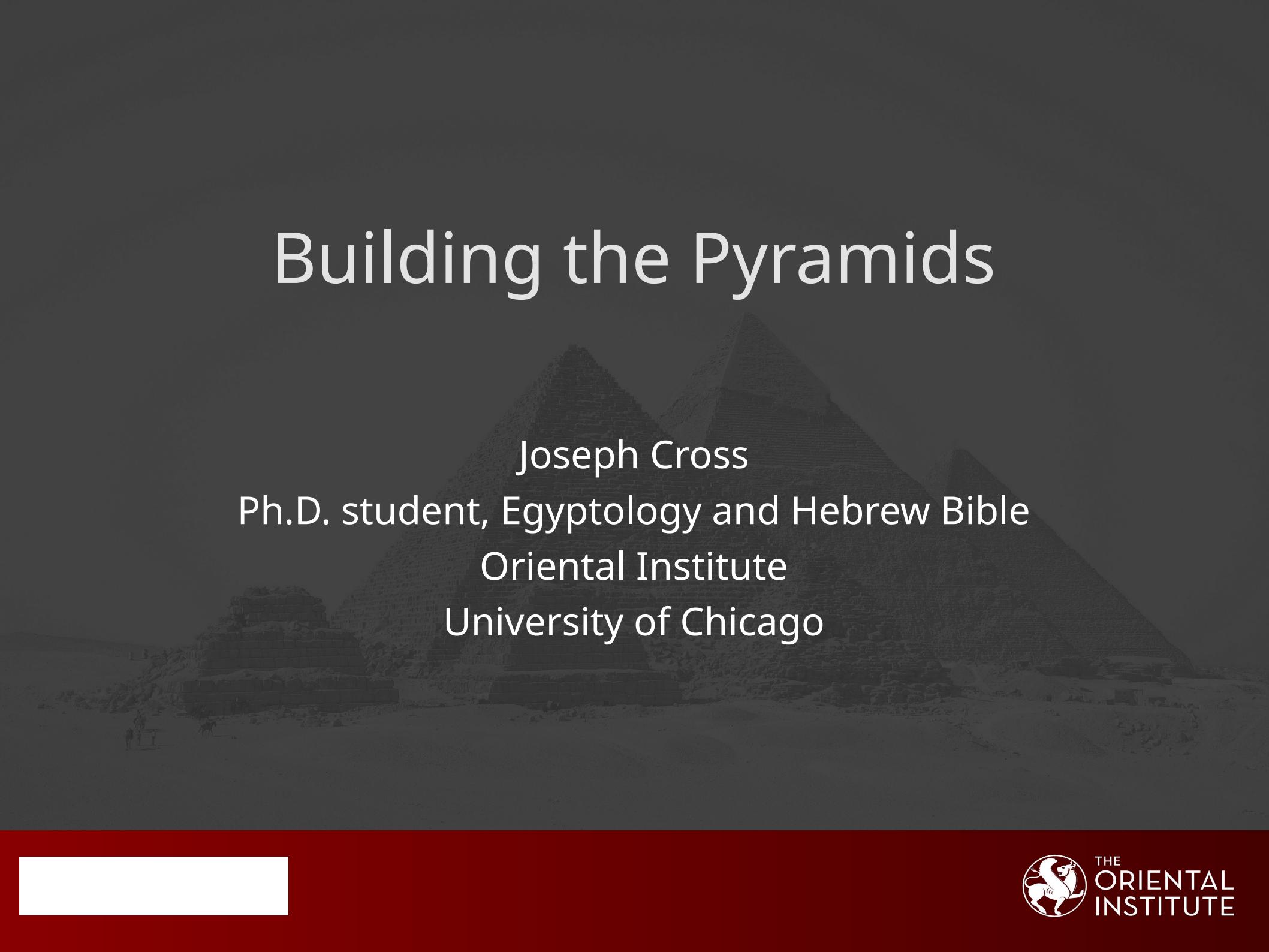




THE  
ORIENTAL  
INSTITUTE  
OF THE UNIVERSITY OF CHICAGO

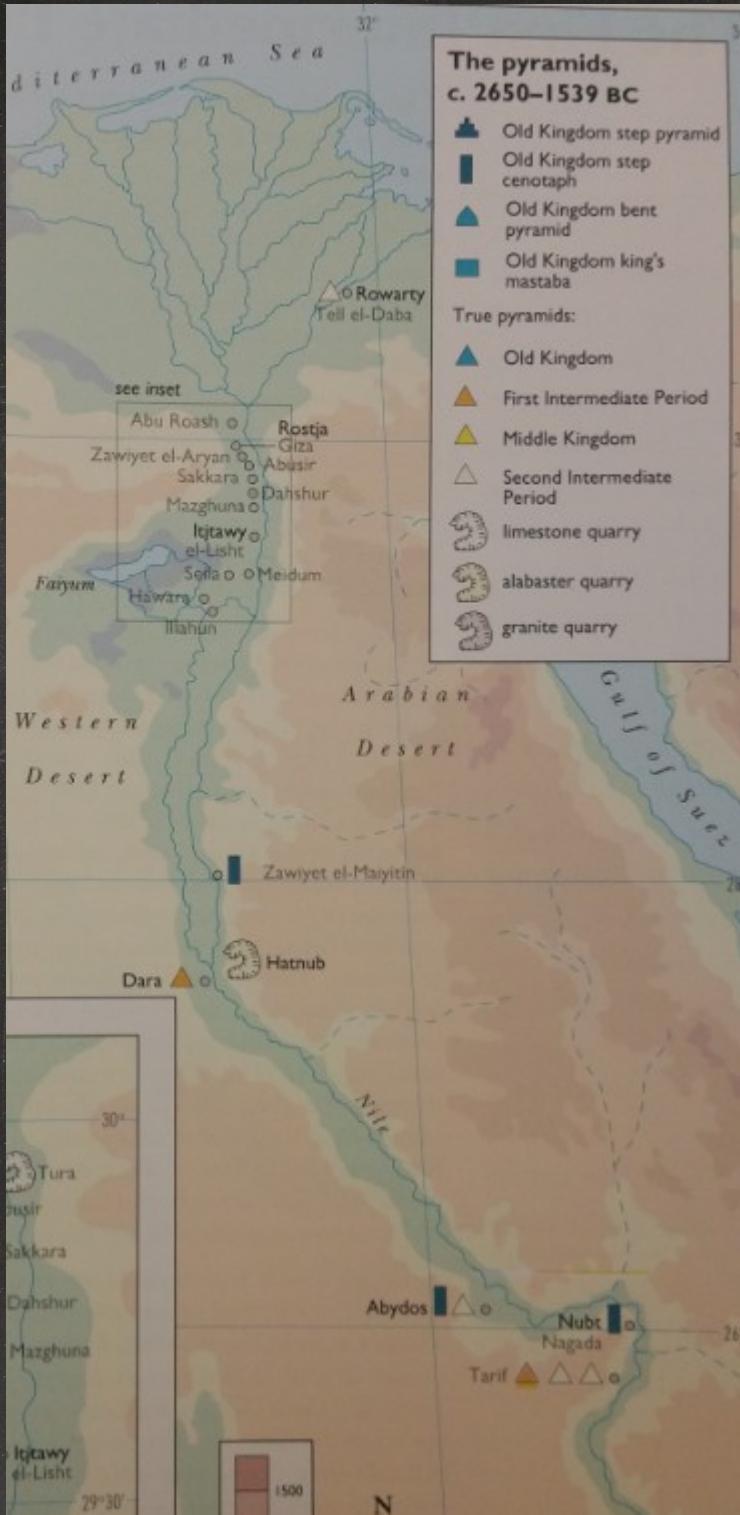
# Building the Pyramids



Joseph Cross  
Ph.D. student, Egyptology and Hebrew Bible  
Oriental Institute  
University of Chicago



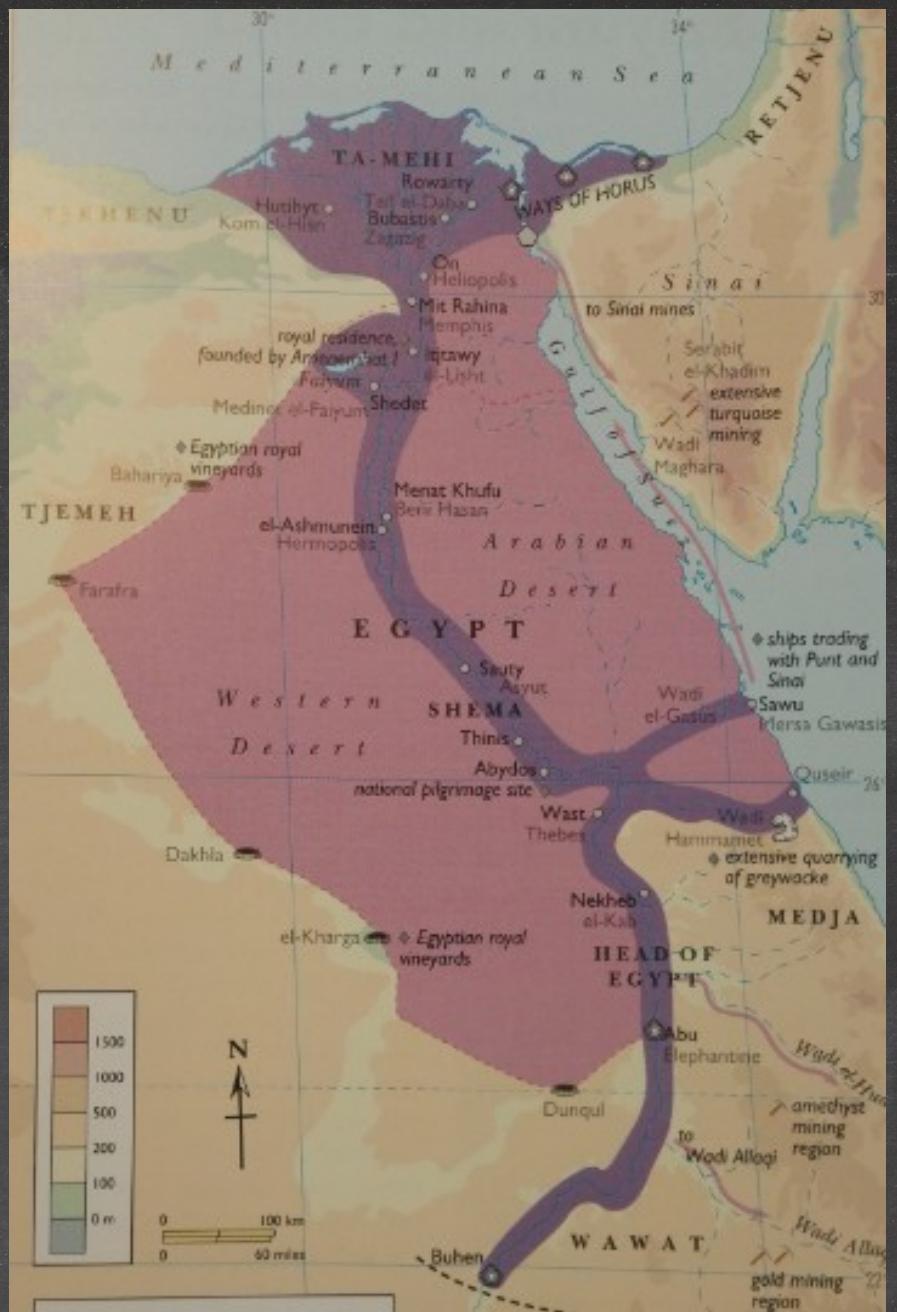


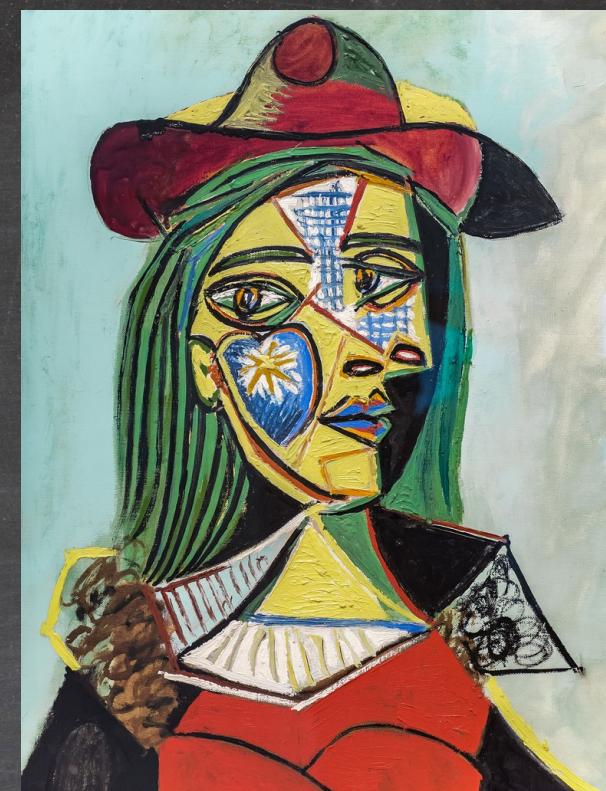
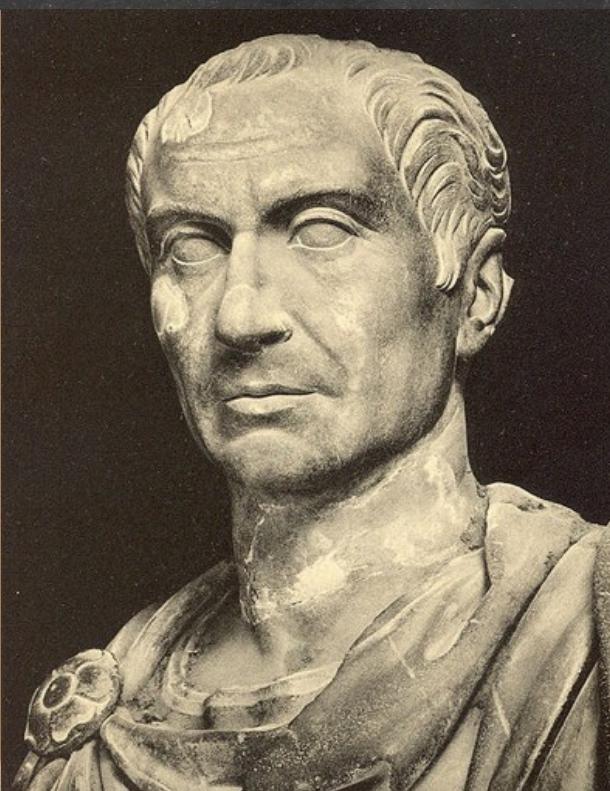


# Old Kingdom (2700 to 2150 BCE)



# Middle Kingdom (2000 to 1650 BCE)





# Seven Wonders of the Ancient World



# Seven Wonders of the Ancient World

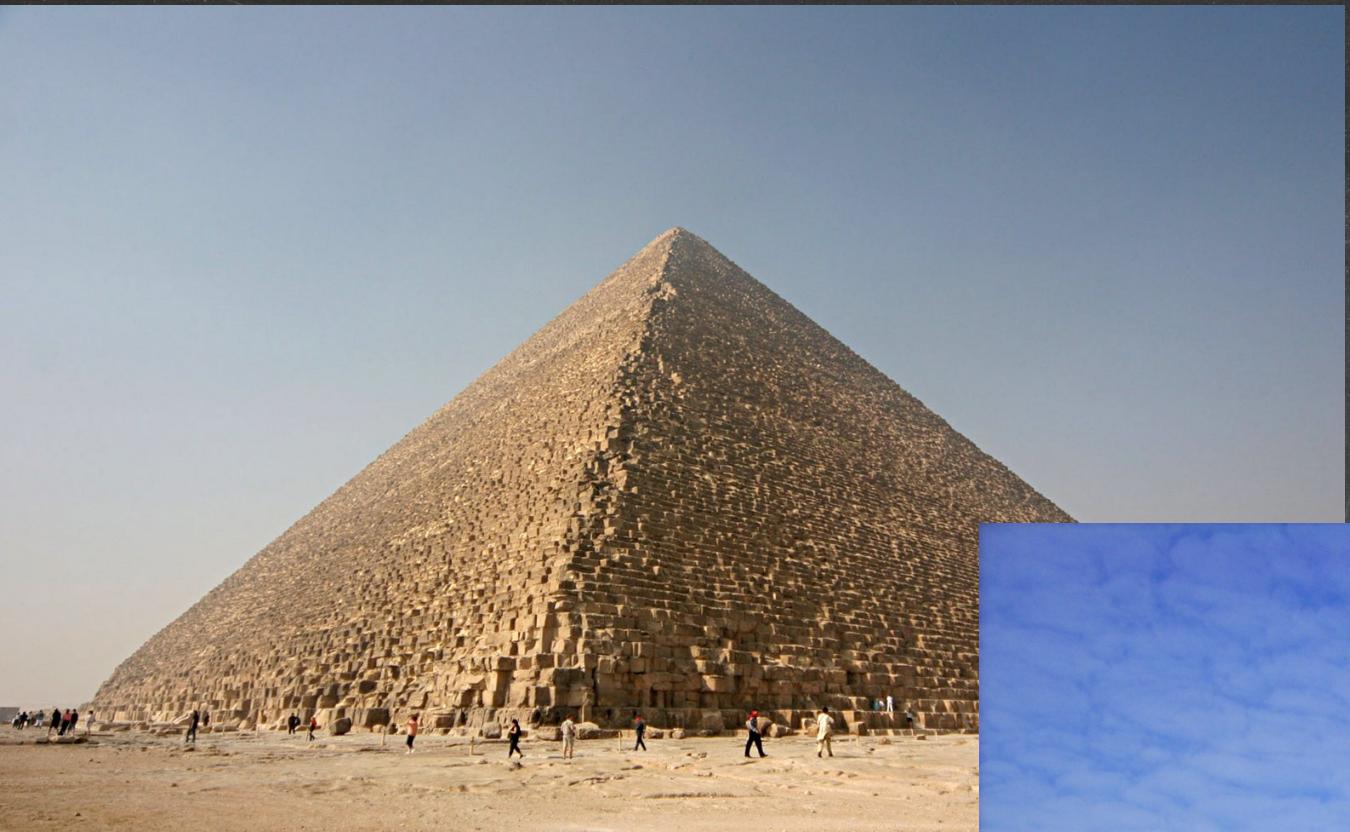


# Great Pyramid Of Khufu (Cheops)



- 500 ft tall
- 2 million bricks

# Great Pyramid Of Khufu (Cheops)





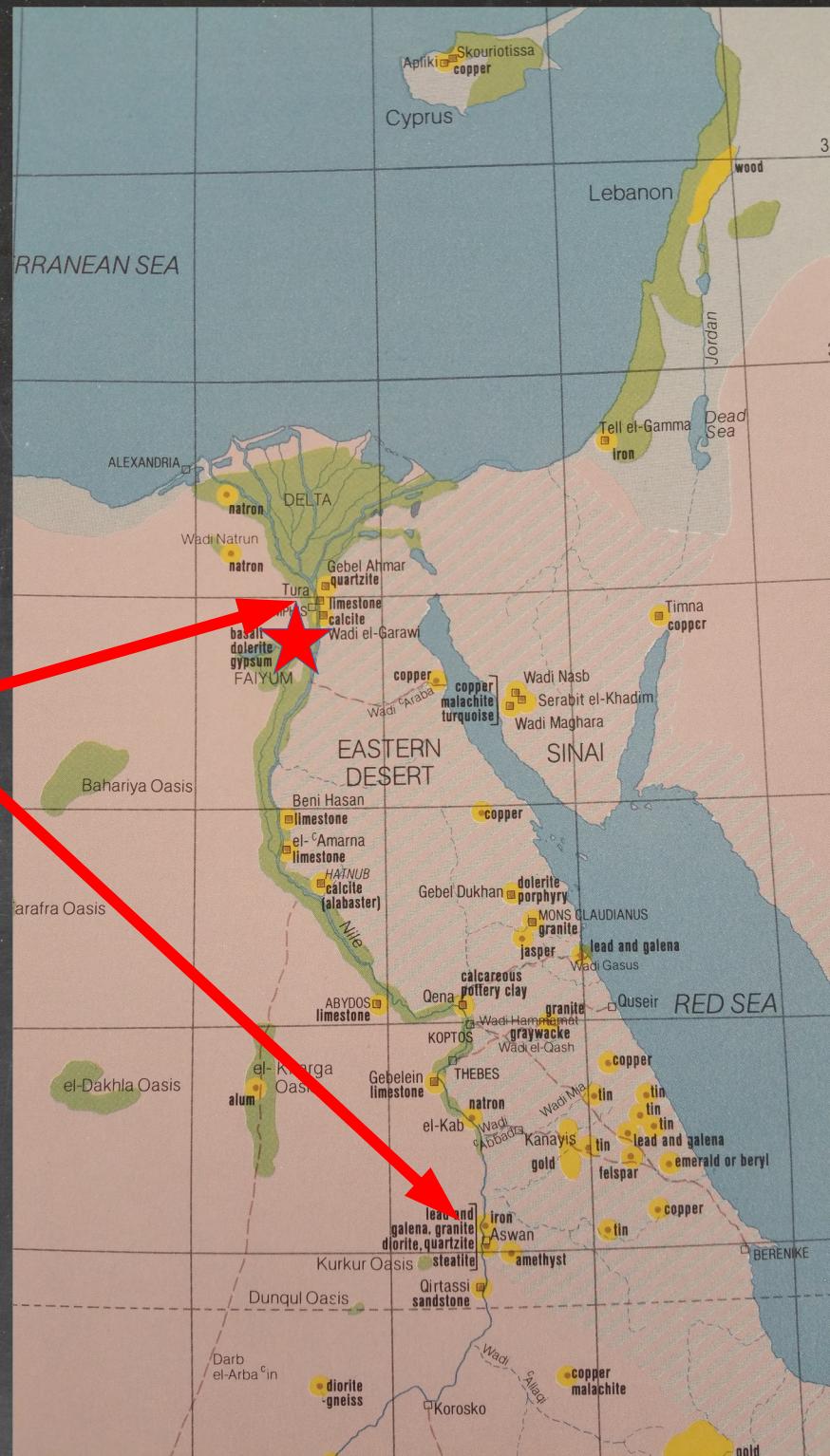
# How were they built?

# How were they built?



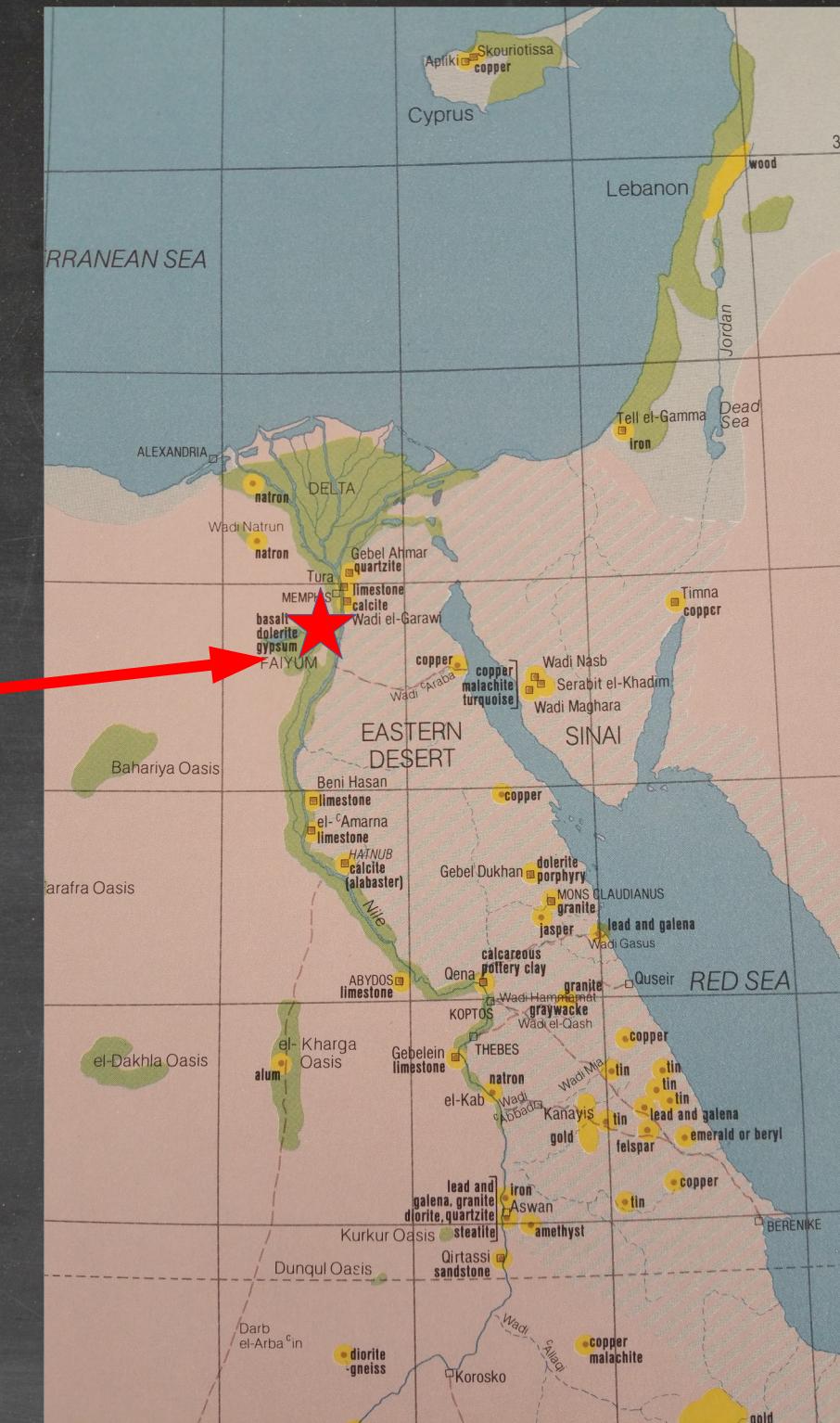


Limestone



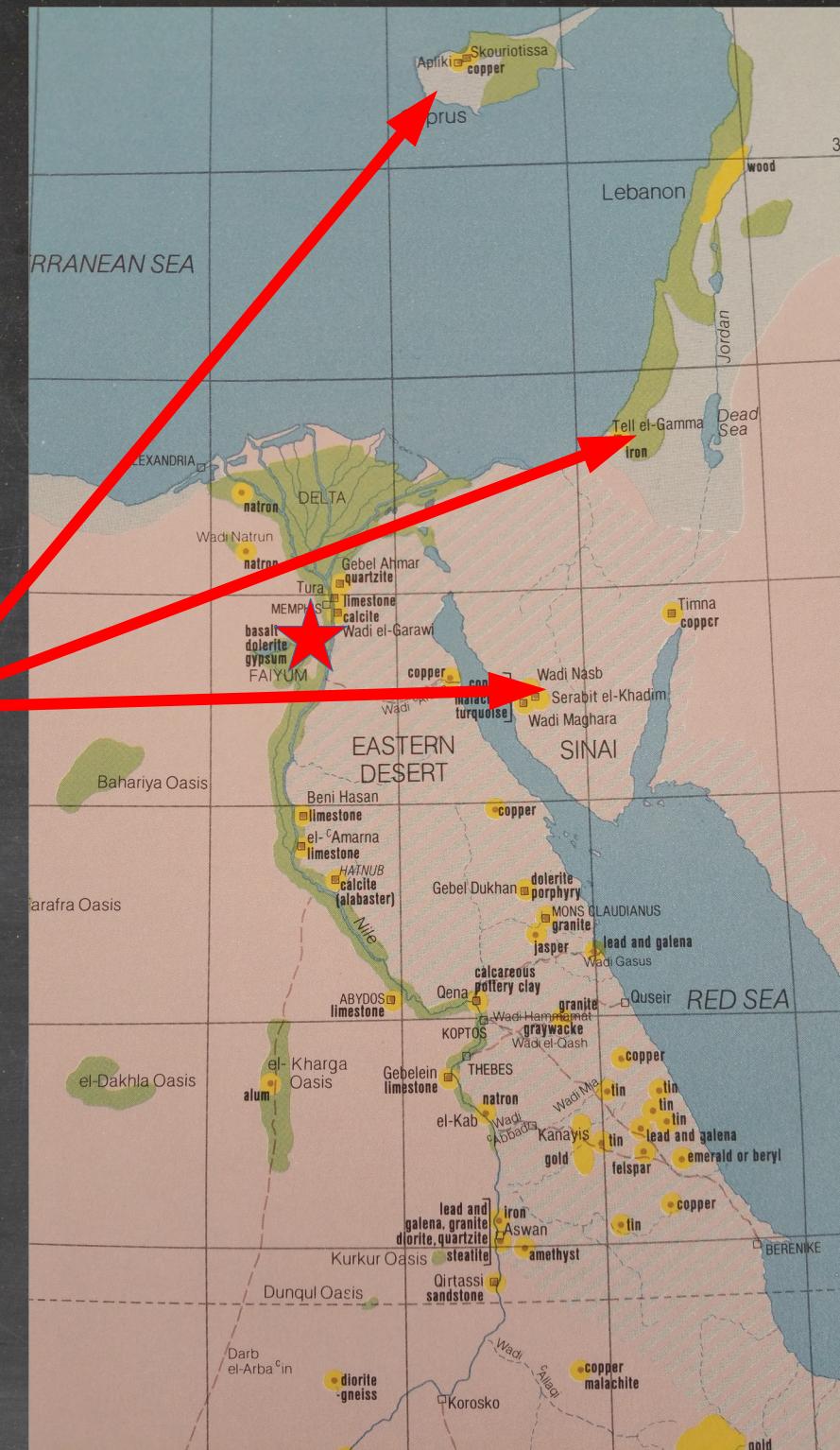


Gypsum



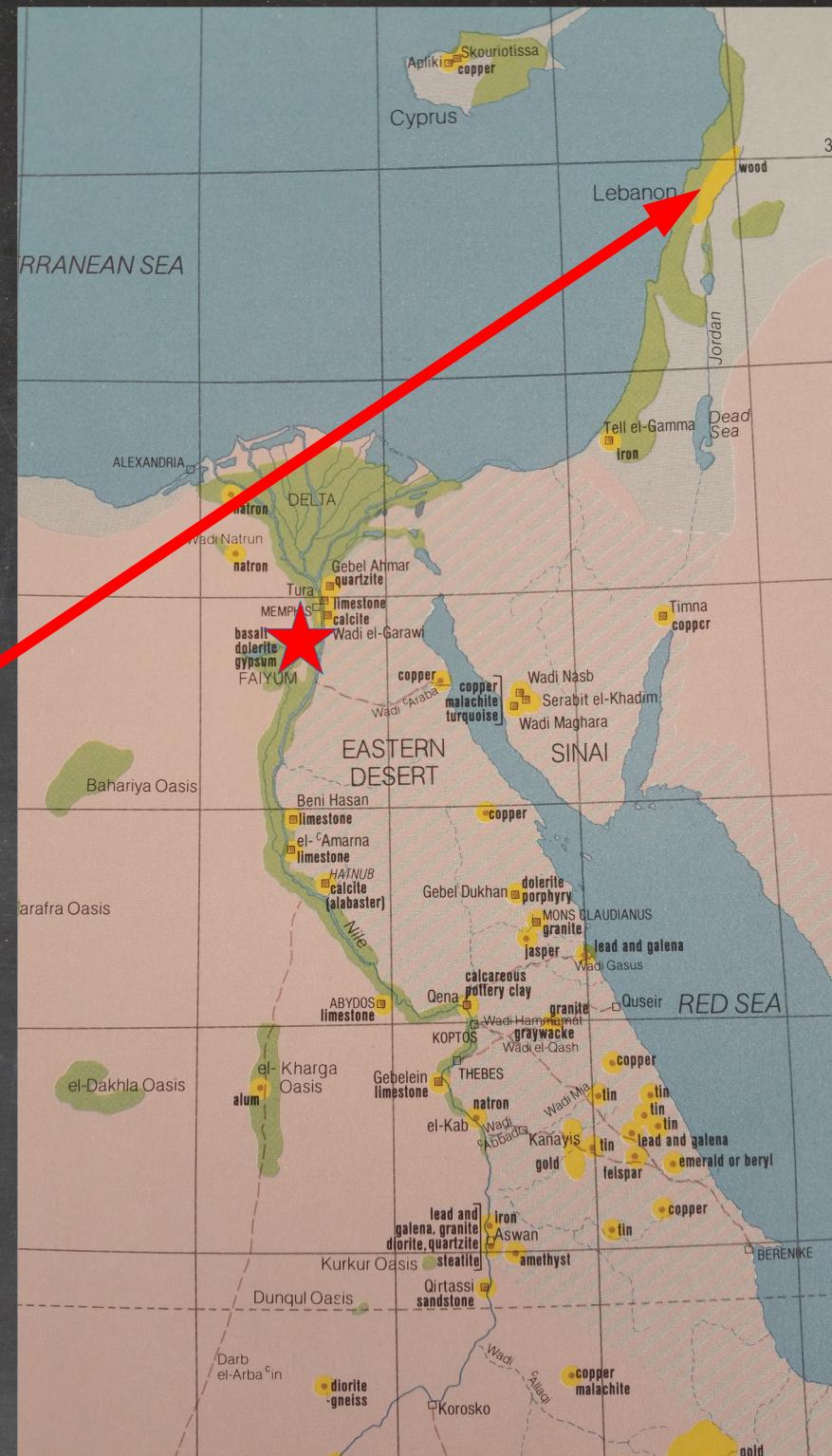


Copper



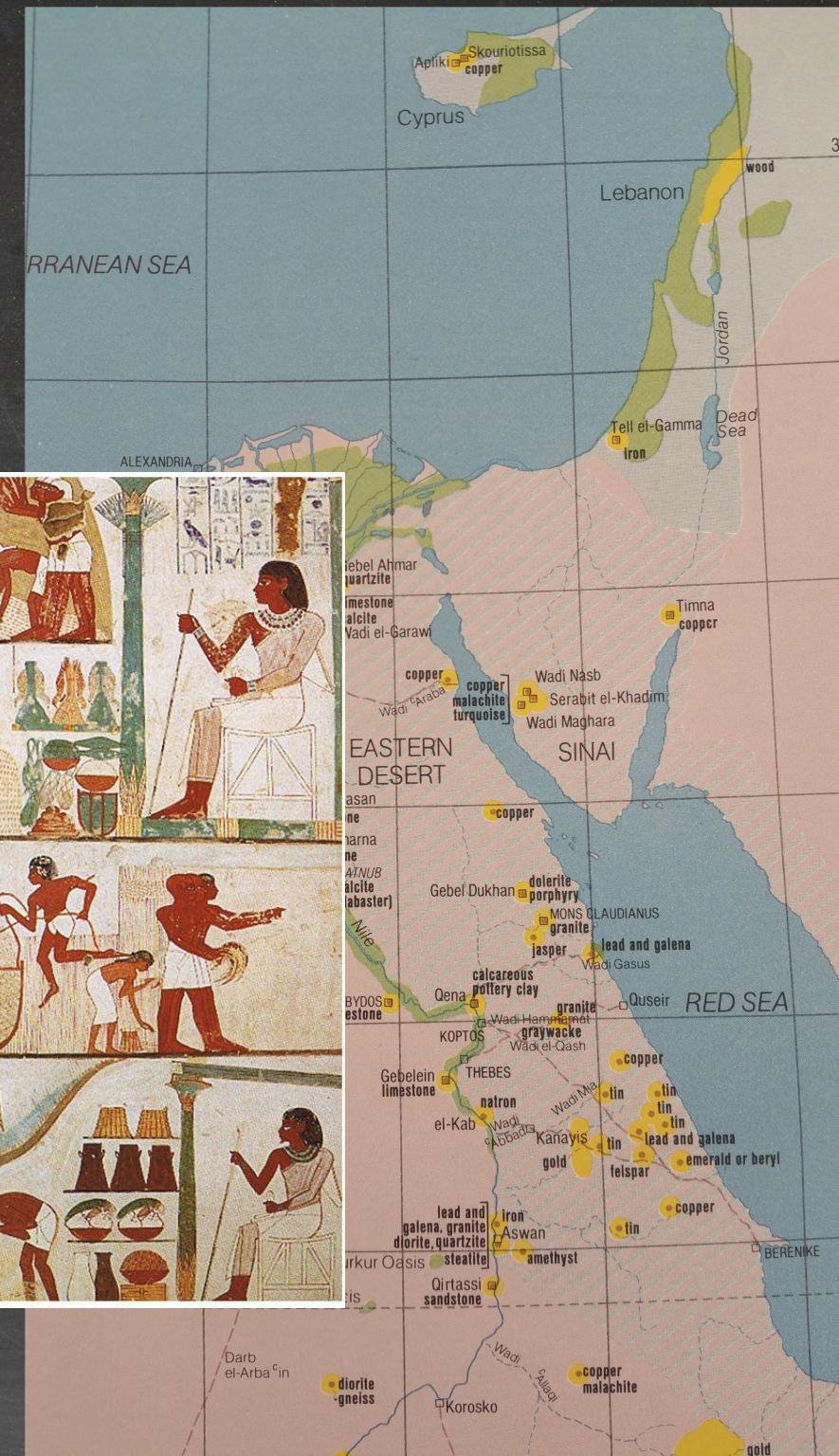
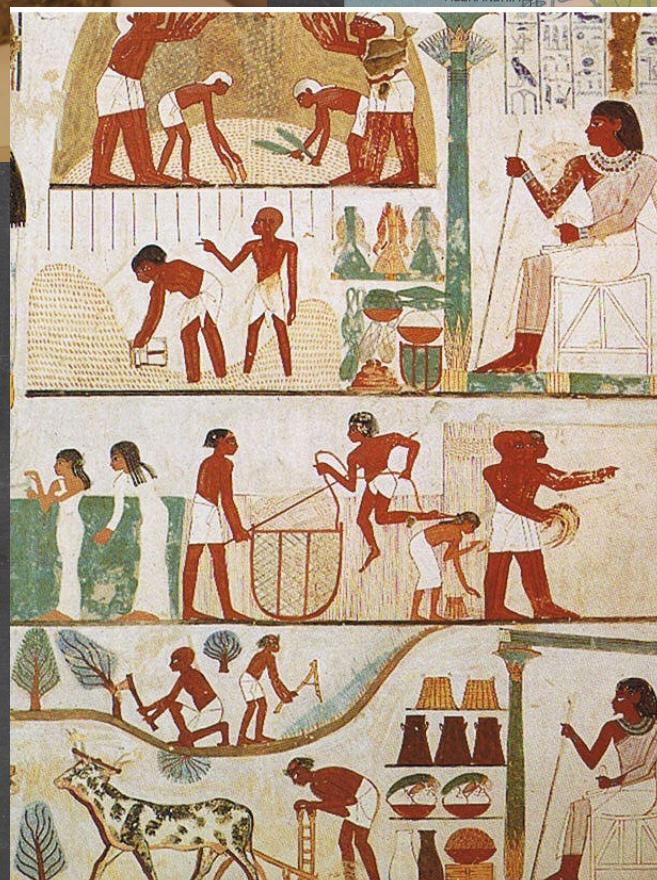


Cedar wood





## Grain



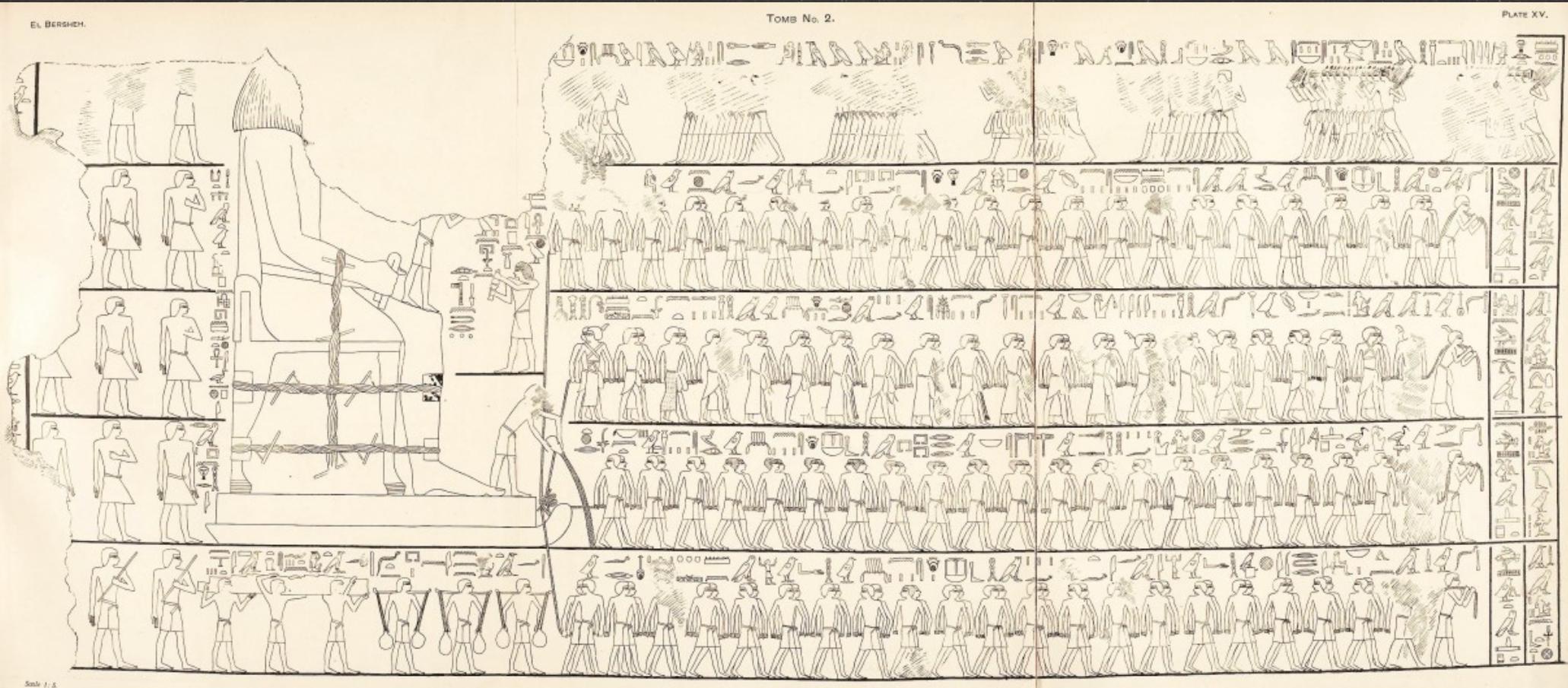


# Quarrying

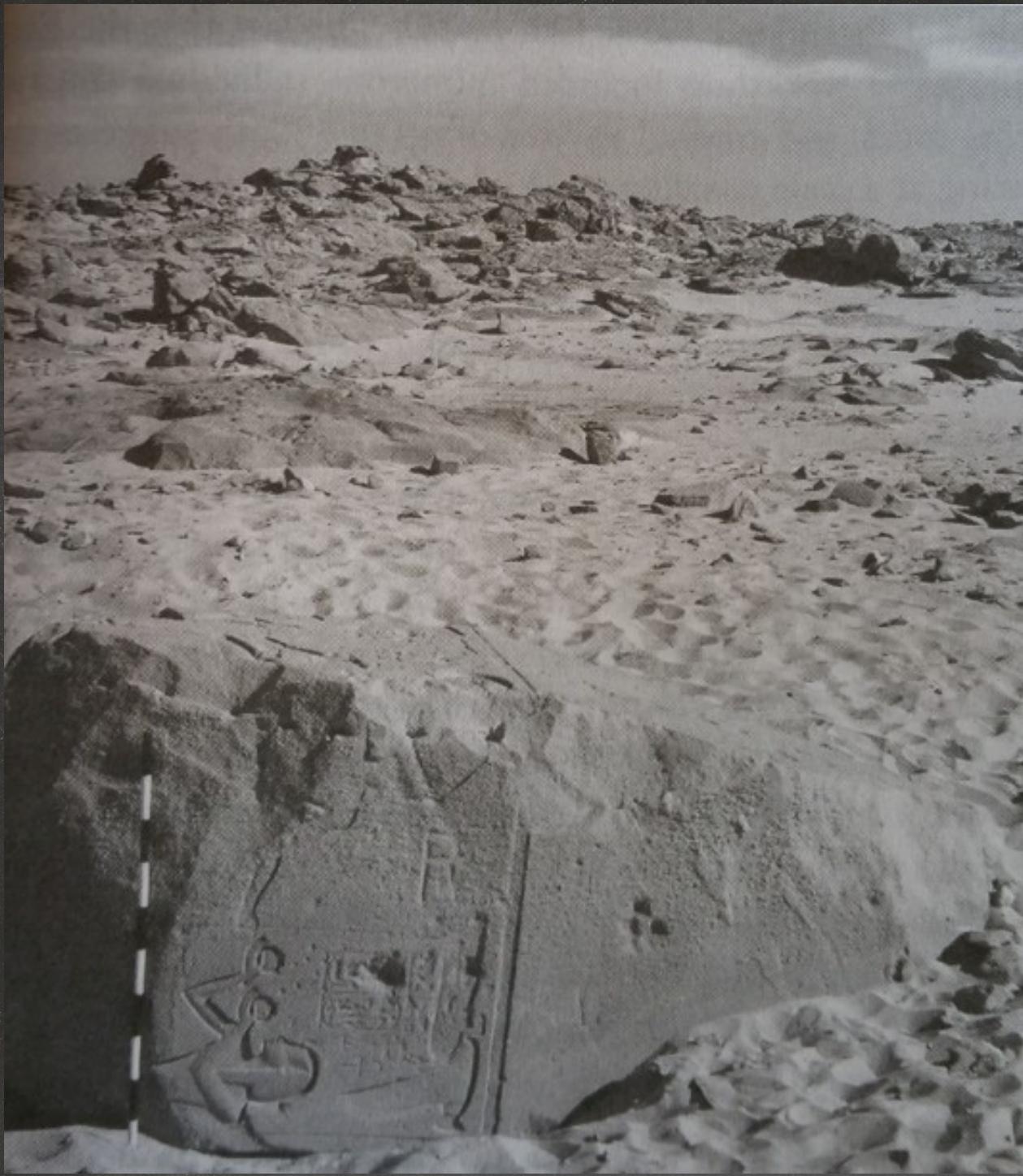


# Quarrying





From the tomb of Thuthotep at Deir el-Bersha (Middle Kingdom)

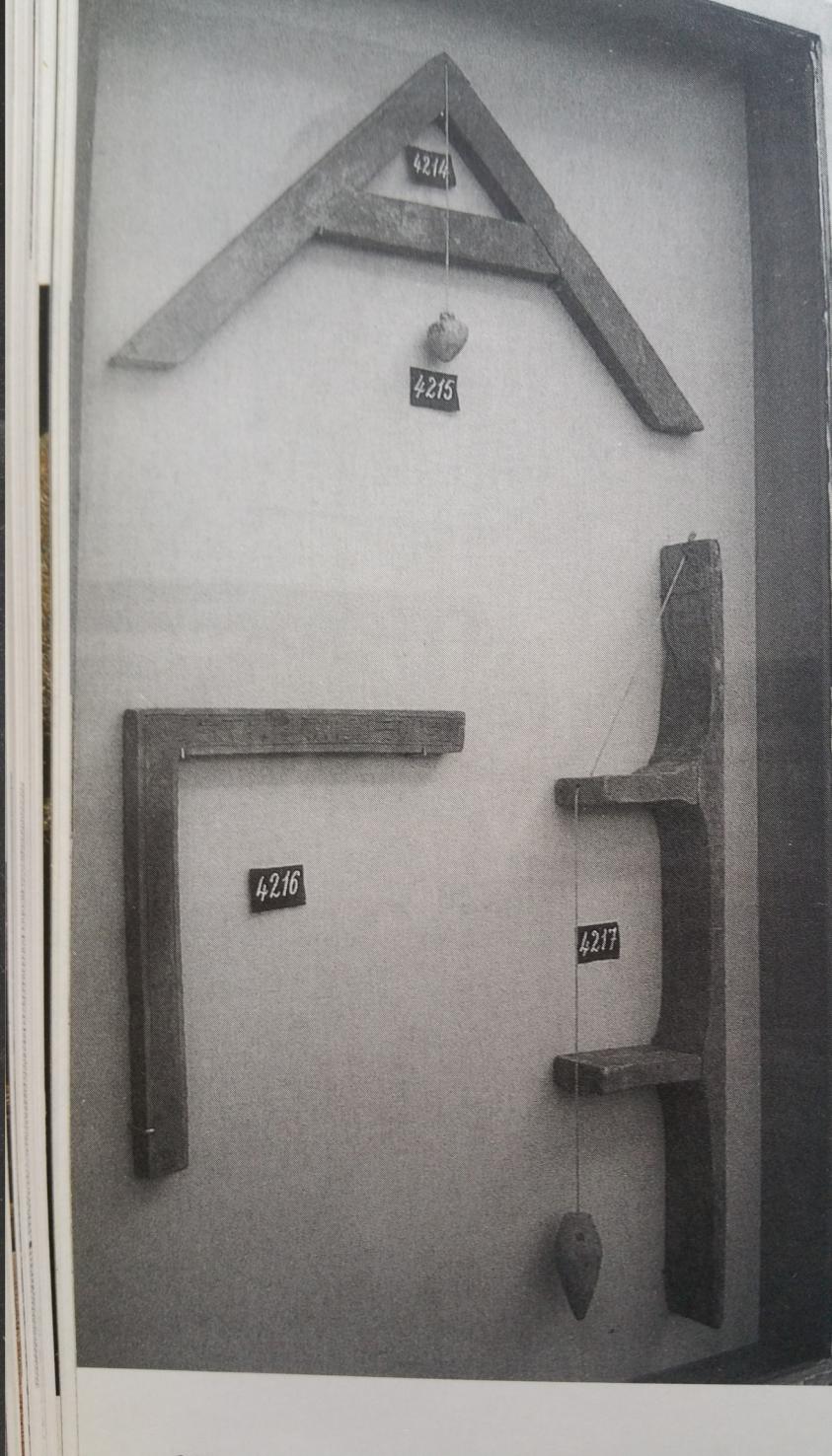


# Quarrying

# Transportation of stone



# Preparing the site

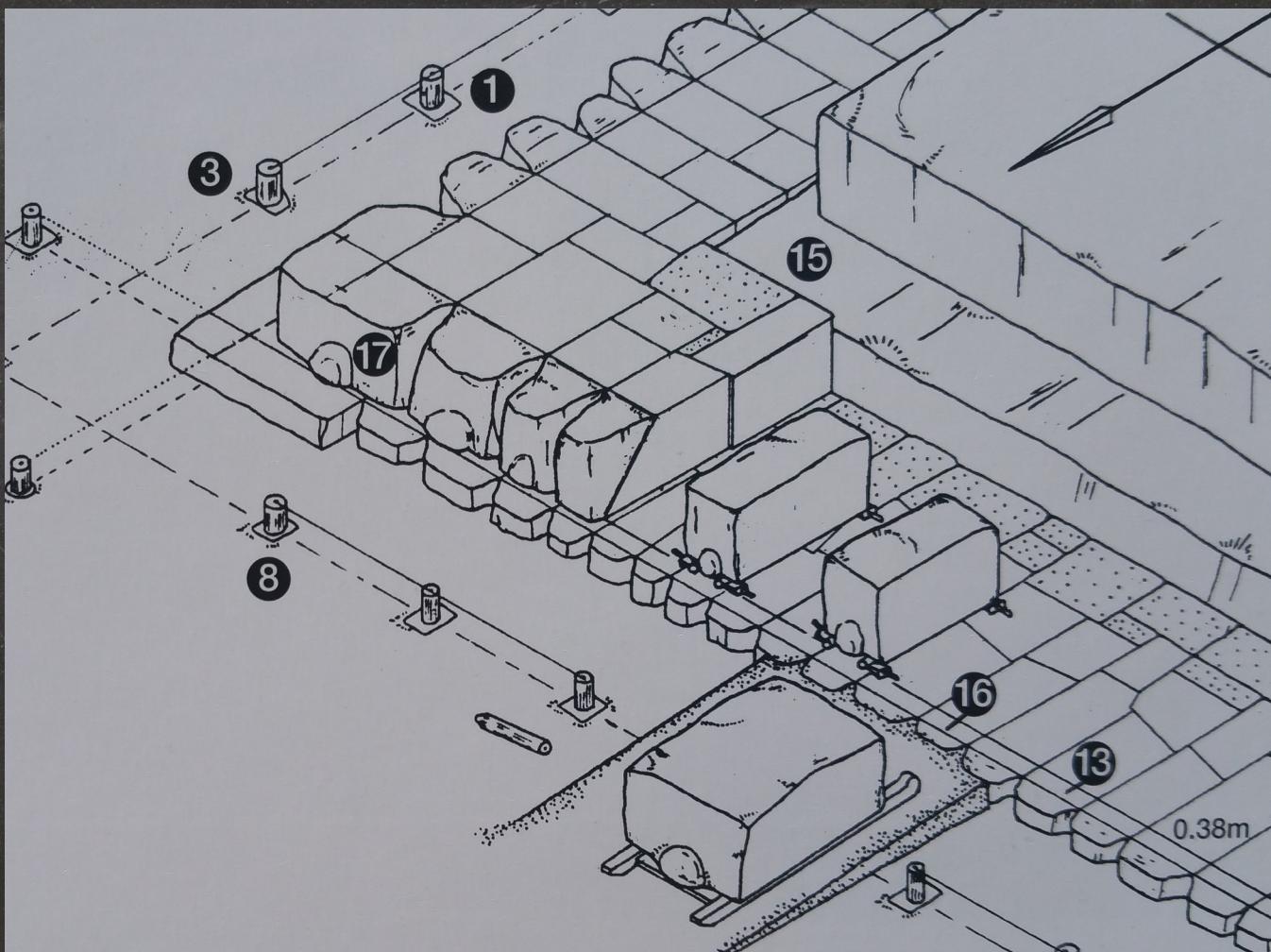




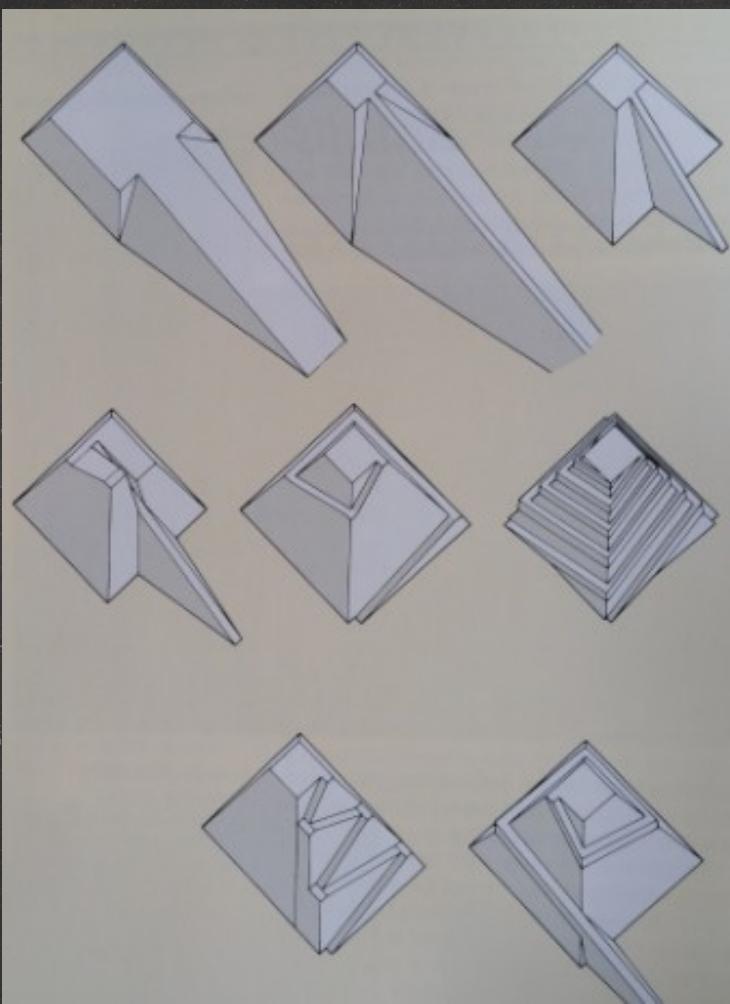
KEY

- 1 Great Pyramid of Khufu
- 2 ramps
- 3 housing for workers
- 4 supply trucks
- 5 harbour, canals
- 6 stone quarry
- 7 Khufu's palace complex
- 8 causeway to valley temple
- 9 town
- 10 tombs of royal relatives and officials
- 11 future sites of pyramids of Menkaure and Khafre and of the Sphinx

# Placement of stones

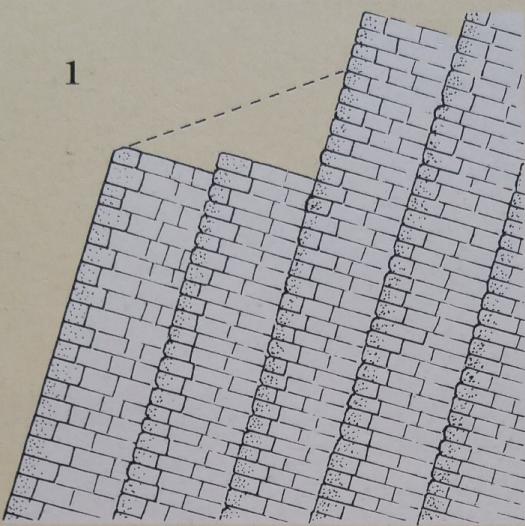


# Placement of stones

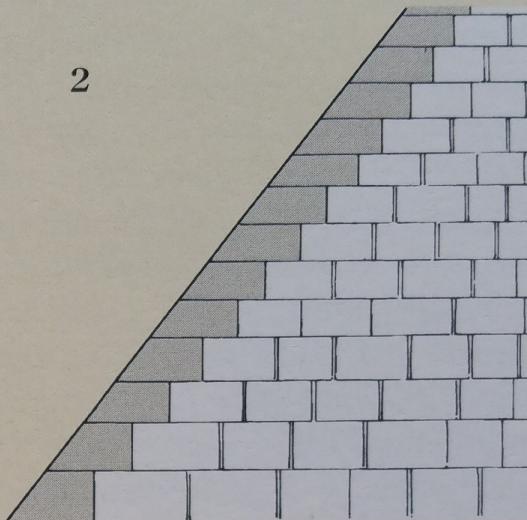


# Placement of stones

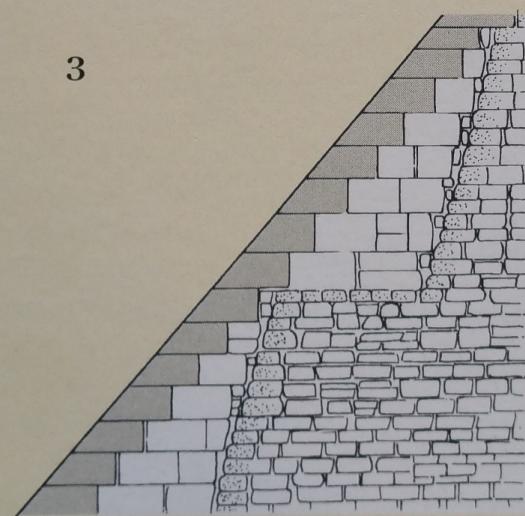
1



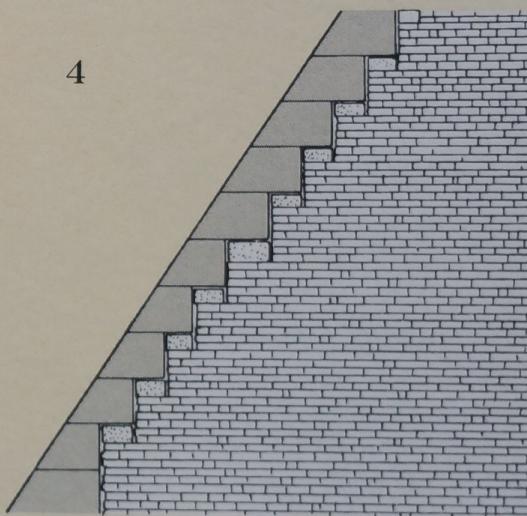
2



3



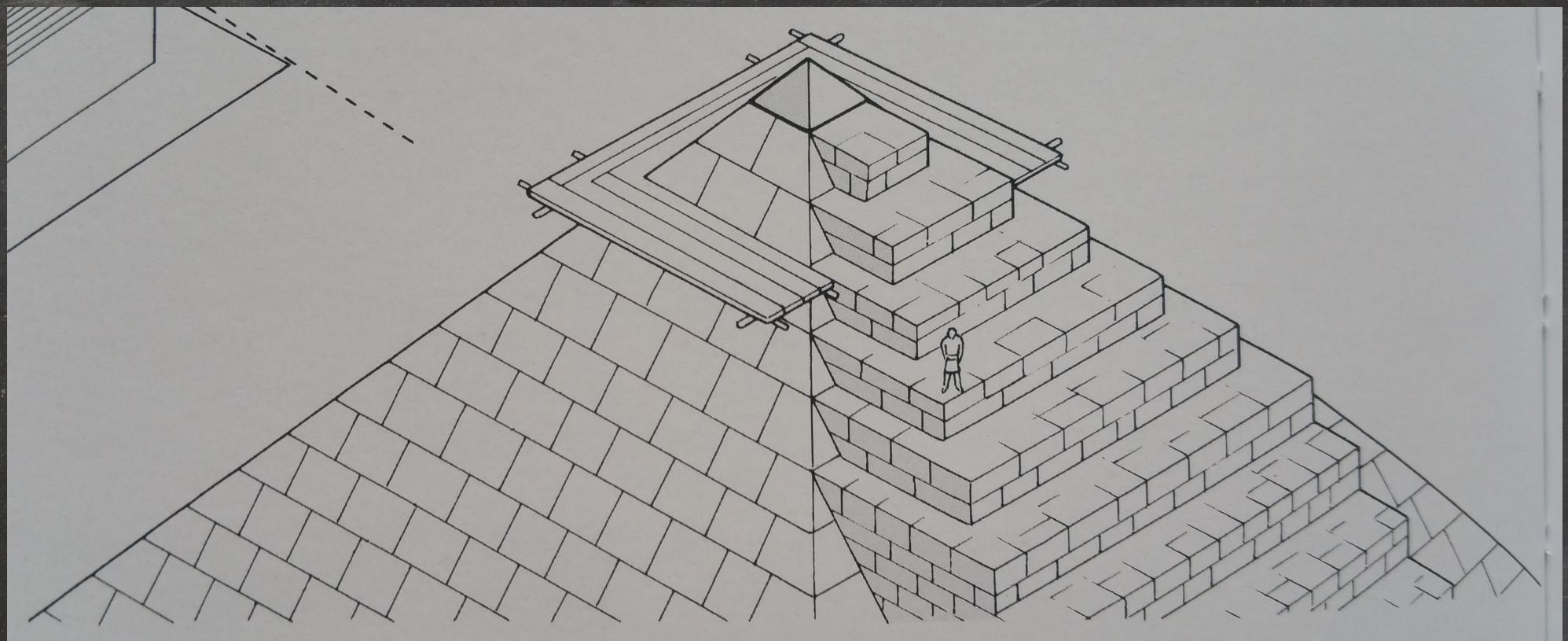
4





# Placement of stones

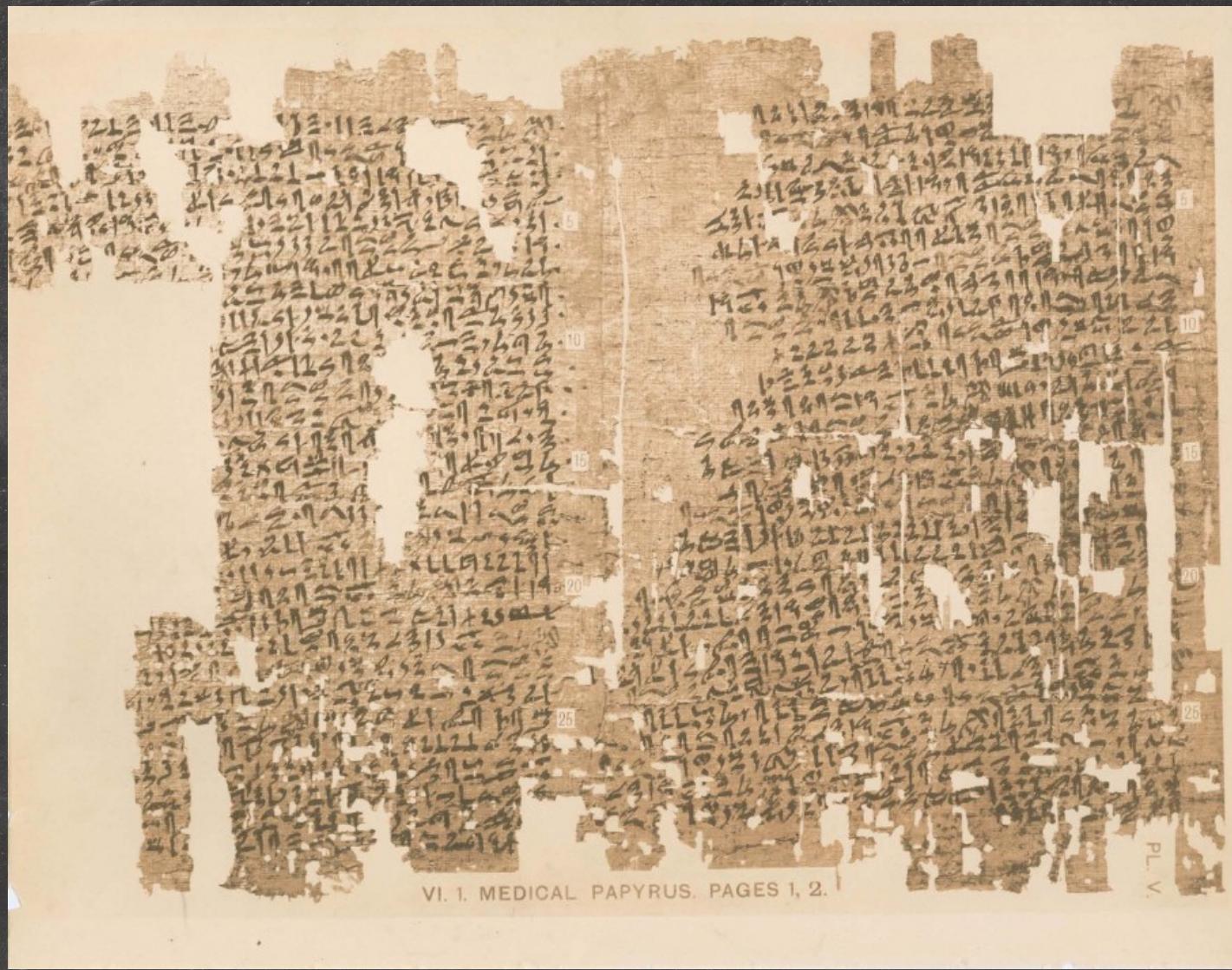
# Topping it off



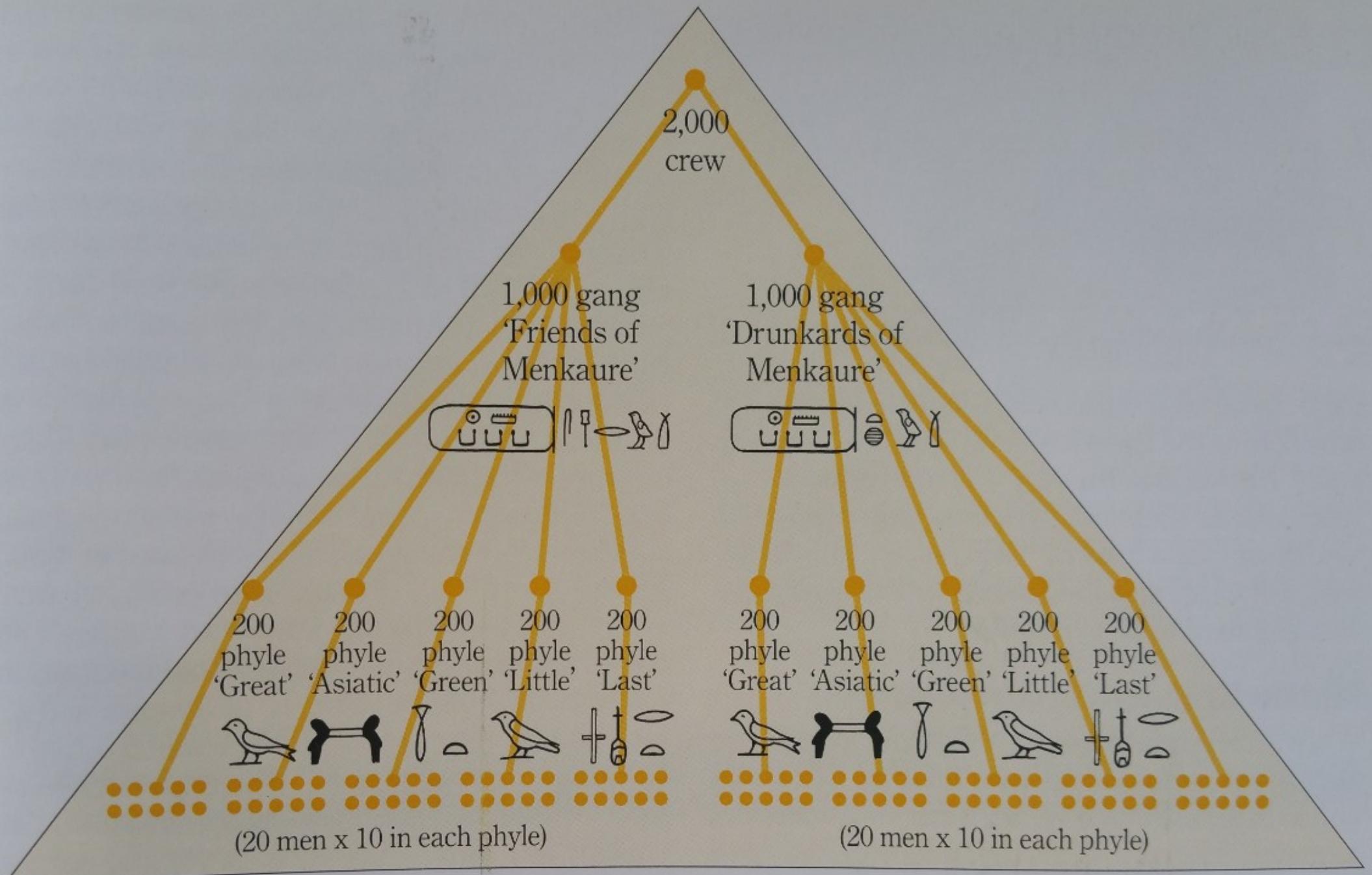
# How much arithmetic did it take?

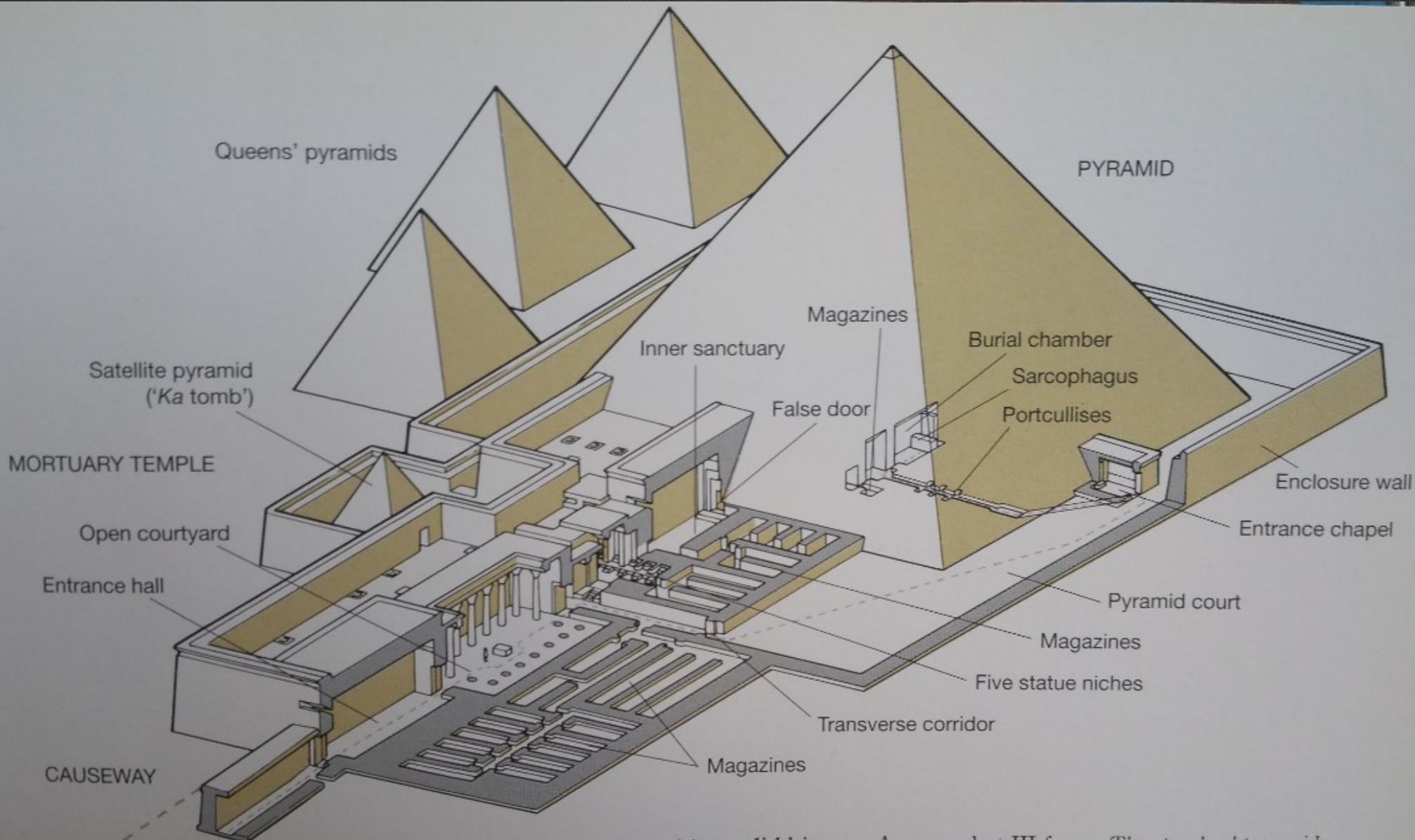
٢٠١	بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِيْمِ	٢٠٢
٢٠٣	الْحُكْمُ لِلّٰهِ الرَّحْمٰنِ الرَّحِيْمِ	٢٠٤
٢٠٥	رَبُّ الْعَالَمِينَ	٢٠٦
٢٠٧	وَالْحَمْدُ لِلّٰهِ الرَّحْمٰنِ الرَّحِيْمِ	٢٠٨
٢٠٩	أَنْ شَاءَ اللّٰهُ فَلَيْلٌ	٢١٠
٢١١	فَإِذَا كَانَتِ الظَّاهِرَةُ	٢١٢
٢١٣	لَيْلٌ	٢١٤
٢١٥	فَإِذَا كَانَتِ الظَّاهِرَةُ	٢١٦
٢١٧	لَيْلٌ	٢١٨
٢١٩	فَإِذَا كَانَتِ الظَّاهِرَةُ	٢٢٠
٢٢١	لَيْلٌ	٢٢٢
٢٢٣	فَإِذَا كَانَتِ الظَّاهِرَةُ	٢٢٤

# How did they work together?

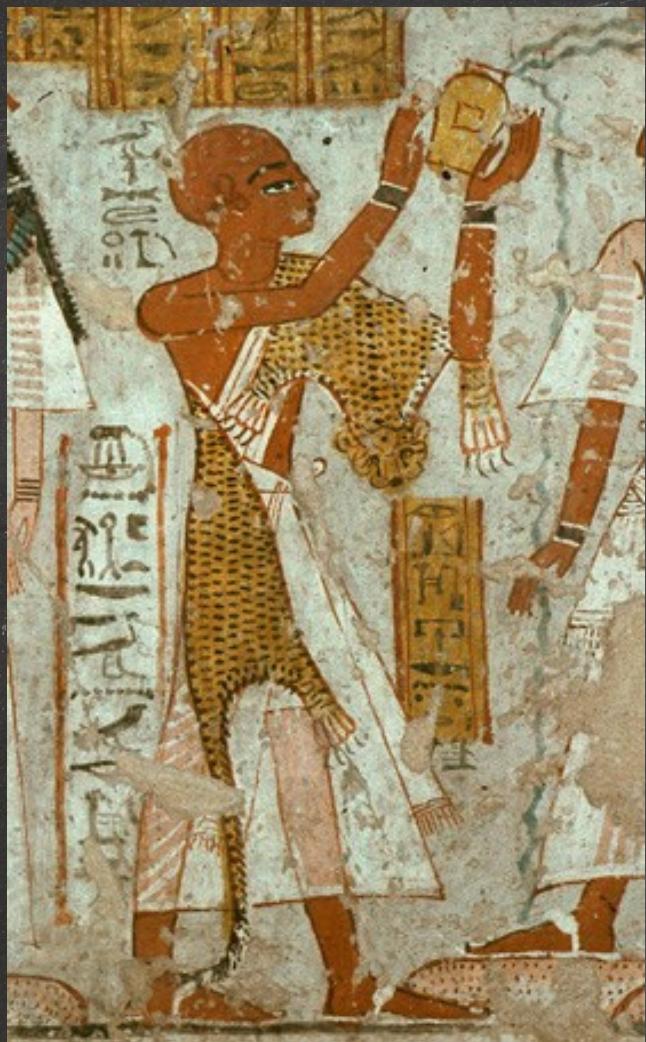


VI.1. MEDICAL PAPYRUS. PAGES 1, 2.









What did the pyramid symbolize?

# What did the pyramid symbolize?



# What did the pyramid symbolize?

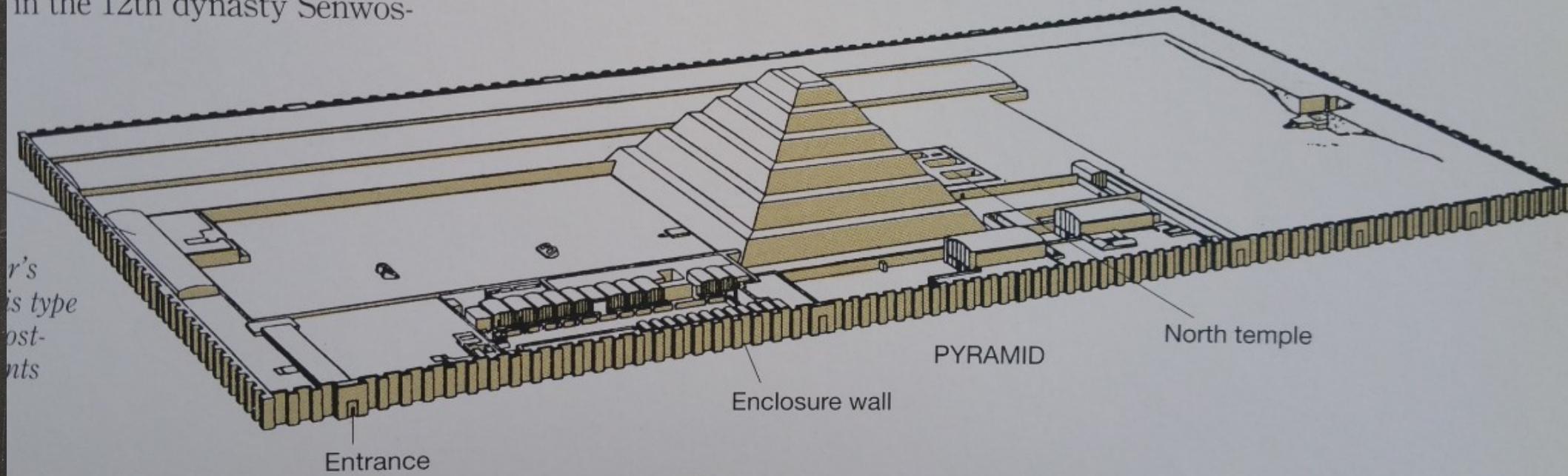


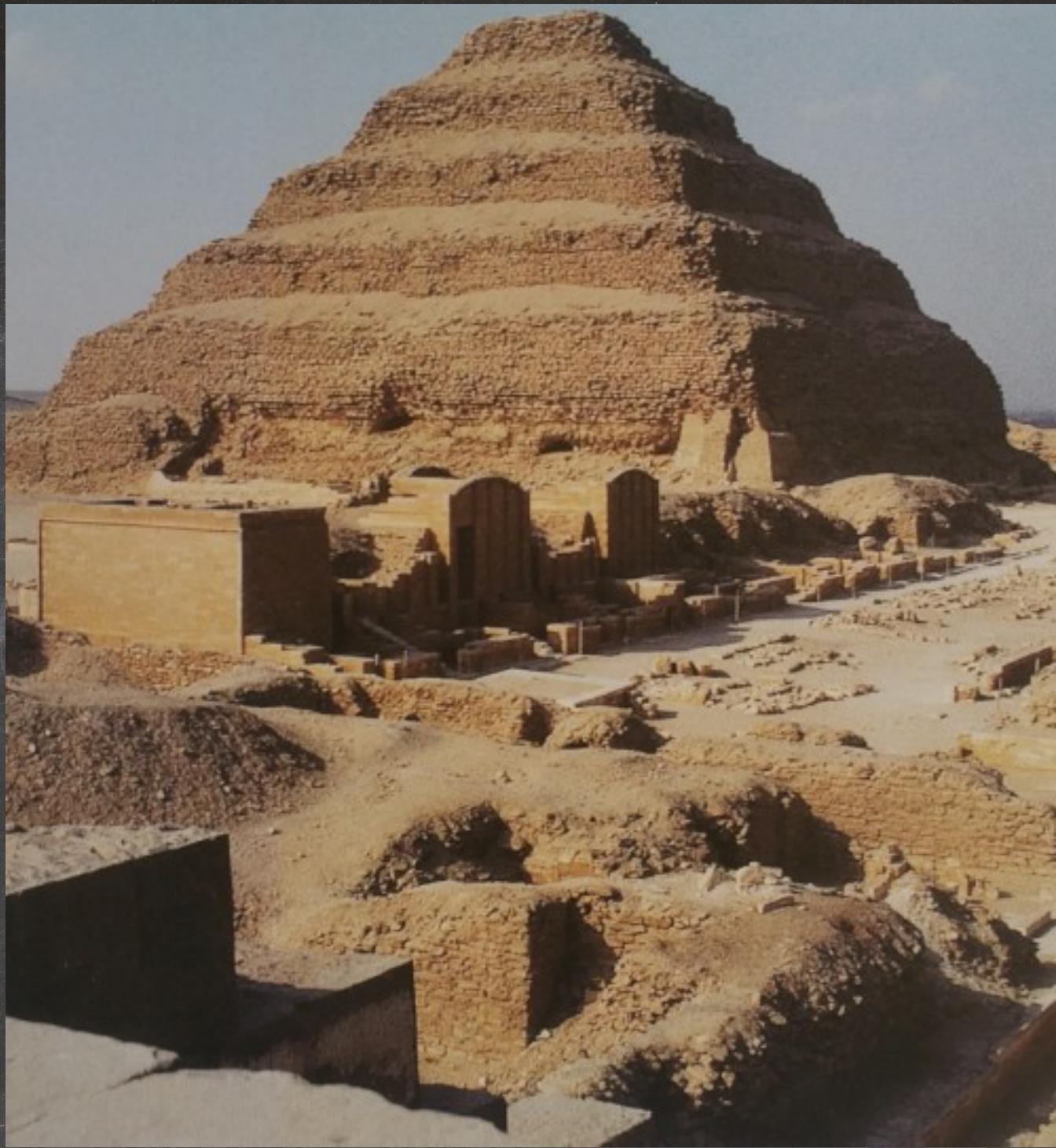
# A brief tour of the pyramids

# Step Pyramid of Djoser



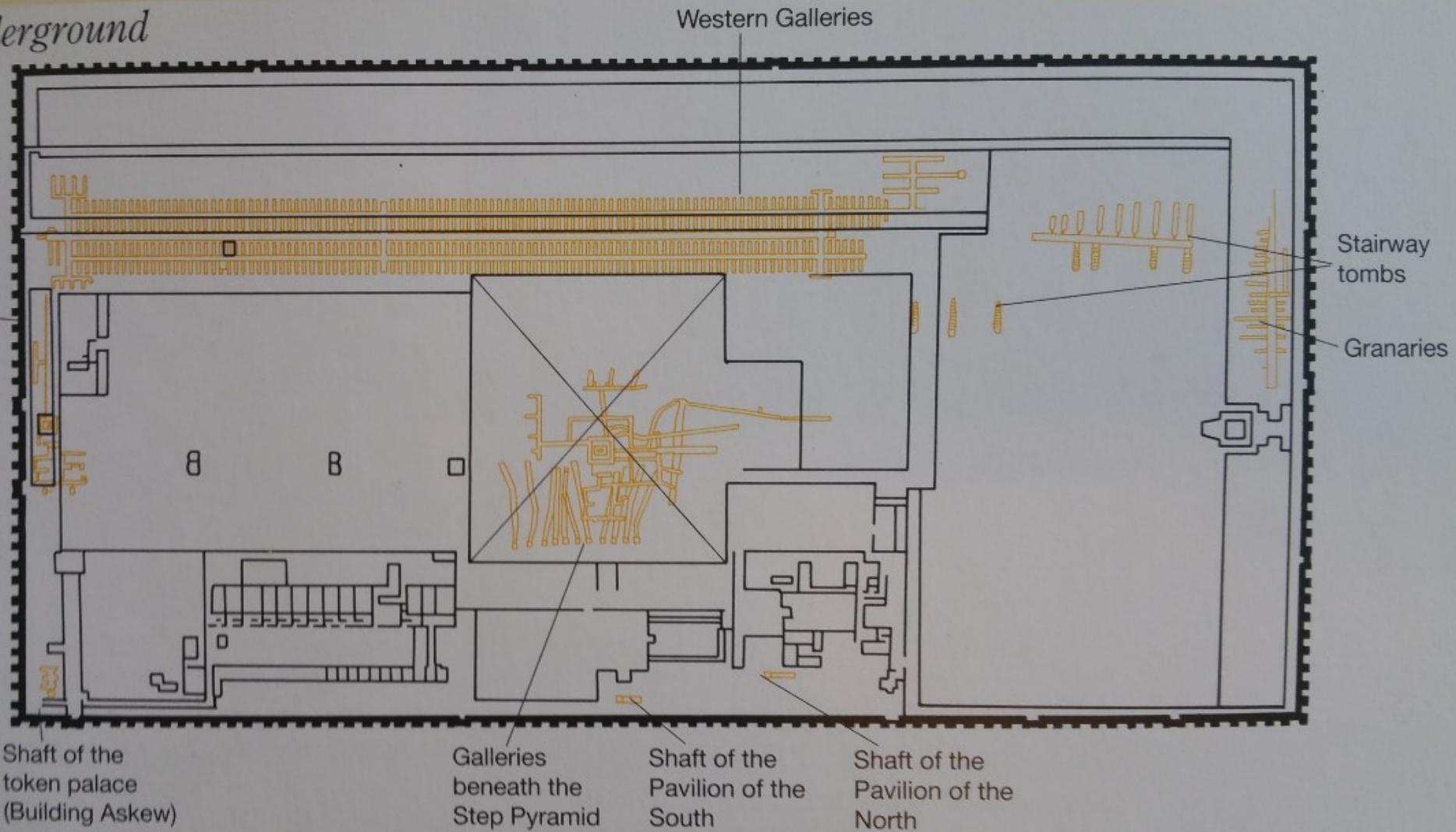
in the 12th dynasty Senwos-







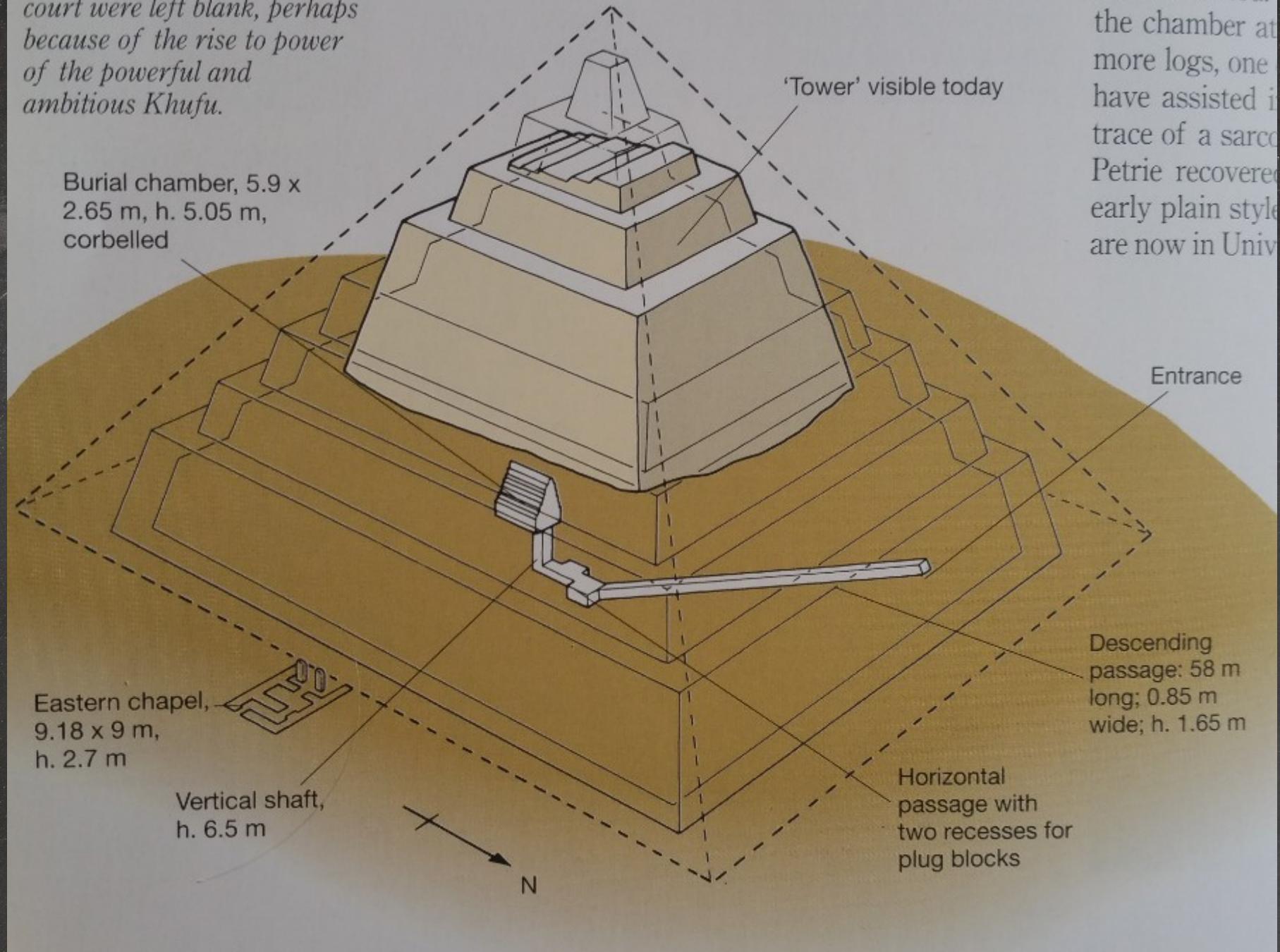
## Djoser Underground



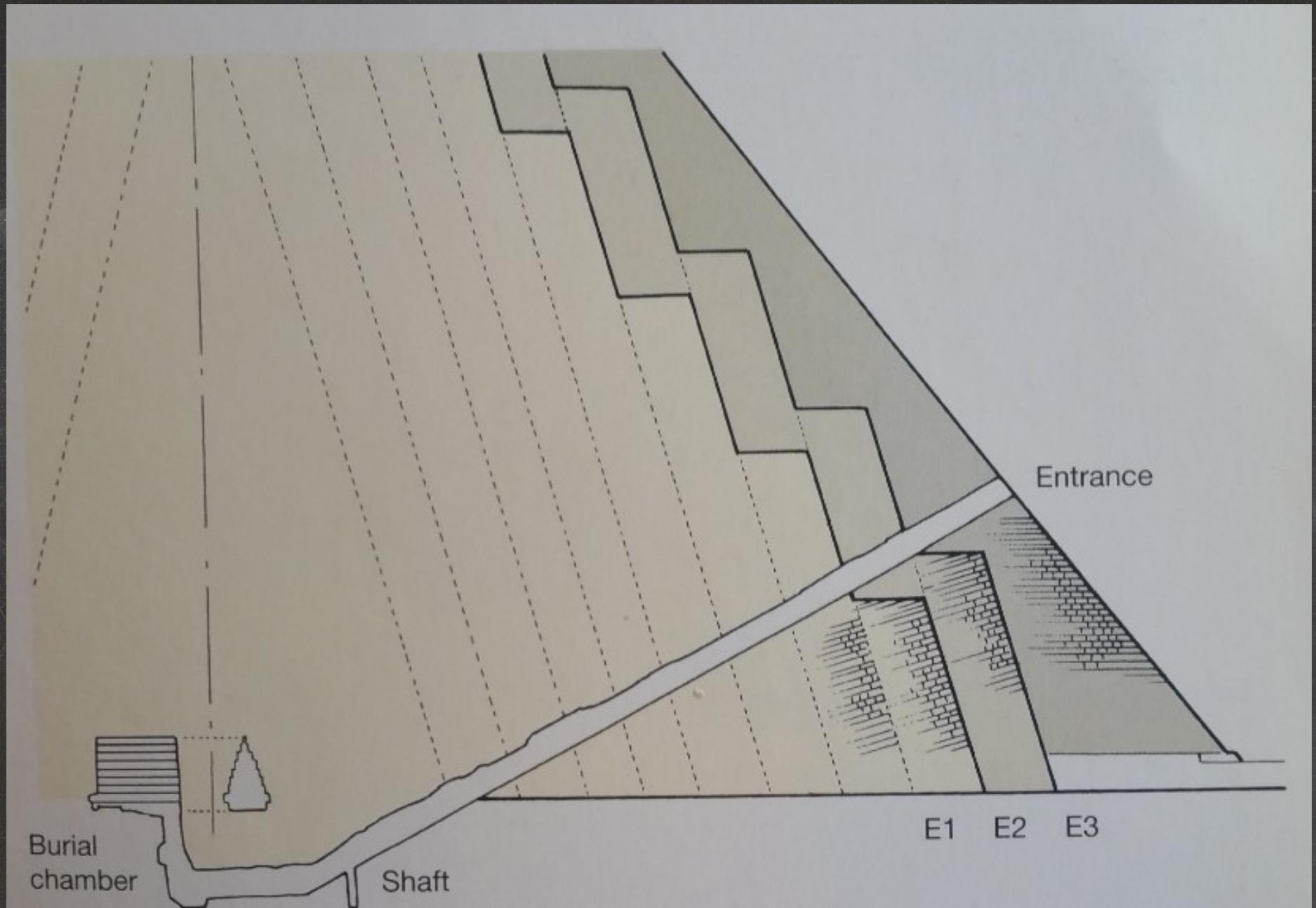
# Meidum Pyramid of Sneferu



court were left blank, perhaps because of the rise to power of the powerful and ambitious Khufu.



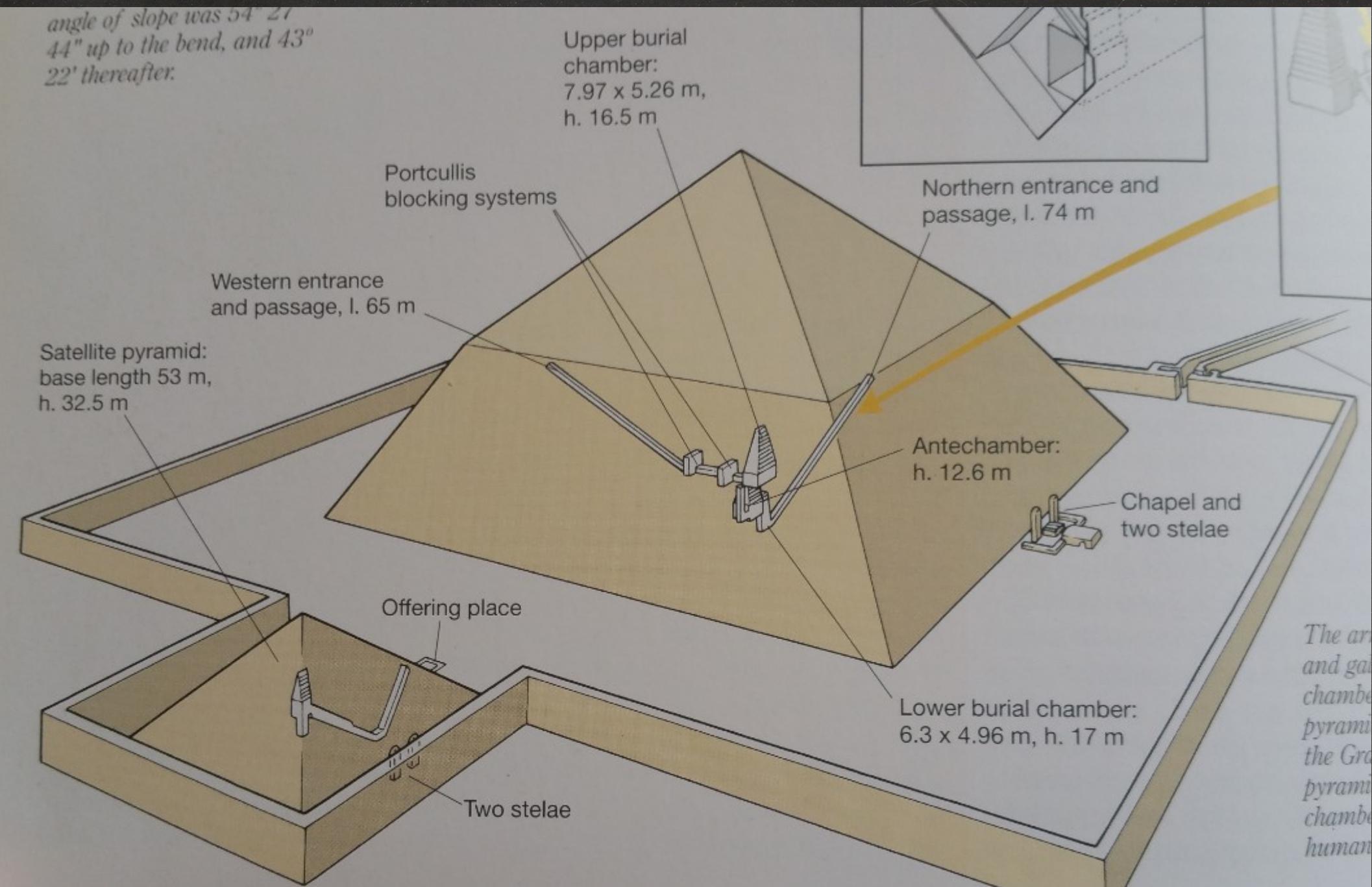
Never finished.  
the chamber at  
more logs, one  
have assisted in  
trace of a sacerd  
Petrie recovered  
early plain style  
are now in Univ



# Bent pyramid of Sneferu



angle of slope was 54° 27' 44" up to the bend, and 43° 22' thereafter.



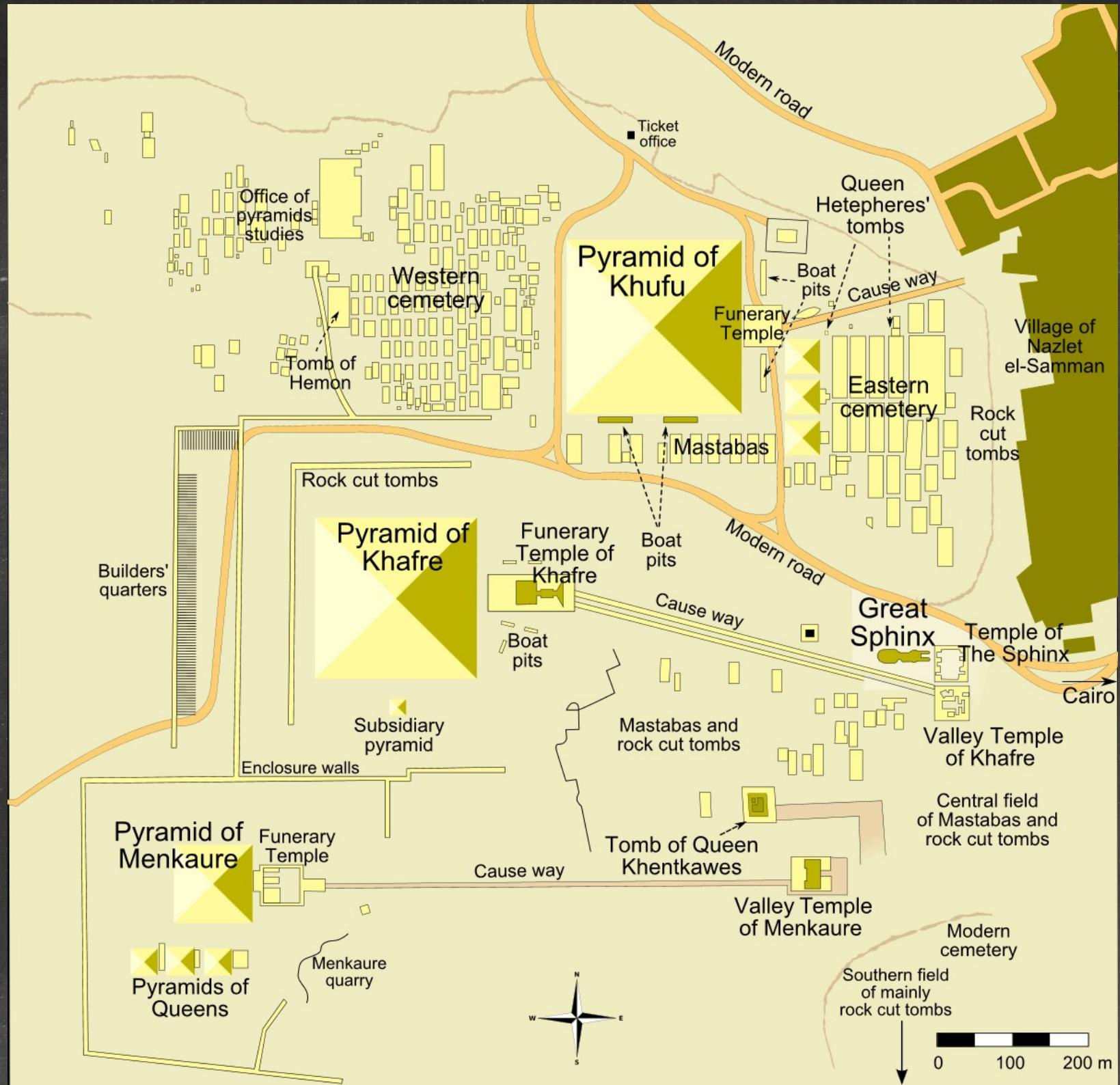
The ar...  
and ga...  
chambe...  
pyrami...  
the Gr...  
pyrami...  
chambe...  
human

# Red pyramid of Sneferu



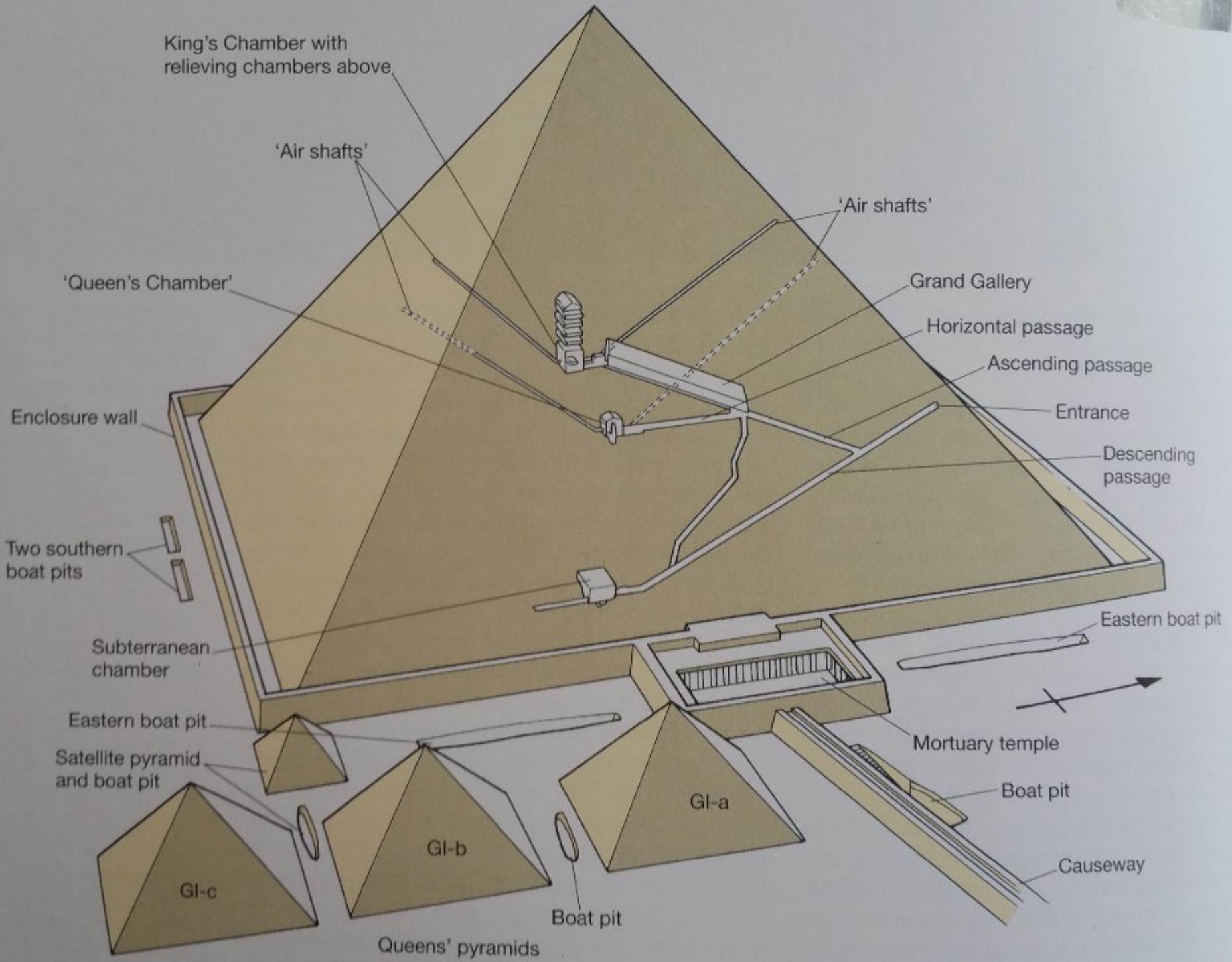






# Great Pyramid of Khufu



















# Pyramid of Khafre





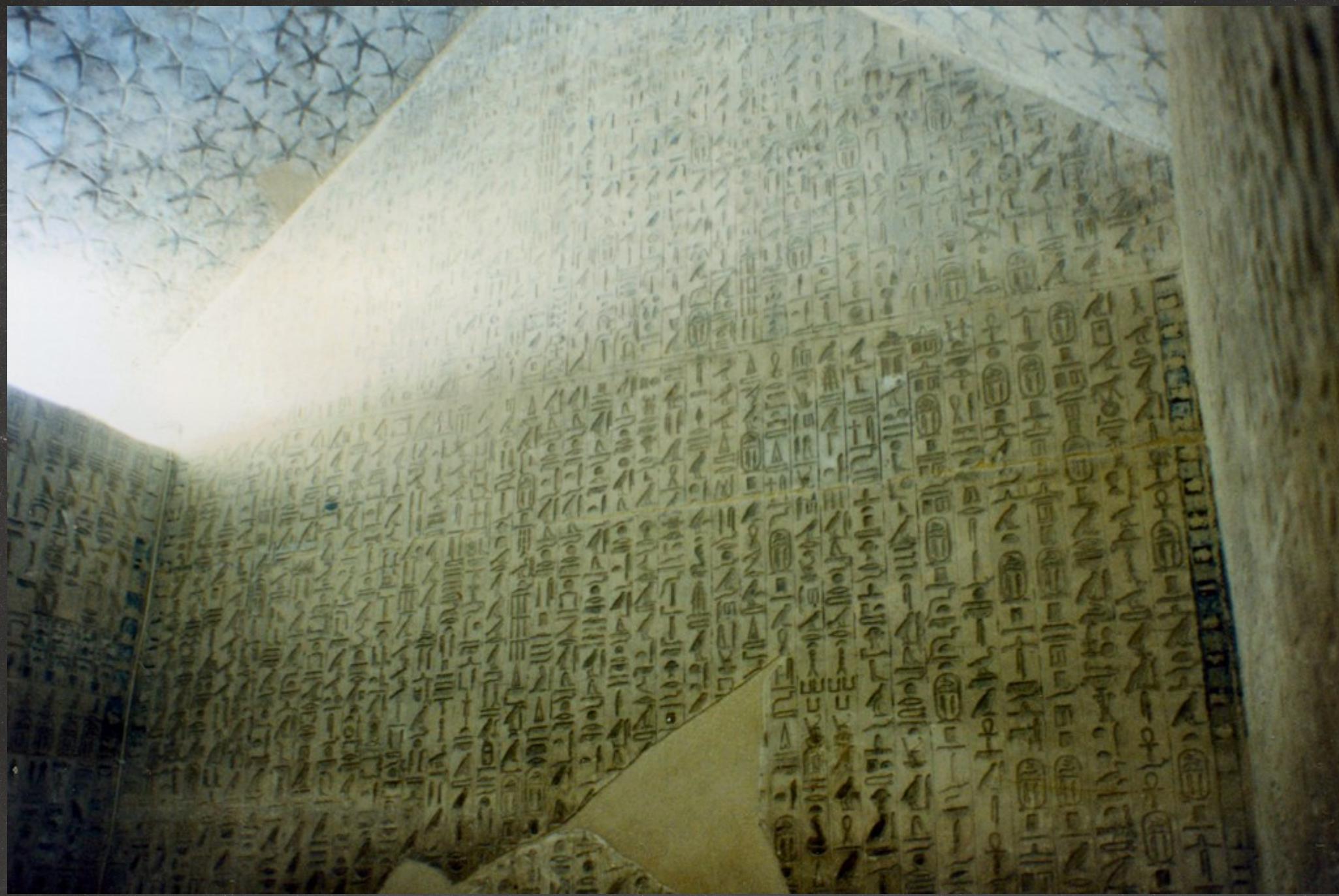






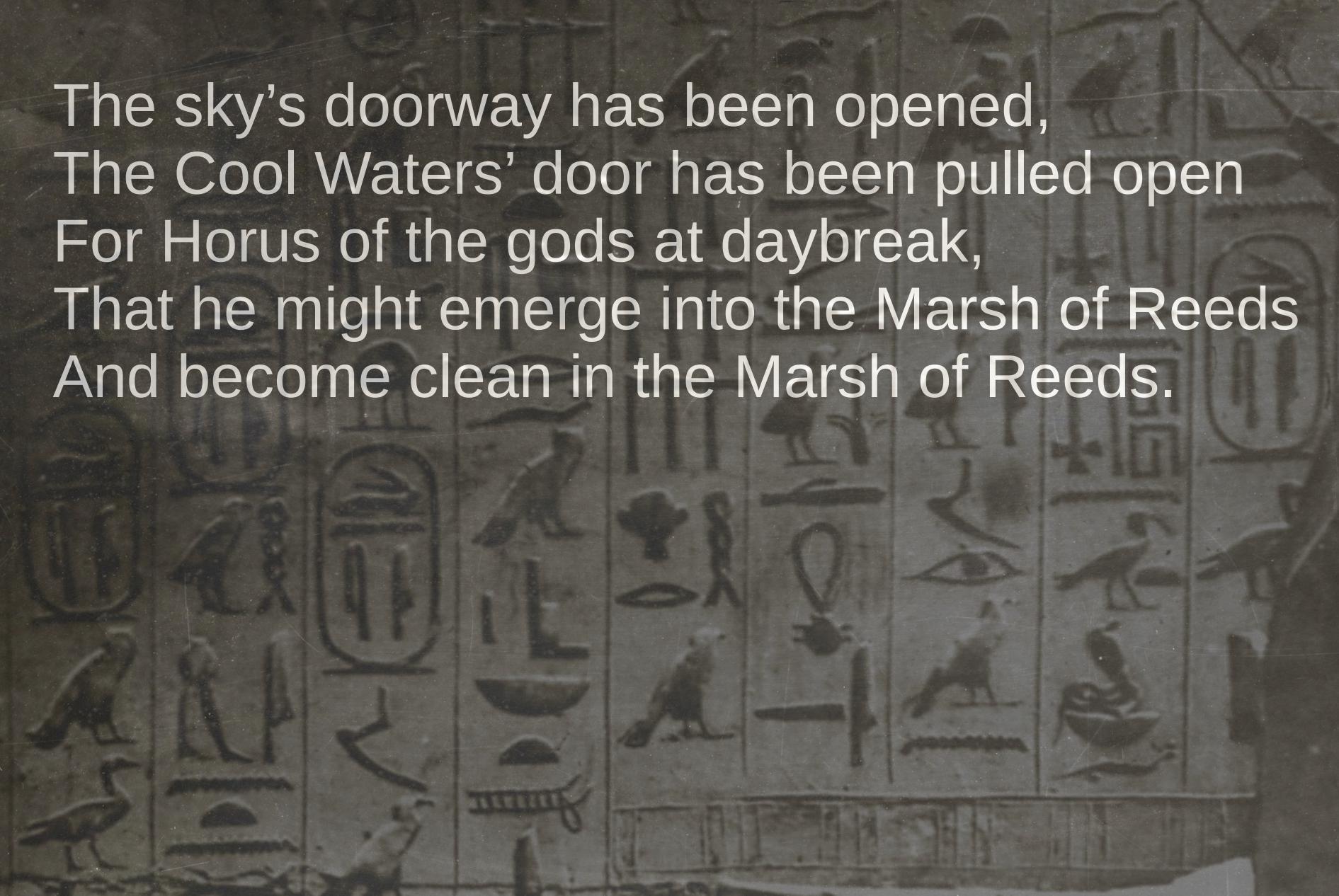
# Pyramid of Unas







# The Pyramid Texts

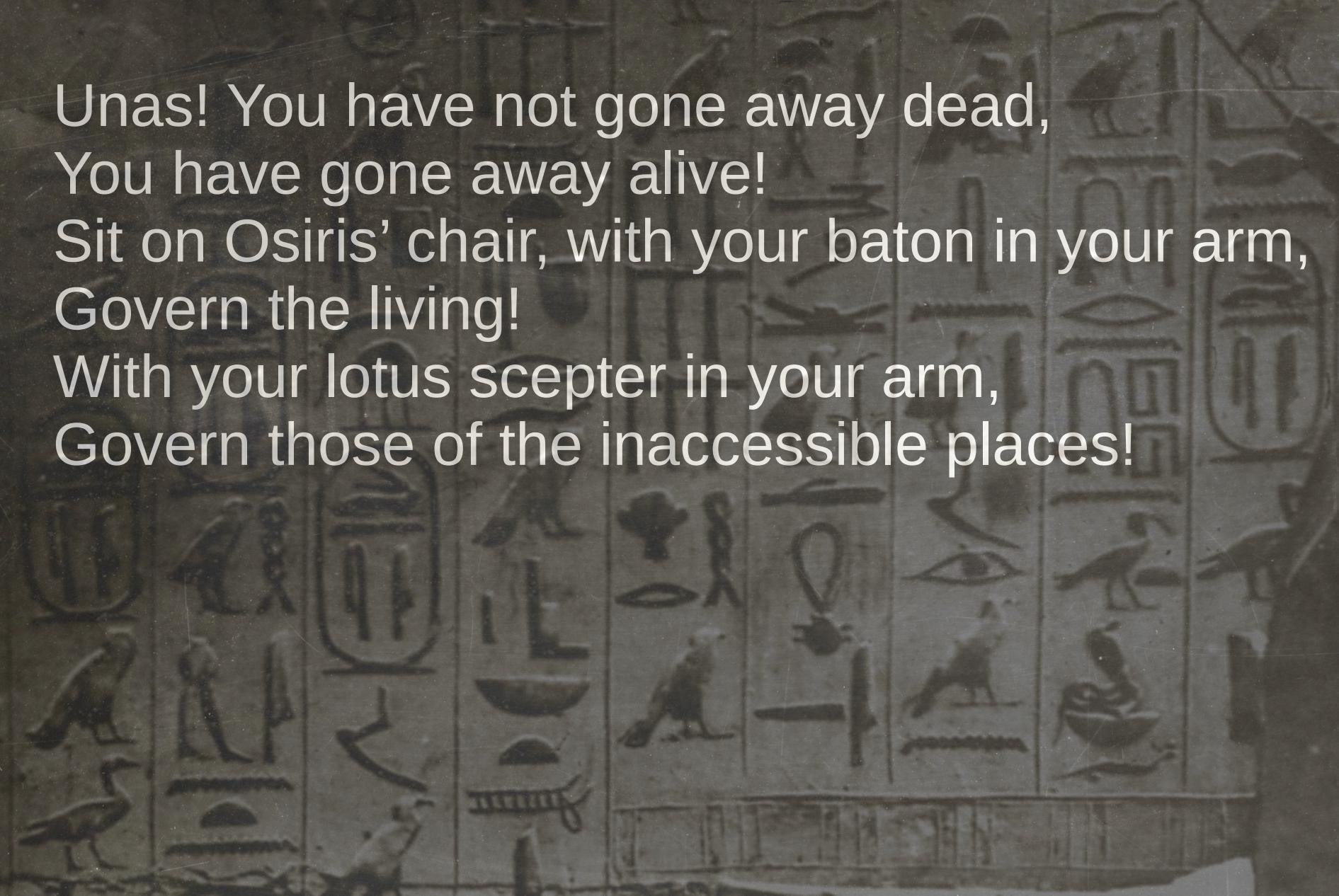


The sky's doorway has been opened,  
The Cool Waters' door has been pulled open  
For Horus of the gods at daybreak,  
That he might emerge into the Marsh of Reeds  
And become clean in the Marsh of Reeds.





# The Pyramid Texts



Unas! You have not gone away dead,  
You have gone away alive!  
Sit on Osiris' chair, with your baton in your arm,  
Govern the living!  
With your lotus scepter in your arm,  
Govern those of the inaccessible places!

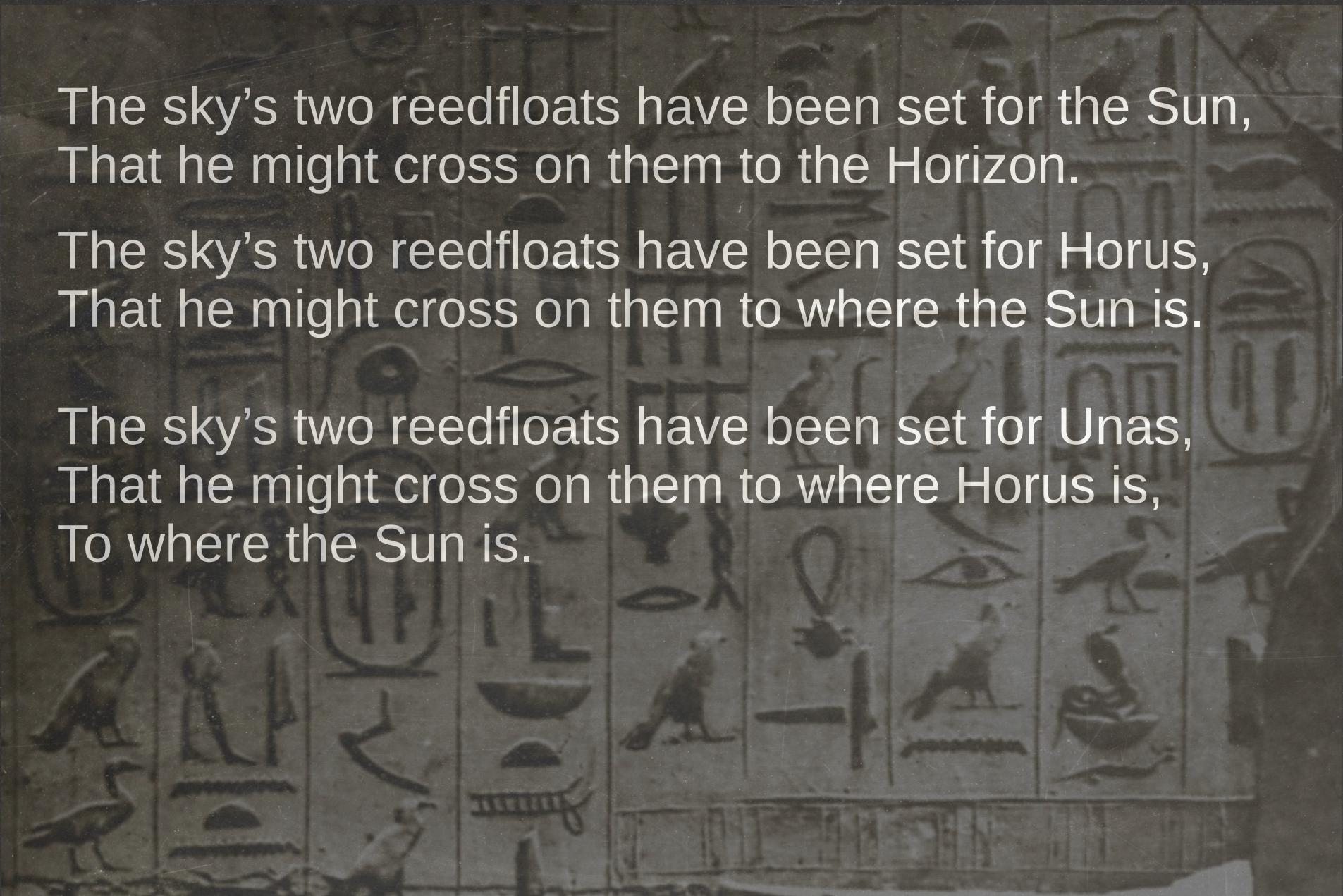


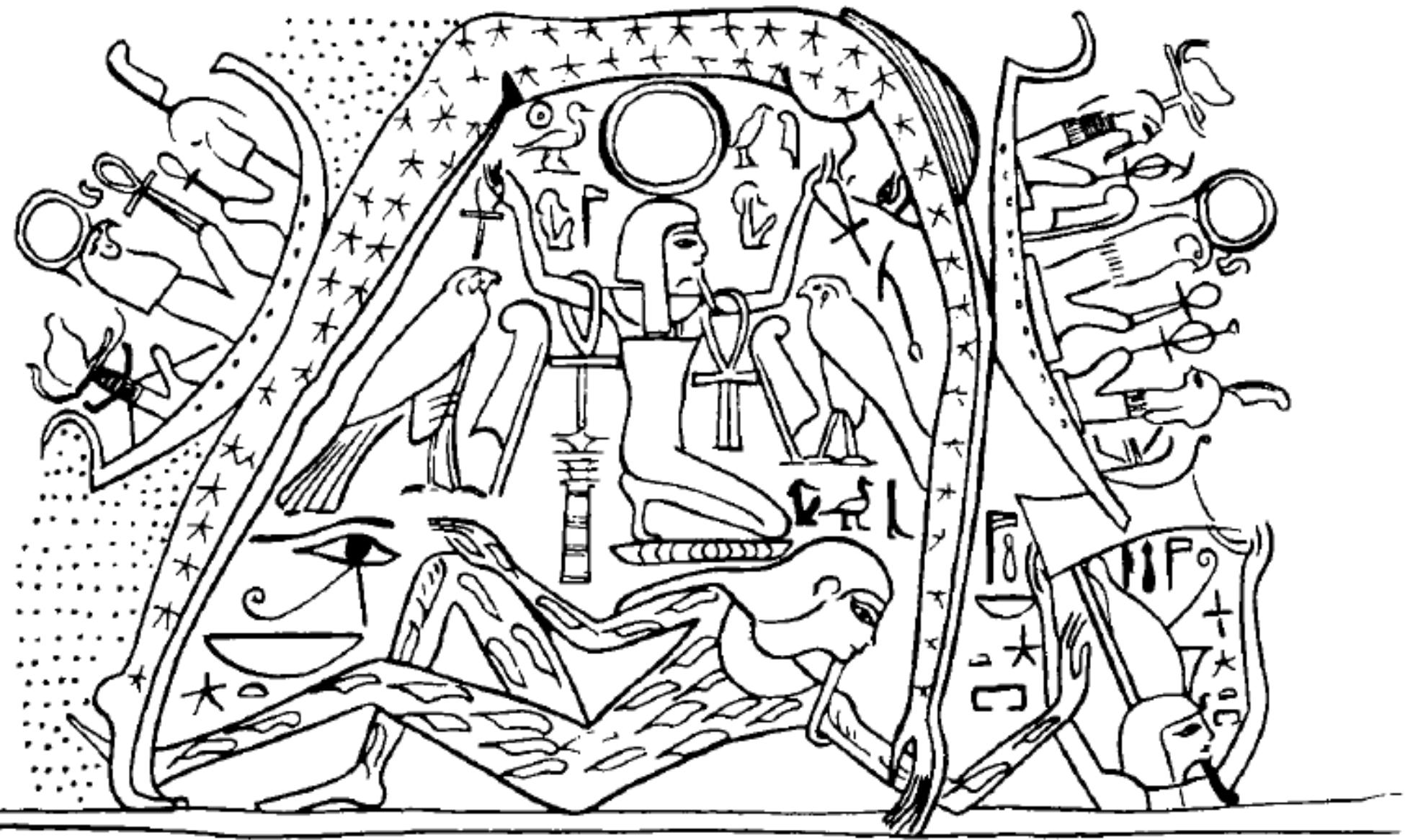
# The Pyramid Texts

The sky's two reedfloats have been set for the Sun,  
That he might cross on them to the Horizon.

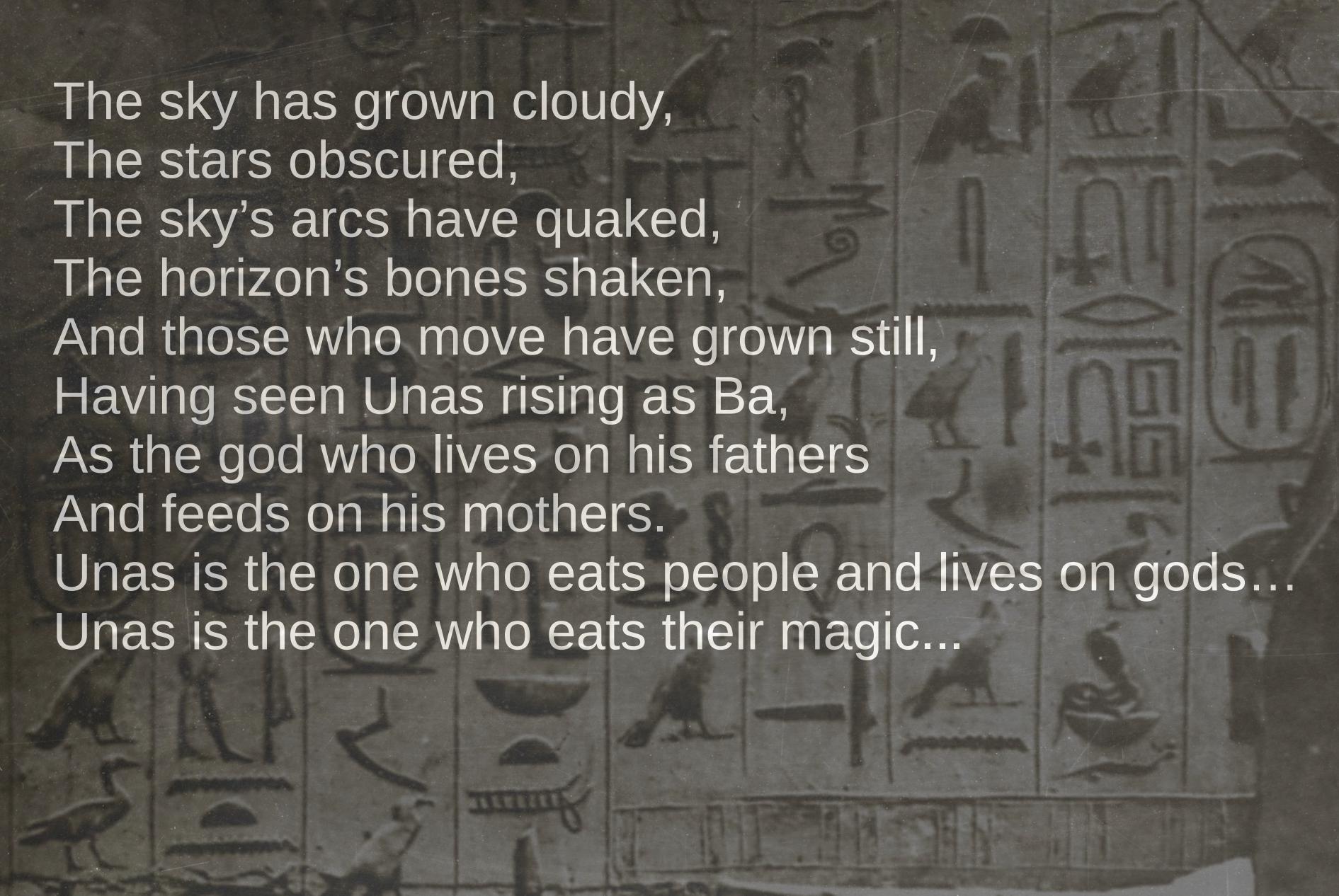
The sky's two reedfloats have been set for Horus,  
That he might cross on them to where the Sun is.

The sky's two reedfloats have been set for Unas,  
That he might cross on them to where Horus is,  
To where the Sun is.





# The Pyramid Texts

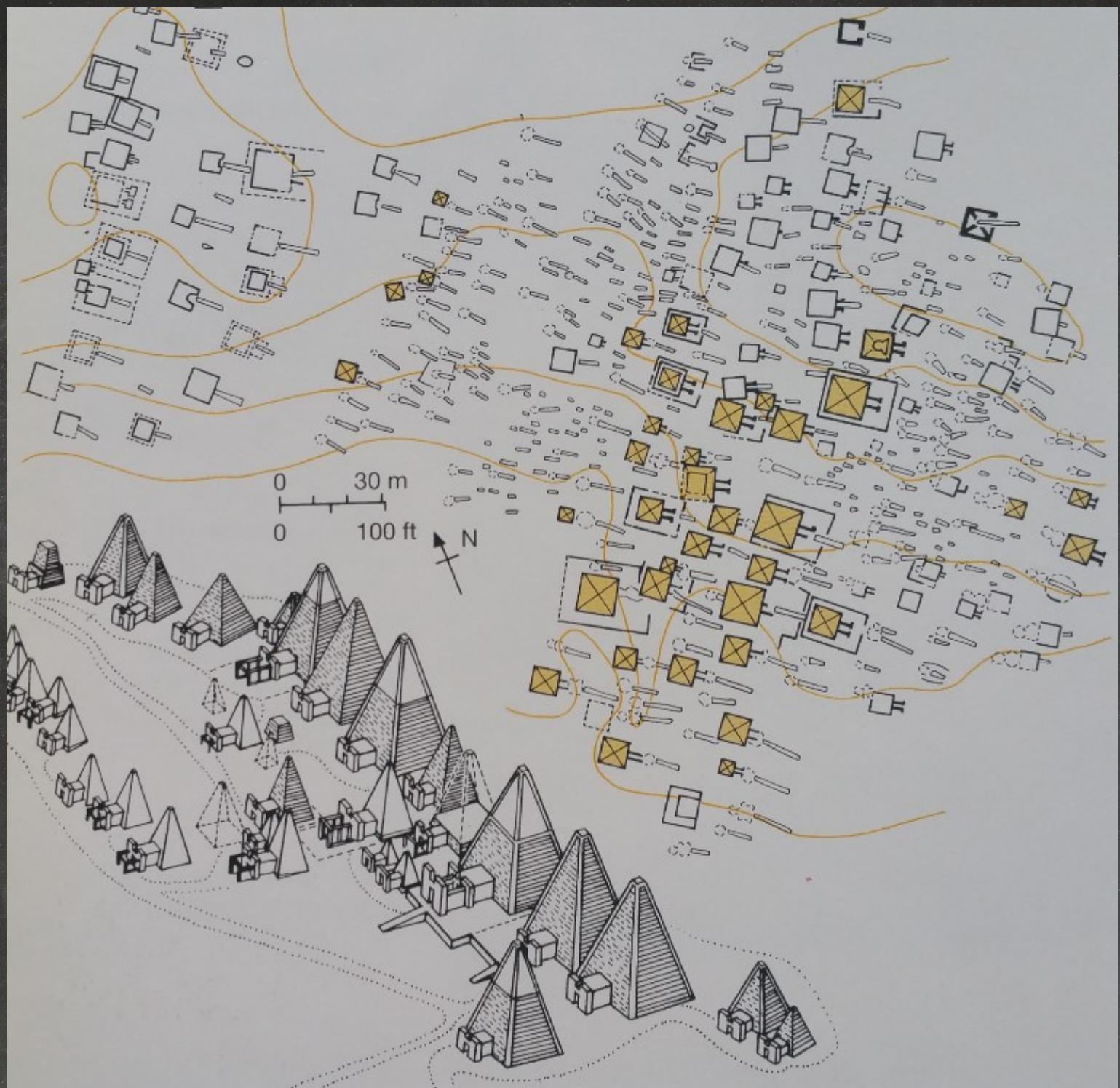


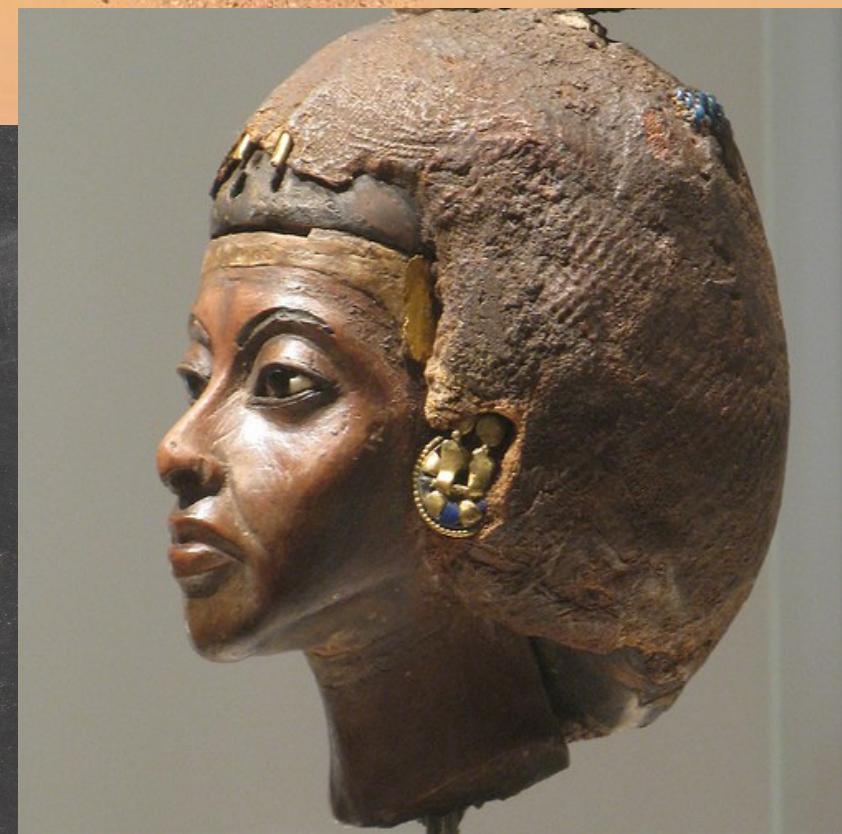
The sky has grown cloudy,  
The stars obscured,  
The sky's arcs have quaked,  
The horizon's bones shaken,  
And those who move have grown still,  
Having seen Unas rising as Ba,  
As the god who lives on his fathers  
And feeds on his mothers.  
Unas is the one who eats people and lives on gods...  
Unas is the one who eats their magic...



# Nubian pyramids at Meroe



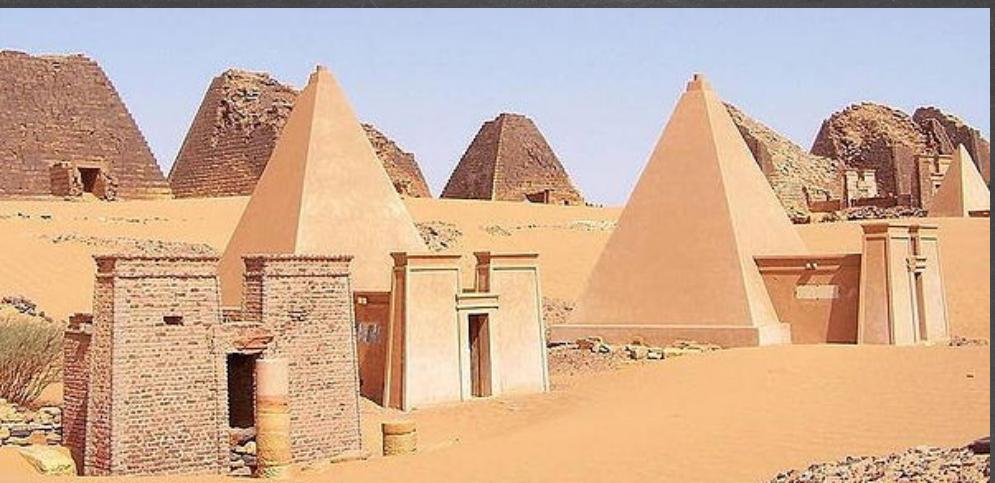








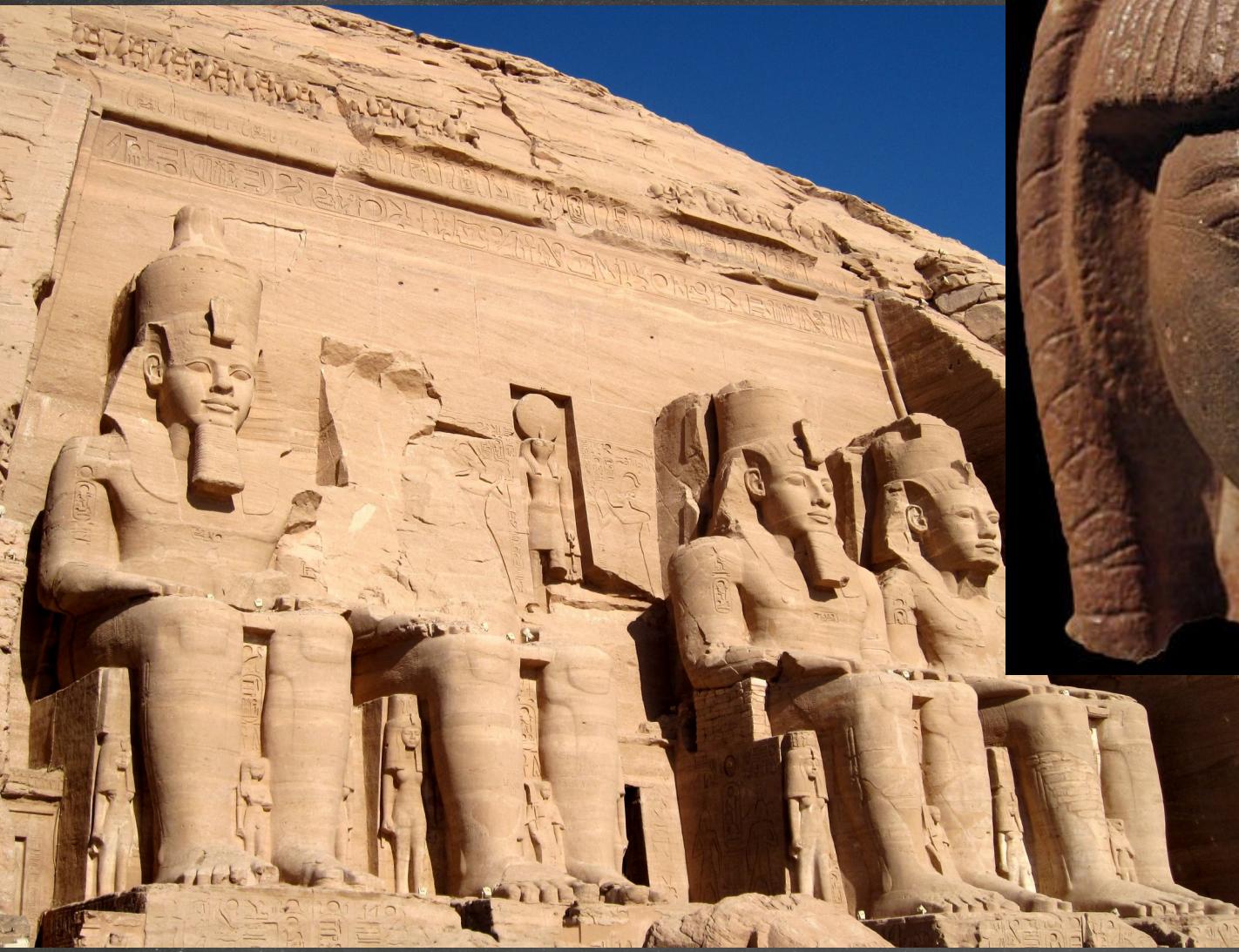
## Mediterranean Sea



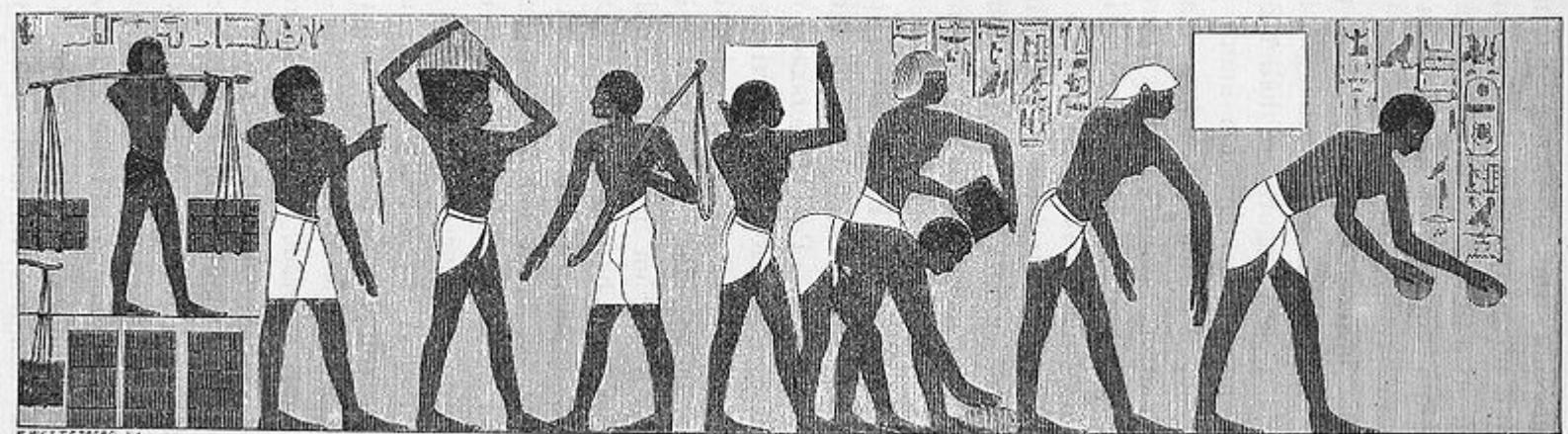
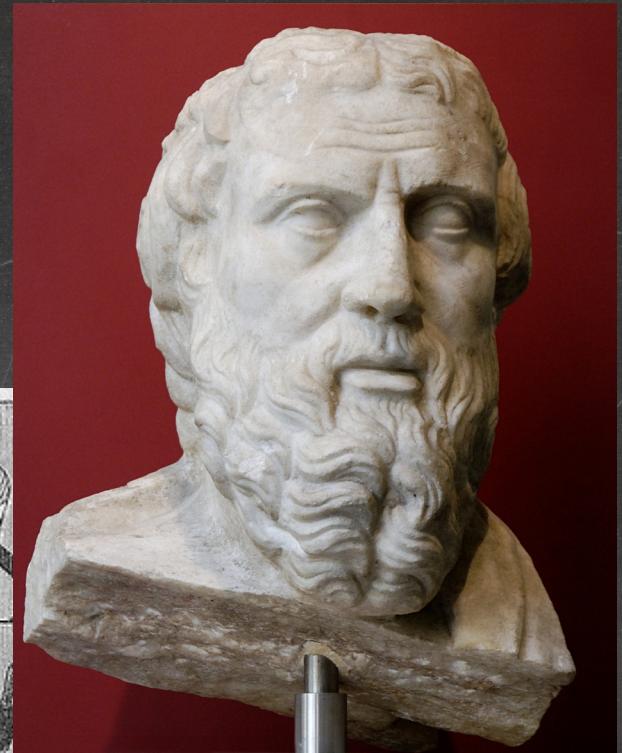
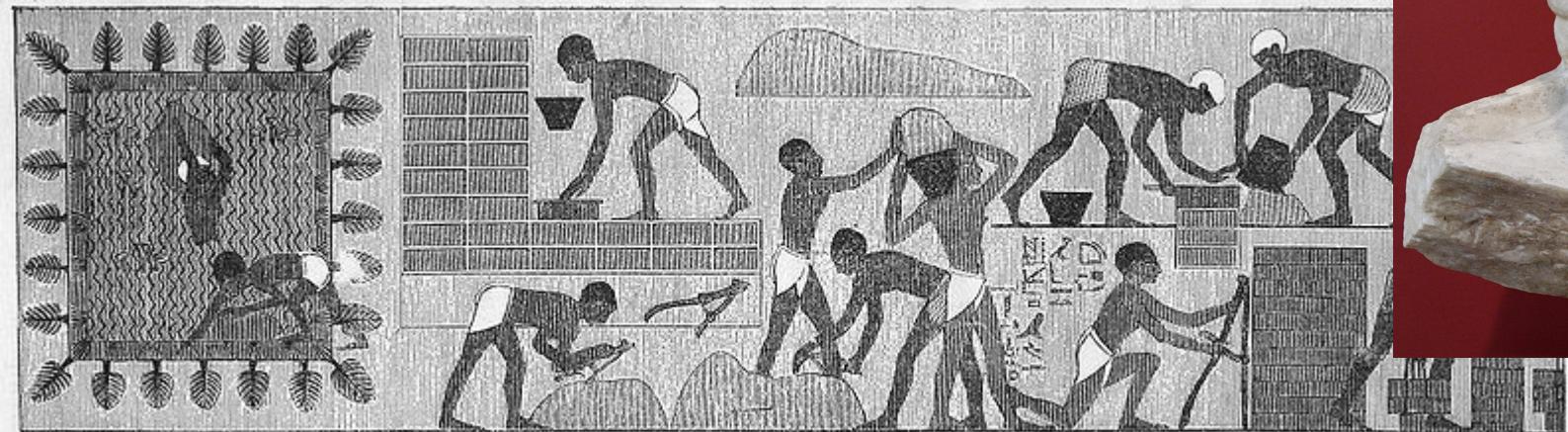




# Khaemwaset, son of Ramesses II



# Herodotus (485-426 BCE)



# Josephus (37 – 100 CE)



# The Arabian Nights



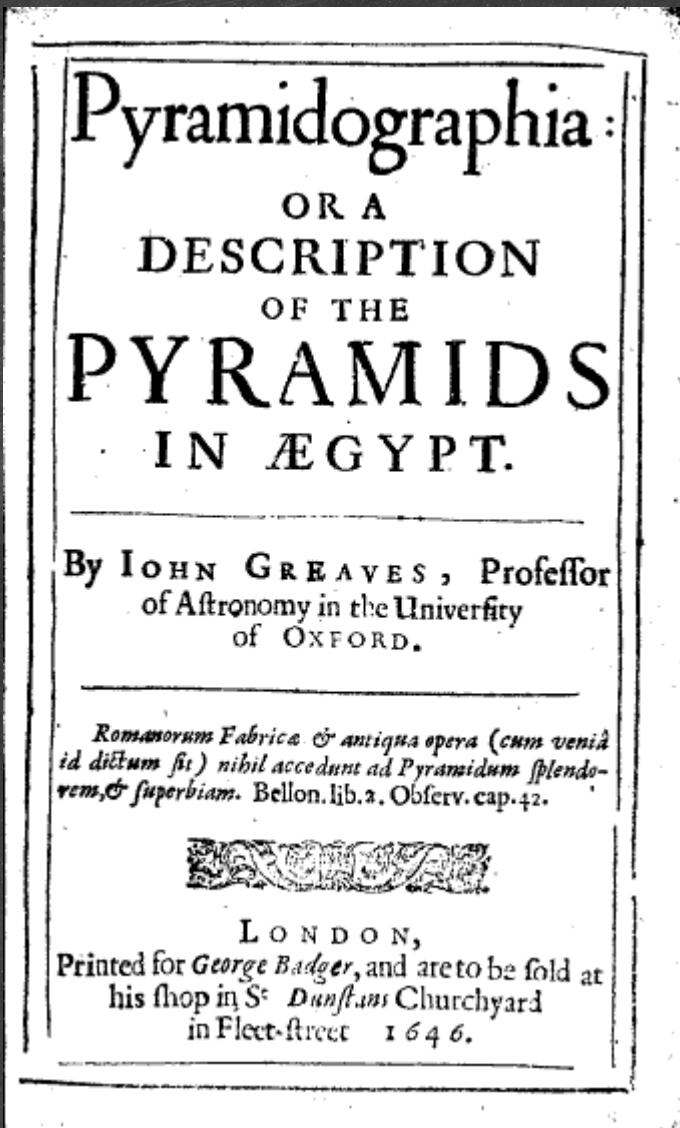


St. Mark's,  
Venice



# The Renaissance View

# John Greaves (1602-52)



# Napoleon Bonaparte (1769-1821)





Jean-Léon Gérôme, Napoleon devant le Sphinx (1867-1868)

DESCRIPTION  
DE L'ÉGYPTE,  
OU  
RECUEIL  
DES OBSERVATIONS ET DES RECHERCHES  
QUI ONT ÉTÉ FAITES EN ÉGYPTE  
PENDANT L'EXPÉDITION DE L'ARMÉE FRANÇAISE,  
PUBLIÉ  
PAR LES ORDRES DE SA MAJESTÉ L'EMPEREUR  
NAPOLEON LE GRAND.

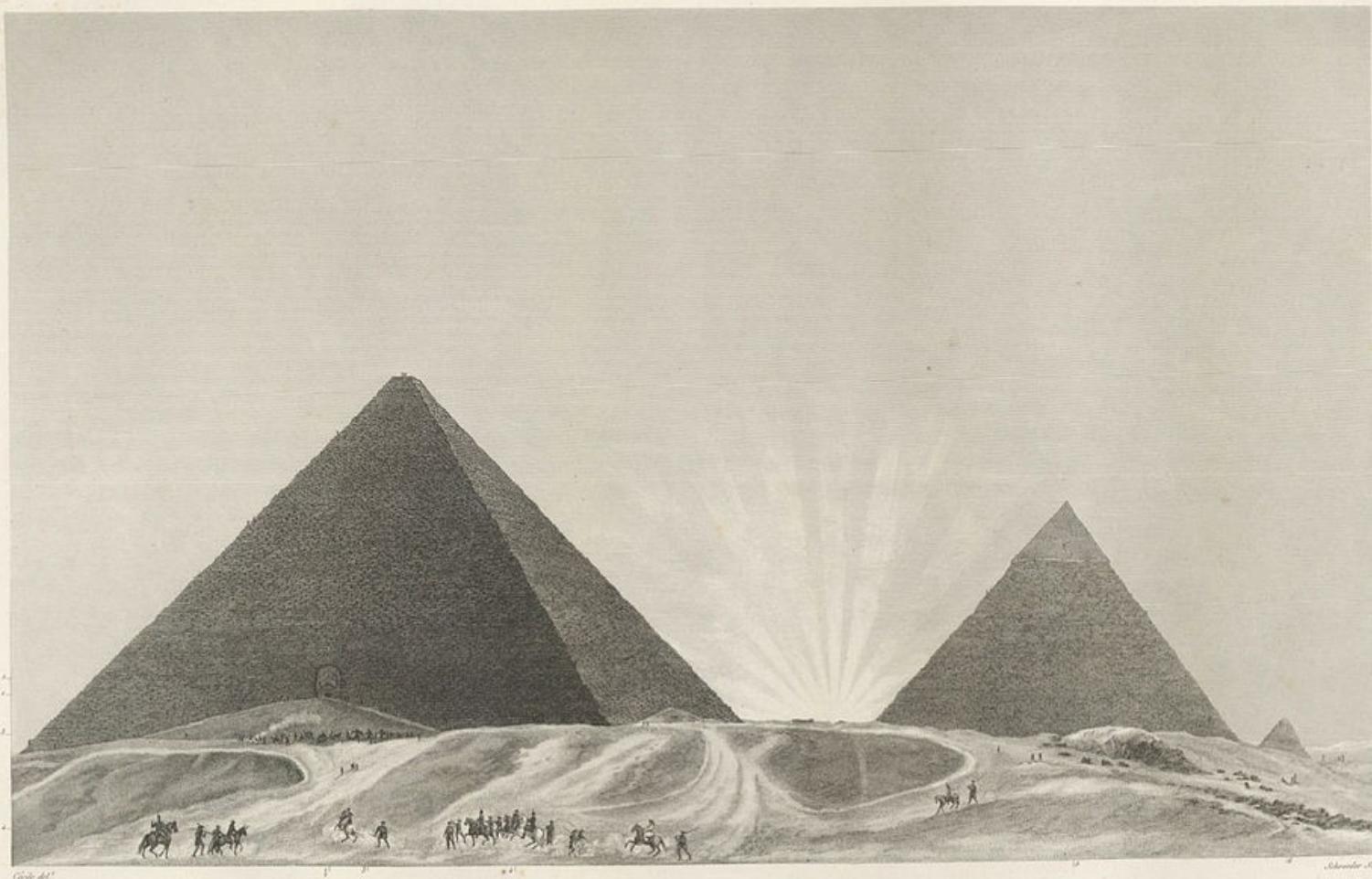
I - PLANCHES.



A PARIS,  
DE L'IMPRIMERIE IMPÉRIALE.  
M. DCCC. IX.

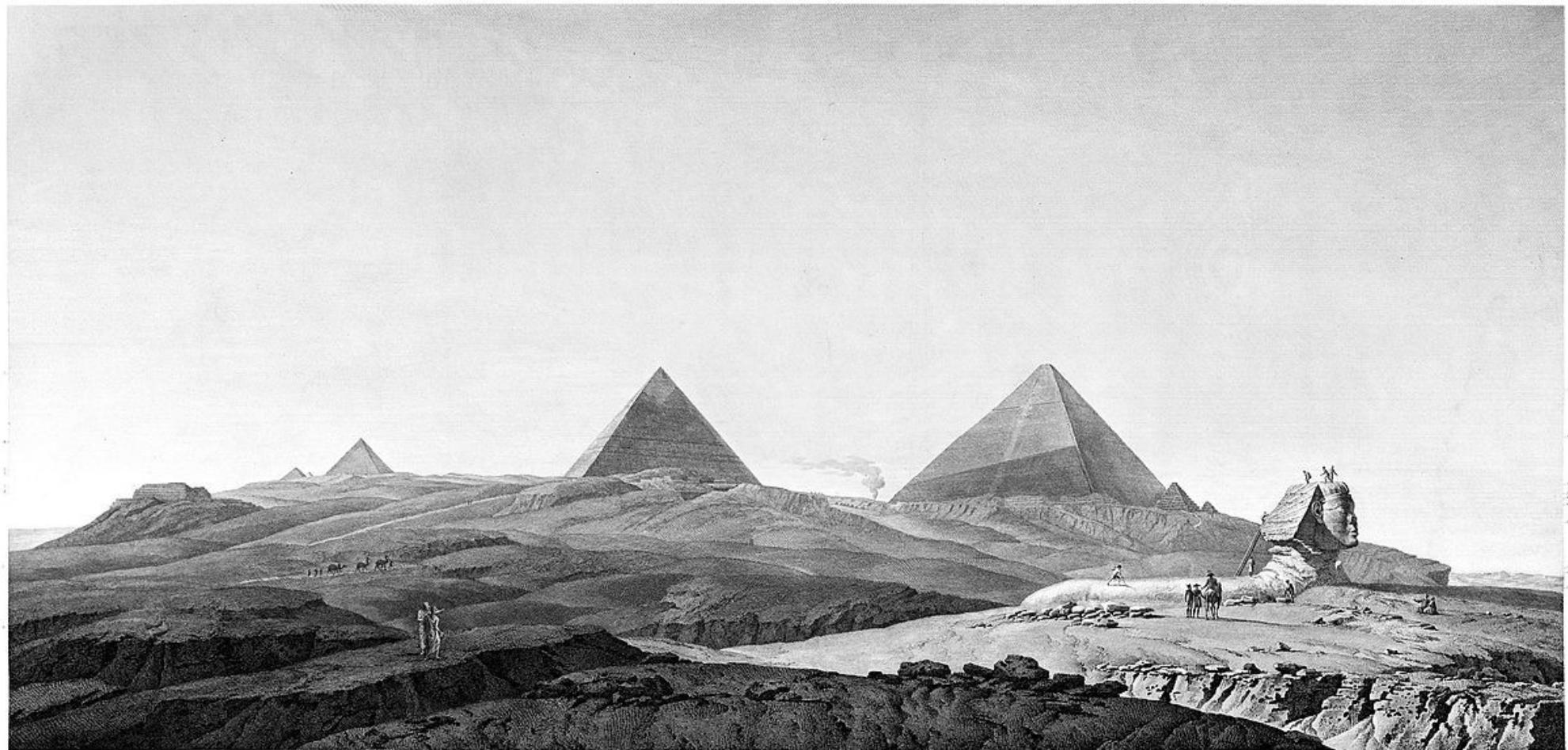


PYRAMIDES DE MEMPHIS.



VUE DE L'ENTRÉE DE LA GRANDE PYRAMIDE, PRISE AU SOLEIL LEVANT.

PYRAMIDES DE MEMPHIS.



VUE GÉNÉRALE DES PYRAMIDES ET DU SPHINX, PRISE AU SOLEIL COUCHANT.



VUE DU SPHINX ET DE LA GRANDE PYRAMIDE, PRISE DU SUD-EST.

