

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





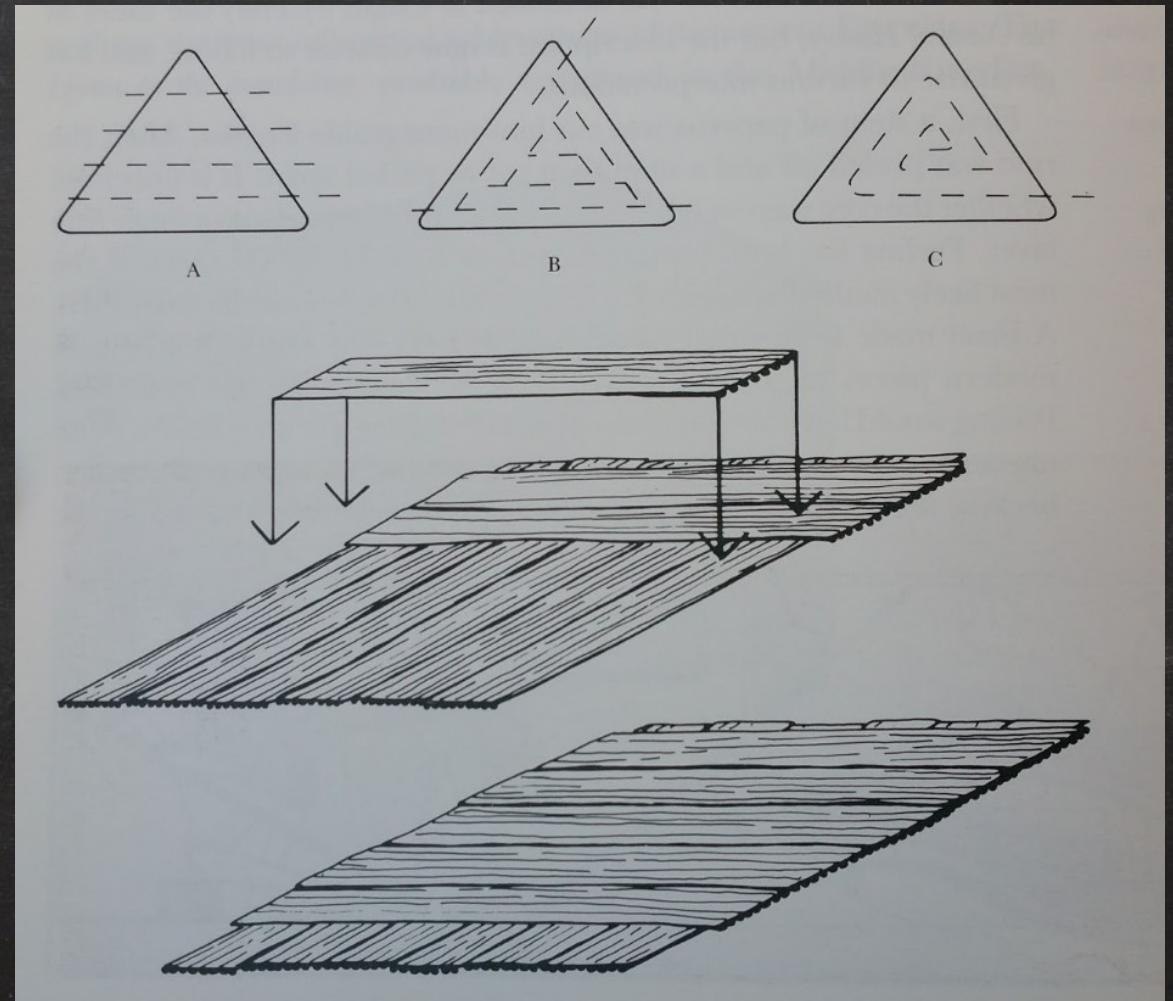
Den (standing)
First Dynasty Pharaoh
29th century BCE

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



The earliest book: papyrus scrolls

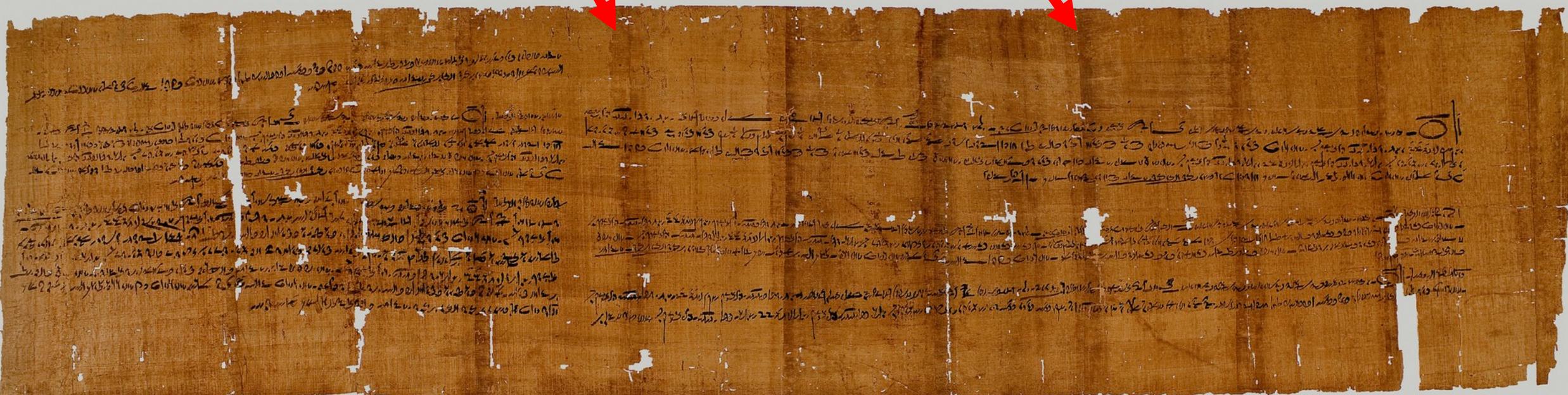
- How to make a sheet of papyrus



Joins between two sheets

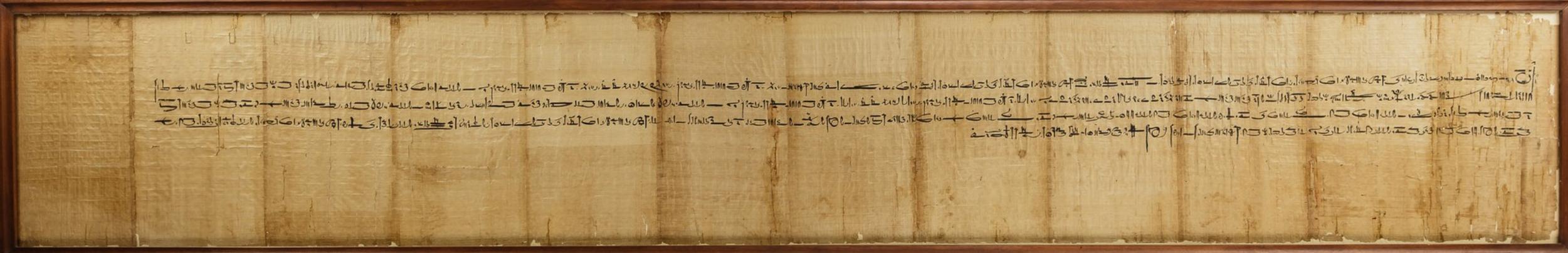


Joins between two sheets

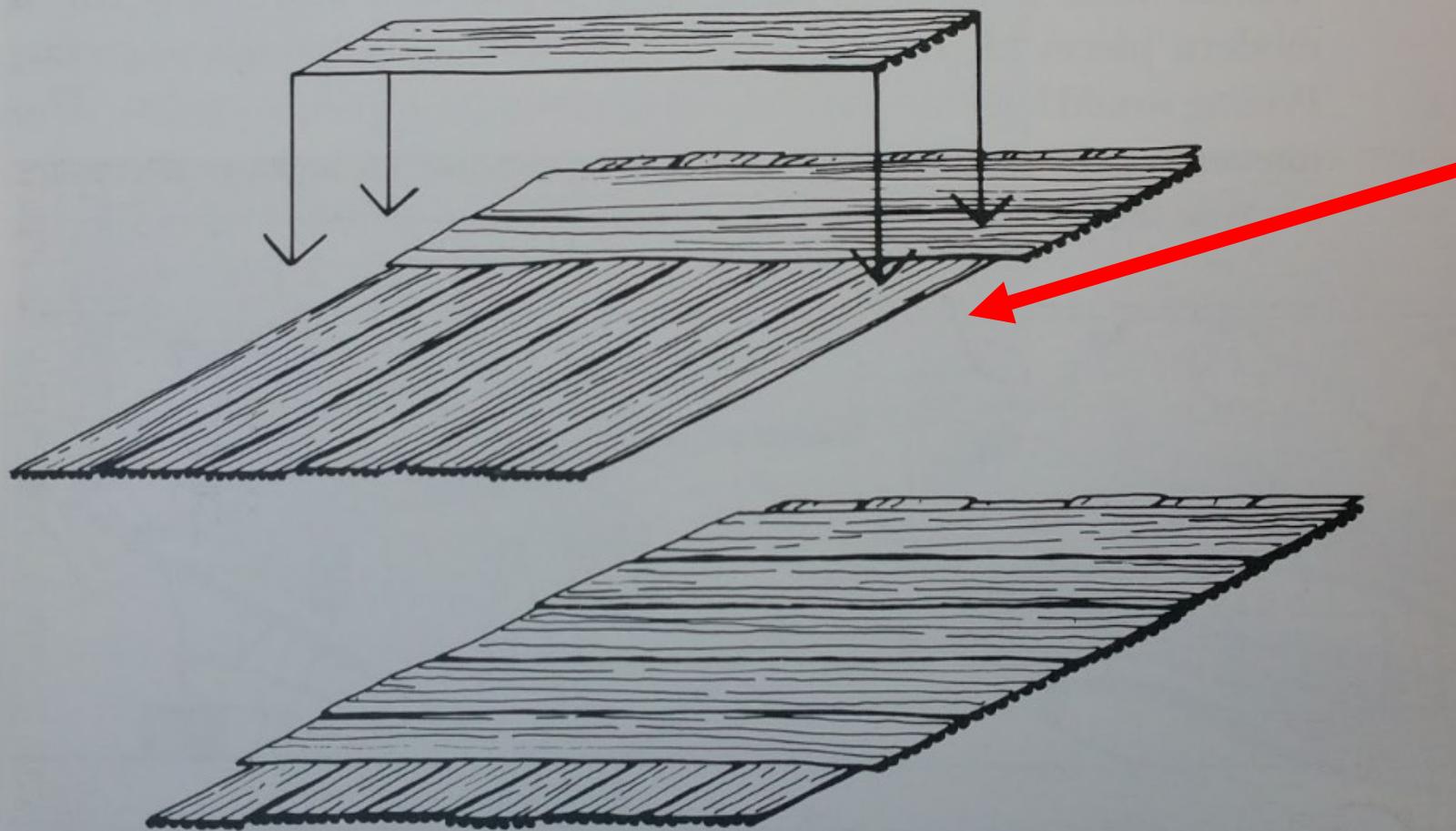
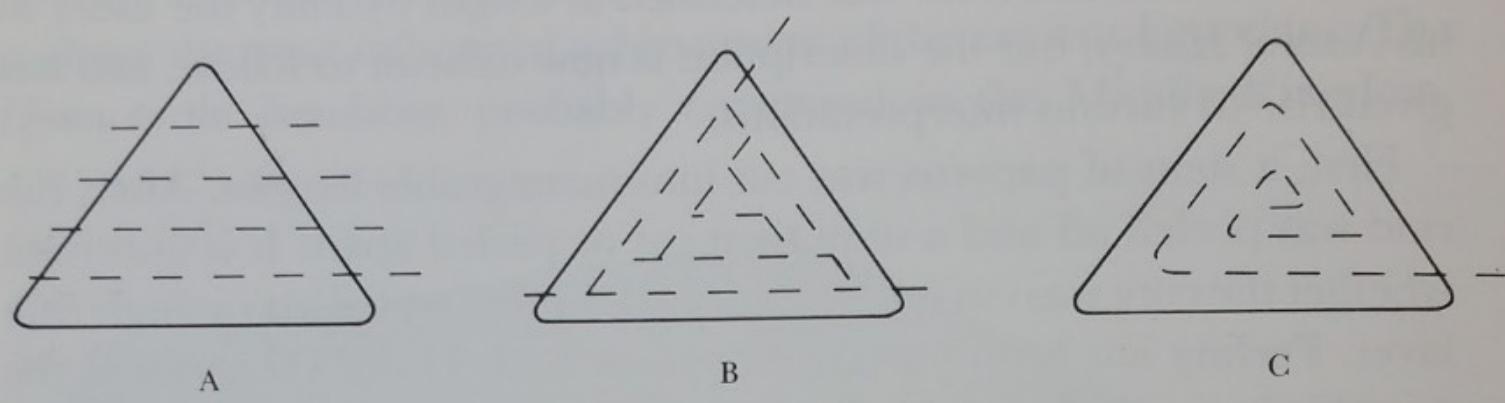


An Egyptian marriage contract (ca. 310 BCE)
(OIM E25259)

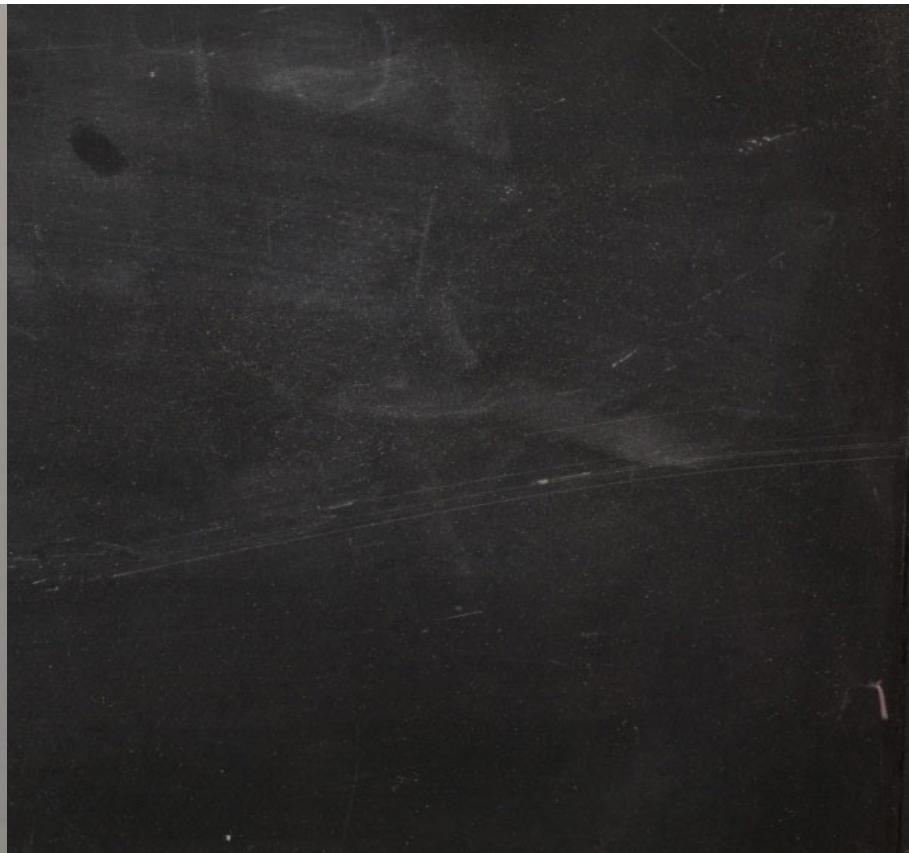
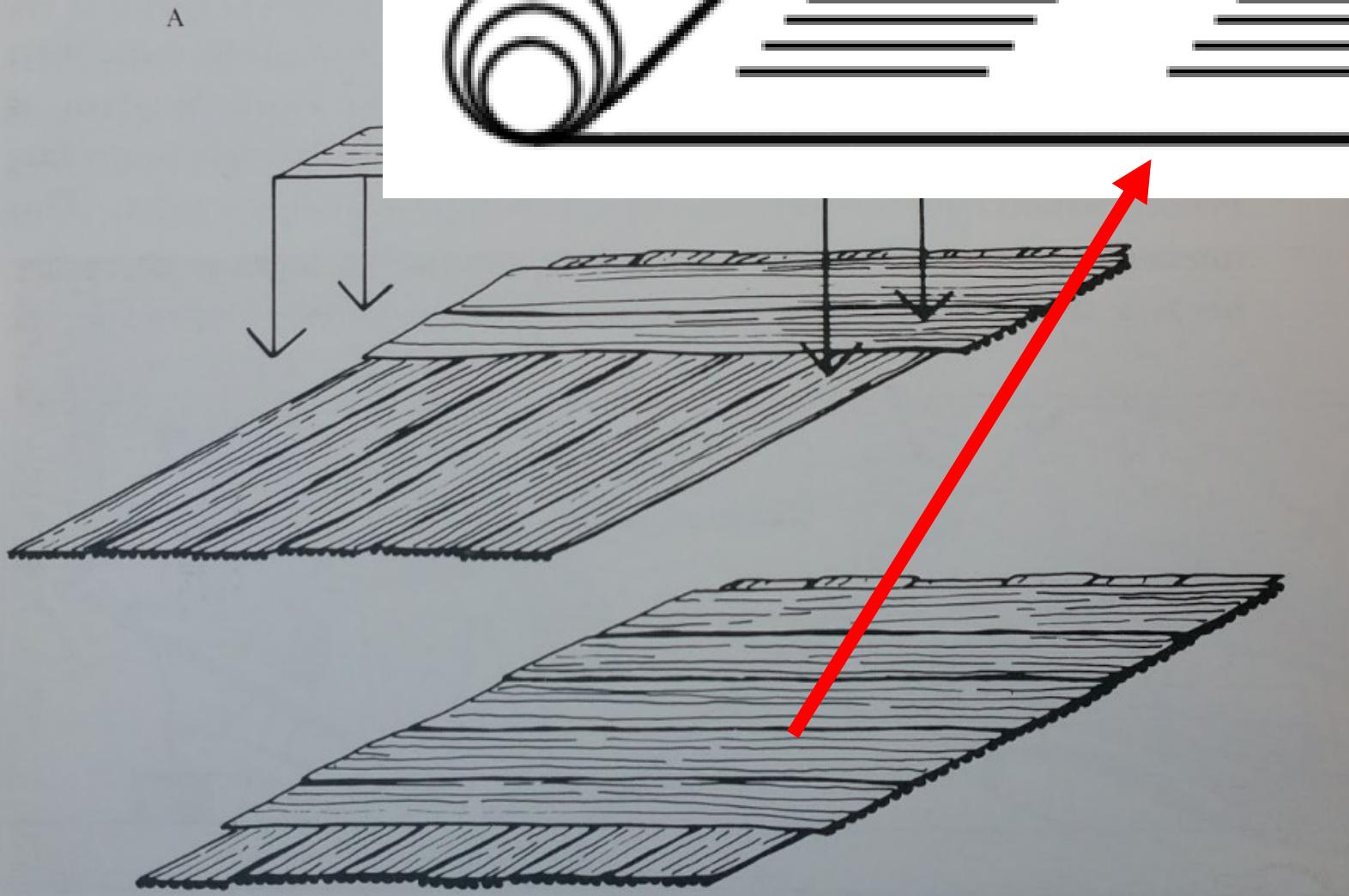
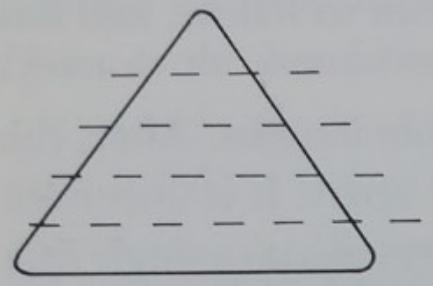
Joins between two sheets



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



Overlay of strips, typically
2 layers

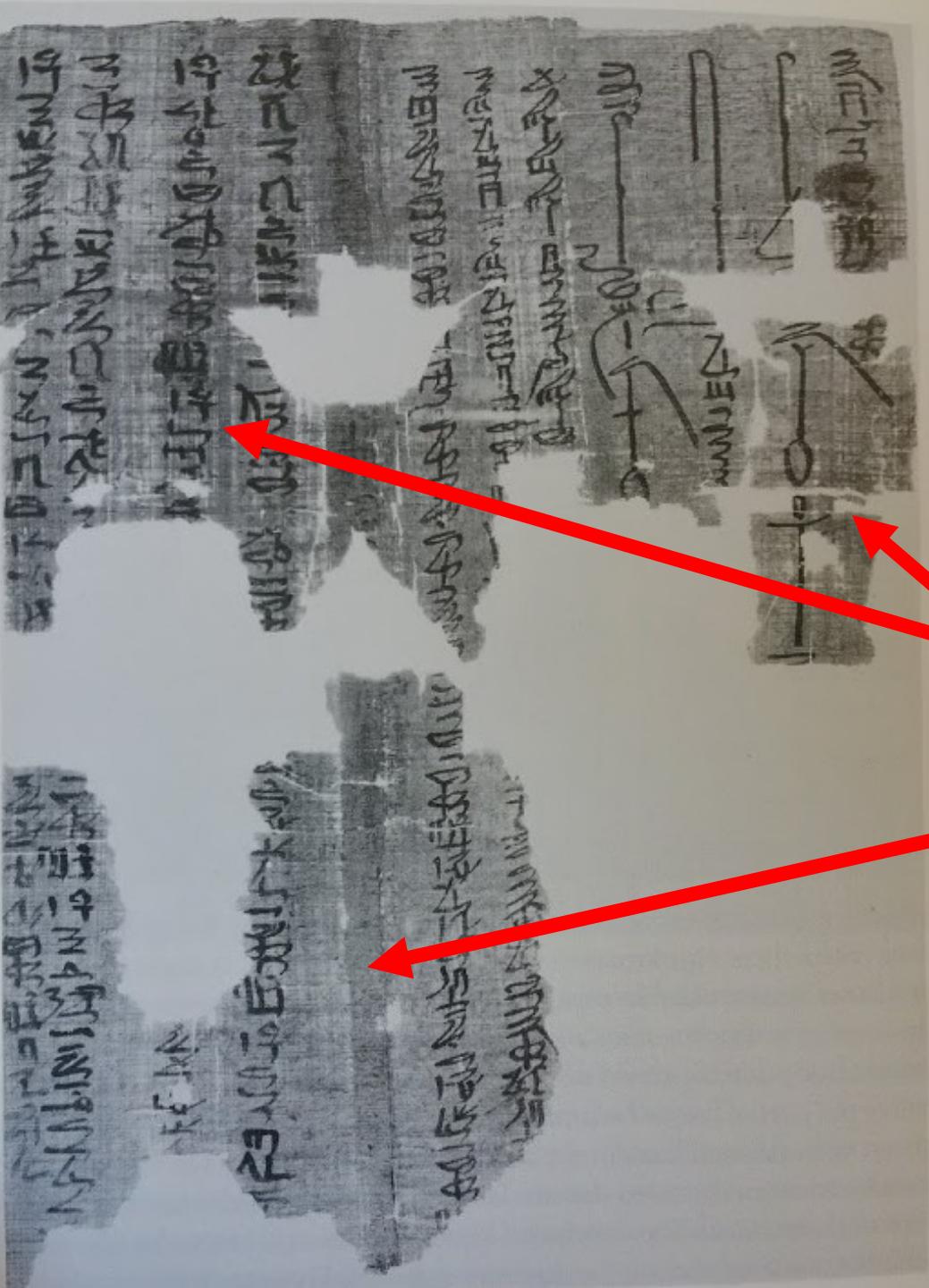


 ----- Direction of writing


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

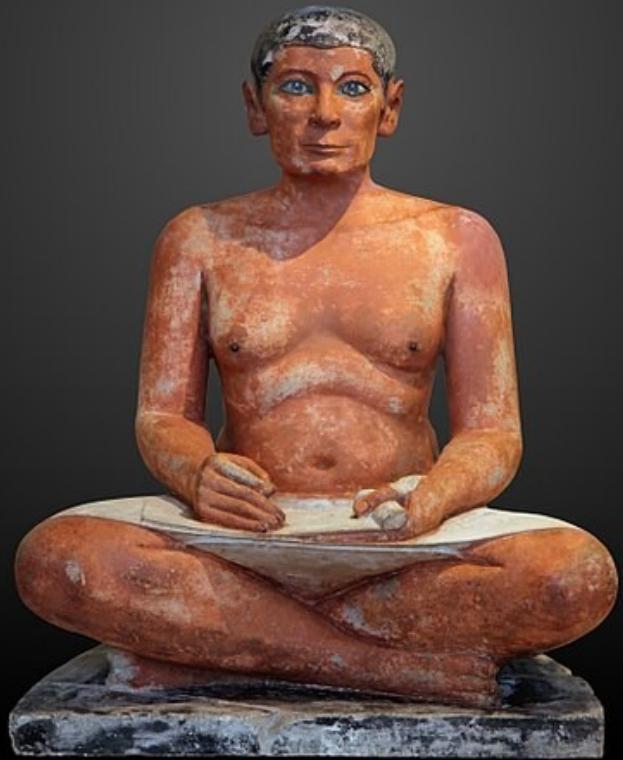


A letter made by combining
two sheets from different
letters

Note different handwriting

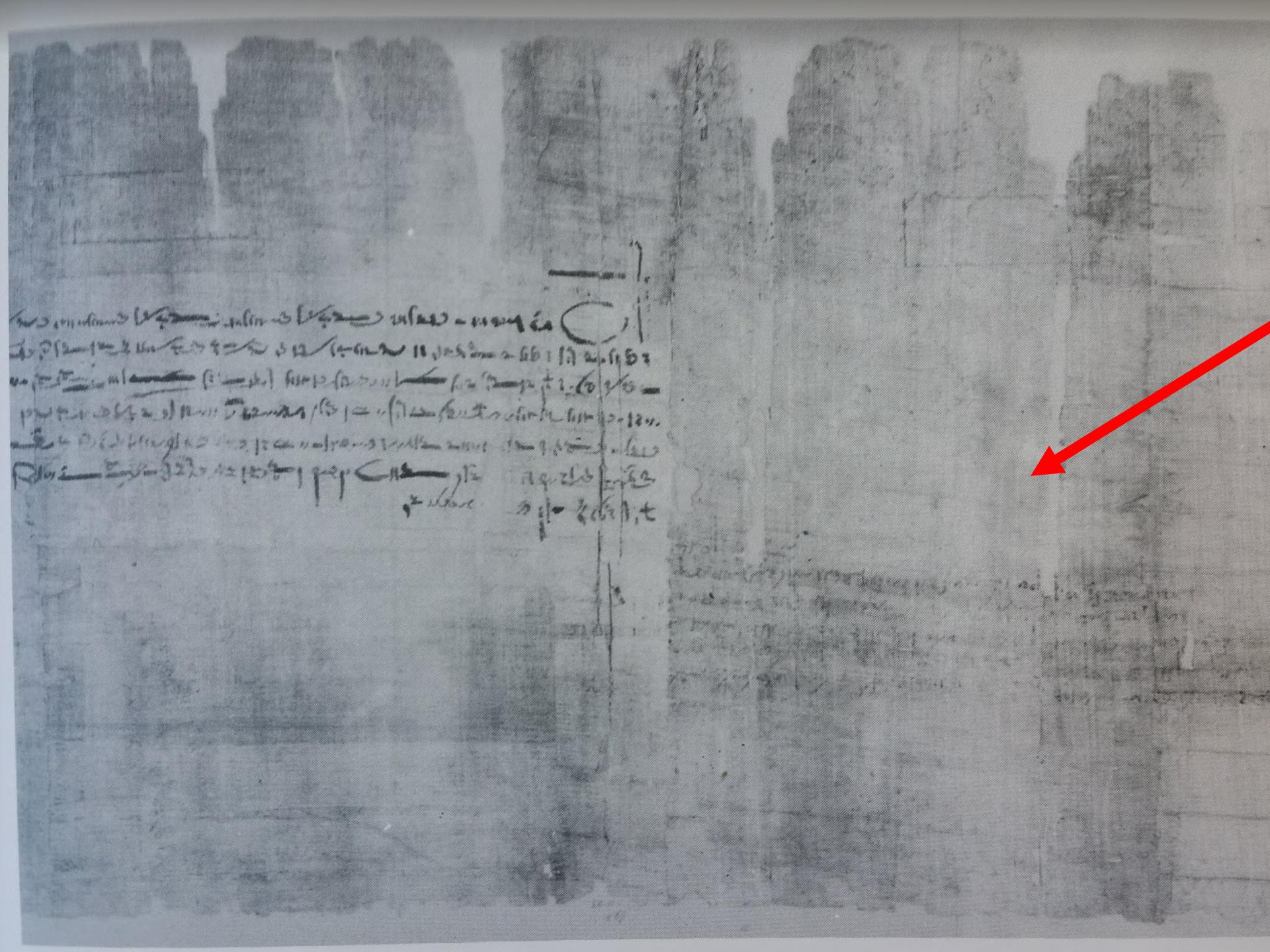
Note papyrus join

(from Parkinson and Quirke, *Papyrus*)



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

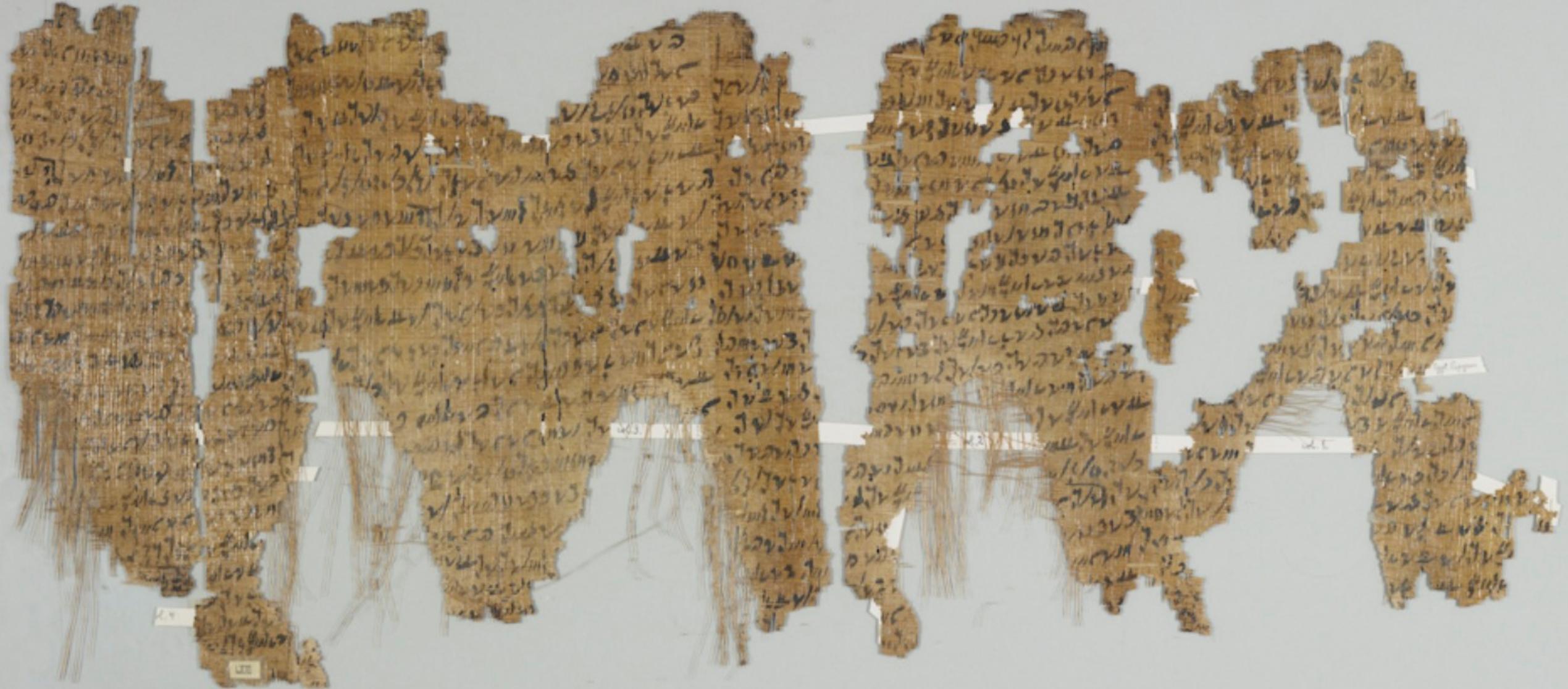
(Louvre)



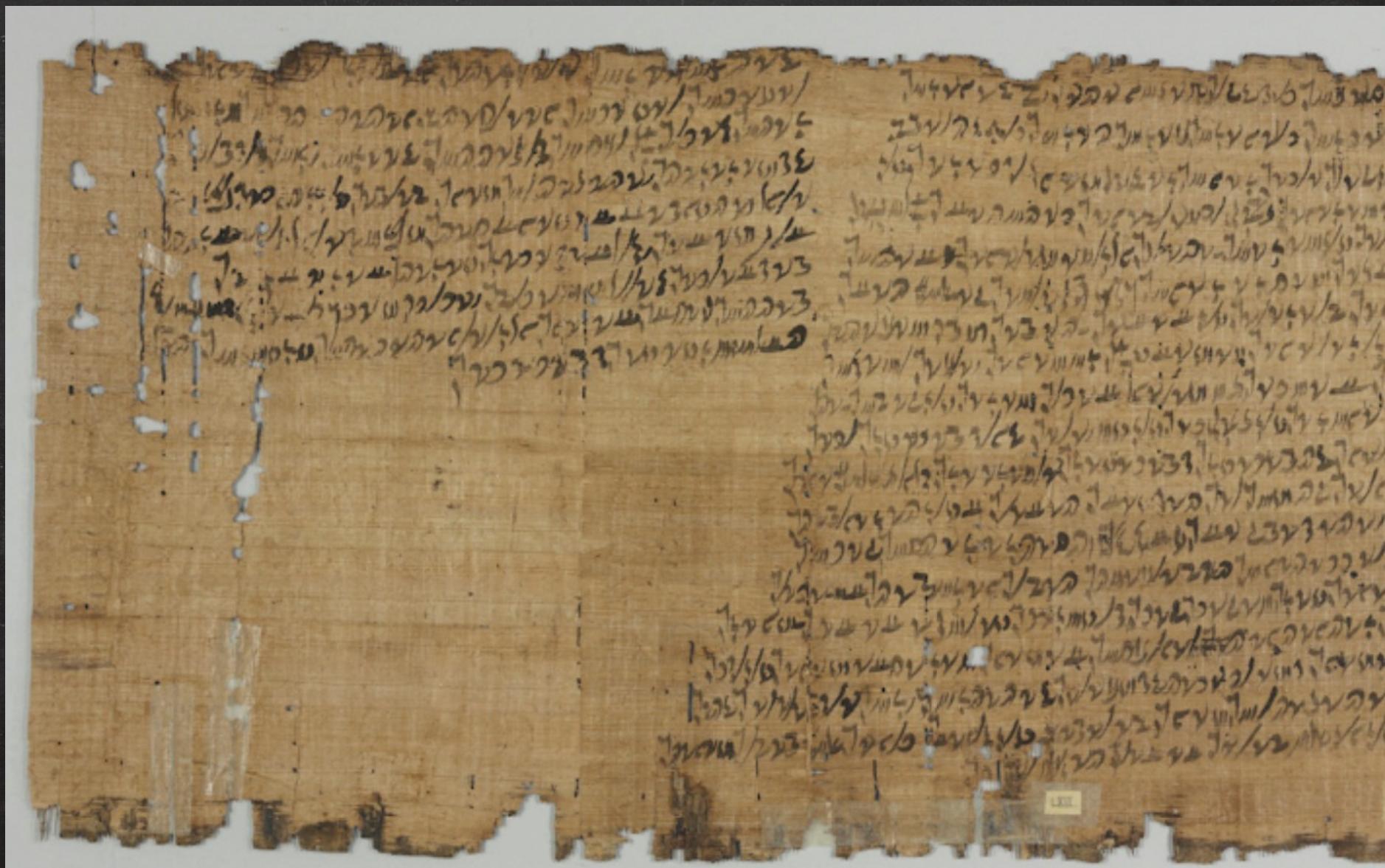
Blank sheet at
beginning of
scroll

(from Parkinson and
Quirke, *Papyrus*)

Beginning of a scroll....



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



Top margin

First words

Bottom margin

How to inscribe a scroll

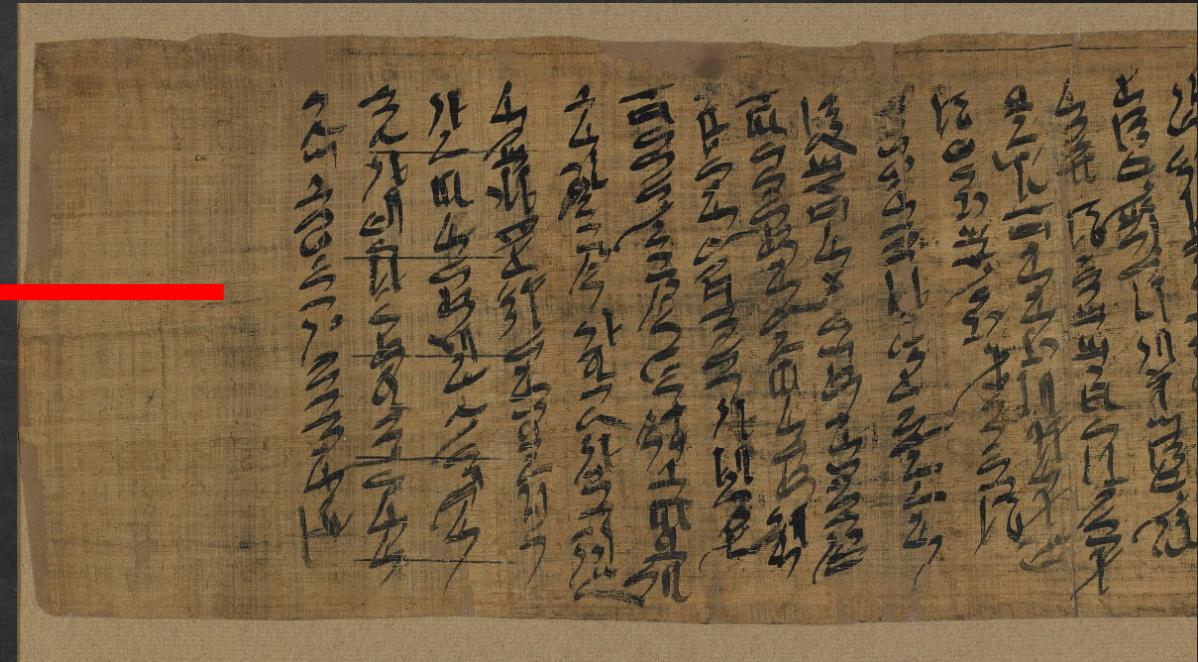
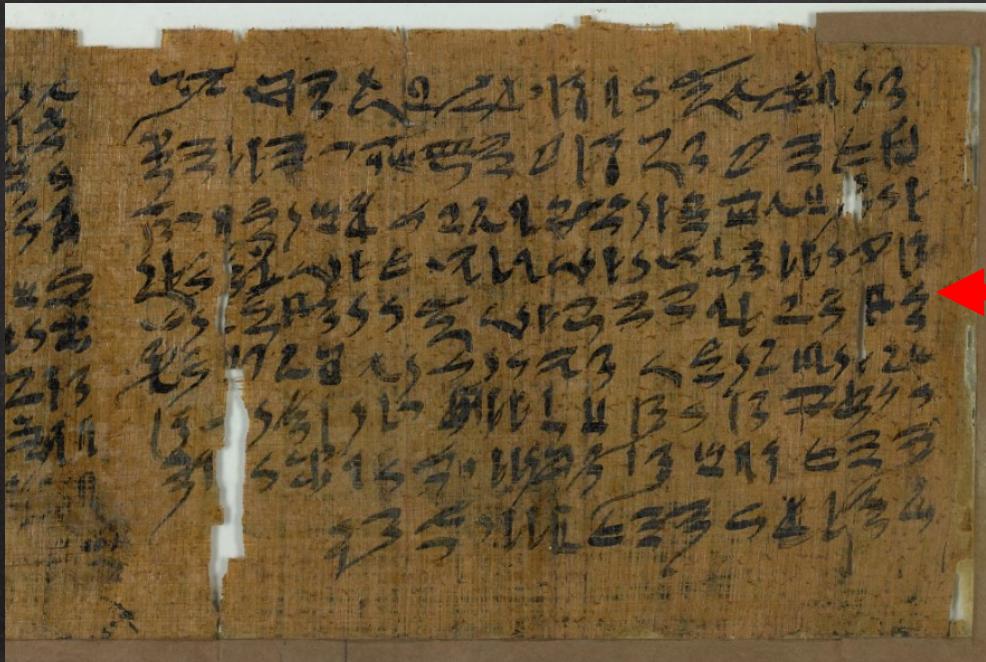
1. Leave space at the beginning for a handle and to prevent
against wear and tear
2. Leave a margin at the top and fill in a square- or rectangle-
shaped column of writing
3. Once the bottom margin is reached, begin a new column
4. Continue on the back if necessary

The Instruction of Amenemope, formatted with one sentence per line



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

End of front



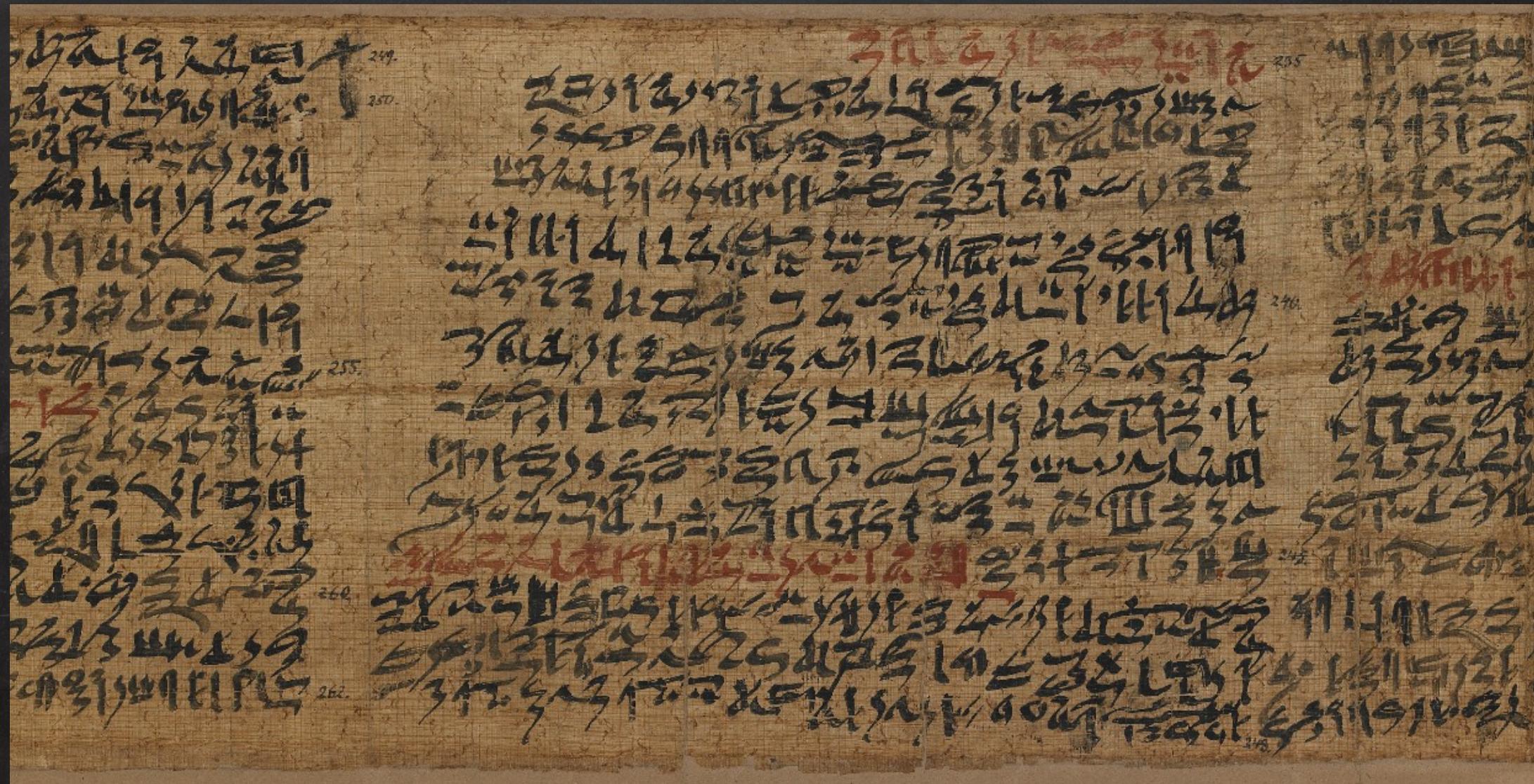
The Eloquent Peasant (Middle Kingdom)

28

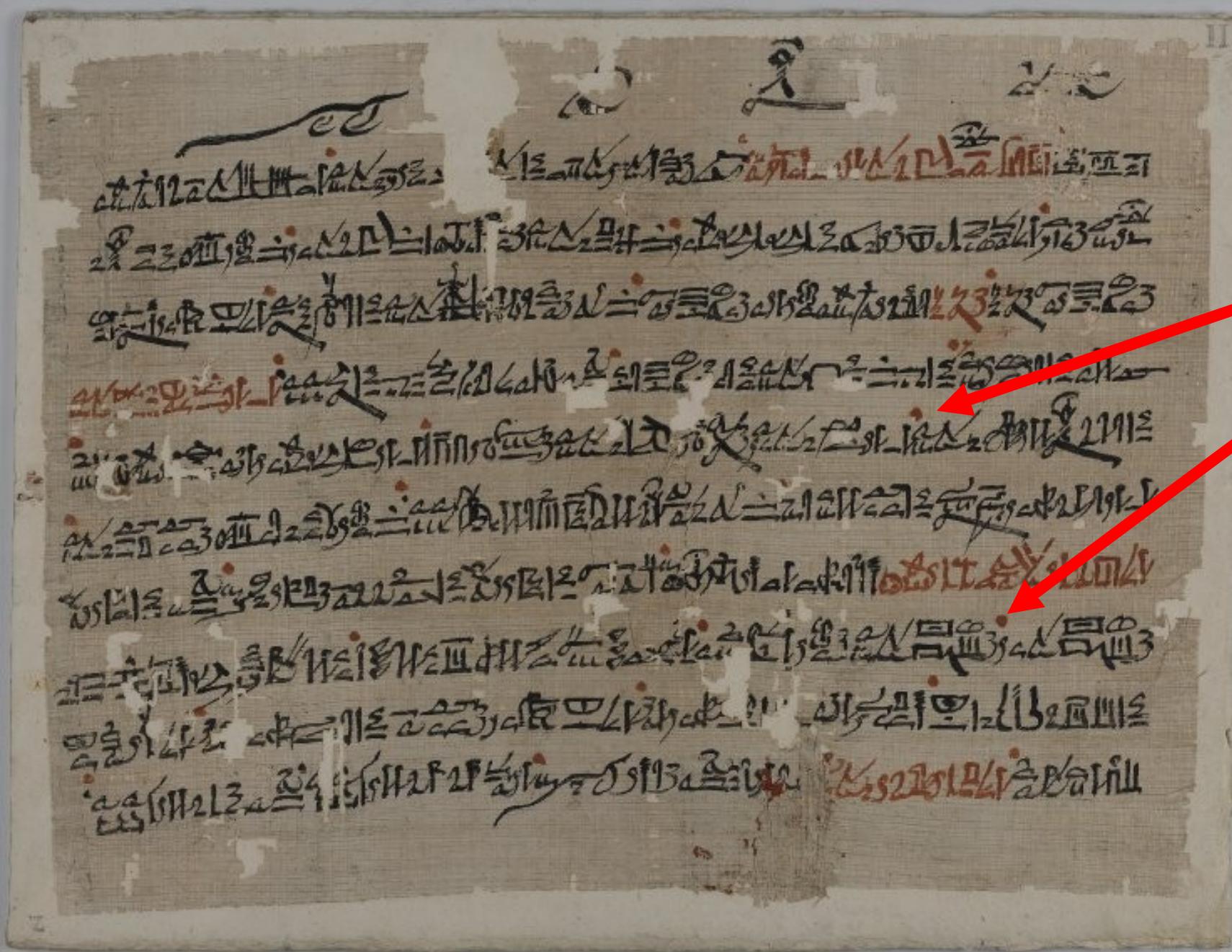
Red ink used to mark
beginnings and ends of
prescriptions in a doctor's
handbook

Papyrus Ebers (Middle Kingdom)

Red ink used in a short story to mark sections



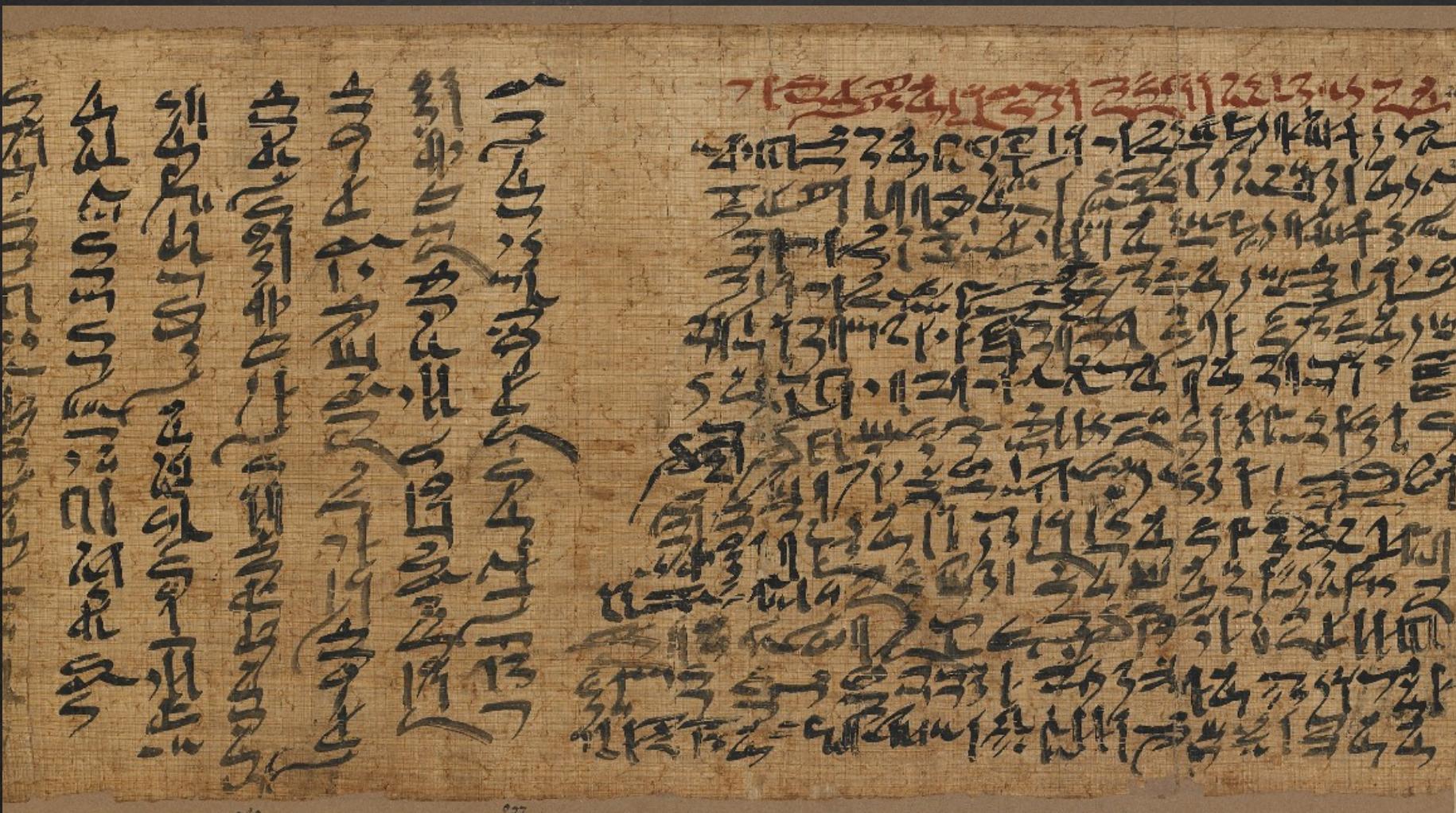
Dots (“verse points”) used to mark units of poetry



Wadi Jarf
papyrus

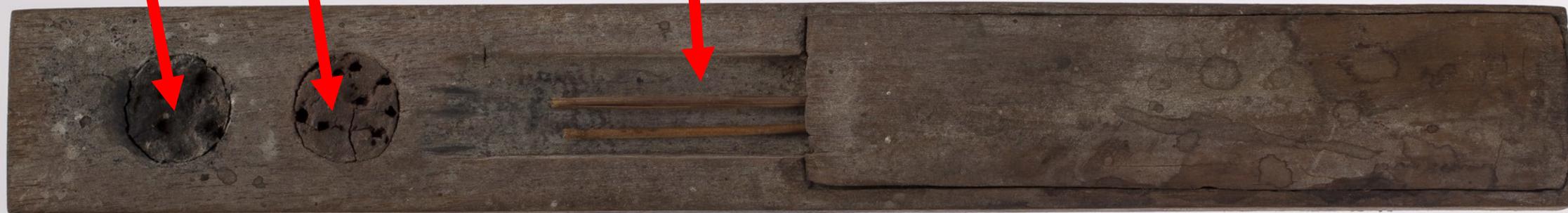


Two directions
of writing in
the same scroll,
a Middle Kingdom
short story
(*Sinuhe*)

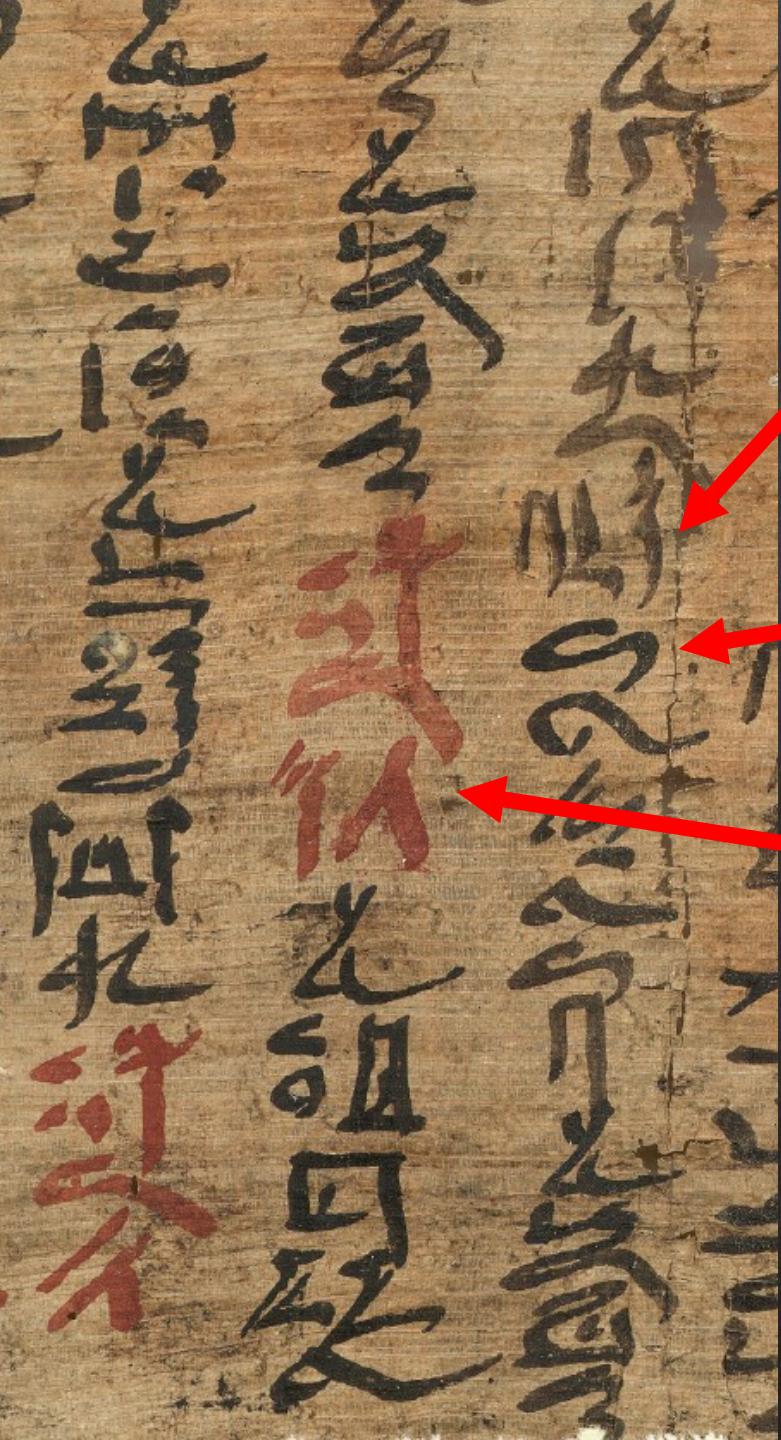


Blank ink
Red ink

Brushes



Egyptian scribal kit (OIM E10780C)



Ink running out

Scribe dips brush in ink

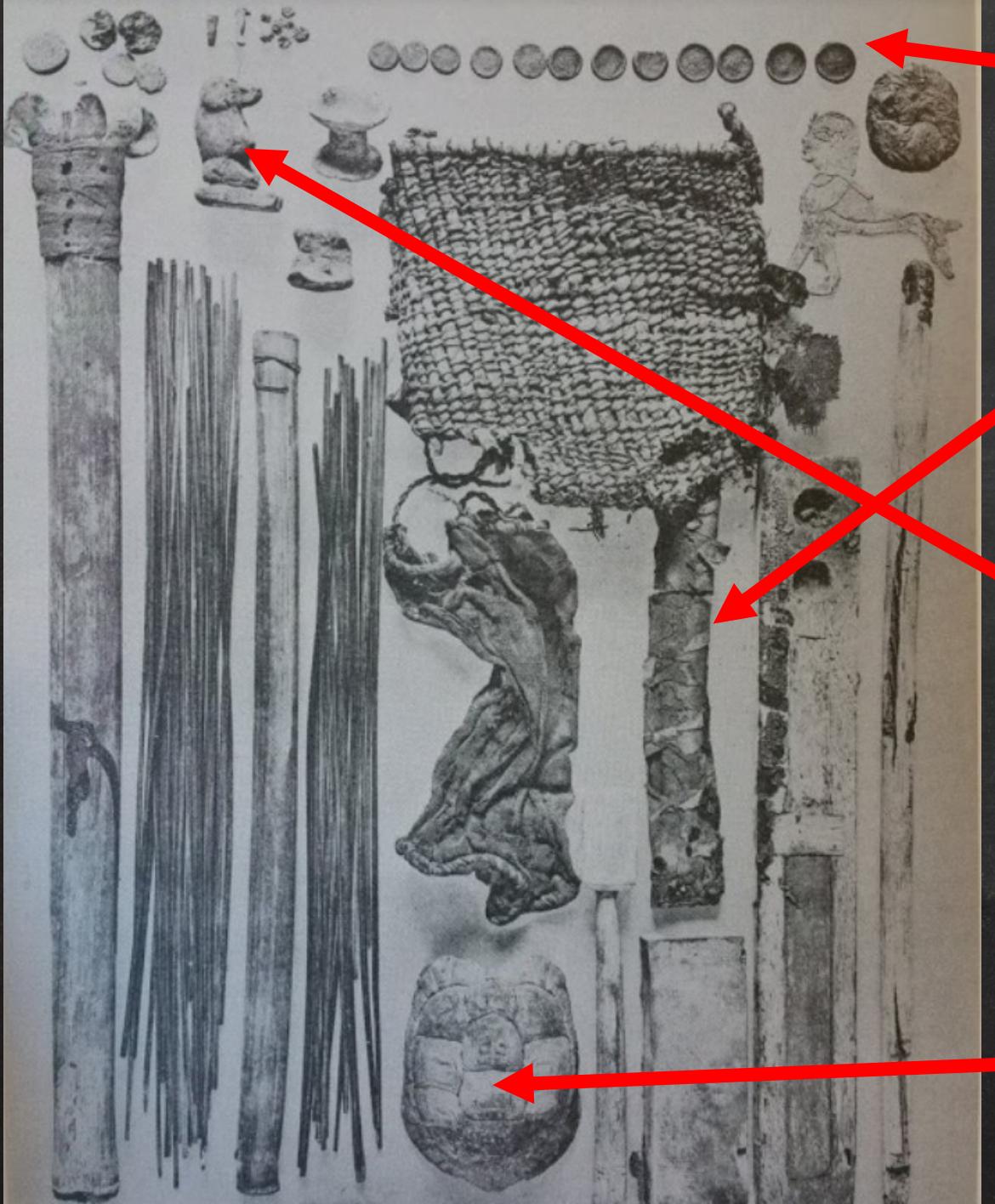
Seamless switch to red ink
and back to black

Blank ink
Red ink

Brushes



Egyptian scribal kit (OIM E10780C)

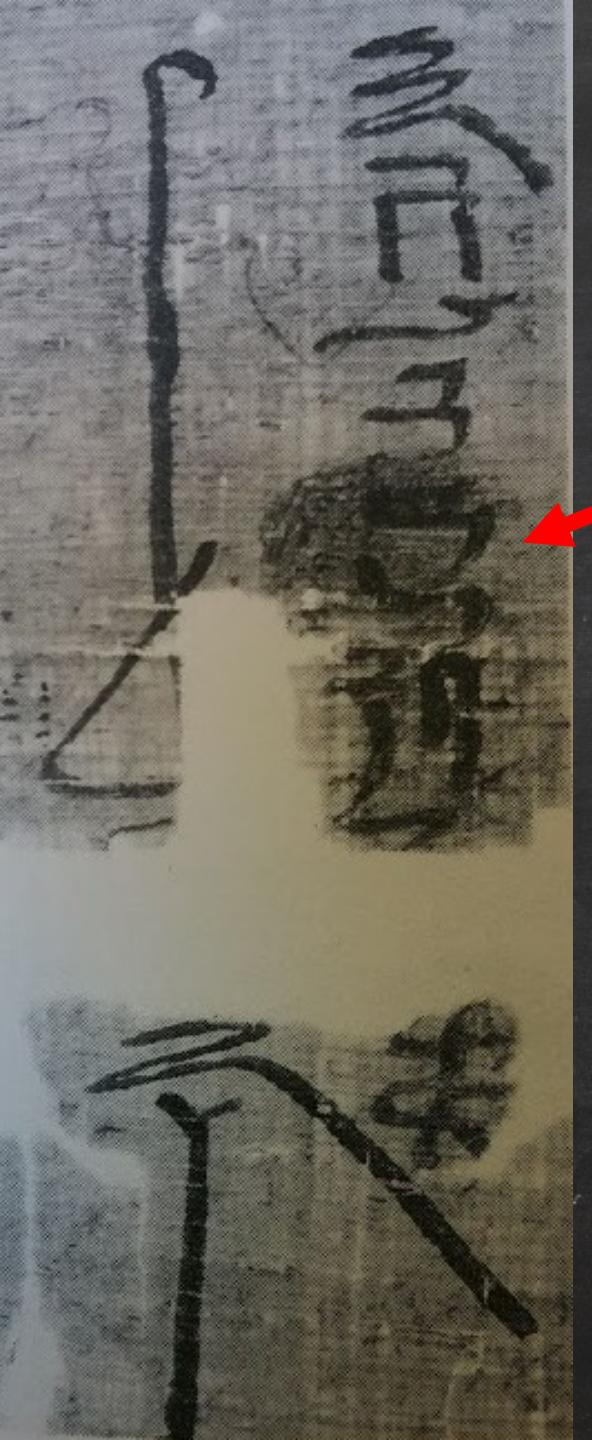


Clay balls

Mallet

Statue of Thoth (as baboon)

Tortoise shell



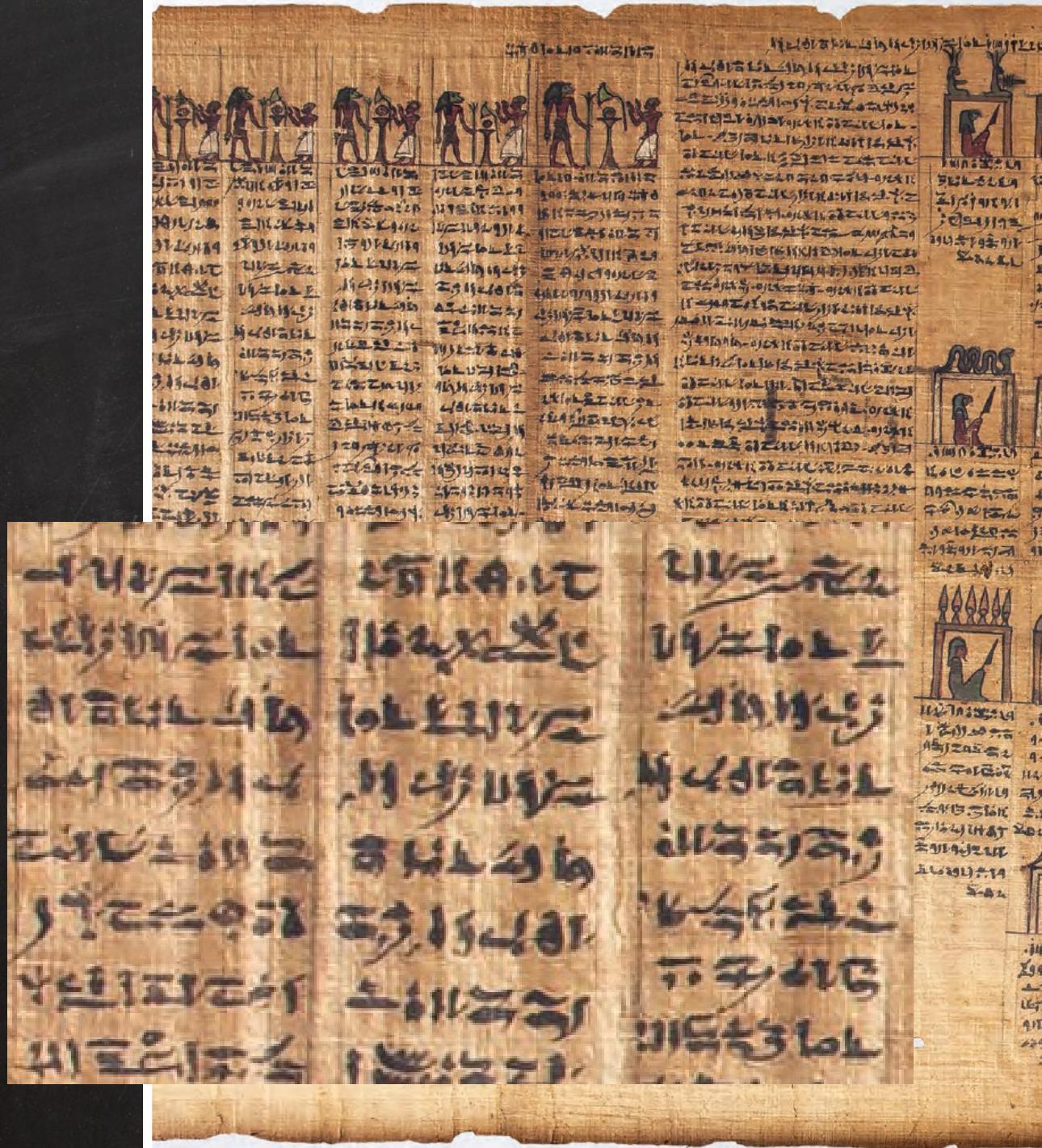
A thumb print left when a scribe erased a word on a letter he was reusing, and wrote a new one



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)

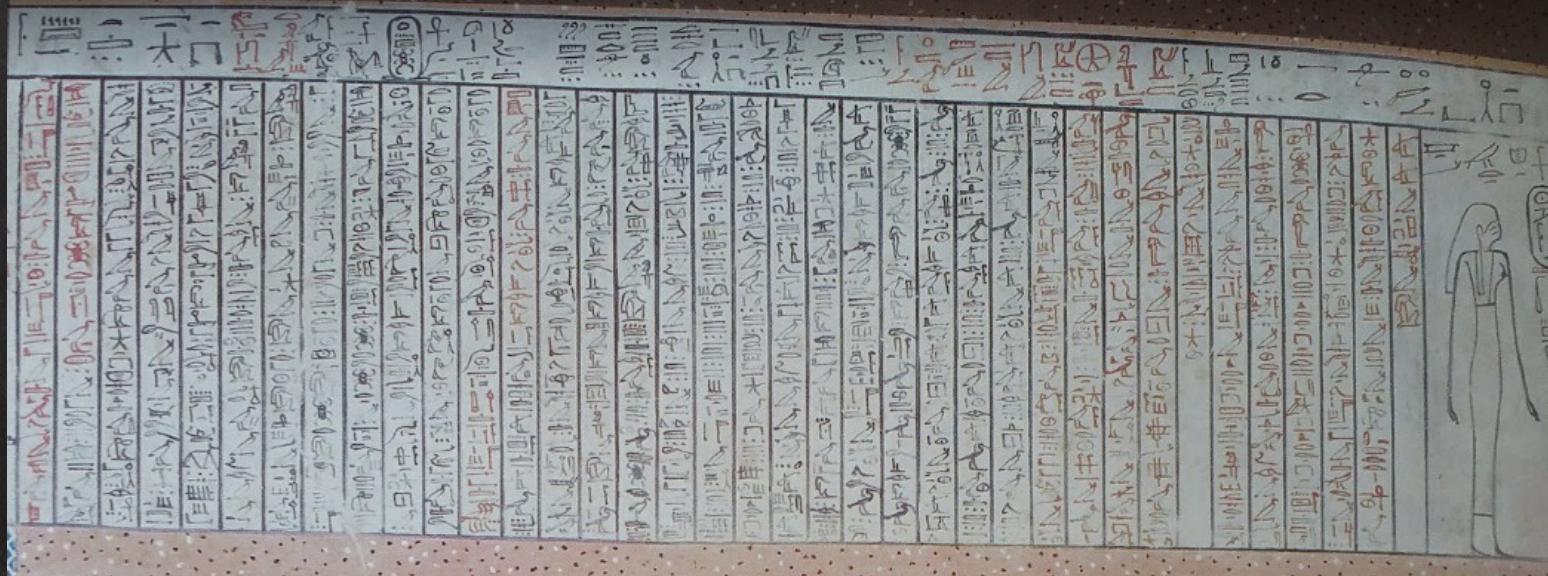


A section from a second Book of
the Dead scroll in the Oriental
Institute (Papyrus Milbank)

(OIM E10486J)

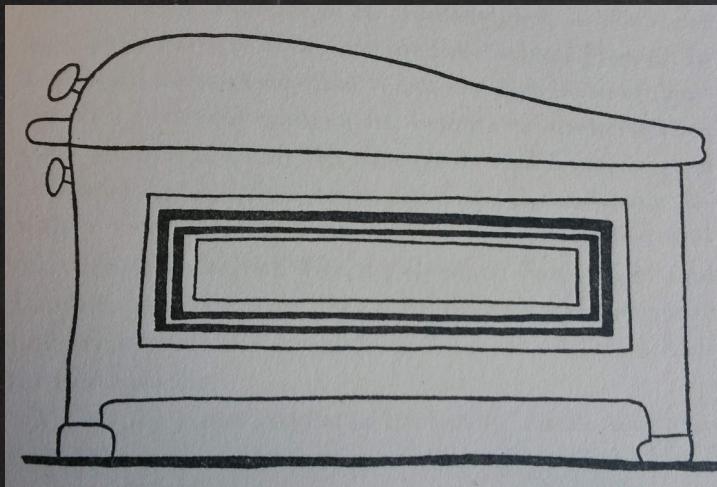
Note more ornate, hieroglyphic
writing

Walls in the tomb of Thutmose 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

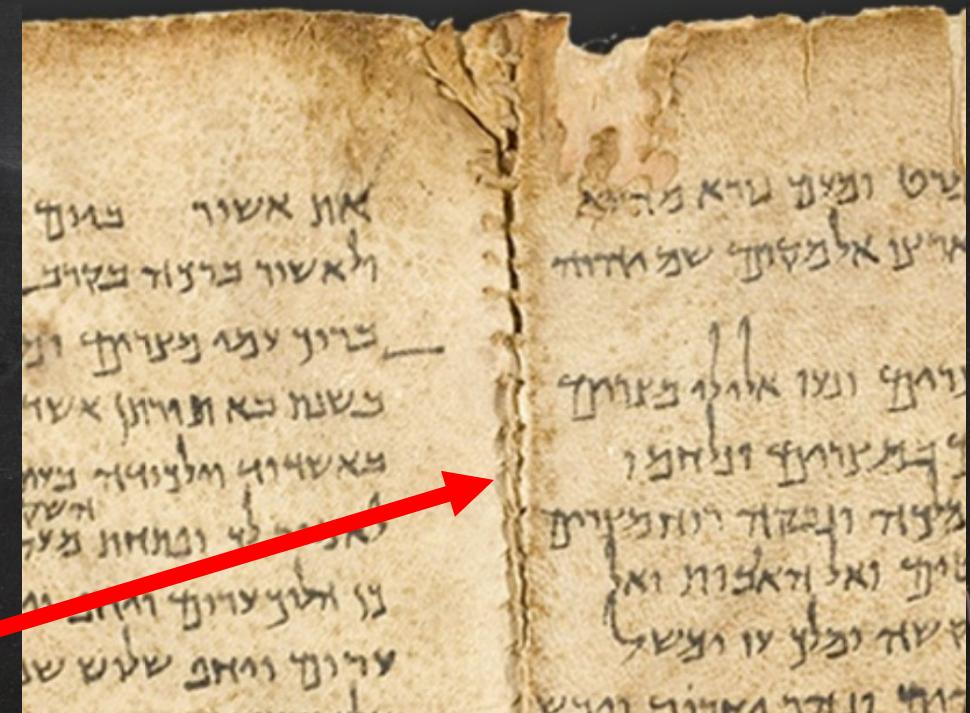
The “Great Isaiah Scroll”
from the Dead Sea
(1st century BCE)



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



Great Isaiah scroll, 73.5 meters = 24 feet long

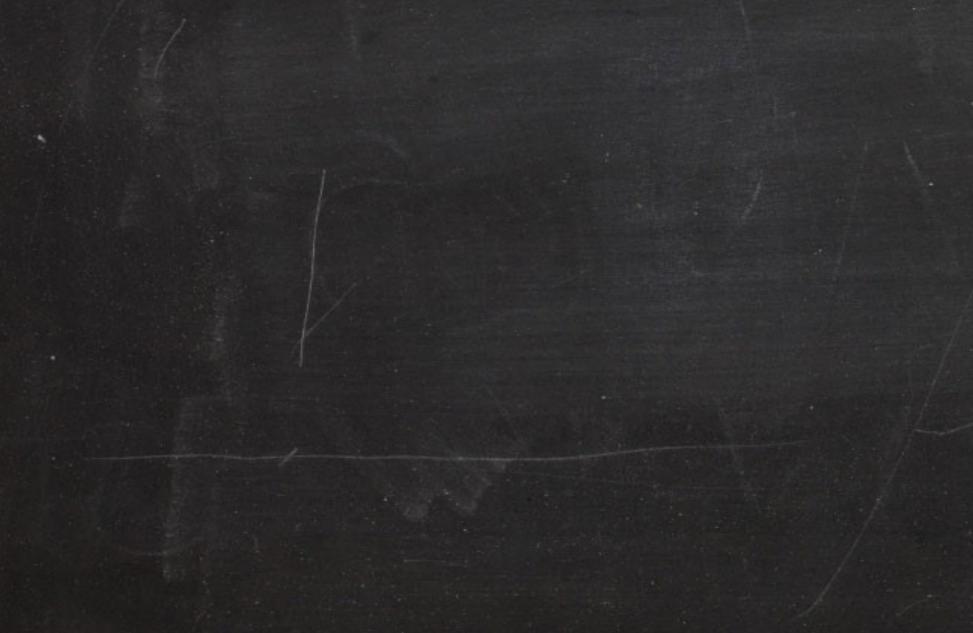
Continued use of scrolls

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

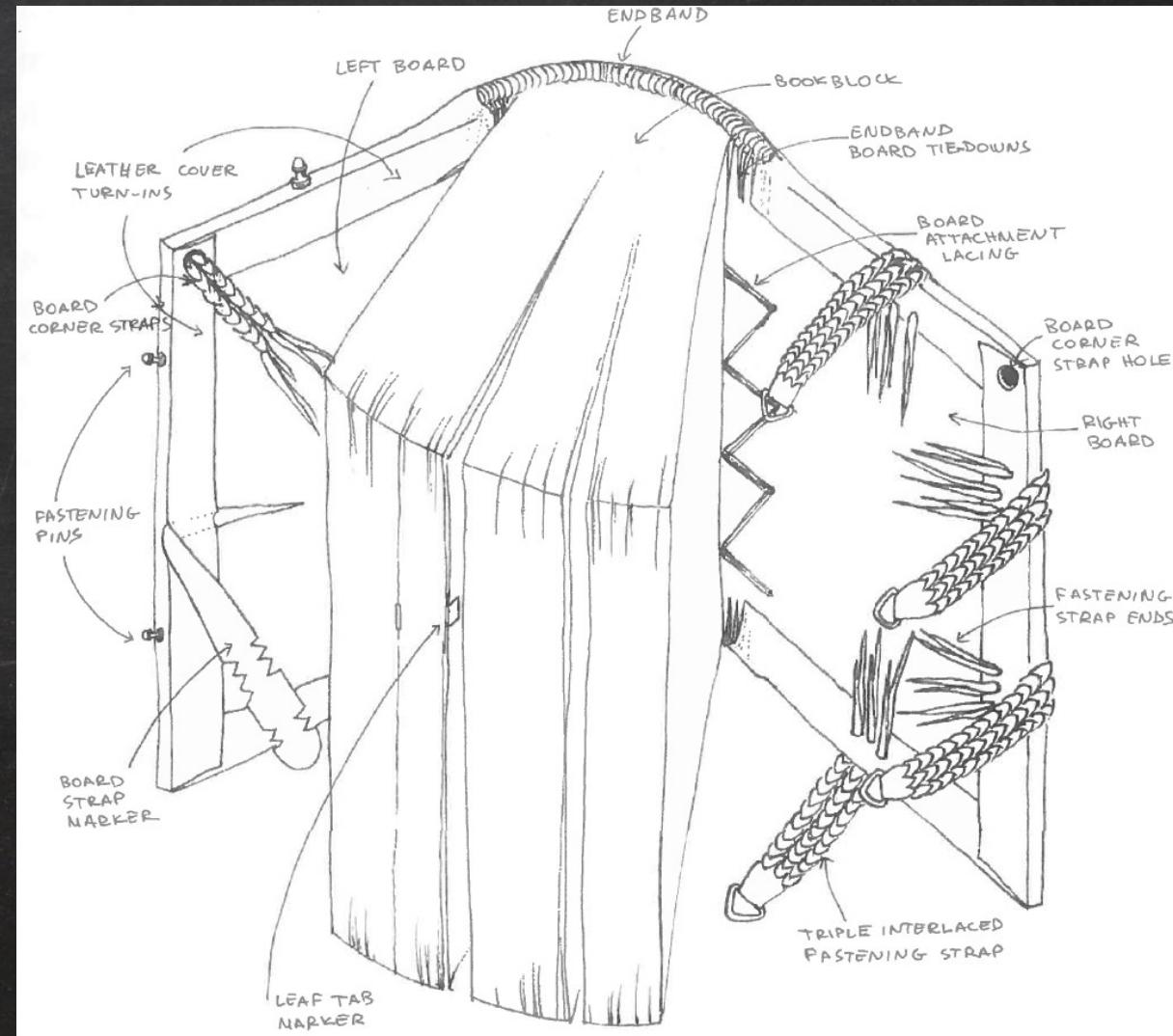


Beginning of a Torah scroll (16th century) from the British Museum

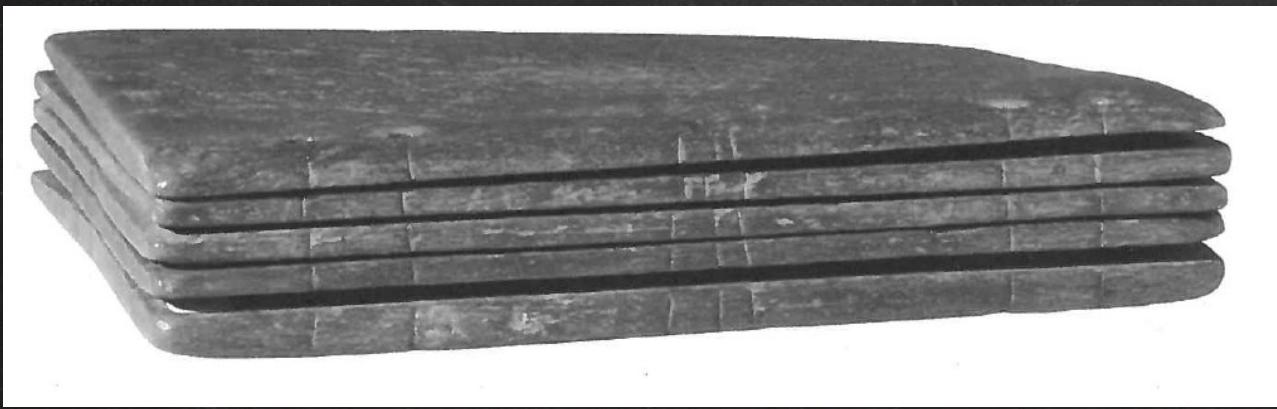
The successor to scrolls: the codex



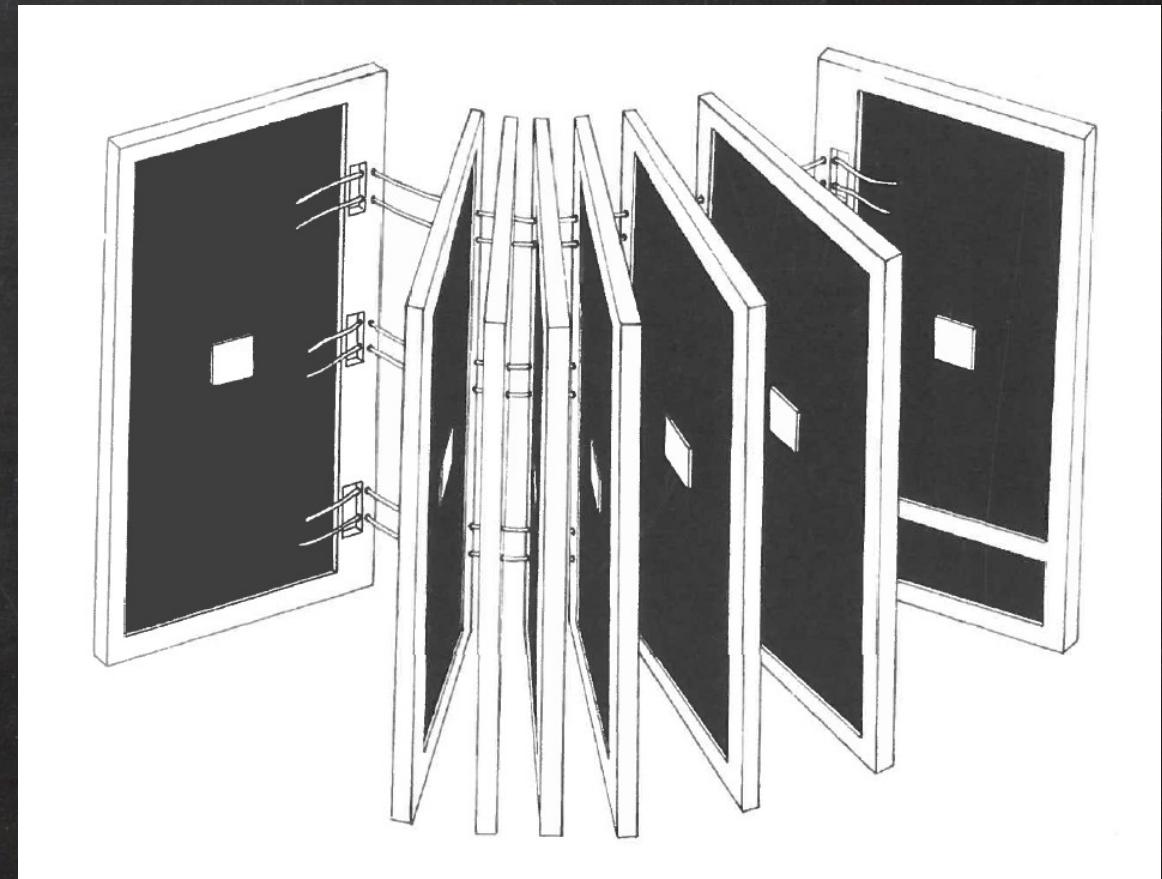
A drawing of a typical early codex
(from Boudalis, *The Codex and Crafts
in Late Antiquity*)



Early codices: writing tablets



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

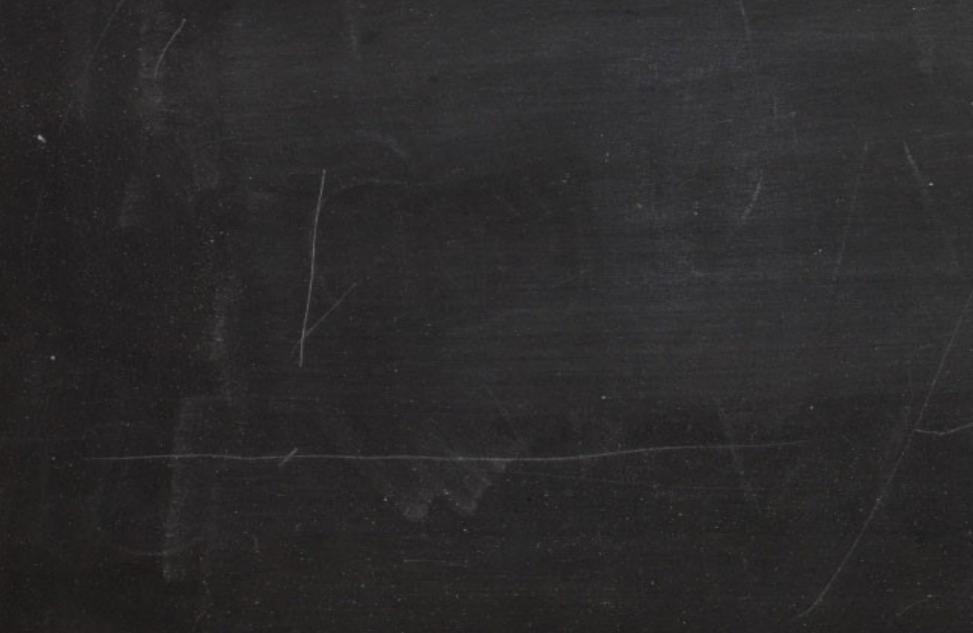


Scraper Wood tablets Ink well Pen Scroll

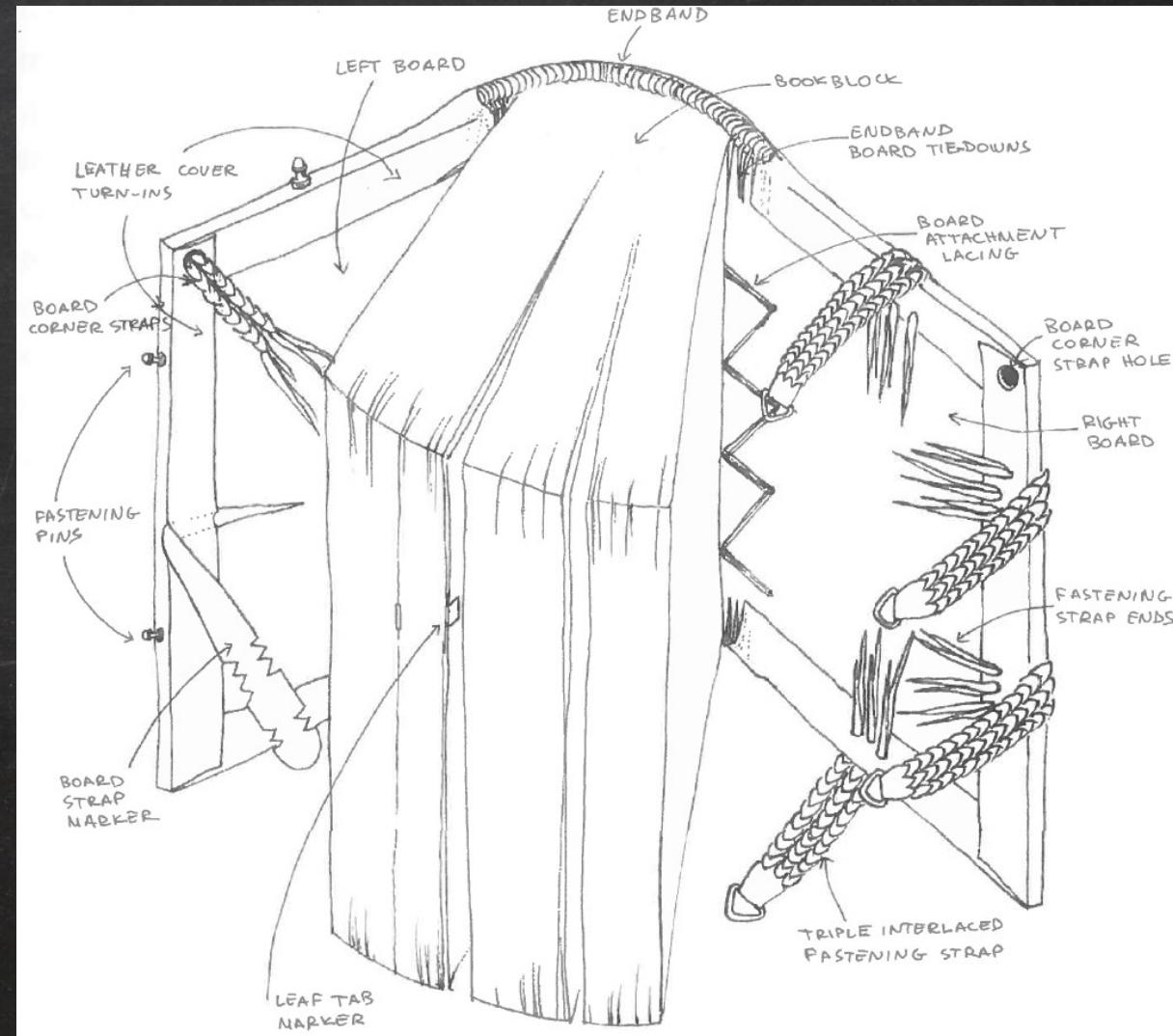


Fresco from Pompeii (1st century BCE)

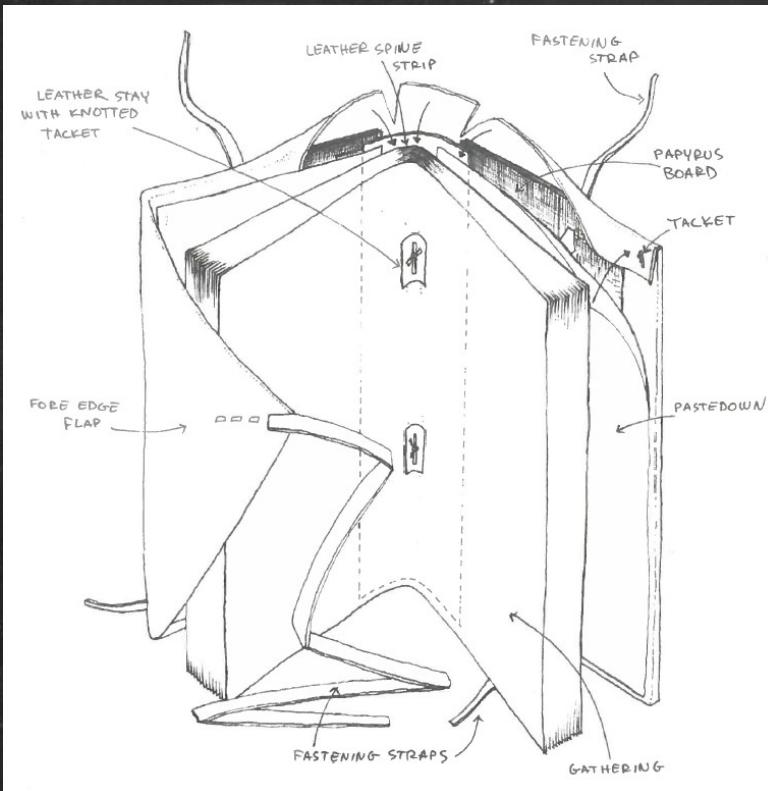
The successor to scrolls: the codex



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*

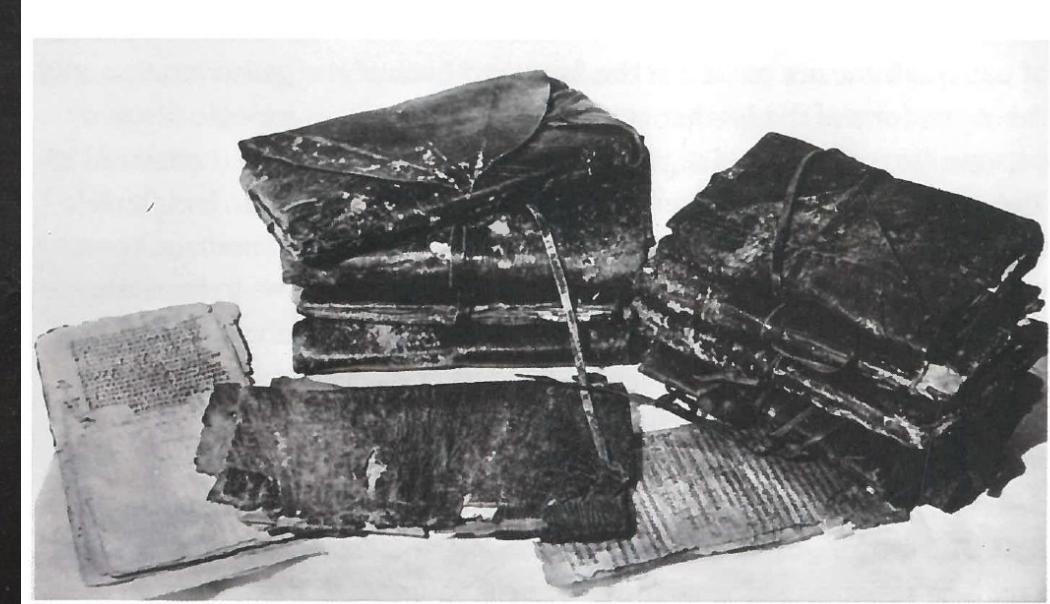


Fig. 22 The Nag Hammadi codices as they appeared when found in 1945. Coptic Museum, Cairo, Egypt.
From Doresse and Mina,
"Nouveaux textes gnostiques coptes découverts en Haute-Égypte."

A papyrus sheet from a Nag Hammadi codex

Page number

Title of the preceding composition

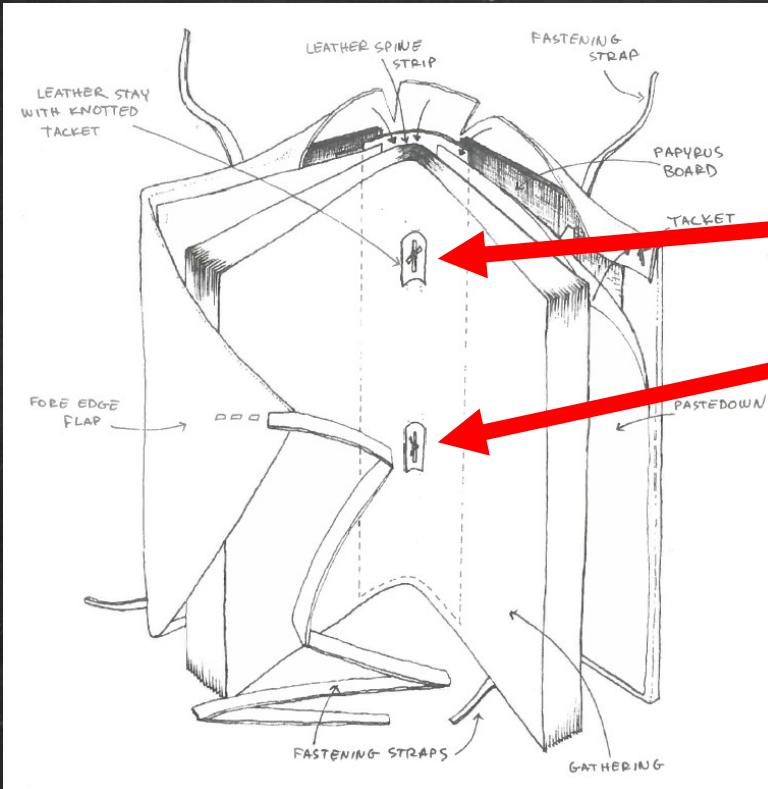
New composition

ΝΤΕΙΜΕΝΕ ΛΥΣΑΙ ΛΥΤΛΥΝΑ
ΙΝΟΥΜΥΣΠΡΙΟΝ ΛΥΣΩΝΤΟΥΝΟΥ
ΙΧΡΑΤΟΥΝΗΣ ΕΒΩΛΜΠΕΘΗΤΟΕΒΟΛ
ΛΥΣΑΔΛΥΕΙΣΛΥΕΙΣΛΥΒΡΗΙΛΥΠΙΛΥΤΕ
ΙΥΛΥΕΡΟΥΝΝΕΝΤΑΠΩΡΧΟΟΥ ΛΥ
ΙΣΠΕΧΡΣΛΥΜΗΝ

ΚΑΤΑ ΓΙ ΣΩΖΑΝ ΝΗΗ
Ν
ΑΠΟ ΚΡΥΦΟΝ

ΝΑΙΝΕΝΩΔΗΣΕΕΝΠΕΝΤΑΙΣΕΤΟΝ
ΧΟΟΥΛΥΣΛΥΣΛΙΣΟΥΝΔΙΔΥΜΟΣ
ΙΟΥΔΑΣΘΩΜΙΛΔΥΩΠΕΧΗΨΔΕΠΕ
ΤΑΣΕ ΣΘΕΡΜΗΝΕΙΛΝΝΕΕΙΩΔΗΣΕΝΑ
ΣΙΤΠΕΛΝΜΠΜΟΥΠΕΧΕΙΣΜΝΤΡΕЧ
ΛΟΝΔΗΠΕΓΩΝΝΕΕΙΨΙΝΕΩΔΛΤΕ
ΦΙΝΔΛΥΣΓΟΤΛΗΕΨΑΝΩΙΝΕΨΗ
ΣΤΡΤΡΑΛΥΣΕΨΑΛΝΨΟΤΡΤΡΨΝΑΡ
ΨΩΠΗΡΕΔΛΥΣΨΝΑΡ
ΡΡΟΕΧΜΠΠΡΨΠΕΧΕΙΓΧΕΕΥΨΔ
ΧΩΟΣΝΗΤΝΝΟΙΝΕΓΣΩΚΓΗΤΗΥΤΝ
ΧΕΕΙΣΓΗΤΓΕΕΤΜΝΤΕΡΟΓΝΤΠΕ
ΕΙΕΝΔΗΤΝΛΡΨΩΡΓΠΕΡΨΤΝΝΤΕ
ΤΠΕΕΥΨΑΛΧΩΟΣΝΗΤΗΧΕΕΓΝΘΔ
ΛΛΣΣΛΕΕΕΝΤΒΓΝΛΡΨΩΡΓΠΕΡΨΤΝ
ΔΔΛΤΜΝΤΕΡΟΣΜΠΕΤΝΓΟΥΝΛΥΨ
ΣΜΠΕΤΝΒΛΛΓΟΤΛΝΕΤΕΤΝΨΛ
ΣΟΥΣΝΤΗΥΤΝΤΟΤΕΣΕΝΑΣΟΥΨ

Single-gathering codices



Leather tabs



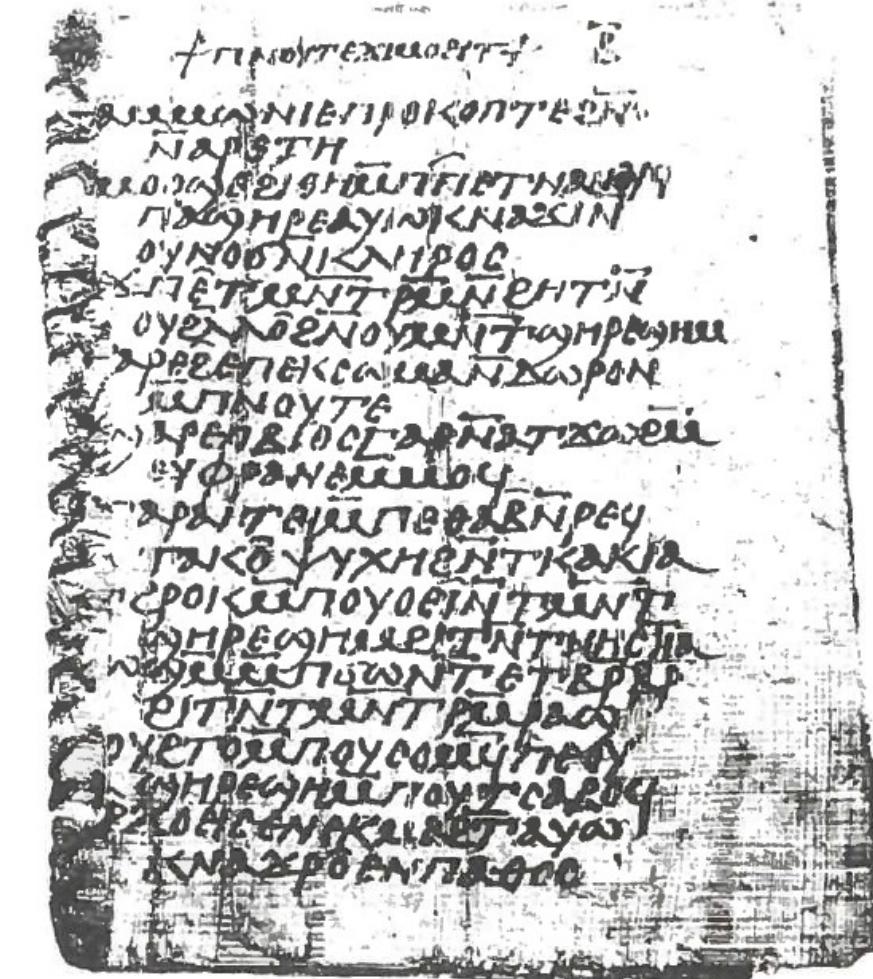
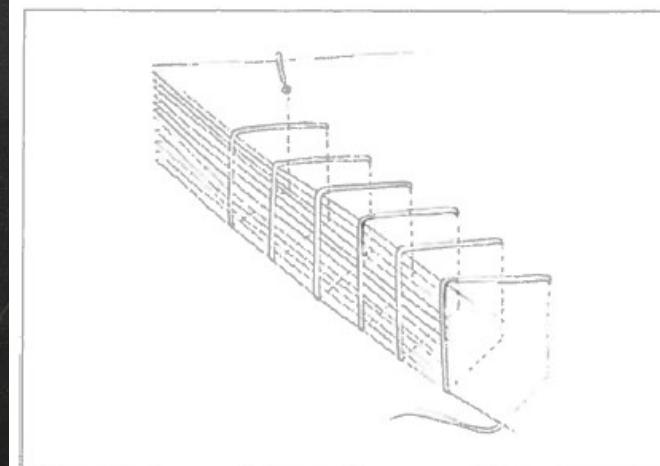
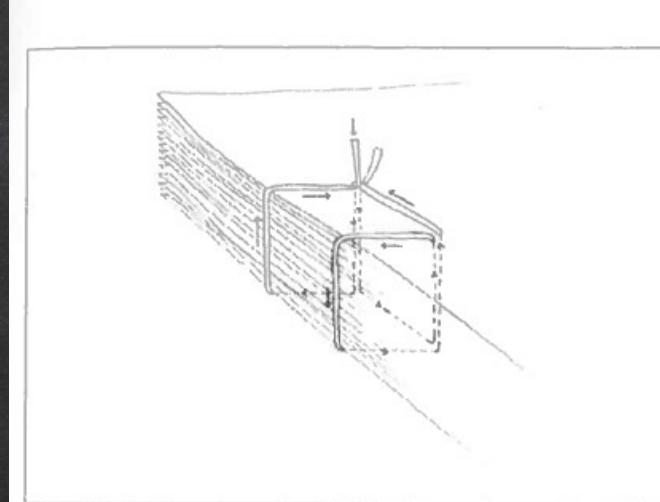
Fig. 22 The Nag Hammadi codices as they appeared when found in 1945. Coptic Museum, Cairo, Egypt.
From Doresse and Mina,
"Nouveaux textes gnostiques coptes découverts en Haute-Égypte."

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

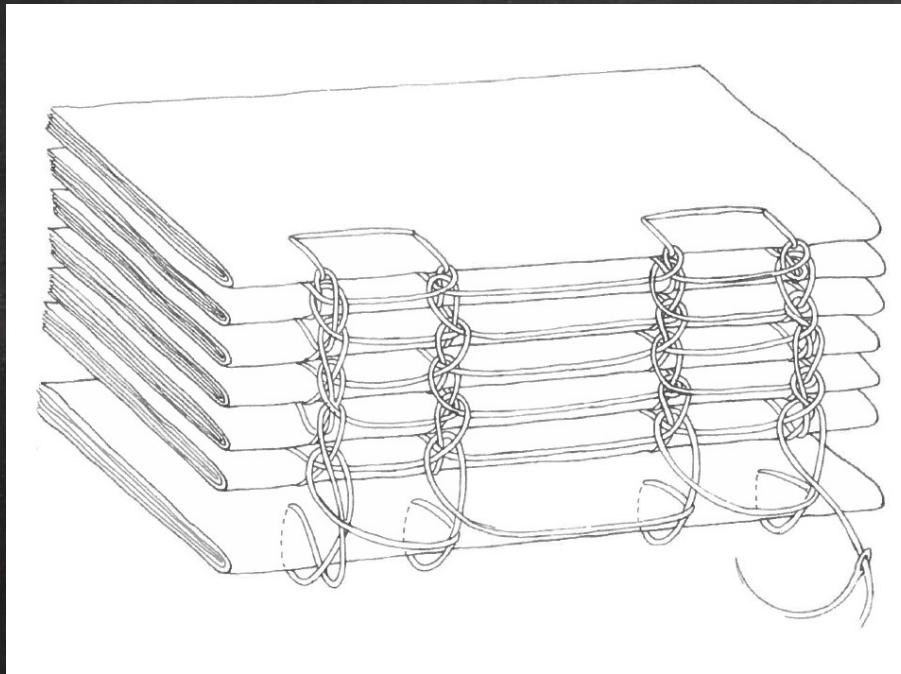
Spiral-sewn single-gathering codex

6th-7th century CE,
Egypt

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

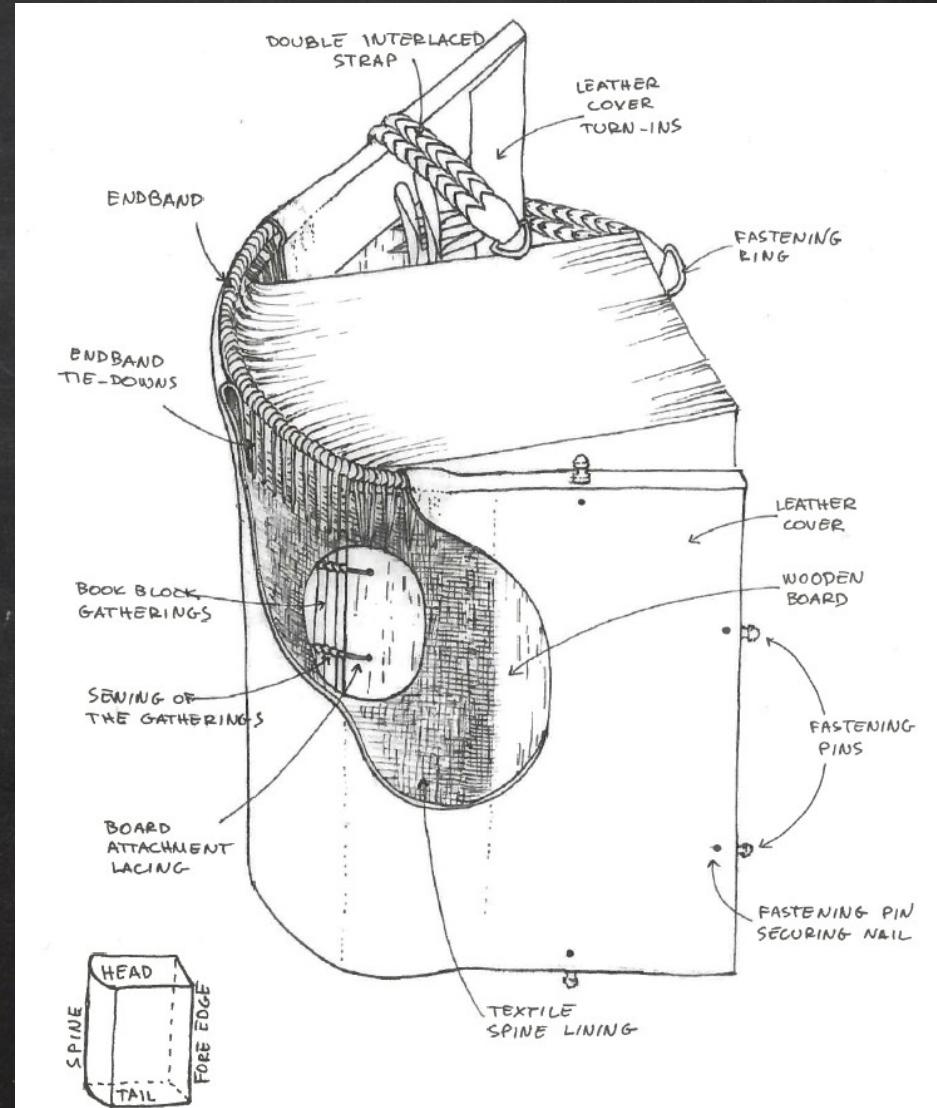


The multi-gathering codex



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

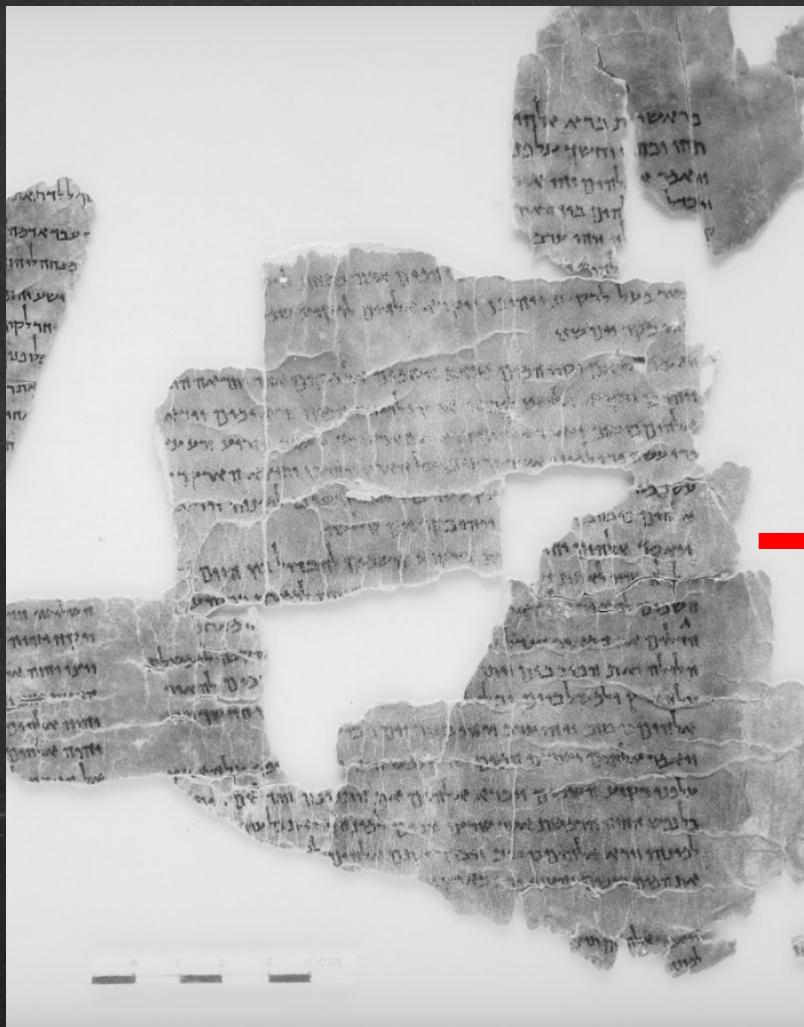
- Codex: could combine many texts into one and create very long documents *in the same physical object*
 - Could even have multi-volume texts
- Scroll: difficult to have a document longer than a single scroll

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 biliomancy)
 - St. Augustine's conversion after hearing a voice say "tolle, lege!" ("pick up and read!"), and opening a Bible to Romans

Thank you!