me. May your holy paternity send [...] and appoint him for us [as] deacon, for [...] he [...]"

1 The first line is uneven and follows the edge of the ostracon, making it unlikely that any lines are lost from the beginning of the ostracon. As the rest of the lines are evenly spaced and follow the ribs of the sherd, the address was most probably written after the letter proper.
3 The iota in ϵιωτ has a horizontal stroke, suggesting that there is a correction here.
6 Mu in ⲙⲛⲧϵιωτ is a correction over an initial letter.
7 The meaning of [.2] . . . . ⲧ̣ⲃϵⲋ is unclear. As the writer is requesting an individual to be ordained deacon, it is possible that the name of the person in question is written here. The surviving traces do not, however, recall attested names.

2 Letter from Bishop Abraham Concerning a Festival (Fig. 3)

O. Col. inv. 574 6 × 5.7 cm 590–610/620
TM 320024

Description: Limestone sherd, palm-sized and written on both sides. It is mostly complete, except for chips to the left and right edges that have resulted in the loss of some letters. On the back, the text is written over two faces of the sherd and the ink is worn on the face on the right side.

Content: The start of the letter is abrupt, without the polite framework exhibited in letters to superiors (as seen in letter 1 above). The letter concerns a celebration at *the topos* of Apa Johannes, referred to here by name only, and the provision of wine. A *topos* of Apa Johannes occurs in several Theban texts: O. Crum 310 (mentioning a monk and identifying it as a *topos*), 482, 485 (identifying it as a ⲙⲁ "place"), Ad. 30 (identifying it as a *topos*), and P. Mon. Epiph. 84 and 397 (mentioning an *oikonomos*).[59] The letter is written from bishop Abraham to a priest, Ananias; it was therefore written at Deir el-Bahri, but was also returned and deposited there.

Front
[☩ ⳩]ⲟ̣ⲣⲡ̄ ⲙⲉⲛ ϯ⳩̣ⲓ-
[ⲛϵ] ϵⲣⲟⲕ ⲟ̣ⲩⲱ⳩
[ⲛⲅ]ⲣ̣Ⳁⲁ ϵⲁⲡⲁ ⲓ-
4 [ⲱ]ⲁⲛⲏⲥ ⲙⲙⲟ̣-
ⲛ ⲁⲩⲭ[ⲟ-]

59 See Papaconstantinou 2001, 118–119.

Back

ⲟⲥ ⲛⲁ[.?]
ⲉⲕⲭⲱ ⲁ̣ⲛ̣[ⲓ]
ⲏⲣⲡ ⲉⲃⲟⲗ ⲧⲁ[ⲁ-]
ⲥ ⲛⲁⲛⲁⲛⲓⲁⲥ ⲡ̣-
ⲡⲣⲉⲥⲃ(ⲩⲧⲉⲣⲟⲥ) ⲥⲓⲧⲛ̄ ⲁ-
ⲃⲣⲁϩⲁⲙ ⲡⲉⲡⲓ̣-
ⲥⲕ(ⲟⲡⲟⲥ)

1 μέν **10** ⲡⲣⲉⲥⲃ *ostr.*, πρεσβύτερος **11–12** ⲉⲡⲓⲥⲕ/ *ostr.*, ἐπίσκοπος.

"[Ⲫ F]irst, I g[reet] you. Please celebrate at Apa J[oh]annes. They sent to [...], as you said 'Bri[ng] wine.' Give it to the priest Ananias from bishop Abraham."

2 For this use of ⲟⲩⲱⲱ as a politeness marker in other Deir el-Bahri texts, see O.Crum 70.2 (ⲟⲩⲱⲱ ⲛⲅⲁⲟⲕⲓⲙⲁϫⲉ ⲙⲡϩⲱⲃ, "Please examine the matter") and O.Brit.Mus.Copt. 2.22.1 (ⲟⲩⲱⲱ ⲛⲅⲃⲱⲕ ⲉⲛϩⲏⲧ "Please go north").
3–4 Perhaps instead ⲓ[ⲱϩ]ⲁⲛⲏⲥ.
6 The lost suffix pronoun should perhaps be reconstructed as ⲛⲁ[ⲓ], the 1sg "to me".
7 The speech marker, ϫⲉ, has been omitted.
12 There is a considerable gap between sigma and kappa, the reason for which is not clear. There does not appear to be damage to the surface here that the writer was avoiding; it is possible that he instead chose to fill the space at the bottom of the ostracon, but this is pure speculation.

Fig. 3: Letter from Bishop Abraham Concerning a Festival (O.Col.inv. 574), left = front, right = back.

3 Letter from Victor Concerning Papyrus (Fig. 4)

O. Col. inv. 582 7.7 × 7.2 cm 590–610/620
TM 320033

Description: Limestone sherd, almost square and discolored in places. Apart from some small chips, the sherd is complete. The text is written on one face, apart from one word that is written on the back.

Content: Address to a woman, Susanna, from Victor, this note accompanied the delivery of papyrus. As it is written on limestone and is from a known figure, the priest Victor,[60] it was written at Deir el-Bahri and—as with letter 2 above—was also returned to the site. The ostracon is written in 'Hand D' (following Crum's identification of scribes at the monastery), that is, the monk David who acted as scribe for Victor.[61]

Front

+ ⲕⲁⲧⲁ ⲑⲉ ⲉⲛⲧⲁⲧⲛ-
ⲧⲛ̄ⲛⲟⲟⲩ ⲉⲣⲟⲩⲛ ⲛⲁⲓ̈
ϯⲛⲟⲩ ⲉⲓⲥ ⲡⲭⲁⲣⲧⲏⲥ ⲁⲛ-
ⲥⲣⲁⲓⲧ̄ⲩ ⲕⲁⲧⲁ ⲫⲉ ⲛⲧⲁⲧⲉ-
ⲧⲛ̄ⲭⲟⲟⲥ ⲉⲓⲥ ⲣⲏⲡⲉ ⲁⲛ-
ⲕⲁⲁⲩ ⲣ[ⲁ]ⲣⲧⲏⲓ̈ ⲟⲩⲭⲁⲓ
ⲣⲙ̄ ⲡⲭⲟⲉⲓⲥ ⲧⲁⲁⲥ
ⲛ̄ⲥⲟⲩⲥⲁⲛⲛⲁ
ⲣⲓⲧⲛ̄ ⲃⲓⲕⲧⲱⲣ

Back

ⲡⲡⲣⲉⲥⲃⲩⲧⲉⲣⲟⲥ
+

1 κατά **3** χάρτης **4** κατά **10** πρεσβύτερος.

"+ According to what you sent to me, now, here is the papyrus. We wrote it according to what you said, 'Look, we placed it before me'. Farewell in the Lord. Give it to Susanna from the priest Victor. +"

5 ⲣⲏ(ⲏ)ⲡⲉ is unusual in Sahidic, in which ⲣⲏⲏⲧⲉ is expected.

60 For whom, see Garel 2016.
61 Garel (forthcoming) examines David's hand.

5–6 It is unclear if the writer has confused pronouns here. The switch to 1pl. pronouns, "we", suggests that this passage is direct speech, but the immediately following 1sg. pronoun "me" is then incorrect. If reported speech, "you have placed it before me" would be expected.

10 Despite the writing of this title in the middle of the ostracon, it should be read in conjunction with the name Victor, for which there was no space on the front.

Fig. 4: Letter from Victor Concerning Papyrus (O.Col.inv. 582), left = front, right = back.

Acknowledgements

The bulk of the research for this paper was written during a one-month visiting fellowship at the University of Heidelberg in May 2018, as part of the project "Material Text Cultures: Materiality and Presence of Writing in Non-Typographic Societies". I would like to express my gratitude to Julia Lougovaya-Ast and Clementina Caputo for the opportunity to discuss many aspects of ostraca, materiality, and text-production during this time. Additionally, my thanks go to Jane Siegel (Rare Books and Manuscript Library, Columbia University) for permission to publish the three ostraca in the collection here, and to David Ratzan (ISAW).

Bibliography

Antoniak, Iwona (2010), "New Ostraca from Thebes", in: Gawdat Gabra and Hany N. Takla (eds.), *Christianity and Monasticism in Upper Egypt, vol. 2, Nag Hammadi-Esna*, Cairo, 1–6.

Bagnall, Roger S. (2011), *Everyday Writing in the Græco-Roman East*, Berkeley.

Ballet, Pascale (2007), "Le topos de Saint-Marc et son faciès céramique", in: Nathalie Bosson and Anne Boud'hors (eds.), *Actes du Huitième Congrès International d'Études Coptes (Paris, 28 juin – 3 juillet 2004)*, Leuven, 129–140.

Bavay, Laurent/Delattre, Alain (2013), "La céramique des reçus de taxe thébains du VIII[e] siècle", in: *Chronique d'Égypte* 88, 379–385.

Beckh, Thomas (2007), "Die Gebrauchskeramik der spätantik/koptischen Klosteranlage Deir el-Bachit", in: Beate Böhlendorf-Arslan, Ali O. Uysal, and Johanna Witte-Orr (eds.), *Çanak, Late Antique and Medieval Pottery and Tiles in Mediterranean Archaeological Contexts*, Istanbul, 207–214.

Beckh, Thomas (2010), *'Zeitzeugen aus Ton', Die Gebrauchskeramik der Klosteranlage Deir el-Bachit in Theben-West (Oberägypten)*, Ph.D thesis, Ludwig-Maximilians-Universität, Munich.

Beckh, Thomas (2016), "Monks, Magicians, Archaeologists. New results on Coptic settlement development in Dra 'Abu el-Naga North, Western Thebes", in: Paola Buzi, Alberto Camplani, and Federico Contardi (eds.), *Coptic Society, Literature and Religion from Late Antiquity to Modern Times. Proceedings of the Tenth International Congress of Coptic Studies (Rome, September 17th–22nd, 2012)*, Leuven, 739–748.

Beckh, Thomas/Eichner, Ina/Hodak, Suzana (2011), "Briefe aus der koptischen Vergangenheit. Zur Identifikation der Klosteranlage Deir el-Bachît in Theben-West", in: *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 67, 15–30.

Behlmer, Heike (2007), "Christian Use of Pharaonic Sacred Space in Western Thebes: The Case of TT 85 and 87", in: Peter F. Dorman and Betsy M. Bryan (eds.), *Sacred Space and Sacred Function in Ancient Thebes*, Chicago, 163–175.

Behlmer, Heike/Underwood, Matthew (2010), "Coptic Textual Finds from the Macquarie University Excavations at Dra Abu al-Naga (TT 233)", in: Gawdat Gabra and Hany H. Takla (eds.), *Christianity and Monasticism in Upper Egypt, vol. 2, Nag Hammadi-Esna*, Cairo, 7–19.

Boud'hors, Anne (1996), "Reçus d'impôt coptes de Djémé", in: *Cahier de Recherches de l'Institut de Papyrologie et d'Égyptologie de Lille* 18, 161–175.

Boud'hors, Anne (2017), "The Coptic Ostraca of the Theban Hermitage MMA 1152. 1. Letters (O. Gurna Górecki 12–68)", in: *Journal of Juristic Papyrology* 47, 45–100.

Bucking, Scott (2007), "Scribes and Schoolmasters? On Contextualizing Coptic and Greek Ostraca Excavated at the Monastery of Epiphanius", in: *Journal of Coptic Studies* 9, 21–37.

Burchfield, Richard (2016), "'The Man of Jeme' Designations of Place and Witness Statements in Western Thebes", in: Paola Buzi, Alberto Camplani, and Federico Contardi (eds.) *Coptic Society, Literature and Religion from Late Antiquity to Modern Times. Proceedings of the Tenth International Congress of Coptic Studies (Rome, September 17th–22nd, 2012)*, Leuven, 699–708.

Choat, Malcolm (2016), "Posidonios and the Monks of TT233 on Dra Abu el-Naga", in: Paola Buzi, Alberto Camplani, and Federico Contardi (eds.) *Coptic Society, Literature and Religion from Late Antiquity to Modern Times. Proceedings of the Tenth International Congress of Coptic Studies (Rome, September 17th–22nd, 2012)*, Leuven, 749–754.

Choat, Malcolm/Cromwell, Jennifer (2016), "Thebes in Late Antiquity", in: Paola Buzi, Alberto Camplani, and Federico Contardi (eds.) *Coptic Society, Literature and Religion from Late Antiquity to Modern Times. Proceedings of the Tenth International Congress of Coptic Studies (Rome, September 17th–22nd, 2012)*, Leuven, 695–698.

Cromwell, Jennifer (2017a), *Recording Village Life: A Coptic Scribe in Early Islamic Egypt*. Ann Arbor.

Cromwell, Jennifer (2017b), "Five Tax Receipts from Djeme in the Collection of Columbia University", in: *Bulletin of the American Society of Papyrologists* 54, 143–155.
Dekker, Renate (2018), *Episcopal Networks and Authority in Late Antique Egypt: Bishops of the Theban Region at Work* (Orientalia Lovaniensia Analecta 264), Leuven.
Delattre, Alain (2002), "Reçus de taxe et marine arabe", in: *Archiv für Papyrusforschung* 48, 156–158.
Delattre, Alain (2007), "La réutilisation des protocoles aux époques byzantine et arabe", in: Jaakko Frösen, Tiina Purola, and Erja Salmenkivi (eds.), *Proceedings of the 24th International Congress of Papyrology (Helsinki, 1–7 August 2004)*, Helsinki, 215–220.
Delattre, Alain/Lecuyot, Guy (2015), "Ostraca découverts au Deir el-Roumi au cours de la mission 2007–2008", in: Anne Boud'hors and Catherine Louis (eds.), *Études coptes XIII. Quinzième journée d'études (Louvain-la-Neuve, 12–14 mai 2011)*, Paris, 107–115.
Delattre, Alain/Vanthieghem, Naïm (2014a), "Sept reçus de taxe thébains", in: *Journal of Coptic Studies* 16, 89–102.
Delattre, Alain/Vanthieghem, Naïm (2014b), "Trois ostraca coptes de Hambourg", in: *Journal of Coptic Studies* 16, 103–113.
Förster, Hans (2002), *Wörterbuch der griechischen Wörter in den koptischen dokumentarischen Texten*, Berlin.
Garel, Esther (2016), "The Ostraca of Victor the Priest Found in the Hermitage MMA 1152", in: Tomasz Derda, Adam Łajtar, and Jakub Urbanik (eds.), *Proceedings of the 27th International Congress of Papyrology (Warsaw, 29 July – 3 August 2013)*, Warsaw, 1041–1054.
Garel, Esther (Forthcoming), "Hand D and David the Monk", in: Anastasis Maravela and Agnes Mihálykó (eds.), *New Perspectives on Religion, Education, and Culture at Christian Western Thebes (VI–VIII)*.
Godlewski, Włodzimierz (1986), *Le monastère de St. Phoibammon*, Warsaw.
Haensch, Rudolf/Kreuzsaler, Claudia (2018), "Neuzeitlich, asiatisch? Ein Ostrakon der Archäologischen Staatssammlung München," in: *Mitteilungen des deutschen archäologischen Instituts. Abteilung Kairo* 74, 73–81.
Hasznos, Andrea (2013), *Coptic Texts from the 'Monastery of Cyriacus' (TT 65); With an Introduction by Tamás A. Bács*, Budapest.
Heurtel, Chantal (2008), "Les prédécesseurs de Frangé: l'occupation de TT29 au VII^{e} siècle", in: Anne Boud'hors and Catherine Louis (eds.), *Études coptes X. Douzième journée d'études (Lyon, 19–21 mai 2005*), Paris, 166–178.
Hölscher, Uvo (1954), *The Excavation of Medinet Habu, Volume V: Post-Ramesside Remains*, Chicago.
Krause, Martin (1956), *Apa Abraham von Hermonthis: ein oberägyptischer Bischof um 600*, Ph.D. thesis, Humboldt-Universität, Berlin.
Liebrenz, Boris (2010), "Eine frühe arabische Quittung aus Oberägypten", in: *Archiv für Papyrusforschung* 56 (2), 294–314.
Lipiński, Jadwiga (1977), *Deir el-Bahari II. The Temple of Tuthmosis III: Architecture*, Warsaw.
Markiewicz, Tomasz (1999), "Five Coptic Ostraca from Deir el-Bahri", in: *Journal of Juristic Papyrology* 29, 79–84.
Markiewicz, Tomasz (2000), "New Fragmentary Coptic Texts from Deir el-Bahri", in: *Journal of Juristic Papyrology* 30, 67–70.
Müller, Matthias (2016), "Coptic Ostraca in the Tombs of the South Asasif Necropolis", in Elena Pischikova (ed.), *Tombs of the South Asasif Necropolis: New Discoveries and Research, 2012–2014*, Cairo, 279–310.
Naville, Edouard (1893–1894), "Excavations. Work at the Temple of Deir el Bahari", in: *Archaeological Reports (Egypt Exploration Fund) (1893–1894)*, 1–7.

O'Connell, Elisabeth R. (2006), "Ostraca from Western Thebes. Provenance and History of the Collections of the Metropolitan Museum of Art and at Columbia University", in: *Bulletin of the American Society of Papyrologists* 43, 113–137.
O'Connell, Elisabeth R. (2007), "Transforming Monumental Landscapes in Late Antique Egypt: Monastic Dwellings in Legal Documents from Western Thebes", in: *Journal of Early Christian Studies* 15 (2), 239–273.
O'Connell, Elisabeth R. (2010), "Excavating Christian Western Thebes: A History", in: Gawdat Gabra and Hany N. Takla (eds.), *Christianity and Monasticism in Upper Egypt II: Nag Hammadi-Esna*, Cairo, 253–270.
Papaconstantinou, Arietta (2001). *Les culte des saints en Égypte des Byzantins aux Abbassides. L'apport des inscriptions et des papyrus grecs et coptes*, Paris.
Pimpaud, Alban-Brice/Lecuyot, Guy (2013), "Cartes pour l'étude de la rive gauche de Thèbes aux époques romaines et byzantines", in: *Memnonia* 24, 147–154.
Polz, Daniel/Rummel, Ute/Eichner, Ina/Beckh, Thomas (2012), "Topographical Archaeology in Dra' Abu el-Naga: Three Thousand Years of Cultural History", in: *Mitteilungen des deutschen Archäologischen Instituts Abteilung Kairo* 68, 123–127.
Till, Walter C. (1962), *Datierung und Prosopographie der koptischen Urkunden aus Theben*, Vienna.
Underwood, Matthew/Behlmer, Heike (2016), "Coptic Documents From the Tomb of Mery, Theban Tomb No. 95", in: Paola Buzi, Alberto Camplani, and Federico Contardi (eds.), *Coptic Society, Literature and Religion from Late Antiquity to Modern Times. Proceedings of the Tenth International Congress of Coptic Studies (*Rome, September 17th–22nd, 2012*)*, Leuven, 779–793.
Vanthieghem, Naïm (2019), "Un document arabe de la région thébaine. Réédition de P. Liebrenz Quittung", in: *Chronique d'Égypte* 94, 206–12.
Vliet, Jacques van der (2002), "Pisenthios de Coptos (569–632), moine évêque et saint. Autour d'une nouvelle édition de ses archives", in Marie-Françoise Boussac (ed.), *TOPOI: Supplément 3*, Lyon, 61–72.
Vliet, Jacques van der (2013), "Les archives de Pesynthius: Nouvelles découvertes, Nouvelles questions", in: Anne Boud'hors and Catherine Louis (eds.), *Études coptes XII. Quatorzième journée d'études (Rome, 11–13 juin 2009)*, Paris, 263–270.
Wilfong, Terry G. (1989), "Western Thebes in the Seventh and Eighth Centuries: A Bibliographic Survey of Jeme and Its Surroundings", in: *Bulletin of the American Society of Papyrologists* 26, 89–147.
Wilfong, Terry G. (2004), "New Texts in Familiar Hands: Unpublished Michigan Coptic Ostraca by Known Scribes", in: Mat Immerzeel and Jacques van der Vliet (eds.), *Coptic Studies on the Threshold of a New Millennium: Proceedings of the Seventh International Congress of Coptic Studies*, vol. 1, Leuven, 545–551.
Winlock, Herbert/Crum, Walter E. (1926), *The Monastery of Epiphanius at Thebes. Part I: The Archaeological Material; Part II: The Literary Material*. New York.

Photo Credits

Fig. 1: © J. Cromwell.
Fig. 2–4: © Columbia Rare Book and Manuscript Library.

Contributors

Adam Bülow-Jacobsen
is a former Research Professor of Greek Papyrology at the University of Copenhagen. In 1978–1987 he participated in in the Photographic Archive missions to the Egyptian Museum in Cairo. Since 1987 he has taken part in excavations in the quarries at Mons Claudianus and Umm Balad (near Mons Porphyrites) and in the Roman and Ptolemaic *praesidia* along the Coptos–Myos Hormos and Coptos–Berenike roads. He has edited numerous texts, foremost ostraca from the Eastern Desert, and has pioneered the application of various modern photographic methods to the imaging of ostraca and other inscribed objects.

Clementina Caputo
is currently Post-Doctoral Researcher in the Department ABC at the Politecnico di Milano. From 2016 to 2019, she was part of the project "Writing on Ostraca in the Inner and Outer Mediterranean" conducted under the auspices of the Collaborative Research Centre 933 "Material Text Cultures" at the Ruprecht-Karls-Universität Heidelberg. Trained in archaeology and material culture of Greco-Roman Egypt, she has been a member of the Dime excavation team since 2006 and of the Amheida excavation team since 2009. She works on Greco-Roman pottery and ceramic writing supports in the Ancient Mediterranean.

Marie-Pierre Chaufray
graduated in 2011 from the EPHE (Paris) with a PhD in papyrology and Demotic. Since 2015, she has been a researcher in papyrology at the CNRS (Ausonius, UMR 5607, Bordeaux). Her work focuses on administration and taxation in Hellenistic and Roman Egypt based on unpublished corpora. She has been a member of the French Archaeological Mission of the Eastern Desert (MAFDO) since 2014.

Jennifer Cromwell
is Lecturer in Ancient History at Manchester Metropolitan University and member of the Manchester Centre for Youth Studies. Her main interests lie in the social and economic history of late antique and early Islamic Egypt, and the study of Coptic non-literary texts. She is the author of *Recording Village Life: A Coptic Scribe in Early Islamic Egypt* (Ann Arbor, 2017) and co-editor with Eitan Grossman of *Scribal Repertoires in Egypt from the New Kingdom to the Early Islamic Period* (Oxford, 2017)

Paola Davoli
is Professor of Egyptology at the University of Salento (Lecce, Italy) since 2002. She is the co-director of the Soknopaiou Nesos Project with M. Capasso since 2004 and the archaeological director of Amheida Project (Dakhla Oasis, Egypt) of New York University, directed by R. S. Bagnall. Her main interest is Egyptian archaeology, in particular of the Greco-Roman settlements.

Margaretha Folmer
is a Lecturer at the University of Leiden (Netherlands) (Aramaic language and linguistics, with special focus on Imperial Aramaic and Targumic Aramaic) and an Assistant Professor at the Vrije Universiteit Amsterdam (Biblical Hebrew and Jewish magic, with special focus on incantation bowls).

Ben Haring
is Senior Lecturer in Egyptology at the Leiden University Institute of Area Studies. His research focuses on Ancient Egyptian administration, writing (from monumental hieroglyphic to documentary cursive), and other systems of notation, on which he published several monographs.

Sandra Luisa Lippert
is *Directrice de recherche* at the French National Center for Scientific Research (CNRS) and a member of the research team "Archéologie & Philologie d'Orient et d'Occident" (UMR 8546 – CNRS, EPHE, ENS, PSL) at Paris. She was previously a teaching and research associate in Würzburg (2000–2005), Berkeley (2006), Tübingen (2006–2011, 2013) and Montpellier (2011–2019). Her work focuses on Demotic studies, ancient Egyptian law, and the economy of Egyptian temples in the Greco-Roman period. Since 2000, she has collaborated with Karl-Theodor Zauzich and Maren Schentuleit on the edition of Demotic texts of the Roman period from Soknopaiou Nesos in the Fayum. Since 2008, she is responsible for the edition of the Demotic sources from the University of Tübingen excavation at Hut-Repit/Athribis near Sohag.

Julia Lougovaya
is Researcher and Lecturer in Ancient History and Papyrology at the Ruprecht-Karls-Universität Heidelberg. Since 2015 she has been in charge of the project "Writing on Ostraca in the Inner and Outer Mediterranean" within the Collaborative Research Centre 933 "Material Text Cultures". Her current research is concerned with material aspects of writing practices in the ancient world as reflected in papyrological and epigraphical sources. Her interests also include ancient mathematical education and literary culture on the fringes of the Greco-Roman world.

Bérangère Redon
is Researcher at the French National Center for Scientific Research (UMR 5189, HiSoMA, Lyon). She is trained in Egyptian Archaeology and History from the 7th c. BCE to the 3rd c. CE, and her interests are in the presence of Greeks and Romans on the fringes of Egypt and its expressions and consequences. She conducted the French archaeological mission to the Eastern Desert between 2014 and 2017 and is currently the principal investigator of the "Desert Networks" project (ERC-2017-STG, Proposal number 759078).

Maren Schentuleit
is Associate Professor for Egyptology and Coptic Studies at Oxford University and Lady Wallis Budge Fellow of University College. She was previously a teaching and research associate in Würzburg (2000–2004, 2019), Göttingen (2004–2008) and Heidelberg (2008–2018). Her main research focus lies in the Demotic and bilingual documentary texts from Greco-Roman Egypt, the social and economic history of Egypt, and the relationship between religion and politics. She has been researching sources from Soknopaiou Nesos for two decades.

Indices

1 Ostraca and Papyri

https://doi.org/10.1515/9783110712902–012

Coptic/Greek

Demotic

Hebrew

2 Subjects, Persons, and Places