

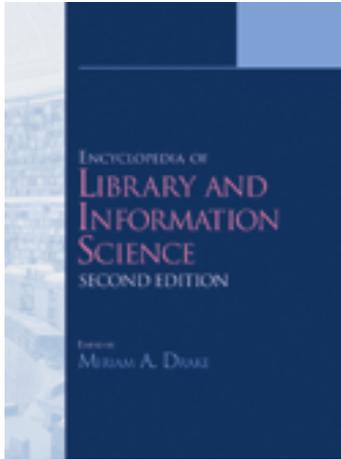
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Papyrology

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Papyrology

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INTRODUCTION

Papyrology is the science of preserving, reading, and interpreting ancient texts written on papyrus. The field deals particularly with those papyri written in Greek or Latin; those in other languages are generally considered part of the domain of Egyptology and Semitic studies.

THE PLANT AND THE PAPER

The writing material is made from the fibers of the reed *Cyperus papyrus*; strips are cut from the stalks, laid side by side, first in one direction and then on top of these at a right angle. They are pressed together so that the natural juices of the plant flow, acting as a binding agent. After drying, the resultant pieces provide a smooth, flexible, light-colored, and durable writing surface. Typically, a number of such pieces would be glued end to end (with small overlaps) to make a roll, which was the standard form of papyrus for commerce and book production. For documents of smaller than roll size, pieces would then be cut from the roll to the desired dimensions.

Paper from papyrus was manufactured by the Egyptians as early as the fourth millennium B.C.; for various reasons (partly the circumstances of preservation), the papyri that have survived to modern times come largely from the first millennium B.C. and the first eight centuries of the present era. Papyrus came to be used less and less after the Byzantine period, for reasons that are not fully understood (see "Contributions of Papyri: Literature," subsection "History of the Book"), and hardly any was used after about 800. As a result, the papyrus swamps in Egypt, which were the source of the raw material of the paper industry, gradually silted up and disappeared from Egypt so that the plant is now found growing wild only in an area 500 miles up the Nile in Ethiopia.

Papyrologists also deal with texts written on certain other materials: potsherds (*ostraka*), wood, waxed tablets, leather rolls, and parchment. Writing on stone and metal, on the other hand, is considered to belong to the province of epigraphy. The division between the two disciplines is sometimes indistinct.

THE REDISCOVERY OF PAPYRI

Although a certain number of papyri continued to be preserved in archives in Europe through the Medieval Period, the Western world lost awareness of papyri during this period, and not until the eighteenth century did papyri come back to the attention of Europe. In Herculaneum, in 1752, a villa was found in which numerous carbonized rolls of papyrus from a private philosophical library were preserved. When to the difficulty of unrolling the brittle texts was added the disappointment of the literary world at the failure of the rolls to contain famous lost works of literature, the papyri of Herculaneum receded from the public view. No less disappointing to scholars of the time was a papyrus roll brought back from Egypt in 1778 that turned out to be an account of laborers on irrigation works rather than a lost play of Sophocles or some such.

It was not until the middle of the next century that a few collections of papyri in Europe were formed and published, notably those of London, Leiden, Paris, and Turin. Then in the last quarter of the nineteenth century, numerous finds were made and a vast expansion of papyrus collections in Egypt, Europe, and North America was underway. Over the next 60 years, tens of thousands of texts were found, both literary and documentary, from organized or clandestine excavations. The largest number of papyri comes from the Fayûm, a low-lying area to the southwest of Cairo, but other finds have ranged from the Nubian frontier in the northern Sudan to the Delta. Few papyri, however, have been excavated in the Delta and other regularly irrigated areas, because of the destructive effects of water on papyrus; desert areas (especially tombs) and once-cultivated but now dry regions have been the most productive. From Alexandria, the capital, we have only a small number of texts found in other areas (sometimes sent there as waste paper for wrapping mummies—cartonnage, as it is called).

Outside Egypt, significant finds have been made at Dura-Europos in Syria (mostly from the third century of our era), from Nessana in the Negev (late Byzantine period), in the area of the Dead Sea, and in Italy at Herculaneum. A very early carbonized roll (fourth century B.C.) was found in a tomb at Derveni in Macedonia.



Unsuitable climatic conditions have caused papyri to be destroyed in most areas, but more finds may yet be made in countries with desert regions similar to Egypt.

COLLECTIONS OF PAPYRI

There is no census of collections available, for papyri are usually made known only when published in full, and the process of publication is slow. The largest collection is in the National Library in Vienna, formed by the Archduke Rainer 75 to 100 years ago; its total number (only partly Greek texts) is in excess of 100,000. There are many collections in Germany, with the largest in Berlin, and others in Heidelberg, Cologne, Munich, Freiburg, Jena, and Leipzig. The principal French collections are those in Paris, Strasbourg, and Lille; in Italy in Milan and Florence; in England in London, Oxford, and Manchester; and in Scandinavia at Oslo and Copenhagen. Egypt itself possesses one of the largest collections in the Cairo Museum and a smaller one in the Alexandria Museum. In North America, the largest collection is at the University of Michigan, and smaller but important ones exist at Yale, Columbia, Berkeley, and Princeton. Still smaller but significant collections are at Cornell, Duke, New York University, Washington University, Toronto, Pennsylvania, and others. Many American colleges have small groups of papyri distributed by the Egypt Exploration Fund in the early part of the century.

TREATMENT OF PAPYRI

Papyri are commonly in bad condition when found—torn, full of holes, wadded together, dirty, folded, even charred. Relatively simple problems can be solved by humidifying the papyri and manipulating them in this condition, allowing them to dry only when clean and straightened. For cartonnage, a new technique has been developed whereby a dilute solution of the enzyme tripsin is used to dissolve the adhesive between sheets within a few minutes. Papyri of any size are normally best preserved between thin sheets of glass, although folded paper or blotting paper may be an acceptable short-term substitute. Like other old paper materials, they benefit from storage out of the light and in controlled temperature and humidity conditions.

Various aids can be used in reading texts that are not clear to the naked eye: first, simple magnifiers, then if needed, more powerful microscopes. Photography by infrared or ultraviolet is sometimes helpful, and even conventional photography can on occasion,

by long exposure time, make faint ink traces appear more clearly.

RESEARCH AND RESEARCH FACILITIES

The beginning of the study of a treated papyrus is reading it. This is an easy or difficult task depending on the physical condition of the papyrus, the difficulty of the handwriting, the clarity or obscurity—and sometimes, the vulgarity—of the writer's Greek, the nature of the contents, and the skills of the reader. The papyrologist's task is not so much to read individual letters and words as to grasp the thought of the writer; once that is understood, the words can be read more easily. In a banal standardized document (a lease, for example) this can often be very easy, while a very individual, private letter may resist all attempts at understanding. The reading of a text is thus inseparable from the work of translation and commentary, which sets forth the editor's understanding of his text. In the commentary to a papyrus one finds an explanation of its general import and contribution to our knowledge, as well as a detailed examination of problems in the language or contents.

The publication of the annotated and translated text is only the start, however. Because of the many difficulties of reading and understanding papyri, few texts are so perfect when published as not to need correction. And a published text may give rise to extensive studies of its literary, historical, juristic, economic, or social implications: studies that often finish by correcting the texts.

To carry on the various stages of this work, the papyrologist needs good light, a magnifying glass, and sometimes a microscope, but above all, a complete collection of the already-published papyri of other collections. These volumes (see "Publication," next section), together with the special lexica, grammars, prosopographies, indices, and monographs in the field, form the indispensable working library of the papyrologist. In the course of a few hours' work, one may consult dozens of volumes to check references to possible parallels to a phrase or an institution, and only the assembly of the requisite books in one place for easy consultation can make serious papyrological research possible; such studies have flourished only where special working libraries could be created. Particularly good collections in North America of this sort exist at Michigan, Columbia, Duke, Toronto, and Yale.

PUBLICATION

All modern editions of papyri follow, in essentials, the form outlined above: introduction, text, translation, and line-by-line commentary. These texts are published



primarily in volumes uniting many papyri from one collection, provenance, or archive. Publications by the place of finding include notably the *Oxyrhynchus Papyri* (now 44 volumes with over 3,000 texts) and the *Tebtunis Papyri* (4 volumes with 1,093 texts); specific archives are numerous, the largest being that of Zenon, an estate manager of the third century B.C., which is scattered in several collections and numbers over 2,000. Other large collections published are the Michigan papyri (14 volumes aside from that containing Zenon texts, with over 500 papyri), the collection of Florence (3 series with over 1,800 texts), the Berlin papyri (in all, 26 volumes with about 2,700 texts), and several series of volumes of Cairo papyri. Papyrologists have a standard set of abbreviations for these volumes (e.g., *P.Oxy.* = *The Oxyrhynchus Papyri*).

Many other texts are published for the first time in journals. These are periodically reprinted in the *Sammelbuch*, started by Fr. Preisigke, which indexes them as well. More than 10,000 texts (inscriptions as well as papyri) are printed and indexed in the 11 volumes that have appeared so far. Preisigke also started another publication that records, in more or less systematic fashion, conjectures and corrections to papyri and *ostraka*, scattered through the literature. More details on this and the other essential reference works of the subject are given in the bibliography.

CONTRIBUTIONS OF PAPYRI: LITERATURE

History of the Book

Papyri provide virtually all of our firsthand evidence about the form and character of ancient books. The usual form of the book was a roll of papyrus on which a succession of columns of writing was placed, so that the reader would start with the outer edge of the inside face, unrolling the papyrus as he went, rolling up again from the other side. Practical considerations limited the amount that could be written on one roll, and the cumbersomeness of referring to a roll encouraged the habitual practice of giving references to other authors only by the "book" (i.e., roll), with no further precision.

About A.D. 100, we get the first examples of the codex, the forerunner of the modern book with pages opening from a common spine. The codex appears to have originated in the Christian community and was at first used exclusively for Christian books. Later, and gradually, it came into much wider use for all kinds of books. Increasingly, parchment was used for making codices, perhaps because it resisted wear and tear along edges better than papyrus.

Many examples of both types of books have been found, largely complete or badly damaged, among the papyri. They show us not only the form of the book but its characteristics, notably the handwriting (book-hands are normally neat, carefully written scripts) and the critical marks (full or partial accentuation of Greek appears for the first time in a few papyri). From these, we are able to form a more accurate idea of the type of manuscript that lies behind the medieval ones through which most ancient literature is preserved.

Greek Authors

The range of literature in circulation in Hellenistic and Roman Egypt was much larger than what survives to our day in medieval manuscripts, and numerous discoveries, occasionally of complete or nearly complete works—but more often of scraps—have considerably enriched our store of Greek literature over the last hundred years. Among authors or works found in significant amounts are lyric poets, especially Bacchylides, Archilochus, and Alcaeus; the Athenian orator Hyperides; the comic dramatist Menander (of whom previously only fragments had survived); the "Constitution of Athens" by Aristotle; Callimachus; the *Hellenica* from Oxyrhynchus by a historian of the fourth century B.C.; the Epicurean writings by Philodemos found at Herculaneum; Herodas; a satyr play by Sophocles. Some of the paraphernalia of ancient learning have also appeared to increase our knowledge, such as lists of initial lines of plays; lists of Homeric vocabulary, which was obscure already in ancient times; summaries of works; and the like. Through these we get valuable information about lost works and come to understand how the ancient reader approached his texts.

The majority of the literary papyri discovered and identified give us texts from works already known; besides informing us on the character of ancient books, these give us an idea of the reading habits of the literate public in Hellenistic and Roman Egypt. The *Iliad* of Homer was by far the most popular work, with the *Odyssey* next. After Homer come Demosthenes, Euripides, Callimachus, Hesiod, Isocrates, Plato, Thucydides, Aeschylus, and Xenophon. Another 60 or so authors have more than one papyrus each, while the same number have just one apiece. Some 130 authors—to count only those identified—were thus read even in provincial Egypt. The literate Greeks of the period thus had available to them a considerably larger selection than survived the Middle Ages. At the same time, we see that very few works were *commonly* read that have not survived in medieval manuscripts.

Almost half of all literary fragments have not been assigned with certainty to a known author and work. Sometimes this results from our knowing too little about



the works of authors whose books have not otherwise survived; the *Hellenica Oxyrhynchia*, of which we have a sizable amount but whose authorship is disputed, is an example. Most often, the fragment is very small and, in the absence of its discovery in a known work, the preserved material is so small as to make an attribution to an author (about whom little may be known) very difficult, even impossible.

Religious Literature

Numerous papyri have preserved parts of the texts of the Old and New Testaments, contributing considerably to the study of the earliest form of these texts. Many other Greek and Coptic papyri of theological or liturgical significance have been found, including many witnesses to the diversity of the early Christian tradition, in particular the *Sayings of Jesus* from Oxyrhynchus, and the Gospel of Thomas from the important find of Coptic Gnostic texts at Nag Hammadi. Other apocryphal gospels have also been found. The history of the New Testament is further illuminated by early manuscripts of the gospels and by a fragment of Tatian's *Diatessaron*, giving an attempted harmonization of the four gospels (with some apocryphal material), found at Dura-Europos.

The early centuries of Christianity in Egypt are also illuminated by some outstanding discoveries, notably two major works of Origen and a large number of commentaries on the Old Testament by Didymus the Blind, found in the Tura quarries near Cairo.

Many aspects of other religions also gain from the papyri; those from Egypt provide much information on the life of Jews in Egypt, and the finds from Wadi Qumran and Wadi Murabbaat in Palestine make a more direct contribution to the study of Judaism in the first two centuries. In pagan religion, there is a wealth of information varying from hymns to priestly practices to organizations of cultic associations. Magic and astrology are well represented in the papyri, with horoscopes and spells well known.

CONTRIBUTIONS OF PAPYRI: HISTORY

Political History

Most of the thousands of documents found concern affairs internal to Egypt and usually local in character. The history that they yield is largely the story of the otherwise unknown small farmers, businessmen, soldiers and other ordinary people, a story entirely ignored by the "historical" writings that we have from antiquity. There are exceptions, cases in which the papyri provide us with important facts about the main course of politics, war, and

diplomacy. It is, for example, from papyri that most of our information about the chronology of the Ptolemaic kings comes. From the archives of Zenon (see "Publication," above), we hear of court intrigues, diplomacy with the Seleucids, and the government of the Ptolemaic empire. A report by Ptolemy III gives a narrative of part of the Syrian War of 246–241.

The several native revolts and civil wars of Ptolemaic Egypt are documented in the papyri, especially by repeated royal amnesty decrees such as the well-preserved edicts of 118 B.C. and by some correspondence from troubled periods. Typically, we get, from the papyri, not an overview but rather the effects that historical events had on some individuals.

From the Roman period, with its larger number of papyri, we derive correspondingly more abundant information. We learn the names and dates of the Roman governors of Egypt, and we have considerable information on the composition and activities of the garrisons they commanded. The political vicissitudes of Egypt in the turmoil of the later empire are reflected in the dating formulas used, giving us a degree of precision about shifts of allegiance difficult to come by in other provinces.

It is, however, more in the areas of institutions, social and economic aspects, and culture that the masses of papyri create for us, with a wealth of detail (but not always any generalizations!), a minutely detailed panorama of life. Particularly valuable are the surviving archives, groups of interrelated papyri, which taken together give us much greater insight than the individual documents could if isolated. Several examples are cited below.

Law and Institutions

We learn of the governing of Hellenistic and Roman Egypt, both in theory and in practice, from a considerable number of documents. Nearly a hundred Ptolemaic laws of various sorts are preserved in full or in extracts: city laws of Alexandria; royal decrees about subjects such as military service, slavery, taxes, police work, and judicial procedure; detailed regulations for the operation of the monopolized oil industry; and royal laws applicable to areas outside Egypt such as Syria and Phoenicia.

Under the Romans, we are no less richly benefited by legal texts on papyrus. The famous Gnomon of the Idios Logos (a collection of excerpts of imperial rulings and laws) gives the gist of the detailed and repressive code under which Roman administrators confiscated property, prohibited marriage between many groups, and enforced numerous aspects of Roman social policy. Imperial and prefectural edicts and responses to petitions set forth principles of law and their application, broad or narrow; some of the most famous are two edicts of Germanicus Caesar and some responses of Septimius Severus.



The detailed application of the law and the machinery through which it operated are revealed in numerous records of court proceedings and in a host of related documents. One of the most famous is the dossier recording the feud between a Greek soldier and some Egyptian priests of the dead about a house in Thebes in Upper Egypt. The extensive knowledge of judicial procedure gained from these texts has led to scores of monographs and many works of synthesis. It is fair to say that the study of Greek and Roman law has been profoundly influenced in the last 75 years by the papyri.

The other aspects of royal and imperial administration—finances especially—are shown in great detail by surviving official correspondence, petitions, accounts, memoranda, and other records. One of the most interesting archives is that of Menches, a village scribe in a Fayûm hamlet in the late second century B.C., struggling to maintain royal revenues in a time of declining agricultural production—and, above all, to protect his own position. His counterpart 300 years later, Petaus, is barely able to sign his own name, but his scribe-written files give us much information on such problems as compulsory public service in his period.

Society and Economy

The papyri offer no economic laws and few obvious generalizations, but they do give us thousands of transactions—leasing land, renting a house, selling crops, buying a slave, apprenticing one's son or oneself, paying taxes, and much more. We see the major processes of the economy of Egypt from both the government's side and that of the individual. In the Revenue Laws papyrus, we find the detailed instructions for the maintenance of the crown monopoly on the production and sale of edible oils; elsewhere, we hear about smuggled oil and violation of other regulations. We find Ptolemaic soldiers selling plots of land that belong to the king rather than to them; we also have the royal edicts prohibiting this practice.

The economy of Egypt rested predominantly on the grain crop, and so it is the grain crop about which we hear most—its sowing, cultivation, harvest, taxation, and ultimately its sale or dispatch abroad for Ptolemaic foreign trade or the Roman grain dole. But we learn also of other industries like papyrus, of trade in rarer items like spices, of the trade through the Red Sea ports to India. In many cases, the evidence allows the distillation of statistics, though their reliability is not always secure.

The society of Egypt that we see in the papyri was a mixture of Greek and Egyptian, but only to a limited extent a blend of them. We find Greeks living in groups in towns, Egyptians mostly farming the land. The Greeks preserved their culture by various institutions (see "Culture," below). Some Egyptians sought self-advancement

through learning Greek and rising in the bureaucracy (or the Roman army), and some Greeks married native women and were essentially absorbed by Egyptian society. In general, the vast mass of Egyptians was only slightly affected by any direct influence of Hellenism; their life expectancy was also considerably lower than that of the Hellenic population.

The Greek papyri, naturally, come predominantly from the part of society that could speak Greek, a group that included many Egyptians as time went on. The early Ptolemaic papyri reveal to us a still very Hellenic society, made up of immigrants and their children, but the more ambitious natives were added to it as time went on, and the Greek openness to the gods of their new country led to a growing adoption of personal names based on Egyptian deities. The longer the separation from the world of the Greek *polis* (city-state), the greater the tendency was to develop what we may call a Greco-Egyptian society, rather less centered on a privileged citizen body than the classical pattern and accepting many native customs. If more of our surviving documentation concerned the Greek cities, our view might be different, but it is the provincial towns and villages that are, above all, represented in the surviving texts.

Culture

The extent of literacy and reading among the Greeks in Egypt has already been discussed briefly. The Greeks sought to preserve a corporate and cultural identity by means of their educational institutions—schools, and especially the gymnasium, in which the young men of Greek families received the athletic training and other education to fit them for a place in Hellenic society. The gymnasium remained a center of community life for these men as adults, providing the focus for the athletic contests, which were such a prominent part of social activity.

A host of smaller private clubs existed among both Greeks and Egyptians to promote a congenial social atmosphere and to celebrate the cults of various gods. We find some evidence of Greek forms of entertainment in the papyri, such as flute players and comic actors, often hired for private parties.

LANGUAGE

Thirty thousand Greek papyri from 11 centuries of Greek life in Egypt provide one of our major resources for understanding the transformation of the language known in the classical authors into that of modern Greece. There is still much to be done in the systematic study of this evidence, but already the trends that are visible have been described in sufficient detail for it to



be clear that the *koine* Greek of the New Testament was not a special language concocted for it alone, nor yet a heavily "semitized" Greek from Palestine, but rather a type of Greek abundantly illustrated by documents and letters, very characteristic of the actual language of its time. Similar insight has been gained into the language used by many literary figures of postclassical Greek antiquity.

The tendencies of the period are heavily in the direction of simplification, in part no doubt because of the absorption of many non-Greek peoples into the body of Greek speakers. The perfect tenses and the optative mood become rarer, and many irregular forms give way to newly formed regular ones. The vocabulary too changes; many Homeric words were sufficiently unknown in Roman times that readers of Homer would have special glossaries at hand to help. The nature of papyrus texts has led to a knowledge of many classes of words connected to everyday life that literary sources do not use, thus broadening our knowledge of the language. Conversely, the papyri shun much of the elaborate vocabulary of classical Greek, especially of poetry.

CONCLUSION

Papyri are an important part of our written heritage and document several major steps in the development of human communication. Papyrus was a crucial element in the organization of one of the earliest complex societies, the first reasonably portable means for recording man's memory, the most convenient way of transporting information across distances, and the vehicle by which large portions of the Greek world came to have more than perfunctory literacy. In the papyri, we find, more than in any other source, the material for a direct understanding of the daily life of ordinary people in antiquity. Although papyrus gave way to paper after four millennia of use, the shape of books in paper remained the codex, one of those for which papyrus was employed, and only the invention of movable type changed significantly the style of communication that papyrus represents in the history of the Western world.

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The principal international organization in the field is the Association Internationale de Papyrologues, with headquarters in Brussels. Its American affiliate is the American Society of Papyrologists (606 Hamilton Hall, Columbia University, New York, NY 10027).

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Publication

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Law and Institutions

For Ptolemaic law see M.-Th. Lenger, *Corpus des ordonnances des Ptolémées* (Acad. Roy., Brussels, 1964); many of the important documents concerned with Roman law appear in V. Arangio-Ruiz, *Fontes Iuris Romani Antejustiniani*, Vol. 3 (Barbéra, Florence, 1943). The trial of Hermias and the Priests is found in U. Wilcken, *Urkunden der Ptolemäerzeit* (de Gruyter, Leipzig, 1927–1957). The Gnomon of the Idios Logos is in *Aegyptische Urkunden aus den Staatlichen Museen zu Berlin, Griechische Urkunden*, Vol. 5, W. Schubart and W. Graf Uxkull-Gyllenband, eds. (Staat. Mus., Berlin, 1919–1934). The replies of Severus are in *Apokrimata*, W.L. Westermann and A.A. Schiller, eds. (Columbia, New York, 1956). Menches' papyri are in *The Tebtunis Papyri*, Vol. 1 (E.E.S., London, 1902), those of Petaus in *Das Archiv von Petaus*, U. Hagedorn, D. Hagedorn, L.C. Youtie, and H.C. Youtie, eds. (Westdeutscher Verlag, Cologne/Opladen, 1969).

Society and Economy

A.C. Johnson, *Roman Egypt*, in T. Frank et al., *An Economic Survey of Ancient Rome* (Hopkins, Baltimore, 1936), gives a mass of documents in translation with commentary.

Language

The lexicon of the papyri is F. Preisigke et al., *Wörterbuch der griechischen Papyrusurkunden* (Author, 1924): Vols. 1–2, dictionary; Vol. 3, special lists of kings, officials, taxes, etc.; Vol. 4, a supplement in form of dictionary, 4 fascicles to date. Supplement 1 (1969–1971), in 3 parts, covers texts from 1941 to 1966 but gives only the references. For names, F. Preisigke, *Namenbuch* (Author, Heidelberg, 1922); and D. Foraboschi, *Onomasticon Alterum Papyrologicum* (Cisalpine, Milan, 1967–1971). E. Mayser, *Grammatik der griechischen Papyri der Ptolemäerzeit* (de Gruyter, Berlin/Leipzig, 1906, 2 vols., in several parts) is the standard work on grammar, but he does not treat the Roman papyri. A grammar of papyri of Roman and Byzantine times by F.T. Gignac is in progress: *A Grammar of the Greek Papyri of the Roman and Byzantine Periods* (Cisalpine, Milan, 1976).

General

Besides works cited above, note the general introduction to the field and selection of texts in the fundamental work of U. Wilcken and L. Mitteis, *Grundzüge und Chrestomathie der Papyruskunde* (Teubner, Leipzig, 1912, 4 vols.). A selection of documents is translated in the Loeb Classical Library *Select Papyri* (Heinemann, London, 1932–1934, 2 vols.), by C.C. Edgar and A.S. Hunt; a volume of literary papyri (poetry only) by D.L. Page (Heinemann, London, 1941) has also appeared.

