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EDITED BY KATELIJN VANDORPE



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**A COMPANION TO GRECO-ROMAN
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the Eastern Desert. She is particularly interested in foreign elements (especially Greek and Roman) in Egypt, how they were expressed, and what effects they had. As a specialist on Greek and Roman baths in Egypt, she is actively involved in the international Balnéorient project.

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Cornelia Römer studied Classics at the Universities of Cologne and Florence. She was Head of the Papyrus Collection at the University of Cologne until 2000, when she became Professor of Papyrology at UCL. From 2005, she was Director of the Papyrus Collection and Papyrus Museum in Vienna. She is now a long-term lecturer at the German Academic Exchange Service at Ain Shams University, as well as a freelance collaborator at the German Archaeological Institute in Cairo. The main areas of her research are Greek literary and documentary papyrology and the archaeology of Greco-Roman Egypt.

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powers, as well as Roman epigraphy, numismatics, and papyrology.

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Katelijan Vandompe is Professor of Papyrology and Ancient History at the KU Leuven University, Belgium, and a member of the Royal Flemish Academy of Belgium. Her main research field is Greco-Roman Egypt, and her publications include text editions (P. Dryton and, with S.P. Vleeming, P. Erbstreit), archival research, studies on seals, onomastics, institutions, and socioeconomic aspects of this multicultural society.

Peter van Minnen is Professor of Classics at the University of Cincinnati. He specializes in documentary papyrology and the social and economic history of Greco-Roman Egypt. The author of numerous publications, recipient of several awards, and editor of *BASP*, he is currently working on an edition of a family archive from Hermopolis and a guide to Alexandria in the age of Augustus.

Anne-Emmanuelle Veïsse is Assistant Professor in Greek History at the University of Paris 1 Panthéon-Sorbonne. She is the author of *Les "révoltes égyptiennes." Recherches sur les troubles intérieurs en Égypte du règne de Ptolémée III à la conquête romaine* (2004) and co-editor of two collective books. Her research focuses on the political and social history of Ptolemaic Egypt.

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Marja Vierros is a postdoctoral scholar in the project Act of the Scribe. Transmitting Linguistic Knowledge and Scribal Practices in Greco-Roman Antiquity (Academy of Finland, University of Helsinki). She is the author of *Bilingual Notaries in Hellenistic Egypt. A Study of Greek as a Second Language* (2012). Her areas of expertise are Greek papyrology, historical (socio)linguistics, and linguistic annotation (dependency treebanks).

Sitta von Reden is Professor of Ancient History at the University of Freiburg, Germany. She has published widely on both Hellenistic Egypt and the ancient monetary economy. Her monographs include *Money in Ptolemaic Egypt* (2007), *Money in Classical Antiquity* (2010), and *Die antike Wirtschaft* (2015).

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Three younger colleagues of the University of Leuven research group of Ancient History have collaborated on this volume: **Gwen Jennes** graduated in Egyptology (with a minor in Archaeology) at the KU Leuven University, where she also obtained her PhD; her research focuses mainly on the relation between personal names and reli-

gion in Late Period, Greco-Roman, and Late Antique Egypt. **Valérie Wyns** graduated in Ancient History, and is currently a PhD student studying the impact of Ptolemaic government on the quality of life. **Nico Dogaer** graduated in Ancient History, and is currently a PhD student researching the Ptolemaic system of monopolies.

Preface

When as a student I was introduced to the field of Greco-Roman Egypt, I was fortunate to rely on a rarely used introduction, the Dutch *Papyrologisch Handboek* by Willy Peremans and Jozef Vergote (1942), which already fully included Egyptian (Demotic and Coptic) material and also focused on broader issues such as Administration and Religion, even though it was no longer up to date in all areas. Already at that time, I silently cherished the ambition to present such a manual to an international audience.

When, a few years ago, I was offered the chance to edit *A Companion to Greco-Roman and Late Antique Egypt*, I had some doubts. The situation had completely changed. While more publications than ever were appearing in the field and some guidance was undoubtedly needed, several excellent companions were already available – companions in which I had taken part and which, as I am writing this introduction, are piled up on the table in front of me. What more could I offer? Should I accept this invitation? Over the course of this project, my answer has changed from a cautious to a full-blown “yes.” I have tried to compose a companion that still provides basic information for students and, I hope, their professors, but at the same time is sufficiently different from the handbooks already in existence.

Egypt: from Alexander to the Copts. An Archaeological and Historical Guide (2004), edited by Roger S. Bagnall and Dominic W. Rathbone, was the first handbook with a strong archeological focus, of which a revised electronic edition is now available. The *Oxford Handbook of Papyrology* (2009b), edited by Roger S. Bagnall, obviously emphasizes the papyrological source material (including ostraca and wooden tablets) and focuses on the Greek and Latin sources, although several chapters also deal with Egyptian, Aramaic, Persian, and Arabic documentation and with broader issues such as Law, Religion, and Science. The *Blackwell Companion to Ancient Egypt* (2010), edited by Alan B. Lloyd, is a two-volume handbook with a pharaonic and Greco-Roman component to all its themes, the stated aim of which is to “recognize differences but also emphasize the continuities of Pharaonic Egyptian civilization” thus providing “valuable perspectives and data both to Egyptologists and Graeco-Roman specialists” (p. xxi). The major themes that are addressed include State and Economic Structures, Social Order, Language and Literature, Visual Arts, and Reception Studies. *The Oxford Handbook of Roman Egypt*

(2012), edited by Christina Riggs, aims to exceed the disciplinary boundaries for that specific period. Within the major themes (Land and State; City, Town, and *Chora*; People, Religion, Texts, and Language; Images and Objects; and Borders, Trade, and Tourism), the editor presents chapters written by authors with a variety of disciplinary profiles. The archeological component is explicitly present in several parts.

It was a big challenge to present a new thematic perspective. Apart from the case of *Egypt: from Alexander to the Copts*, our chronological scope is of course different from that of other comparable works. Here, we cover almost 1000 years of Egyptian history, starting with its liberation from Persian rule by Alexander the Great in 332 BC and ending in AD 642, when Arab rule began.

We have further pursued the following objectives. In the first place, we wanted to offer a comprehensive overview, which is the main objective of a companion. For this, we have chosen a largely sociological approach: the “Life Portraits” at the end of each part, the theme of “Identity in a Multicultural Environment,” and Chapter 35 on the quality of life of Egypt’s inhabitants are clear examples of this aim. Furthermore, we wanted to emphasize the changes that occurred in the Greco-Roman and Late Antique Periods, as illustrated in thematic titles such as “Governing a Country with a Past: Between Tradition and Innovation,” “Traditional Religious Life Challenged,” and “Creative Minds in Theory and Praxis.”

Also in this volume we have sought to exceed disciplinary boundaries, especially those between Greek papyrology on the one hand and Demotic and Coptic studies on the other; we hope that we have realized this in a reasonably systematic manner, which is new for this type of handbook. Thus, we opted against presenting separate chapters on, for example, Greek literature, Latin literature, Egyptian Demotic literature, and so on, or on Egyptian or Greek sciences, as these are already available in other handbooks. Here, rather, we have brought together specialists who discuss the multilingual sources on, for example, literature, in one chapter jointly presented. For this, we have put together authors from different backgrounds in a variety of chapters: Greek papyrologists and demotists/Egyptologists (Chapters 21, 31, and 32); historians and archeologists (Chapter 2); scholars of the Ptolemaic, Roman, and/or Late Antique Periods (Chapters 11, 12, and 18); and other specialisms (Chapter 24). Except in our Chapters 2, 15, and 33, the archeological component here is less clearly present than in *Egypt: from Alexander to the Copts* or in the *Oxford Handbook of Roman Egypt*, which provide detailed data according to region. Finally, we have not included chapters on the reception of Greco-Roman Egypt, which is widely discussed in the *Blackwell Companion to Ancient Egypt* (Part VII), but have chosen to emphasize the possible impact of the study of Greco-Roman Egypt on other fields of research, such as Hellenistic and Roman History more generally, and New Testament Studies (Chapters 36–38, but see also Chapters 3–6) – an area that does not always receive due attention.

All these ambitious goals are hopefully realized. The main themes are preceded by an introductory section: I. Greco-Roman Egypt Explored, focusing on the sources in their physical context and presenting the research fields in a digital and multidisciplinary context. The following main themes of this volume are: II. Egypt as Part of a Globalizing World, that is the Hellenistic, Roman, and, finally, Byzantine worlds; III. Governing a Country with a Past, focusing on traditions and innovations in the administration, policy

fields, fiscal system, army and police, and private law; IV. Developing the Economic Strength of the Nile Country, presenting chapters on monetization, stimuli for irrigation, agriculture and quarrying, and the economic growth and exploitation of land; V. Identity in a Multicultural Environment, including social, class, and ethnic identity, familial and gender identity, and cultural identity; VI. Traditional Religious Life Challenged, discussing religion in a multicultural context, the ruler and imperial cults, new deities and new cults, and Egypt's role in the rise of Christianity, monasticism, and regional schisms; and VII. Creative Minds in Theory and Praxis, a theme in search of new developments in language and literature, science, architectural practices, urbanism, and the visual arts.

The Epilogue presents chapters on sociologically inspired thoughts concerning the quality of life in Greco-Roman Egypt, the research impact of work on Greco-Roman Egypt on other domains, and a discussion of the future of our studies. The detailed Chronological Outline is complementary to that of the *Blackwell Companion to Ancient Egypt*, which has a strong focus on Pharaonic Egypt. The Bibliography is inevitably preceded by a long list of digital resources, referred to throughout the volume. For the photographs, we have preferred illustrations of less well-known texts, objects, and structures.

We have tried to be innovative by introducing at the end of each theme a chapter on "Life Portraits," which takes advantage of archival material and shows how individuals responded to the various aspects presented in the preceding chapters. These include portraits of both royals and more ordinary people in a globalizing world, of individuals and their everyday papers in a bureaucratic society, of people at work, of people of a multicultural generation, and of people in worship. The Life Portraits have been written by members or former members of the KU Leuven research unit of Ancient History. Some topics are highlighted in "Information Boxes." Among such boxed topics, one can find, for example, "'Wandering' Orators and Poets in Late Antique Egypt," "Textiles and Textile Archeology," and "'I Will Tattoo on Your Head ...': New Ancient Books." More complex or detailed information is made available in a series of tables.

For common personal and place names, we have used the Latinized or English form (the god Horus, Ptolemy, Homer), while non-common names are simply transliterated (an otherwise unknown individual is called Horos or Paniskos). For the titles of the works of classical authors, we have largely relied on the Oxford Classical Dictionary, although we have not abbreviated them in this volume. Egyptian Hieroglyphic/Hieratic, Demotic, and Coptic words are presented in transliteration formats typical of the respective fields of research.

It has really been a pleasure and an honor to cooperate with so many excellent colleagues and scholars. I hope the reader will enjoy reading or consulting this companion.

Katlijn Vanderpe
Heverlee, May 2017

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Abbreviations

Abbreviations of papyrological and inscriptional sources are too numerous to be listed here.

- For abbreviations of papyrological sources (P., O., etc.), see J. F. Oates, R. S. Bagnall, S. J. Clackson, A. O'Brien, J. D. Sosin, T. G. Wilfong, and K. A. Worp, *Checklist of Greek, Latin, Demotic and Coptic Papyri, Ostraca and Tablets*. ed. 5. Bulletin of the American Society of Papyrologists, Supplement 9. Oakville and Oxford 2001, regularly updated in the online version: <http://www.papyri.info/docs/checklist>
- For abbreviations of inscriptional sources (I., CIL, etc.), see http://www.antiquite.ens.fr/IMG/file/pdf_guide_epi/abbreviations_guide.pdf
- For abbreviations of both papyrological and inscriptional sources, see additionally <http://www.trismegistos.org/tm/search.php>

AE	<i>L'Année épigraphique</i> , since 1888
ANRW	<i>Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung</i> , since 1970
BL	<i>Berichtigungsliste der griechischen Papyrusurkunden aus Ägypten</i> , since 1922
BullÉp	<i>Bulletin épigraphique</i> , in <i>Revue des études grecques</i> , since 1888
DDbDP	<i>The Duke Databank of Documentary Papyri</i> , available via papyri.info
DNP	<i>Der Neue Pauly</i> . Enzyklopädie der Antike. 16 vols. Stuttgart-Weimar 1996–2003
FGrHist	<i>Die Fragmente der griechischen Historiker</i> , Parts I–III, edited by Felix Jacoby, Berlin 1923–1930, Leiden 1940–1958; <i>Die Fragmente der griechischen Historiker continued</i> , Part IV, edited by Guido Schepens, Leiden 1999–2008, by Stefan Schorn, Leiden since 2009, accessible online at www.brillonline.com
LDAB	Leuven Database of Ancient Books. http://www.trismegistos.org/ldab/
Pros. Ptol.	<i>Prosopographia Ptolemaica</i> , 10 vols. Leuven 1977–2002

SEG	<i>Supplementum Epigraphicum Graecum</i> , since 1923
<i>Suppl. Hell</i>	<i>Supplementum Hellenisticum</i> , edited by Hugh Lloyd-Jones and Peter Parsons. Berlin-New York 1983
TM	Trismegistos: an Interdisciplinary Portal of Papyrological and Epigraphical Resources. http://www.trismegistos.org/
TM Arch	TM arch (followed by identification number of the archive). Database and descriptions of Papyrus Archives in Greco-Roman Egypt. http://www.trismegistos.org/arch/index.php
TM Geo	TM geo (followed by identification number of the place name). Database and descriptions of Papyrus Archives in Greco-Roman Egypt. http://www.trismegistos.org/arch/index.php

See also the digital resources at the end of the volume.

Chronological Outline

For a more detailed survey of the Pharaonic Period, the reader should consult the chronological overview in Lloyd's *Companion to Ancient Egypt* (2010). For the Ptolemaic Period, see the detailed "Overview of the events discussed in the history of the Ptolemaic Kingdom" in Hölbl (2001). For the Greco-Roman and Late Antique Period, see the "Chronological outline" by Bagnall and Rathbone (2004). Periods of instability are marked in bold.

Pharaonic Egypt

Early Dynastic Period	c. 3150–2686 BC
Old Kingdom	c. 2686–2160
First Intermediate Period	c. 2160–2055
Middle Kingdom	c. 2055–1650
Second Intermediate Period	c. 1650–1550
New Kingdom	c. 1550–1069
Third Intermediate Period	c. 1069–664
c. 800, Homer calls the Nile country <i>Aigyptos</i>	
Late Period:	664–332
<i>Twenty-sixth Dynasty</i>	664–525
Psammetichus I	
foundation of the Greek city of Naucratis	
Necho II	
rebuilding of Nile–Red Sea canal started (finished by Ptolemy II)	
Psammetichus II	
after 594, Solon of Athens visits Egypt and meets the priests of Sais?	
Apries	
Amasis	
Thales of Miletus studies in Egypt geometric principles	
Pythagoras stays in Egypt for 22 years	
Psammetichus III	

<i>Twenty-seventh Dynasty (first Persian Period)</i>	525–404
Cambyses	
Darius I	
c. 500, Hecataeus of Miletus visits Egypt as far south as Thebes	
Xerxes	
c. 460, Anaxagoras explains the risings of the Nile	
Artaxerxes I	
449–447, Herodotus visits Egypt	
Darius II	
Artaxerxes II	
 <i>Twenty-eighth Dynasty</i>	 404–399
Amyrtaios	
 <i>Twenty-ninth Dynasty</i>	 399–380
Nepherites I	
Psammuthis	
Hakor	
Nepherites II	
 <i>Thirtieth Dynasty</i>	 380–343
Nectanebo I	
Teos	
Nectanebo II	
 <i>Thirty-first Dynasty (second Persian Period)</i>	 343–332
Artaxerxes II	
Arses	
Darius III	

Macedonian Dynasty (332–305 BC)

Alexander the Great	332–323 BC
332, liberation of Egypt from Persian rule by Alexander	
331, Alexander's expedition to the Siwa Oasis, foundation of Alexandria	
Philip Arrhidacus	323–317
323, Settlement of Babylon, Ptolemy son of Lagus becomes satrap of Egypt	
321–320, First War of the Successors	
321, Ptolemy "abducts" Alexander's corpse on its way to Macedonia or Siwa	
320, Settlement of Triparadisus (Northern Syria)	
319–315, Second War of the Successors	

Alexander IV of Macedon, son of Alexander the Great	316–310/09
314–311, Third War of the Successors	
before 311, Alexandria becomes Egypt's new capital	
311, Satrap stele set up by priests of Bouto (Delta)	

Ptolemaic Rulers (305–30 BC)

Ptolemy I Soter	305–282 BC
305/4, Ptolemy assumes kingship	
303–301, Fourth War of the Successors	
c. 300, foundation of the Alexandrian Mouseion and Library	
288–285, Fifth War of the Successors	
285, construction of the Pharos	
reign of Ptolemy I or II, Manetho revises Egyptian history in his <i>Aigyptiaka</i> , dividing Egypt's past into the currently used dynasties	
Ptolemy II Philadelphus	284/2–246
c. 279, Ptolemy marries his sister Arsinoe II	
c. 275, conquest of Lower Nubia, Cyrenaica becomes independent under Magas (until 250)	
274–271, First Syrian War (against Seleucid Empire)	
273, first diplomatic contacts between Alexandria and Rome	
272/1, creation of cult of “brother–sister gods”	
270, death of queen Arsinoe II	
268/7–262/1 Chremonidean War (Ptolemy supports Athenian-Spartan coalition)	
260–253, Second Syrian War	
[Rome: 264–241, First Punic War]	
250, Cyrenaica is reabsorbed by Egypt after Magas' death	
Ptolemy III Euergetes I	246–222/1
246–241, Third Syrian War	
243, decree of Alexandria, first sacerdotal decree by synod of priests meeting in precinct of Alexander's tomb	
238, Canopus decree	
237, construction of the Edfu temple starts	
Ptolemy IV Philopator I	222/1–204
219–217, Fourth Syrian War	
217, Battle of Raphia	
[Rome: 218/7–202/1, Second Punic War]	
Ptolemy V Epiphanes	204–180
206–186, the Great Revolt, construction of the Edfu temple halts	
c. 202–198(/5), Fifth Syrian War	
196, Memphis decree (Rosetta stone)	
193/2, Ptolemy marries Cleopatra I, daughter of Seleucid king Antiochus III	

Ptolemy VI Philometor	180–145
180–177/6, Cleopatra I rules with her son, Ptolemy VI	
Ptolemy VIII Euergetes II	170–163
170–168, Sixth Syrian War	
169 & 168, Antiochus IV invades Egypt	
c. 168–164, coup d'état of Dionysios Petosarapis	
164, clash between Ptolemy VI and VIII; VI flees to Rome and Cyprus	
163–145, Ptolemy VI back in Egypt, Ptolemy VIII reigns over Cyrenaica	
[Rome: 149–146, Third Punic War]	
145, Ptolemy VI campaigns in Syria, is wounded and dies (Ptolemy VII Neos Philopator, never reigned)	
Ptolemy VIII Euergetes II	145–116
145/4, Ptolemy VIII marries his sister, Cleopatra II	
c. 141, Ptolemy VIII also marries his niece, Cleopatra III	
142, inauguration of the Edfu temple; 140, start of the construction of the pronaos	
c. 140, Scipio Aemilianus visits Egypt	
132–124, dynastic rivalry and civil war	
118, general amnesty promulgated by the king and queens	
Cleopatra III	116–101
rules jointly with Ptolemy IX (116–107) and Ptolemy X (107–101)	
Ptolemy IX Soter II	116–107
112, the Roman senator L. Mummius visits Egypt	
Ptolemy X Alexander I	107–88
103–101, Judean-Syrian-Egyptian conflict	
88, dynastic rivalry and revolt in the Thebaid	
Ptolemy IX Soter II (restored)	88–81/0
Ptolemy XI Alexander II	80
Ptolemy XII Neos Dionysos Auletes	80–58
60–59, Diodorus Siculus visits Egypt	
59, Ptolemy becomes “friend and ally of the Roman people”	
Cleopatra VI Tryphaena and Berenice IV Epiphanes	58–55
Ptolemy XII Neos Dionysos (restored)	55–51
55, Ptolemy puts his daughter Berenice IV to death	
Cleopatra VII Philopator	51–30
rules jointly with her brothers (XIII and XIV) and son (XV)	
Ptolemy XIII	51–47
48, Pompey murdered by Ptolemy; his tomb becomes pilgrimage site for emperors	
Ptolemy XIV	47–44
Ptolemy XV Philopator Philometor, alias Caesarion	44–30
47, Nile cruise of Cleopatra and Caesar	
≈47, birth of Ptolemy XV	

- 46, Cleopatra follows Caesar to Rome
 44, assassination of Caesar, Cleopatra travels back to Egypt
 41, Cleopatra meets Antony in Tarsus
 31, sea battle at Actium (Greece), Antony and Cleopatra defeated by Octavian
 30, suicide of Antony and Cleopatra in Alexandria, assassination of Ptolemy XV

Roman Emperors (30 BC–AD 324)

(linked names indicate joint rulers)

Octavian/Augustus	30 BC – AD 14
official name: Imperator Caesar (from 27 BC on: Imperator Caesar Augustus)	
30 BC, Octavian in Alexandria, visits Memphis	
29 BC, Theban revolt, crushed by the first prefect Gallus	
27/6 BC, Gallus commits suicide	
c. 25 BC, Strabo visits Egypt	
Tiberius	14–37
AD 19, Germanicus visits Alexandria without emperor's consent	
Caligula	37–41
38, atrocities against Jews in Alexandria	
Claudius	41–54
Nero	54–68
Galba, Otho, Vitellius	68–69
68, edict of the prefect Ti. Julius Alexander, introducing measures against corruption etc.	
Vespasian	69–79
69, Vespasian proclaimed emperor by the legions in Alexandria, visits the city; his son and general Titus also travels to Memphis	
66–73, failed Judean Revolt , put down by Titus, entails harsh repercussions for Egyptian Jews; “Jewish tax” imposed on Jews throughout the empire	
Titus	79–81
[Italy: 79, eruption of Vesuvius]	
Domitian	81–96
Nerva	96–98
Trajan	98–117
115–117, Jewish Revolt in Cyrenaica and Egypt, crushed under Hadrian	
Hadrian	117–138
130–131, Hadrian visits Egypt, foundation of Antinoopolis	
Antoninus Pius	138–161

Marcus Aurelius	161–180 }
Lucius Verus	161–169 }
167–179, Antonine plague in Egypt	
c. 172, <i>Boukoloi</i> or “cattlemen” terrorize areas of the Delta	
175, Avidius Cassius defeats <i>Boukoloi</i> rebellion, proclaimed emperor; Marcus Aurelius suppresses sedition	
Commodus	180–192
Pertinax	192–193
Didius Julianus	193
Septimius Severus	193–211
Various sources attest to a persecution of Christians under Septimius Severus	
193–194, Pescennius Niger, governor of Syria, proclaimed emperor and for a short time recognized in Egypt	
199/200, emperor visits Egypt	
200/1, the nome capitals become Greek-style <i>poleis</i>	
Caracalla (Antoninus)	211–217 }
Geta	211 }
212, <i>Constitutio Antoniniana</i> , granting all free citizens of the empire Roman citizenship	
215, Caracalla visits Alexandria	
215–216, repression of the Alexandrians, who had rioted during imperial visit	
Macrinus	217–218
Elagabalus	218–222
Alexander Severus	222–235
c. 233, emperor plans visit to Egypt	
Maximinus Thrax	235–238
Gordian I and II	238
Pupienus, Balbinus	238
Gordian III	238–244
Philip the Arab	244–249
Decius	249–251
250, Decian persecution of Christians, <i>libelli</i> in Egypt	
Trebonianus Gallus	251–253
Aemilius Aemilianus	253
Valerian	253–260 }
c. 257–260, Valerian persecution of Christians	
Gallienus	253–268 }
260–261, Macrianus junior and his brother Quietus, usurpers, recognized in Egypt	
Claudius II the Goth	268–270
Quintillus	270
Aurelian	270–275

270–272, Palmyrene occupation of Egypt, with queen Zenobia and her son Vaballathus	
c. 270, Antony's withdrawal from inheritance to solitary asceticism at the edge of his village: traditional starting point of monasticism	
Tacitus	275–276
Florianus	276
Probus	276–282
Carus	282–283
Numerian	283–284
Carinus	283–285
Diocletian	284–305
284, the Copts take the year Diocletian became emperor as the starting point for their “Era of the Martyrs”	
293, installation of the tetrarchy system with <i>Augusti</i> and <i>Caesares</i>	
296/7, Lucius Domitius Domitianus, usurper, recognized in Egypt	
297/8, Aurelius Achilleus, usurper, recognized in Egypt	
297/8, Diocletian suppresses rebels, visits Middle and Upper Egypt, negotiates treaty in Nubia with Blemmyes and Nobatae	
301, Price edict	
303–313, the Great persecution	
Maximinus	305–313
Severus II	305–307
Maxentius	306–312
Licinius, Augustus of the East	308–324
Constantine I, Caesar and Augustus of the West	306–324
311, execution of Peter, bishop of Alexandria	
313, decree of Licinius or Edict of Milan, granting all persons freedom of religion	
c. 323, foundation of first monastery by Pachomius	
324, Constantine's victory over Licinius	

Byzantine Emperors (AD 324–639/42)

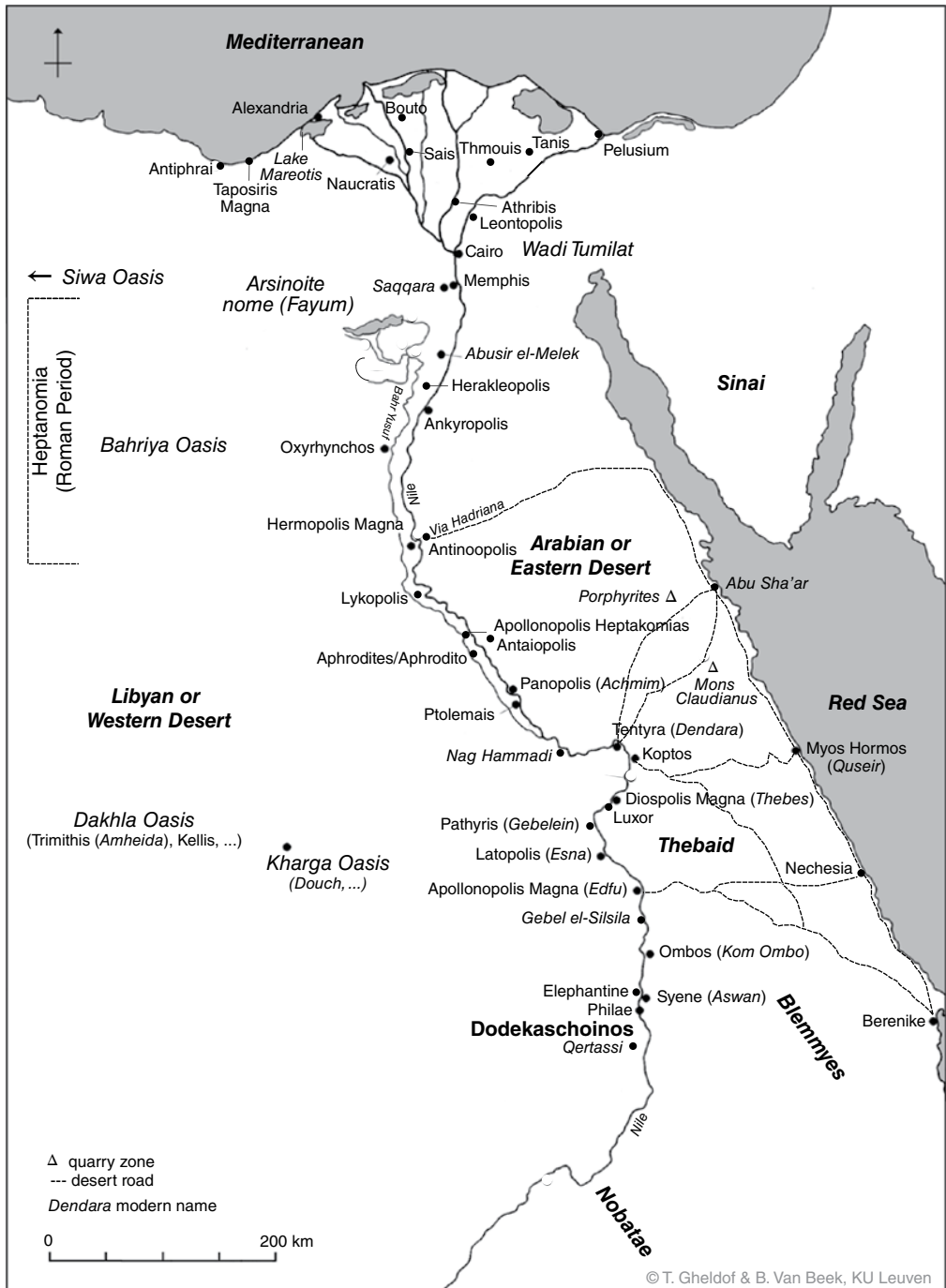
Constantine I, the Great	324–337
325, in a letter to the Egyptian Church, the Council of Nicaea condemns Arianism, reintegrates the Melitians, and fixes the date of Easter	
328–373, Athanasius, bishop of Alexandria, exiled five times by four emperors	
330, foundation of new capital Constantinople	
337, after death of Constantine I, empire divided between three sons	

Constantine II	337–340
Constans II	337–350
Constantius II	337–361
Julian, the Apostate	361–363
Jovian	363–364
Valens	364–378
Theodosius I, the Great	379–395
c. 385, Shenoute of Atripe becomes head of the monastery founded by his uncle, Pgol	
391, destruction of Serapeum in Alexandria, replaced by a church	
391/2, Theodosian interdiction of pagan worship	
394, last Hieroglyph carved in temple of Harendotes (Philae)	
395, <i>Roman Empire divided after death of Theodosius I. Here are listed the emperors of the Eastern Roman Empire:</i>	
Arcadius	395–408
Theodosius II	408–450
431, Council of Ephesus condemns Nestorianism	
Marcian	450–457
451, Council of Chalcedon condemns Monophysitism; beginning of the split of the Egyptian Coptic Church and Byzantine Church	
Leo	457–474
Zeno	474–491
476, fall of the Western Roman Empire	
Anastasius	491–518
First Blemmyan War at the southern frontier	
Justin I	518–527
520s, foundation of Christian school by John Philoponus in Alexandria	
Justinian	527–565
c. 535–537, closure of Isis temple in Philae, where the Blemmyes were the main worshippers	
540–543 and 563–568, Second and Third Blemmyan War at the southern frontier	
Justin II	565–578
Tiberius II	578–582
Maurice	582–602
Phocas	602–610
Heraclius	610–641
619–629, occupation of Egypt by Persians (Sasanian Empire)	

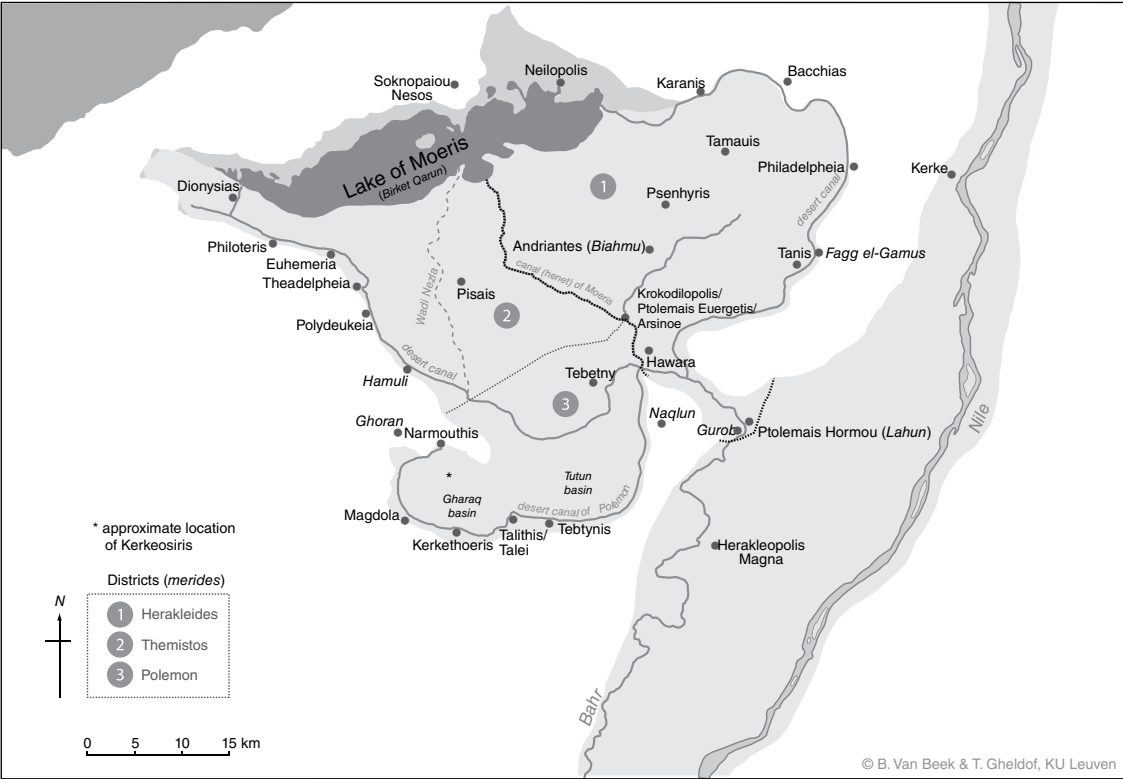
Arab Rule (since AD 639/42)

639–642, general ‘Amr ibn al-‘As conquers Egypt
641, foundation of Fustat, first capital under Muslim rule
645/6, weak attempt of Byzantines to win Egypt back
706, Arabic becomes the official language in Egypt

Maps



1. Greco-Roman and Late Antique Egypt



2. The Fayum

PART I

**GRECO-ROMAN
EGYPT EXPLORED**

CHAPTER ONE

Unique Sources in an Unusual Setting

Arthur Verhoogt

1.1 A Wealth of Sources

Whoever studies ancient Egypt has to deal with an abundance of available sources, making this region unique among those of the ancient world (Wendrich 2010). In addition to the non-organic archeological and epigraphical remains that are available for other regions and periods, the desert climate of Egypt also provides a wealth of organic sources such as wood, linen, papyrus, and mudbrick. Taken together, the sources allow for a much more detailed historical analysis for Egypt, although sometimes the abundance causes extra interpretational problems, because the models needed to analyze and explain what is happening are much more complex than those for regions with fewer sources. There is always the chance of an odd text or object not fitting the model.

In order to gauge what exactly an Egyptian site can yield, it is perhaps worthwhile to browse through a preliminary report from a recent excavation. This is not to claim that there is a “typical” archeological yield for sites, including trash dumps, in Egypt, but just to illustrate the abundance of material that is coming from even short and limited excavations. The example is the short 2009 season at the Red Sea harbor site of Berenike (Sidebotham and Zych 2011). Apart from the more typical descriptions of magnetic surveys and trenches excavated, finds are presented in a number of categories: archeobotanical and archeozoological remains, ostraca (and other writing materials, such as papyrus), coins, glass, an *intaglio*, and pottery. Whatever does not fit in one of these specific categories is presented in a chapter on “Finds.” The 134 individual finds listed here include terracotta oil lamps, a mixture of various items made of wood and basketry, textiles, and a mix of so-called “personal accessories,” such as beads. All this is the result of “17 days of

actual digging” (Sidebotham and Zych 2011, p. 9), showing what Egyptian archeologists have to deal with in number and variety, especially when excavating a trash dump.

The abundance of Egyptian sources is even more telling for the focus of the current volume, the Greco-Roman and Byzantine Period, from the late fourth century BC to AD 642, when Egypt became part of the Caliphate. Most remarkable about the sources available for this period are the written texts. Not only is there simply a greater variety of written sources (inscriptions, papyri, ostraca, wooden tablets, wax tablets, etc.), there is also a much greater linguistic diversity, with documents surviving not only in various stages of ancient Egyptian (Hieroglyphic, Hieratic, Demotic, Coptic), but also in Greek, Latin, and various other languages, such as Aramaic and Arabic. Many of these languages were in use at the same time, and often by the same people, which has made available Egyptian sources for more theoretical debates about bilingualism and code-switching (e.g. Adams 2003; Vierros 2012). On a more practical level, it is only because three languages occurred on the same writing surface of the Rosetta Stone that Thomas Young and Jean-François Champollion were originally able to decode Hieroglyphs (Robinson 2012).

The contents of the written record of ancient Egypt are very varied, especially in this late period. The main distinction is that between literary and documentary texts, with an in-between category that is commonly called “subliterary,” or “para-literary.” The latter category contains magical texts, medical prescriptions, prayers, and so on. Literary texts comprise the books of the ancient world, not only the works of Greek (and Latin) literature and Christian biblical texts, but also representative samples of Egyptian literary texts (see Chapter 31). The category of documentary texts is the largest, showing that ancient Egypt, although perhaps not a literate society per se, did function as a semi-literate one, with many aspects of life being conducted in writing (legal claims, registration of land ownership, census, etc.) (Eyre 2013).

Documentary texts come in all shapes and genres. There are very long texts on papyrus, such as second-century BC papyri listing court proceedings (P.Tor.Choach. 12 in Greek: 192 cm long, 10 columns; P.BM Siut in Demotic: 290 cm long, 10 columns) and a contemporaneous agricultural account (P.Tebt. IV 1103: c. 286 cm long, 23 columns). And there are short texts on papyrus, ostraca, and other writing materials, such as a late fourth-century BC order not to enter (SB XIV 11942: three lines of Greek writing on papyrus), an early third-century BC receipt for burial tax (P.OI Muhs 8: four Demotic lines of writing on potsherd), and a second-century AD order to arrest (SB XXIV 16005: five lines of Greek writing on papyrus). The contents of the documentary papyri are very broad, ranging from administrative documents (correspondence, accounts, etc.) to private letters and various lists.

In all their variety and broadness, however, it is important to note that texts do not come from all parts of Egypt or from all chronological periods in equal number (Habermann 1998). As most of the writing surfaces are organic, they depend for their survival on dry, desert-like circumstances, preferably without too much subsequent habitation. Most written sources, then, survive from the desert edge, with virtually no papyri coming from the humid Delta or continuously inhabited and used parts of the country such as the center of the Fayum. This geographical chance of survival has consequences for what we can expect from our written source material. For example, the lack of papyri from the Nile Delta means that almost none survive from the administrative center of Egypt, the capital city of Alexandria. And settlements at the desert edge, as a rule, represent rural rather than

urban Egypt (without denying the existence of close connections between villages and the urban centers).

Another thing to realize is that in most cases, the caches of written texts that do survive are not the untouched records of the ancient world, but are the result of selection and choice. Many of the written sources, as was already clear from our summary of the Berenike excavation report, come from trash dumps or have been reused as second-hand paper in mummy cases or mummified crocodiles. This means that somebody in Antiquity made a decision to discard these texts for whatever reason. We thus find the texts that were no longer needed, rather than the active archive of a person or government official. Texts removed from an archive can then find another use, for example as scrap paper, fuel for burning, or material to construct mummy casings for humans or to strengthen crocodile bodies in the process of their mummification. In this process, as shown by various archeological finds, texts from one archive can be mixed up with texts from another. For example, the cache of papyri found in 1934 in the cellar of a house in Tebtynis consists of texts discarded from at least three separate private (or professional?) archives (Gallazzi 1990; Smolders 2004). The papyri recovered from crocodile mummies in 1899/1900 also contain administrative texts removed from various village offices (Verhoogt 1998). The modern scholar will find the texts in this secondary use context and will be required to actively reconstruct the original discarded groups.

Alternatively, discarded texts can be found thrown away on a local garbage dump. Such dumps may be inside an inhabited space (such as a courtyard or a stairwell that went out of use), close to an inhabited space, or farther removed at the edge of the settlement. The archeological record offers examples of all such possible dump sites in Egyptian towns and villages (Verhoogt 2012). However, it is important to realize that trash is not a static thing and that there may be movement between these sites, such as when one was cleaned out for development and the trash was removed to another dump. Alternatively, the trash may even have been returned to the original site for use in construction projects (Dicus 2014). Modern excavations give ample examples of texts in trash dumps with precise find circumstances (e.g. Berenike, Trimithis, Mons Claudianus), and also many texts found in earlier excavations come from trash dumps (e.g. Oxyrhynchos, Theadelphia), although here the precise context is more difficult to ascertain (e.g. Rathbone 2009, p. 22 for papyri probably found in a dump in Theadelphia in the early 1900s).

Admittedly, the difference between “dumping” and “storing” texts is difficult for the modern eye to distinguish, but the archeological record also offers possible examples of the actual storing of documents. There have been a number of finds of papyri that were wrapped carefully and stored in jars in cellars (Vandorpe 2009). There are also groups of texts that were stored in tombs and houses, only to be discovered by modern-day archeologists or illegal diggers. It is then difficult to establish why the texts were still found where they were found. Is it simply that they were forgotten by their owners? Or did major events contribute to residents moving away without taking their documents? The latter situation seems to be the case for the many Pathyris archives found inside what may have been houses, left behind when the residents fled after a military revolt in 88 BC (Vandorpe and Waebens 2010a).

Another problem with written sources is that they represent not the population as a whole but, more frequently, the literate groups in society, which, in the ancient world, also

tend to be the more wealthy and privileged groups. At the same time, the literate elites we see at work in Egypt's documentary record are more varied than the elites we see in the epigraphic record elsewhere in the ancient world, who as a rule represent the top layers of society. Subaltern groups do appear in the written record, because of ancient Egypt's dependency on writing to claim ownership and payment of taxes. Even the most illiterate farmer would have at least one or two receipts for payment of taxes at home.

The greatest producer and absorber of documents, perhaps, were the ancient state and its representatives on the various levels. Documents produced included various reports and surveys registering the composition of households or ownership of land, as well as the registration of rents and taxes owed on land and property. There was also much written correspondence between various state actors, either giving directions or submitting reports. In addition, the state also required people who wanted to engage the state to their benefit, to do so in writing.

Although Greco-Roman Egypt certainly has the top place in the survival of papyrological written sources from Antiquity (more than 78 000 papyri, ostraca, and texts on wood or parchment; see Table 1.1), it does not have sole rights. Writing materials have survived from elsewhere (about 2900 papyri, ostraca, and texts on wood or parchment), which can be compared in format, language, and content with those known from Egypt. From the extreme western frontier of the Roman Empire, near Hadrian's Wall, for example, comes a cache of several hundred thin wooden tablets used for writing (e.g. Bowman 2004). Another important source of writing materials was found near Mt. Vesuvius in Italy. Most attention has been given to the library of hundreds of literary works that was carbonized during the AD 79 eruption of the volcano (e.g. Delattre 2006), but there have also been a number of groups of waxed tablets found in Pompeii and Herculaneum that have been very important for the economic history of the early first-century AD (e.g. Terpstra 2013). In addition, potsherds may have been used for writing throughout the ancient world at a much grander scale than previously assumed (Bagnall 2011). Table 1.1 shows the geographical spread of the documentation (Egypt versus the rest of the Mediterranean): 96.5% of the organic writing materials are found in Egypt, versus only 3.2% of the texts on stone (cf. Clarysse n.d. for the Greek documentation).

Table 1.1 Geographical spread of the documentation in the Mediterranean world.

	<i>Outside Egypt</i>	<i>Egypt</i>	<i>Egypt (%)</i>
<i>Organic material</i>			
Papyri	762	49 513	98.5
Ostraca	310	23 981	98.7
Texts on wood	1 286	3 698	74
Texts on parchment	497	1 097	68.8
<i>Total</i>	2 855	78 289	96.5
<i>Compare</i>			
Texts on stone (including graffiti)	445 256	14 354	3.2

Source: Trismegistos online October 2016.

While small pockets of written sources have thus been found all over the ancient world, scholars have compared the picture in Egypt mostly with the written sources from the ancient Near East and the eastern part of the Roman Empire (Gascou 2009). There is a similar mix of types of text, not only literary (e.g. Nessana), but also documentary (official texts, private legal documents, etc.). In addition, there are, apart from the texts in Greek and Latin, also texts from the various language communities in the Near East (Aramaic, Arabic, Nabataean, etc.). The chronological range of texts from the Near East is less broad than for those from Egypt, with almost none surviving from the Hellenistic Period. An interesting difference is in the development of handwriting, with an earlier move to what papyrologists consider a typical four-lined Byzantine type (Crisci 1996). However, as more Egyptian texts with image become available, we may have to revisit this statement (It is now easy to assess the often – for people trained to boldly claim date ranges on the basis of handwriting – disconcerting range of possible contemporaneous handwritings via the website <http://PapPal.info>.)

The abundance of written sources for Late Period Egypt has tilted the historiography of this time and region toward an almost exclusive focus on texts. When Late Period Egypt entered the scholarly discourse in the late nineteenth century, it became the territory of classical philologists rather than archeologists and (Late Period) Egyptologists (obviously, the Pharaonic Period remained in high Egyptological demand during this time). And even within the category of ancient Greek texts there was a clear focus on literary texts that could provide, it was expected, the missing links between ancient author and medieval manuscript tradition. In addition, the hunt for the most ancient Christian texts also focused the scholarly interests of the time, fueled by finds like the so-called Sayings of Jesus (actually a fragment of the Gospel of Thomas), allegedly among the first papyri to be found at Oxyrhynchus in 1897 (Parsons 2007, p. 15). With regard to non-literary texts, preference was given to official documents that could illustrate the workings of the Ptolemaic and Roman state and to texts that illustrated the private lives of ancient Egyptians. Given that papyrology was at this time mostly the field of classical philologists, scholars tended to focus on Greek (and the handful of Latin) texts, which seriously impacted the resulting historical analysis. This is most clear in the study of Egyptian land tenure, which was originally based only on Greek texts from one region in Egypt (the Fayum) and thus completely ignored the Egyptian evidence from the Nile valley. This Greek focus has been remedied only since the late 1980s, when Demotic texts were also taken into account when writing the history of Ptolemaic Egypt. This happened particularly in the Leiden and Leuven schools but has now become generally accepted, leading to all-encompassing studies by, for example, Manning (2003a, 2010) and Monson (2012b). A similar trend is currently also underway for later periods of Egyptian history with the inclusion of Coptic and Arabic texts in historical studies of the country.

The same focus on texts also triggered a very active trade in ancient papyri, where individuals and institutions were more interested in the texts themselves than in their provenance. Egyptian antiquarians were more than willing to feed this market by initiating their own “excavations” and encouraging local farmers to search for and sell papyri (and other artifacts of interest) in the margins of existing scholarly excavations (Davoli 2015). They also played the market by dividing caches of texts that clearly must have been found together (or even were part of the same codex; see e.g. Nongbri 2014b) and offering

them for sale separately to different buyers. As a result, some of the more famous archives (e.g. of Zenon and of Heroninos; see Chapter 17) from ancient Egypt have been dispersed over more than a dozen collections worldwide (Figure 1.1). The papyrus trade fed most Western collections and museums that are currently still in existence. In this trade, too, the same hierarchy existed, with literary texts – including Christian ones – fetching much more money than financial accounts. It is sad to see that in some circles, the same ruthless interest in especially literary/Christian texts still exists (see the various blogposts on the Green Collection’s acquisition of papyri by Roberta Mazza).

The archeology of Late Period Egypt came to fruition only in the course of the twentieth century (Bagnall 2001; Bagnall and Davoli 2011). The text-only approach was replaced with a text-and-architecture one in the 1920s and 1930s, with the Italian excavations at Tebtynis and the University of Michigan excavations at Karanis being the most well-known representatives. It is quite clear that the abundance of portable finds from these sites surprised even the excavators, who were in no position to deal with everything. Thus, for dating and interpretation, they focused on what they knew best: papyri and coins. Only in the late 1980s did continuous excavation according to the methods developed for more traditional parts of the Mediterranean world (Greece, Italy) enter Egypt, with Claudio Gallazzi’s excavations in Tebtynis being the trailblazer. Soon, other exemplary excavations followed, especially in the Fayum and Eastern and Western Desert.

The twentieth century also saw a more holistic approach to the textual evidence from Late Period Egypt. Texts were no longer studied as texts per se, but as important historical sources with an unparalleled level of detail. In order to tease out as much as possible from these fragmentary sources, models from the historical and social sciences were introduced, with sometimes exciting results. For example, comparative demographic models were applied to the evidence from especially Roman Egypt, leading to important insights into Egypt’s demographic regime (Bagnall and Frier 2006).

A final development that is currently underway is a return to the study of papyri as material and archeological objects. This is not to say that there is no longer interest in the actual contents of the texts studied, but they are now studied as a whole package, with ample attention to the physical properties of the writing surface and of the writing itself. Studies of literary papyri led the way here (e.g. Johnson 2004), but recently the same amount of detail can be found in studies of documentary texts (e.g. Ast 2014; Claytor 2014). Study of writing surfaces as material objects also includes their interpretation as archeological objects (Verhoogt 2012). This is of course being done for texts being excavated during current excavations (e.g. Cribiore-Davoli 2013), but there is also an attempt to reconstruct the contexts of texts that are parts of collections without further find information (e.g. Vandorpe and Waebens 2010a).

It is clear that the original focus on texts has often separated Egyptian history from its physical environment. This has led to some interesting interpretational results, such as the reading of one text as being about how to catch pregnant mice (from the very literary Greek *entoka*), rather than how to catch mice in the Egyptian village of Toka (*en Toka*: more suitable for an Egyptian setting) (P.Oxy. II 299). As far as we can establish, the practical question how one would specifically target pregnant mice did not enter scholars’ minds. Recent scholarship has brought the physical setting back into the interpretation of texts. Most studies of Egypt currently begin with a chapter in which the physical space of the country is presented (e.g. Monson 2012b; Sijpesteijn 2013).

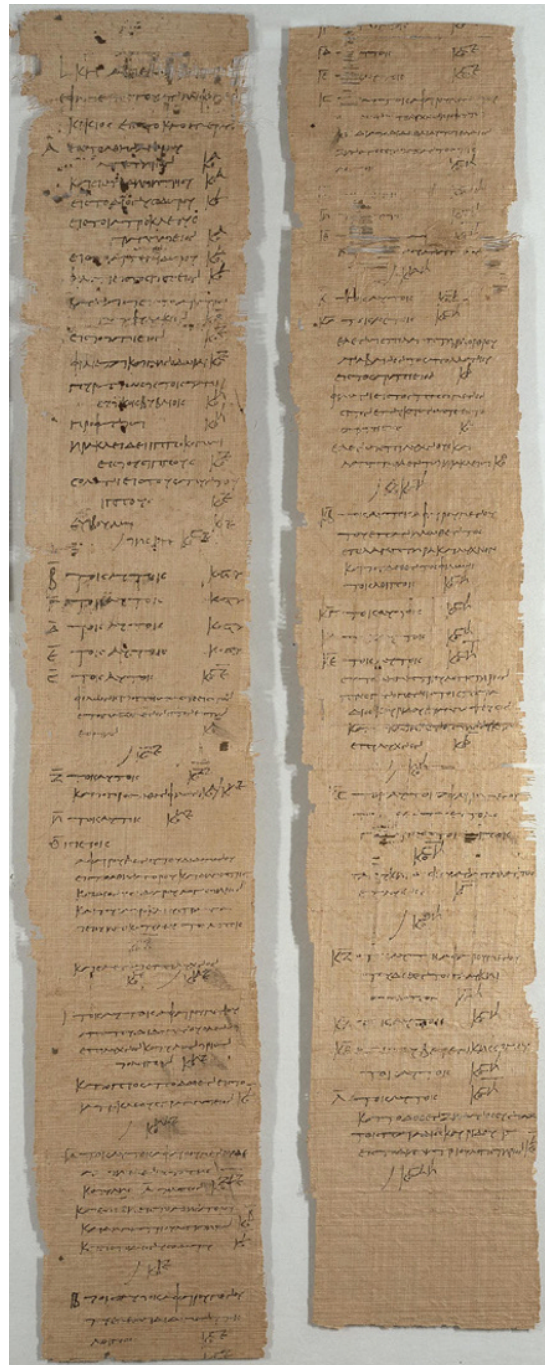


Figure 1.1 Daily record of lamp oil for the retinue of the minister of finances. The day numbers are found in the left column. The papyrus, almost 2.5 m long and of a fine texture, belongs to the Zenon archive (257 BC). Source: courtesy Ann Arbor, University of Michigan, Graduate Library P.Cornell II 1, cf. P.Cornell 1. Image digitally reproduced with the permission of the Papyrology Collection, Graduate Library, University of Michigan.

1.2 The Physical Landscape

Egypt's history is tied up with the Nile, the desert, and the Mediterranean (Parcak 2010). The Nile provides Egypt's connection to Africa and enables a successful agricultural regime (although admittedly nowadays the link is not as direct as before the 1960s building of the Aswan High Dam). The desert secures Egypt's borders and, with its aridity, brings forth the abundance of materials that survive from periods other than the present day. And the Mediterranean provides Egypt's access to the networks of the Near East and southern Europe.

The interplay between Nile, desert, and Mediterranean has shaped an Egypt that is so unique in its physical and ecological setting that it has been difficult for modern scholars to fit it in broader historical models. The actual and perceived otherness of Egypt as compared with other regions has often blurred or even prevented attempts at analysis, although in recent years this has been remedied with great success. A case in point is the position of Egypt in Roman imperial studies, where the original tendency to see it as "other" and not representative for the incorporation of the Near East into the Roman Empire has given way to a more balanced approach that allows for its inclusion in Roman provincial studies, especially in the East (Monson 2012b; see also Chapter 37).

Egypt's lifeline is – and has for several millennia been – the River Nile. Apart from annually providing the rich sediment that covered the Egyptian fields (especially upriver), it also enabled traffic from south to north and (with slightly more difficulty) vice versa, and allowed abundant fishing to add to the population's diet. The Nile also shaped Egypt's agricultural regime (Chapter 15). It divided the year in clear segments, with an inundation season, a sowing season, and a harvest season. During the inundation season (roughly June–September), the focus was on preparing the country for the upcoming flood by cleaning irrigation canals, repairing dykes, and so on. The sowing season (roughly October–February) included the preparation of the fields, the actual sowing, and the weeding of the fields to ensure a good crop. The harvest season (March–June) included not only the physical harvesting of the fields, but also the storage and transportation of crops and the payment of taxes. The Egyptian state, whether pharaonic, Saite, Ptolemaic, or Roman, was always heavily involved in all stages, because the outcome of the agricultural year was the basis for its financial well-being. This involvement left a substantial paper trail, as already discussed.

The most fertile fields were the ones in the Nile valley, about two-thirds of which were flooded every year, even in years when the inundation was low. The most difficult fields for a farmer were the ones in higher-lying parts, where sufficient inflow of water was not secured on a year-to-year basis and crop yields could vary greatly. Here, there was more effort needed to make sure that the fields were irrigated. That the ancient state was willing and able to deal with the vagaries of nature is shown by the fact that annual surveys by government officials assessed the natural state of the fields and, if necessary, adjusted the rents levied on them (Manning 2003a).

The overall nature of Egypt's landscape within the desert boundaries on either end remained largely the same for all of its history until the building of the Aswan High Dam (Bowman and Rogan 1999). Bordering the Nile, lakes, swamps, and bigger canals grew reeds (including the papyrus reed) and flowers (such as the lotus). Interspersed with larger

and smaller settlements on higher-lying parts were the fields used to grow crops to feed people and animals. Between and around these fields were bigger and smaller canals surrounded by low dykes that directed floodwaters during the inundation season. And between these fields, there stood occasional trees (acacia, tamarisk, palm date). It is not surprising that in this landscape, the widely available papyrus became the writing material of choice (Figure 1.1), instead of the much more scarce wood (Figure 1.2). What did change over time were some of the actual crops that were grown in this landscape. The staple crop in pharaonic Egypt was emmer wheat, but with the coming of the Greeks, this gradually changed to hard wheat (*Triticum durum*). Similarly, the Greeks expanded viticulture and oleoculture in the Egyptian landscape (van Minnen 2001a), which was a considerable economic investment given the import of vines and the manual irrigation necessary.

Recent research has also shown that there was not one Egypt (Manning 2003a; Monson 2012b). There are substantial differences in ecology and in the agricultural and

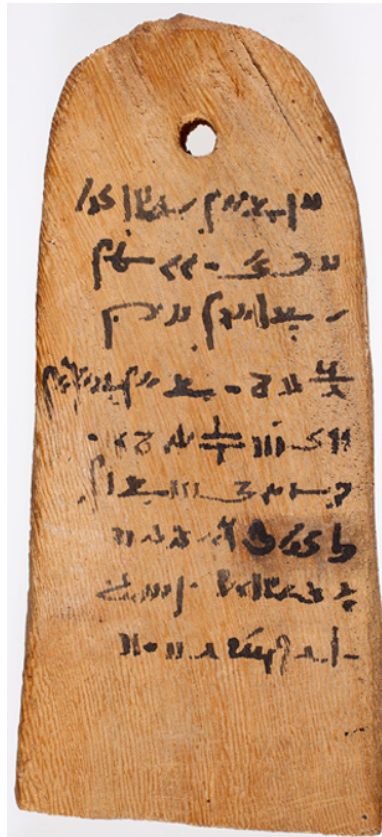


Figure 1.2 Mummy label in Egyptian Demotic having the shape of a stele. According to this label, a priest in Upper Egyptian Hermonthis has the permission to perform burial for Tnepthersais, daughter of Horos. Wood, although scarce in Egypt, was regularly used to identify mummies (99 BC). Source: courtesy Leiden, Papyrological Institute V 3, cf. Short Texts II 427. © Leids Papyrologisch Instituut.

demographic regimes between, for example, the Nile Valley and the Fayum, a depression in the desert c. 80 km south west of modern Cairo. But even within the Fayum, there are differences between the center and the periphery. These latter differences can only be distinguished in the archeological record, as almost no texts survive from the continuously inhabited Fayum center, apart from a big cache of papyri found in the ruins of the capital Arsinoe in 1877. What is even more important is that it is now clear that the state (Ptolemaic and Roman) allowed for this regional variety and did not impose a one-size-fits-all approach (Manning 2003a; Monson 2012b).

The deserts to the east and west of Egypt have been the subject of extensive archeological activity in the last decade (Bagnall and Davoli 2011). On the eastern side, the focus has been on the many fortresses and Red Sea harbors that formed part of the Roman road and trade network. On the western side, focus has been on the urban centers that developed in the oases. The various excavations have shown that the desert was part of Egypt, too, but again the Eastern and Western Deserts were different (Bingen 1998). The Eastern Desert presents us more with low-key settlements built to accommodate temporary visitors traveling to and from the Red Sea. In the oases on the western side of the Nile, there was more permanent settlement, and thus the development of urban institutions and elites. On both sides of the Nile, however, there were also several nomadic tribes that roamed the desert and often came into contact (friendly and less friendly) with the settlements.

1.3 Conclusion

Egypt, then, has much to offer for scholars interested in studying and understanding its long and varied history. The desert climate provides an impressive number of different sources that make it stand out from the remainder of the ancient world. Prominent among the organic sources that survive in great number from Egypt are writing implements such as papyrus, potsherds, wooden tablets, etc., although it should be noted that this prominence may be more the result of scholarly interests than of actual numbers.

The written sources from ancient Egypt (combined with pharaonic tombs and Egyptian temples) have attracted the most scholarly (and also general-public) attention from the nineteenth century onward. And while indeed it cannot be denied that these are unique, special, and important, they are part of the archeological record and should be interpreted in tandem with all other information (Chapter 2). Recent scholarship has shown that this is the way to go, not only for texts found during current excavations (e.g. O.Trim.), but also for those that were found during the earlier years of the discipline, when find circumstances were not always noted.

Similarly, it is important to explicitly acknowledge the particularities of the Egyptian landscape in every study of ancient Egypt, but especially in studies dealing with written sources. In many cases, such documents are the result of the particular landscape of the country and of the ancient residents' way of dealing with it. It is only when these texts are brought back into their physical environment that their full potential for analysis becomes available.

FURTHER READING

Bagnall (2001) and Bagnall and Davoli (2011) provide good overviews of recent archaeological activity in Egypt. The second article also provides a list of online resources for a number of these excavations (and their results). Bagnall (2009b) is the most up-to-date introduction to the field of papyrology. The gateway into the written world of Egypt from the eighth-century BC to the eighth-century AD is the Leuven-based Trismegistos project (<http://trismegistos.org>). Those working with Greek ostraca and papyri should consult the Papyrological Navigator (<http://papyri.info>); see Chapter 2.

CHAPTER TWO

Modern Scholars at Work in a Digital and Multidisciplinary Setting

Mark Depaew and Dorota Dzierzbicka

The traditional image of a scholar of the ancient world, including Greco-Roman and Late Antique Egypt, is that of a lone connoisseur of a specific field of learning, to use that archaic word. Perhaps with the aid of an assistant, a “disciple” whose hope it was to tread in his or her master’s footsteps one day, this expert answered questions and solved problems. Judgments were based on a thorough knowledge of the available source material and, as scholarship advanced in the course of the twentieth century, of secondary literature. Scholarly research was presented in often rare printed texts that referred to the elements on which the judgment was made, often in footnotes. The scholar was the one who led the way: the guide introducing visiting readers into an opaque world.

The advent of the computer has profoundly shaken this microcosm. Initially only an advanced typewriter, and later mainly a heuristic tool, information technology has now spread to all aspects of academic life – research as well as teaching. This chapter explores the repercussions of the digitalization of scholarship of the ancient world in general, and of Greco-Roman and Late Antique Egypt in particular. We distinguish four areas, all narrowly intertwined: multidisciplinary, the impact of digitalization on heuristics, publication culture, and research methods.

2.1 The Growth of Scholarly Disciplines and Multidisciplinarity

Traditionally, the study of Greco-Roman and Late Antique Egypt has been rather fragmented. The diversity of the sources – in transmission, material, language, and date – increasingly compelled scholars to specialize. This resulted in specific disciplines,

often with their own curricula and training. One of the oldest divides is that between material remains and written sources, with archeology on the one hand and philology on the other. For a long time, archeology focused on “beaux arts” and esthetic aspects, which now generally are the domain of what is commonly called “art history.” Similarly, philology used to focus on the (medieval) manuscript tradition of “Classical” authors, paying special attention to their style and method, in historiography and literature studies. Increasingly, however, objects and texts of “daily life” have demanded attention (for the objects, see later).

For philology, the study of less arcane but more tangible textual remains led to the creation of subdisciplines such as epigraphy, the study of inscriptions on stone and other hard materials, and papyrology (focusing on softer writing surfaces almost exclusively preserved in Egypt).

These new philological disciplines also brought scholars of Antiquity into contact with languages other than Greek and Latin, which since the Renaissance had been almost the exclusive vehicles of knowledge about Egypt. Following the decipherment of Hieroglyphic and its derivative scripts by Champollion in 1822, historical sources in the local vernacular became available in increasing quantities. The orientalist and Egyptologists who studied these documents and developed their own conventions initially almost all knew the “Classical” languages, but not all “Classical scholars” bothered to learn the local ones. In many cases, a rift grew between specialists of Greek and Latin on the one hand, and those of Egyptian on the other.

On top of that, the thousand years of foreign political rule between Alexander and the Arab invasion were far from what tradition considered the pinnacle of ancient Egyptian civilization. These late periods were long (and to some extent still are) considered a niche. They were the domain of the not especially numerous specialists of Demotic and Coptic – the later stages of the Egyptian language – or of those dealing with religious temple texts or Books of the Dead, a common type of funerary composition. As a result, the Egypt of the Greco-Roman Period as documented in ancient Egyptian has become somewhat estranged from the Egypt known from Greek sources. In a similar way, the rules of Ptolemies, Romans, and Byzantines gave each period of Egyptian history its own specific political and sociocultural characteristics, and each has attracted different scholars with their own backgrounds, interests, and capacities.

Yet, the history of Egypt is a continuum, and its society was multicultural. There was no wall separating “Egyptians” from “Greeks” or, later, “Romans,” and it is impossible to think of, for example, the state administration of the Ptolemies or the tax regime of the Romans as created *ab ovo*. Perhaps the increasing multiculturalism resulting from the world’s globalization has made us more aware that a broad perspective and attention for the *longue durée* are essential. The focus is often no longer on political events (“histoire des événements”), but on social and economic phenomena. All sources, of whatever nature and in whatever language, can shed important light on parts of the puzzle. At the same time, the exponential increase of available information has made sometimes far-reaching specialization inevitable, rendering it difficult for individual scholars to embody this multidisciplinary. Cooperation with colleagues from other fields, often from other universities and countries, is frequently the most practical solution to this problem. Nice examples are the study of the Judeo-Syrian-Egyptian conflict of 103–101 BC in Van’t

Dack et al. (1989), where literary texts, papyri and epigraphy in various languages have been edited together, and Porten et al. (1996), where papyrological evidence from Elephantine in all possible languages has been presented in a single volume.

Multidisciplinarity is also a standard in archeology. As a field of study, it has in fact drawn on the methodologies of other disciplines from its inception. Virtually all archeological missions include, at least at some point, an epigraphist, a numismatist, an archeozoologist, a paleobotanist, a geomorphologist, etc. But a research project cannot be called truly interdisciplinary if these specialists just do their work and leave, or if they carry out their studies alongside – but not with – archeologists. Rather, interdisciplinarity consists in a scientific exchange in which representatives of various disciplines add their voices to a discussion and together come up with both answers and questions.

There has certainly been a push toward building such multidisciplinary teams in archeology. For instance, specialists in the study of paleobotanical and archeozoological material have become regular members of excavation teams alongside experts in ceramics and inscribed material (Sidebotham and Zych 2011). Some sites require special interest in botanical remains, particularly if these remains are remarkably well preserved, abundant, or varied, or if they are expected to be vehicles of especially important information. For instance, examination of the botanical remains from Roman and Islamic ports at Quseir el-Qadim (Myos Hormos) shed light on patterns of food consumption, culinary and medicinal commodities, the Eastern trade in spices, exploitation of wood, and innovation in agriculture (van der Veen 2011).

An archeologist can sometimes plan which specialists will be needed in an expedition in a given season, but at other times it is easier to invite experts to study material collected beforehand. It has become a standard procedure on many sites that samples for scientific analysis are taken and stored awaiting specialists. The fact that the modern academic community is well-connected (also in the digital sense) helps in communicating with potential collaborators. Digitized documentation can be shared with any specialist on the planet, for instance via password-protected project databases. Archeology has become a globalized affair, with multinational teams and specialists able to bring work on material home, maximizing time and cost-efficiency.

Cooperation between archeologists and papyrologists on Greco-Roman sites in Egypt occurs on multiple planes and is perhaps a special case of multidisciplinary work. It is nowadays a rule that papyrologists work together with archeologists on every site that regularly yields inscribed material. On sites rich in textual finds, like Soknopaiou Nesos and Tebtynis in the Fayum, Amheida in the Dakhla Oasis, and the *praesidia* or stations in the Eastern Desert, papyrologists take charge of excavation projects and run them in cooperation with archeologists. On sites like Berenike on the Red Sea coast, where texts are regularly found, integration of all textual and archeological information is necessary to create a full, comprehensive image of the past (Wendrich et al. 2003). Evidence from sites like Karanis – no longer excavated but once rich in both papyri and archeological finds – is revisited as new interpretations arise (Landvatter 2016).

Collaboration between papyrologists and archeologists starts in the trench, as the study of dated texts helps to resolve complex stratigraphic issues (Ast and Davoli 2016). The work of the papyrologist, in turn, is not complete without data provided by archeologists and other specialists. For instance, archeological data about the context of textual finds is

indispensable for correct interpretation of the texts' significance. Reading texts also cannot be detached from material studies on their support. Research on inscribed pottery calls for a collaboration between a ceramicist and an epigraphist or papyrologist, as neither the inscriptions nor the jars should be published separately, ignoring the other. The publication of ostraca is no longer considered complete without a ceramological description of sherds (Bacot 2009). Also, if inscriptions are in more than one language, the research team working on the assemblage should be able to read and publish all of them.

It has become evident that the study of papyrological data must be considered an important part of the research process on all Greco-Roman sites in Egypt, not just the ones rich in textual finds. Archeologists draw on papyri to gain deeper insight into various research topics (e.g. Mossakowska-Gaubert 2016). This was recently exemplified in a study of Ptolemaic baths in Taposiris Magna (Fournet and Redon 2013; see Chapter 33). The remarkably well-preserved heating system of these baths led the authors to re-examine the issue of heating devices in baths through both archeological and papyrological sources, even though the site itself preserves scarce inscribed material.

New directions in research have led to renewed interest in the economy of Greco-Roman Egypt. Economic historians turn to archeological sources for new quantifiable data on trade and production. Studies on economic questions like production, consumption, and distribution of various goods are also particularly fertile ground for combining archeological and documentary evidence (e.g. Dzierzbicka 2005). Papyri and artifacts complement one another, and only their combined use provides a broad picture of production and distribution patterns in Greco-Roman Egypt. The same can be said about the study of everyday life, which combines analyses of material – human and animal bones, botanical remains, ceramics – with textual evidence that preserves the voices of real inhabitants of the past (e.g. Brun and Cuvigny 2011–2012). There are in fact few research topics in studies on Greco-Roman and Late Antique Egypt in which papyrology and archeology do not cross paths.

2.2 Impact of Digitalization – Textual Sources

2.2.1 *Digitalization and Scholarly Heuristics*

Multidisciplinarity is thus omnipresent in modern scholarship. And although this trend predates the digital age, it has undeniably received a strong digital boost. The worlds of Egyptology, papyrology, epigraphy, and the study of “Classical” literary texts are now increasingly connected through common digital tools. These instruments facilitate dealing with idiosyncratic disciplinary conventions, which up until very recently made certain areas of scholarship inaccessible to the outsider. And since it is now so much easier to look over the wall, scholars are also increasingly doing so.

It is indeed in scholarly heuristics that the impact of digitalization is most noticeable. There was a time when finding antique sources for a research problem entailed reading through all accessible evidence, perhaps in some cases taking the shortcut of available indices or concordances. This changed fundamentally with the emergence of digital tools such as the *Thesaurus Linguae Graecae* (TLG 1988), a CD-ROM containing most of the Greek

literary texts preserved through the manuscript tradition. In the late 1980s and early 1990s, it caused a lot of excitement when a computer program could come up with all attestations of a word in just three or four hours, instead of the days or months of hard work previously needed. Through cooperation with the Packard Humanities Institute, a substantial number of Greek inscriptions could even be searched simultaneously, making this an indispensable tool (TLG 1988). For Late Period Egypt, however, the most important innovation came not too long afterwards, in 1995, with the online availability of *Perseus* for texts from the mediaeval manuscript tradition, including those in Latin, and the integration in 1996/97 of the *Duke Databank of Documentary Papyri* (DDbDP online). The latter contained the text of almost all published documentary papyri, ostraca, and wooden tablets, so that the full text of most written sources in Latin and Greek was digitally available.

The late twentieth and twenty-first centuries have witnessed a further explosion of digital tools, which are gradually replacing printed dictionaries, concordances, indices, bibliographies, and lists of all kinds. It would be easy to spend all of the pages allocated to this chapter in describing these and various other digital heuristic tools for the study of Greco-Roman and Late Antique Egypt. There are several reasons not to do so, however. The first and most obvious one is that Delattre and Heilporn (2014) is a recent, very exhaustive survey. It shows how wide the panorama has become: scholars no longer exclusively look at texts in Greek and Latin, but include sources in the ancient Egyptian languages and scripts, Coptic, and even Arabic; the evidence from ancient authors is combined with that transmitted directly via papyri and ostraca, inscriptions, coins, and archeology; and – last but not least – the chronological horizon has broadened, from the arrival of the Greeks in Egypt (and even earlier) to the coming of Christianity (and even later).

2.2.2 *Digitalization and Current Scholarly Publishing Practice: PDF*

There is another reason, however, why we will not provide an overview of digital tools here, and that is that print is probably not the right medium for it. Delattre and Heilporn (2014) themselves point out that several websites are no longer kept up to date or have become completely unavailable. This is indeed a problem that should be addressed. But, ironically, a printed article such as theirs (or an earlier, more general one such as Babeu 2010) immediately becomes outdated, and many of the tools they present will have improved, fundamentally changed, become obsolete, or even disappeared by the time future readers search for them. There is a paradox here, in that a digital environment permits us to keep research up to date, but also forces us to do so.

This is a more fundamental change than it might appear at first sight. The current scholarly model relies on static “screenshots”: a publication gathers and synthesizes all available information relevant to a specific subject, which is then presented as the work of a single individual (still the most common option in our fields) or a group of cooperators. Once it has gone public, it is set in proverbial stone: it never, ever changes. Whether printed on paper or as a PDF, a publication ages from the moment it appears: tables and lists become defective as new evidence is published; sources often change names as a result of new publications (in Greek papyrology and epigraphy) or a new numbering system in a museum

(in Egyptology); new parallels lead to re-editions with new readings; even the insights resulting from the article or book will eventually become obsolete in the face of new evidence. Yet, the publication will not change.

This immutability is even considered a positive thing, in the light of stability of reference. Research currently works in a kind of Hegelian way, with thesis, antithesis, and synthesis. Scholars publish articles and books; the information is then reused in new articles, with corrections and additions; both the original scholarly publications and those that interact with them are referred to; and finally someone decides to publish a new book, integrating all the updates, and synthesizing the new insights that result from them. Text editions follow the same pattern: someone produces an *editio princeps*, transliterating the original script into a more readable, standardized format. Nowadays, a translation is added, as well as in most cases a detailed commentary on and analysis of the social, historical, and (if available) archeological context of the source. Some of these observations gradually become obsolete over time, through the growth of the available evidence and changing insights. People also improve on some readings, correct mistakes, perhaps even find new fragments. This new information is scattered over many publications, and it is a painstaking process to gather them, even with the assistance of projects such as the papyrological *Berichtigungsliste* (BL since 1913) or of epigraphic tools such as *Supplementum Epigraphicum Graecum*, *Bulletin Épigraphique*, and *Année Epigraphique* (SEG since 1923; BullEp since 1913; AE since 1888). Finally, someone decides that enough progress has been made to warrant a new edition, at which point another cycle is set in motion (Schubert 2009).

For a long time, this was the only possible model, because it was logistically difficult for scholars working in different places to communicate their knowledge. In the early nineteenth century, new insights were spread through academies, learned bodies of scholars, and their proceedings. “Open” letters were another possibility, with as a famous example the “Lettre à Monsieur Dacier” announcing the decipherment of Hieroglyphs. In the later nineteenth century, many disciplines got their own journals, some of which still exist today. But although communications in proceedings, journal articles, and – perhaps to a lesser extent – lemmata in encyclopedias were important, the pinnacle of academic achievement was the monograph: a book written by a single author about a specific topic. In the course of the nineteenth century, especially in the wake of the Second World War, a new channel was created: books written by several authors, first in honor of a deceased or retired colleague – the *Fest-* and *Gedenkschriften* – and later as the result of a symposium on a specific topic or a general congress bringing together all specialists in a discipline.

As the scientific community and the resulting academic production grew, publishers became more important. They made sure that the produced scholarship reached its audience. They had the means to spread it through the world’s universities, museums, and other institutions. In collaboration with the academics themselves, they even started organizing a kind of quality control. In some cases, the editors, playing the role of middlemen between the authors and the publishers, assessed the merits of potential contributions themselves. In others, they asked more qualified third parties (“peers”) to do this, often concealing the identity of both the assessed and the assessor: the so-called “double-blind” peer review.

All of this is essentially yesterday’s model: scholars produce various kinds of static, printed scholarship, which is spread throughout the world by publishers. In today’s world,

mainstream scholarship still follows this scheme, with one essential change. In our fields, much is still printed, but digital versions of what has been printed have become equally important. In some cases, there no longer is a paper version. The now universal PDF format allows the spread of academic insights as email attachments, or via download from a repository. The latter can be organized by individual publishers or by an intermediary such as JSTOR (jstor.org), which provides access to material from a range of companies. Increasingly, however, the individual scholar's profile page on platforms such as Academia (academia.edu) and ResearchGate (researchgate.net) is the easiest way of accessing secondary literature. Monographs, which in many disciplines are a medium of the past except when making science more accessible to the general public, so far seem to have slipped through the net of the digital revolution. Although a move away from very specialized subjects can perhaps be noticed, they still stand strong in their printed form: for this type of publication, e-books have only very gradually been picking up momentum, and their future seems uncertain.

2.2.3 *Digitalization and Future Publishing Practice: The Example of papyri.info*

Despite their omnipresence, the digital publications of today are in a way outdated. They still take the printed version as their point of departure, just like the earliest incunables mimicked manuscripts. The possibilities offered – and even expected – by the new medium are not exploited. To begin with, PDFs are closed: it is difficult, if not impossible to interact digitally with the information provided. Often, the best that can be done is to link to the (outdated) article or book as a whole. In a digital world, where up-to-date information is often only a mouse-click away, this is somewhat unsatisfactory. Furthermore, as already stressed, PDFs are static and never change, not even if there are inaccuracies or errors. As such, they do not allow continuous updating or rapid correction of mistakes. Paradoxically, information that is only available online is still considered by many as secondary or even second-rate, despite the fact that it can be kept up-to-date easily. The evolution toward an academic environment in which scholars are assessed on the basis of their contributions to central places where knowledge can be found is only in its initial stages.

Nevertheless, important first steps have already been taken, particularly in the domain of digital text editing. The *Papyrological Navigator* (PN) for Greek (and other) documentary papyrological texts brings together the full text of the sources as collected by the DDbDP and their metadata (date, provenance, typology, ...) as curated by the *Heidelberger Gesamtverzeichnis der dokumentarischen Papyri* (HGV). But the *Integrating Digital Papyrology project* (Bagnall 2010) has added another very significant layer to the platform papyri.info: the *Papyrological Editor* (PE). This interface allows users to add new texts or metadata, or to propose changes in existing texts. The complexity of digital (and non-digital) text editing is enormous, and the underlying language used to deal with it is XML (Extensible Markup Language), in particular the so-called EPIDOC coding scheme, first developed for digital epigraphy (Bodard 2010). To maximize accessibility, however, the *Papyrological Editor* has developed a more user-friendly interface mimicking the traditional Leiden system of annotations and diacritical signs, appropriately called Leiden+ (Sosin 2010).

The ability to add or change would in itself have been important progress. But what is more relevant here is that all this works with a login system, and that all additions and changes are documented and peer-reviewed. Each change is vetted by a board of experts, and approved or rejected with a motivation. A full history of changes is stored and made accessible to the scholarly community. Papyri.info has thus taken an important first step toward the professionalization of digital text editing. Standard problems such as the lack of documentation for the editorial history and the absence of a peer-review process have been mended (Baumann 2013). What remains to be done is to convince evaluation committees and bibliometric instances that work on this platform is valuable and should be an important part of a papyrological scholar's curriculum.

Text editing is only one area where this kind of approach is possible. One can imagine a world where an encyclopedia is no longer static, but continuously updated in the light of new findings. In fact, such an encyclopedia already exists, and is even freely accessible: Wikipedia. Granted, it is not peer-reviewed, in the sense that changes have to be approved by editors before they are published, and in view of its philosophy it will probably never be so. This makes it vulnerable to abuse, and a less than ideal platform for scholarly disagreement. But it does attract very large audiences and remains the best place to reach the general public.

2.2.4 *The Move Toward (Linked) Open Data*

Both papyri.info and Wikipedia are open access. They are nonprofit projects whose main goal is the propagation of knowledge, as broadly as possible. Freely accessible for everyone with an Internet connection, they reach large communities of scholars and laypeople. Of course, costs are involved, but these are covered through funding by a university, a scholarly foundation, a public institution, or even the general public itself in the case of Wikipedia. In our field in particular, where almost all producers of knowledge are paid by public money, we should aim at providing free access to the results of our research, and funding agencies are justified in increasingly demanding this (UK Research Council online). Universities should do more, therefore, to assist scholars in their digital coming of age, in various ways. They should help in setting up websites; they should credit digital work; they should be more open to new publishing forms, such as blogs and databases; and they should encourage or even compel their researchers to make their data and final results available as Open Data, free for all to use and reuse (Blackwell and Crane 2009). Open Data are an essential prerequisite for a long-held dream: that of a smart Internet through Linked Open Data (Berners-Lee online; LAWDI online).

To describe what this would be, let us first describe the current situation. In order to reach new insights, scholars collect data from scattered sources. But this information is often imprecise or impressionistic. References to the entities themselves can be unclear: different people have the same names, and the same texts may have different labels. Further, what is said about the entities is not standardized: when a text is allegedly modeled on another one, it can mean that it is a literal copy, or that it is merely inspired by it. Databases and websites may be available on the Internet and even linked to other sites, but the connections are formal only. Human effort still has to be made to assemble the information in these digital silos, and there is no real digital understanding. Computers cannot themselves

suggest interesting avenues through which to gather extra information, potentially resulting in something new.

So, how do Linked Data (Heath and Bizer 2011) hope to change this? The basic idea is background standardization. As a first step, stable identifiers for entities are designed in gazetteer databases. The various Trismegistos databases, for example, aim to collect all instances of a specific type of information and assign them unique identifiers (trismegistos.org). Take a bilingual document from the archive of Dryton, a Greek officer living in the Egyptian countryside (Vandorpe 2002a; Chapter 25), identified by Greek papyrologists as P. Dryton 48 (referring to the publication number of the text's edition) and by Demotic scholars generally as P. Cairo 10 343 (using the inventory number of the museum where it is preserved). In some publications, this text is described as coming from Pathyris, while in others it is said to originate from Gebelein, or even Gebelayn. For experts, this "confusion of tongues" is no problem, and they know that in both cases the designations refer to the same entities: document and place of provenance, respectively. Lay people may find this more problematic, but at least they will have no problems with the variation between "P. Dryton 48" and "P. Dryton 48." But computers have a hard time even with this kind of very minor variation. They prefer plain, unambiguous numbers or other apparently meaningless strings of characters. So what Trismegistos does is assign serial numbers to all of these entities, and, as part of a Web address, make them available as part of a Universal Resource Identifier (URI), usable in a Linked Data setup. Thus, the archive of Dryton (TM Arch 74) becomes <http://www.trismegistos.org/archive/74>, the village of Pathyris (TM Geo 1628) <http://www.trismegistos.org/place/1628>, and the document itself (TM 357) <http://www.trismegistos.org/text/357>. This makes it easier to refer to the entities and to the information about them on Trismegistos, at least in a digital context (see https://www.trismegistos.org/about_how_to_cite for more details).

But it is possible to go a step further, and try to standardize not only the entities themselves, but also the relations between them. Collections of various types of relations are called ontologies. Thus, the connection between a text (TM 357) and the place where it was discovered (TM Geo 1628) becomes unambiguous when described as a property/predicate (e.g. "lawd:foundAT") using the *Linking Ancient World Data* ontology. This relation is described in the form of a subject–predicate–object relation, or "triple." When information such as this is made public in the so-called *Resource Description Framework* (RDF) format, the Internet – or, rather, the computers that constitute it – can start to put two and two together, without the assistance of humans. Users can then define from which source they prefer to pull certain types of information through (semi-)automated updates, on the basis of standardized relations between standardized entities. An early form of this is the constellation of *Pleiades* and *Pelagios* for geographical entities (Pleiades online; Pelagios online). While the former focuses on a gazetteer of places and their names, the latter connects projects on the basis of occurrences of gazetteer URI's, not only of Pleiades, but also of other sources such as Trismegistos. For people, the *SNAP* project (SNAP online) aims to do something similar, bringing together various prosopographical projects.

Through projects and initiatives like these, our scholarly knowledge of Egypt and the ancient world in general will gradually become accessible online, in the most connected and standardized way possible. *Optical Character Recognition* (OCR) will be of invaluable

assistance in scanning new material, although not all of the problems with recognizing and converting non-Latin scripts to Unicode seem to have been solved as yet (White 2012). Once a computer-readable text is available, however, *Named Entity Recognition* (NER) can automate the distillation of information of various types (publications, places, people, ...), allowing it to be stored in external (graph) databases or in the XML annotating the text itself (see e.g. Broux and Depauw 2015). Once the bulk of scholarship is available in this way, we will enter a completely new world, in which information can be drawn in live from other sources, and in which a computer can make sense of the connections between different entities: a smart Internet. This still seems light-years away in our fields, but one day it may well be realized. In fact, what it could be like is illustrated by the KU Leuven Fayum project, which attempted something similar in the Trismegistos microcosm (*avant la lettre*, because TM had not yet been created). The article on Alexandrou Nesos (TM Fayum online), for example, provides many links to individual texts, but is also connected “live” to the database for actual figures (e.g. for the number of texts). Unfortunately, many of the links have now gone dead because of changes in the database structure: another reason why stable identifiers will be crucial in future attempts along this path.

2.2.5 *Quantification, Visualization, and Objectivisation*

As a result of all these digital developments, it has become easier than ever to quantify evolutions and to provide real figures instead of impressions. In the past, such an approach was very time-consuming, because of all the counting involved. There were therefore only relatively few studies, which were received very critically by more “conservative” scholars (see Bagnall 1995, pp. 73–89). Even today, the response of the scholarly community is often critical, as recent examples illustrate (Depauw and Clarysse 2013, 2015; Frankfurter 2014). Of course, each figure should be interpreted very carefully in order to decide what information can be distilled from it: the sources from the ancient world are as a rule not randomized, do not have a normal distribution, and are for many reasons far from the ideal sample material. Statistical results should therefore always be put in context, and one should be careful with extrapolations. Nevertheless, if it is possible to count instead of using impressionistic terms such as “frequently,” “regularly,” “sometimes,” or “rarely,” why would it then be inadvisable to provide percentages or precise figures? When evolutions can be sketched in more detail than just “gradually,” or the age structure of the population of Roman Egypt can be defined more precisely (Scheidel 2012), a graph can be worth a thousand words. Admittedly, there are problems, as so many texts are not precisely dated, and editors sometimes neglect to specify chronological ranges they consider self-evident – which they often are not to outsiders. Yet, even imprecisely dated texts can be visually represented (e.g. in “weighed dates” graphs) (Van Beek and Depauw 2013).

Another way in which information can be visually represented and quantified is by (*Social*) *Network Analysis* (SNA). Developed in the 1960s in mathematics, anthropology, and sociology to measure structural forms of relations between individuals, network analysis has found its way to the history of Greco-Roman and Late Antique Egypt (Ruffini 2008; Cline 2012). The approach is also being applied to other than human relations (e.g. combinations of names, Broux 2015a, or even epistolary formulae, Dogaer and Depauw 2017).

Finally, maps and localization have also become much more mainstream. By putting things on a (normally digital) map, a website such as orbis.org can now visualize the time and costs involved in traveling in the Roman world, including Egypt.

Surely, there will soon be new developments, coming in from other fields. *Computational Modeling* and *Complex Adaptive Systems* are already applied in archeology outside Egypt (e.g. Poblome 2015; Brughmans and Poblome 2016), and *Social Sequence Analysis* is an interesting new approach to the study of changes over time (Cornwell 2015).

The growing influence of quantitative methods has been mirrored in other facets of the move toward a modern, more objective scholarship. Technological advances in the study of material remains have opened up new avenues in the study of human life and its environment, as well as better ways to date developments (Zakrzewski et al. 2016). At the same time, the traditional “intuitive” philological and factual-historical approaches are under pressure, and various concepts from philosophy and sociology (e.g. ethnicity, identity, network, people’s history) have come to the foreground (e.g. Monson 2012b). Especially in the field of economic studies, terms such as “New Institutional Economics,” “Economic Sociology,” and even “Game Theory” are at the core of current research (Manning and Morris 2005; Manning 2010; Erdkamp and Verboven 2015). Mathematical models like the rank–size rule are used to explain the development of settlement systems (Obluski 2014). More and more scholars are also aware of the relativity of their standpoint and trying to objectivize the fundamentals of the theoretical concepts they employ (e.g. Alston 2002, pp. 4–43).

2.3 The Impact of Digitalization: Archeological Sources

2.3.1 *The Impact on Heuristic Approaches in the Archeology of Greco-Roman and Late Antique Egypt*

The computer is nowadays an indispensable tool in archeology, and digital techniques have entered virtually every aspect of excavation work. Field notes and drawings, although still mostly done by hand, are digitalized using computer graphics programs. The drawing of plans and site mapping are carried out with the aid of – or even solely using – computer technology, with instruments like the *Total Station* coupled with computer-aided design (CAD) systems. Increasingly informative and efficient surveys and site-mapping projects are conducted thanks to the use of aerial photography and photogrammetry (Bitelli et al. 2003), GPS-RTK, GIS, and *Google Earth* imaging (Blue 2011). The employment of non-invasive remote-sensing techniques like magnetic prospection and geo-electrical resistivity mapping offers the possibility to see underground. “Sandwiching” the results of various research methods and analyses produces a complex picture of extant relics permitting the potential of a given area to be assessed even before any actual digging is done (Herbich 2012).

Computational methods have also changed the approach to collecting artifacts. Archeology is a destructive research discipline, and therefore emphasis has long been placed on recording as much as possible. Archeologists have to maintain objectivity, taking care not to squander the archeological resource, but must also work in an efficient manner.

While the collection of *all* material would contribute to the objectivity of the research and the preservation of the evidence, it is the time-, labor- and cost-efficiency of such a policy that tends to pose a problem. Collected finds of all categories, which sometimes can be counted in the hundreds of thousands, must be processed and documented, and more often than not require specialized drawing by hand. All these tasks are labor-intensive, time-consuming, and as yet impossible to automate. The archeologist must establish an efficient, systematic, structured system of finds collection and documentation, and a sampling strategy that does not lead to impossible workloads and unmanageable storage. Thanks to digital storage and tools for working with large datasets, however, archeologists can afford more inclusive finds-collection policies. Databases enable the management and statistical analysis of enormous datasets comprising hundreds of thousands of small finds. Records of mass material, such as nondiagnostic fragments of utilitarian wares and glass or of undecorated plaster, can be made for statistical purposes even if the material itself is not stored for future studies.

The advent of digital photography revolutionized field documentation. Prior restraints like development costs and storage space limits no longer apply. It might seem the documentarist's dream has come true: the number of documentation images (including photogrammetry, 3D models, etc.) of every single object and feature can now be infinite, at least in theory. New imaging technologies do not replace drawings, but complement them by providing a superbly detailed and objective reference for further study. Their use, however, has led to an unprecedented inflation of field documentation, and this abundance has its perils. Generating digital images is relatively cheap, quick, and easy, but it takes time and effort to maintain order in the mass of photographic documentation and to provide a framework for its ever-increasing bulk. The solution lies in well-structured databases and plentiful disk (server) space, on which to store field documentation, organize the data, and, ultimately, keep things manageable and accessible.

2.3.2 *The Output of Archeology: Publish Online or Perish?*

The possibilities unfolding before an archeologist in the digital age have changed the way we think about the publication process. Traditionally, reports from excavation seasons were published yearly or every few years in journals, and a given project terminated with a final monograph. Reports and monographic volumes appearing in paper form demanded certain sacrifices on the part of the archeologists. Only a fraction of the documentation could be included in the printed work, and one had to choose what to include and what to leave out. Pictures of common finds or structures of lesser importance were only briefly included, and their documentation was eventually laid to rest in a seldom-visited archive. Finally, even in the age of color photography, the printing of a catalog volume entirely in color was difficult for financial reasons. The appearance of digital formats freed archeologists from such constraints. Color catalogs of any length can be published online and the selection of presented images can be driven by scientific rather than technical concerns. An example of a digital publication series featuring abundant images of material from the Nile Valley is the *British Museum Studies in Ancient Egypt and Sudan* series, which also revisits material and documentation from past excavations (e.g. Thomas and Villing 2013; O'Connell 2014).

There is growing pressure toward open-access publication of archeological fieldwork. Most excavations are publicly funded and therefore morally or formally obliged to present their output to the general public in free and openly accessible form. Several traditional journals (*Bulletin de l'Institut Français d'Archéologie Orientale* (BIFAO), *Polish Archaeology in the Mediterranean* (PAM), *Journal of the American Research Center in Egypt* (JARCE), *Journal of Egyptian Archaeology* (JEA)) provide free online access to archeological reports on excavations of Greco-Roman sites in Egypt, facilitating dissemination of results. The reports are scattered across journals that report on the activities of various institutions (*American Research Center in Egypt* (ARCE), *Deutsches Archäologisches Institut* (DAI), *Institut Français d'Archéologie Orientale* (IFAO), *The Polish Centre of Mediterranean Archaeology* (PCMA)) or have a broader chronological and geographical focus (*Journal of Egyptian Archaeology* (JEA), *Journal of Roman Archaeology* (JRA)). The *Ancient World Online* (ancientworldonline.blogspot.com) blog keeps a list of open-access journals in ancient studies, including archeology, but no dedicated digital tools have yet been created to facilitate access to new archeological data on Greco-Roman and Late Antique Egypt. A number of journals important for archeological research (mainly those issued by major commercial publishers) are available online, but access is by payment or subscription only. Others remain unavailable in digital form. Digital bulletin formats are also used for more concise reports on excavation activity (e.g. DAI e-Forschungsberichte).

However, publication in the digital age is not only about putting a PDF online. The change toward open access can go much further, with online archives and data stored in repositories. Such archives, hosted by reliable institutions and labeled with stable identifiers, render all collected data available to the reader (e.g. Rowley-Conwy 2012). The benefits are twofold: the researcher no longer has to choose what to include and what to omit, and the fact that research results and conclusions can be easily verified by the reader contributes to the objectivity and scientific value of the archeological publication.

Archeological datasets available online – an outcome of the research of individuals, teams, and institutions – form a large yet fragmented corpus (e.g. *Online Cultural and Historical Research Environment* (ochre.pk), *Archaeology Data Service Online* (archaeologydataservice.ac.uk)). Metadata registries like *ARIADNE* (ariadne.ac.uk) were designed to integrate the archeological research-data infrastructures, essentially working as search engines. Browsing them, however, one finds few datasets generated by research on Greco-Roman and Late Antique Egypt. While open-access repositories are increasingly common in other parts of the archeological *oikumene*, in Egypt they have been slow to take root. Some sites are more present in the digital realm than others. For instance, a database for Amheida (amheida.org) was made available by the Institute for the Study of the Ancient World, NYU. Some Amheida publications (e.g. Bagnall and Ruffini 2012) and preliminary reports are also available online.

The reasons for archeologists' reluctance to embrace the open-access policy are twofold. The first is an unwillingness to give access to images of unpublished material for fear of unauthorized use and publication. Since most excavation projects take many years to complete, the excavated material may remain inaccessible for decades, awaiting final publication. The second issue lies in the nature of the data. Excavations generate a tremendous amount of material, and even when information is recorded and processed systematically, it requires corrections and additions. That an internal project database is a

work in progress needs no explanation. Bringing such a database to publicly accessible form, however, requires particular effort and care. Data made available to researchers outside the project must be provided with proper metadata and rendered as error-free and final as possible. After all, the quality of any potential conclusions is contingent on the quality of the primary data.

Finally, publication for the wider audience has witnessed some changes with the advent of the digital age. Archeologists have at their disposal new ways of presenting their sites to the general public, such as 3D reconstructions of monuments and virtual tours (e.g. *Nubian Monasteries Project*, nubianmonasteries.uw.edu.pl). Such evocative tools for education and promotion give a new and greater power to images, but also offer fresh perspectives on the spatial characteristics, ambient light, and architectural form of ancient buildings (Karelin 2011). However, they are not without their pitfalls, as the thin line between scientifically justified reconstruction and groundless fiction can easily be crossed (Van Gool et al. 2004).

2.3.3 A Closer Look at Finds: Pushing Back the Boundaries of Specializations

A vital element of archeological research is the study of finds. Technological progress has allowed this study to go deeper, to extend the boundaries of specializations, and to seek answers to new questions. The primary goal of studying archeological finds is to reconstruct the life of past societies. Archeologists go beyond building typologies and amassing collections of objects and goods. They seek to understand the immaterial factors behind the creation and use of objects and to trace patterns of continuity and change in production and trade.

Modern research on archeological finds enables materials to be subjected to investigations using different analytical techniques in order to learn more about their material, technology, and provenance (Zakrzewski et al. 2016). The advantage of such analyses is that they provide scientifically measurable and comparable data linking an artifact to a particular source, production site, or chronological period. Provenance determination helps answer questions about economic matters such as mining and quarrying sites or trade and craftsmanship, but also contributes important data on social aspects: the standard of living, subsistence strategies, and social stratification.

The collection and analysis of scientific data requires specialized equipment and know-how. Researchers studying particular categories of finds need to work with laboratory scientists, and they must understand their methods in order to know what can be gained by their application. On Greco-Roman sites in Egypt, the use of the microscope and other portable instruments (e.g. X-ray fluorescence (XRF) analyzers) has gained popularity, but most analyses can only be performed in a laboratory. A ban on taking samples out of Egypt, combined with a shortage of state-of-the-art equipment locally, has led to a notable paucity of laboratory data on finds from Greco-Roman sites. However, this situation is slowly changing, and some analyses are undertaken within the cadre of excavation projects (see e.g. Pichot and Boussac 2014; Mahmoud et al. 2011).

Pottery, no longer perceived only as a means of dating archeological contexts, has been receiving increased attention as a potential source of information on daily life, trade, and

technology. Important data regarding the use and function of vessels can be obtained from the archeological context and the morphological and technological characteristics of the vessel, as well as from analytical-chemical studies of residues and organic material. In turn, thin-section and elemental analyses provide information on provenance. Detailed chronologies and typologies have been developed for ceramics from other regions of the Greco-Roman world. Research on amphorae from Ptolemaic and Roman Egypt is in progress (see e.g. Centre Alexandrin d'Étude des Amphores online). Archeometric analyses (using physical, chemical, or mathematical procedures for archeological data and artifacts), however, are virtually lacking. This may change with the completion of the French-German project, *CeramEgypt – Pottery Production and Consumption in Ptolemaic-Roman Egypt*, launched in 2015. The plan is to conduct exhaustive physicochemical and petrographic analyses, and ultimately to produce a comprehensive atlas of Egyptian ceramics (for progress, see Marchand 2014).

The study of other categories of finds has also benefitted from the introduction of analytical methods. Broad-scope archeometric research on glass-making in the Greco-Roman world has given a wider Mediterranean context to the Egyptian glass industry and commerce (Degryse 2014; Nenna 2014). Studies on workshops, production techniques, and the distribution of glass in Roman and Late Antique Egypt have been running for more than a decade (Nenna 2007; Picon et al. 2008). Analyses of assemblages of glass finds from excavations, however, are still few (e.g. Rosenow and Rehren 2014; Then-Obłuska and Dussubieux 2016).

The application of stable isotopic analyses in physical anthropology has opened new possibilities for learning about the diet, living conditions, and daily life of ancient populations. Variations in nitrogen, oxygen, and carbon isotope values in bone collagen are the result of differences in diet, for instance consumption of specific plants or subsistence on terrestrial or marine diets. At the Roman-Christian Kellis 2 cemetery in the Dakhla Oasis, stable isotopic analysis was used to explore dietary habits (Dupras and Tocheri 2007) and to determine the seasonal diet at the time of death. In combination with burial alignment, this allows questions of the seasonality of conception and birth to be addressed, and even for this seasonality to be linked to social and religious factors (Dupras et al. 2015).

The main focus in the study of visual arts is no longer on the subjective criterion of esthetic value, but rather technology and composition. Production technologies and materials are investigated using X-ray diffraction (XRD), energy dispersive X-ray analysis (EDS), scanning electron microscopy (SEM), and Fourier transform infrared spectroscopy (FTIR) techniques. Wall paintings, once approached from an art-historical perspective, are now also the focus of analyses of the materials and technologies used by the artists (Mahmoud et al. 2012; Abd Elrehim et al. 2015). Pigments and binding media used on mummy cartonnages from the Greco-Roman Period are another object of study (Afifi 2011), while petrographic analyses of decorative stone used in sculptures and architectural details bring new data on long-distance trade and the sources of these materials (Harrell 2013).

The implementation of new analytical methods in archeological studies also gives us a chance to revisit objects that were excavated in Egypt long ago but are now housed in museums. For instance, Greco-Roman faience has been subjected to analyses at the Louvre (Kaczmarczyk and Nenna 2014), and research has been carried out on the pigments of

painted portraits and panels from Tebtynis at the Phoebe A. Hearst Museum of Anthropology at UC Berkeley (Ganio et al. 2015). There is increased emphasis on in-depth studies of perishables. For instance, research on textile manufacturing techniques and the publication of new radiocarbon dates are among the objectives of the *Textiles from the Nile Valley* research group (De Moor et al. 2015; see also Box 17.1). Scientists at the Vitelli Institute in Florence have determined the ancient content of oil lamps and jars by conducting multi-analytical chemical studies of organic and inorganic residues (Colombini et al. 2005; Copley et al. 2005; Ribechini et al. 2009). The identification of radish oil remains in lamps from the sixth–seventh centuries and of the remains of fish sauce in an amphora from Antinoopolis offers new, much-needed data for economic studies, for example – data no less important for its scarcity.

Most of the analytical methods mentioned here are used in order to answer questions being asked within the cadre of specific research projects. Archeology is the vital starting point for all such research, because it is at the dig that objects are collected and stored. It is the director of the archeological project who is usually responsible for obtaining permissions and for going through the often lengthy and complicated procedures needed to allow their transport to the chosen lab. Finally, it is also the director who organizes funding for the analyses. Such analyses are therefore usually not considered standard procedure at excavations, for they entail increased cost and effort on the part of archeologists. On the other hand, without this closer, deeper look at finds, archeology would be reduced to being art history’s poor cousin. Perhaps, in time, more analyses will become a part of excavation policy. Published archeometric data change the way we think about the material remains found at excavations and lead to new questions. The more data become available, the greater the possibilities.

Archeology in the digital age is not, ultimately, just about building bigger and better databases or dazzling reconstructions and digital models. It is also about seeking new ways to solve problems and giving more accurate answers to questions both old and new. Its goals of objectivity, efficiency, and the preservation of evidence are ever the same, but new tools can take archeologists a step closer to reaching them. However, it is true multidisciplinary – achievable thanks to new technological possibilities – that creates a new quality in research and makes archeology a historical science *par excellence*.

2.4 Conclusion: A Bright Future

The advent of the computer has been very gradual in the study of Greco-Roman and Late Antique Egypt. Few scholars in the 1980s would have imagined the pivotal role it would play today. A digital environment has stimulated and accelerated the movement toward interdisciplinarity, making access to (extra-disciplinary) information so much easier. Quantification of the evidence and compelling visualizations are increasingly available even to those with little training in information technology. Technological aids and greater attention for theoretical models have made scholars’ judgments more objective, as well. New publication methods and the development of computer-friendly standards for information will no doubt further overhaul scholarship. We live in interesting times: the future is digital and in constant flux, but it is bright (see Chapter 39).

FURTHER READING

The ebooks by Reggiani (2017, 2018) discuss methods, tools, trends, and case studies in digital papyrology. Zakrzewski et al. (2016) demonstrate the potential of scientific archaeology for the discipline of Egyptology. Trismegistos and Papyri.info are portals for textual sources, while the metadata registry ARIADNE is a portal for existing archeological research data infrastructures. See also the list of digital resources at the end of the volume and Chapter 39 on the future of digital scholarship.

PART II

**EGYPT AS PART OF
A GLOBALIZING WORLD**

CHAPTER THREE

The Last Pharaohs: The Ptolemaic Dynasty and the Hellenistic World

Anne-Emmanuelle Veisse

3.1 Ptolemy I and the Foundation of the Ptolemaic Dynasty (323–305/4 BC)

We do not know Ptolemy's first impression of Egypt when he entered the country following Alexander the Great in the autumn of 332 BC. If it was ever included in his *Memoir*, it was not transmitted. Undoubtedly, it was strong enough that he was given the government of the country during the Settlement of Babylon that followed the premature death of the Conqueror on June 11, 323 BC. Ptolemy son of Lagus belonged to a Macedonian family of minor nobility that was distantly related, on the maternal side, to the royal Argead family. At the end of Philip II's reign, he was one of those who were sent into exile due to their loyalty to Alexander during the dispute between father and son. He then took an active part in the *Anabasis*, was integrated in 330 to the narrow circle of the *somatophylakes* (the "bodyguards" of the king), and won renown during the campaigns in East Iran and India. However, he does not seem to have played a leading role in these campaigns, and he did not have the same political weight as men such as Hephaestion (who died in 324), Perdiccas, Craterus, or even Antipater, who was left behind by Alexander to run Macedonia and watch over Greece. After the death of the king, the latter three received the task of ruling the empire in the name of Alexander's two official heirs: his mentally deficient half-brother Philip III Arrhidaeus and his posthumous son Alexander IV, born to the Iranian princess Roxana. Antipater's duties in Europe were confirmed, Perdiccas was designated *chiliarch* ("commander over a thousand") in Asia – a responsibility that gave him authority over the different satraps of the area – and Craterus received the title of *prostates* or "protector," as representative of the kings. As for Ptolemy, he was one of the beneficiaries of the distribution of satrapies. But this distribution turned out to be of

more historical importance than that of the central powers, because this is when the seeds of the Hellenistic kingdoms were sown (Will 1979: I, p. 24).

The satrapy Ptolemy obtained in Babylon had been under Macedonian control for about 10 years. Alexander had left behind two nomarchs, several Macedonian troop commanders, and a powerful financial intendant, the Greek Cleomenes of Naucratis – possibly because he thought it unsafe to entrust such a rich and relatively defensible country to a single person (Arrian, *Anabasis* 3.5.7). Ptolemy established his residence in Memphis, the old pharaonic capital and capital of the Persian satrapy of Egypt, rather than Alexandria, which was no more than a huge construction site at the time. His relationship with Cleomenes quickly became problematic. The latter had been placed under the authority of the new satrap by the Settlement of Babylon, but Ptolemy suspected him of being Perdiccas' eyes and ears (Pausanias 1.6.3). Taking advantage of the intendant's unpopularity, he put the man to death. Then, in 320, he stopped Perdiccas himself, who had undertaken to rein in the satraps who were reluctant to accept his authority: blocked in front of Memphis, the *chiliarch* was assassinated by his own officers. Almost at the same time, Craterus disappeared in battle against Eumenes of Cardia, Perdiccas' last ally. Of the original three main characters of the Settlement of Babylon, only one survived – Antipater – and a new conference had to be organized in Triparadisus. The unity of the empire was still officially maintained, but in fact this settlement heralded only an era of fiercer conflicts between the Diadochs, Alexander's successors. If what Diodorus says is true, Ptolemy himself would have been in a position "to assume the guardianship of the kings" after the death of Perdiccas – but he chose not to take the opportunity (Diodorus Siculus 18.36.6), and at Triparadisus his position as satrap of Egypt was confirmed. Nevertheless, it is far from certain that Ptolemy really had the opportunity to become guardian of the kings (Roisman 2014, pp. 470–471). Similarly, there is no evidence that he was, from the beginning, a "separatist," and that his real ambitions, like those of his main rivals, were not to reign one day over Alexander's entire empire (Meeus 2014; Hauben 2014, pp. 257–259).

As early as 322/1 BC, Ptolemy had gained domination over Cyrenaica, interfering in conflicts between the Greek cities of the region and being appointed *strategos* for life in the constitution of Cyrene. The Settlement of Triparadisus' participants took this into account by acknowledging his authority over – in addition to Egypt – "Libya and the vast territory beyond" (Arrian, *FGH* 156 F34). Around the same time, Ptolemy established diplomatic relations with the kings of the *poleis* of Cyprus, and in 319 he invaded the satrapy of Syria-Phoenicia.

On the domestic front, Ptolemy ensured the development of Alexandria, gradually transforming Alexander's foundation from a construction site – whence its Egyptian name of Rhakotis (*R^c-qd*, "Construction site"; Chauveau 1999) – to a Mediterranean megapolis. Somewhere before 311, it became the new capital of Egypt and the official residence of the royal family. He also laid out the basis for a new administration, introduced the cleruchic system, and established good relations with the Egyptian clergy.

However, Ptolemy ruled for 18 long years without assuming a royal title. From 323 to 317 BC, he was officially only satrap, under the nominal authority of Philip III and Alexander IV, and then of Alexander alone after Philip's assassination in 317. In the year 310, documents in Egypt were still dated according to the regnal years of Alexander's

son, as shown by the famous marriage contract of Elephantine, one of the rare Greek papyri from the reign of the first Ptolemy (P.Eleph. 1). But in the same document, the ambiguity of Egypt's political status is also illustrated by the use of a second date, referring to the years of the satrap Ptolemy: "in the seventh year of the reign of Alexander son of Alexander; in the fourteenth year of the satrapship of Ptolemy." In 310/09, the assassination of Alexander IV by Cassander, the ruler of Macedonia, made Ptolemy a *de facto* independent satrap. He waited another five years before assuming the royal diadem, however. In this, he followed the example of Antigonus the One-Eyed, who himself had taken advantage of his great victory over the Ptolemaic fleet at Salamis in 306 to be proclaimed king (*basileus*) by his army. On the Ptolemaic side, this step was taken during the year 305/4 – the exact date is still debated – after which he retro-dated his regnal years to 323 (Caneva 2016).

The new dynasty that then arose in Egypt revealed itself to be the longest-lasting of those born from the dismantling of Alexander's empire: for approximately three centuries, Egypt would be ruled by the descendants of Ptolemy I. One of the most striking features of these rulers is certainly the fact that they were "double-faced" (Heinen 1978, p. 185). On the one hand, the Ptolemies were Hellenistic kings like any other. They emphasized their Macedonian origin in the context of pan-Hellenic games (Fantuzzi 2005; Thompson 2005; see Box 3.1) and they "liked to be called Macedonians as in fact they were" (Pausanias 10.7.8). Regarding royal ideology and government practice, they shared many common points with their Antigonid, Seleucid, and later Attalid counterparts. On the other hand, they also adopted many of the ancient pharaonic institutions (Manning 2010) and presented themselves as traditional pharaohs to their Egyptian subjects.

3.2 The Legitimization of Power: The Ptolemies as Hellenistic Kings and as Pharaohs

The Greco-Macedonian face of Ptolemaic power is clearly manifested in the royal ideology primarily directed at the "Hellenes" of Egypt – namely, the Greeks, the Macedonians, and the Hellenized immigrants, who represented 5% or more of the total population (compare Chapter 19) and who were, especially at first, the most fierce supporters of the throne. At the time of Ptolemy I, the claim of a privileged link to Alexander the Great formed the cornerstone of the process of legitimization. All the Diadochs, indeed, were self-made men, who were committed to assert themselves as Alexander's successors in order to justify their seizure of power. Like many of them, Ptolemy I minted a series of coins with the portrait of Alexander and tried to bind himself to the Argead family through a projected marriage with Cleopatra, the only full sister of the Conqueror (Meeus 2009). Nevertheless, in this legitimacy race, Ptolemy gained a significant advantage over his competitors by appropriating Alexander's corpse in 321, when the sumptuous funeral cortege that had left Babylon passed through Damascus. Was its final destination the royal necropolis of Aegae, in Macedonia, or the oasis of Siwa, the place where Alexander had been recognized as the son of Zeus-Ammon in 331 (Pausanias 1.6.3 *contra* Diodorus Siculus 18.3.5)? The fact remains that Ptolemy, through force or persuasion, intercepted the burial convoy – which was probably one of the triggers of the war with Perdiccas. He brought Alexander's

Box 3.1 Ptolemaic Royals and Olympic and Other Greek Games.

by Katelijn Vandorpe and Sophie Remijsen

The Ptolemies stressed their Greek identity in the Hellenistic world by taking part in the most prestigious events of the pan-Hellenic games (chariot races), by instituting new games in Alexandria to which Greeks from other regions were invited, and by building new sports infrastructure. We are well informed about the early Ptolemaic interest in sports thanks to the collection of Hellenistic epigrams attributed to Posidippus of Pella. The section “On Equestrian Victories” (*Hippika*), for instance, gathers 18 epigrams for victors of chariot and horse races (Remijsen 2009).

Ptolemaic royals at the pan-Hellenic and other games of the Greek world

<i>Date BC</i>	<i>Games</i>	<i>Contest</i>	<i>Victors</i>
314	Pythian	Two-horse chariot race for foals	Ptolemy I
308/7	Arcadian Lykaia	Two-horse chariot race	Lagus, son of Ptolemy I
308–292	Olympic	Four-horse chariot race	Ptolemy I
304–288	Olympic	Four-horse chariot race	Berenice I, wife of Ptolemy I
284, 280, or 276	Olympic	Four-horse chariot race	Ptolemy II
272	Olympic	All chariot races	Arsinoe II, wife of Ptolemy II
268	Olympic	Four-horse chariot race for foals	Belistiche, mistress of Ptolemy II
264	Olympic	Two-horse chariot race for foals	Belistiche
c. 260	Isthmian	“Victorious many times” in chariot races	Princess Berenice, daughter of Ptolemy II
c. 260	Nemean	All chariot races	Princess Berenice
260–252	Olympic	Four-horse chariot race	Princess Berenice
245–241	Nemean	?	Berenice II, wife of Ptolemy III
Second century	Panathenaic	Equestrian races	Ptolemy V and VI

Ptolemaic royals instituting new Greek games

<i>Founder</i>	<i>Games or infrastructure</i>	<i>Details</i>
Alexander and Ptolemy I	Basileia	Annual, on Ptolemy’s official birthday = day of Alexander’s coronation. For Alexander’s coronation, once in Memphis. Later reinstituted by Ptolemy II in Alexandria
Ptolemy I	Lageion, a hippodrome	In Alexandria, near the Serapeum
Ptolemy II	Ptolemaia	Every four years, in honor of Ptolemy I, with isolympic status (victors are entitled to the same rewards as those in the Olympic games), taking place in HieraNesos near Alexandria

<i>Founder</i>	<i>Games or infrastructure</i>	<i>Details</i>
Ptolemy II	Theadelphia	Every four years, in honor of the Sibling Gods (Ptolemy II and Arsinoe II), held after the Ptolemaia in Alexandria
Ptolemy II	Arsinoeia	Annual, in honor of Arsinoe II, in Alexandria
Ptolemy II	Dionysia	In honor of his dynasty's patron god, in Alexandria
? Ptolemy II	Pentaeteris	Every four years, in the center of Alexandria, in mid-winter, sometimes identified with the Ptolemaia
Ptolemy III		Grants contest for artists in Ptolemais

remains to Memphis and buried them according to Macedonian rites. Later, he transferred the body to Alexandria, placing it in a newly built tomb, the *Sema* or *Soma*. There, Alexander received a double cult: a civic cult as founder of the city and, from around 290, a royal cult, for which the first appointed priest was no less than Ptolemy's brother, Menelaus son of Lagus. Furthermore, alone among the Diadochs, Ptolemy took on the role of Alexander's historiographer by virtue of his *Memoir*, which later was to be the main source for Arrian's *Anabasis of Alexander* (Bingen 2007a, pp. 20–23).

After Ptolemy's reign, once the power of the dynasty was well established, reference to Alexander occupied a less prominent role in the legitimizing discourse of the kings. Ptolemy II emphasized dynastic continuity and, after his marriage with his full sister Arsinoe II, he introduced the theme of marital harmony (Caneva 2016). He also elevated his deceased parents, Ptolemy I and Berenice I, to the rank of "Savior Gods" (*Theoi Soteres*) around 279 BC. Then, around 272/1, he created the cult of the "Brother-Sister Gods" (*Theoi Adelphoi*), in which he was associated with Arsinoe II. Thereafter, all the Ptolemaic kings and queens received a cult during their lifetime and after their death. This Greek ruler cult was headed by an eponymous priest, who was also in charge of Alexander's cult and whose name was recorded in the dating formulae of the Greek and Demotic legal documents throughout the country ("In the reign of Ptolemy... the priest of Alexander and the Ptolemies being..."). Some of the priestesses of the queens enjoyed the same privilege, such as the *kanephoros* of Arsinoe II and the *athlophoros* of Berenice II. The priests and priestesses who exercised these priesthoods belonged to the most prominent Hellenic families, which also provided government dignitaries (on the ruler cult, see Chapter 27).

The royal epithets, fixed by the cult and widely distributed through official dating formulae, express different aspects of the royal ideology. Some underline the divine nature of the kings, like "Savior" (*Soter*, Ptolemy I), which is traditionally an epithet of Zeus, "Who Has Appeared" (*Epiphanes*, Ptolemy V), which evokes the manifestations of the gods, or even more explicitly, "New Dionysus" (*Neos Dionysos*, Ptolemy IV and XII). Others express the king's generosity, his nature of "Benefactor" (*Euergetes*, Ptolemy III and VIII). Still others highlight strong family ties: "Brother and Sister" (*Adelphoi*, Ptolemy II and Arsinoe II), "Who Loves his Father" (*Philopator*, Ptolemy IV, Cleopatra VII and her brothers), "Who Loves his Mother" (*Philometor*, Ptolemy VI, Ptolemy X). The emphasis on the unity of the dynasty is also shown by the systematic homonymy of the kings: from