

These five religious traditions manifest differences with respect to revelation. For Jews and Muslims, scripture is revelation, whereas Christians encounter revelation in scripture. Hindus are closer to the Jewish and Muslim understanding of the relationship between revelation and scripture, while Buddhist scriptures are sacred because of their source in a historical person who achieved enlightenment, which is the source of his authority. This suggests that a sacred book depends on its source, and often a long historical process, until it reaches social consensus and canonicity.

The revelations of the three monotheistic religions represent a historical act that occurred at a particular time and place. There is no divine revelation in Buddhism, although the Buddha did achieve enlightenment within history. For the Vedic sages, their inspiration was an internal process occurring within the mind or heart of an individual sage, who initiated the process of inspiration by ascending and calling upon the gods for assistance, whereas God takes the initiative in the monotheistic traditions.

There are some important differences between writing and the oral transmission of a text. Writing claims an authority the oral cannot, although such authority does not end the importance of the oral tradition, as is evident in Judaism. Writing encourages textual features that make language an object of aesthetic awareness and an artefact to be decoded, which are features that go beyond the oral text. Finally, writing renders possible the creation of a history different from that produced by an oral tradition.

BIBLIOGRAPHY

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|---|---|
| R. Alter, <i>The Art of Biblical Narrative</i> (1981) | — <i>Hindu Primary Sources</i> (2007) |
| J. Barr, <i>Holy Scripture</i> (1983) | L. Patton, ed., <i>Authority, Anxiety, and Canon</i> (1994) |
| A. Cole, <i>Text as Father</i> (2005) | E. F. Peters, <i>The Monotheists</i> (2003) |
| F. M. Denny and R. L. Taylor, eds., <i>The Holy Book in Comparative Perspective</i> (1985) | S. Pollock, <i>The Language of the Gods in the World of Men: Sanskrit, Culture, and Power in Premodern India</i> (2006) |
| W. Eichrodt, <i>Theology of the Old Testament</i> , tr. J. A. Baker (2 vols, 1961, 1967) | G. von Rad, <i>Old Testament Theology</i> , tr. D. M. G. Stalker (2 vols, 1962, 1965) |
| E. Frauwallner, <i>The Earliest Vinaya and the Beginnings of Buddhist Literature</i> (1956) | C. K. Roberts and T. C. Skeat, <i>The Birth of the Codex</i> (1987) |
| J. Gonda, <i>The Vision of Vedic Poets</i> (1963) | M. Witzel, ed., <i>Inside the Texts Beyond the Texts: New Approaches to the Study of the Vedas</i> (1997) |
| — <i>Vedic Literature</i> (1975) | |
| B. A. Holdrege, <i>Veda and Torah</i> (1996) | |
| M. Levering, ed., <i>Rethinking Scripture</i> (1989) | |
| K. R. Norman, <i>Pāli Literature</i> (1983) | |
| C. Olson, ed., <i>Original Buddhist Sources</i> (2005) | |

3

The Ancient Book

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1 Introduction

While the main line of descent traces the printed book in the West back through the medieval codex to the scrolls of ancient Greece and Rome, it is important to remember that these latter civilizations arose after, and alongside, a number of other ancient cultures that also had writing. Although it is likely that writing arose independently in the Near East, China, and Central America, Greece and Rome interacted regularly with the cultures of Mesopotamia, Egypt, the Germanic tribes, and Israel, so that a full consideration of the book in the ancient world must take into account all of these areas and their interrelationships.

The earliest writing is logographic (picture writing), beginning with a simple drawing (pictogram), then developing to a sign that represents a number of concepts associated with the original object (ideogram). When the sign represents the sound of an object's name, the logogram has become a phonogram; only when the sign comes to represent consonants, or consonants and vowels, does the system become phonetic. Most early writing systems were mixed, and some have remained that way (see 1).

2 Mesopotamia

By the 4th millennium BC, ancient Mesopotamia had developed the world's first fully developed writing system, a mixed approach of some 2,000 logograms (later reduced to about 800), somewhat over 100 phonograms, and some semantic indicators and syllabic signs. By 2800 BC the signs in this system had

taken on a characteristic wedge shape that was easily impressed into the wet clay in which they were usually written, giving the system its name: cuneiform (Lat. *cuneus*, 'wedge-shaped'). This system was developed initially by the Sumerians, but by the middle of the 3rd millennium BC it had been adapted to Akkadian, which became the common language of the Near East, and it was later taken up by the Elamites, Hurrians, Hittites, and Persians.

Ancient Mesopotamian writing is occasionally found on stone, seals, metal weapons and craft objects, leather, and the wax tablets that were ubiquitous in the ancient world for note-taking, letter-writing, etc. The classic Near Eastern book, however, was made of clay. The most common shape was oblong, flat on the top with a convex underside, written on while wet with a reed in horizontal rows, starting at the top-left corner on the flat side and continuing to the lower-right corner, then on to the convex side if necessary, where the writing then went from right to left. The tablets were dried in the sun, or kiln-fired in later periods. Important documents were sometimes put into a protective clay envelope. Several tablets could be joined together to make books, which were collected into libraries. The largest of these was the Ashurbanipal (r. 668–27 BC) Library at Nineveh; the archive at Ebla was notable for its systematic organization, and that of Nippur for its catalogues.

Writing was taught in palace, temple, and home; because the system was complex, the literacy rate remained fairly low (2–5 per cent), but scribes came from a variety of classes, ranging from petty bookkeepers to high officials. A significant part of all cuneiform finds are tied to writing instruction (e.g. word lists), and examples of various literary genres also survive, often as schoolboy exercises. Best known are the *Enuma Elish* ('When on High...'), the Babylonian creation poem, and the Gilgamesh epic. Editions of the literary classics were not illustrated, although mathematical figures and diagrams were entered on documentary tablets, and even the legal Code of Hammurabi (1780 BC) contains a picture of Shamash, the god of justice. Books of magic, medicine, and technology, along with maps, astronomical calculations, and building plans, survive, but 90 per cent of what the ancient Mesopotamians wrote is economic and administrative.

3 Egypt

Beginning around 3000 BC, Sumerian influence on Egypt appears to have stimulated a mixed writing system which eventually evolved into around 600 logograms, 100 phonograms, and 24 alphabet-like signs that represent one consonantal sound. In addition to the formal version of this script, called hieroglyphs (Gk *hieros*, 'sacred' and *glyphein*, 'to carve'), two non-pictorial scripts derived from it—hieratic and demotic—also appeared, to meet the demand for symbols that were faster and easier to write.

The Egyptians wrote on wooden tablets, ostraca (pottery sherds), linen mummy wrappings, monuments, and temples, even occasionally on animal

skins, but most often on papyrus, which came from the marshy delta of the lower Nile. The precise details of the production process remain debatable, but it is commonly agreed that the stalks of reeds were opened out and sheets of papyrus were placed on top of one another at right angles, then pressed so that their sap would hold them together. Sheets were next dried and bleached in the sun, then pasted together into scrolls. The pen was cut from the same reed, with its tip pounded into a sort of brush initially, then cut into a split nib in Hellenistic times. Black ink alternated with red to distinguish a second section of text, especially a heading, from which the term 'rubric' (Lat. *ruber*, 'red') is derived. Egyptian scrolls had wide margins, with hieroglyphics being written initially in vertical rows from right to left, generally on the inside only of a roll without handles. The outside of the roll sometimes contained the title, the author's name, and a summary or the opening words of the text, information that could also be written inside as a colophon. The Egyptian book bequeathed several things to its successors: writing in columns, illustrations to accompany a text, and rubrication for headings, titles, and colophons.

In the Old Kingdom, prayers and lists of a deceased person's accomplishments written on tomb walls evolved into catalogues of virtues and maxims that were transferred to papyrus as 'Instructions to the Dead', to which hymns, prophecies, and warnings were later added. Short stories and ballads, then historical inscriptions and narrative poems became common in the New Kingdom, with non-literary writings like astronomical texts, calendars, magical incantations, treatises on practical medicine, and court proceedings being copied as well. The best-known genre, however, is the Egyptian Book of the Dead, which contained burial ceremonies, prayers for the deceased, and speculations about what life beyond the grave held. Illustrations, which were added separately and are sometimes not integrated perfectly with the text, show scenes like the weighing of the deceased's soul and the presentation of the deceased to Osiris by Horus.

4 The Hebrew book

The earliest Hebrew writing goes back to the 15th or 14th centuries BC and is found on metal, pottery bowls, and an ostrakon used as an abecedary. By the 10th century, royal records were being kept, and Deuteronomy 6:4–9 presents an early commandment that sacred texts were to be written on doorposts (*mezuza*) and in boxes bound on to the head and arms (*tefillin*). The Bible also refers to seals and signet rings that go back to the 8th century BC, and writing on ivory goes back to the same period, while the earliest fragments of the Bible (Num. 6:24–6) are found on two silver scrolls that date from slightly later. Inscribed stones with the teachings of Moses were displayed publicly (Josh. 8:32), and Ezekiel was commanded to write on pieces of wood (Ezek. 37:15–20). Baked clay ostraca were used for receipts, lists, tax records, and drafts. The Dead Sea Scrolls, fragments found between 1947 and 1956 in caves near Qumran, include the earliest surviving biblical texts written on animal skins.

The Jewish religion has its basis in the Torah, which kept the Hebrews together through exile and persecution; no other book has survived as long with the same physical form and textual stability, nor does any other religious book come with such constraints on its layout, materials, and preparation. The Torah contains the Pentateuch, the first five books of the Bible. It is written on parchment, on the flesh side only, in 248 to 252 columns, with two or three columns per sheet. Mistakes can be corrected, but too many errors condemn the page to the genizah, the burial ground for damaged, worn, or error-filled Torahs. The sheets are sewn together at the end, and each end is attached to a roller. In addition to the Torah, the other parts of the Old Testament (the Prophets and the Hagiographa, or sacred writings) are important, as is the Talmud, the effort to harmonize the Torah with the commands of everyday life. The Talmud was passed down orally until the 4th or 5th centuries AD, so it is written in codex form, since this was what was common when the text was committed to writing (see 8).

Parchment appears to have been used in Hebrew scrolls before it was used widely elsewhere in the Graeco-Roman world. Word spacing and justified margins also first appear regularly in Hebrew books.

5 Greece

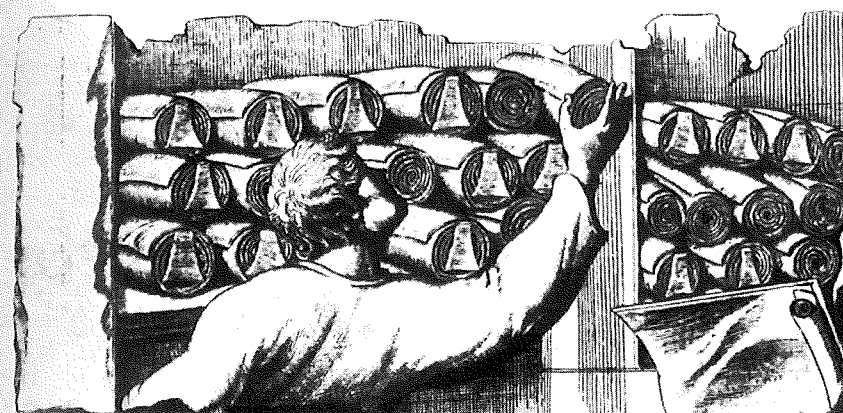
5.1 The physical book

A good number of charred Greek MSS have been recovered from Herculaneum, and thousands of papyrus fragments have emerged from the graveyards and rubbish dumps of Egyptian towns like Oxyrhynchus. This material has generated fragments of previously lost books by Alcman, Herodas, Menander, Aristotle, and Philodemus, while lines from other lost works have survived in florilegia, but what has perished is still immeasurable: over 95 per cent of Sappho, over 90 per cent of Sophocles, and almost all astronomical works prior to Ptolemy, for example.

Writing in ancient Greece evolved through several forms. The Minoan civilization on Crete was contemporary with those in Mesopotamia and Egypt and similar to them in many ways, producing writing on a number of surfaces in two distinct types of pictogram, then in two cursive syllabic scripts. Linear A, found mostly in Crete in the 17th and 16th centuries BC, was engraved on stone, metal, and clay pottery. From around 1600 to 1200 BC mainland cities like Mycenae and Pylos rose to power as well, producing an official script, Linear B, that was related to Linear A but different from it. When the Mycenaean civilization was destroyed around 1200 BC, the knowledge of writing perished with it. Around the middle of the 8th century BC, the Greeks borrowed an alphabetic writing system from the Phoenicians, who also served as intermediaries in the papyrus trade (the Phoenician port of Byblos may have provided the Greeks with their word for book, *biblos*), adapting it to their language. This script began in a

monumental version, which evolved into a rounded, more compressed uncial form as a bookhand, then into a cursive form for business purposes.

Within a few generations the Greeks were writing on a variety of surfaces: coins, introduced by the Lydians c.630 BC; bronze weapons and utensils; seals, of ivory or stone; gems; and stone slabs, for laws and treaties. Wax tablets, held together by thongs into groups of two (*diptycha*), three (*triptycha*), or more (*polyptycha*), were used for note-taking and schoolwork. Pottery often contained the names of figures in a story or the people to whom the vessels were to be given, and ostraca were inscribed in the assembly with the names of political leaders whom the Athenian citizens wished to send into temporary exile (i.e. to ostracize). Parchment, named from an early production centre in Asia Minor (Lat. (*charta*) *Pergamena*, 'paper of) Pergamum'), was used as well, but not extensively during the classical period. The main writing surface for the ancient Greeks was papyrus, obtained (directly or indirectly) from Egypt and written on with a pen (*kalamos*). Writing was in columns, sufficient for 16–25 letters in prose or a line of poetry, with 25–35 lines per column and two or three columns per sheet, on one side only except for private note-taking. No space was left between words, and there was no systematic punctuation system, although marks like the *paragraphos*, a horizontal stroke indicating a change of speakers in drama or a break in sense in prose, are sometimes found. Standard 20-foot rolls could be glued together into scrolls of up to 100 feet in length, although anything over 35 feet (the length of two or three books of the *Iliad*) was rare because it was so hard to handle. The scroll could be preserved with saffron or cedar oil and its edges were sometimes coloured; often it had a single handle (*omphalos*), around which the papyrus was rolled. Basic information like the name of the owner, the size and source of the text, and perhaps the price could



Engraving of a lost piece of Roman sculpture (c.100 AD) of rolled and ticketed scrolls from Neumagen, near Treves, in C. Browerus and J. Masenius, *Antiquitatum et Annalium Trevirensium Libri XXV* (Lyons, 1670). The Bodleian Library, University of Oxford (A 16.2, 3 Th)

either hang from the middle of the lower edge or be added in a note at the end of the text (colophon), where it would be equally accessible, since scrolls were generally not rewound for the convenience of the next reader. The scroll could then be covered with fabric or leather and stored in a bucket, case, or on shelves.

5.2 Book trade

Initially 'publication' in the Greek world meant an author reading from a single roll containing his works. This was succeeded by copying for and among friends, but there was no copyright: an author 'published' a book by seeing to it that correct copies, which were prized more highly than unauthorized ones, were in circulation. In the 6th century BC the tyrant Pisistratus organized competitive recitations of Homer, whose works he also had edited and copied, and later Lycurgus required that an official copy of the works of the three great tragedians be placed in the public record office of Athens. By the 5th century BC a book trade existed in Athens. A semi-circular recess in the marketplace (the *orchestra*) had been set aside for booksellers, and Plato says that a second-hand copy of the works of the philosopher Anaxagoras could be had there for one drachma, less than a day's wage for an unskilled worker.

5.3 Reading

By the 6th century BC Athenian graffiti show that writing was common, and by 490 BC vases showed people reading from scrolls of literary authors. The average Athenian male citizen knew his alphabet, girls could get enough of an education to run a household, and slaves were also sometimes literate. With wealth and leisure, education could continue, from the elementary level through more advanced study of language, composition, history, and myth, to the *gymnasia* that eventually spread Greek physical and intellectual values throughout the Hellenized world. People wrote letters, contracts, and wills, and court cases depended on written documents.

It is not safe, however, to assume that people in ancient Greece read in precisely the same way that modern Europeans do. The fact that texts were written without word division (*scripta continua*) made vocalization almost imperative, so that reading aloud remained normative throughout Greek culture. In time, some Greeks developed the ability to read silently, in a process that is tied to the rise of Socrates' *daimonion*, the inner voice that would later be called one's 'conscience'. Aristophanes' *Knights* (produced in 424 BC, when Plato was 5 years old) has a scene in which a character reads silently, confusing another character who does not recognize this practice, confirming that it was by no means ubiquitous.

5.4 Libraries

The tyrant Pisistratus, an early book collector himself, founded the first public library in Athens, although the books were carried off by Xerxes when he sacked the city in 480 BC. No public libraries are mentioned in the 5th and 4th

centuries, but significant private collections were alluded to by Xenophon in the first half of the 4th century BC, and Aristotle's library in particular was notable for its size and breadth. After the death of Alexander the Great, the Ptolemies in Egypt developed a plan to set up a research institute (a Museum) with a small group of residential scholars and substantial library resources to support their work. Books were collected from throughout the Greek world for the Alexandrian Library, and no expense was spared: after having left fifteen talents (a huge sum) on deposit to borrow the official copy of the plays of the three tragedians, the library opted to forfeit the sum in order to keep the original. The result was the greatest library the world had ever known—by one estimate it contained at least 400,000 books in the main collection, with the 3rd-century catalogue (the *Pinakes*) of Callimachus alone taking up 120 scrolls. The other major Hellenistic library was founded by the Attalids, with the holdings of the Pergamum Library being large enough that, in the 1st century BC, Mark Antony supposedly gave 200,000 books from it to Cleopatra. Other cities often had libraries suited to their special strengths: in Rhodes, a centre for rhetorical studies, the library of the local gymnasium was rich in speeches and works of politics and history. Inscriptions show that these libraries depended heavily on their donors.

5.5 Textual criticism

Since Greek scrolls were copied by hand, the threat of textual corruption was always high. This threat was addressed in a systematic way by scholars associated with the library in Alexandria, with Zenodotus, Aristophanes, and Aristarchus developing a system of critical signs like the *obelos*, a horizontal stroke in the left margin that signalled a verse as spurious. These same scholars advanced the principle that the best guide to an author's usage is what can be found in his other works. Actors' interpolations were identified in Euripides, and the metrical patterns in Pindar were understood well enough to allow for emendation. The earliest fragments of Homer that have emerged from the sands of Egypt are not significantly different from the textual tradition that derives from Alexandrian scholarship, suggesting that Zenodotus and his successors did their job well. (See also 4, 20.)

6 Rome

6.1 The physical book

Books were present early on in Rome: it is said that in the 6th century BC Lucius Tarquinius Superbus eventually purchased the magical records in the Sibylline Books, which were written on linen (*libri lintei*), as were the consular records of the 5th century BC that are also mentioned by Livy. Other writing materials were used in early Rome as well. The Latin word for 'book', *liber*, serves as a reminder that the inside bark of trees (the root meaning of the word) was written on,

while Virgil mentions writing on leaves. Inscriptions were made on stone and coloured, usually in red, sometimes in gold. Wax tablets had a variety of uses, from note-taking to deeds and tax receipts, to the production of prose summaries, then first drafts for poetic composition. In the empire, discharged soldiers received a bronze diptychon called a *diploma*, awarding them citizenship, land, and the right to marry. Inscriptions are also found on mosaics, coins, pottery, and gems. Parchment was known, but its use was widespread only among the Jews, then the Christians.

From the early republic the basic Roman book was the papyrus scroll, developed along the Greek model. The papyrus was attached to a rod (*umbilicus*) of ivory, ebony, even gold, with handles (*bullae* or *cornua*); the scroll was held in the right hand and unrolled with the left. Originally only one side was written on, and mistakes could be scraped off—indeed, entire MSS, called *codices rescripti* (*palimpsesta* in Greek), were scraped or washed off and reused, with several important texts (e.g. Cicero's *De Re Publica* and the 2nd-century BC *Institutiones* of Gaius) surviving only as the lower text on a palimpsest. Illustrated books are found only from the 4th century AD, but their existence before that can be inferred: Vitruvius refers to the drawings that accompanied his work, and it is known that the biographical studies of Varro were accompanied by 700 portraits. Travellers' itineraries required maps (e.g. the Peutinger Table). Several famous Virgil MSS (e.g. Vat. lat. 3225 and 3867, the Codex Romanus) exemplify the achievements of late Roman illumination.

A variety of writing styles were employed. Square capitals (*capitalis quadrata*), used during the first five centuries after the birth of Christ, began as inscriptional lettering, but were quickly transferred to papyrus. Slow and therefore expensive to produce, they offered an elegant contrast of thick and thin strokes with pronounced serifs, or finishing strokes. Rustic capitals, common on monuments from Iberia and the Near East, on less formal public notices, and in many of the earliest surviving MSS of Roman literature, are a more compact majuscule script that originated in square capitals but shows some cursive influence as well. Uncial (Lat. *uncia*, 'one-twelfth of a foot', i.e. an inch, a derisive term applied to these letters by Jerome, who claimed that such large writing was wasteful) results from a rounding-off of square capital forms, with several distinctive new shapes (e.g. a, d, e, and m) evolving from cursive influence; this script flourished from approximately 300 to 900 among the Christians, who preferred it as a new form of writing that was free of pagan overtones. Under greater pressure from cursive, parts of letters came to be left off and ascenders and descenders were exaggerated, resulting in the first true minuscule script: half-uncial or semi-uncial, which appeared in the 5th century AD and flourished in the 6th, again primarily for Christian works. Punctuation was spotty; word division was initially found in inscriptional square capitals, disappeared under Greek influence, and eventually reappeared, beginning in cursive MSS.

6.2 Book trade

A Roman author began the process of publication with a *recitatio*, a public reading, designed to introduce a new work. Virgil and Horace quickly achieved a level of attention which they found embarrassing, and the practice got even more out of hand in the empire, with the younger Pliny complaining that there was a recitation almost every day. There were advantages to the system: a 'bravo' from the audience must have encouraged the author, critics could point to defects while they could still be easily corrected, and the audience had its appetite whetted. Patronage was a key part of the Roman literary system, with Maecenas, Augustus' unofficial minister of culture, being the most famous example of a wealthy man who financed the production and distribution of literature in exchange for having the work dedicated to him.

The primary responsibility for getting a work circulated in written form lay with the author, although precisely how this happened has become debatable. The traditional explanation holds that a writer could have the work copied by his own slaves or could rely on a large-scale 'publisher', someone like Cicero's friend and correspondent Atticus (110–32 BC). Atticus and other publishers like Q. Pollius Valerianus, Tryphon, Atrectus, Secundus, and the Sosii brothers had readers dictating to scribes, who produced copies that were disseminated all over the Roman world. The author and his publisher agreed how the book would look (e.g. what type and colour of wrapping the scroll would have), but there was no copyright protection and the author received no royalties: the advantage of using a publisher was that a writer would not have to have more copies produced under his own supervision, at his own expense. Booksellers (*librarii*) were concentrated near the forum and often specialized, some in rare items, some in contemporary authors, and some in antiquarian goods. Recently, however, parts of this picture have been challenged. W. A. Johnson has noted that the consistent way in which scrolls were prepared suggests a professionalized training among scribes. R. J. Starr and others have urged that the picture of mass-production scriptoria be replaced with one focused on a series of concentric circles, in which an author made copies for his friends, who had copies made for their friends, with the personal connection to the author being gradually dissolved, but with a bookshop coming into play only as a last resort in aristocratic circles (although it may well have been the first, indeed only, choice for lower-class readers). Cicero and Atticus, according to this argument, may well have had copying done in house, but this was not the norm; more commonly, someone who needed a copy made would resort to a *librarius*, seen here primarily as a copyist who was relatively indifferent about whether the original came from the customer, the handful of books in his stock, or a library.

6.3 Reading

Although the upper classes took more care to educate their children than the lower classes, education was not simply a function of class, as the number of

writers of humble origin confirms: Terence came to Rome as a slave, and Augustus' freedman Hyginus became librarian at the Palatine library and wrote learned encyclopaedic works. Books were necessary, as one might expect, at every level of Roman education. The alphabet, then syllables, and basic reading were taught at the beginning, on wax tablets, then later on writing boards. At the secondary level, under the *grammaticus*, grammar and the interpretation of literature were taught, in Greek and Latin, with reference to many school texts. The third level focused on rhetoric and required both theoretical treatises and sample speeches, and the final level, philosophy, again required access to many books.

Most reading was still done aloud, which required one to learn when to breathe, to raise or lower the voice, and to gesture; it had its physical component, so that reading was commonly positioned in medical books among those exercises that promote good health. Some reading was silent, but usually for texts, like a letter, that did not seem to lend themselves to public consumption. Catullus and Cicero were the first to distinguish kinds of reader, adding to the aristocrats and the teachers traditionally associated with them a new, broad middle group that read more for pleasure than utility, that preferred a simple style, and that was indifferent to the physical qualities of the book. Among them were government employees, soldiers, merchants, tradesmen, and an increasing number of women—indeed, Ovid was especially conscious of this last group. The extensive use of writing within the military suggests that especially in the empire, some level of literacy was widespread, but the poor spelling and grammar of many of the graffiti in Pompeii warn that many of the 'new readers' had absorbed little beyond the basics.

6.4 Libraries

The first significant private libraries came to Rome as the spoils of war: in the 2nd century BC Aemilius Paulus brought back the books of Perseus, king of Macedonia, and Sulla looted from Athens the library of Apellicon of Teos, which included many of Aristotle's books. It quickly became fashionable to have a library in noble villas, with aristocrats like Cicero having books at home but also freely using the libraries of their friends. The library in the Villa of the Papyri in Herculaneum, probably owned in the 1st century BC by Caesar's father-in-law, L. Calpurnius Piso, exemplifies this trend, although its focus on philosophers from Epicurus to Philodemus was probably atypical.

Julius Caesar's plans for a public library in Rome were not carried out, so that it fell to G. Asinius Pollio to found the first public library in Rome. Augustus founded two more, in the Temple of Apollo on the Palatine and in the Portico of Octavia at the Campus Martius. Later emperors built others; beginning with Trajan, libraries were often incorporated into the public baths, until by AD 350 there were 29 in Rome. Libraries were built in the provinces as well, often with the aid of wealthy donors like the younger Pliny, who endowed the library in his native Como. The eastern provinces had a number of famous libraries

(e.g. the library of Celsus at Ephesus and, in Athens, the libraries established by Pantainos—built between AD 98 and 102—and by Hadrian), but curiously, the western half of the empire outside Italy has only two securely attested libraries, at Carthage in Tunisia and Timgad in Algeria.

Roman libraries were laid out differently from Greek ones. The Greek library generally contained books in Greek only, stored in small rooms that basically served as stacks and opened onto a colonnade where readers consulted the scrolls. Roman culture was bilingual, so libraries were divided into two sections, one for books in Greek and one for Latin. Scrolls were stored in wooden bookcases (*armaria*), with the centre of the room kept free for readers. Libraries were generally open in the mornings only, but borrowing was occasionally permitted.

6.5 Textual criticism

The initial transmission of texts in ancient Rome was casual, with Cicero complaining that his speeches were mangled and the plays of Plautus being adapted freely by actors. Stability began with the early grammarians. Varro, for example, established a corpus of genuine Plautine plays and worked on the interpretation of obsolete or difficult words. Adoption as a school text helped to preserve a work but also subjected it to poor copying and second-rate scholarly intervention. Among a group of 1st-century AD scholars, the most famous was M. Valerius Probus, who applied Alexandrian methods, correcting transcription errors, punctuating, and adding critical signs for Virgil, Horace, and Lucretius. Later, Fronto and Gellius studied the early republican authors, attempting to recover readings from old MSS to correct the texts. From late antiquity some 27 subscriptions—formulaic expressions at the end of a book indicating the circumstances under which it was revised and copied—attest to the interest of such important families as the Nicomachi and the Symmachi in correcting and preserving key works of Roman culture like the first decade of Livy's histories.

6.6 From roll to codex

The term *codex* was originally the Roman name for the wooden tablet notebook. Before the end of the 1st century AD, the Romans began replacing the wood with parchment, and Martial indicates that standard authors were available in this format in his day. Papyrus was not an appropriate substitute for wood in the codex format, since folding and sewing weakened it at the key point, the spine. Parchment had not worked well for scrolls, since it made the MS too heavy, but it was admirably suited to the codex.

The rise of the parchment codex is linked to the rise of Christianity: all of the Christian works found in 2nd-century AD Egypt are in codex form, while 98 per cent of the non-Christian works are not. A number of reasons have been suggested for this. Initially Christianity spread among the lower and middle classes, who had known the codex as a school notebook, a notepad, or a professional manual. It was easier to find a passage in a codex than in a scroll—an important

point for a new religion in which textual authority was important. In addition, the parchment codex was free from the pagan overtones that went with the papyrus scroll. Whatever the reason, by the 4th century AD large bibles like the Codex Sinaiticus were being produced in codex form, which ended up being the dominant model even for pagan texts as antiquity came to an end.

7 Runes

The earliest known example of writing in runes comes from the Danish island of Funen during the second half of the 1st century AD. Often inelegant, runes are associated with peoples not known for their cultural achievements in other areas.

Runes are alphabetic, though without taking full advantage of that system (e.g. consonants do not double) (*see* 1). They seem to be drawn from the Roman alphabet, adapted to a non-Latin language: five 'unnecessary' letters (K, Q, X, Y, and Z) are used for phonemes and language clusters that have no Latin equivalent, while one rune has no equal in the Roman alphabet. Runes began in the Romanized centres of northern Germany and spread from there, appearing on high-prestige artefacts to record the owner's or giver's name. The only function that goes beyond this is naming a spear 'Prober', which may indicate a certain awareness of the metaphorical but does not suggest magical overtones. The most likely explanation is that runes were developed from Roman writing in the 2nd century AD by Germanic people who had had some contact with the Romans, to mark the donor or maker, ownership or function. Objects so marked became a good way to indicate group membership and forge alliances, something for which the Romans themselves at the same time used language.

8 China

The earliest writing in China appeared c.1200 BC in Anyang, the last capital of the Shang dynasty (*see* 1, 42). It is sometimes said that this writing was stimulated by contact with Mesopotamia, but there is no archaeological evidence to confirm this assumption. Early Chinese writing appears as a fully developed system, and reasoning from analogy suggests that what has been found at Anyang must be a later version of a writing system whose lost early stages would have resembled early Mesopotamian tablets and Linear A and B remains. Here the problem may revolve around the fact that some writing materials survive longer than others. Early Chinese writing is also found on bones (as souvenirs of royal hunts), turtle shells (as records of the delivery of goods), jade and other precious stones (as marks of ownership), and pottery, but not on the mats of wood or bamboo slips which served as books from the 5th century BC. Letters written on silk were mentioned by writers several centuries before the time to which the earliest surviving examples can be dated. If the early stages of Chinese

writing also appeared on surfaces as fragile as these, their disappearance would make sense.

Early Chinese script is often said to be pictographic, but here, each character is part of a real writing system with both a signifier and a signified; in addition, many Chinese pictographs could represent more than one word, so that by evoking a sound as well as an image, they were used as phonograms as well. Abstract signs exist, as do compounds, but only one quarter to one third of the approximately 4,500 surviving signs have been deciphered. These symbols appear most often on animal bones that were heated and cracked for the purpose of divination, with the date and the name of the diviner given first, then the question to which an answer was desired; occasionally the answer is present as well. Fewer examples survive of the bronze ritual vessels in which the elite presented offerings to their dead ancestors, with the name either of the person who commissioned the bowl or of the dead ancestor written on it.

Chinese books written on thin slips of wood begin to be found with some regularity in excavations from the 2nd century BC. The slip (*ce* or *jian*), generally made of bamboo, is 9–9 ½ inches long and a quarter- to half-an-inch long, with one column per side but often with writing on both sides. Writing in vertical columns seems to be an accommodation to the shape of the bamboo slip. Fan-fold paper books and scrolls became common beginning in the 2nd century AD. The book was covered with a case, a title was pasted on the corner of the cover, and the book was stored vertically. Characters were formed with a hair brush—an appropriate instrument for writing on silk and bamboo, but one which also helped stimulate the straightening of the curves in the old characters, so that their resemblances to pictorial symbols diminished. Chinese writing was linked to painting through calligraphy, so that by the 3rd century AD the traditional concern for careful letter-making had been extended to book illustration. Imperial edicts and government reports in turn were written on rectangular tablets (*fang*), and writing is also found on triangular prisms (*kue*).

Among the earliest Chinese books is the Book of Odes (*Shijing*), some 300 poems depicting life in the 8th and 7th centuries BC. The works of Confucius (c.551–479BC) were also copied frequently. Around AD 100 Xu Shen wrote a lexicon, and Cao Pei (AD 187–226) produced an encyclopaedia. The Chinese also had scholars investigating the authenticity of works, revising and collating texts, and commenting upon early books at roughly the same time as the Alexandrian scholars were active in the West. Emperor Wu-ti (157–87/6BC) set up a body to collect and copy books, and in 26 BC Liu Xiang organized a thorough survey of the book holdings in the Chinese empire.

9 Mesoamerica

Beginning as early as 500 BC, the peoples of Mesoamerica created writing systems in isolation from the Old World (*see* 1, 48). The earliest of these scripts in particular remain difficult, if not impossible, to read; as iconic, hieroglyphic

systems, they preserved a sense of union between spirit and matter that is fundamentally non-European.

A system of prewriting begins with the Olmec civilization around 900 BC. Mesoamerican writing proper began in the glyphic markers of personal identity: people were identified by signs in headdresses, and captors differentiated from captives by gestures and positioning. Initially the headdresses were lexemic, with signified and signifier still coupled, but beginning around 900 BC the lexical identifier was separated from the representation of the body associated with it. This separation remained porous throughout the scripts of Mesoamerica, however, making them iconic in ways that resemble Egyptian hieroglyphs more than cuneiform and early Chinese writing, which moved towards abstraction more quickly and definitively. Actual writing, in which language is represented graphically, detached from the body of the referent, and arranged sequentially to accommodate greater syntactic complexity, appeared around 500 BC in the Zapotec area of Oaxaca, Mexico, but unfortunately much of it cannot be understood with certainty. A handful of texts also survive from the first few centuries after Christ from the area in and around the Isthmus of Tehuantepec. This writing contains relatively few icons; whether it is decipherable or not remains debatable.

The best-known and best-understood Mesoamerican writing is Mayan, for which thousands of texts ranging from the time of Christ to the 16th century survive. The earliest examples remain difficult to decipher, but examples from the classical period contain comprehensible symbols that changed over time. Mayan script was a relative latecomer in Mesoamerica, using the dating system and column format that had become standard in the other scripts by this time. The earliest examples appear on small objects like carved greenstones and heirlooms, with a tendency for one glyph to fill a block first, then for the block to contain several glyphs. Mayan writing is often said to be tied to the administrative and propaganda needs of the complex society from which it originated; but given the relatively small number of people who could read, this assumption is difficult to prove.

The Mayan script remained tied to the society in which it was created and closed to external influences, ultimately dying with the Spanish conquest. Beginning about AD 350–450, however, the civilization around Teotihuacan began to exert its influence, using an open script that was easily adaptable to the languages and cultures with which it came in contact. The more open writing systems continued among the indigenous peoples of Mexico even after the conquest, appearing in court documents alongside Spanish, then eventually giving way to the Roman script of the Europeans.

BIBLIOGRAPHY

- L. Avrin, *Scribes, Script, and Books* (1991)
 T. Birt, *Das antike Buchwesen in seinem Verhältnis zur Litteratur* (1882)
 H. Blanck, *Das Buch in der Antike* (1992)
 W. G. Boltz, *The Origin and Early Development of the Chinese Writing System* (1994)
 E. H. Boone et al., eds., *Writing Without Words* (1994)
 L. Casson, *Libraries in the Ancient World* (2001)
 G. Cavallo, *Libri, scribi, scritture a Ercolano* (1983)
 — 'Between Volumen and Codex: Reading in the Roman World', in *A History of Reading in the West*, ed. G. Cavallo et al., tr. L. G. Cochrane (1999; French original, 1995)
 E. Chiera, *They Wrote on Clay*, ed. G. C. Cameron, 2e (1969)
 J. Černý, *Paper and Books in Ancient Egypt* (1952)
 P. T. Daniels et al., eds., *The World's Writing Systems* (1996)
 O. A. W. Dilke, *Roman Books and their Impact* (1977)
 D. Diringer, *The Book before Printing* (1982)
 R. W. V. Elliott, *Runes* (1989)
 [Galleries Nationales du Grand Palais,] *Naissance de l'écriture* (1982)
 H. Gamble, *Books and Readers in the Early Church* (1995)
 J.-J. Glassner, *The Invention of Cuneiform*, tr. and ed. Z. Bahrani et al. (2003; French original, 2000)
 A. Grafton et al., *Christianity and the Transformation of the Book* (2006)
 W. Harris, *Ancient Literacy* (1989)
 S. D. Houston, ed., *The First Writing* (2004)
 M. A. Hussein, *Origins of the Book* (1970)
 W. A. Johnson, *Bookrolls and Scribes in Oxyrhynchus* (2004)
 F. Kenyon, *Books and Readers in Ancient Greece and Rome*, 2e (1951)
 T. Kleberg, *Buchhandel und Verlagswesen in der Antike* (1967)
 R. Pfeiffer, *History of Classical Scholarship from the Beginnings to the End of the Hellenistic Age* (1968)
 M. Pope, *The Story of Archaeological Decipherment* (1975)
 R. Posner et al., *The Hebrew Book* (1975)
 Reynolds and Wilson
 C. H. Roberts et al., 'Books in the Graeco-Roman World and in the New Testament', in *CHB* 1
 W. Schubart, *Das Buch bei den Griechen und Römern*, 3e (1961)
 D. Sider, *The Library of the Villa dei Papiri at Herculaneum* (2005)
 R. J. Starr, 'The Circulation of Literary Texts in the Roman World', *Classical Quarterly*, 7 (1987), 213–23
 J. Svenbro, *Phrasikleia* (1993)
 E. Turner et al., *Greek Manuscripts of the Ancient World*, 2e (1987)
 B. L. Ullman, *Ancient Writing and its Influence* (1963)
 G. Vermes, *The Dead Sea Scrolls* (1977)
 D. J. Wiseman, 'Books in the Ancient Near East and in the Old Testament', in *CHB* 1