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Chapter 1: Archival Artefacts: From Sheets and Files to Digital Documents

Abstract: The chapter explores the diversity of archival artefacts from different cultures around the globe through their forms, functions, and cultural meanings. Oriented by forms and shapes, the archival artefacts range from the conventional ones (e.g. tablets, rolls, sheets, files, codices) to the unconventional ones such as pottery from ancient Mediterranean, the *kipu* knots of the Inca, as well as the digital documents of the contemporary modern world. This diversity of archival artefacts points out the adaption of different materials in order to serve record-making and -keeping practices in different places and times throughout the long history of archival practices.

1 Introduction: Archives and written records

The term ‘archive’ in English has different dimensions of meaning related to record-making and -keeping. According to Laura A. Millar,¹ archive can refer to documentary materials or written records preserved by a public or private entity for further use, the institution responsible for acquiring and preserving the archival materials, and the building in which the archival materials are stored. Archival artefacts discussed in the chapter concern the first meaning of archives given by Millar, and can be perceived as the smallest unit of the material dimensions of archiving where the information is stored. They appear in a large variety of forms, functions and cultural meanings in different regions and periods throughout human history, therefore, constituting a large topic for the history of archiving practices of the globe.

It should be noted that not every single piece of written records or documentary materials is simply considered an archival artefact, as the term archive connotes the meaning of assemblages or collections of records.² Therefore, archival artefacts include only written artefacts which can be stored and preserved for further use or consultation, covering those of administrative, private and religious content. Various writing supports have been used in different cultures as archival

¹ Millar 2017, 4.

² Walsham, Peters and Corens 2018, 14–15; Yeo 2022, xi.

artefacts, such as clay, papyrus, parchment and paper, which are generically alluded to in the subtitle of the chapter as ‘sheets and files’. Looking at the materials of archival artefacts from different cultures, one can see how physical features of different materials have been adapted or applied to suit the archiving practices.

Though encompassing various materials for writing supports, this chapter does not include materials which were used for recording but not for archiving, such as human skin. Human skin, though not often considered a conventional material for written artefacts, has long been used to receive writings through tattooing for many purposes. Apart from talismanic and ritual purposes,³ other forms of tattooing were arguably a part of record-making practices. Slavery registers in Mesopotamia were tattooed on slaves’ skin.⁴ A similar practice can be found in the administration of premodern Thailand,⁵ in which the category and affiliation of all adult freemen and redeemable slaves were tattooed on their wrists until the late nineteenth century. This writing on (living) human skin was a tool to check the identity and affiliation of the freemen and slaves, as tattooed writing was rather permanent and could not be easily removed. Furthermore, according to Herodotus’s *Historiae* Book V,⁶ a secret message for a revolt against the Persian Empire in Ionia around the beginning of the fifth century BCE was tattooed on the shaved scalp of a slave before letting his hair grow back to conceal the message. The slave had then been sent to the revolt ally without anyone noticing the hidden tattooed writing, before the slave’s head was shaved again at the right place and time to reveal the message.

These cases demonstrate how human skin can be a writing support for such important records and very involved with the record-making practices in different cultures from different periods. However, written human skin cannot be easily collected and later consulted like the other kinds of archival artefacts. Even though letters have often been collected together by individuals or institutions and frequently constituted a large part of archives in different cultures, the practice of collecting human skin as an assemblage of records has never been attested. Thus, human skin is properly considered an important material for written records, not as a kind of archival artefact.

³ Yeo 2022, 18.

⁴ Charpin 2010, 75. Correspondingly, in the Nazi concentration camps during World War II, prisoners’ registration numbers were tattooed on their arms (Mrázek 2020, 286–287; Sofsky 1997, 82).

⁵ Wales 1965, 95

⁶ Rawlinson 1859, 242–244.

2 Oral and written archives

Even though the term archives is often associated with written records, the evidence on the so-called ‘oral archives’,⁷ in which certain information has been stored and transmitted through memory among a group of specific people, is, nevertheless, attested from many cases. A group of communal remembrancers in ancient Greece, for example, called ‘memory men’ (*mnemones*) functioned as an exclusively mental recorder of business affairs transacted in the remembrancer’s presence,⁸ before such information was written down in the later period. Communal historians and genealogists in sub-Saharan Africa known as griots were responsible for safeguarding and transmitting local history, myths, legal proverbs and legal precedents through their memory.⁹ The particulars memorised by the *mnemon* and griot can be perceived as an assemblage of oral documents or pieces of information considered necessary to be preserved for further use, thus, labelled by scholars with a paradoxical term such as oral archives. These cases have proved that archival practices can exist without any writing, physical artefact or materiality, but oral archives have not left much direct evidence, unlike the written ones.

Oral archives such as *mnemon* and griot belong to oral tradition, of which many cases demonstrate that the collective memory in a community can preserve astonishingly long texts and bodies of sophisticated knowledge despite the absence of writing. Monks in the Theravada Buddhist tradition, for example, had memorised the texts of *Tipiṭaka* (the Buddhist Canon) by heart¹⁰ for several hundred years after the death of Buddha in the sixth century BCE, before the texts were written down in Pali around the first century BCE. In addition, Polynesian peoples also transmitted their advanced knowledge of navigation and became the master voyagers of the vast Pacific Ocean without any use of writing at all. They transferred their famous ‘wayfinding’ techniques from generation to generation with collective memorisations, songs and other mnemonic devices, mastering how to observe the stars, read the winds, waves and clouds, and even estimate their distance to their destination from fish and birds,¹¹ in order to survive on the ocean.

⁷ Delsalle 2018, 44.

⁸ Posner 1972, 94; Sickinger 1999, 37.

⁹ Delsalle 2018, 45.

¹⁰ See more in Bhikkhu Anālayo 2022.

¹¹ Crowe 2018, 80–93.

The oral transmission of the early Buddhist Canon and the Polynesians' navigation techniques might not directly concern archival practices in the sense of record-keeping, but these examples showcase the efficiency of orality in transmitting knowledge in specific communities. Nevertheless, oral transmission can become fragile if the remembrancers of that particular information die out. The condition is believed to be the main reason underlying the writing down of the Buddhist Canon in the first century BCE.¹² By contrast, without eventual transformation into writing, a lot of the original wayfinding knowledge of Polynesians has been lost to us.¹³ Information can be preserved in a form that lasts a long time throughout history with the help of writing and writing supports and can be accumulated together, forming an archive proper. The archival artefacts discussed here in this chapter are based mainly on the written archival evidence in order to highlight the material dimensions of archiving.

3 Archival artefacts

Some traces of archiving can, perhaps, be found predating the invention of writing. The history of archival practice, according to some scholars, starts with cave or rock paintings all over the globe, as they pinpoint the earliest attempt of humans to transfer information with the help of durable material.¹⁴ A cave wall, thereby, might have been one of the earliest archival materials for 'recording' information. Writing, which allows information to be stored and transmitted on a certain material, had been developed in Mesopotamia circa 3400–3300 BCE,¹⁵ in Egypt around 3100–3000 BCE and in China in the second half of the second millennium BCE.¹⁶ The reasons for the emergence of these early writings were mainly political, economic and religious.¹⁷ Some cases of early writings were mainly used to keep records of information for administrations, as in the case of protocuneiform writings from Uruk (dated 3300–2900 BCE).¹⁸ A number of stone inscriptions also arguably perform archival functions. So, archiving in the pre-printing period does not necessarily cover the use of manuscripts alone. Material dimensions of

¹² Bechert 1992, 52.

¹³ Crowe 2018, 85.

¹⁴ Delsalle 2018, 1.

¹⁵ Michalowski 1996, 33; Michalowski 2021, 67–68; Michel 2021, 90.

¹⁶ Davies 1990, 82; Boltz 1996, 191.

¹⁷ Ong 2012, 85.

¹⁸ Charpin 2010, 19.

archiving in the Modern Period have become more diverse, ranging from photographs to cassettes. Despite its evanescent feature, sound became a recordable entity from the late nineteenth century, while motion pictures can be captured and recorded through film. These new media have continuously been selected to be stored in modern archival institutions. Now, in the twenty-first century, archival documents are made available and presented in an intangible form through digital platforms. Materials of archival writing supports have a long history spanning millennia, encompassing traditional media such as manuscripts and inscriptions along with modern digital media.

This chapter is oriented by the form and shape of archival writing supports (referred to here as archival artefacts, i.e. tablets, sheets and rolls) rather than the materials themselves (e.g. paper, leather, metal). Still, several forms suggest some certain material (e.g. bamboo or wooden slips), while many other forms can be produced from different materials. This chapter attempts to encompass as many different significant types of forms and materials as possible in order to appreciate the diversity of archival material dimensions around the globe. Thereby, in some aspects, the chapter might overlap with the history of writing supports and of communication, but only written artefacts in relation to archival practice will be included.

3.1 Walls

Paul Delsalle¹⁹ begins his history of archival practice by mentioning the examples of cave art dated back 40,000 years from around the world (i.e. Scandinavia, France, Spain, Sudan, China, Brazil, Australia). These cases of drawings and paintings might have been associated with magical acts, yet, some scholars interpret them as early humans' attempt to transmit information and, thus, have considered this early cave art as a milestone for the history of archives, though not without controversy.²⁰ Regardless of how we interpret this cave art, cave walls provide a large, free space for drawings, paintings and, later, writings, and might have been one of the most convenient materials available for early humans. Subsequently, writings from Antiquity have also been found on walls of different places, from caves and city walls to private buildings. Their surfaces were often prepared for being used as a writing support. Though often performing other functions (i.e. ritual) than record-keeping, some striking examples of the adminis-

¹⁹ Delsalle 2018, 1–2.

²⁰ Yeo 2022, 5–6.

trative records on the walls can be found. A short passage on the cave wall of the Sudama cave (in Bihar, India), for example, recording King Aśoka's dedication of the cave to the Ajīvakas, a sect of Indian philosophers, in the third century BCE,²¹ can be interpreted as a grant of authority over the cave given by the king. Furthermore, the Egyptian counterpart of the famous peace treaty between Hattusili III of Hittite and Ramses II of Egypt (dated 1259 BCE) was engraved in hieroglyphs on a wall of two temples of Ramses II in Thebes²² (Fig. 1).

Stone walls in the city of Gortyn (Crete) also preserved a collection of legal texts, commonly known as the Gortyn Code (Fig. 2), dated to around the middle of the fifth century BCE.²³ The Gortyn Code was discovered on a circular stone wall which supports the structure of a theatre built in the first century BCE. However, the wall must have formed a part of an earlier building, possibly a law court. The inscriptions cover twelve columns of legal texts. Each column is cut upon four layers of stone and about 1.5 m high. The length of the whole inscription is about 10 m.²⁴ The Gortyn Code provides an outstanding case for a collection of early legal texts inscribed on a wall. These written texts on the wall were supposedly originally accessible for a wider literate audience, even though they were publicly displayed as a monument of the ruler's authority²⁵ rather than an administrative document or an archive proper.

These records on the walls, however, can be considered a kind of archival artefact due to their administrative purpose and durability. Walls as parts of larger structures cannot be moved, giving the texts more permanence than any movable object. Even though a building wall could sometimes be 'reused' for a rebuild or renovation, the writing possibly remains inscribed on the same wall, despite its new surroundings and context, as in the case of the Gortyn Code, making an extensive legal text become a part of a theatre structure. Unmovable written supports, such as walls, were undoubtedly not the earliest artefact used to keep an administrative record, but walls count among the earliest surviving archival evidence that we have, while other movable artefacts contemporary to them have been lost.

²¹ Sircar 1957, 62.

²² Its Hittite counterpart of the treaty inscribed (in cuneiform) on a silver plate has been lost. Only its bronze tablet copy has survived to us (Charpin 2010, 168).

²³ Thomas 1992, 67.

²⁴ Willetts 1967, 3–4.

²⁵ Thomas 1992, 145.



Fig. 1: Egyptian version of the Hattusili–Ramses peace treaty in Thebes (dated 1259 BCE); photo: Olaf Tausch; CC BY 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Karnak_%C3%84gyptisch-Hethitischer_Friedensvertrag_06.jpg> (accessed on 13 June 2025).

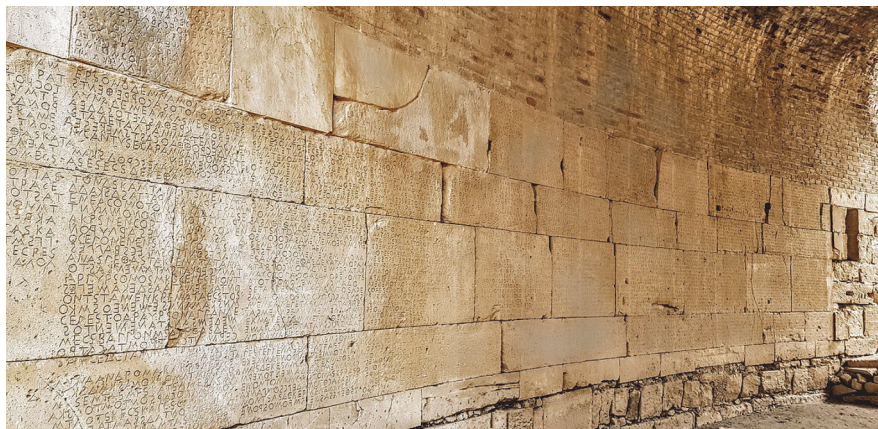


Fig. 2: The Gortyn Code, Crete; photo: Disdero; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Gortyn_Code.jpg> (accessed on 13 June 2025).

3.2 Slabs and pillars

Slabs and pillars in different cultures are, in many cases, considered a form of archiving technology,²⁶ serving as ‘a long-term archival storage medium’.²⁷ Legal texts, treaties and grants, for instance, have been engraved on stone slabs to be used as a reference for legal and administrative purposes in different cultures. The ancient Greeks, for example, inscribed many kinds of official records on marble slabs,²⁸ including treaties and legal documents. As mentioned by Thucydides, copies of certain treaties between city states in ancient Greece were carved into stones erected at Olympia, Delphi, Athens, the Isthmus and the sanctuary of Apollo at Amyklai, south of Sparta.²⁹ Furthermore, Athens in the fifth century BCE had the remarkable tradition of inscribing legal texts into the public sphere. Their usage as the ‘stone archives’ of the administration of Athens has long been debated.³⁰ The inscription texts existed along with their counterparts in other document forms (e.g. papyrus), which were stored in the city archives and more obviously employed in administration.³¹ Though often perceived by modern scholars as

²⁶ Ketelaar 2020, 254b.

²⁷ Delsalle 2018, 38.

²⁸ Posner 1972, 96.

²⁹ Thomas 1992, 136.

³⁰ Posner 1972, 97–99.

³¹ Thomas 1992, 135.

monuments of symbolic value, these legal inscriptions were used as a legal reference.³² The actual inscriptions were consulted, cited with frequency and constituted the chief administrative documents of Athens.³³

Furthermore, in the Hellenistic Period (the third century BCE), a group of inscriptions of Ephebate, the training school of Athenian elite youths, can be considered as a record of the school community. The so-called Ephebic inscriptions, apart from glorifying the institution and its students, contain, for instance, a list of the graduates as a record of the school year. Stone slabs, in this case, perform a record-keeping function among the Athenian community. The tradition continued to the Roman Period in the first centuries of the Common Era.³⁴

The use of stone slabs and freestanding pillars as legal and administrative documents can also be found in India and South East Asia. Some of King Áśoka's inscriptions on pillars from third-century BCE India record the legal edict prohibiting schisms promulgated by the king,³⁵ while others function as a grant over lands and objects (e.g. the Rummindei Pillar),³⁶ the same function found in King Áśoka's inscription from the Sudama cave mentioned above. Grant inscriptions bestowing authority over lands and objects are also found in the form of stone slabs throughout India in the later period. Stone slabs have been used for recording monastic endowments in Thailand and Laos, in mainland South East Asia, constituting an epigraphic genre known in Thai as *kanlapana*.³⁷ Placed in the territory belonging to a particular Buddhist monastery, the stone inscriptions of monastic endowments gave these monasteries full control over their properties and slaves, therefore, functioning as an administrative record and symbol of authority. Legal text on stone, in addition, is also found in Thailand, including a stone inscription recording laws on theft and robbery found from the upper part of central Thailand dated in the fifteenth century.³⁸

Furthermore, treaties between neighbouring kingdoms were also inscribed on stone slabs to be placed in public areas, such as Buddhist monasteries. In 1563 CE, for instance, a peace treaty was made between the Siamese king of Ayutthaya kingdom and the Lao king of Lan Xang kingdom with a stone inscription placed at Wat Phra That Si Sòng Rak monastery on the border between the two kingdoms,

³² Posner 1972, 93–94.

³³ Sickinger 1999, 65.

³⁴ De Lisle 2020.

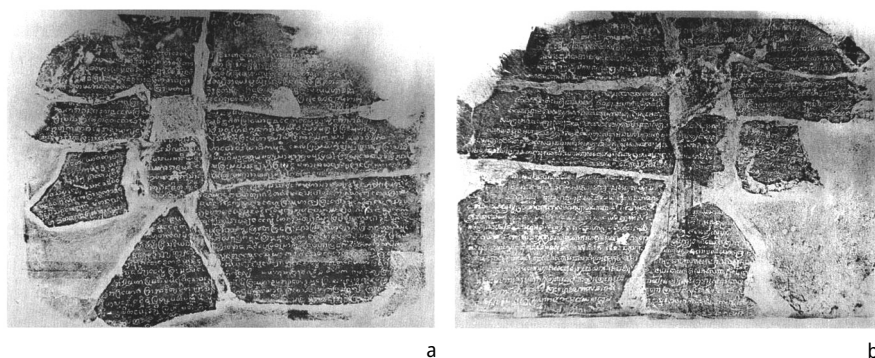
³⁵ Salomon 1998, 139.

³⁶ Sircar 1957, 66.

³⁷ See more in Raviwan Pharkphrot 1982.

³⁸ See Griswold and Na Nagara 1969.

the place where the peace agreement was made. This Siamese–Lao peace treaty on stone (Figs 3a–b) resembles the Hattusili–Ramses treaty two millennia earlier. But instead of having different artefacts for two copies of the treaty, the Siamese–Lao peace treaty was inscribed on two sides of one stone slab. One side bears the Siamese text in Khôm script, the other the Lao text in Dhamma script. Unfortunately, the original inscription was seriously damaged.



Figs 3a–b: Rubbings of the Siamese–Lao treaty inscription of Wat Phra That Si Sòng Rak monastery (Loei, Thailand) dated 1563, bearing Thai text (Khôm script) on one side (a) and its Lao counterpart (Dhamma script) on the other (b); © Inscriptions in Thailand Database, The Princess Maha Chakri Sirindhorn Anthropology Center <<https://db.sac.or.th/inscriptions/inscribe/detail/2433>> (accessed on 13 June 2025).

Writing on stone materials, whether on walls, pillars or slabs, is most often considered as inscriptions, a term with few intrinsic associations with archives. Stone inscriptions are not commonly accepted by modern archivists as archives proper as they were not to be accumulated and stored together in any archival building for any further consultation. However, some examples have shown that a number of stone inscriptions also perform record-keeping and administrative functions. Some of them were employed as a grant over the donated objects or lands, the same function performed by the official documents.

3.3 Tablets, boards and plates

The category of tablets, boards and plates provides one of the earliest clear and widely accepted forms for storing information on a larger scale in archival form. Clay tablets are often light in weights and can be held by hand, unlike stone slabs. Their portability allows tablets (and boards or plates) to be collected together,

more easily classified and even catalogued, forming a large domain of tablet archives, as in the case of cuneiform clay tablets from ancient Mesopotamia. All tablets, boards and plates seem to appear in a relatively rectangular shape, are three-dimensional objects and provide a hard writing surface, compared to what is called sheets and leaves discussed further below.

3.3.1 Clay tablets

Clay tablets constitute the greatest part of ancient Mesopotamian archival artefacts from the third to the first millennia BCE. Clay was an inexpensive material available in abundance throughout the region.³⁹ The key characteristic of the clay used to form tablets is plasticity with the help of water.⁴⁰ The shape of the tablets is formed when the clay is still damp. Writing cuneiform on its surface needs to be done when the clay is still damp as well. As the term cuneiform suggests, the writing consists of wedge shapes impressed into the clay surface by a triangular-shaped calamus made of reed or bone. As a result, cuneiform writing is a three dimensional script.⁴¹ Light and shadow, therefore, plays an important role in reading cuneiform tablets. Readers are expected to peruse a tablet with the light from their left-hand side.⁴² Corrections can also be made by filling in the writing errors with wet clay. A tablet can be reused, erased or reinscribed by either reshaping and merging the clay into new tablets or levigating into sediment.⁴³ If it is dried, a clay tablet becomes solid. But when it is baked, as is mainly the case with library tablets, it will be even more durable, but can easily crack if stored in an improper condition. In the latter condition, whenever an archive building was burnt, the building structure and all the furniture would be damaged by fire, but the clay tablets in the building would be baked and become even more durable.

Clay tablets in the early period were made in a square shape with rounded corners. They later become more rectangular. The obverse was generally almost flat and the reverse more curved. The thickness of a tablet ranged from 1 to 5 cm, depending on its width and length, which can vary greatly from about 2 × 2 to 30 × 40 cm, in order not to be fragile.⁴⁴ The writing most often runs parallel to the short side of

³⁹ Posner 1972, 50.

⁴⁰ Rice 1987 cited in Taylor 2020, 5.

⁴¹ Michel 2023, 11.

⁴² Charpin 2010, 7.

⁴³ Taylor 2020, 21.

⁴⁴ Posner 1972, 50.

the tablet. Hence, most clay tablets appear in portrait format, though the oblong or landscape format is also found, especially during the Neo-Babylonian Period (between the end of seventh and the early fifth century BCE). If the text is written on both sides of the tablet, the reader has to flip it bottom to top (not right to left).⁴⁵ It is noteworthy that the writing can also be placed on the edge of the tablet as well.

The archives of ancient Mesopotamia – whether palace, temple or family archives – housed a large number of clay tablets, including prominently correspondence, private letters between individuals, business and diplomatic letters. The size and format of a letter depended on the length of the text. The use of very small tablets around ‘two fingers long’ for an extremely short letter has been attested.⁴⁶ On the other hand, long letter tablets are also found. In the Assyrian archives of the nineteenth century BCE, when the text does not end on one tablet, an additional smaller tablet, often of oval shape, will be used. Both of them will be sent within the same envelope.⁴⁷ However, in the case that the additional tablet is misplaced from its original main tablet and envelope, it is difficult to identify its counterpart.⁴⁸ Marriage contracts are another group of documents stored in the clay archives. The contract was normally recorded on a clay tablet made by the bride and the groom, including the penalty for breaking the contract. The contract was usually sealed in an envelope and stored in an archive, until the marriage came to end and the married couple needed to consult the agreement they had made earlier. Among many marriage contracts found in city archives, a number of them are unbroken and well-protected by their sealed envelopes, suggesting long-lasting marriages, such as in the case of a marriage contract tablet found in Kanesh (Turkey) dated from the nineteenth century BCE (Fig. 4).⁴⁹

⁴⁵ Charpin 2010, 76.

⁴⁶ Michel 2018, 52–53.

⁴⁷ Charpin 2010, 122.

⁴⁸ Michel 2018, 53.

⁴⁹ Beyer 2016.



Fig. 4: Example of a marriage contract tablet from Kanesh (Anatolia, Turkey) dated from the nineteenth century BCE. Published in Beyer 2016; © Kültepe Archaeological Mission; photo: Cécile Michel.

In the cases of longer scholarly texts, a complete copy employs a series of tablets. A collection of astrological omens, for example, spans over seventy tablets, while the canonical form of the famous *Gilgamesh* epic consists of twelve.⁵⁰ These tablets are not physically bound, but connected with each other by numeration included in the colophon of each tablet. Along with tablet numeration, some colophons even capture the incipit or the beginning line of the following tablet to navigate readers.⁵¹ This technique has been known since the third millennium BCE, predating the earliest pagination found in Europe by several thousand years.

When multiple tablets with related content were collected together in a basket, a small tablet was used as a tag or docket, which appears with a double hole, supposedly for binding with string or thread, as in the case of a square tag for a basket of tablets with accounts dated to the twenty-first century BCE.⁵² The strings for these holed tablets have not survived. These tablets offer one of the earliest traces of binding clay tablets with thread or string in order to classify the records and help the readers when using them. This vestige of the ancient archival practices, therefore, can still be seen from the surviving, albeit partial, materials, such as these stringless holes.

Clay tablets were also used as archival materials elsewhere outside Mesopotamia. A group of clay tablets, for example, written in Linear B has been found in Knossos (Crete), dated between 1400 and 1200 BCE. Some of them are identified as administrative records and business documents.⁵³ Therefore, clay had its place in other archival cultures than that of Mesopotamia.

3.3.2 Wood and wax tablets

Even though clay tablets have constituted the predominant corpus of sources from ancient Mesopotamia, wooden and waxed wooden tablets were used along with clay. The administrative documents between the Middle Assyrian and the Neo-Babylonian Periods are believed to have been written on wood tablets.⁵⁴ However, their actual evidence does not survive, due to the perishability of wooden material. Some scholars argue that wood tablets were used among the Sumeri-

⁵⁰ Michel 2023, 19–20.

⁵¹ Michel 2023, 20.

⁵² Michel 2023, 13–14.

⁵³ Yeo 2022, 66–67.

⁵⁴ Charpin 2010, 75.

ans even before the advent of clay tablets.⁵⁵ Furthermore, sixteen ivory-wooden boards originally constituted a polyptych,⁵⁶ to which further leaves could be added, which was considered the ‘deluxe’ edition of the text presented to the king for very special purposes.⁵⁷ Waxed wooden tablets, on which writing can be easily erased, were also used in Mesopotamia, for example, for recording business transactions and administration.⁵⁸

Waxed wooden tablets continued to be in use in Greece and Rome. They are thin rectangular boards of wood, which are chiselled out and filled with wax. A raised frame is made around the wax surface so as to protect it from being rubbed when many tablets are stacked on top of one another.⁵⁹ The tablets are usually packed in sets of two or more. Holes are made on one of the long sides to fasten the boards together, forming what is called a twofold or multifold booklet. Writing on wax can be easily erased by smoothing the wax surface with the flattened back of the stylus. Therefore, wooden wax tablets are convenient for ephemeral uses. Apart from recording accounts and business transaction, evidence points out that Greek letters in a few cases appear in the form of waxed wooden tablets. However, it seems that waxed wooden tablets were not a common letter material in the Greek and Roman world, but seemed to be only a substitute when the more proper letter material (i.e. papyrus) was not available.⁶⁰ In addition, the use of waxed wooden tablets is still apparent in medieval Europe for taking notes and drafts, not for writing letters.⁶¹

Without being waxed, wooden tablets have been used as a material for writing letters, as in the case of the famous Vindolanda tablets, which represent the best-known Latin letters on wood dated between 90 and 120 CE from the northern frontier of Roman Britain. Among the group of more than one thousand Vindolanda tablets, the majority⁶² appear in the form of thin leaf-tablets (1–3 mm thick) in a size often described as a modern ‘postcard’⁶³ (16–20 cm × 6–9 cm), whose writing is marked on the wooden surface with black ink.⁶⁴ Despite being a thin sheet and even foldable, the Vindolanda letters are most often referred to by

⁵⁵ Posner 1972, 19–22.

⁵⁶ See more in Michel 2023, 16–19.

⁵⁷ Posner 1972, 19–20.

⁵⁸ Michalowski 2021, 79–80; Posner 1972, 20.

⁵⁹ Sarri 2018, 79–81.

⁶⁰ Sarri 2018, 79–81.

⁶¹ Clanchy 2013, 120–121.

⁶² The other group of the Vindolanda letters is on waxed wooden tablets.

⁶³ Delsalle 2018, 26.

⁶⁴ Sarri 2018, 83.

modern scholars as wooden tablets. The content of these tablets ranged from military documents to accounts and private letters.⁶⁵ Many of the letters have notches on the right and left sides to secure the string tied around the folded letters.⁶⁶ In this case, wooden tablets were made from alder or birch which grew locally, thus, becoming one of the most convenient and cheapest materials for writing letters.

3.3.3 Ostraca

Ostraca, or substantial pieces of broken pottery,⁶⁷ are found as one of the common writing media in the ancient world, though not always associated with archival practices. Taking a random shape of a broken piece, an ostrakon provides a hard writing surface and was easy to find around the Mediterranean and the Middle East. The same term also refers to flakes of stone.⁶⁸ Even though broken pottery cannot be recycled like glass or metal once it has been broken, it is easy to reuse,⁶⁹ thus, convenient for ephemeral writing, such as taking notes and drafts.⁷⁰ Toll receipts also appear in the form of ostraca. However, some of the letters in the Greco-Roman world appear in the form of ostraca, especially in the areas in which papyri were not available and ostraca were much easier to find. Yet, it was considered a bad substitute for papyrus. Ostraca were cheap and ready-to-use, but offer a limited space for writing, thus, were only fit for short texts. Furthermore, ostraca cannot be folded, but always remain open, unlike letters on papyrus. This condition made ostraca less suitable for letters or contracts which needed to be kept confidential.⁷¹ Ostraca were frequently found kept together by their owners, which were individuals, families and businesses, and offer modern scholars a source for reconstructing a number of archives in Antiquity.⁷² The cases of ostraca archives exemplify the adaptation of artefacts of everyday life, such as pottery, to serve the archiving purposes.

⁶⁵ See more in Bowman, Thomas and Tomlin 2010.

⁶⁶ Sarri 2018, 83.

⁶⁷ Delsalle 2018, 26.

⁶⁸ Sarri 2018, 77.

⁶⁹ Bülow-Jacobsen 2009, 14.

⁷⁰ Delsalle 2018, 8, 26.

⁷¹ Sarri 2018, 79.

⁷² Maltomini 2012–2013, 37.

3.3.4 Metal plates

Metal provides a durable hard-surfaced material for significant administrative documents. Often appearing in the shape of a thin rectangular sheet, metal plates, in many cases, resemble the shape of sheets and leaves. The value of the metals, including gold, silver or bronze, means a higher cost of production, but it signifies the authority and affluence of the creators and holders of the documents. Its durability also ensures that the artefacts will last for generations.⁷³ As its production was undeniably costly, metal has been used only for some significant documents, especially those produced by the courts. The Hittites, for example, engraved certain international documents on metal plates. A copy of the thirteenth-century BCE treaty between the Hittite King Tudhaliya IV and Kurunta of Tarhuntassa (a Hittite prince and the king's cousin) was inscribed on a bronze plate of a large dimension, weighting over 5 kg.⁷⁴

Gold has been employed in many different cultures to bear significant documents, such as royal orders.⁷⁵ Rectangular golden plates in an oblong format resembling palm leaves have been used as administrative records of the royal authority in mainland South East Asia. Golden plates were used in documents bestowing royal titles to senior noblemen and senior monks and form an epigraphic tradition of the Thai royal court called *suphannabat*,⁷⁶ which started in the fifteenth century and has continued to the present day. These golden plates record the newly bestowed titles by engraving with a stylus, but not filled with any ink, making the writing hardly legible without a proper reflection of light. The process of engraving had to be conducted in a certain consecrated ritual. The documents were then given to the people selected in a ceremony as a reference to the rite of passage. The size, weight and quality of gold vary, depending on the different ranks of the person bestowed.⁷⁷

Apart from the golden plates for the titles, a group of golden plates produced in the royal court of mainland South East Asia is used as symbolic diplomatic letters which the sovereigns there sent to foreign superpowers. The Thai kings of Bangkok, for example, sent a number of golden diplomatic letters to Chinese em-

⁷³ Salomon 1998, 115.

⁷⁴ Charpin 2010, 168. Its original Hittite treatise was believed to have been inscribed on a silver plate.

⁷⁵ For example, in ancient India (Sircar 1965, 77–78).

⁷⁶ Pali: *suvaṇṇa-paṭṭa*; Sanskrit: *suvarṇa-pattra*.

⁷⁷ Panarut and Grabowsky 2023

perors in Beijing.⁷⁸ Later, golden letters of this kind were sent from Bangkok to Queen Victoria of Great Britain and to the French Emperor Napoleon III in 1861 CE. Correspondingly, the Burmese king Alaungpaya also sent a long golden plate (55 × 12 cm) decorated with rubies to King George II of Britain in 1756 as a diplomatic letter (Figs 5a–c).⁷⁹ These golden diplomatic letters are engraved in vernacular Thai and Burmese languages and scripts, which were hardly intelligible for their recipients. But they were sent to the recipients as a symbolic gift, their golden material signifying the wealth and power of both the recipients and the senders. Due to the delivery process through the diplomatic mission, as well as their longer size, the diplomatic golden plates were often folded before being stored in decorated containers, for example, a hollowed-out and decorated tusk of a Myanmar elephant.⁸⁰

Silver plates might have been more frequent than golden plates in mainland South East Asia. In Thailand, for example, the silver plates (*hiranyabat*) have been used for appointing noblemen and senior monks to certain lesser titles. Titles granted with the silver plates were more often bestowed throughout the years, but fewer silver plates have been collected and published. Furthermore, silver plate has also been used for royal decrees, including one example granted by the queen of Chiang Mai in 1587 CE⁸¹ exempting the inhabitants of a cluster of five villages in a district south of Chiang Mai (northern Thailand) from their feudal labour in recognition of their taking care of a Buddhist monastery, even though the case is rather rare.



a

⁷⁸ For an example of a surviving golden diplomatic letter from the Siamese king to the Chinese emperor in the early nineteenth century, see Panarut 2022.

⁷⁹ This golden diplomatic letter is nowadays kept at the Gottfried Wilhelm Leibniz Bibliothek – Niedersächsische Landesbibliothek in Hanover, the former official seat of King George's House of Hanover before ascending to the throne of England (see more in Ruppelt and Leider 2014).

⁸⁰ Ruppelt and Leider 2014, 24.

⁸¹ Grabowsky 2004, 165–166.



b



c

Figs 5a–c: Diplomatic letter in form of golden plate from King Alaungpaya of Burma to King George II in 1756. The golden plate was originally rolled and stored in an ivory container; © Digital collection, Gottfried Wilhelm Leibniz Bibliothek – Niedersächsische Landesbibliothek in Hanover: <<https://digitale-sammlungen.gwlb.de/resolve?id=00056452>> (accessed on 16 May 2024).

Copper plates constitute a specific genre of written artefacts in India, commonly known as *tāmra-paṭṭa* (literally ‘copper plate’), with the earliest evidence dated from the mid fourteenth century CE.⁸² They are also known as copper-plate grants due to their function granting authority over lands and properties. Two main types of format⁸³ can be distinguished among the copper plates found from India. In South India, copper plates appear in an oblong format. The writing runs on several plates, which were joined by a ring passing through a hole of each plate and soldered with a seal. In North India, on the other hand, the copper-plate grant often consists only of one plate with a seal attached. In addition, the copper plates as royal grants and charters have also been found in the Persian culture since the twelfth century.⁸⁴

Early evidence from South India suggests that the format imitates the shape of palm leaves. Early writing on copper plates is believed to have been produced by cutting with a chisel, while in the later period, the writing was engraved on the plate in the molten condition.⁸⁵ The use of copper instead of perishable writing materials, which would have been less costly, reflects an attempt to establish the document as a permanent record.⁸⁶ The copper plates from earlier periods were usually produced by royal chanceries with the royal seals signifying the royal authority granted to the owners of the plates, as well as their descendants. In later times, copper-plate grants were also used for more private purposes to grant rights among individuals without any association to the royal authority. Even though the copper-plate grants from India functioned as legal documents, they were not meant, in the first place, to be read, except when received by their owners or in case of legal disputes.⁸⁷ Therefore, Emmanuel Francis (2018) points out that copper-plate grants are not archives proper, because they were not meant to be stored and consulted, but, instead, they constitute their own uniqueness with overlapping features between manuscripts, inscriptions and legal documents.

Yet another metal which concerns archival practices is lead, which is a by-product of the extraction of silver.⁸⁸ Lead is durable, soft and malleable, thus, providing a suitable writing surface. Most of the lead-plate inscriptions in the Greek and Roman world are curse texts or magic spells.⁸⁹ Though the association

⁸² Salomon 1998, 114.

⁸³ Francis 2018, 398.

⁸⁴ Sohoni 2016, 95.

⁸⁵ Natarajan and Kasinathan 1992, 70, cited in Francis 2018, 390.

⁸⁶ Salomon 1998, 115.

⁸⁷ Francis 2018, 392.

⁸⁸ Sarri 2018, 72.

⁸⁹ Turner 1968, 6.

between the curse texts and the lead is not clear, lead has been thought to be ‘appropriate for messages to the underworld’.⁹⁰ Various cases of Greek letters from archaic and classical periods appear in the form of lead plates. Some scholars claim that this specific material was used for letters which required urgency, though not all scholars agree. The cases of two archaeological finds excavated at Keramikos and Athens (Agora) dating to the second half of the fourth century BCE, consisting of hundreds of lead strips recording the name of the owner of a horse, its breed, colour and price, are considered by modern scholars to be ‘cavalry archives’,⁹¹ as these lead plates were presumably used for the record of ownership and evaluation of horses of the Athenian cavalrymen. After the classical Greek Period, lead is, nevertheless, scarcely found as a writing material.

3.3.5 Tortoiseshell

Inscriptions on tortoiseshell are among the earliest written records of the early Chinese language dated to the period around 1200 BCE (Shang dynasty).⁹² As the tortoiseshell inscriptions are closely associated with divination, they are widely known among modern scholars as oracle bone inscriptions. The pieces of tortoiseshell, which was used for divination and inscription, are taken from the plastrons or the lower scapular of the tortoise, not from carapaces or the upper part of the shells.⁹³ After the divination had been performed by making a crack on the shell surface, the results of the divination were inscribed on the shells. Thus, the writing was probably made after the divination had been finished.⁹⁴ The written texts on the shells are either the results of the divination or the narratives on the king and his divination rituals.⁹⁵ Though the tortoiseshell does not have a flat or rectangular shape, as it is the case for tablets, boards and plates, the tortoiseshell plates offer a hard writing surface. Their thickness also prevents them from being

⁹⁰ Sarri 2018, 72–73.

⁹¹ Sarri 2018, 73.

⁹² Even though there are vessel inscriptions dated earlier than the tortoiseshell inscriptions, the writing on the early ceramic inscriptions contain mostly a single character and more probably performs ritual and honorific functions rather than being a record proper. On the other hand, the tortoiseshell inscriptions contain proper Chinese sentences with a wide range of word choices, indicating their purpose as written records on divination and, at the same time, offering a source for studying the early phase of the Chinese written language (Gu 2009, 105–106).

⁹³ Shaughnessy 2023.

⁹⁴ Yeo 2022, 70.

⁹⁵ Gu 2009, 107.

folded. Therefore, tortoiseshell inscriptions from ancient China are categorised here along with clay tablets, wooden tablets and boards, as well as metal plates.

The tortoiseshell inscriptions were kept to be further consulted in the divination rituals,⁹⁶ therefore, modern scholars consider them as a part of archival practices and record-making. Furthermore, some archaeological excavations found significant numbers of these tortoiseshell together in a pit,⁹⁷ implying the practice of accumulating these shells in a specific space for further consultations. Therefore, the tortoiseshell inscriptions might have been collected together and constituted ‘divination archives’ in ancient China.⁹⁸

3.4 Slips

The other form of writing materials which represents the proper archives of ancient China were slips (sometimes also named ‘strips’) made from bamboo and wood, called in Chinese *jiance* or *jiandu*. The Chinese character for the word archive (*ce*) has also contained the pictograph of bamboo since the early period, implying its significance in the archival practices in ancient China. One slip, often around 22–23 cm long,⁹⁹ provides one vertical line. Writing was made by brush with indelible ink. If any characters were written incorrectly, they were scraped off with a knife.¹⁰⁰ A number of slips are bound together with a string, either at their top, middle or bottom, creating a wooden roll in order to provide enough writing space for longer texts. The binding strings were produced from either bast fibre plants or silk. The most common plants used for binding are hemp (*Cannabis sativa*) and ramie (*Boehmeria nivea*), while the production of silk is expected to involve higher costs.¹⁰¹ These bound slips are common from the period around 1000 BCE to the third or fourth century CE.¹⁰² Some scholars have considered these slips as ‘the earliest true book form’ in China before the advent of paper.¹⁰³ Texts found made from slips cover literary tales, administrative documents, chronicles

⁹⁶ Yeo 2022, 70.

⁹⁷ Shaughnessy 2023.

⁹⁸ Note that other perishable writing materials (e.g. bamboo and silk), which might have existed during the Shang dynasty have not survived to our time.

⁹⁹ Gu 2009, 124.

¹⁰⁰ Gu 2009, 125.

¹⁰¹ Staack 2023, 49–50.

¹⁰² Tsien 1962, 91; Gu 2009, 104.

¹⁰³ Edgren 2009, 97.

and legal texts. Bamboo slips are more common than wooden slips,¹⁰⁴ especially in places where bamboo grew in abundance.

One obvious shortcoming when using bamboo or wooden slips as writing materials is that the cords or strings which bound them can be lost, removed or broken, leading to the disarrangement of the slips. Modern scholars of Chinese philology have spent a lot of time rearranging the bamboo or wooden slips found in archaeological sites into their proper order,¹⁰⁵ as the binding strings had already decomposed.¹⁰⁶ Furthermore, a set of bound bamboo or wooden slips can be rather heavy and inconvenient to carry or even to flip through. The Chinese emperor of Qin had to read more than a hundred pounds of bound bamboo or wooden slips every day.¹⁰⁷ Thus, bamboo and wooden slips were surpassed by a lighter material, such as paper, in the following centuries.

3.5 Sheets

The category of sheets here refers to thin and rectangular materials which provide soft writing surfaces. It encompasses a variety of materials from papyrus, parchment, paper, textile and bark, becoming the largest group of archival materials found across the globe. These materials are light in weight and convenient for using and storing. However, they are also often more perishable than other writing supports, leading in modern times frequently to measures of restauration or the application of secondary supporting materials. A classic case would be little glass plates attached to fragile papyri on both sides – an effective form of protection that, nonetheless, becomes almost a part of the original archival artefact (see Case Study 1.1).

3.5.1 Papyrus

Papyrus was once a dominant writing material across the Mediterranean in the ancient and medieval periods. The papyrus plant (*Cyperus papyrus*) grew only in the marshes along the Nile River in Egypt in Antiquity.¹⁰⁸ The plant, therefore,

¹⁰⁴ Yet the use of wooden slips was also attested in the archives of ancient China (for example, see Fölster 2018, 218).

¹⁰⁵ For example, see Staack 2016.

¹⁰⁶ Gu 2009, 125.

¹⁰⁷ Gu 2009, 126.

¹⁰⁸ Sarri 2018, 74.

became a symbol of Lower Egypt itself.¹⁰⁹ Apart from being a writing material, papyrus was utilised by the Egyptians as fuel, food, medicine, clothes, rugs, sails and ropes. Manufacturing a writing support from papyrus plants was a complicated process.¹¹⁰ After being properly prepared, the resulting sheet of papyrus is light in colour, strong and flexible. One side of a papyrus sheet, in which the fibres run horizontally, provides a smoother surface than the other rougher side, whose fibres run vertically. As the smoother side was often the one written on first, it is called *recto*. The other rougher side, *verso*, was less used for writing and more often left blank. The width of a sheet usually ranged around 25 cm, which corresponds to the length of the individual strips of papyrus used.¹¹¹

The earliest surviving Egyptian papyri dated to the mid third millennium BCE (the fourth and fifth dynasties of the Old Kingdom), but hieroglyphic representation of the papyrus roll suggests its use for writing since 3100 BCE. Archives in ancient Egypt constitute a huge corpus of papyri.¹¹² The traditional Egyptian way of writing on papyri is to use a reed brush.¹¹³ The oldest preserved papyrus outside Egypt is a Hebrew scroll from the period around 750 BCE.¹¹⁴ Papyrus rolls found in Greece were presumably imported from the Phoenician port city of Byblos. Writing on papyrus was intended to be permanent,¹¹⁵ unlike waxed wooden tablets which can be reused. The practice of erasing and rewriting, though documented in several cases, does not seem to have been common. Papyri were an important archival material in the Greco-Roman world, covering legal documents, administrative records and letters. Papyrus was also used for administrative records in the caliphal offices in Cairo, after the Arab conquest of the city in 641 CE.¹¹⁶ In addition, multiple sheets of papyrus can form a larger unit, such as rolls and codices, the forms which will be further discussed below.

Papyrus remained one of the most common writing and archival materials before the decline of its use when parchment, the other archival material, started to play an important role in the archival cultures of Antiquity since the first century CE.¹¹⁷ However, papyrus was still in use in some specific contexts in medieval

¹⁰⁹ Turner 1968, 3.

¹¹⁰ See more in Bülow-Jacobsen 2009, 5–8.

¹¹¹ Sarri 2018, 75.

¹¹² See more in Hagen and Soliman 2018.

¹¹³ Sarri 2018, 76.

¹¹⁴ Bloom 2001, 21.

¹¹⁵ Roemer 2009, 85.

¹¹⁶ Bloom 2001, 48.

¹¹⁷ Reynolds and Wilson 2013, 3.

Europe, including the papal chancery, where it was still present until the eleventh century.¹¹⁸

3.5.2 Parchment and leather

Parchment is a writing support produced from animal skins, such as those from goat, sheep or calf, as well as other animals, including rabbits and squirrels,¹¹⁹ through a special preparation process.¹²⁰ The best quality parchment is made of calfskin, called vellum, which offers both strength and thinness.¹²¹ The term parchment is often interchanged with the term leather. However, according to Ronald Reed,¹²² the main difference between parchment and leather is that the former is prepared from the pelt (wet, unhaired and limed skin) by drying under tension on a wooden frame (known as a stretching frame), while with leather, the wet pelt was not dried under tension, resulting in different fibre bundles.¹²³ In addition, leather was tanned and, thus, became more resistant to water. Both terms, parchment and leather, are often used imprecisely in many scholarly works. Some modern scholars use both terms generically to describe strips of leather prepared to receive writing, without any precision about the process of preparation. This generic use of both terms is also applied here in this chapter.

The use of animal skins as a writing material is attested in Mesopotamia, but the use of parchment and leather in the early Near East was probably not very widespread. The best quality parchment in the Greco-Roman world came from Pergamon, a city on the western coast of Asia Minor. The term parchment itself derives from the name of this city.¹²⁴ Unlike papyrus, which was native only to Egypt, parchment can be produced from livestock, becoming a common writing material across the Mediterranean since the first century CE. Parchment became one of the most important archival materials in medieval Europe. It was used for administrative records, charters and letters. Corresponding to papyrus in the earlier periods, it was common for medieval monastic authors to write on waxed tablets and then have a fair copy made on parchment.¹²⁵ Parchment was also used

¹¹⁸ Turner 1968, 16.

¹¹⁹ Clanchy 2013, 122.

¹²⁰ See more in Reed 1975, 25–40.

¹²¹ Sarri 2018, 84.

¹²² Reed 1972.

¹²³ Reed 1972, 119–121; Reed 1975, 46.

¹²⁴ Reynolds and Wilson 2013, 3.

¹²⁵ Clanchy 2013, 121.

in medieval Russia for political treaties, business contracts, depositions and grants.¹²⁶ It provides a large and smooth area, which is more suitable for drawing and painting than papyrus. As a result, a number of medieval and early modern European maps appear on parchment.¹²⁷

The cost of parchment depended a lot on the availability of the livestock from which it was produced.¹²⁸ After paper, a much cheaper material, had been introduced into Europe between the twelfth and thirteenth centuries, the dominant role of parchment in European archival practice started to decline. After printing technology employed paper as its main material and resulted in the widespread use of paper, parchment continued to be used mainly for legal purposes. The sheer quantity of animals required for parchment production has been considered one of the reasons for the decline in its use for printed material.¹²⁹ However, parchment still served as a material for the refined and official document copy in the late eighteenth century, for example, the original and official copies of the Declaration of Independence and the United States Constitution,¹³⁰ and even in the twentieth century, for instance, the abdication documents of the queens of the Netherlands in 1948 and 1980.¹³¹

3.5.3 Paper

Paper is undeniably the main and possibly the most important writing support worldwide during the past centuries. Its dominance was challenged only by the dawn of digital technology in the late twentieth century. With its long history over two thousand years, paper appears in various types in different regions and periods, as a result of different production techniques.¹³² Despite its diversity, sheets of paper offer an appropriate writing space at much cheaper costs compared to papyrus and parchment. Paper is also the only material among the archival artefacts in the category of sheets (i.e. papyrus, parchment, paper) which has been appropriated for printing, presumably due to its cheaper cost.¹³³ The industrialisation of paper production, which included the technology to produce paper from

¹²⁶ Dekker 2018, 12.

¹²⁷ See Holsinger 2022, 83–88.

¹²⁸ Clanchy 2013, 124.

¹²⁹ Forde and Rhys-Lewis 2013, 11–12.

¹³⁰ Bloom 2001, 27.

¹³¹ Ketelaar 2020, 265b–266a.

¹³² See more in Hunter 1947.

¹³³ Bloom 2001, 11.

the cheaper trees and wood available, reduced its cost even more,¹³⁴ and, at the same time, enhanced paper's potential to be used to print texts as well as colourful images and graphics.¹³⁵ Photographs appear in the form of a small glossy paper sheet, while certificates of modern universities are usually printed on decorative quality paper before being signed by the university's authorities. Both kinds of records made of paper often found their way into modern archival institutions. Archives of paper, especially in the Modern Period, are, therefore, often not restricted to archives of writing alone. Nevertheless, cheaper industrial paper is often fragile, due to its acid-based condition, a result of a modern technique that shortened the manufacturing process. Modern paper, thereby, is subject to quick self-destruction, one of the main preservation problems for modern archival institutions.¹³⁶

The invention of paper in Chinese tradition was attributed to Cai Lun, an eunuch in the period of the Han dynasty, in 105 CE.¹³⁷ However, archaeologists found a specimen of hemp paper from the desert in the western part of modern China dated to the second century BCE, several centuries prior to the time of Cai Lun.¹³⁸ Modern scholars conclude that paper must have been used for writing for some time already before Cai Lun, who may have perfected it for the use of writing.¹³⁹ Paper has been considered a common writing support in China at least from the second and third centuries CE. It is noteworthy that, apart from being a writing support, paper also served other daily purposes, being used for ropes, cups, kites, wrapping sheets and banknotes, *inter alia*.¹⁴⁰ Chinese paper was introduced to the Arabs during the eighth century CE. It is believed that the Arabs learnt the methods of paper production from Chinese war captives in 751 CE, who happened to be paper makers. A papermill was later established in Baghdad in 794–795 CE.¹⁴¹ Paper then became the most influential writing support for the Arabs. With paper abundantly available, different branches of knowledge and various administrative records were written down and circulated in the Arabic world in the form of paper.¹⁴² Paper must have been known in Europe through contacts with the Arabs

134 Hunter 1947, 376–378.

135 Banham 2009, 274.

136 Forde and Rhys-Lewis 2013, 9.

137 Gu 2009, 124.

138 Bloom 2001, 32–33.

139 Kurlansky 2016, 30–31.

140 Kurlansky 2016, 34–35.

141 Bloom 2001, 42, 48.

142 Kurlansky 2016, 59–62.

sometime before the twelfth century.¹⁴³ The first record on papermaking in Europe dates from 1264 CE.¹⁴⁴ Then the demands for paper called for more papermills in different areas of Europe. Therefore, paper was a part of archival practices in western Europe only after the thirteenth century. Paper was scarcely known in England before 1307 CE.¹⁴⁵ However, in early modern Europe, paper was the main material for writing records and letters, both the administrative and private ones, in the sixteenth and seventeenth centuries. Watermarks, which signify the paper maker, were commonly found on paper made in Europe, helping modern scholars identify the provenance of the paper.¹⁴⁶

Probably influenced by the Arabs, paper was introduced into the northern part of India in the tenth century CE.¹⁴⁷ But paper from northern India did not seem to influence its use in South East Asia. In the latter, paper is made from the bark of either the *sa* tree (*Broussonetia papyrifera*), which is more common in northern and north-eastern Thailand, Laos, and some parts of Burma, or the *khòì* tree (*Streblus asper*) from central and southern Thailand, and Cambodia.¹⁴⁸ The quality of these two types of paper is relatively similar, but the *sa* paper provides a softer and more flexible surface for writing.¹⁴⁹ Though the origins of the production of *khòì* and *sa* paper are unclear, they appear at least as early as the beginning of the seventeenth century and continued to be produced in Thailand and Laos until the twentieth century. A thicker, longer sheet of *khòì* paper can be folded to form a leporello or accordion book, while a thinner, shorter sheet of the same paper (specifically called *phlao* paper) is used for administrative letters and records (e.g. treaties) in Thai and Lao royal courts and administrative systems. If the text is longer than what one piece of paper can bear, two pieces (or more) of paper can be glued together to provide a larger writing space. In this case, the authorising stamp will be impressed on the verso side, exactly over the seam between two pieces, to verify that the two pieces of paper originally belonged together. One example of the stamp over the paper seam can be seen on a Siamese–Dutch trade treaty dated 1792 CE (Figs 6a–b). These official letters and records on *phlao* paper were often folded into smaller rectangular pieces for storage and delivery. The tradition is also found in the royal

¹⁴³ Bland 2013, 24.

¹⁴⁴ Kurlansky 2016, 78–79.

¹⁴⁵ Clanchy 2013, 122.

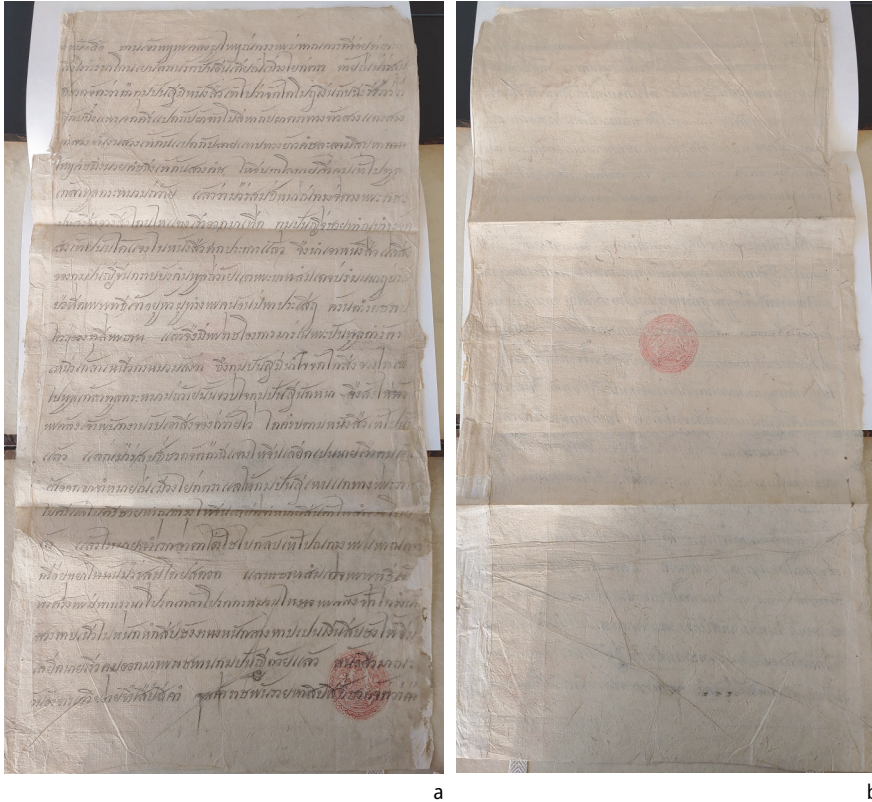
¹⁴⁶ Daybell 2012, 32–33.

¹⁴⁷ Premchand 1995, 78.

¹⁴⁸ Helman-Ważny et al. 2020, 137.

¹⁴⁹ Helman-Ważny et al. 2020, 137.

letters from Laos in the eighteenth and nineteenth centuries.¹⁵⁰ *Khòi* paper is very sensitive to water, as it can diffuse the coating substance and the writing. A colophon of a Thai manuscript from the early eighteenth century notes that this *khòi*-paper manuscript was coated with a waterproof substance to prevent the writing from being damaged.¹⁵¹



Figs 6a–b: A Siamese–Dutch treaty dated 1792 CE on which an authorising stamp can be found over the paper seam of the verso side (b). The pigment of the stamp can also be seen from the recto side on the middle of the page (a). Dimensions: 66.7 × 34.0 cm. Leiden, Universiteit Leiden, Universiteitsbibliotheek, Special Collections, Or. 2236b.

¹⁵⁰ See Phimphan Phaibunwangcharoen 2013.

¹⁵¹ Panarut 2019, 141. A scientific investigation has never been done to prove the case.

Sheets of paper accumulated together form a pile, which can be sorted following the category of the content and function. Bundling sheets of paper into categories was a common archival practice in early modern Europe, along with the technique of binding them as a file or a codex (discussed below). Sorting sheets of paper into bundles was evidently a common practice in sixteenth-century England¹⁵² for servants of a principle secretary and was often applied for the paper without any holes, which was common for private archives. To form a tied bundle, loose sheets of paper are sometimes folded in the same formats and then bound with a string or thread. The same folding patterns and formats would make sure that the sheets are tightly tied and will not easily fall out of the bundle. In some cases in sixteenth-century England, letters, which had been folded to suit their original envelopes, were unfolded and then refolded in the other format, in order to be collected in a bundle, which could then be tied together with string, laces with points, linen tape, parchment strips or leather cords.

Furthermore, sheets of paper in many cultures can be collected and preserved together without being tied, sewn or stitched, but kept within a protective cover, a wrapper or an envelope. ‘Loose-leaf manuscripts’, for example, have survived from the period before the middle of the twentieth century in West Africa.¹⁵³ Sheets of paper from these loose-leaf manuscripts are organised by catchwords written in the left corner of the lower margin of the verso of each folio, informing readers of the beginning of the following sheets. These catchwords keep the sheets in a correct order, thus, perceived by modern scholars as a kind of ‘virtual binding without stitching’.¹⁵⁴

Paper was the main support for the wood-block prints introduced into China in the ninth century CE (Tang dynasty),¹⁵⁵ but its use in archival practice was not apparent. Paper in Europe has been transformed from being a support for handwriting to a common support for printing since the time of Johannes Gutenberg. Gutenberg’s moveable types are convenient for printing longer texts, becoming influential throughout Europe. Some archival records of Europe from the sixteenth century onwards combine print and handwriting. Different types of paper were designed to suit the reproduction of photographs, the technology which became known in the early nineteenth century. Some types of paper, in addition, are specifically designed to serve the archiving purpose. Carbon copy paper, for

¹⁵² Wolfe and Stallybrass 2018, 192–195.

¹⁵³ Bondarev 2023, 285–292.

¹⁵⁴ Bondarev 2023, 285.

¹⁵⁵ Gu 2009, 151.

example, which reproduces a copy after being written on, has been in use since 1806 CE.¹⁵⁶ The use of carbon copy paper for receipts or bills is still common today.

3.5.4 Bark

The inner bark of a tree can be processed to become a writing support in the form of a thin sheet. Two types of plants are used in India: the Himalayan birch tree (*Betula utilis*) in the north-west and the aloe (*Aquilaria agallocha*) in the north-east.¹⁵⁷ Long sheets of birch bark can be folded, such as the fragments of Buddhist texts, which stand among the earliest birchbark manuscripts, dating from the first century BCE to the third century CE. However, it is believed that sheets of birch bark were used in northern India for some time before the invasion of Alexander the Great in 326 CE. The use of birch bark in Kashmir continued into the seventeenth century and into the twelfth century in Nepal.¹⁵⁸ Birch bark manuscripts have also been found in the Assamese manuscript culture in north-eastern India,¹⁵⁹ as well as in the Batak manuscript culture of Sumatra island.¹⁶⁰ Furthermore, excavations in Novgorod (Russia) have uncovered a group of birch bark documents dated between the early eleventh and fifteenth centuries. These birch bark writings bear written records which ‘were not worth the expense of parchment’, for example, matters of everyday life, topics connected to the family or household affairs and estate management.¹⁶¹ These birch bark documents from Novgorod are often labelled as ‘birch bark letters’, but only a few of them can be proved to be actual correspondence letters.

3.6 Rolls

The terms roll or scroll refer to a longer sheet of soft and flexible writing material which is stored by being rolled into a cylindrical shape. Rolls were a standard form of archival records back in Antiquity. Keeping the written records in the form of rolls and scrolls might be helpful to keep the content of the records confidential, to store and transport, as well as to protect the writing from any scratch

¹⁵⁶ Ketelaar 2020, 269b.

¹⁵⁷ Gaur 1979, 15.

¹⁵⁸ Shaw 2009, 128.

¹⁵⁹ Gaur 1979, 16.

¹⁶⁰ For examples of Batak birch bark manuscripts, see Zollo 2020.

¹⁶¹ Dekker 2018, 5–6.

or possible damage.¹⁶² The use of papyrus rolls is very well attested in ancient Egypt.¹⁶³ Sheets of papyrus were glued together on the long side to form a roll or scroll in the Greco-Roman world. Each papyrus sheet (called *kollema* in Greek) was attached with an overlap of 1 or 2 cm.¹⁶⁴ Each attached sheet forms one column. Archival records in ancient Greece have been attested to be in this form of papyrus rolls.¹⁶⁵

A special type of papyrus roll called *tomoi sunkollēsimoī* was employed in Greco-Roman Egypt for archiving purposes, as it contains multiple originally independent papyrus sheets which have been pasted together from left to right to form a roll.¹⁶⁶ In a *tomos sunkollēsimos*, the pasted documents were aligned at the bottom, and the upper, uneven margin was usually left uneven, depending the height of each original documents. This type of roll, found from the Ptolemaic era to the middle of the fourth century CE, was convenient to preserve documents in a permanent and secure order,¹⁶⁷ reflecting the adaptation of materials to serve archiving purposes.

Later rolls or scrolls were also made of parchment and paper. Parchment sheets were sewn to form a Torah scroll in the Hebraic culture.¹⁶⁸ In order to read these papyrus and parchment rolls, one has to move the roll to turn to the following column until the end. Furthermore, one has to ‘rewind’ or ‘unroll’ the roll to its beginning, so that the other readers can start reading texts properly from its beginning.¹⁶⁹ As the directions of reading between Greek and Hebrew scripts are different, the direction of unrolling the rolls or scrolls is also different between the two cultures. For the Greek, one reads from left to right. So, the rolls are unfolded horizontally to the right, where the writing of each line begins. For the Hebrew scrolls, the direction is opposite.¹⁷⁰ One of the disadvantages of this form is that it is difficult to identify the location of texts in a roll.

Rolls then became a common form of records in European archives, especially those made of parchment.¹⁷¹ A number of them are to be unrolled vertically. However, after the codex had become the dominant book form in European writ-

¹⁶² Sarri 2018, 79.

¹⁶³ See more in Hagen and Soliman 2018.

¹⁶⁴ Turner 1968, 5.

¹⁶⁵ Posner 1972, 97–99.

¹⁶⁶ Maltomini 2023, 233–235.

¹⁶⁷ Maltomini 2023, 234.

¹⁶⁸ Bloom 2001, 24.

¹⁶⁹ Reynolds and Wilson 2013, 2–3.

¹⁷⁰ Turner 1968, 8.

¹⁷¹ Clanchy 2013, 140.

ing cultures from the fourth century CE,¹⁷² rolls no longer served as a material for lengthy texts, as was the case in Antiquity. Administrative scrolls (e.g. edicts, royal decrees) of medieval Europe appear in a much shorter length. Seals were often attached to the rolls to authenticate the documents, being hung with threads or strings. Rolls in China, the form specifically known as *juanzhouzhuang*,¹⁷³ have long been a common form of administrative record before being spread to Korea, Japan and Vietnam. A roll or scroll can be made of paper or cloth. Writing was sometimes made on a sheet of paper before being attached to a roll of silk, as is the case for the Chinese royal decrees.

3.7 Files

A number of individual records (e.g. sheets) can constitute a larger codicological unit by being placed loosely together as a pile or tied as a bundle (discussed above), by being placed together in a container-like folder, or by binding with threads or strings as a file. The term ‘file’, derived from *filum* (‘a thread or piece of string’ in Latin), refers to multiple sheets of documents attached, bound or sewn together with a string or thread. As loose sheets of paper are often vulnerable, and liable to become ‘waste paper’, filing was widely practiced in early modern Europe and is even considered ‘the first stage of records management’.¹⁷⁴ Yeo points out that ‘a file, in recent Western societies, connoted a physical mechanism – such as folder or jacket – for holding together records that would otherwise be discrete’,¹⁷⁵ but a limited number of equivalent mechanisms from the ancient world have survived to our time. The modern concept of files in assembling and arranging written records in Europe can be traced back to the thirteenth century.¹⁷⁶ Nevertheless, the practice of putting two related letters of clay tablets together in a clay envelope is arguably an early practice of filing,¹⁷⁷ while the strings that bind two tablets together can be considered an early filing mechanism.¹⁷⁸

Binding multiple sheets together with a string appears to be a practice widely found in various cultures. Filing was commonplace at the institutions, such as the exchequer and chancery, in early modern Europe. Evidence from late-seventeenth-

¹⁷² Brown 2009, 179.

¹⁷³ Edgren 2009, 99.

¹⁷⁴ Wolfe and Stallybrass 2018, 180.

¹⁷⁵ Yeo 2022, 178.

¹⁷⁶ Hochedlinger 2009, 23

¹⁷⁷ Yeo 2022, 178.

¹⁷⁸ See more in Michel 2023.

century England points out that filing is the preferred method to store letters rather than folding, because filed letters can be easily consulted without having to unfold or refold, and can be conveniently portable when the file is backed with a protective wrapper.¹⁷⁹ In the archival system of early modern Germany, an official called a *Registrator* was responsible for keeping files in which all the documents were sorted in chronological order and sewn or fasten together to form a booklet within a strong cover made of parchment or cardboard.¹⁸⁰ When intended to be used for further storage in files, paper was sometimes prepared by piercing or punching holes before being used for writing. However, filing was not only limited to handwritten records, but also applied to printed materials as well. An English exchequer receipt, for example, printed in 1620 CE has one spindle hole originally punched, which was intended for filing purpose.¹⁸¹ Undeniably, ephemeral printed materials, such as receipts or tax forms, can hardly have survived to the present day without being stored properly in a file.

In addition, filing was also practiced in the Middle East. A careful consideration of holes made for stringing often allows scholars today to connect individual documents to larger files, as is frequently necessary in the medieval Arabic Middle East (see Case Study 1.2). Modern inventions, such as paper clips and staples since the late nineteenth century,¹⁸² offering the more secured fastening of archival documents, are still common in the modern practices of filing paper archives nowadays.

3.8 Codices

Around the first and the second centuries CE, the new form of ‘books’, later known as codices (singular: codex), was introduced to Antiquity. This has become the conventional form of books we know today. A codex is made of multiple sheets of papyrus, parchment or paper, bound by stacking the pages and securing one set of edges. Pairs of sheets or leaves are folded into gatherings or quires before being bound to form a codex.¹⁸³ Covers, back and front, also protect the content from any damages from outside. This new format, the codex, has benefits over rolls or scrolls, which had been widespread in Antiquity for many centuries, in many

¹⁷⁹ Wolfe and Stallybrass 2018, 187–188.

¹⁸⁰ Delsalle 2018, 154.

¹⁸¹ Wolfe and Stallybrass 2018, 191.

¹⁸² Ward 2014, 1–6, 242.

¹⁸³ Sawyer 2019, 139.

aspects. It is more durable due to its binding, handier, more capacious and easier to consult. In addition, one codex, providing more writing space in one codicological unit, can hold the contents of several rolls.¹⁸⁴ The codex was common in various cultures, and evolved into different binding techniques and decorations.¹⁸⁵ In the Islamic world, for instance, the codex was introduced soon after the Prophet's death in the seventh century.¹⁸⁶

The codex form was first used in medieval Europe in administration for cartularies, before being employed for other administrative and legal records.¹⁸⁷ Codices, functioning as 'notebooks', offered a convenient writing space for archiving documents. Letters in early modern England, for example, were copied into codices called 'letter-books' for both private and administrative purposes.¹⁸⁸ Some letter-books were even written on pre-prepared books; codex notebooks prepared with ruling lines were rather easy to acquire from the stationary market in the early seventeenth century.

Page numbers, though having their root in the Mesopotamian cuneiform tablets, have been developed as a widespread navigating tool for codices. As each sheet bound in a codex can be flipped, reference was made easier by numbering the pages on their margin. Different techniques of page numbers have been employed and evolved since Late Antiquity.¹⁸⁹ signature (the signs indicating the leaves' place within gatherings, or gatherings' place within a codex), catchwords (the words matching with those from the following page assigned to the margin of the gathering's final leaf or each page), foliation (numeration of leaves or pairs of pages) and paginations (numeration of pages). These complicated techniques have been applied in order to secure the continuation of texts and help identify the text's location within a codex systematically. Parallel to the page numbering of codices, pagination has also been applied to the process of archiving letters in early modern England, as the original pagination of the letters were sometimes carefully noted when copying the letter texts into a codex ('letter-books').¹⁹⁰ Printing technology standardised both foliation and pagination for printed codices,

184 Reynolds and Wilson 2013, 35.

185 Kwakkel 2018, 75–79; see Scheper 2023 for the bookbinding techniques of codices in the Islamic culture; Dal Sasso 2023 for those in the Ethiopic culture; Boudalis 2023 for the Byzantine culture of Eastern Mediterranean; for the case of the Chinese codex, see Edgren 2009.

186 Albin 2009, 166.

187 Ketelaar 2020, 259a.

188 Daybell 2012, 177–182.

189 Sawyer 2019, 140–148.

190 Daybell 2012, 183.

before the latter became the most common system of page numbering after the late sixteenth century.

The codex subsequently became the most common format for printed books and notebooks, due to its advantages over other forms, ever since the dawn of printing. The dominant role of the codex form from Antiquity has been labelled by modern scholars as ‘the triumph of the codex’.¹⁹¹

3.9 Leporello

The other form of book which is common in Europe and Asia is referred to here as *lepirello*¹⁹² or books folded in the accordion or concertina fashion. A *lepirello* is made of a long sheet of paper, which is sometimes made of multiple sheets pasted together, folded in an accordion or concertina fashion. This form of folded book or document is called *jingzhezhuang* in Chinese, and is believed to have been used since the period of the Tang dynasty (618–907 CE), inspired by the oblong format of the Buddhist manuscripts from India.¹⁹³ When turning the pages of a *lepirello* manuscript, one has to begin from the first recto folded page and continue to the end of the recto side, before turning the manuscript to flip to the verso. When unfolded, a *lepirello* provides a large surface for writing, drawing and painting. But when folded, it can be convenient to transport. In China, this form of book served as material for note-taking, philosophical texts, registers and other administrative records. This form of Chinese folded books is also known in East and South East Asia.¹⁹⁴

Khòì and *sa* paper from mainland South East Asia was commonly used to form *lepirello* manuscripts, the main writing support for longer secular texts and administrative purposes. As the manuscript is made of a long piece of folded paper, each folio is connected to the other and cannot be misplaced. However, it is also difficult to find the location of a particular written text from a South East Asian *lepirello* manuscript, as pagination was not common. Two types of *lepirello* were known in Thailand, Burma and Cambodia: the blackened type, in which the background was painted with a black substance, and the greyish type with a light greyish background. The preference and differentiation in terms of usage

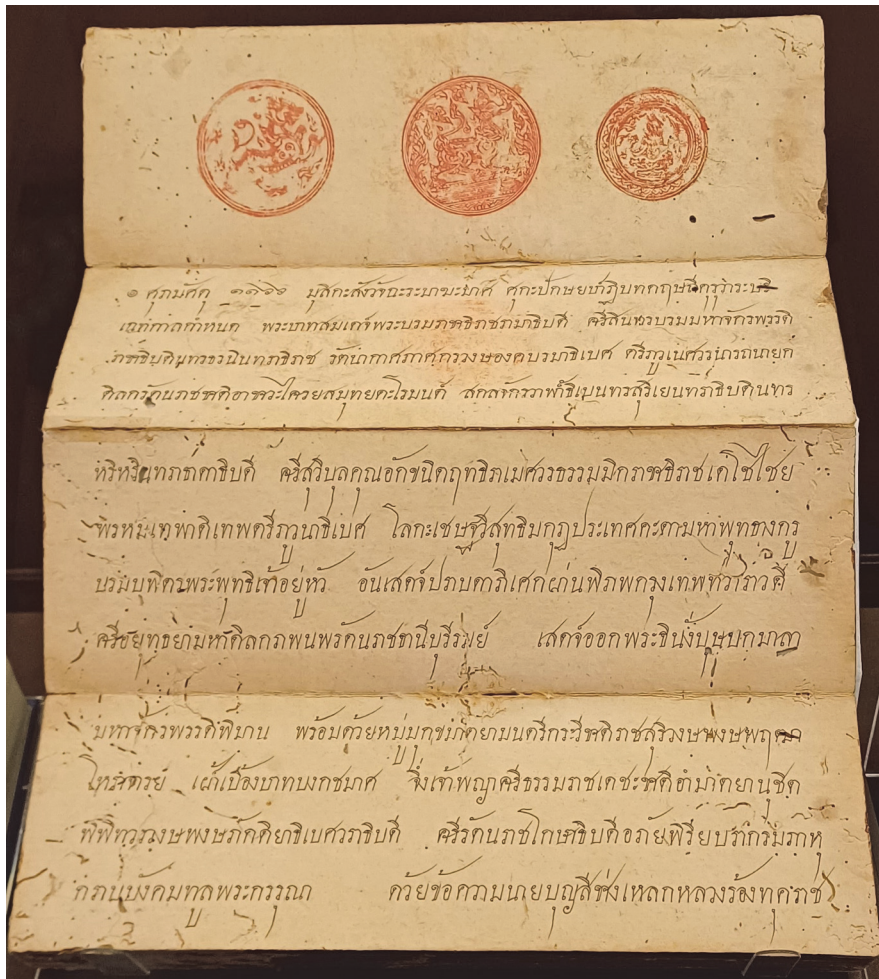
¹⁹¹ Brown 2009.

¹⁹² The term derives from the servant Leporello in Mozart’s opera *Don Giovanni* (premiered in 1787), as Leporello’s list of ladies who had been won over by his master, Don Giovanni, became so long that he had to fold and refold it (Schulz 2019, 15).

¹⁹³ Edgren 2009, 99.

¹⁹⁴ For an example of Batak *lepirello* manuscripts, see Zollo 2020.

between the greyish and blackened types of *khòl*-paper manuscripts are sometimes unclear. The court officials of premodern Thailand, for example, used both of them for record-keeping. But the greyish type was also employed for a certain genre, such as juristic codes *Kotmai Tra Sam Duang* ('Three Seals Law'). The royal manuscript copies of the legal codes are all of the greyish type (Figs 7a–b). Perhaps the texts on the greyish paper cannot be erased or amended without leaving visible traces. The royal copies of the legal texts were also stamped with three official seals on their first recto page, to verify their status as royal official copies which were valid in the juristic courts and administration.





Figs 7a–b: A royal manuscript copy of the Siamese juristic codes from the late eighteenth century appears with the three authorising seals on its beginning page (a). Its title is written on the side edges of the manuscript (b). Bangkok, National Library of Thailand, Kotmai Section, Ms no. 41; exhibited at the National Museum of Thailand (July 2024); photo: Peera Panarut and Thanachot Keatnapat.

3.10 Palm leaves

Palm leaves, appearing in an oblong format, constituted the corpus of written records in South and South East Asia for many centuries. Leaves from palm trees, either talipat palm (*Corypha umbraculifera*), palmyra palm (*Borassus flabellifer*) or lontar palm (*Corypha utan*),¹⁹⁵ were prepared to provide a writing surface in the oblong rectangular format, known as *pothi*.¹⁹⁶ Leaves or folios in this form provide a writing surface on both sides (recto and verso). After reading the recto side of each leaf, it is expected to be flipped upward to the verso. Palm leaves provide a rougher surface compared to paper and parchment. Writing on palm-leaf surfaces is usually done by incising or engraving script with a stylus and then filling in the engraved traces with a black substance made of soot. However, palm-leaf manuscripts written

¹⁹⁵ Gaur 1979, 14.

¹⁹⁶ Ciotti and Balbir 2022, 3.

using a brush have also been found. Palm leaves are a common writing material in South India and South East Asia, areas in which palm leaves were native. Even though the use of palm leaves as writing materials can be attested in these regions for centuries, the surviving evidence of palm-leaf manuscripts date back only to the seventeenth century in the cases of Tamil (Tamil Nadu, India)¹⁹⁷ and Siamese manuscripts (central and southern Thailand)¹⁹⁸ due to the climate.

Multiple leaves bound together with a string through a hole(s) on each leaf usually form a larger unit. In Thailand and Laos, a palm-leaf manuscript fascicle (*phuk*) most commonly consists of twenty-four leaves with an additional leaf as the cover page.¹⁹⁹ Several fascicles form a larger unit of a bundle (*mat*). However, a fascicle of palm-leaf manuscripts from Tamil Nadu can contain more than one hundred leaves.²⁰⁰ Holes pierced through the leaf seem to be one significant feature of palm-leaf manuscripts, as they are used for binding the leaves together with string or thread. Palm-leaf manuscripts from Tamil Nadu and mainland South East Asia often contain either one hole (in the middle or a corner) or two holes in the case of larger leaves (on the middle-left and right). Those from Indonesia, however, can consist of three (on the left and right margins and in the middle).²⁰¹ The location of the hole(s) affects the layout of the writing, as scribes would have to avoid writing on the space around the holes. Furthermore, the space on the left and right margin of each leaves is often left blank. Headings, additional notes and foliations are usually located on the left margin.

Palm-leaf manuscripts in mainland South East Asia are strongly associated with the Buddhist monastic context, as palm leaves are the main writing support for the Buddhist canonical texts. Though functioning as the carrier of Buddhist texts rather than that of the administrative records, they represent collections of monastic documents and scriptures are, therefore, considered ‘Buddhist archives’.²⁰² However, administrative records of the Lao royal court can appear in the form of palm leaves as well, as is the case for two royal decrees found at Vat Saen Sukharam monastery in Luang Prabang (Laos) dated 1857 and 1864.²⁰³ One

¹⁹⁷ Wilden 2014, 15–16.

¹⁹⁸ Kongkaew Weeraprachak 2010, 38. It is noteworthy that the earliest palm-leaf manuscript ever found in Thailand is from the Lan Na manuscript culture (northern Thailand) dated 1471 CE (von Hinüber 1996, 35). However, palm-leaf manuscripts dated in the fifteenth century, apart from this earliest one, have scarcely been found in South East Asia.

¹⁹⁹ Kongkaew Weeraprachak 2010, 36.

²⁰⁰ See Ciotti 2023, 158, 164–165.

²⁰¹ Ciotti 2023, 160.

²⁰² Berger and Grabowsky (eds) 2015.

²⁰³ Grabowsky 2021, 680–687.

palm-leaf royal decree manuscript dated 1864 consists of five folios written in Old Lao script. The other decree dated 1857 contains only one folio. Both palm-leaf manuscripts bear a royal seal on the left margin of the first recto leaf.²⁰⁴ Though not often found, these cases indicate that materials which are strongly related to the Buddhist context, such as palm leaves, can be employed for archival practices as well.

3.11 Rods

The other significant wooden material for record-making is a wooden rod or stick called a tally, which is scored across with notches and then split into halves. Tallies were used for contracts, in which each party kept half of the rod. Functioning as a biparty record, the two halves of tallies had to match with each other to validate the message inscribed or scored on them. Therefore, the history of archival practices sometimes also includes the tally as a part of archival artefacts.²⁰⁵ The practices of using tallies for written records can be traced back to ancient Mesopotamia and ancient China.²⁰⁶ Tallies in Europe were used as receipts for money and records of obligations to make payments. Millions of wooden tallies were produced from the medieval up to the Early Modern Period, but only a few parts of them have survived.²⁰⁷ Note that apart from wood, tallies in other cultures can be made of various materials, such as bone,²⁰⁸ but the term is more associated with the wood.

3.12 Knots

The term *kipu* (sometimes as *quipu*), literally meaning ‘knots’, signifies the knotted cords used to store information which functioned as records, though not written. The use of knotted cords in this sense has been found in different cultures. Legend has it in China, for example, that before the invention of writing, humans stored information in the form of knotted cords.²⁰⁹ However, the term *kipu* is mostly associated with the tradition of the Inca culture, the context from which the term is derived.

204 Grabowsky 2021, 683.

205 Ketelaar 2020, 254b.

206 Yeo 2022, 17, 69.

207 Clanchy 2013, 125–126.

208 Yeo 2022, 10.

209 Bloom 2001, 29.

Writing in pre-Columbian America took shapes which are very different from those of the so-called ‘Old World’ continents.²¹⁰ The Inca people in the territories of present-day Peru and Chile employed no writing system which represents the spoken speech. Instead, they developed the system of the *kipu* knotted cords. Each individual *kipu* was a bundle of multicoloured cords around 60 cm long, with individual cords hanging in groups from the main cord.²¹¹ Different knotting methods and patterns signified different messages, ranging from agricultural goods to numbers. Evidence has confirmed that *kipus* were used to record censuses, assessments, assignments of labour tribute, and measurements of land and resources.²¹² The Spanish accounts mention the Inca officials who made these *kipu* knotted records and the building where they were stored.²¹³ The war between the Spanish and the Inca resulted in the fall of the Inca empire, and the decline of the knowledge about *kipu*. Many artefacts were destroyed, while the knowledge of how to interpret the knots became extinct along with those who learnt it from oral tradition through generations. Nowadays, only a few hundreds of *kipu* artefacts have survived, while our knowledge to interpret the *kipu* seems to be merely a small part of the entire scholarship which once existed.²¹⁴

3.13 Digital documents

According to the *Dictionary of Archives Terminology* by the Society of American Archivists, a digital document is ‘information created on nonelectronic media, typically text or images on paper or film, and converted to an electronic format that can be stored and manipulated by a computer’.²¹⁵ When being stored in a digital form, documents have been transformed from material records to non-material ones. Still, digital documents encompass those originally created in the digital format as well, becoming a huge category of documents and records that can be stored for further use.

In contrast to other archival materials, digitally stored data have ‘lost their sensory solidity’, and, thus, require technical devices to read or write them.²¹⁶ Digital forms of archives were introduced in Europe and the United States of

²¹⁰ Boone 1994, 20.

²¹¹ Delsalle 2018, 59.

²¹² Yeo 2022, 80.

²¹³ Delsalle 2018, 60–61.

²¹⁴ Yeo 2022, 81.

²¹⁵ Society of American Archivists 2005–2025.

²¹⁶ Assmann 2012, 64–65.

America in the late twentieth century and have become a significant trend in archival studies today. Electronic mail is undeniably one of the main communication methods in the early twenty-first century. Sounds once recorded on films and collected together in a cassette form are now stored as electronic files. Some of the three-dimensional written artefacts are now available online through both two- and three-dimensional formats. The latter was a result of the three-dimensional scanning technology developed over decades, allowing the artefact to be investigated from different angles.²¹⁷ However, three-dimensional scanned artefacts, similar to other types of digital documents, are intangible. Their non-materiality can be considered a great advantage, as they are weightless and unbulky in the material sense. However, digital documents need a material computer server to store and maintain them. In addition, with their non-materiality, digital documents depend greatly on software to process and present them, which often requires updates to make digital documents legible and usable.²¹⁸

Although digital documents do not appear in any conventional material forms, terms for digital documents often make references to the material world. The material terms, such as files, folders, cut and paste, email, cc (carbon copy) and desktop, have their origin associated with writing materials and practices, but all make sense when applied to the computer context. Therefore, it is remarkable that even non-material archives, such as digital documents, still interplay with the material ones.

4 Conclusion: From sheets and files to digital documents

Starting with non-material orality, this chapter has surveyed archival materials from the earliest extant material to the very contemporary, non-material form of digital documents. The diversity of archival artefacts is impressive, covering different materials including some unconventional ones, such as stone slabs, metal plates, tortoiseshell, wooden rods and knots. The *kipu* knots can be considered records even without any writing or, according to Elizabeth Hill Boone and Walter Mignolo, ‘records without words’.²¹⁹ Therefore, the study of archival materials in some cultural fields does not have to be paper- or codex-centric, but can encompass unconventional forms and materials of archiving.

²¹⁷ For instance, see Michel 2021.

²¹⁸ Ketelaar 2020, 266b.

²¹⁹ Boone and Mignolo (eds) 1994, viii.

Even though this chapter cannot simply cover every single form of archival materials throughout the long history of archival practices, the cases mentioned above, from sheets and files to digital documents, point out not only the variety of archival artefacts from different places and times, but also the attempts to adapt materials in many different ways in order to serve record-making and -keeping practices. Clay was formed into tablets in different shapes and sizes to suit different writing purposes. Pottery, when broken, was reused as a convenient writing support. Strings or threads were applied for binding or sewing sheets of archival materials, such as papyrus, parchment and paper, to form larger units as files, rolls or books, which secure the preservation of the sheets. Information can become a record only with the help of these applied materials, and records can, in turn, become archives which last for centuries. Archival technologies have, thereby, become very involved with these material dimensions.

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