

# *Homo erectus* behavior

- What behavioral changes are found in *Homo erectus*?
- What is the adaptive pattern?
- What sorts of tools are found with *Homo erectus*?

# Archaic *Homo*

- What are “archaic *Homo sapiens*”?
- Why do we call them archaic?
- What features do they show?
- How are they distinguished from *Homo erectus*?
- What “species” are archaic *Homo* sometimes divided into?



*H. erectus*



archaic *Homo*

# More on archaics

- What other species names are they known by?
- Why would they be put into other species?
- What does it mean to say that they are mosaic?

# Evolutionary Models

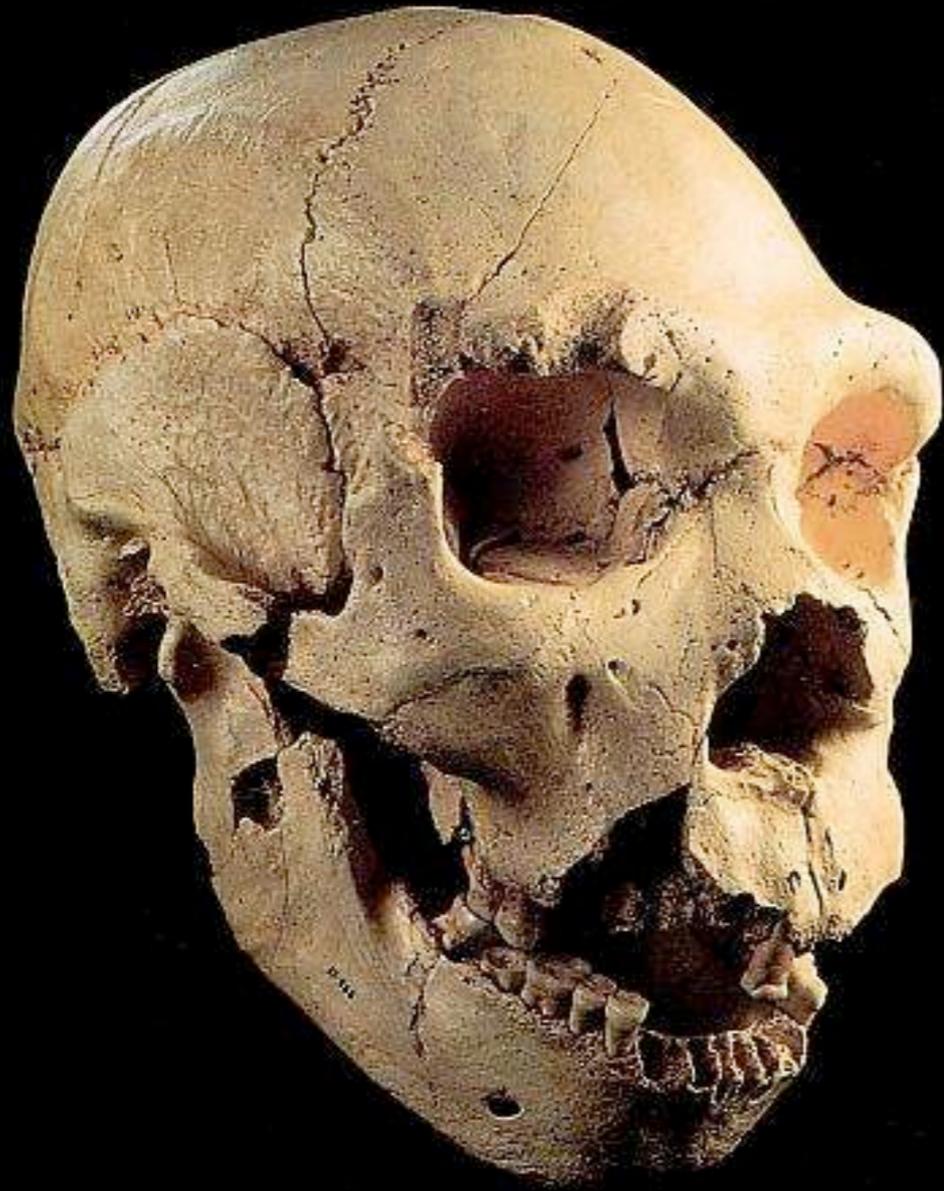
- Models of human evolution from *Homo habilis* to *Homo sapiens* can usually be divided into two paradigms - what are these?
- In each model, where do the various “species” of archaic *Homo* fall?
- What are the differences between the paradigms?
- What is the role of gene flow in these models?
  - How much gene flow is necessary to keep two populations from speciating?
- What are anagenesis and cladogenesis?



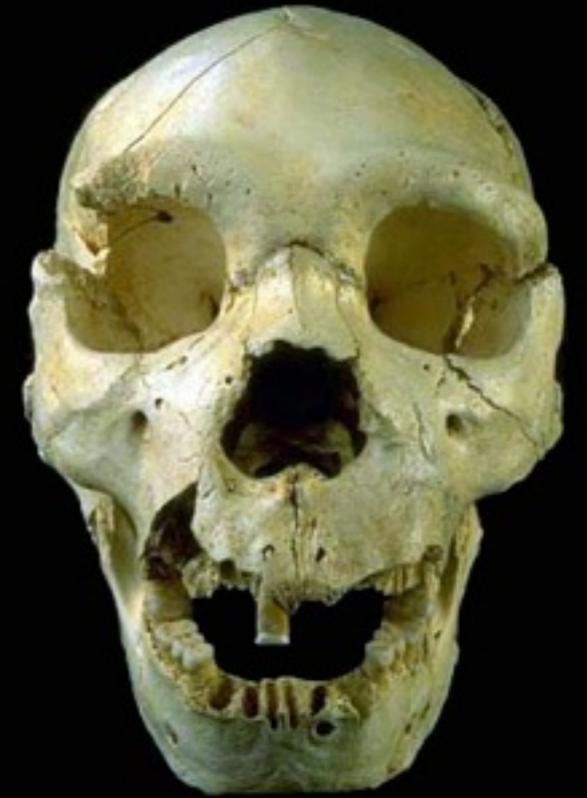
**Bodo**  
**600,000**



Kabwe



Atapuerca 5





Mauer



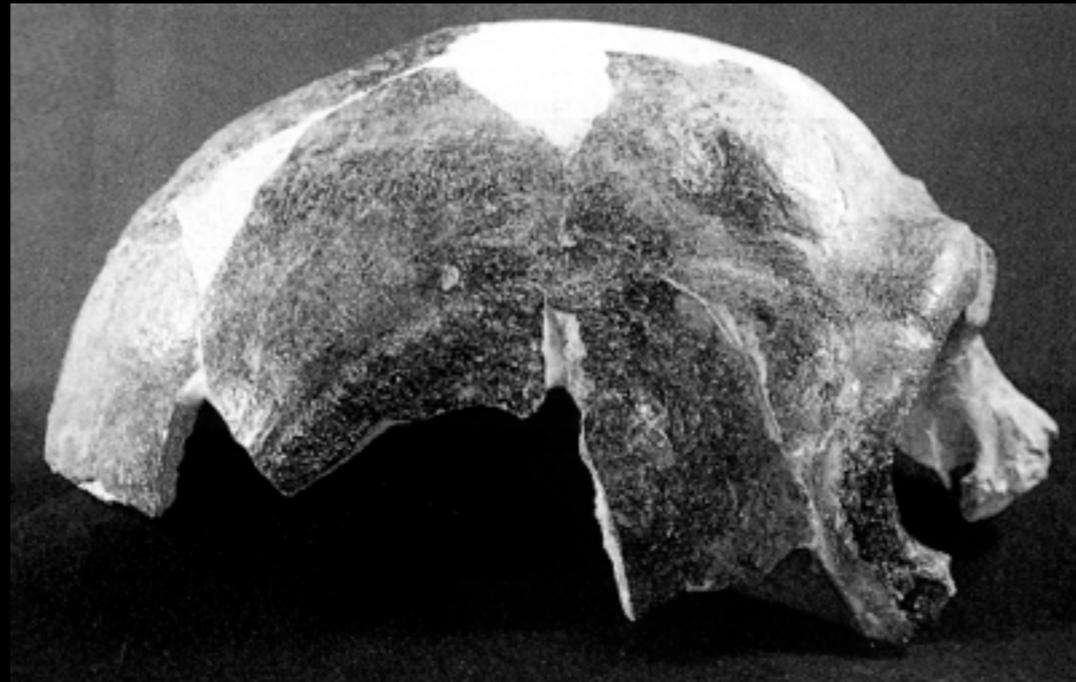
Petralona



Dali



# Jinnuishan

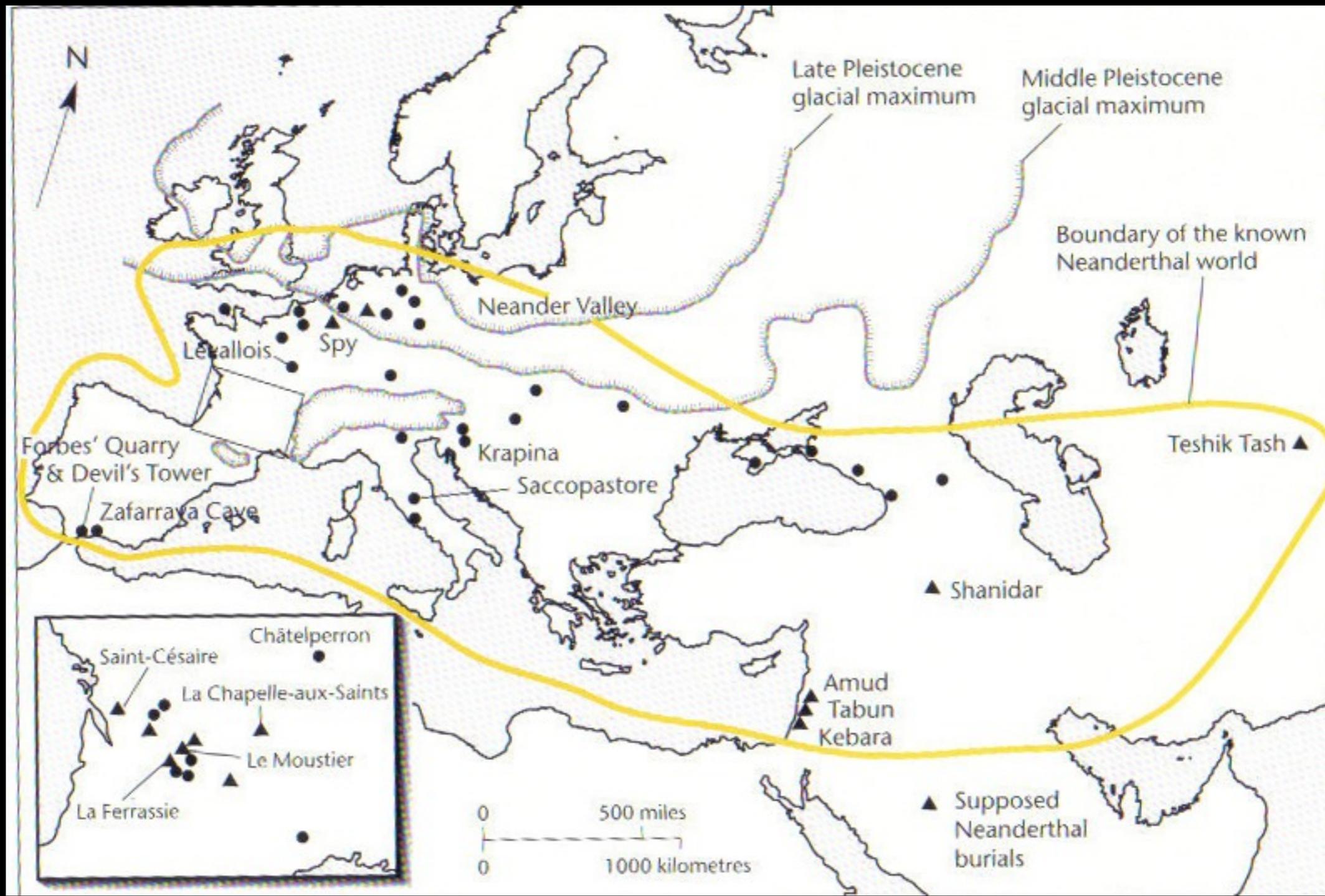


Maba

# Neandertal facts

- Special case of Archaic *Homo*
- First discovered 1830
- Europe and the Near and Middle East
- Date between 150,000 and 27,000 years ago
- Hundreds of individuals known
- Show robust, cold-adapted anatomy







# Background: Neanderthal Reconstructions



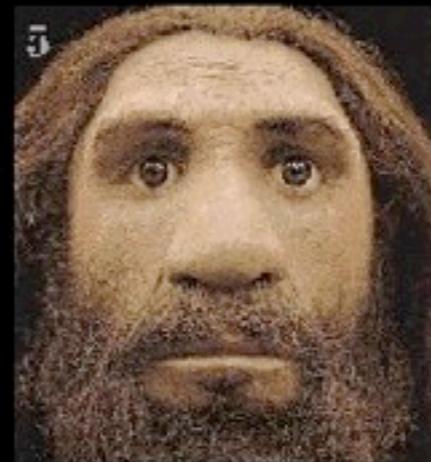
1 Field Museum, Chicago



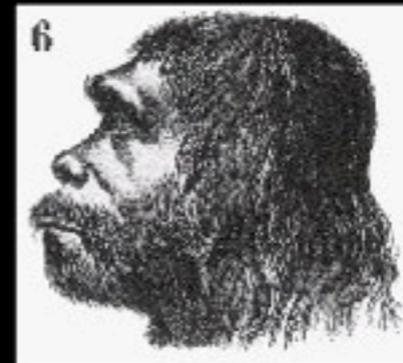
2 Ueberer



3 Mike Anderson



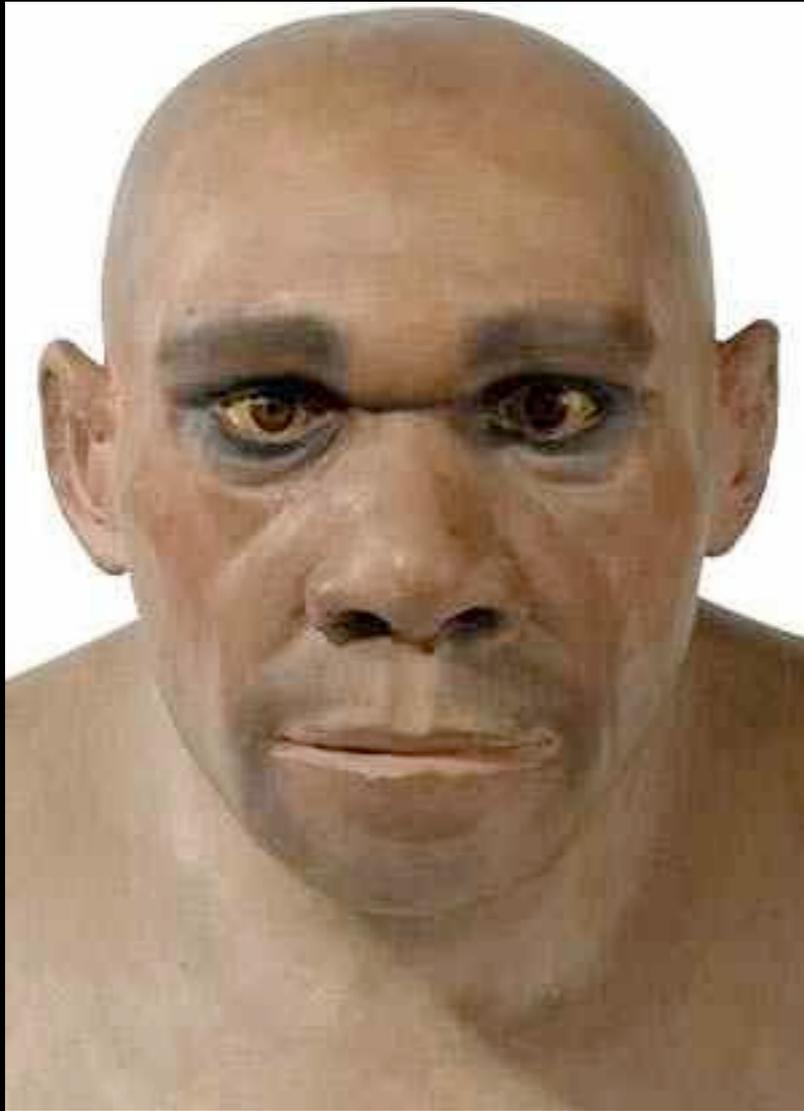
5 Vito Cannella, G.J. Sawyer

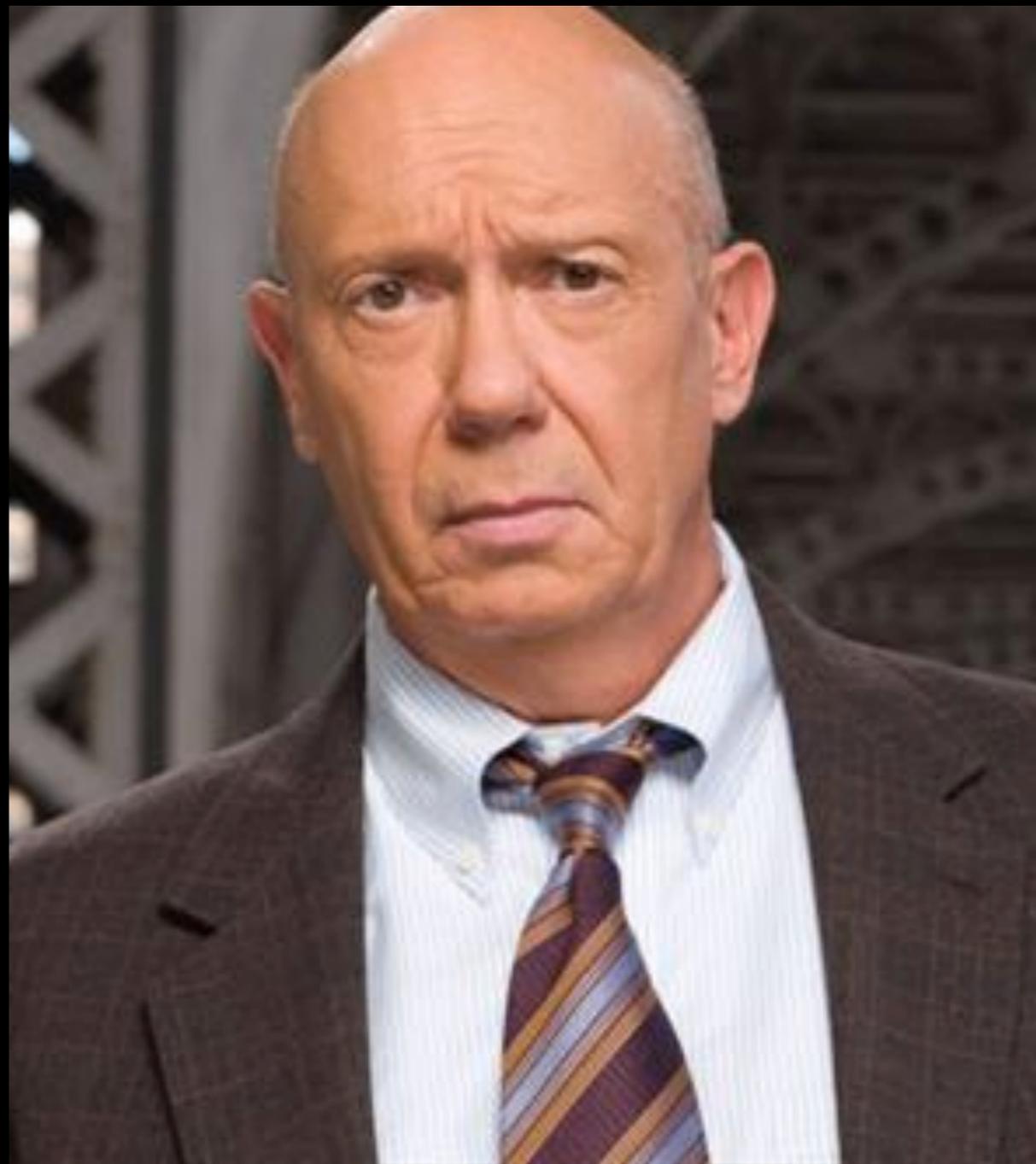
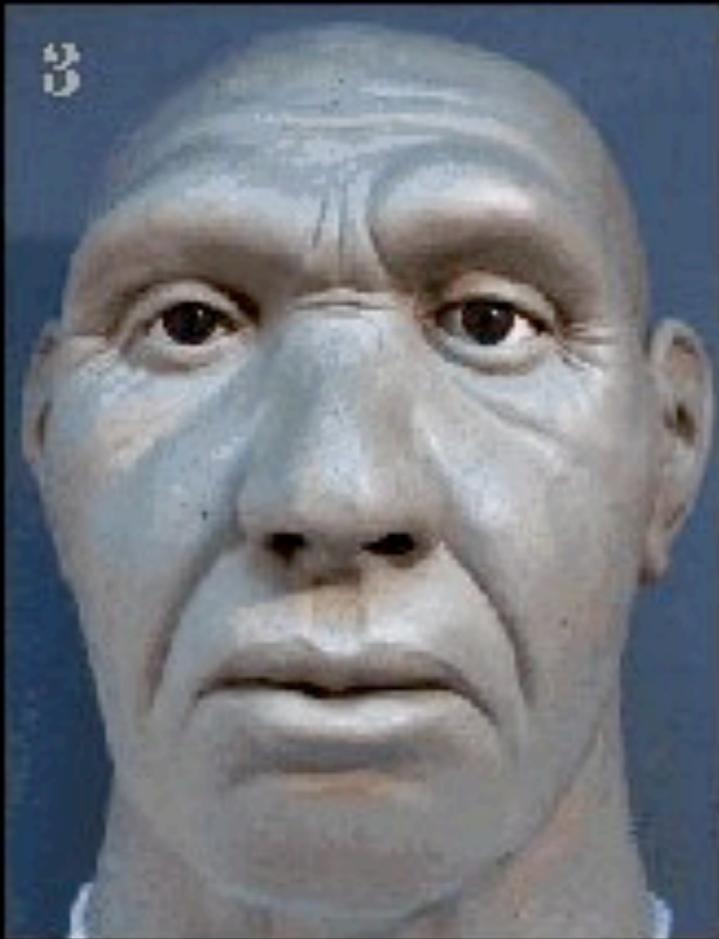


6 Marcellin Boule, 1909



6 Schaffhausen, 1888



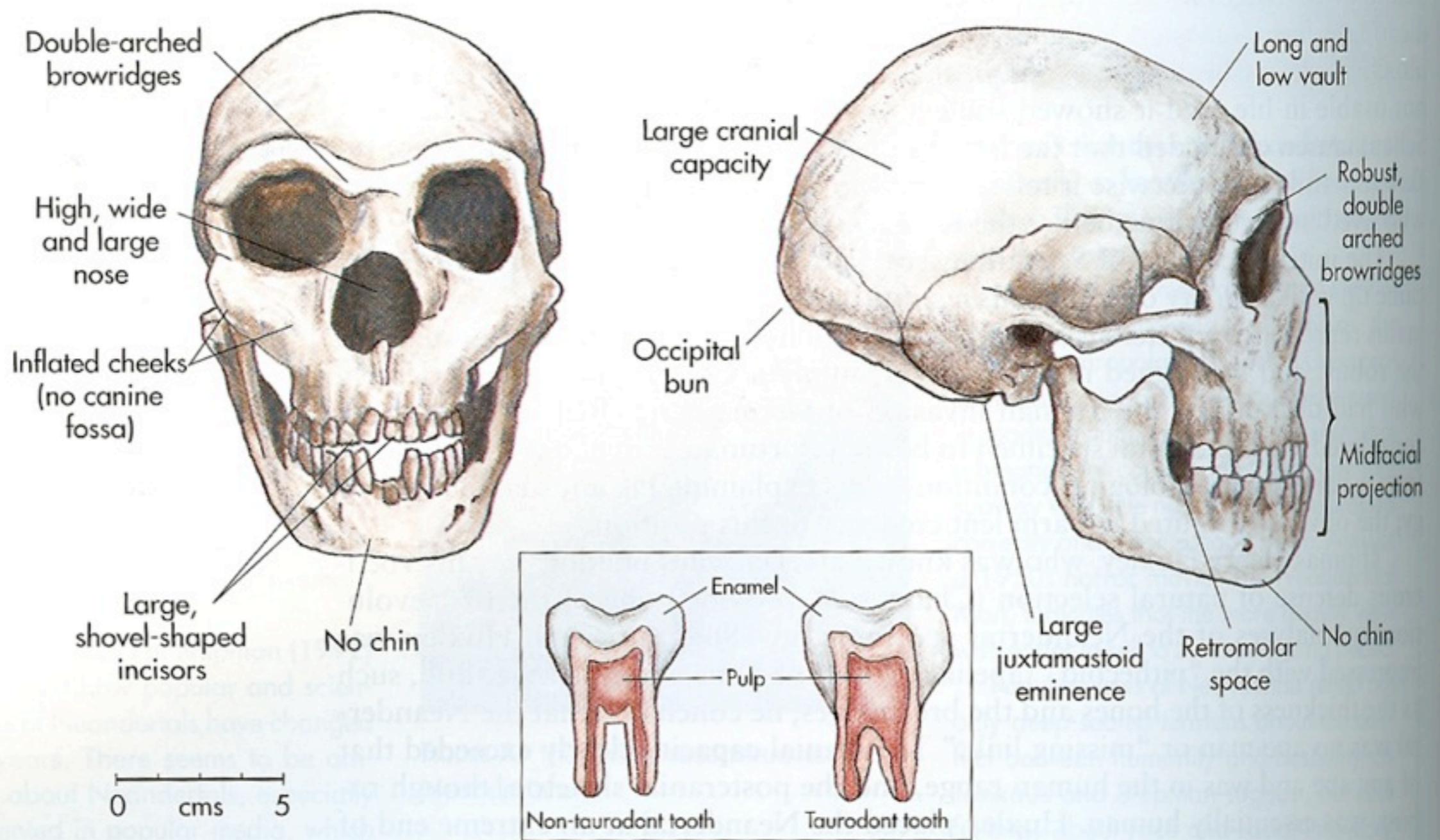




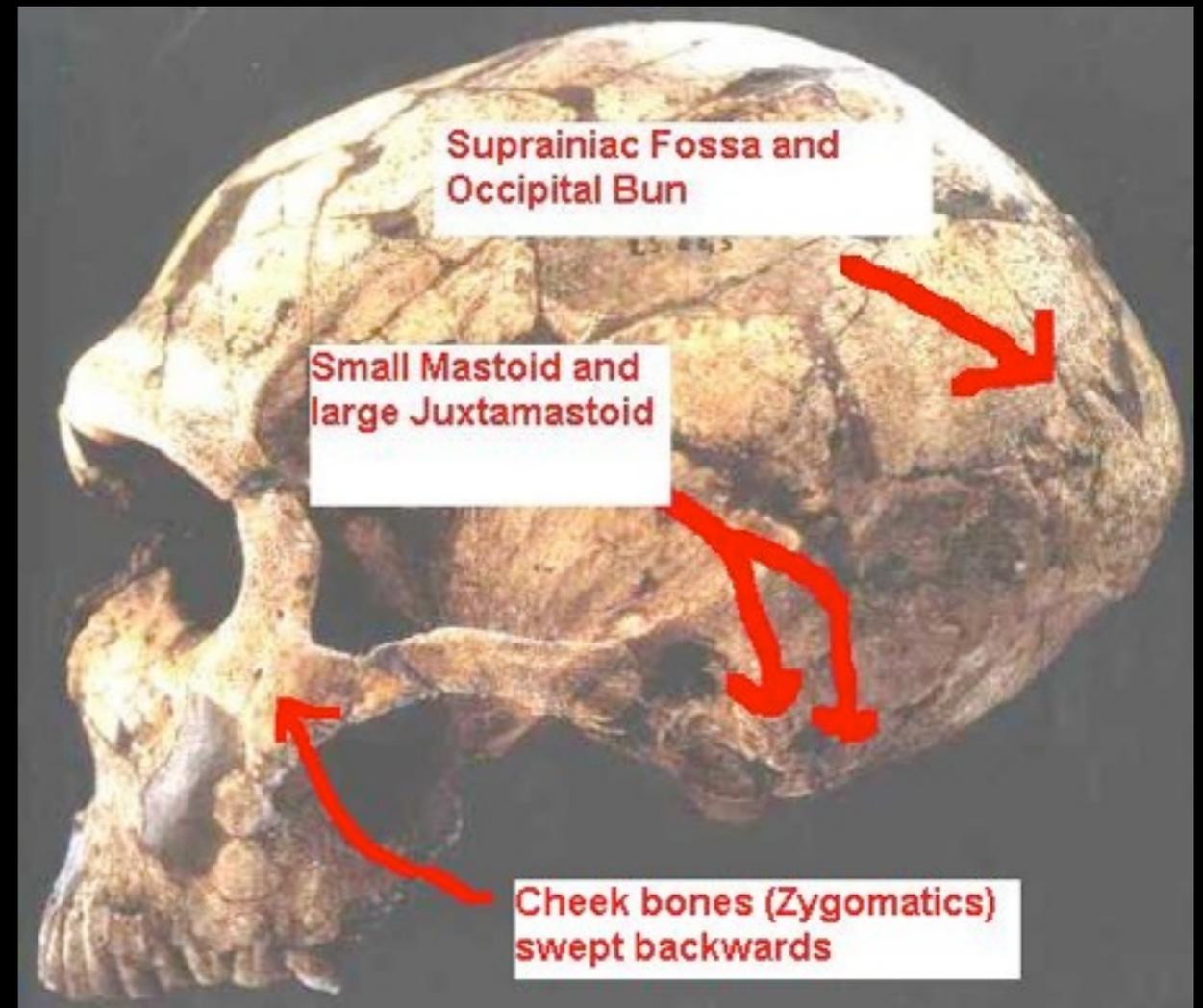
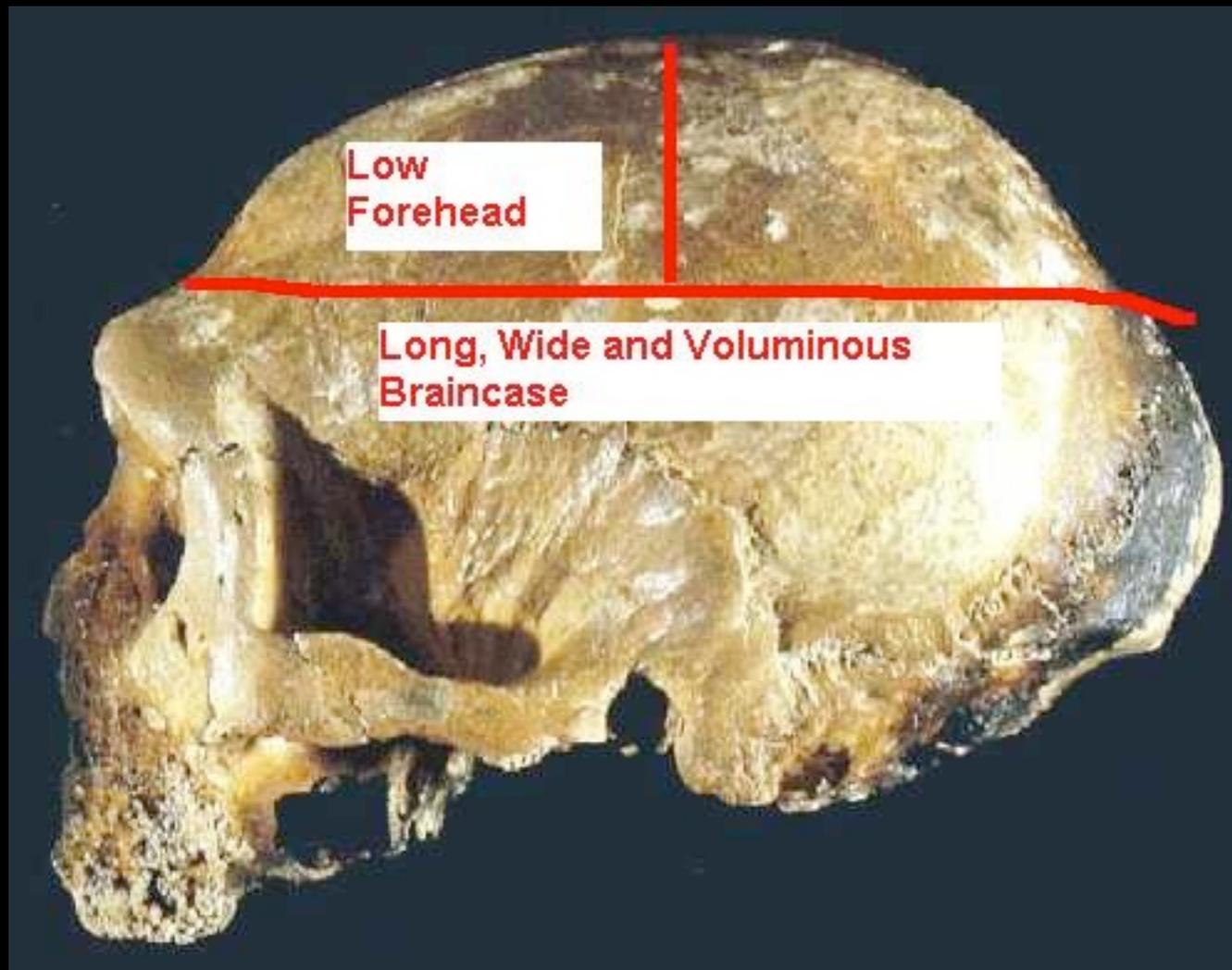
## Modern reconstructions

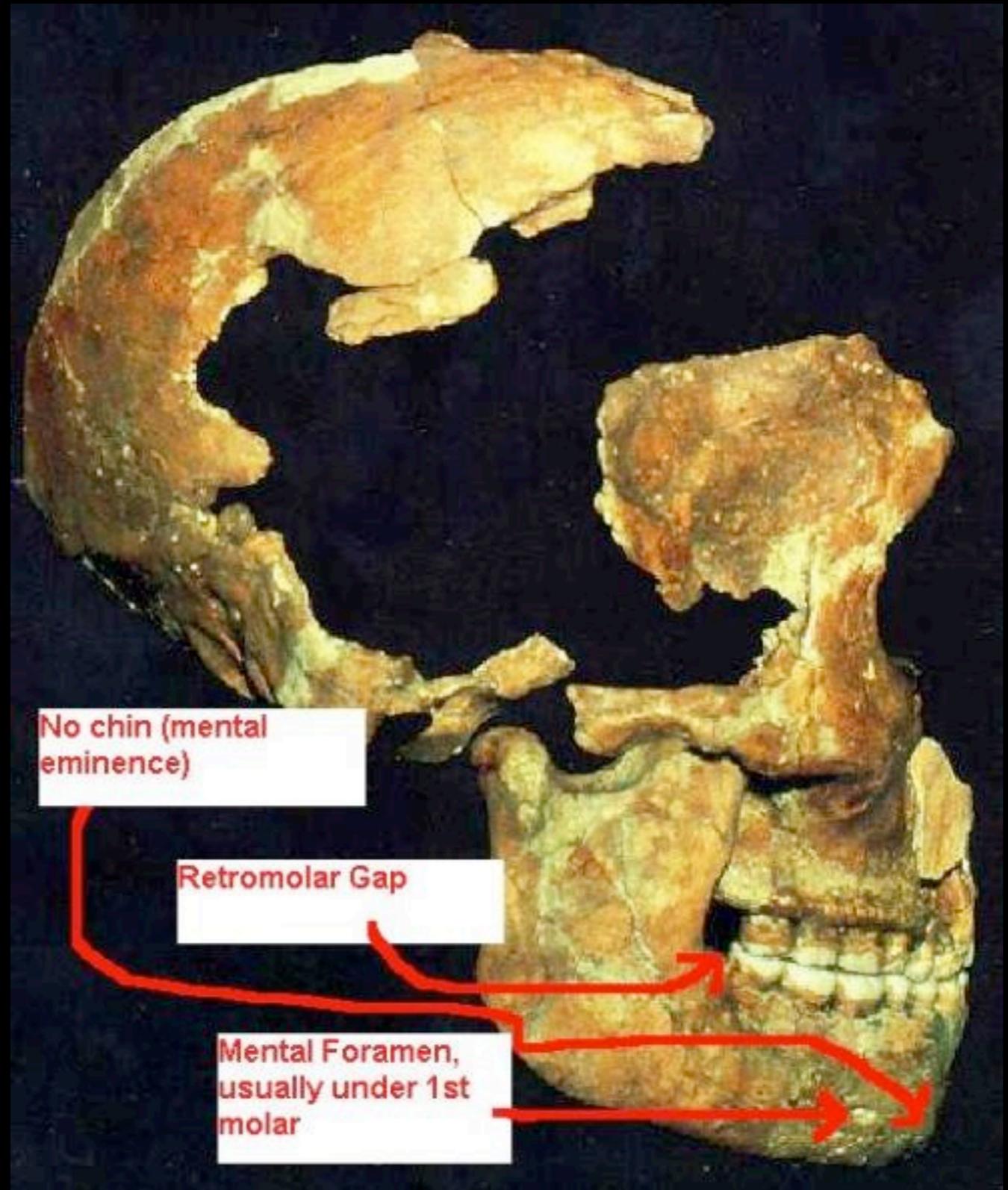
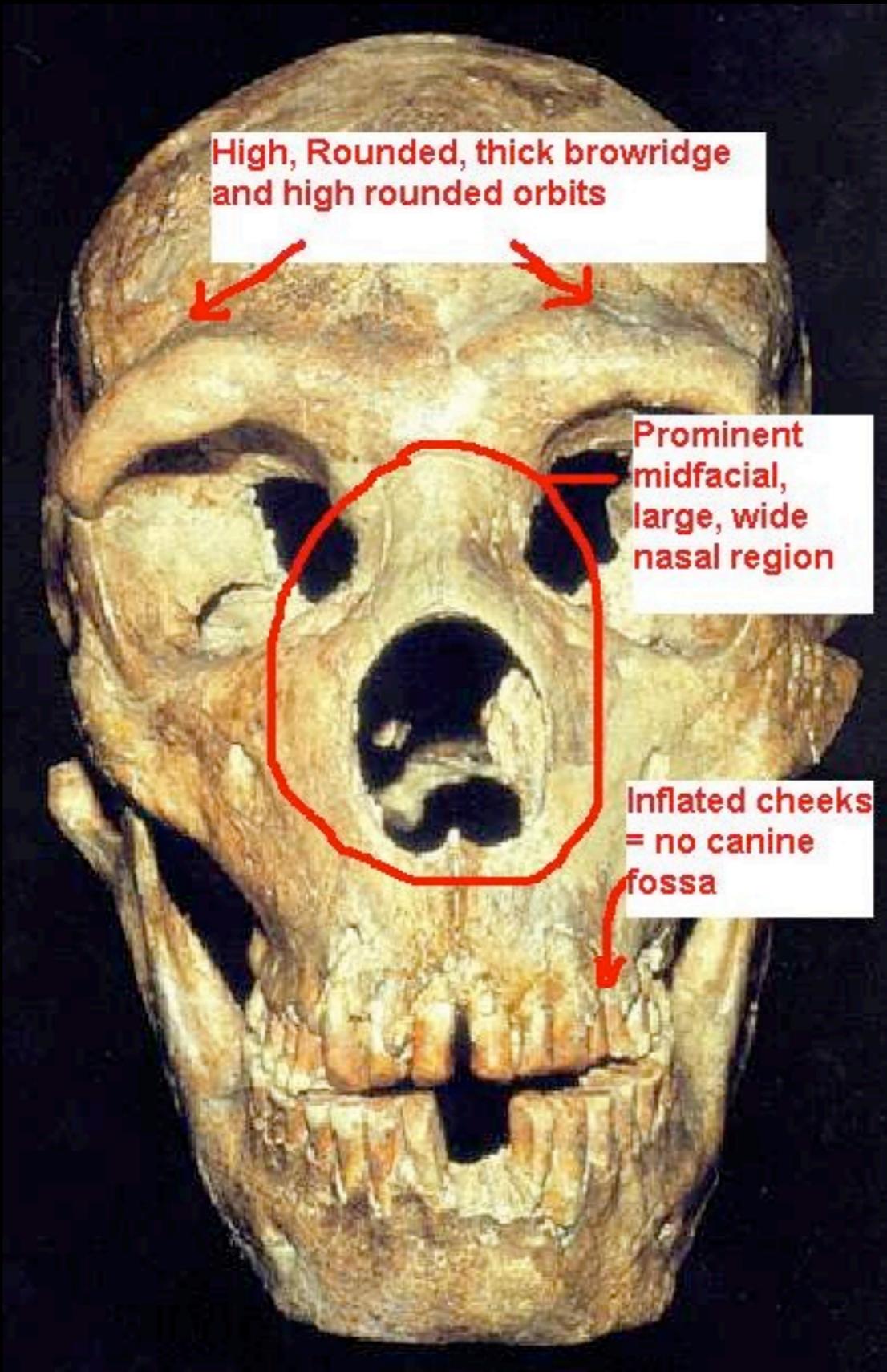
# Neandertal features

- Mean cranial capacity of 1400 cc - up to 1600
- Large projecting midfaces
- Retromolar gap
- Supraorbital torus, double arched
- Receding frontal bone
- Occipital bun



**FIGURE 14.14** The Neandertal skull and teeth. Neandertals have taurodont molars.





# Neandertal features

- Barrel shaped chest, stockier than modern humans
- Short limbs, short stature
- Heavy musculature
- Very high traumatic fracture rate

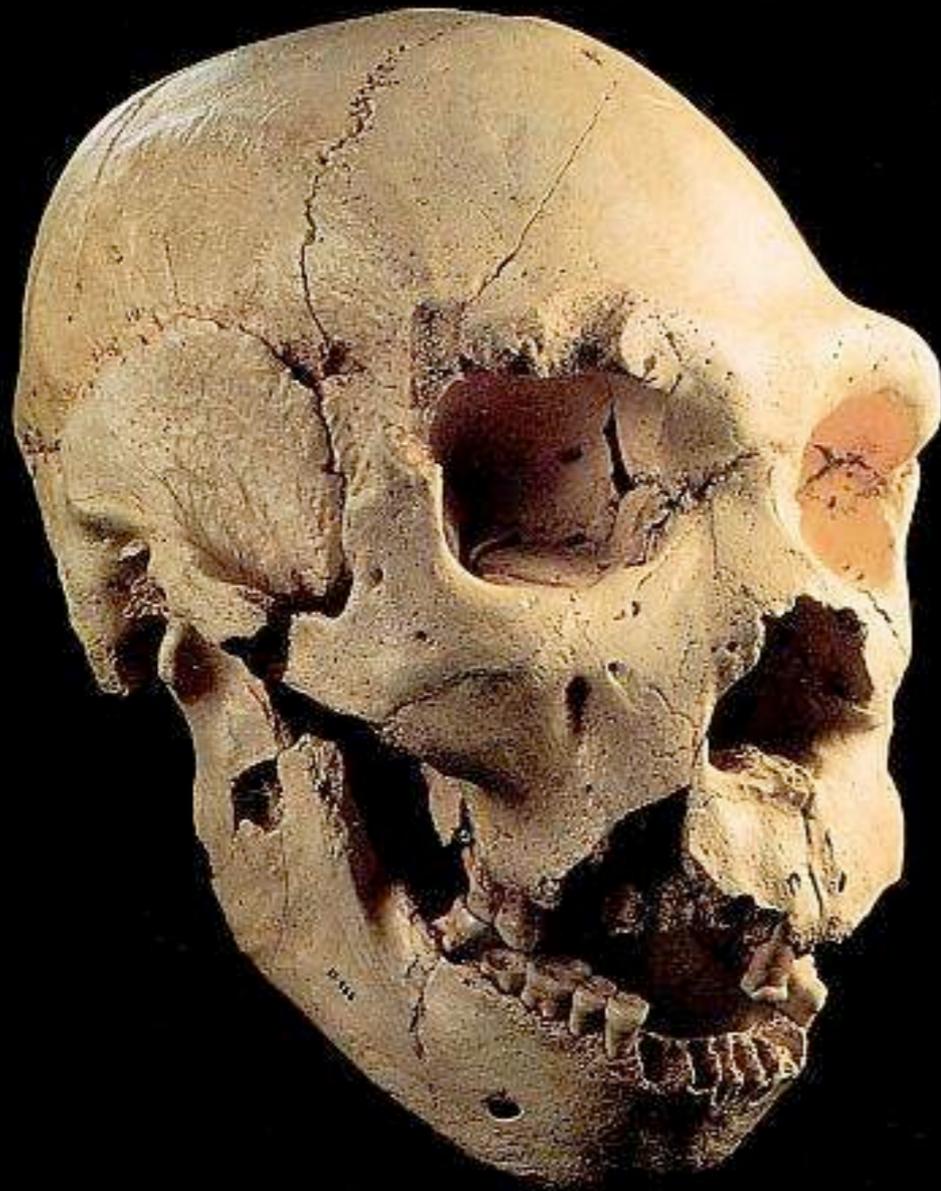
# Neanderthal and modern human skeletons





La Ferrassie  
60,000 ya

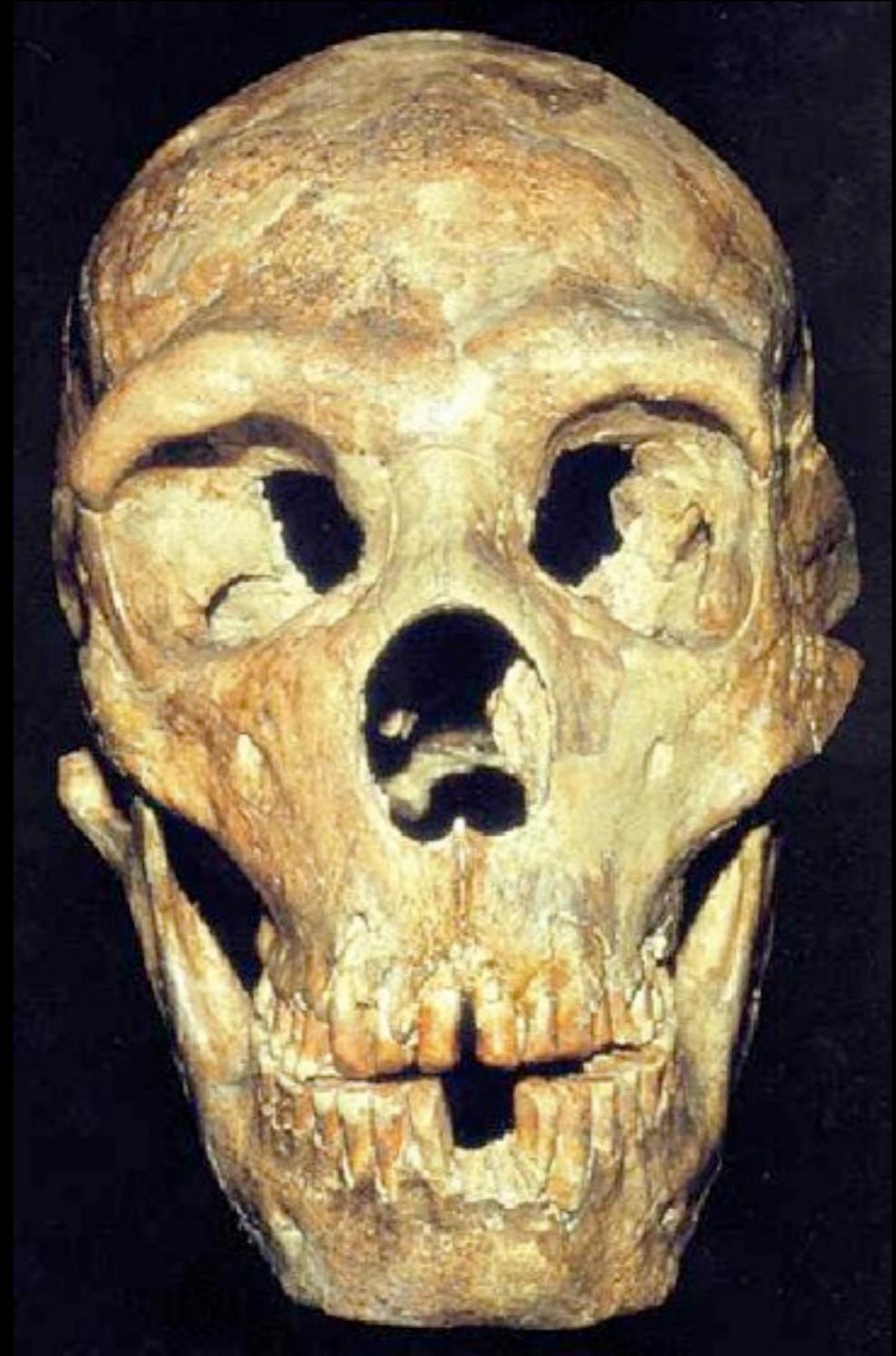
# Neandertal vs. other archaic



# Neandertal vs. other archaic



# Neandertal vs. other archaic





Neanderthal

Krapina  
130 kya





Saccopastore  
120,000 ya



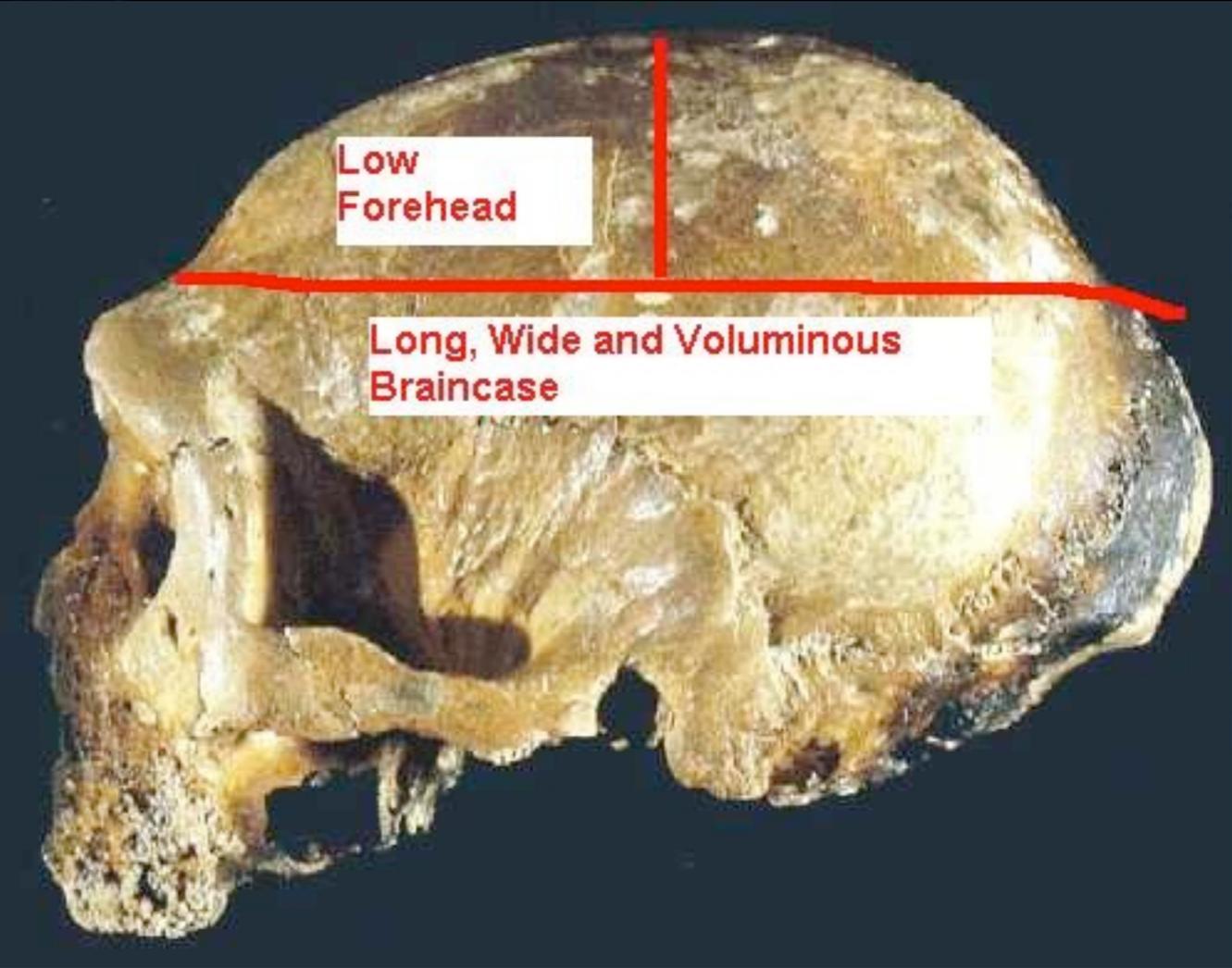
La Ferrassie  
60,000 ya

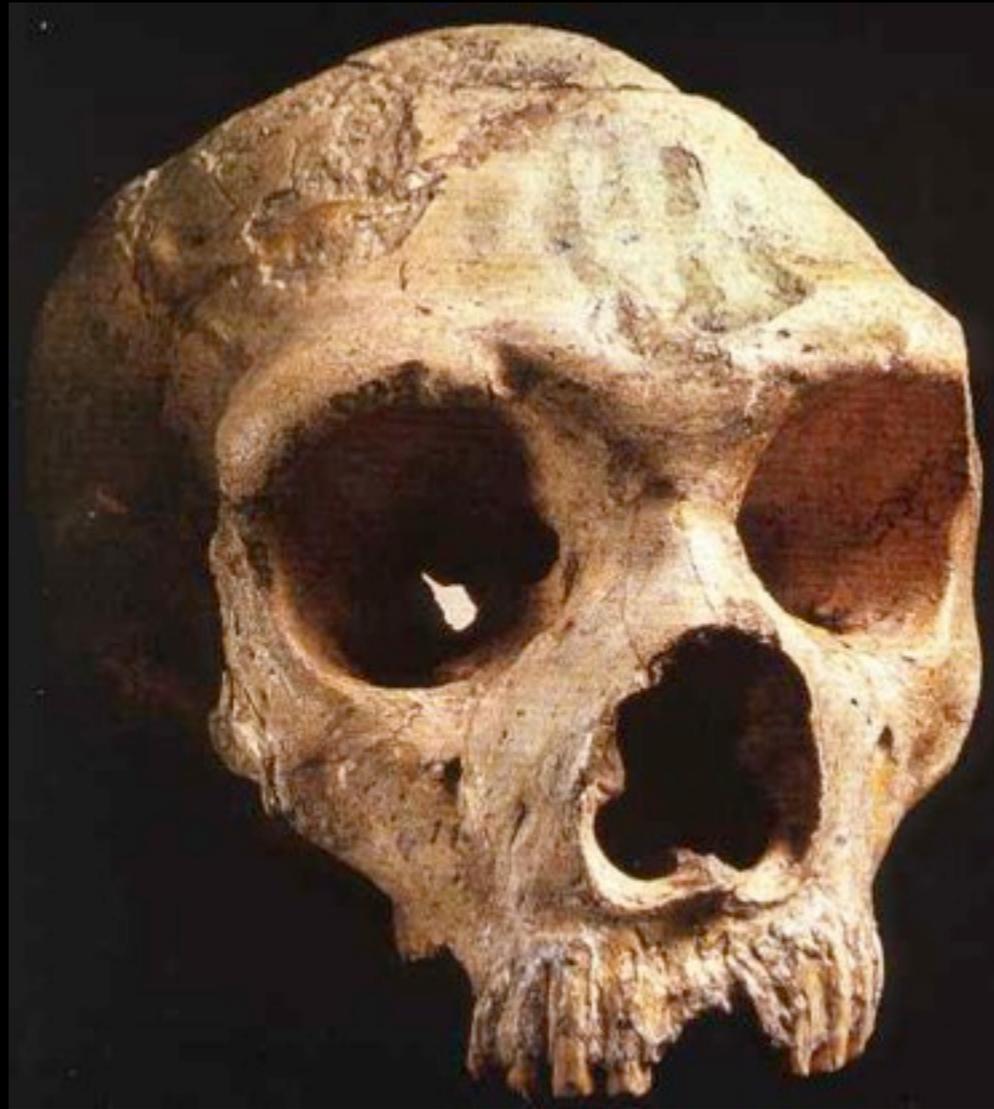




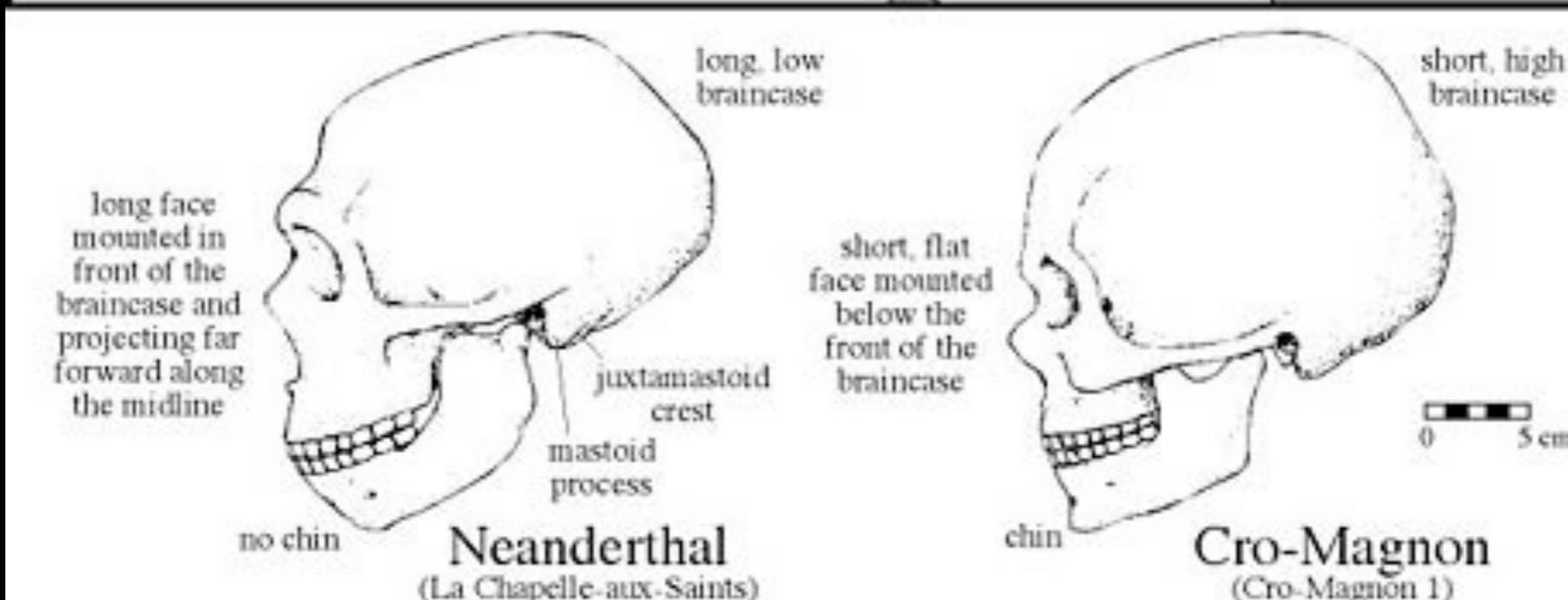
La Chapelle aux Saints  
50,000

# Monte Circeo 60,000 ya





Gibraltar  
30 kya ?

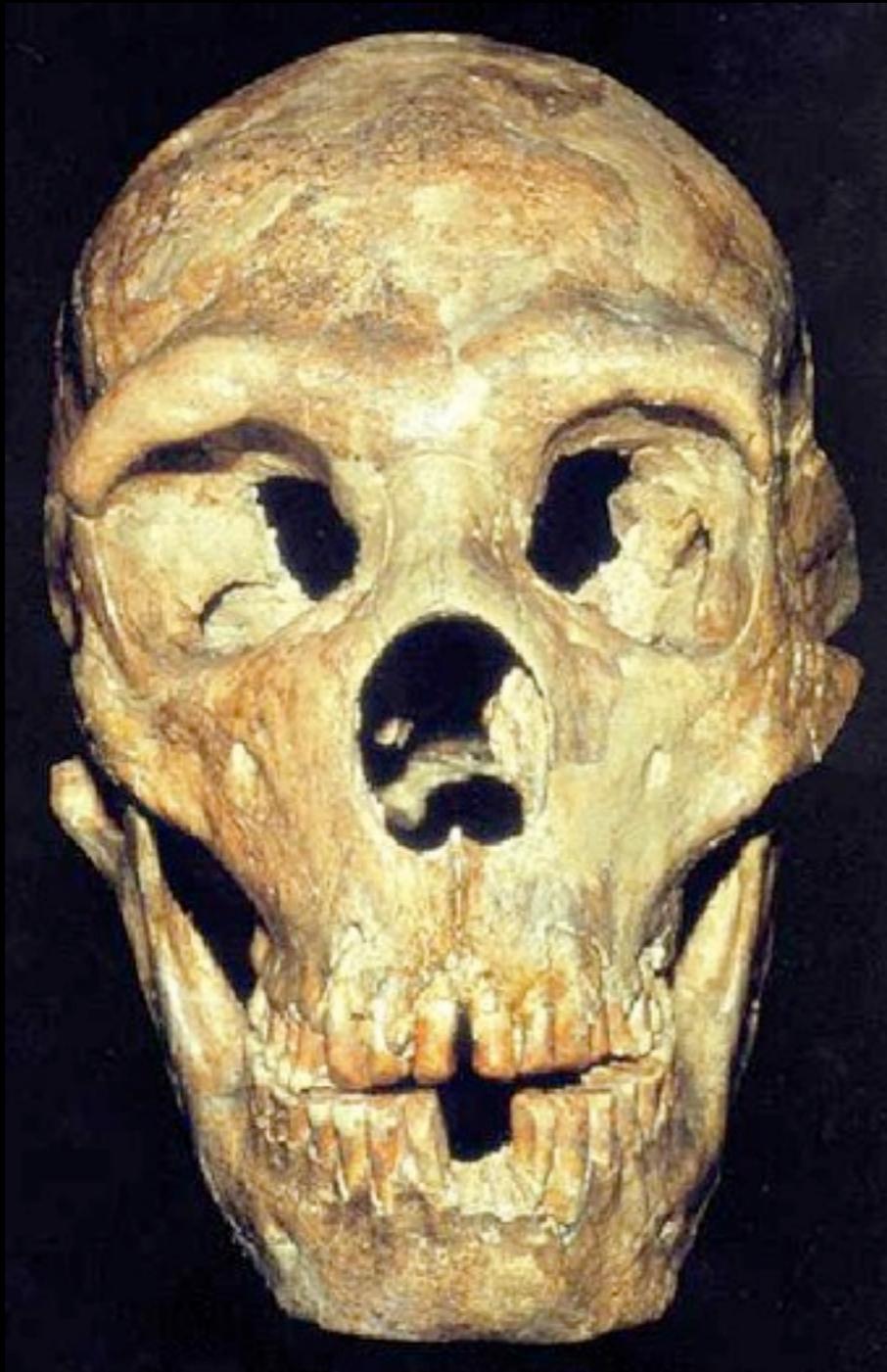


# Amud



Kebara  
60 kya





Shanidar



Teshik Tash

# Who were the Neandertals?

- Their own species or something different?
- A regional subpopulation adapted to the cold?
- *Homo neanderthalensis* or *Homo sapiens neanderthalensis*?
- Just another form of archaic?