

Science and Technology of Writing:

The Earliest Books

Presented by Joey Cross

Teacher Cohort Academy
Oriental Institute

Papyrus (*Cyperus papyrus*)

An unrolled Ancient
Egyptian scroll





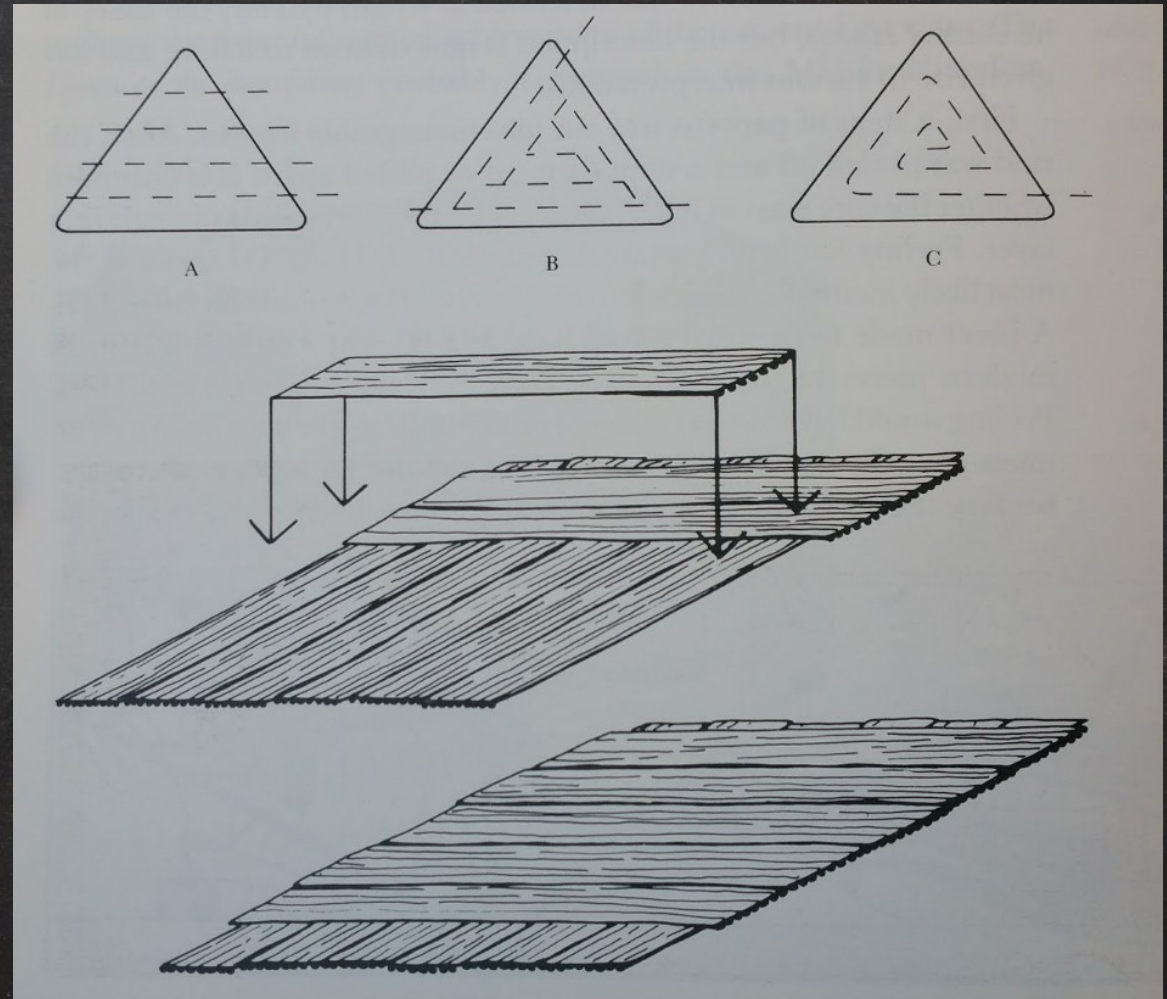
Den (standing)
First Dynasty Pharaoh
29th century BCE

Earliest example of a papyrus scroll found in his tomb (pictured to right, reconstructed)

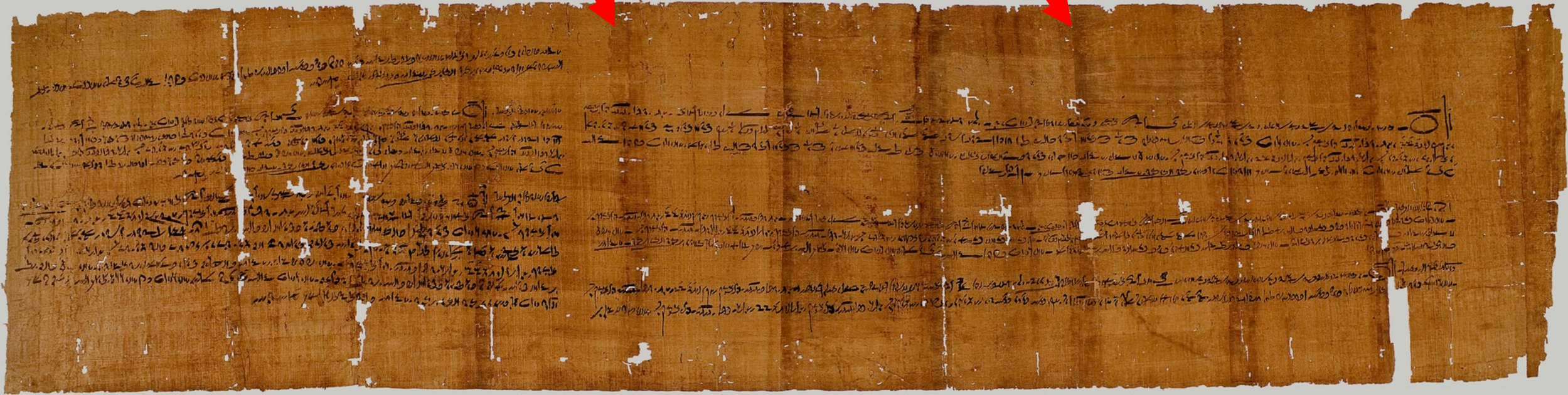


The earliest book: papyrus scrolls

- How to make a sheet of papyrus

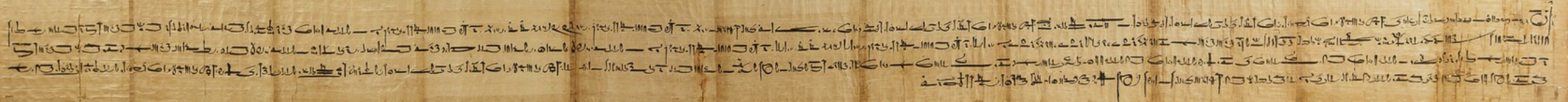


Joins between two sheets



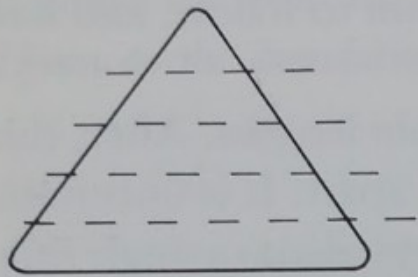
An Egyptian marriage contract (ca. 310 BCE)
(OIM E25259)

Joins between two sheets

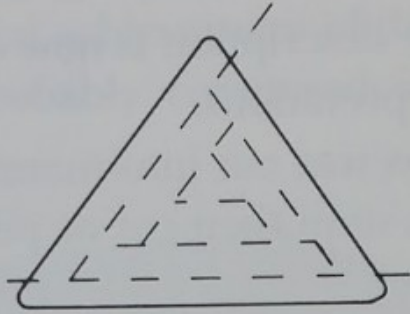


The image shows a long, narrow strip of ancient Egyptian papyrus, likely a marriage contract, with two lines of hieroglyphic text. The strip is divided into several vertical sections by joins, indicating it was made of multiple sheets of papyrus. The text is written in a cursive style, and the papyrus shows signs of age and wear.

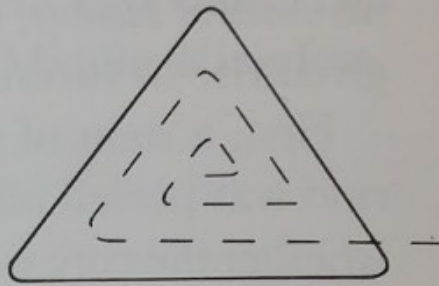
An Egyptian marriage contract (ca. 362 BCE)
(OIM E17481)



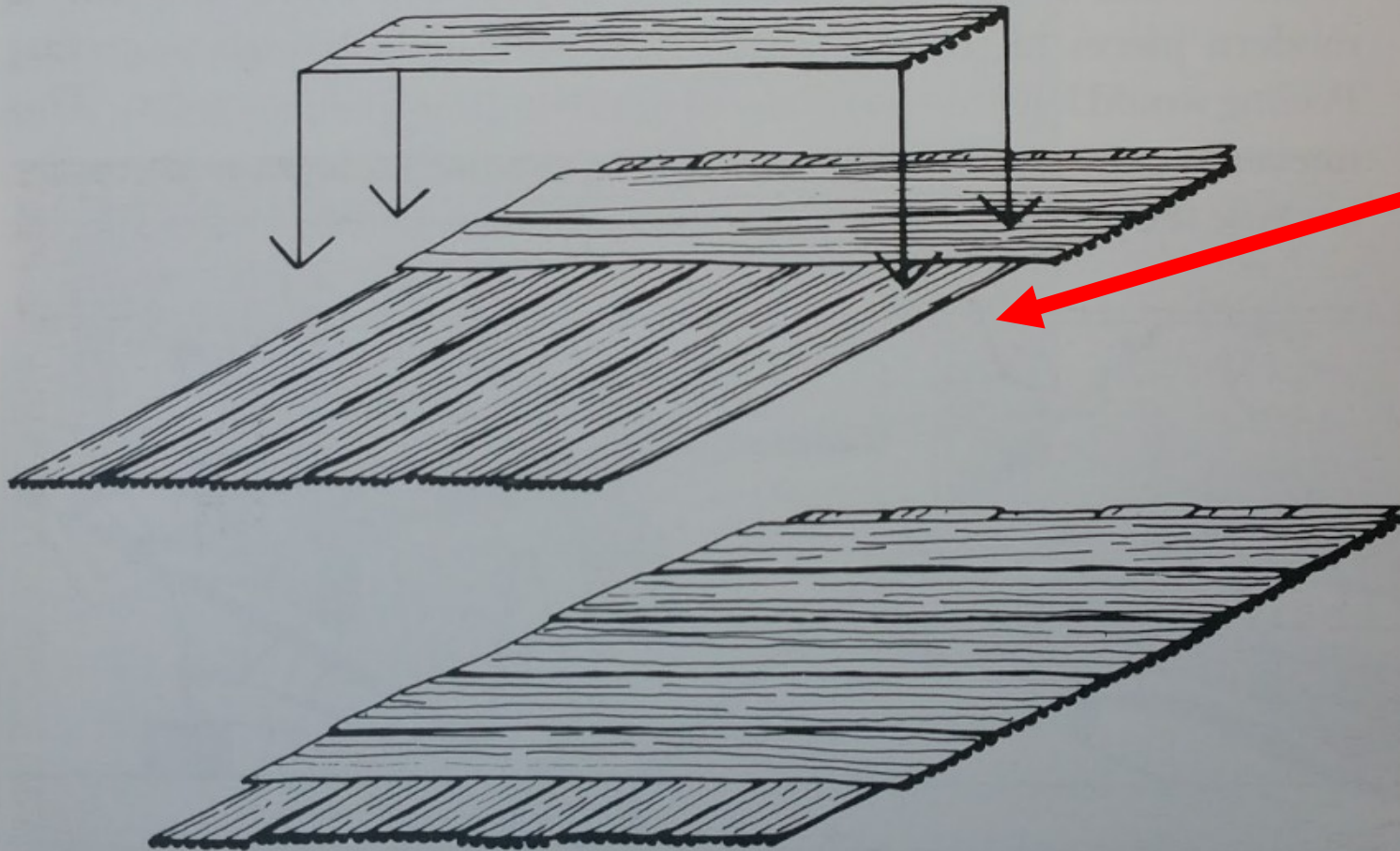
A



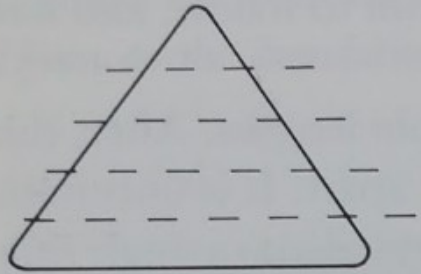
B



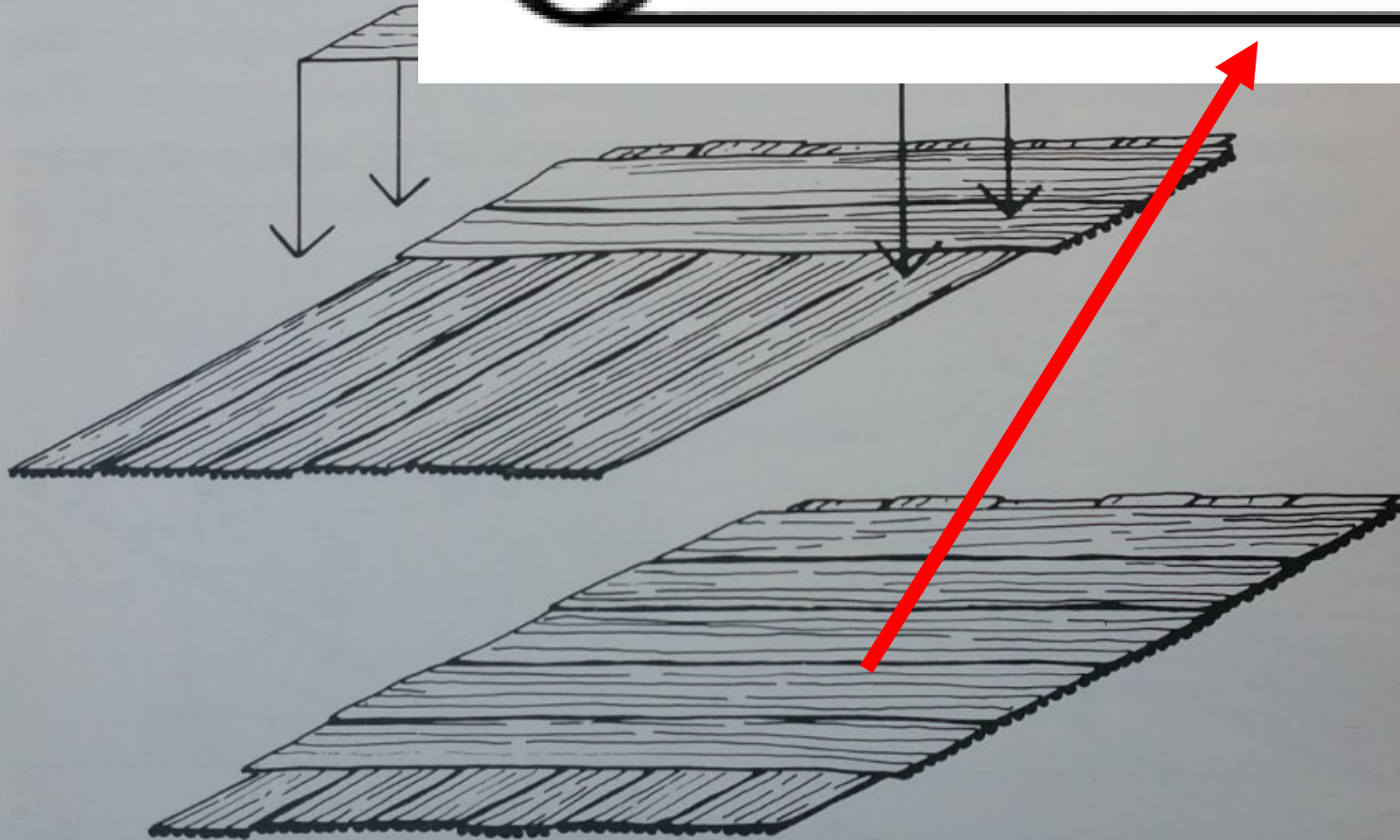
C



Overlay of strips, typically
2 layers



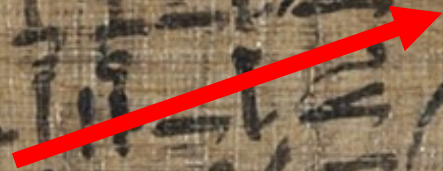
A



 Direction of writing

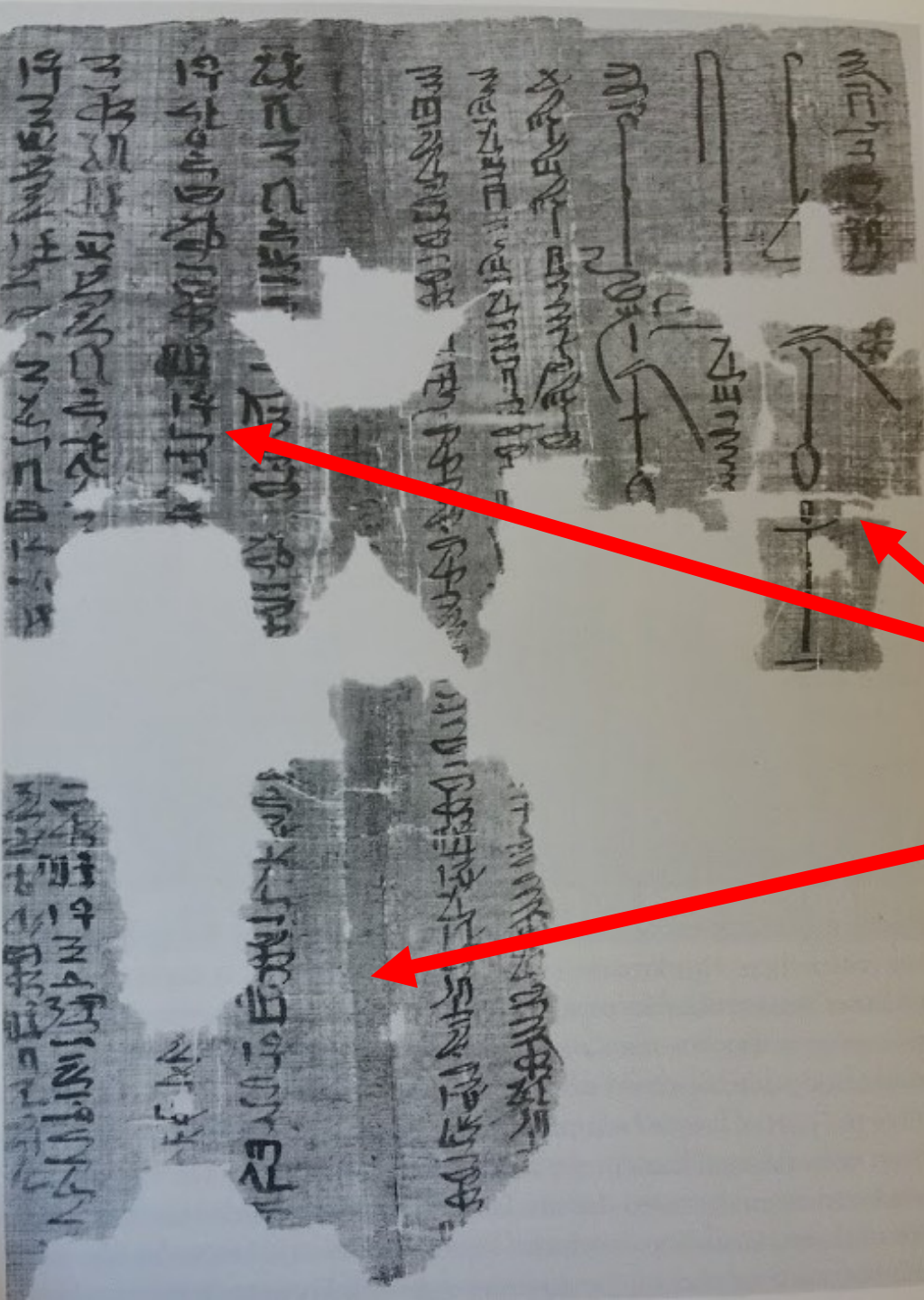


Horizontal papyrus grain
marking the front (recto) of the
scroll



The parts of a scroll

- Recto: the front of a scroll where the fibers are horizontal. Typically where the scribe begins to write.
- Verso: the back of a scroll where the fibers are vertical



**A letter made by combining
two sheets from different
letters**

Note different handwriting

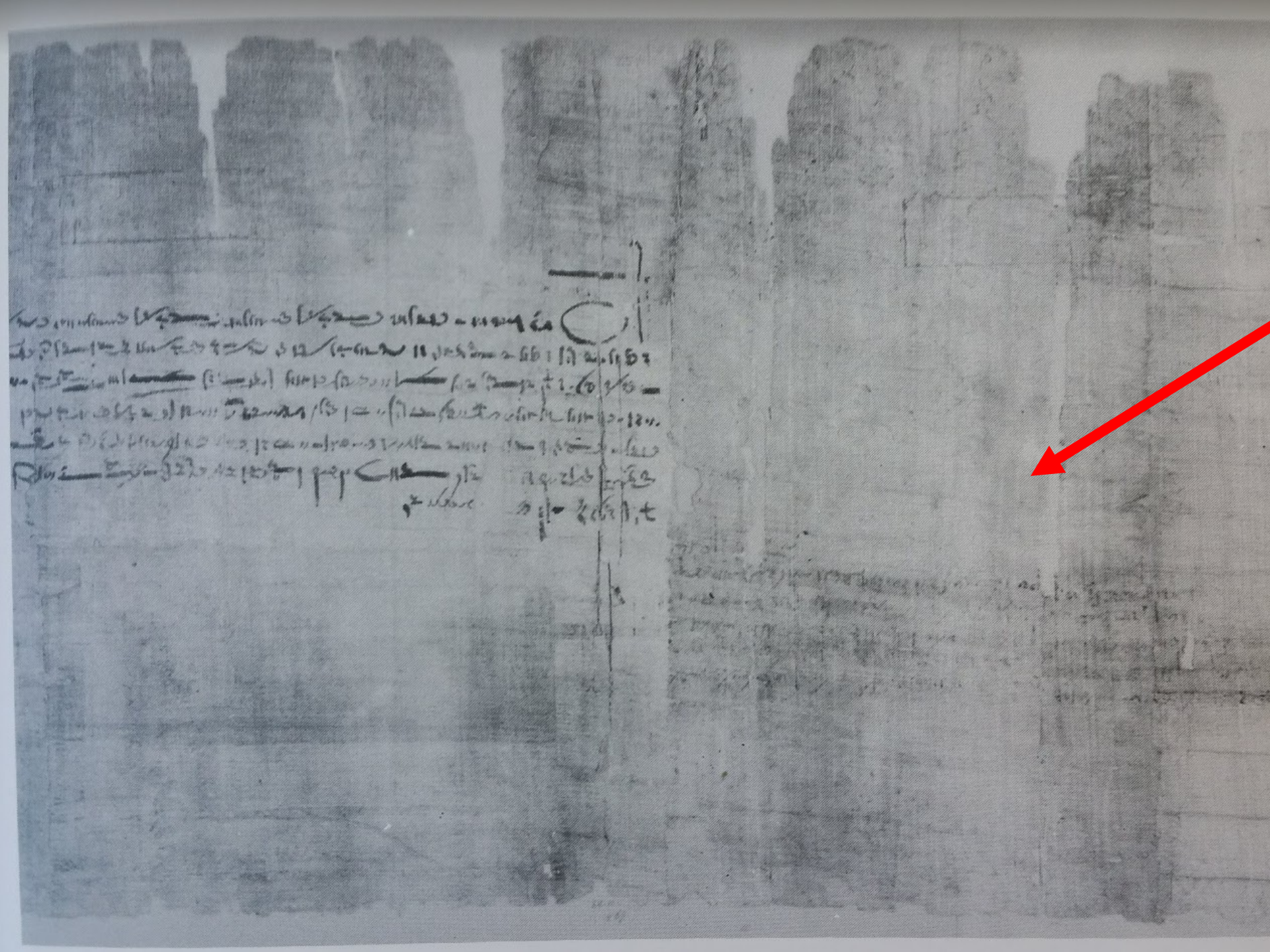
Note papyrus join

(from Parkinson and Quirke, *Papyrus*)

**Seated scribe sculpture from
Old Kingdom (ca. 25th-24th
century BCE)**

(Louvre)

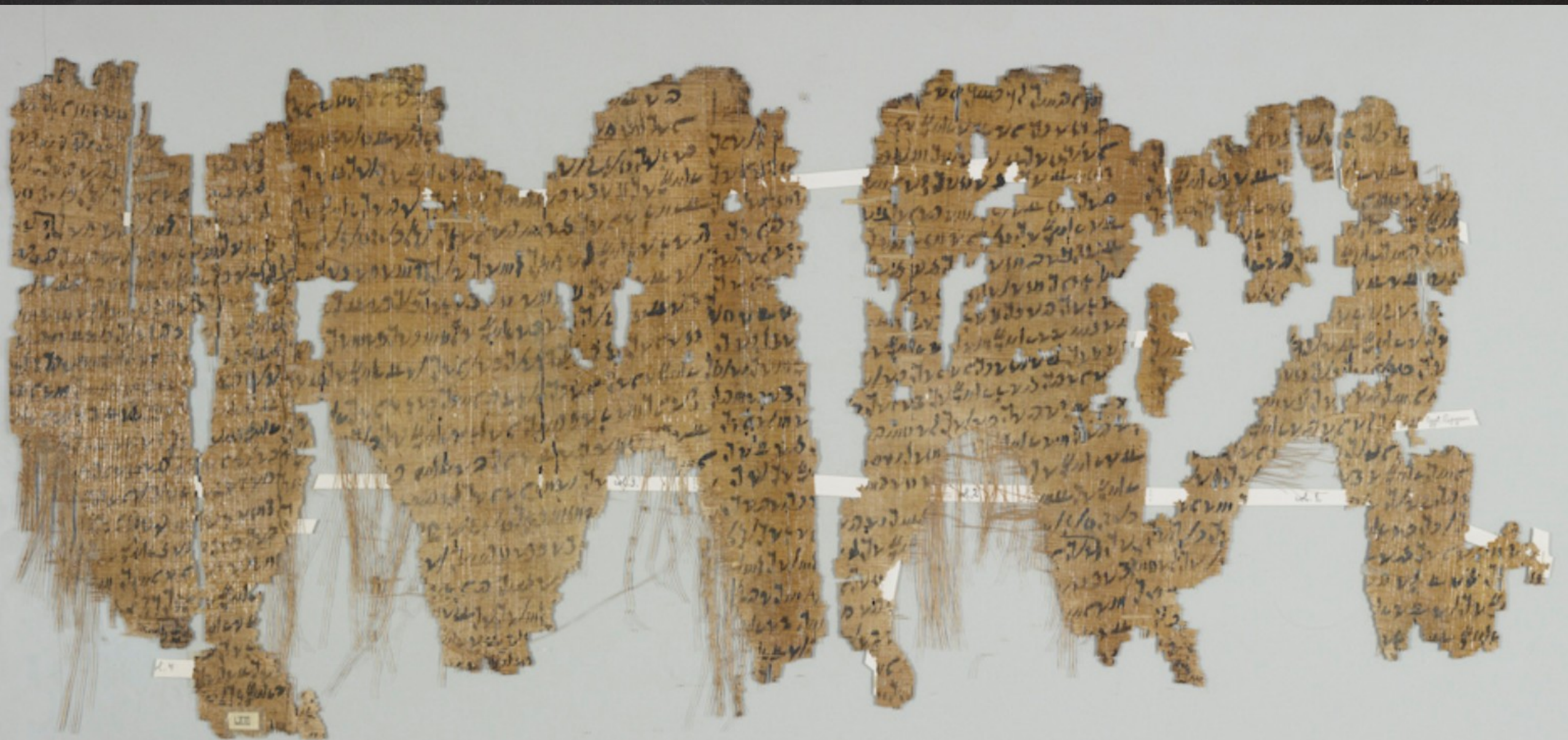




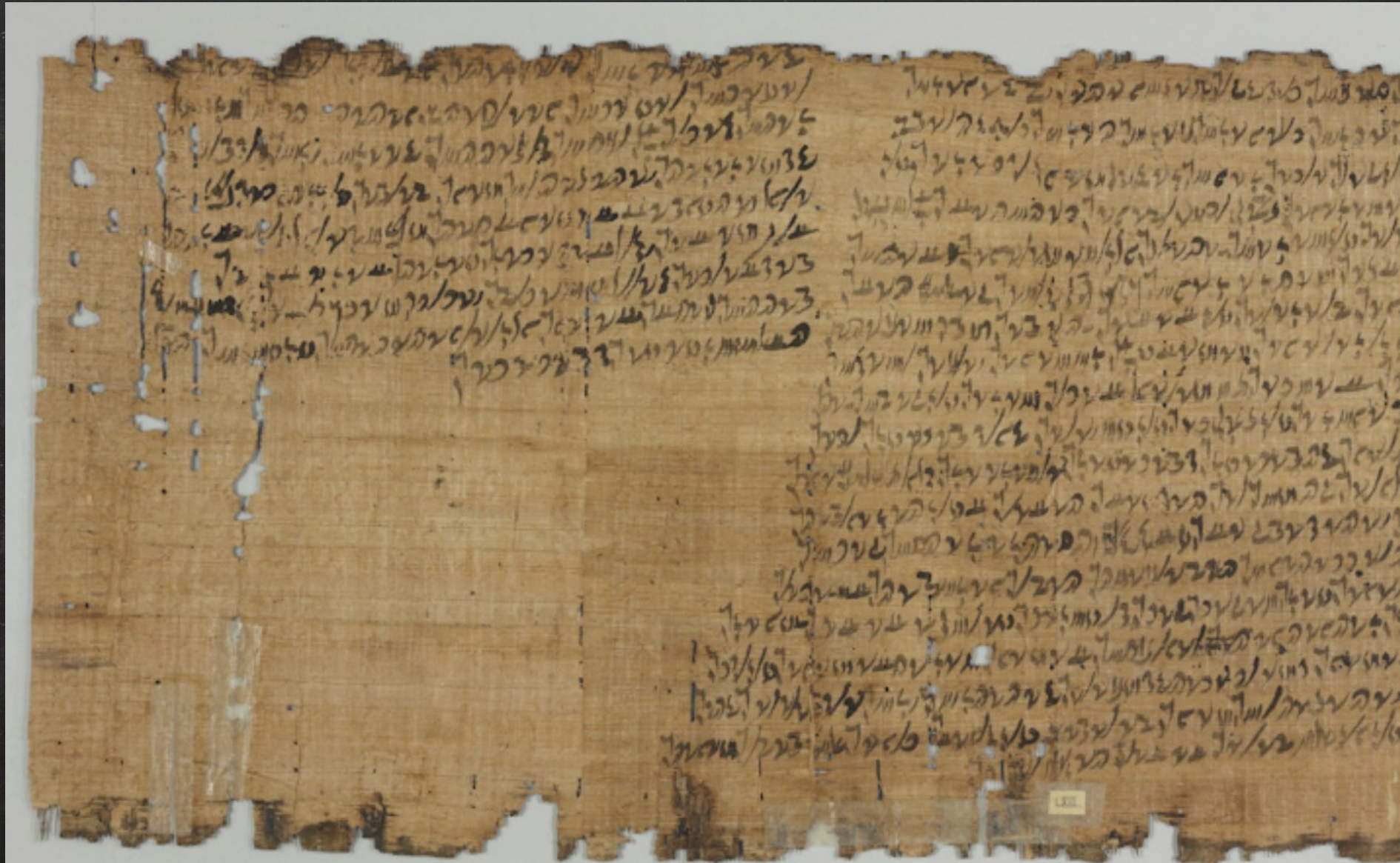
Blank sheet at
beginning of
scroll

(from Parkinson and
Quirke, *Papyrus*)

Beginning of a scroll....



...compared to end of the front of the same scroll



Top margin

First words

Handwritten text in a cursive script, likely a medieval manuscript. The text is arranged in approximately 12 horizontal lines across the page. The script is dense and characteristic of Gothic or similar medieval bookhands. The first few lines appear to contain a large initial letter, possibly 'I' or 'J', followed by several lines of continuous text. The handwriting is somewhat irregular, with varying line heights and some ink bleed-through or fading, particularly towards the bottom of the page.

Bottom margin

How to inscribe a scroll

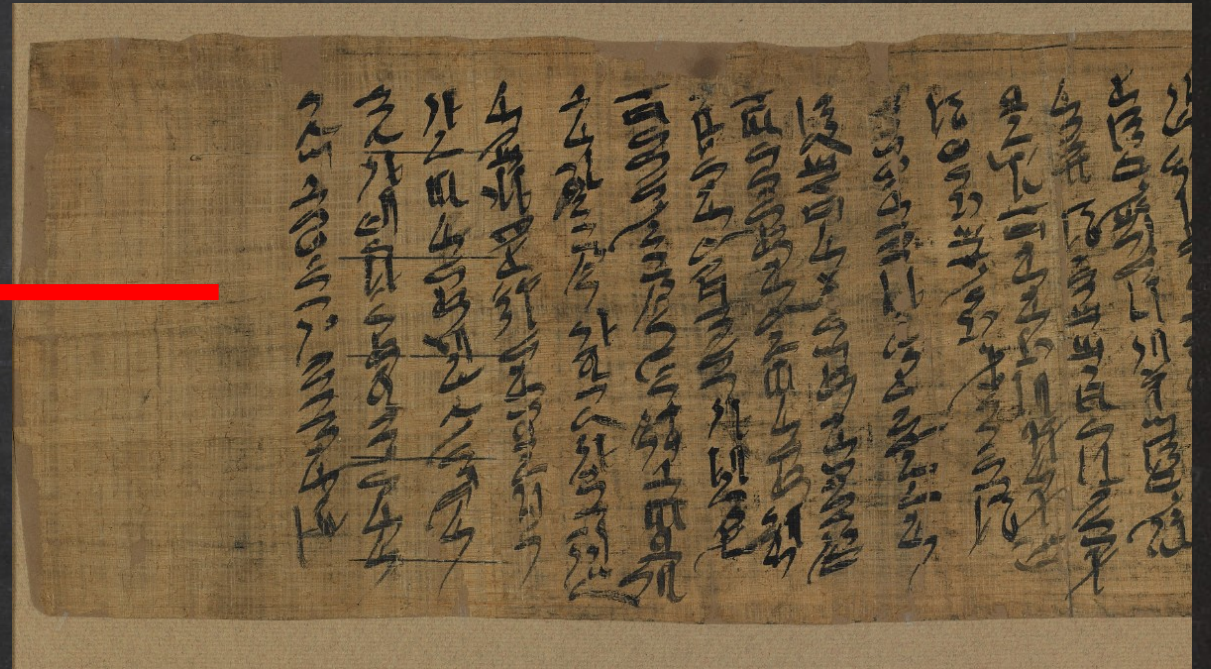
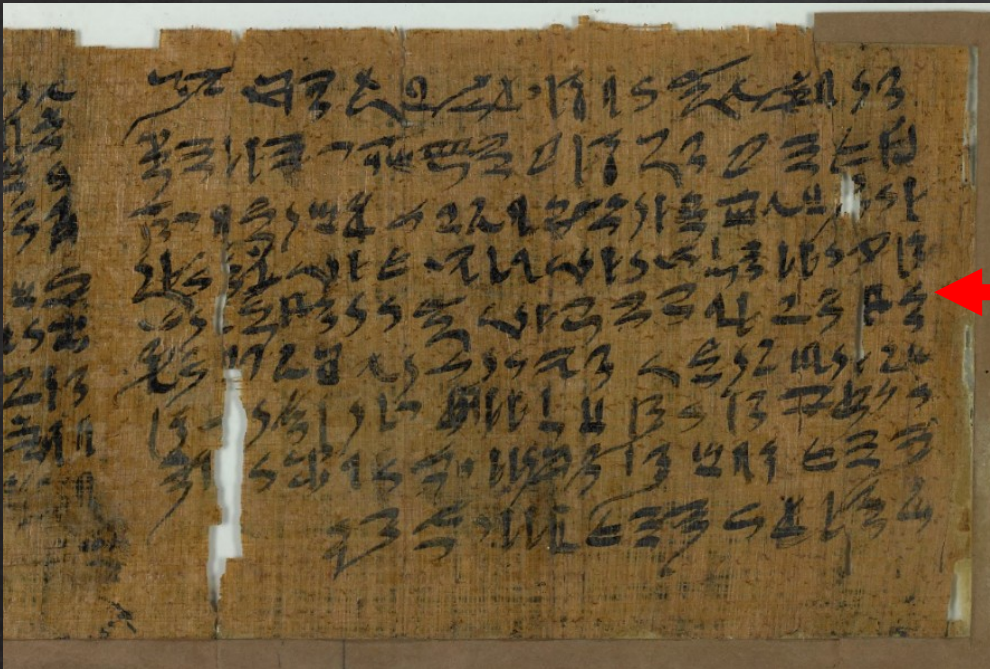
1. Leave space at the beginning for a handle and to prevent against wear and tear
2. Leave a margin at the top and fill in a square- or rectangle-shaped column of writing
3. Once the bottom margin is reached, begin a new column
4. Continue on the back if necessary

The Instruction of Amenemope, formatted with one sentence per line



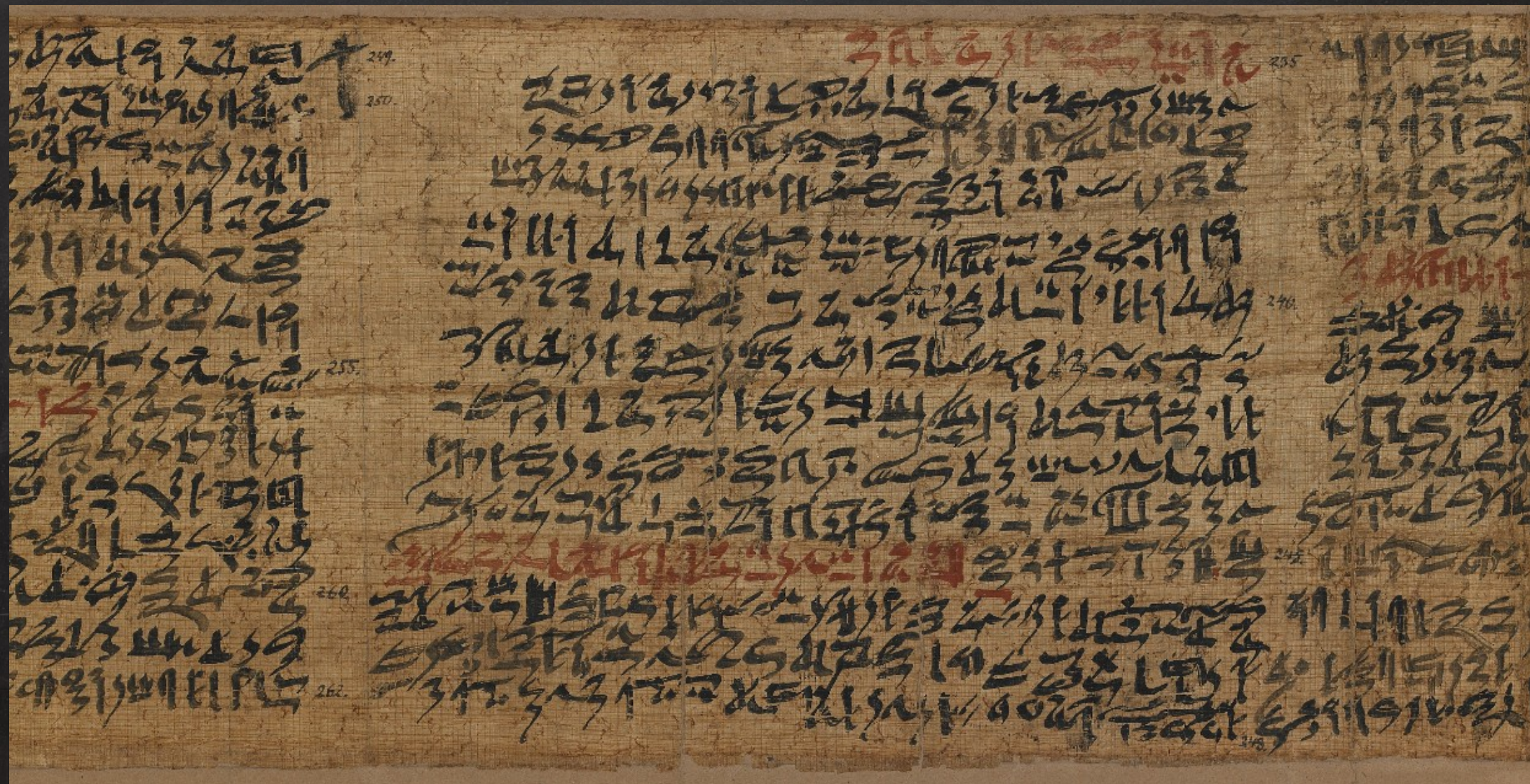
**Beginning of back
(flipped, back of beginning of front)**

End of front



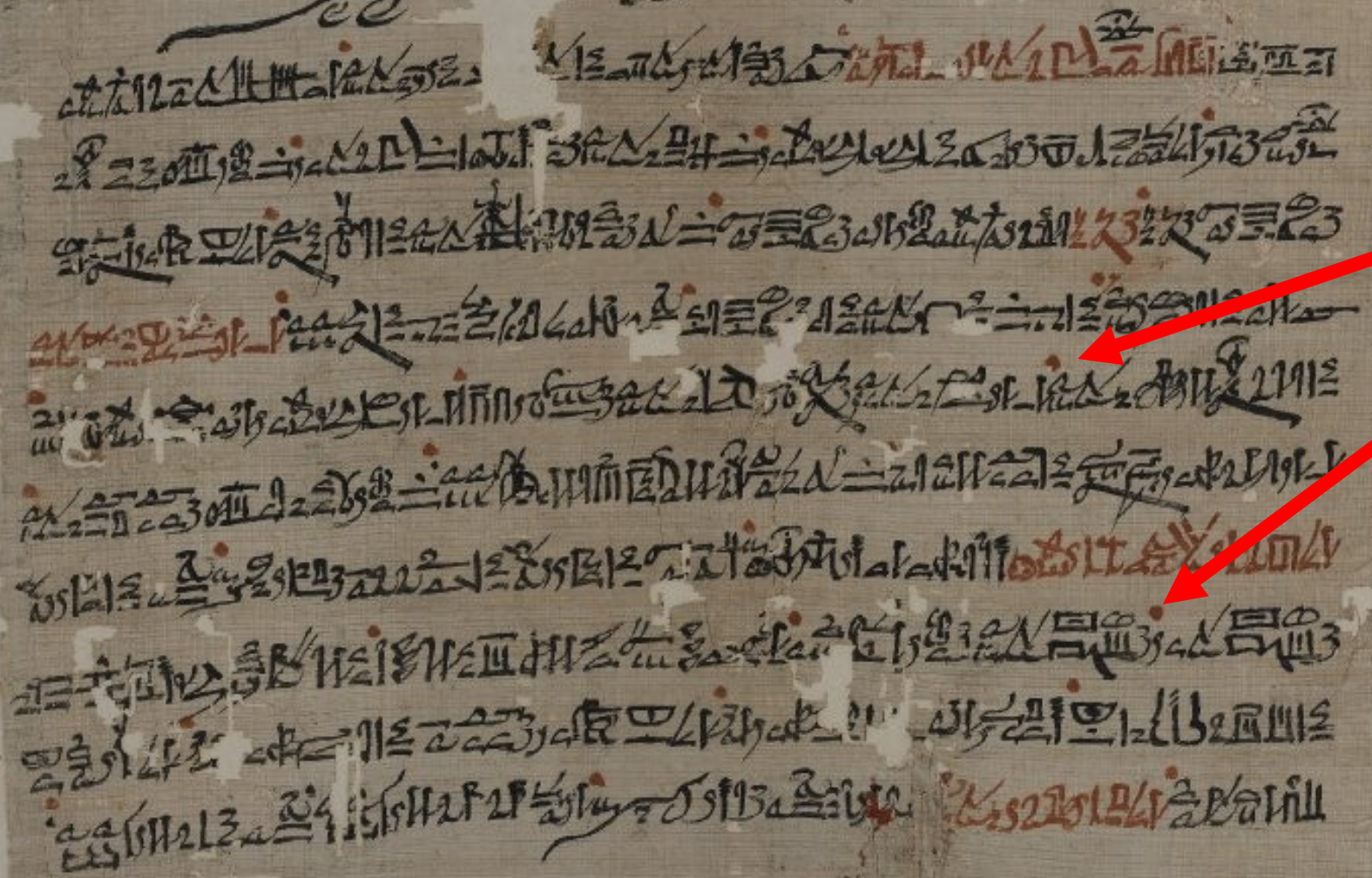
The Eloquent Peasant (Middle Kingdom)

Red ink used in a short story to mark sections



The Tale of Sinuhe (Middle Kingdom)

Dots (“verse points”) used to mark units of poetry

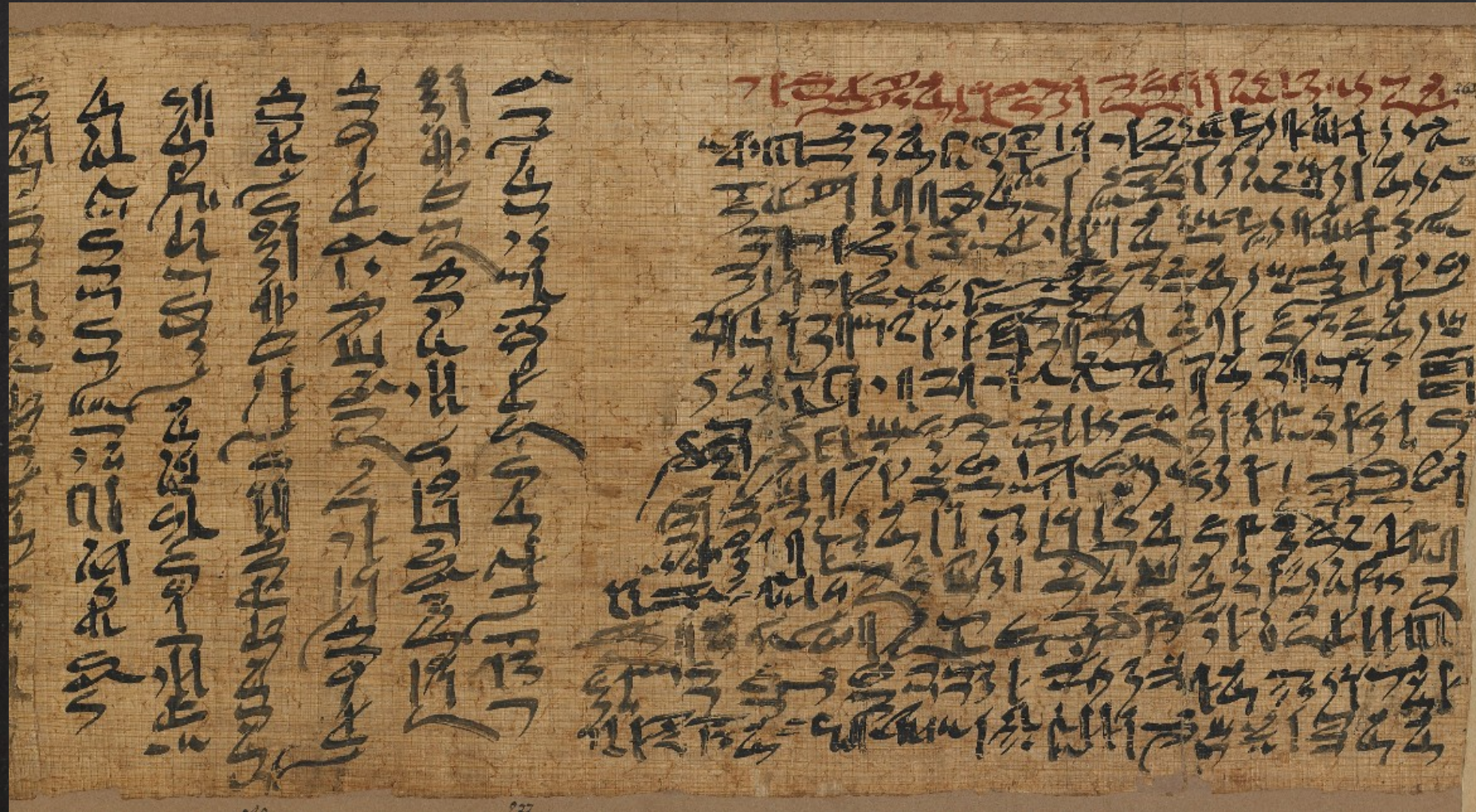


The image shows a fragment of an ancient Egyptian papyrus scroll. The text is written in hieroglyphs, with some characters in red ink. Small red dots are placed above the hieroglyphs, marking units of poetry. Two red arrows point from the text on the right towards these dots. The scroll is aged and shows signs of wear, with some missing sections of papyrus.

The Teaching of Amenemhat (New Kingdom)

Wadi Jarf
papyrus

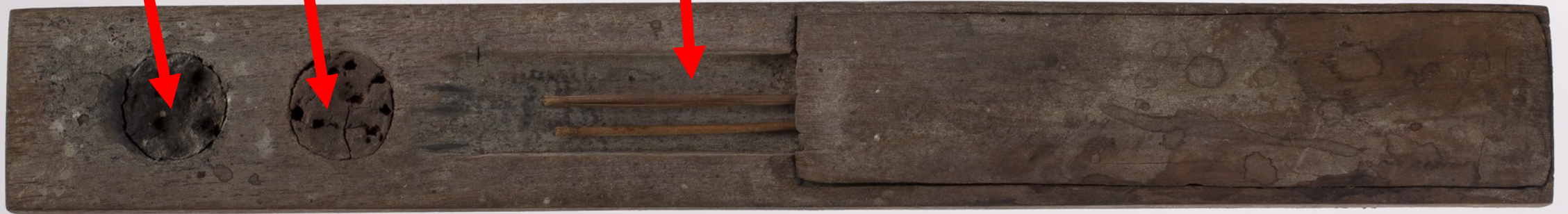




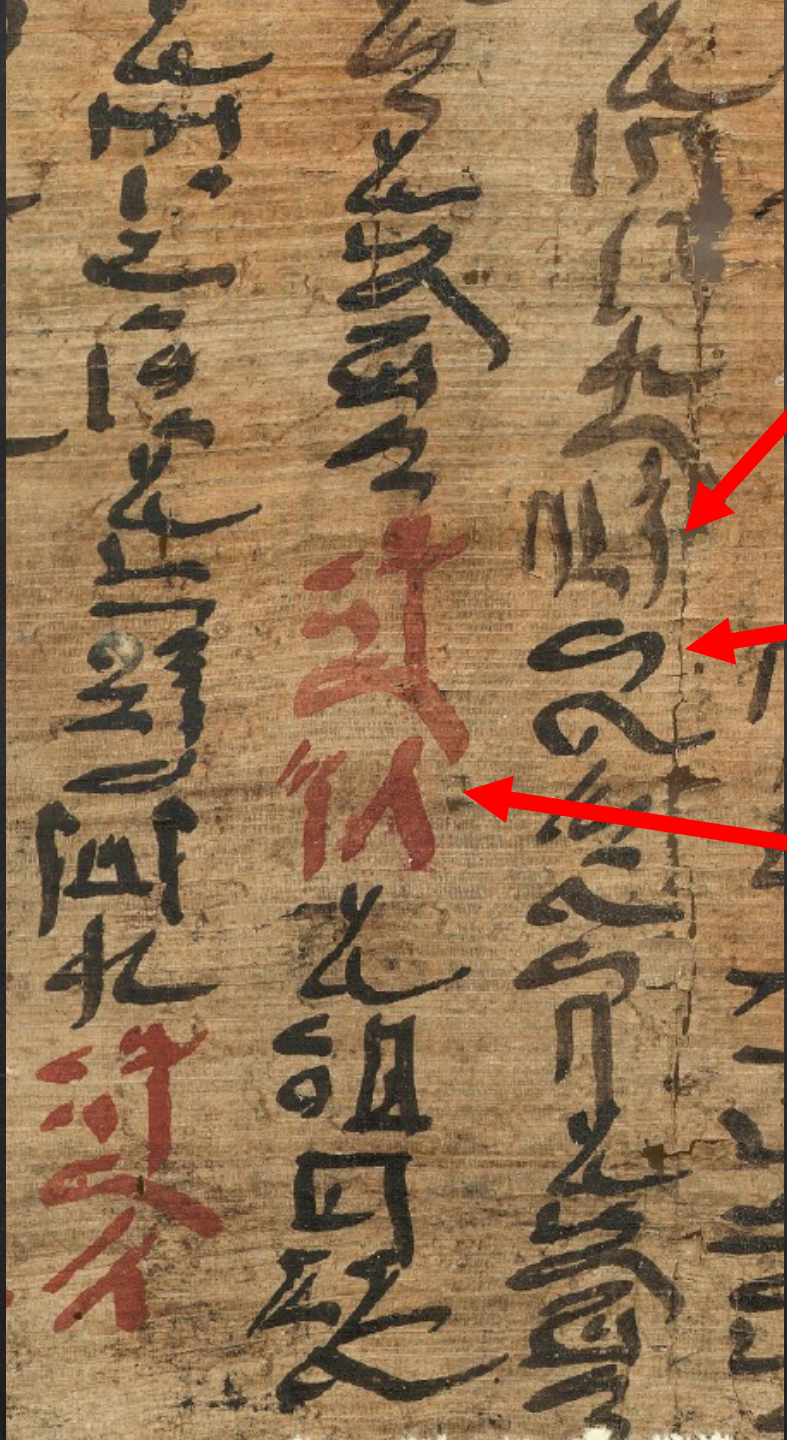
Two directions
of writing in
the same scroll,
a Middle Kingdom
short story
(*Sinuhe*)

Blank ink
Red ink

Brushes



Egyptian scribal kit (OIM E10780C)



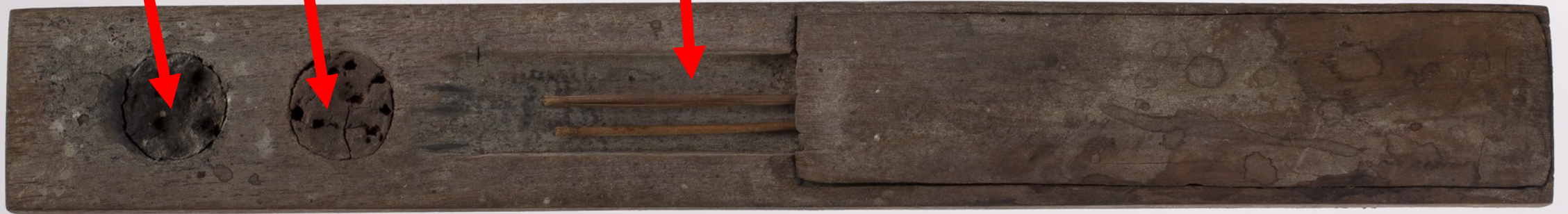
Ink running out

Scribe dips brush in ink

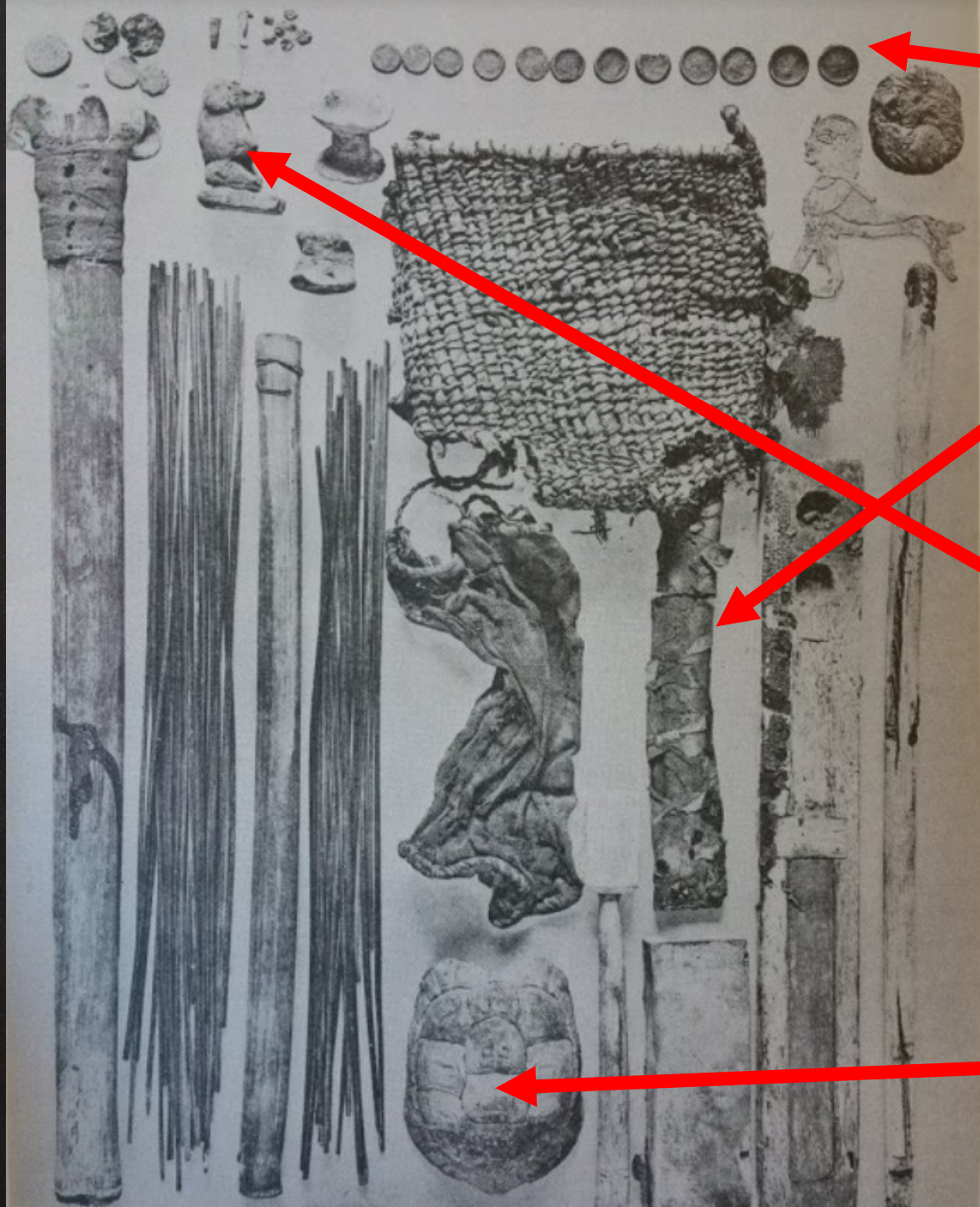
**Seamless switch to red ink
and back to black**

Blank ink
Red ink

Brushes



Egyptian scribal kit (OIM E10780C)



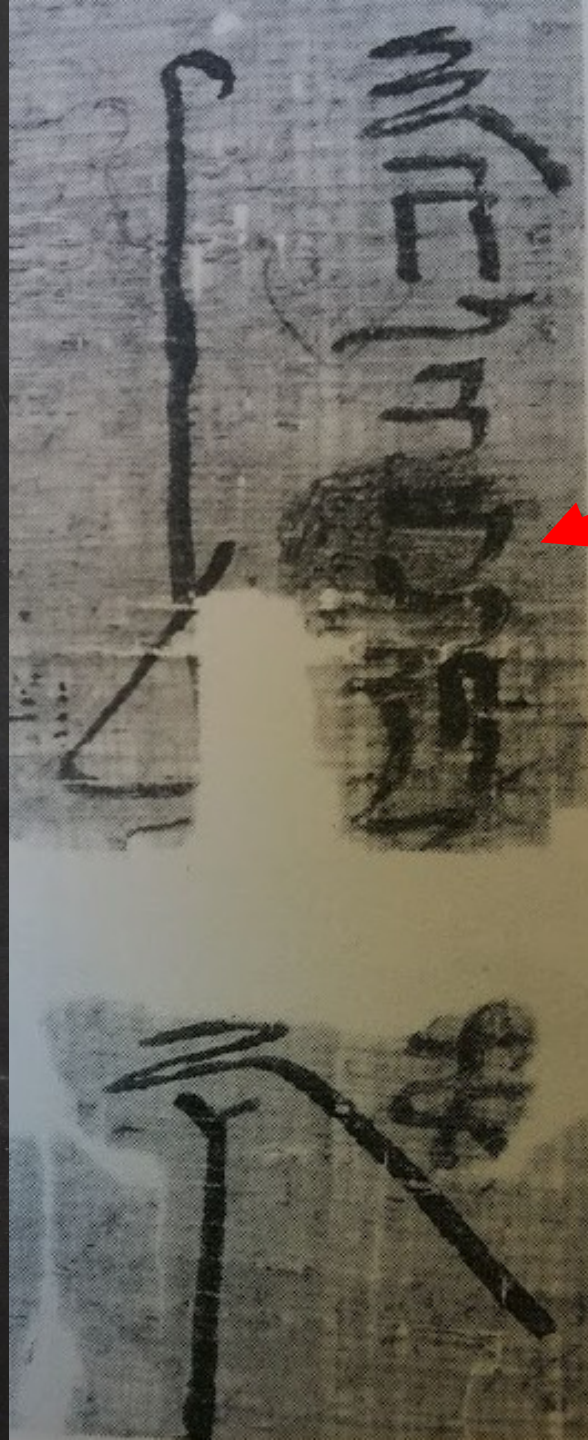
Clay balls

Mallet

Statue of Thoth (as baboon)

Tortoise shell

A thumb print left when a scribe erased a word on a letter he was reusing, and wrote a new one



Egyptian verb *ftt* "to erase"

Palimpsests

- Old, unused scrolls which are erased entirely and reinscribed
- Greek word meaning “scraped again”



A section from a Book of the Dead scroll in the Oriental Institute (Papyrus Ryerson)

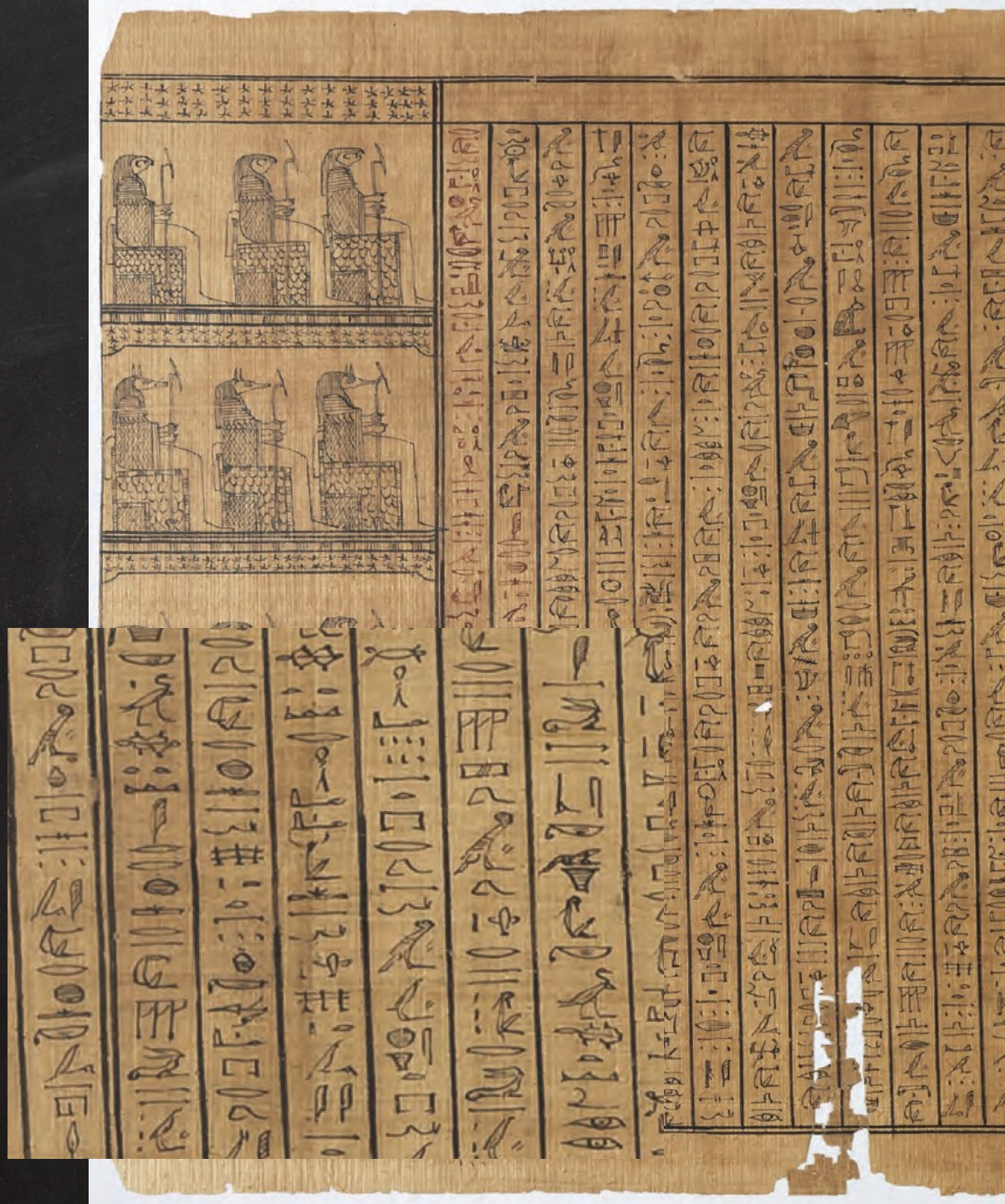
(OIM E9787H)



Note cursive (= everyday) writing



Papyrus of Ani (British Museum)

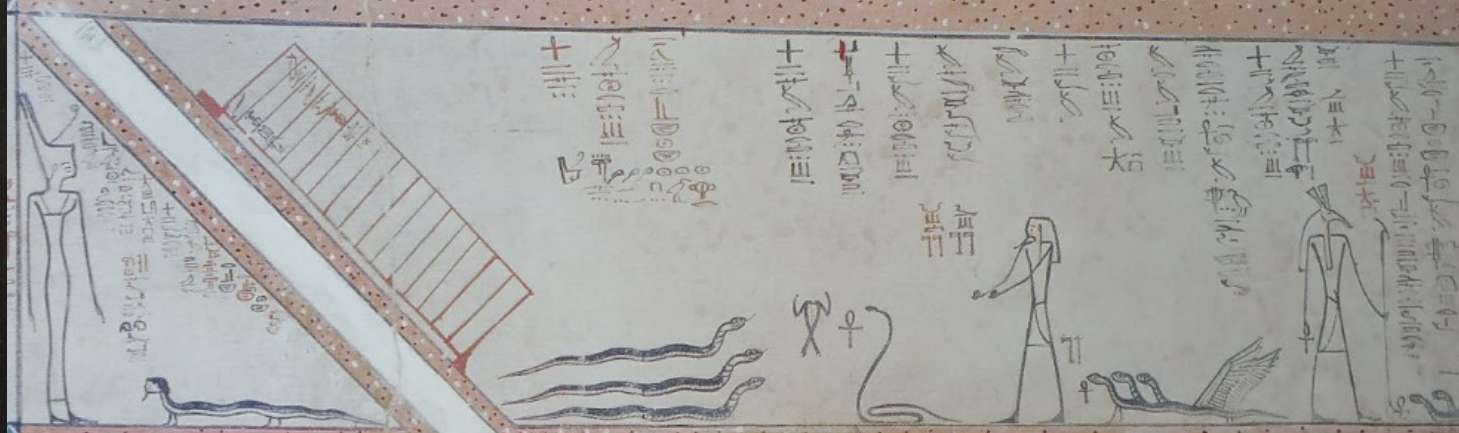
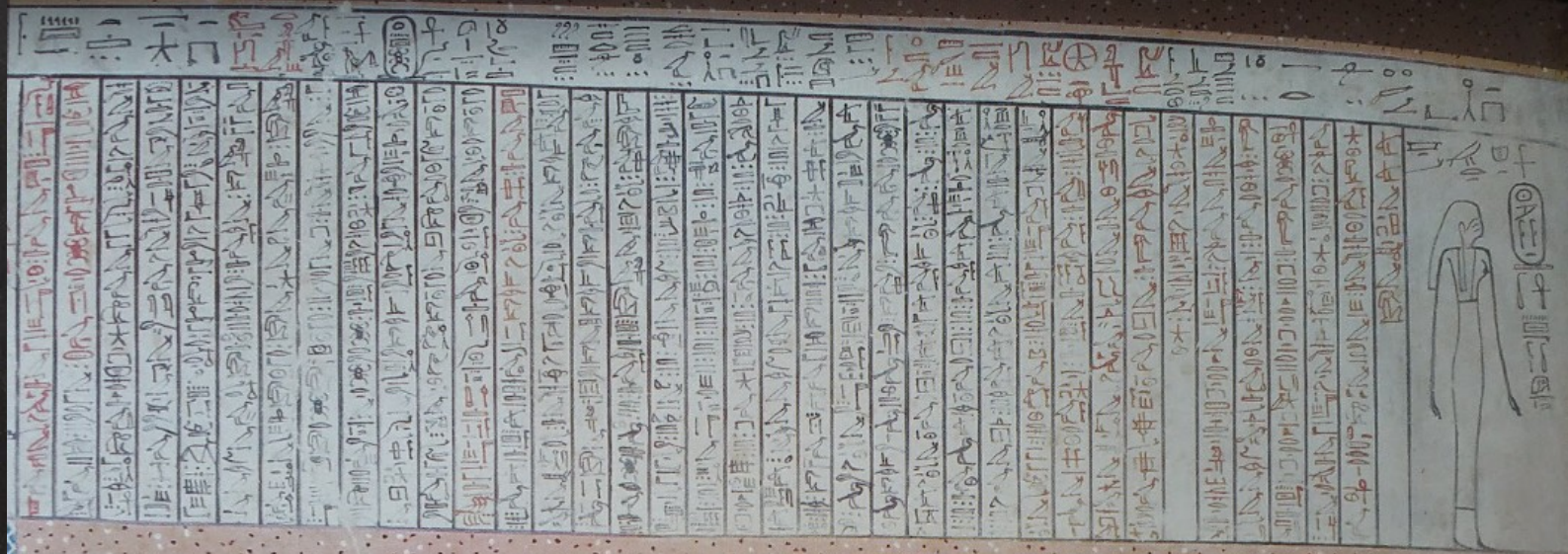


A section from a second Book of the Dead scroll in the Oriental Institute (Papyrus Milibank)

(OIM E10486J)

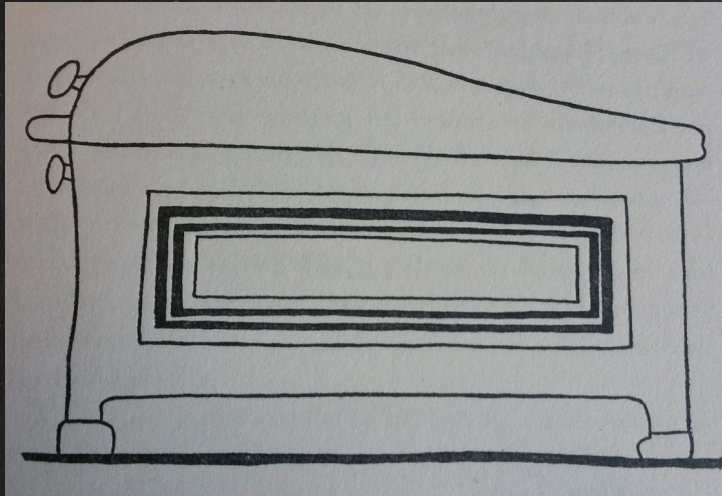
Note more ornate, hieroglyphic writing

Walls in the tomb of
Thutmoses III
inscribed with the
Amduat book, using
cursive writing and red
ink to imitate what
scrolls look like



How to store scrolls

- Chests, frequently depicted in Egyptian art





How to store scrolls

- Chests, frequently depicted in Egyptian art



Archive vs. Library

- Archive: Records for preservation, rarely accessed
- Library: Documents for continued reading

The contents of scrolls

- Multi-scroll works were rare
- Single scrolls which compiled different texts were common
 - Several short texts could be put on the back of a long text at a later time

Herculaneum library



A charred scroll from the library

(Image:
<https://blogs.ucl.ac.uk/dh/2015/08/11/seminar-digital-technologies-and-the-herculaneum-papyri/>)



Use of leather for scrolls



The "Great Isaiah Scroll"
from the Dead Sea
(1st century BCE)



Wall relief from Neo-Assyrian palace at Nineveh (in modern day Iraq), ca. 640 BCE



Writing cuneiform on a clay tablet

Writing Aramaic on a leather scroll

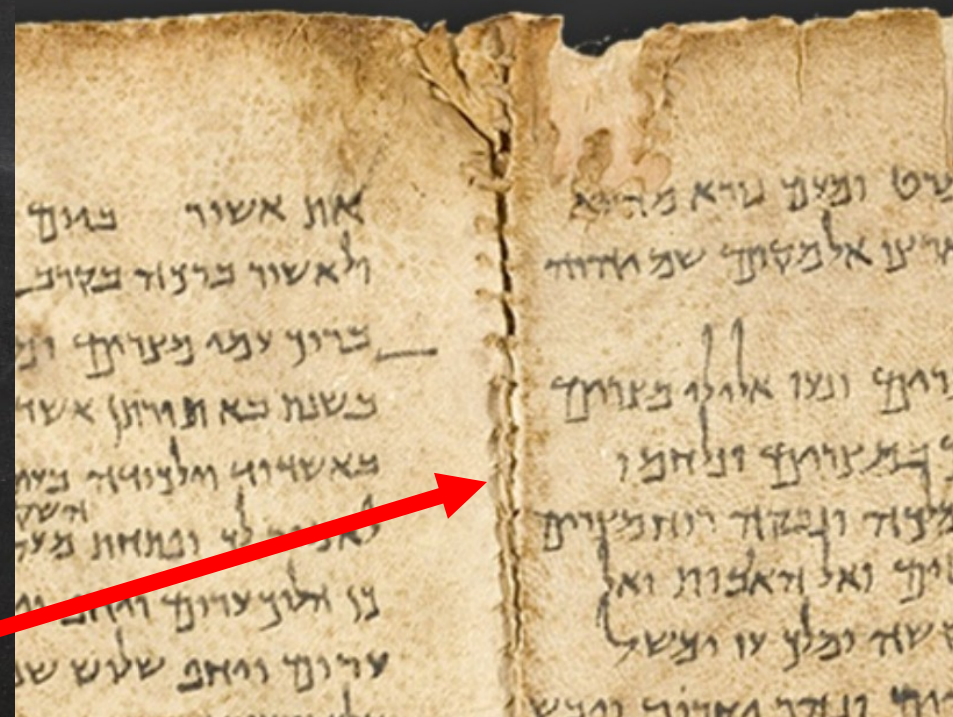
Use of leather for scrolls



The "Great Isaiah Scroll"
from the Dead Sea
(1st century BCE)

Manufacture of leather scroll

1. Soak animal hide (from sheep, cow, or goat) in lime and then strip hair
2. Rinse hide
3. Stretch out hide and scrape clean with a knife
4. Cut into sheets
5. Stitch sheets together to form scroll



Stitches to combine sheets

Correction
above line
that has been
scraped away

Corrections
above line

במה צרא העל וקדוה את חיו שלום ביהוה ודאוישו ולוא עם אמוא דבר צרא צעות
דאוישו לאפור לוא תענהו

והבא אליהם על אשר על חבת ושובא דמופך והוא אהבן אמר דמונה אל
הווקרה קדוה ביהוה והגידו לוא את צרה רב שקד והיה צפיו הווקרה ודעל

והקיר את ביהוה והנחם בשם ויבא בת דדוד והשלח את אליהם אשר על חבת
ואת שובא דסטור ואת וקע דצוהם בעמיהם בשם אל השעהוד בן אפינהו

והאפרו אליו ציה אפר קווקרה ויהי תונחה ונאעד הווקרה ווא צרא באר בנות
עו צטור וניהו את ליהוה אשר השפע ודוד אלוהיה את וצרה רב שקד אשר שלחו

בליך אשרו איווקר לחורב אלהיהם ודעמו ביהוה אשר שפע ודוד אלוהיה ונשאם
תפלה בעו דשארהו דנפיהו ויהי בעור דזואת והבואו עברה דכל אהווקרה אל השעהוד
והוא אשר לדוד השעהוד ציה תראפרו אל אפר ונאעד ציה אפר ודוד אל תהרא מכת דדוד

ואשר שמעוהו אשרו וצרה אפרו אשרו ונאעד ציה אפר ודוד ונאעד ציה אפר ודוד
והשוב רב שקד ונפיעה את בליך אשרו נאדם על לבנה צרא שפע צרא נפע תעיש והשפע
אל תוהרהו בליך ציש לאפור דעא לדלום את צוד והשפע והשפע והשפע והשפע



Great Isaiah scroll, 73.5 meters = 24 feet long

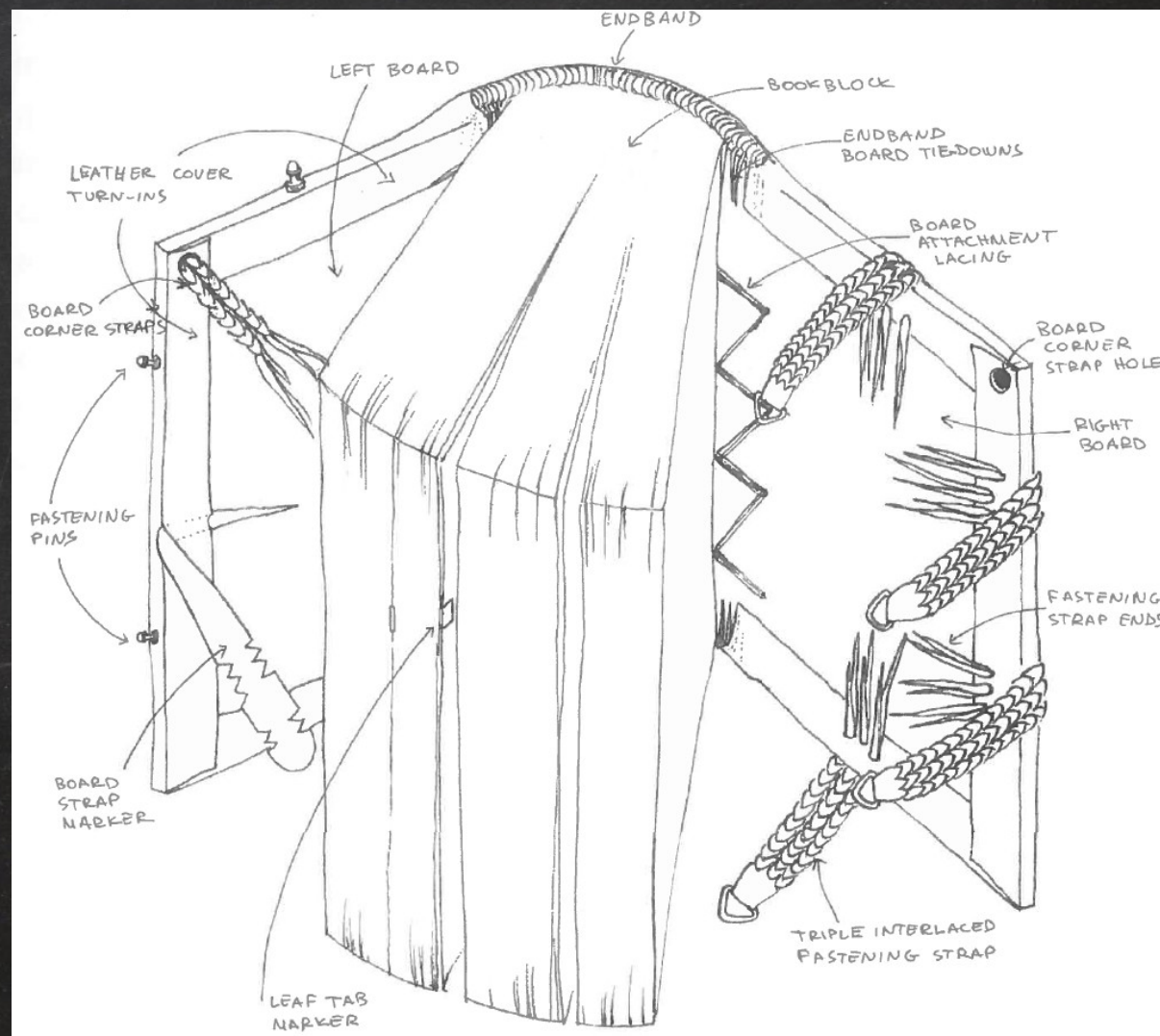
Continued use of scrolls

- Common in the Mediterranean through the 4th century CE
- Specialized use in the Middle Ages:
 - Genealogies
 - Actor's scripts
 - Torah scrolls in Judaism



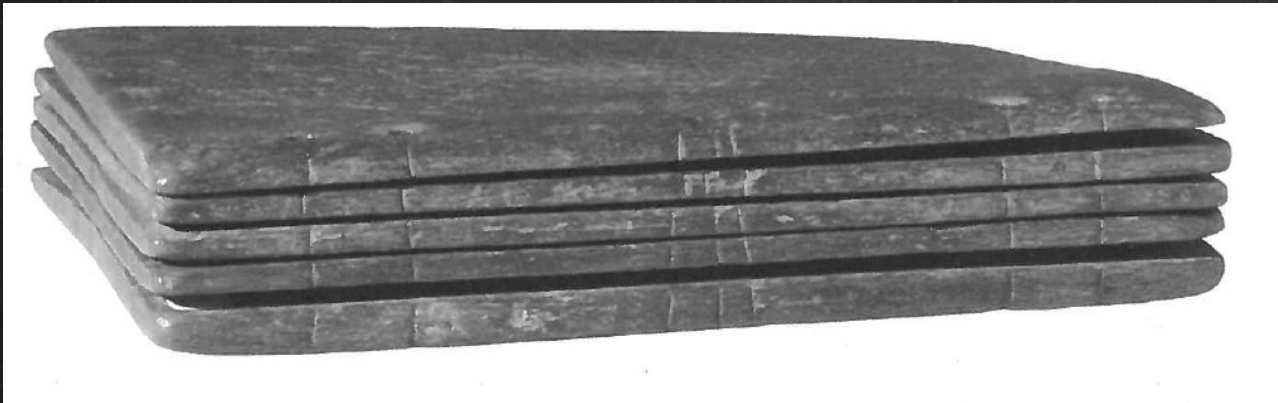
Beginning of a Torah scroll (16th century) from the British Museum

The successor to scrolls: the codex

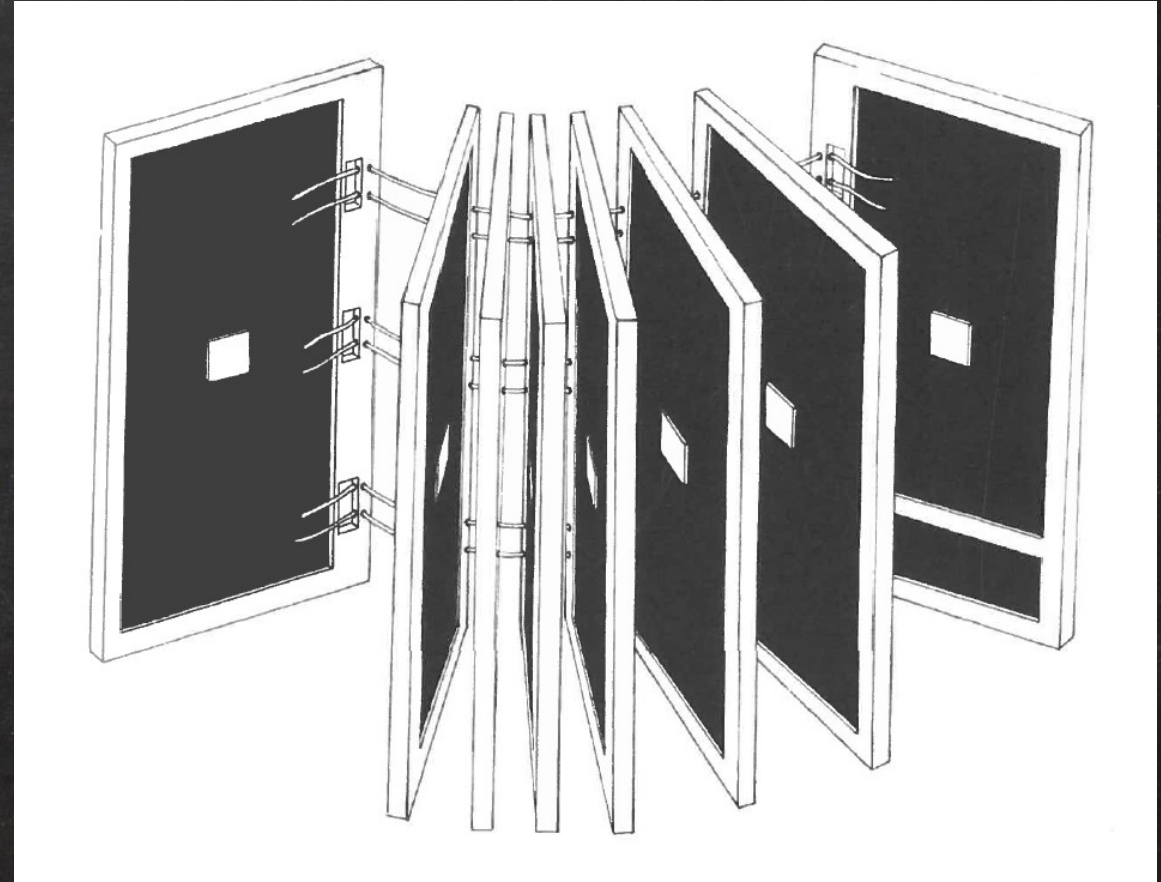


A drawing of a typical early codex
(from Boudalis, *The Codex and Crafts
in Late Antiquity*)

Early codices: writing tablets



4th century tablets from Egypt (Brooklyn Museum)
(from Boudalis, *The Codex and Crafts in Late Antiquity*)



Scraper

Wood tablets

Ink well

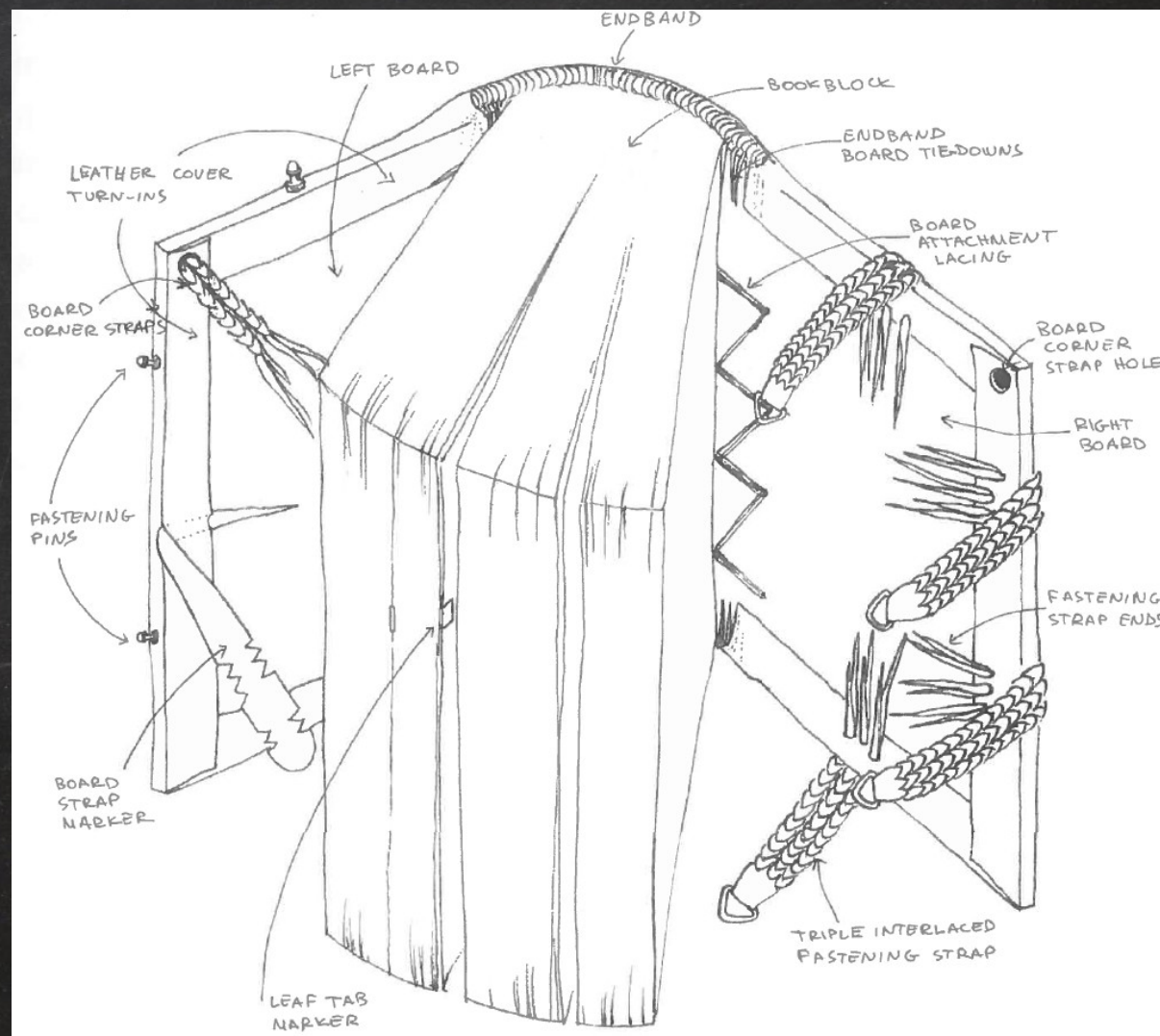
Pen

Scroll



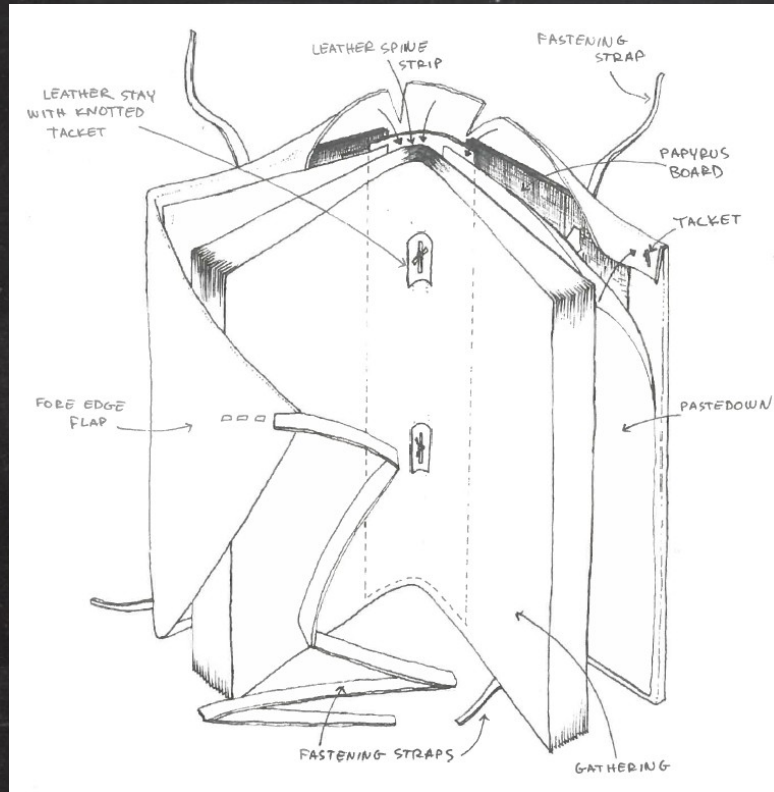
Fresco from Pompeii (1st century BCE)

The successor to scrolls: the codex



A drawing of a typical early codex
(from Boudalis, *The Codex and Crafts
in Late Antiquity*)

Single-gathering codices



from Boudalis, *The Codex and Crafts in Late Antiquity*

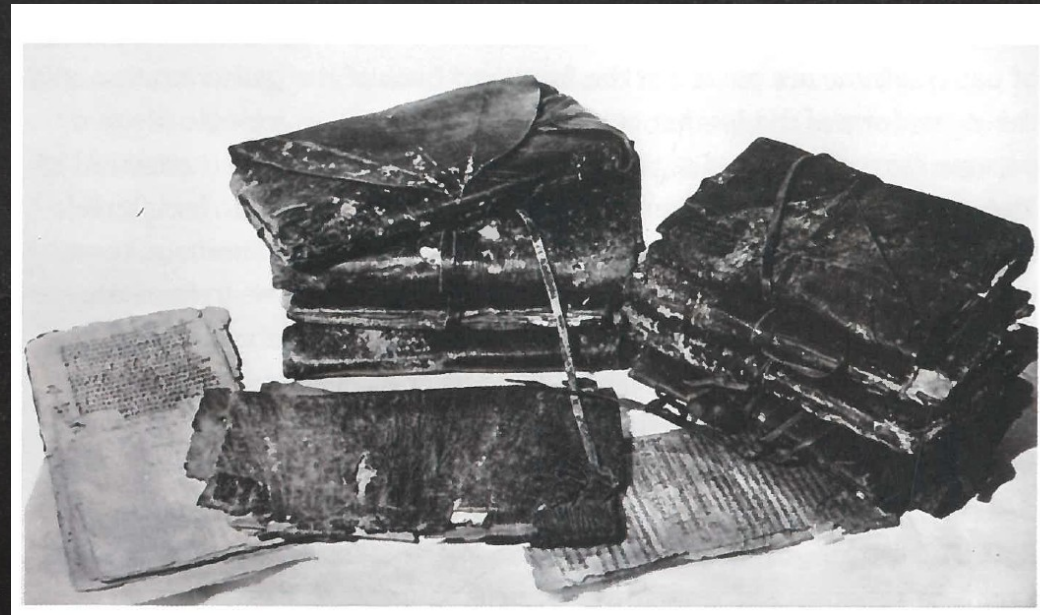


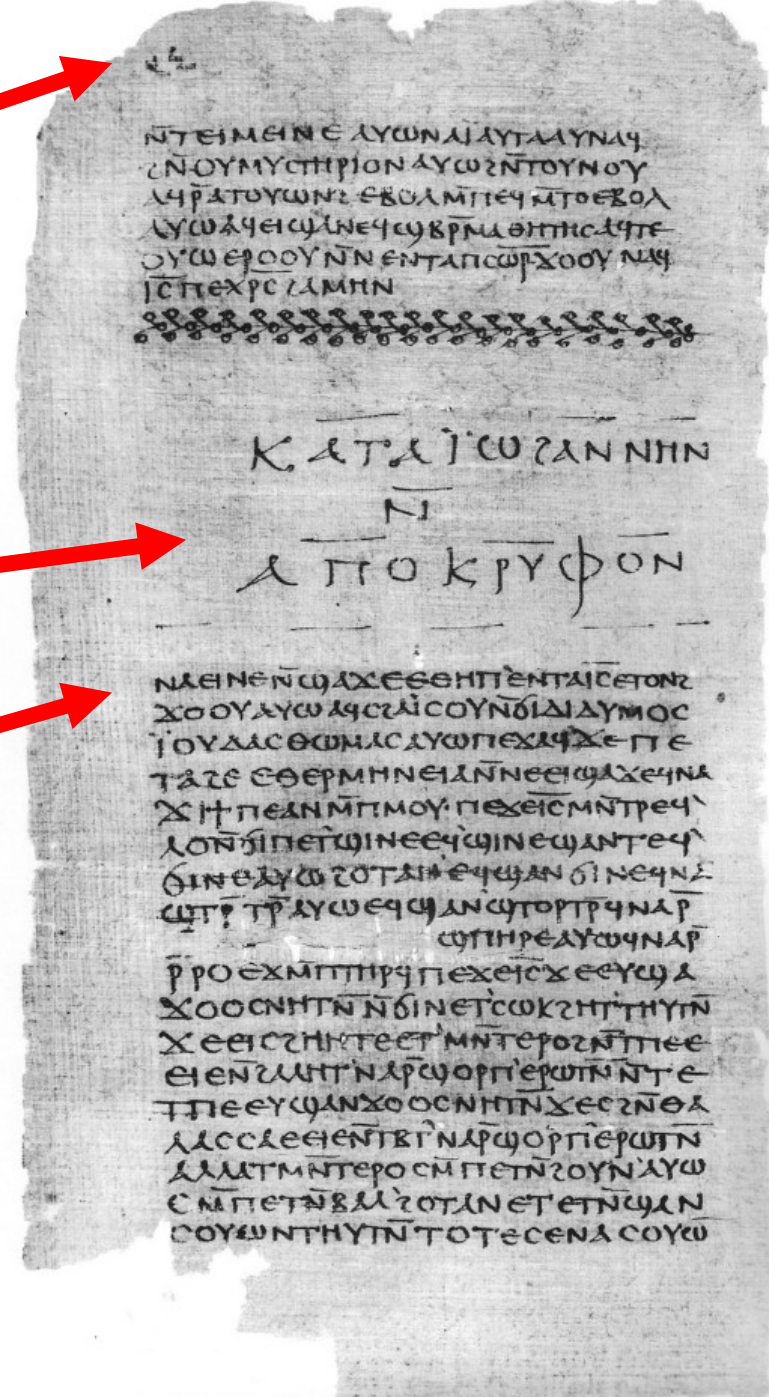
Fig. 22 The Nag Hammadi codices as they appeared when found in 1945. Coptic Museum, Cairo, Egypt. From Doresse and Mina, "Nouveaux textes gnostiques coptes découverts en Haute-Égypte."

A papyrus sheet from a Nag Hammadi codex

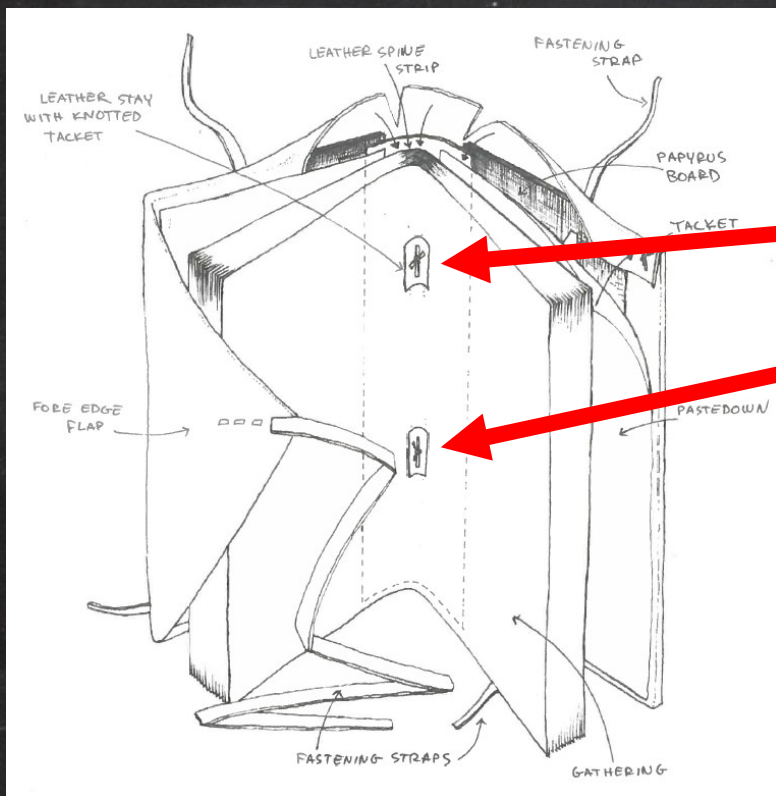
Page number

Title of the preceding composition

New composition



Single-gathering codices



Leather tabs

from Boudalis, *The Codex and Crafts in Late Antiquity*

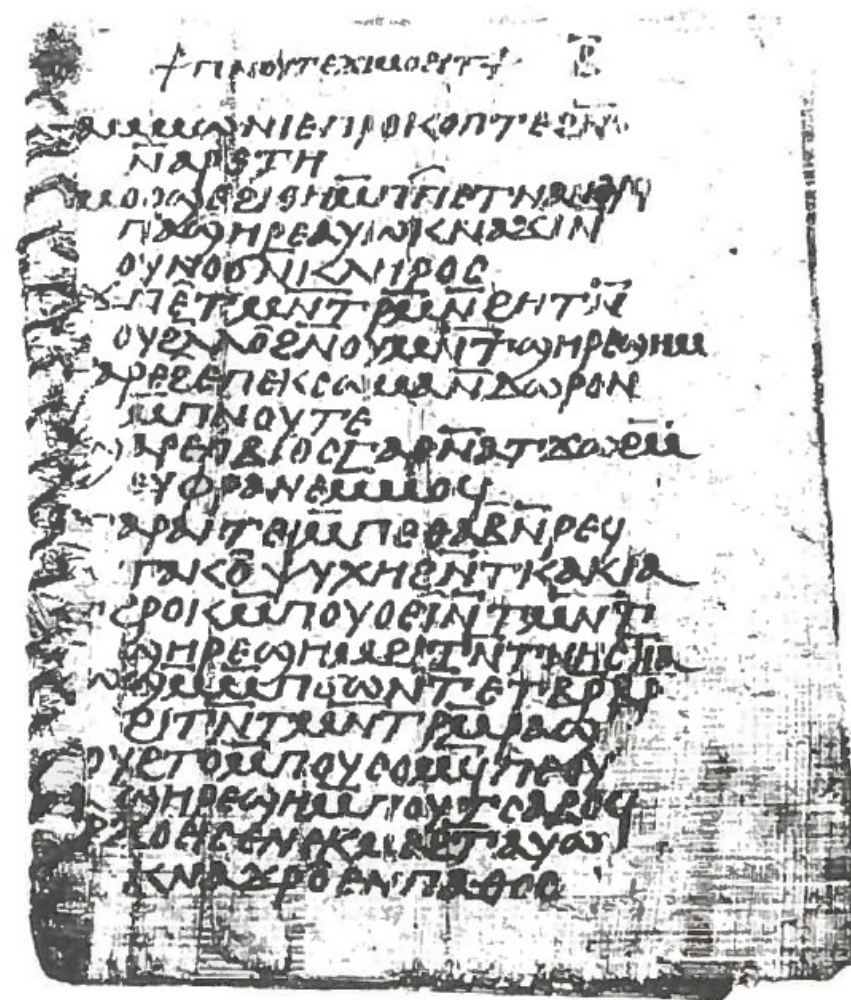
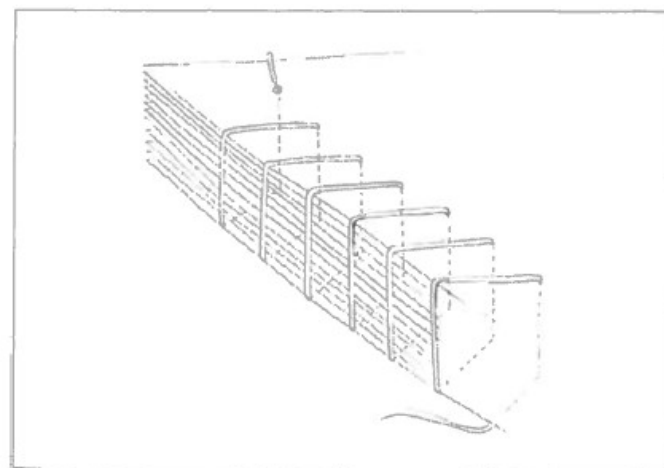
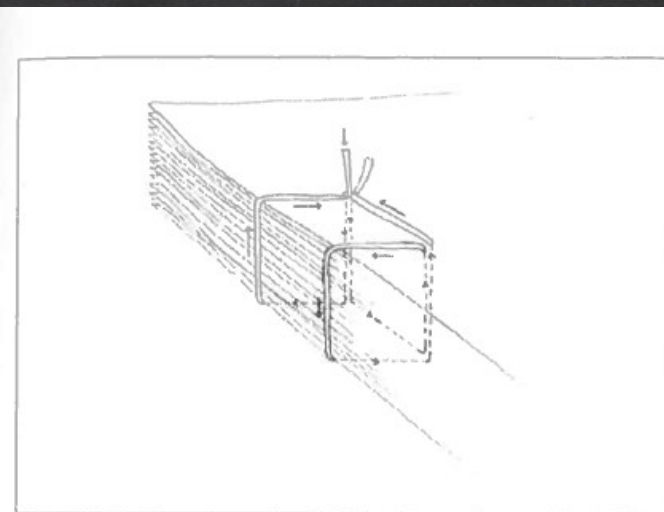


Fig. 22 The Nag Hammadi codices as they appeared when found in 1945. Coptic Museum, Cairo, Egypt. From Doresse and Mina, "Nouveaux textes gnostiques coptes découverts en Haute-Égypte."

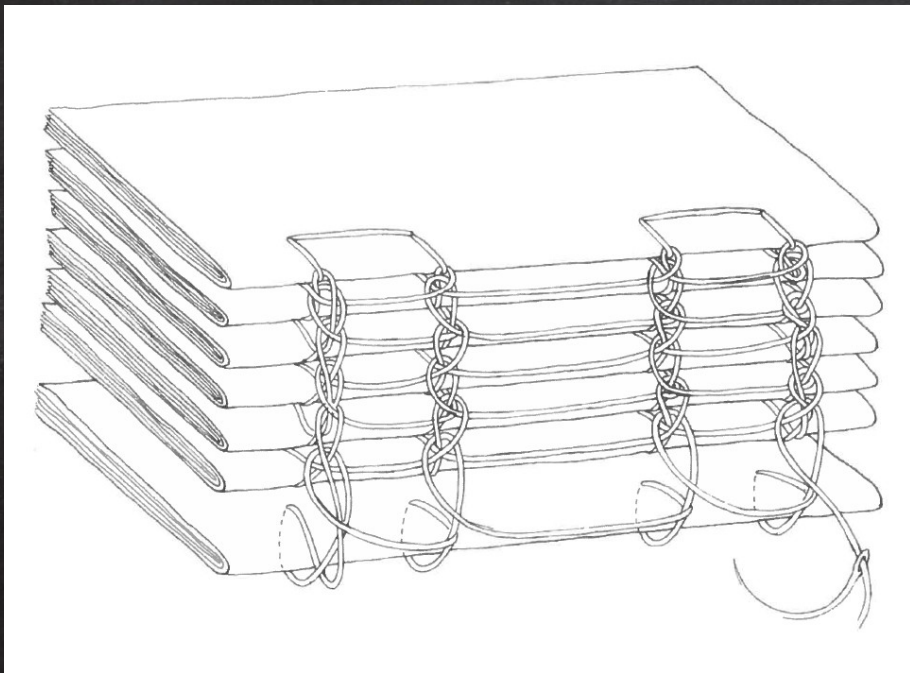
Spiral-sewn single-gathering codex

6th-7th century CE,
Egypt

(from Boudalis, *The
Codex and Crafts in
Late Antiquity*)

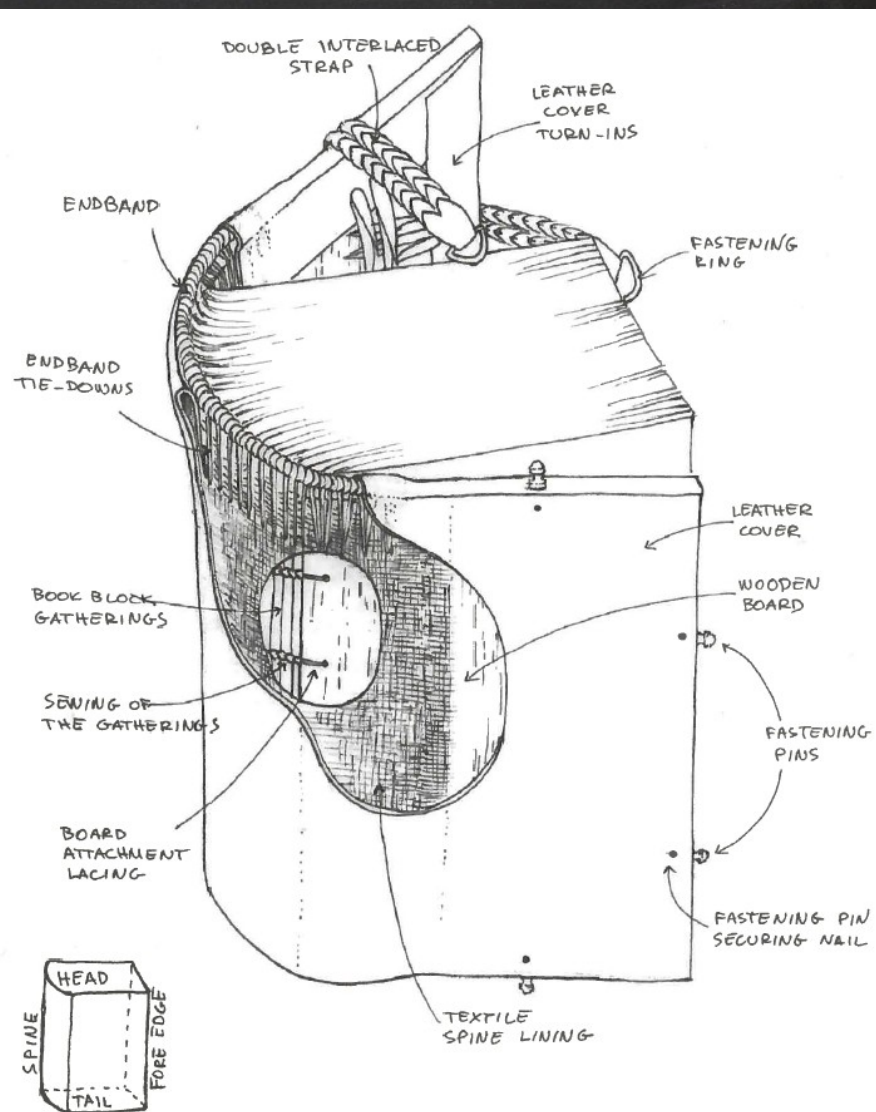


The multi-gathering codex



Groups of pages called *quires*

From Boudalis, *The Codex and Crafts in Late Antiquity* (2018)



Codex versus scroll for storing info

- Codex: complete accessibility of all text inside
 - Aided by page numbers, table of contents, indices
- Scroll: have to “scroll” through the entirety
 - Rarely use column numbers

Codex versus scroll for storing info

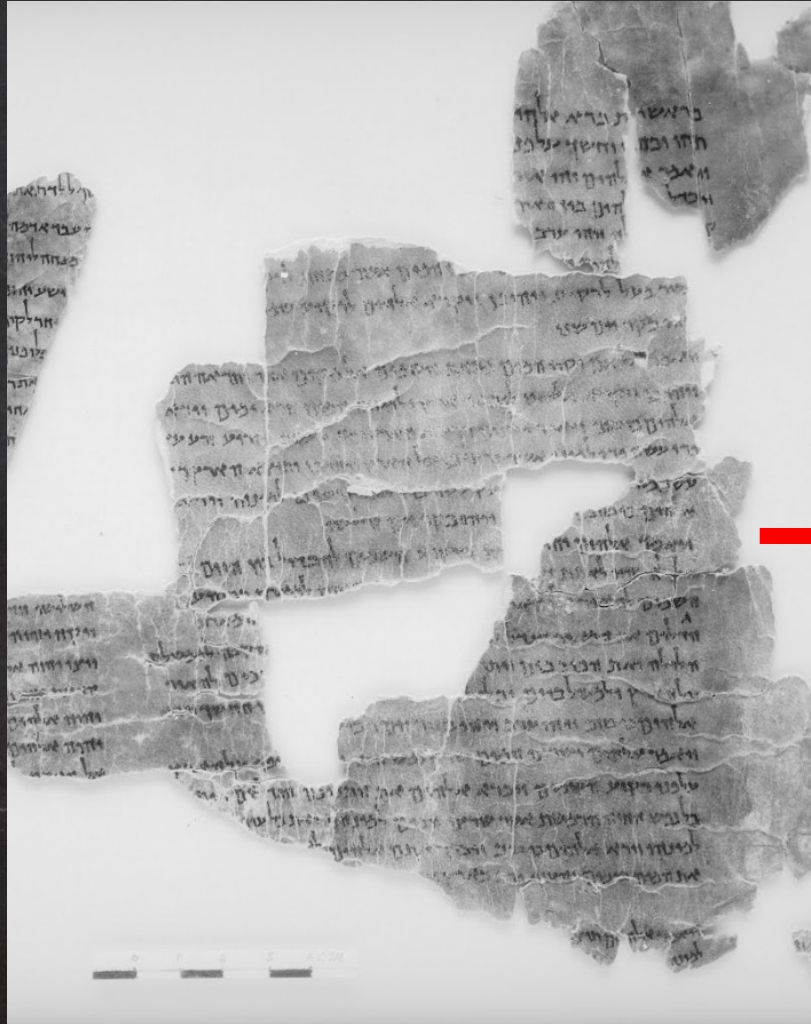
- Codex: could combine many texts into one and create very long documents ***in the same physical object***
 - Could even have multi-volume texts
- Scroll: difficult to have a document longer than a single scroll

Influence of scrolls on codices

- Authors dividing long works into shorter “books” (or chapters)
- Maintaining traditional divisions between scrolls (e.g. the five books of the Torah)

Influence of scrolls on codices

- Maintaining layout of ceremonial biblical scrolls in elaborate codices



Scroll of Genesis (1st century BCE)



Codex of entire Bible (10th century CE)

The codex in the imagination

- **Bibliomancy**: predicting the future by opening up to a random passage in a codex
- Famous examples:
 - *Sortes Virgilianae* (using a book of Virgil for bibliomancy)
 - St. Augustine's conversion after hearing a voice say "tolle, lege!" ("pick up and read!"), and opening a Bible to Romans

Thank you!