

# ARCHY 319

# Archaeology of Australia

Winter 2019

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# Outline



# What will we do today?

Lecture Quiz

Pleistocene economy

Intermission

Pleistocene technology 8861

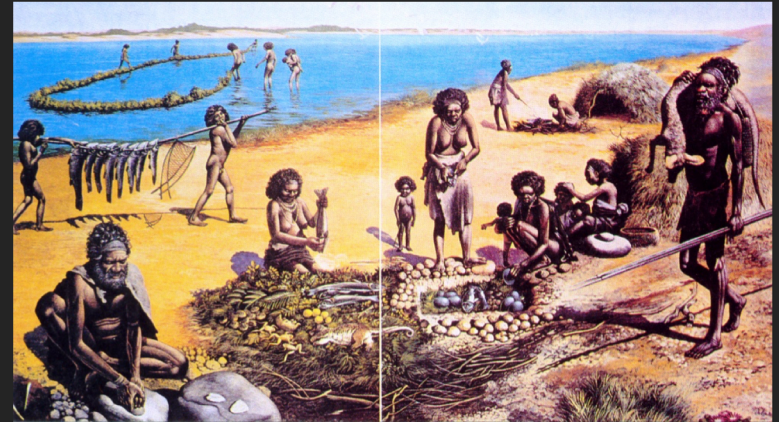
Pleistocene art

# Previously...

Q1: Why was the west coast known so well to Europeans before any permanent settlement?



Q2: Is this illustration intended to be of a modern community or an ancient one?



Q3: What is this and what are its implications for using ethnography to understand archaeological evidence



# Q1: When does the sea level curve suggest that human movement into Australia was most likely?

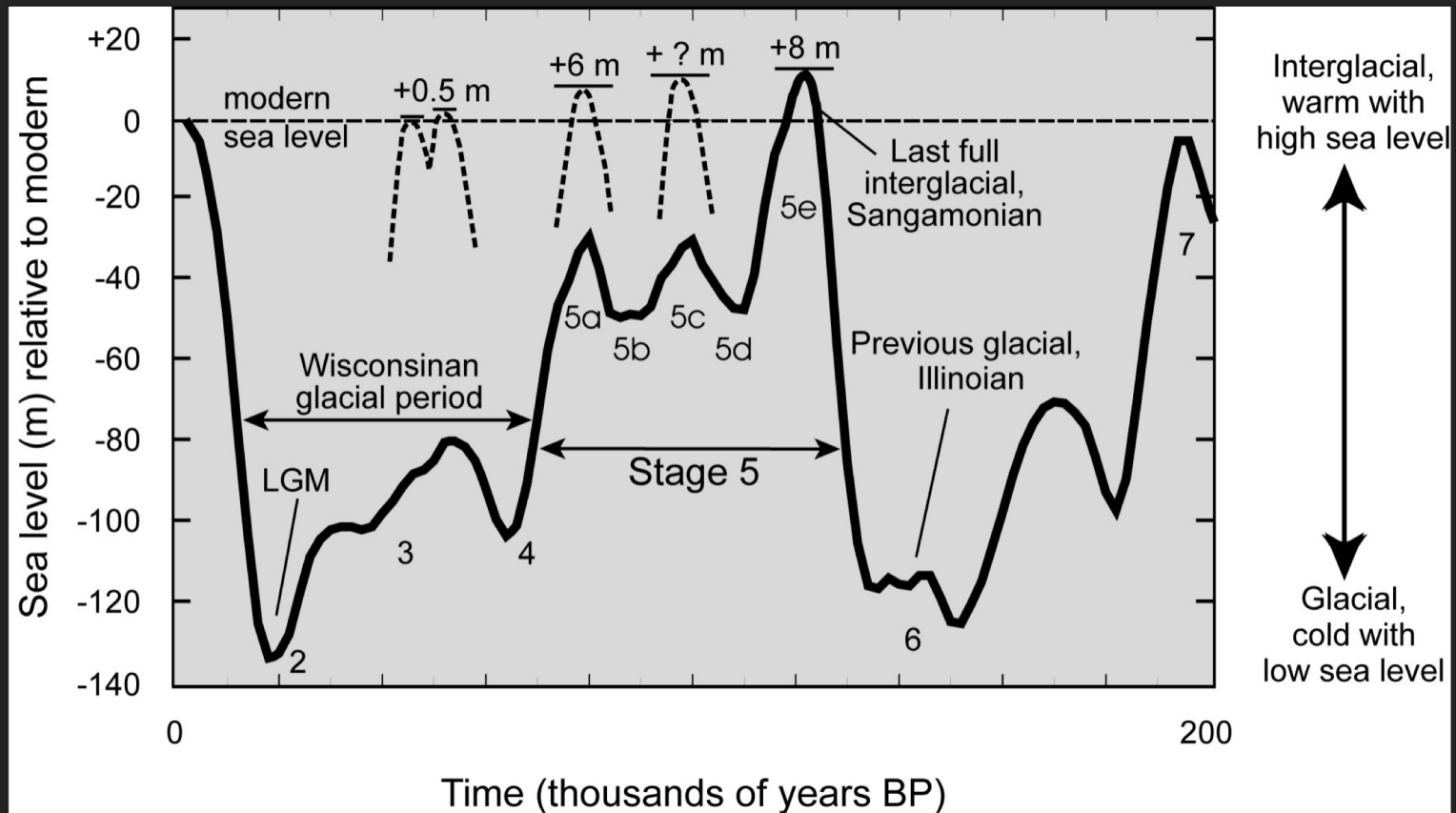
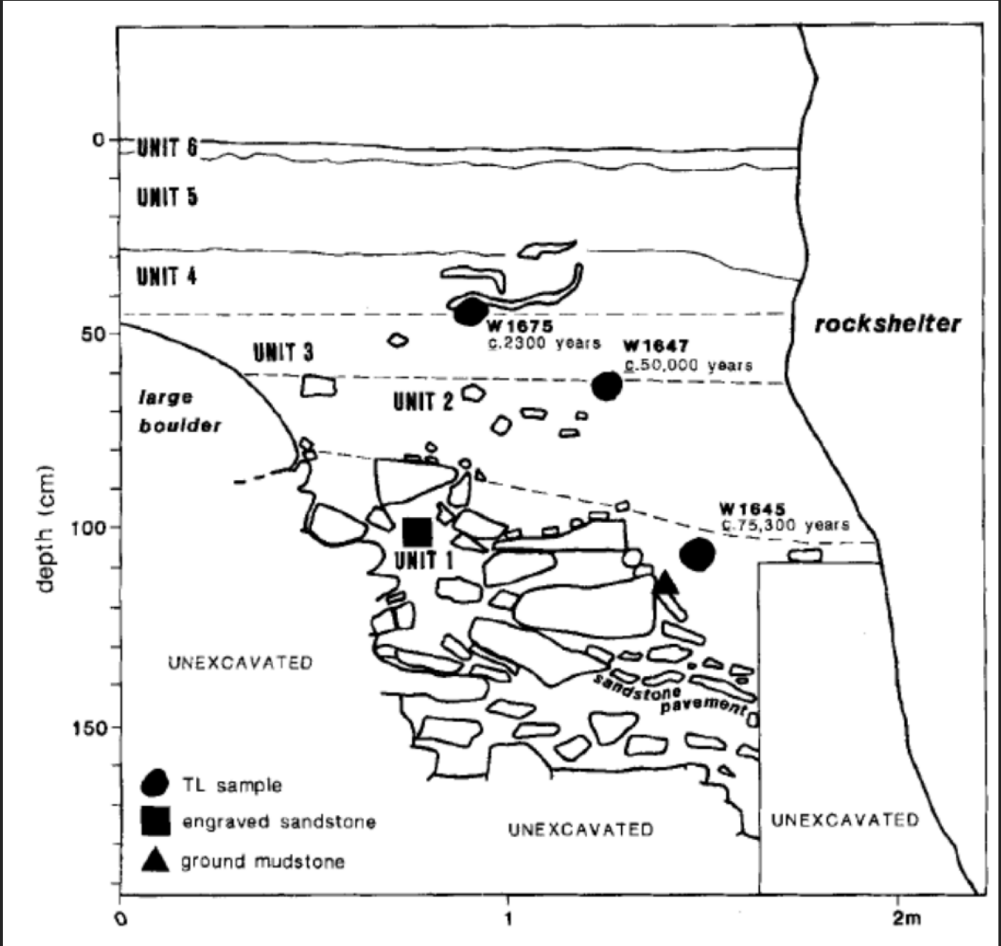


Figure 1 consists of three main vertical panels. The top panel, titled "Lake Levels", shows a shaded area representing lake level fluctuations over time, with a vertical axis labeled "Low" and "High". The middle panel, titled "CHARCOAL PARTICLES", shows two vertical profiles (a and b) of charcoal particles. The bottom panel shows a horizontal bar chart of "SURFACE AREA RATIOS OF CHARCOAL PARTICLES PER UNIT VOLUME OF SEDIMENT" for various plant types: COOL TEMPERATE O.A., WETLAND PLANTS, HERBACEOUS PLANTS, SCLEPHOPHYLL PLANTS, and TREES. A scale bar indicates "EXAGGERATION x 10".



# Q3: What model of initial settlement did Sandra Bowdler propose from her work in Tasmania?



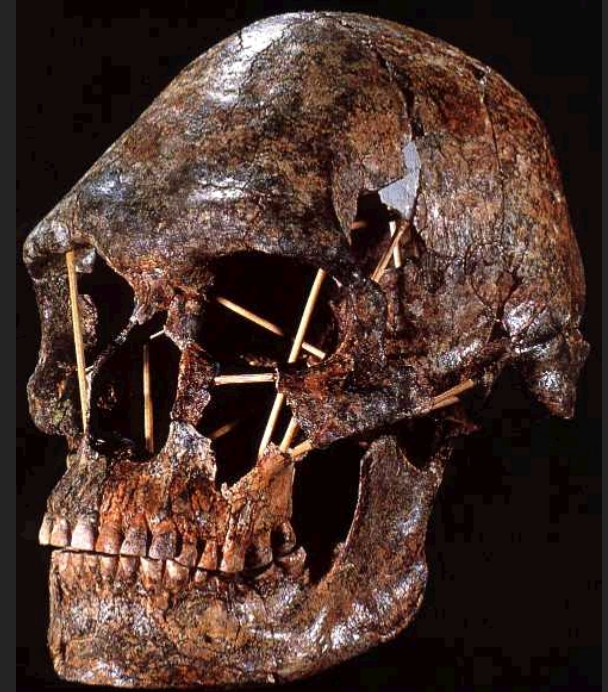
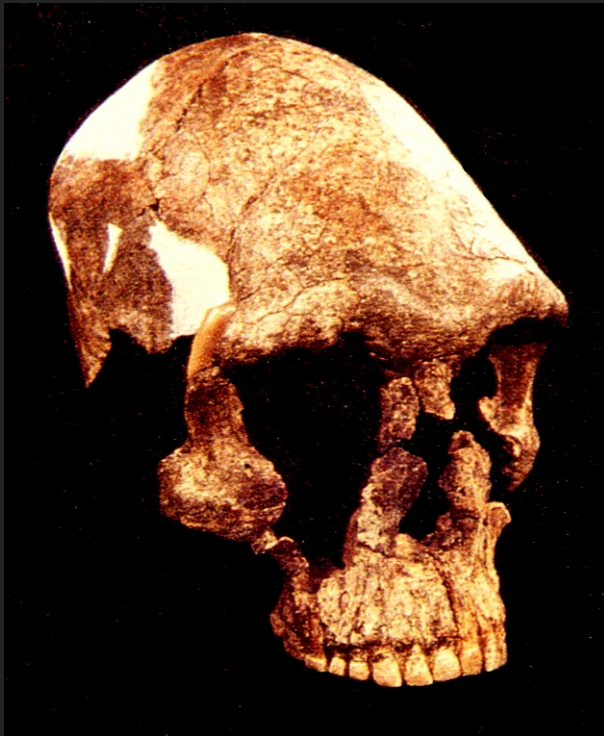


Models of genetic origin come in three flavours:

Trihybrid model

Two population model

Monogenetic model

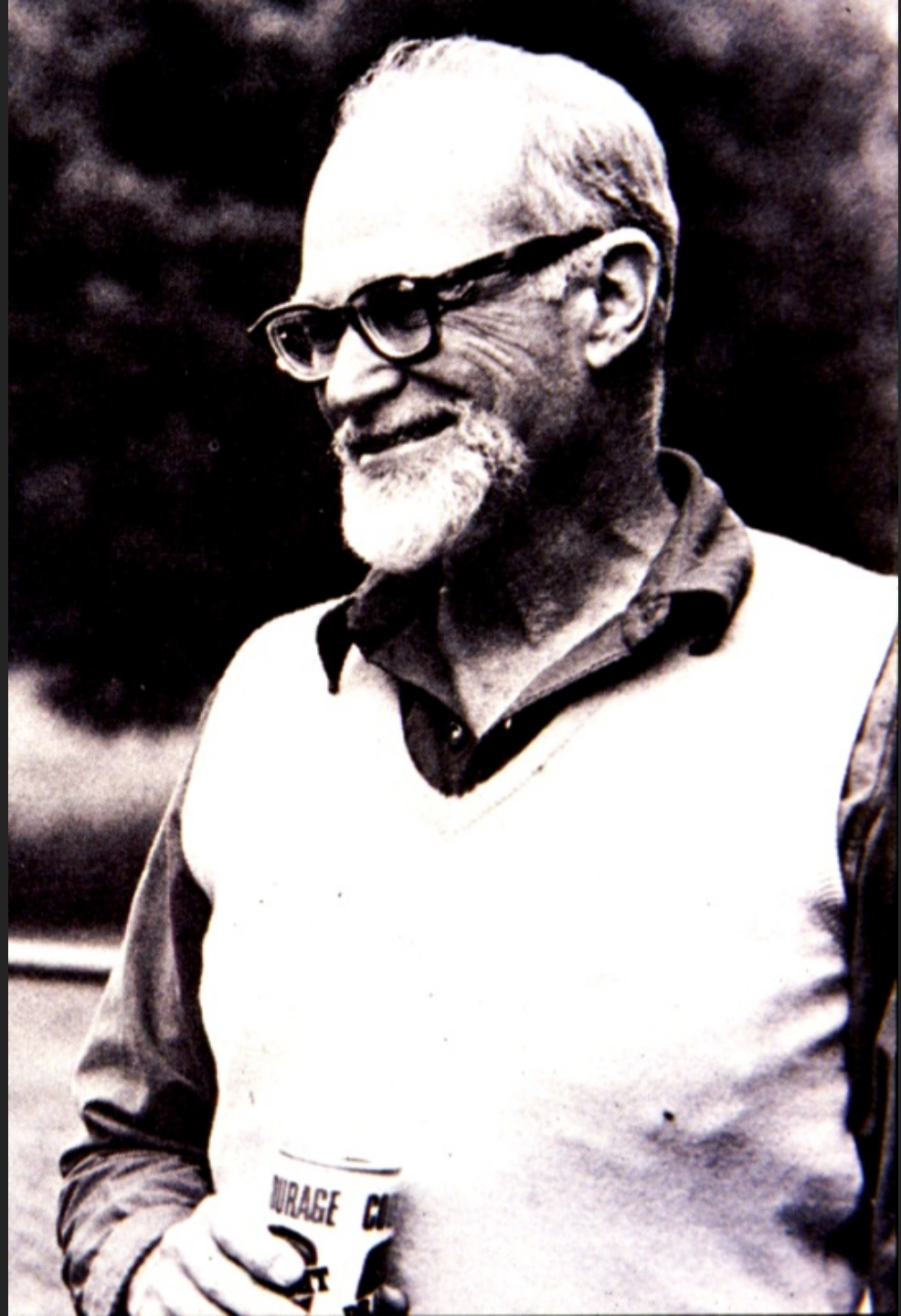


## Trihybrid or 'Pure Race' Model

Birdsell collected physical information about 246 living Australian Aborigines during 1938-1939.

On the basis of spatial variation in morphology Birdsell inferred that three populations migrated into Australia during prehistory:

1. Oceanic Negritos (Tasmania and rainforests)
2. Murrayian (Murray River)
3. Carpentarian (Top end)









Two population model  
In the Talgai skull  
Weidenreich and  
Macintosh saw "the mark  
of ancient Java".



Alan Thorne  
continued the claim  
that two  
populations are  
visible in the fossil  
evidence.

Three big  
problems for  
Thorne's dihybrid  
model...

1.



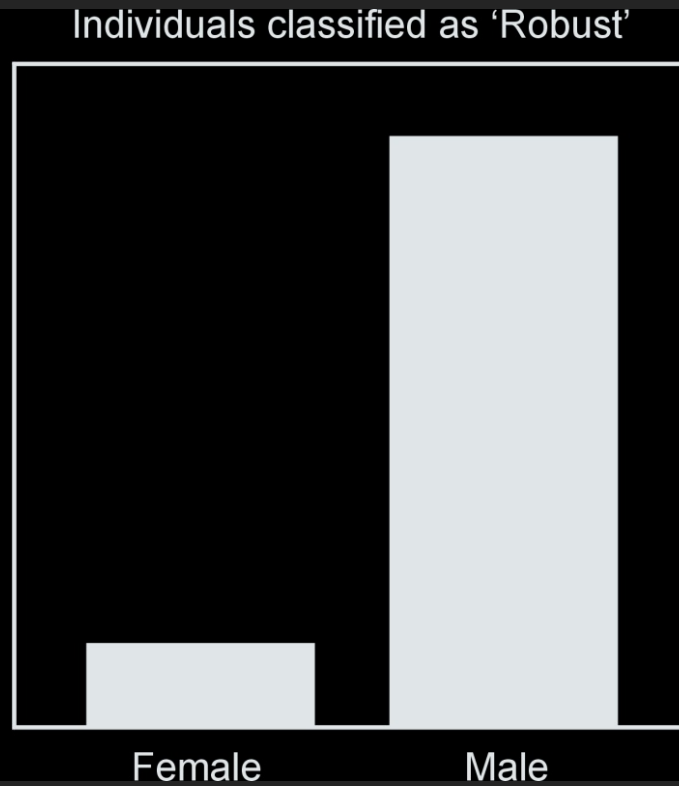
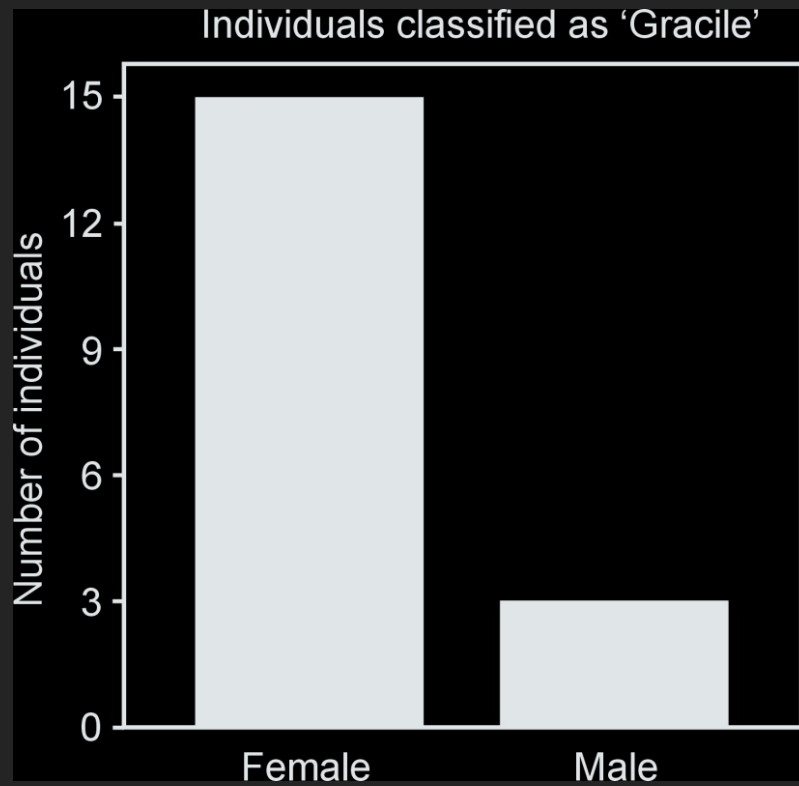
Kow Swamp (and all the other robust skulls) date to less than 20,000 BP.



Both Mungo individuals (classified by Thorne as gracile) are more than 25,000 – 35,000.



2.

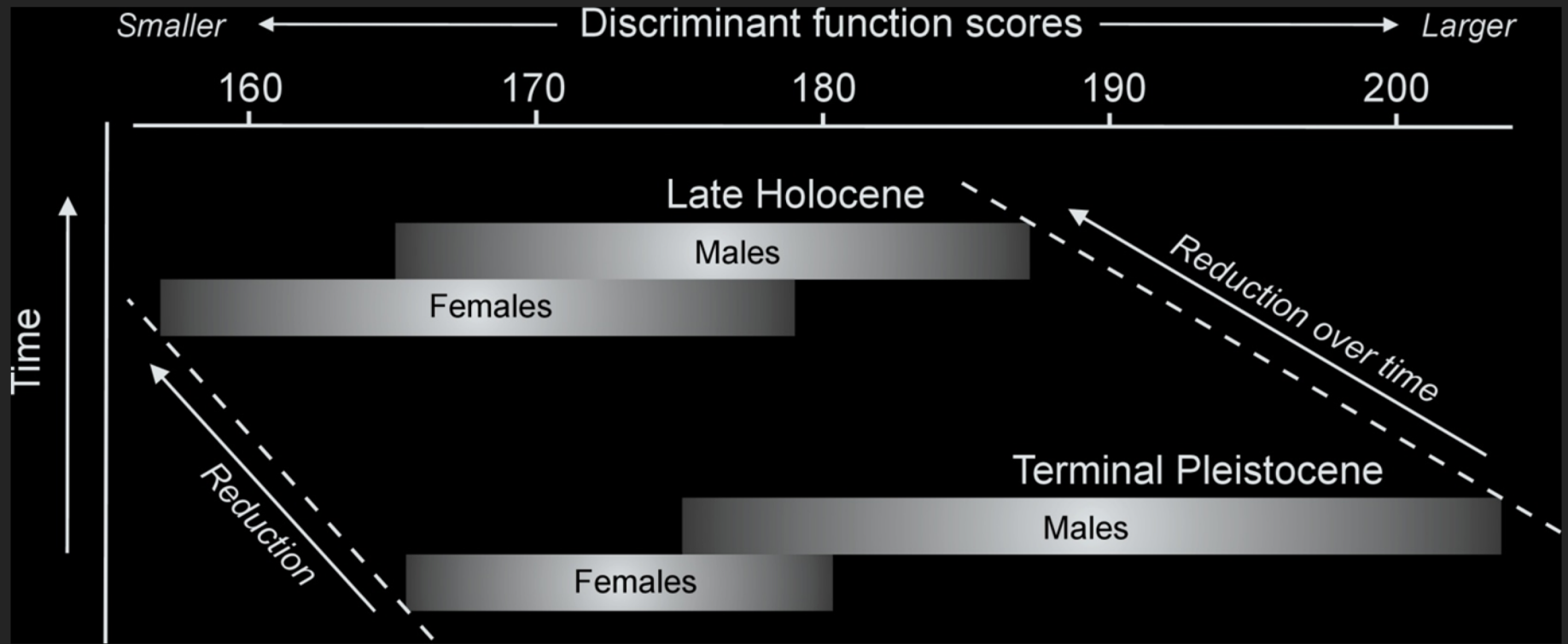


3.



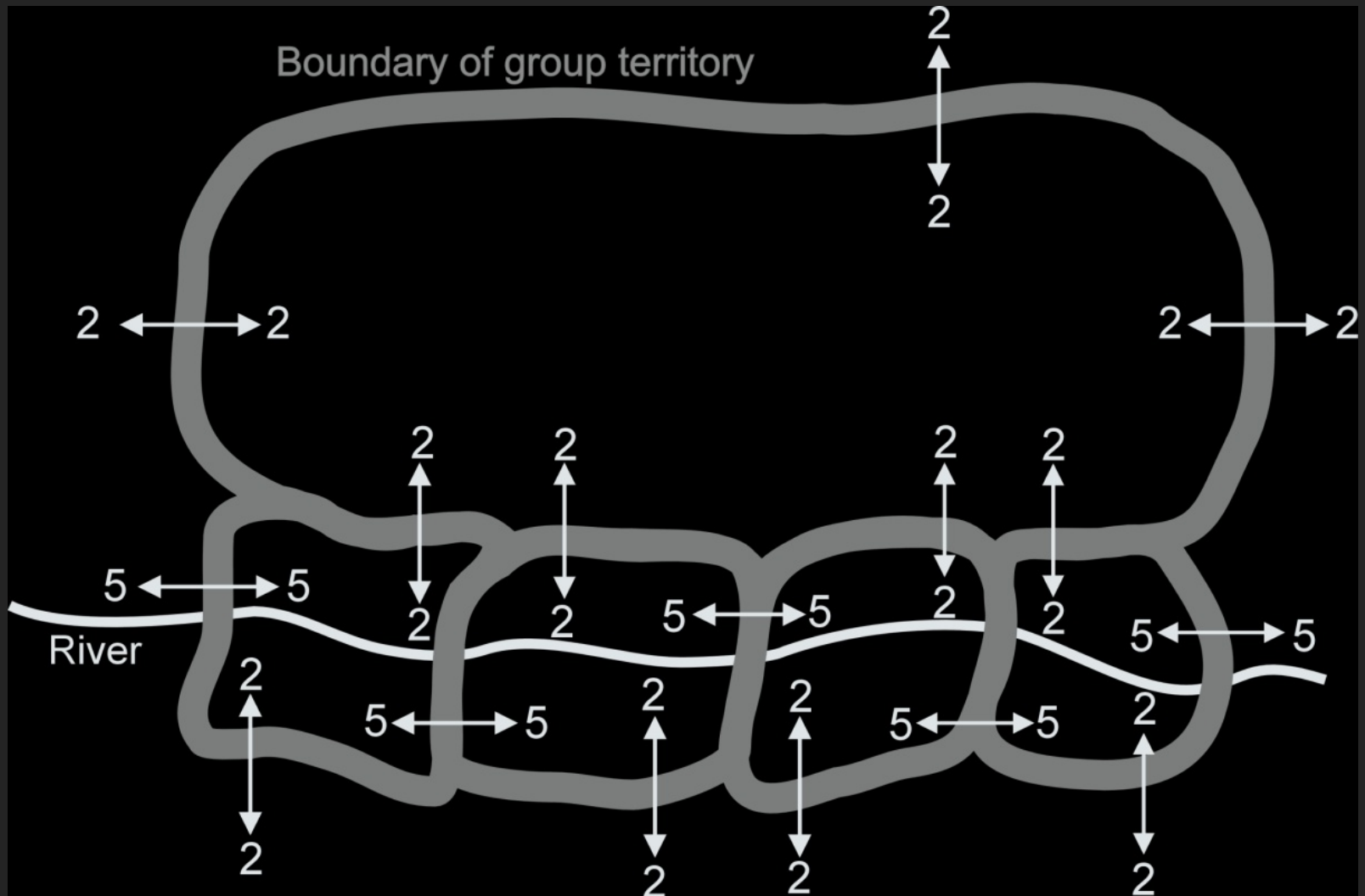
Artificial cranial deformation is well known amongst historic peoples (eg. Arawe of New Britain), but not among Australian Aboriginals. It seems that if it was practiced here, it ceased during prehistory.

# Monogenetic model



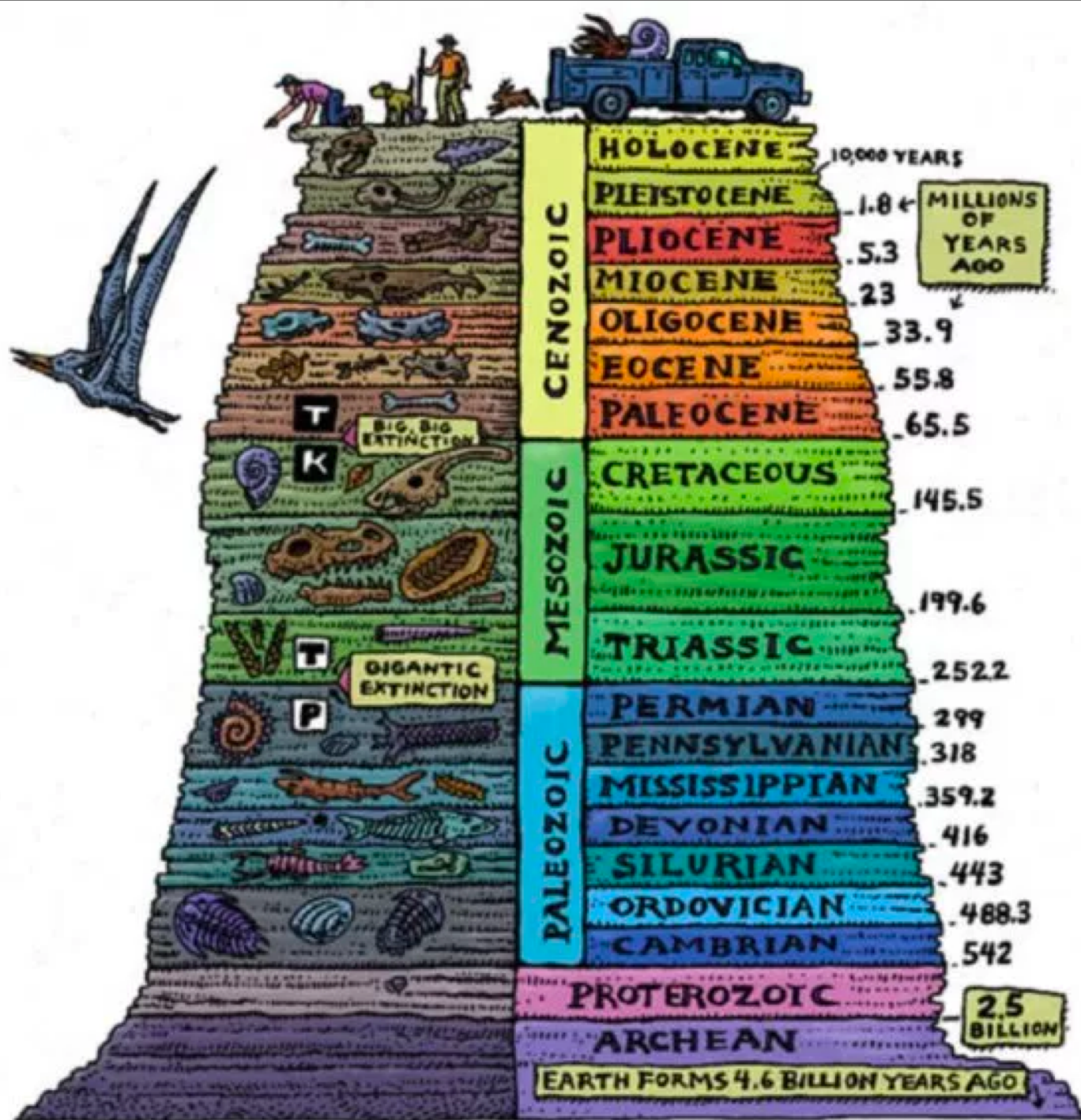
Bergmann's Rule may explain long-term continental trends

Local evolutionary processes due to cultural and demographic barriers may explain the pattern of diverse morphologies

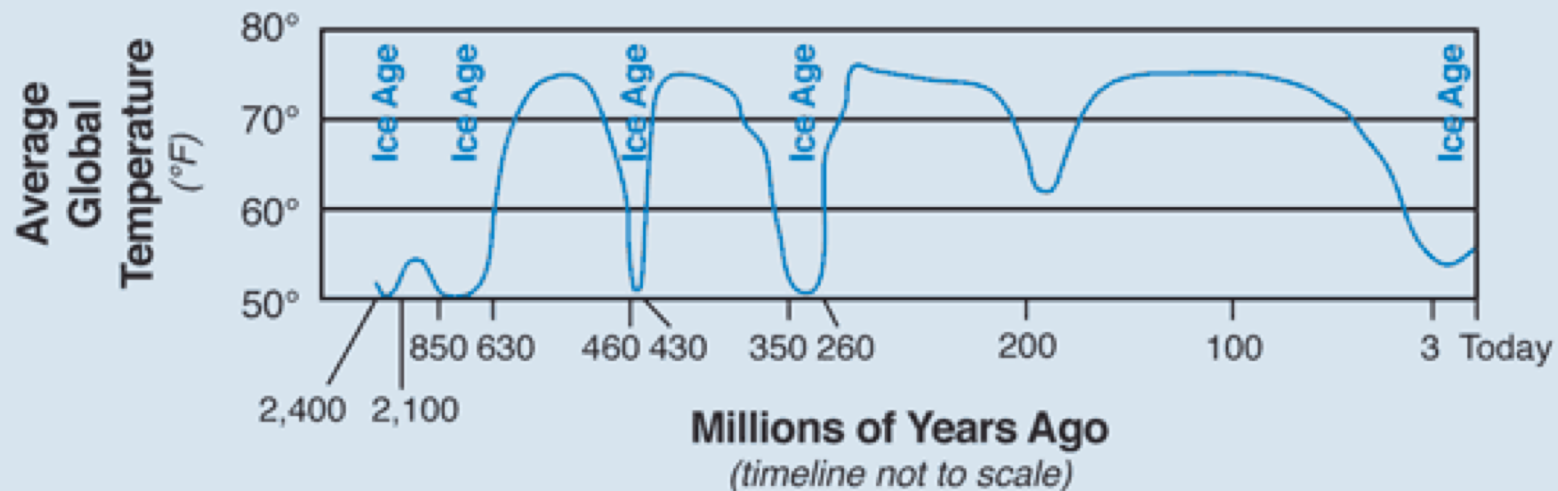




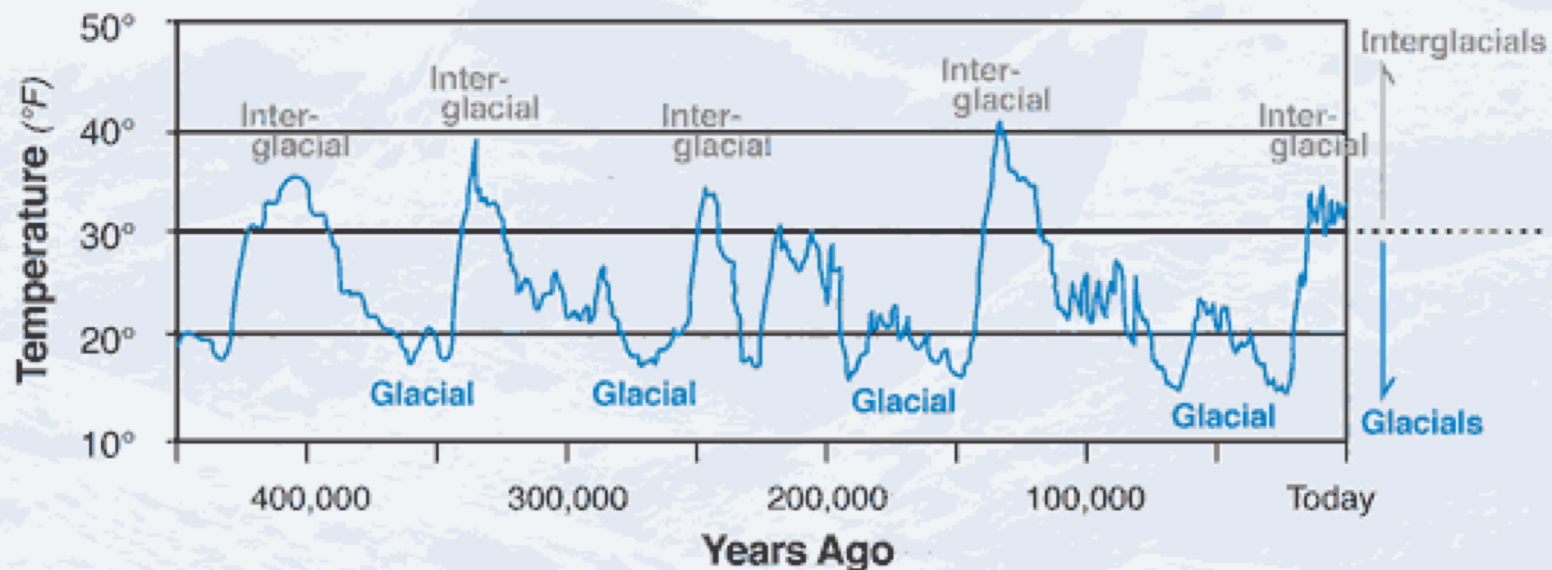
# **Pleistocene economy**



## Ice Ages during the past 2.4 billion years



## Glacial-interglacial cycles over the past 450,000 years



Discussions of Pleistocene economy, social life and technology have often involved *progressionist* notions:

Australian pre-history recapitulates world pre-history

Later people were more sophisticated/complex (a proposition operating at different scales)

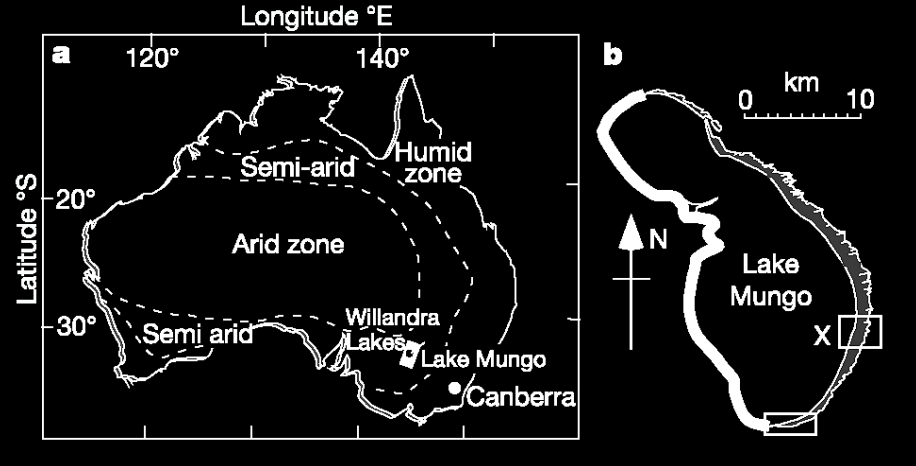
Pleistocene was a time of homogenous and 'simple' cultural systems

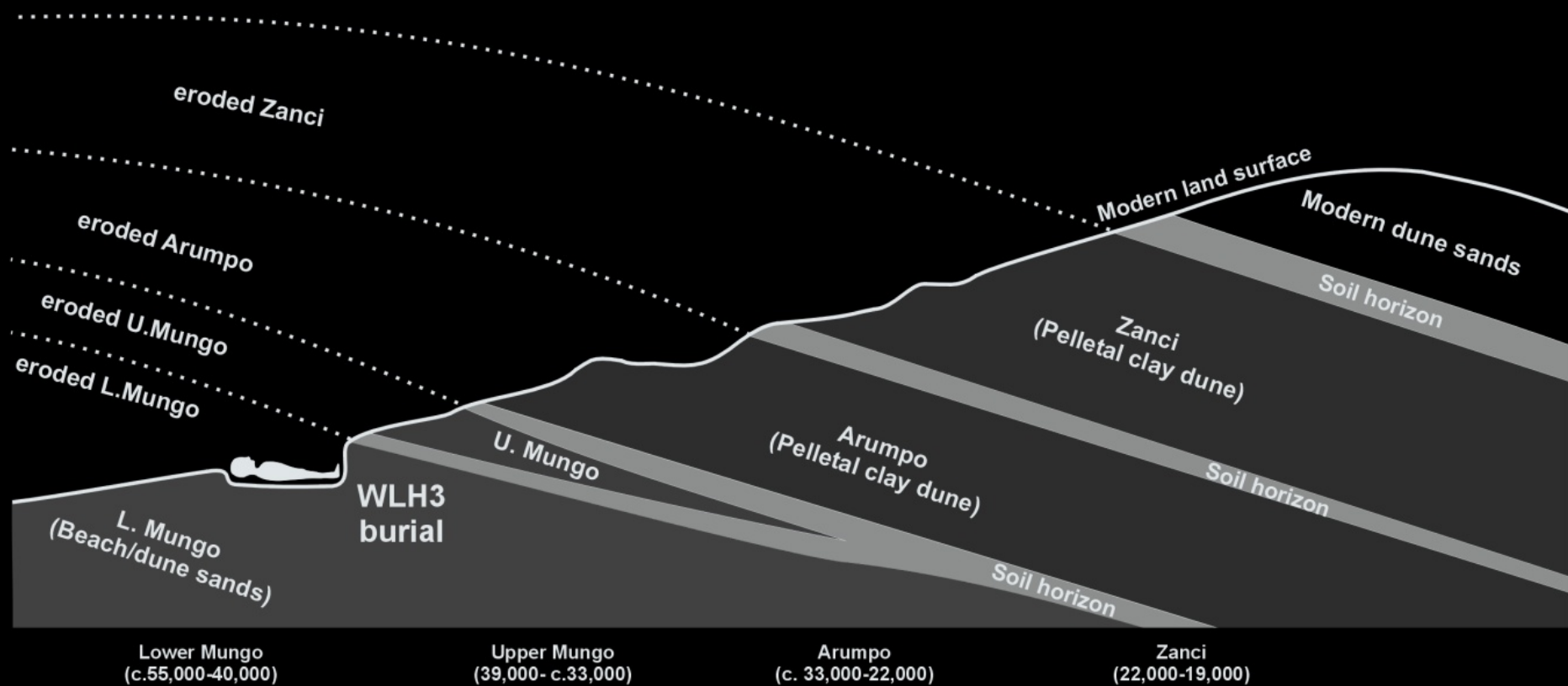
Holocene was a time of diversified, individualized and 'complex' cultural systems.

Economy and technology in the Pleistocene was generalized and little changing

Social life in the Pleistocene lacked key elements of identity and therefore lacked expressions of difference in symbols, ritual, etc







Lunette on the eastern side of the lake shows 4 strata:

- \* Zanci 19-22,000
- \* Arumpo 20-33,000
- \* Mungo 33-50/60,000
- \* Golgol >60,000

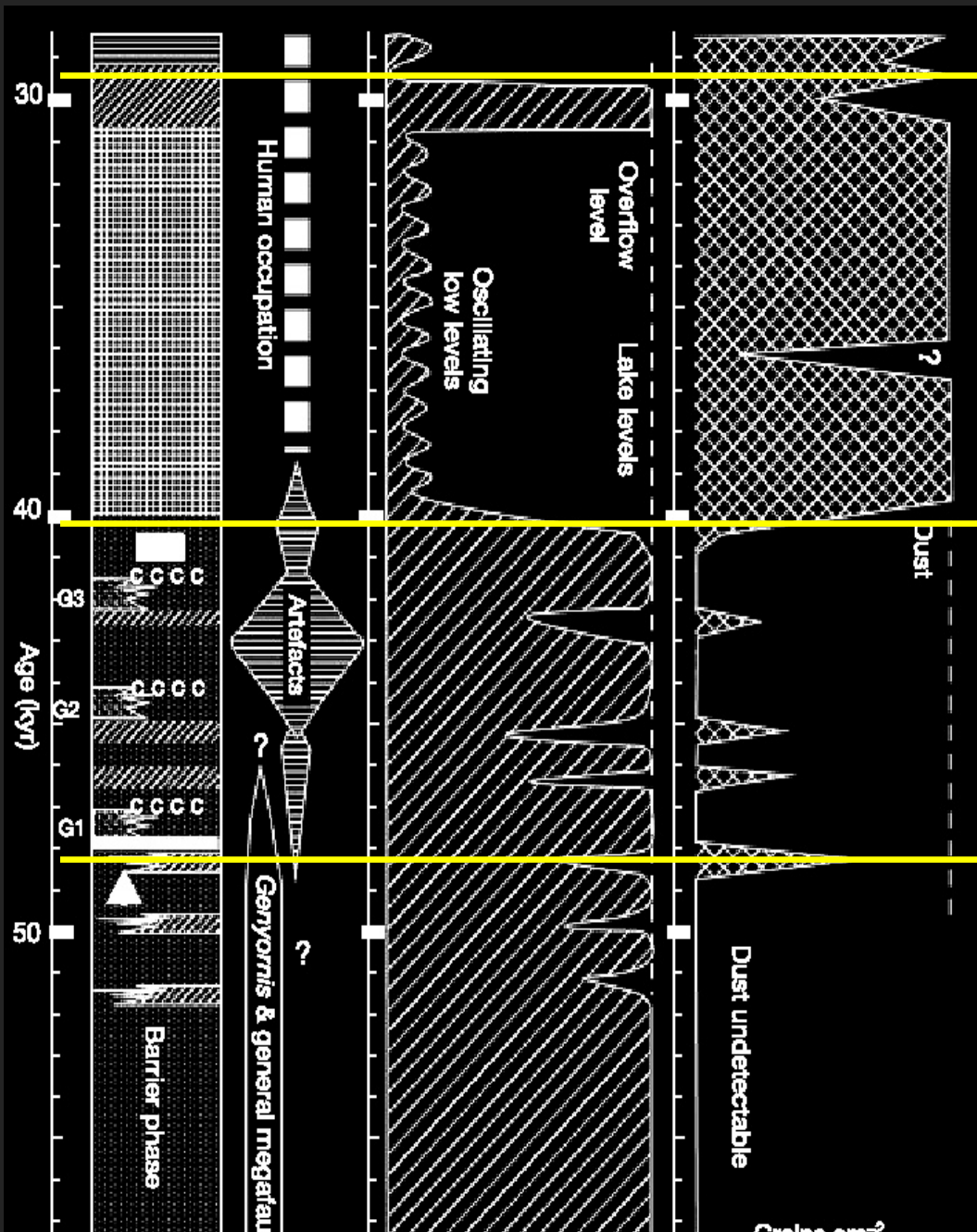


Defunct by about 20,000

Instability in water levels

Base of lake exposed

High water levels







Freshwater mussel shells  
(*Velesunio ambiguus*)





3. Occupation continued after the lakes dried. There was a definite change in the economy:

- \* Shell middens ceased to accumulate at 20K when the lakes dried.

- \* The economy was forced to adjust to being fully terrestrial. The appearance of grindstones marking the initiation of intensive grass-seed processing.

- \* Grass-seed processing was a feature of the ethnographic economy.





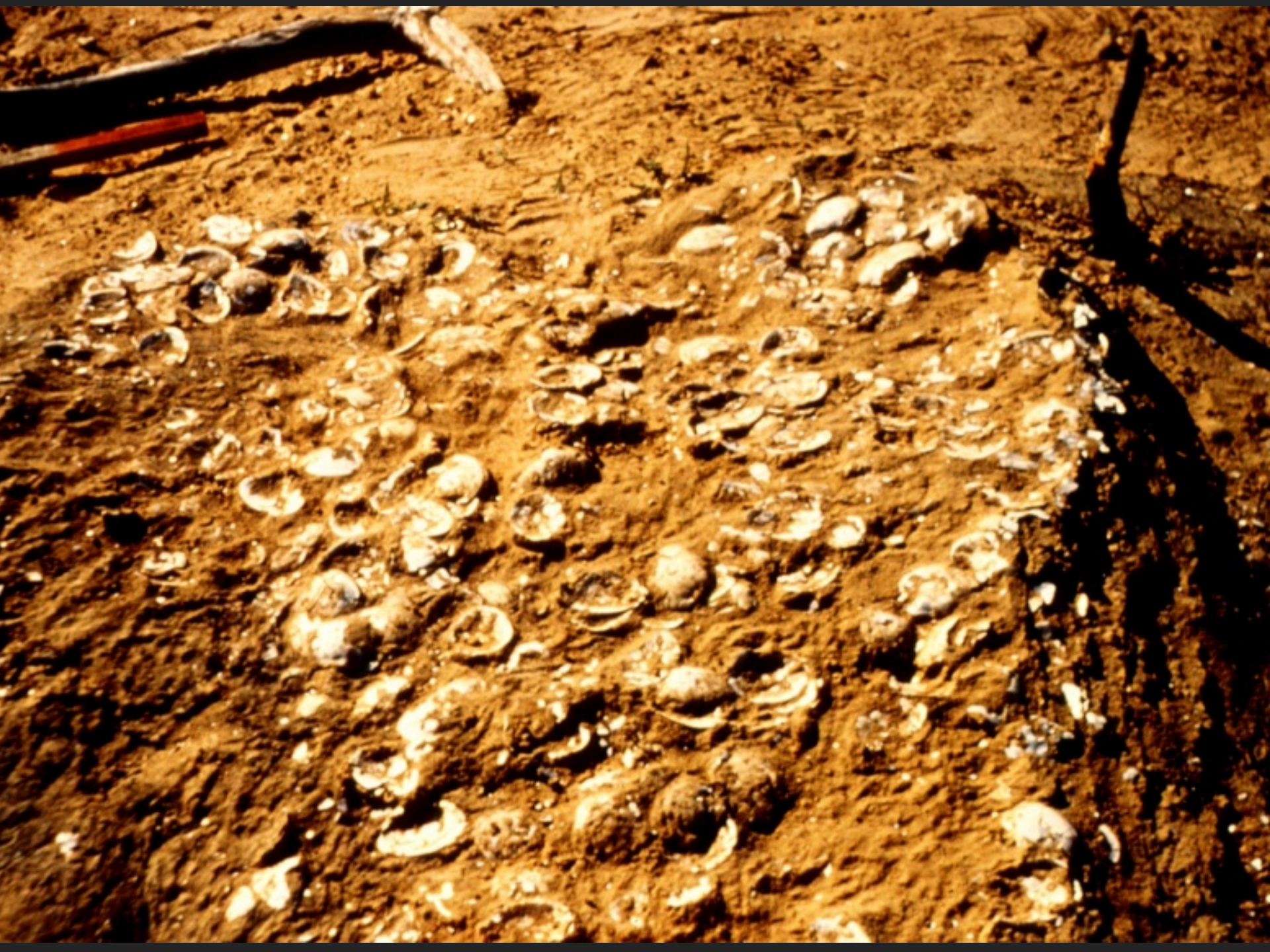








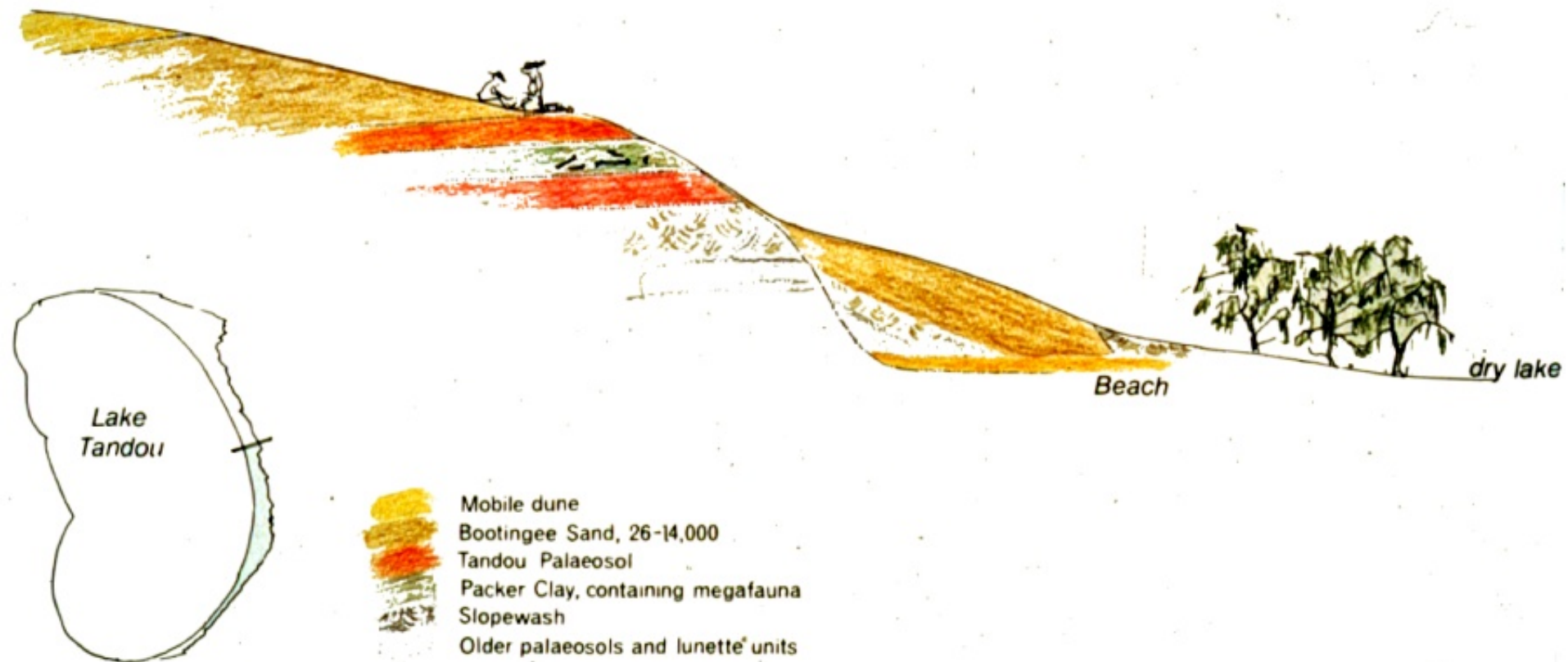




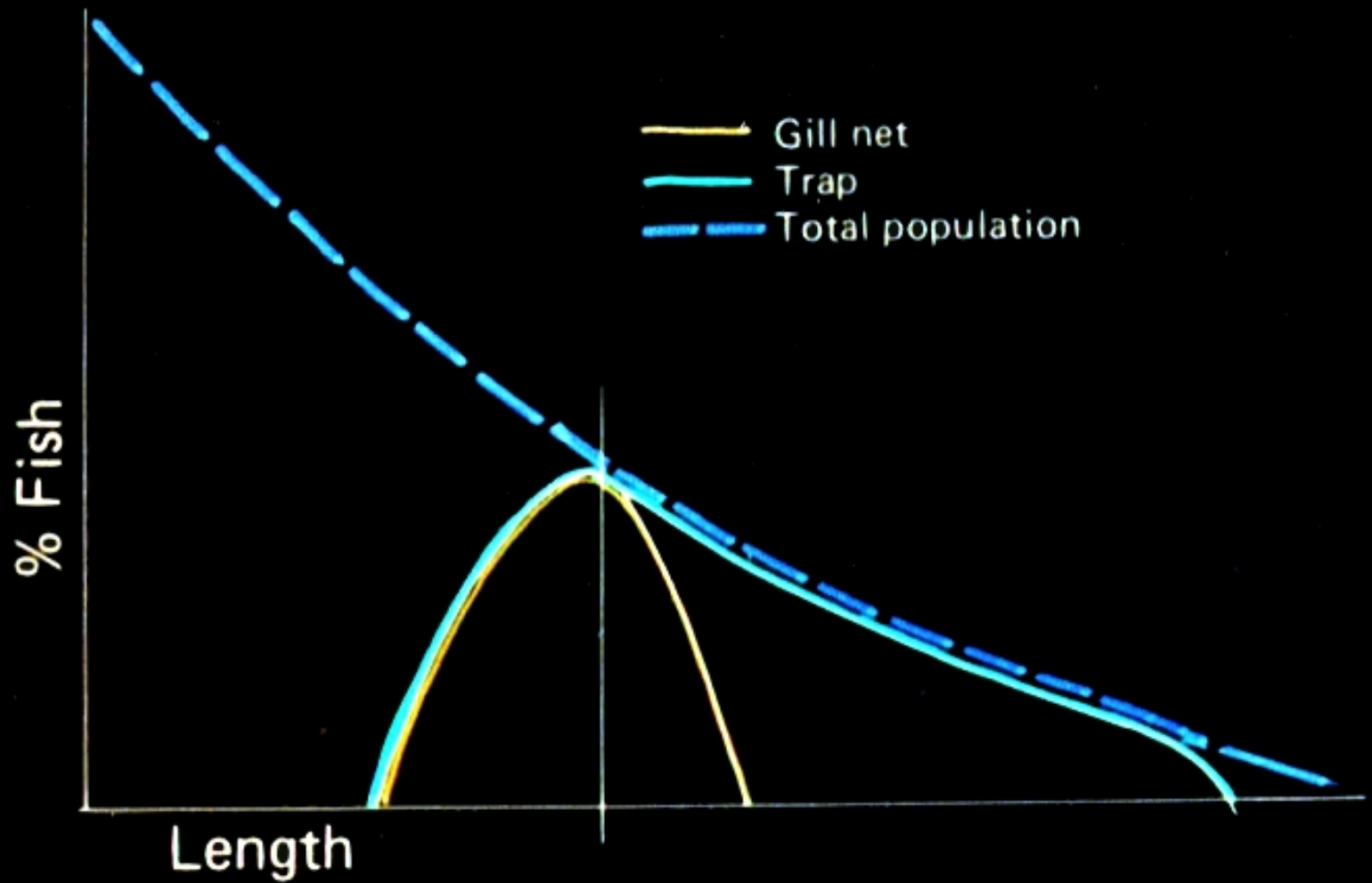




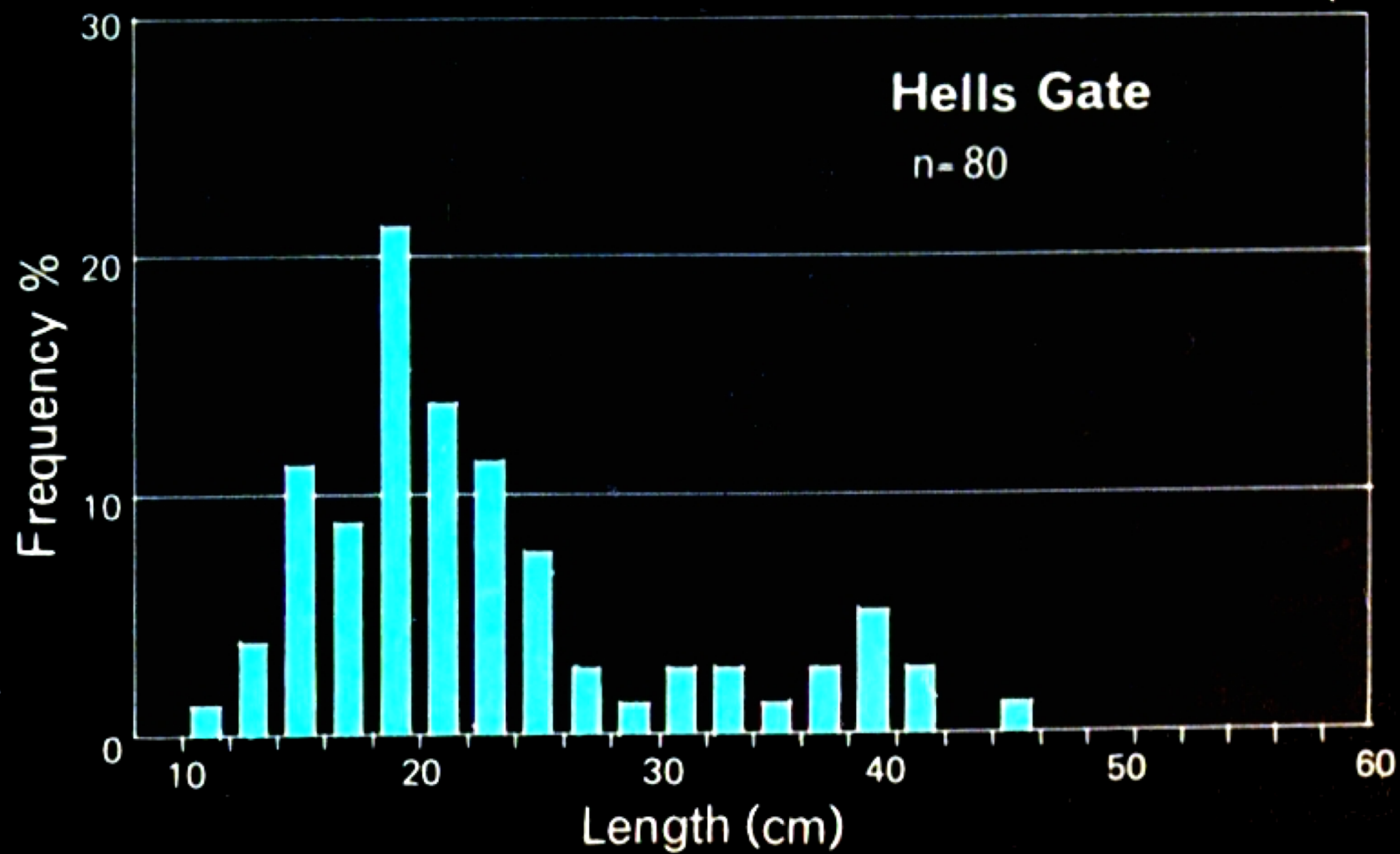
## Shell Date locality, Tandou lunette

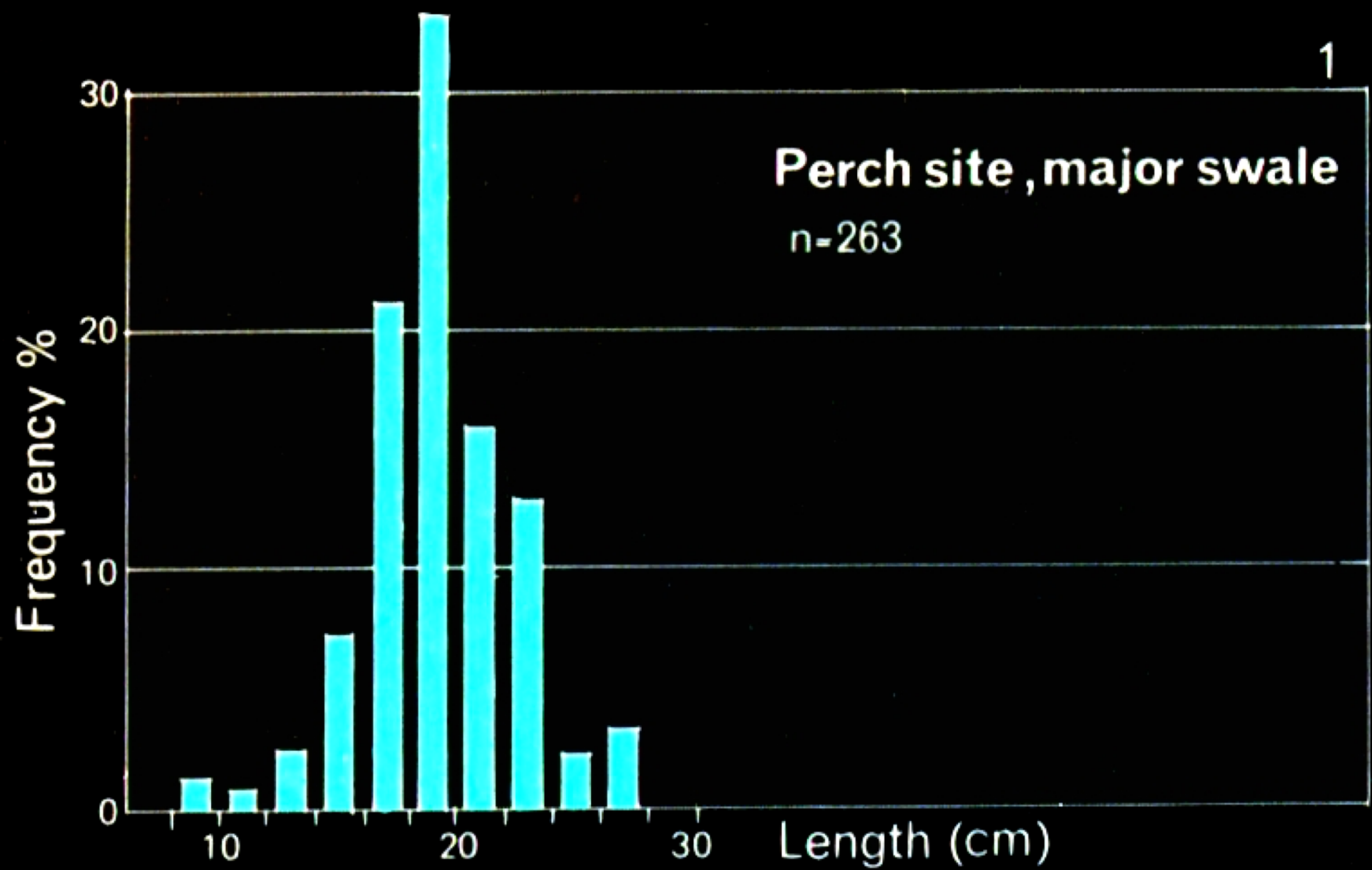


What do  
catastrophic  
mortality profiles  
look like?



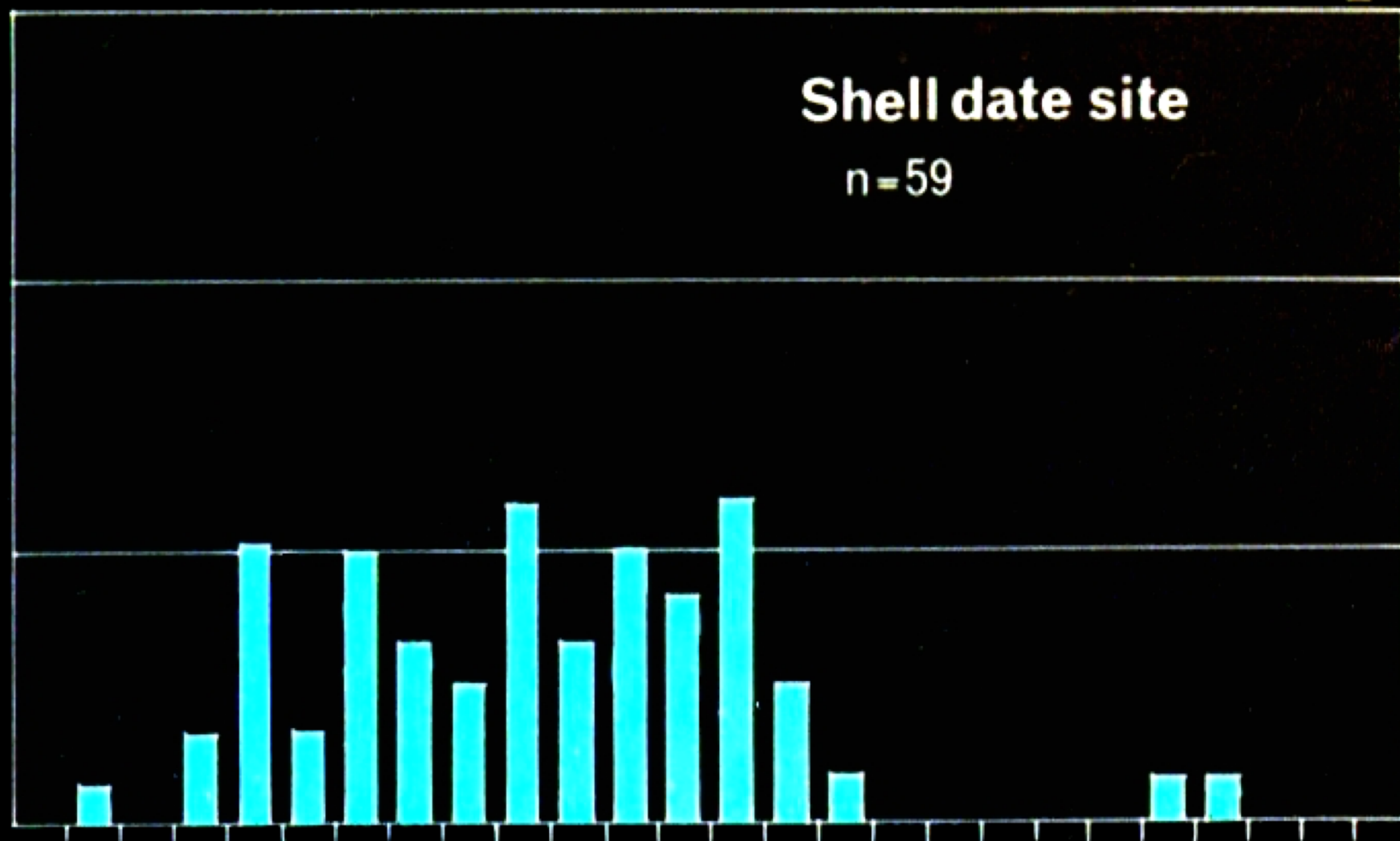




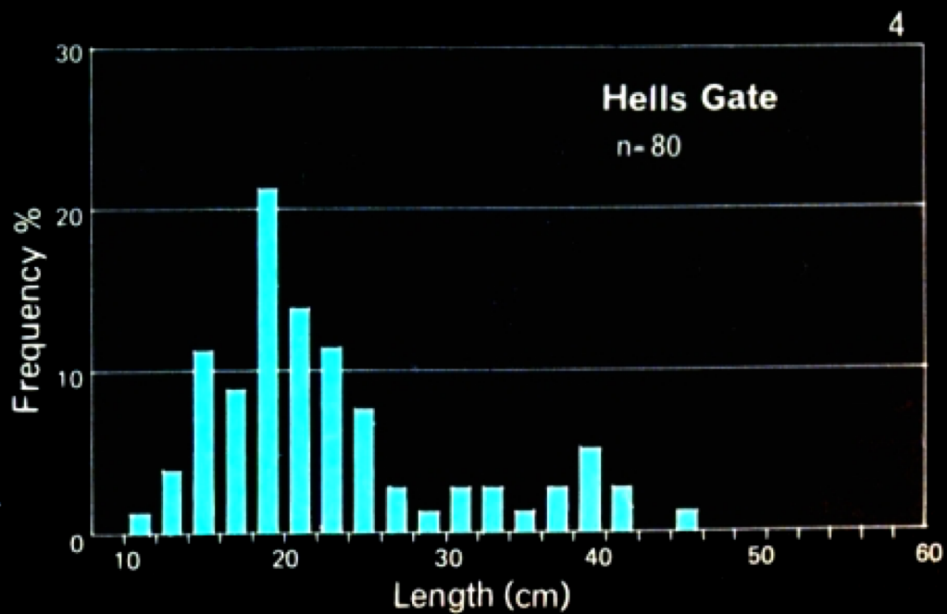
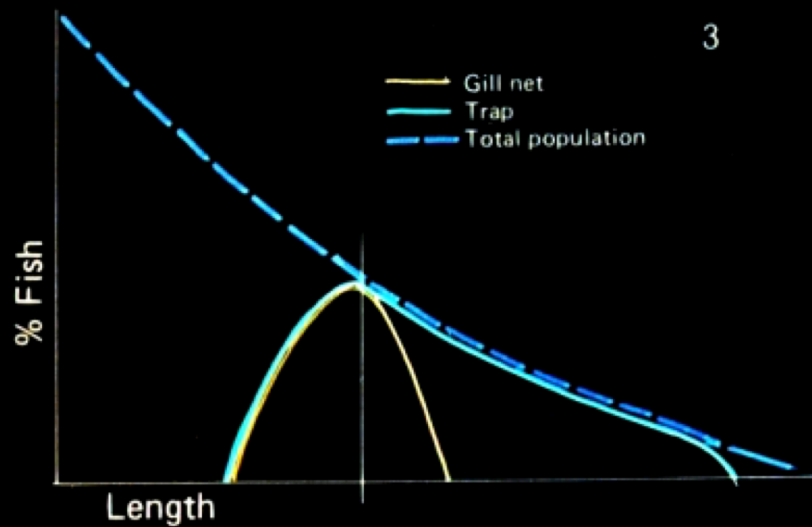
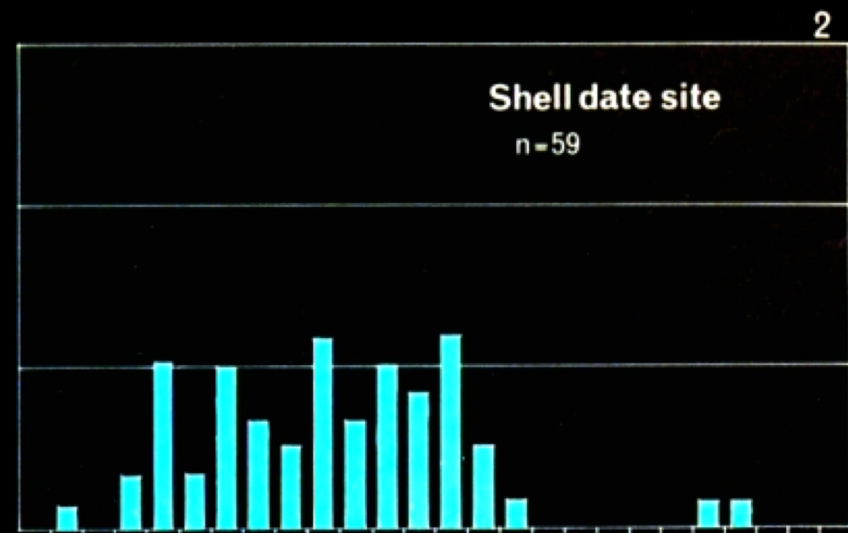
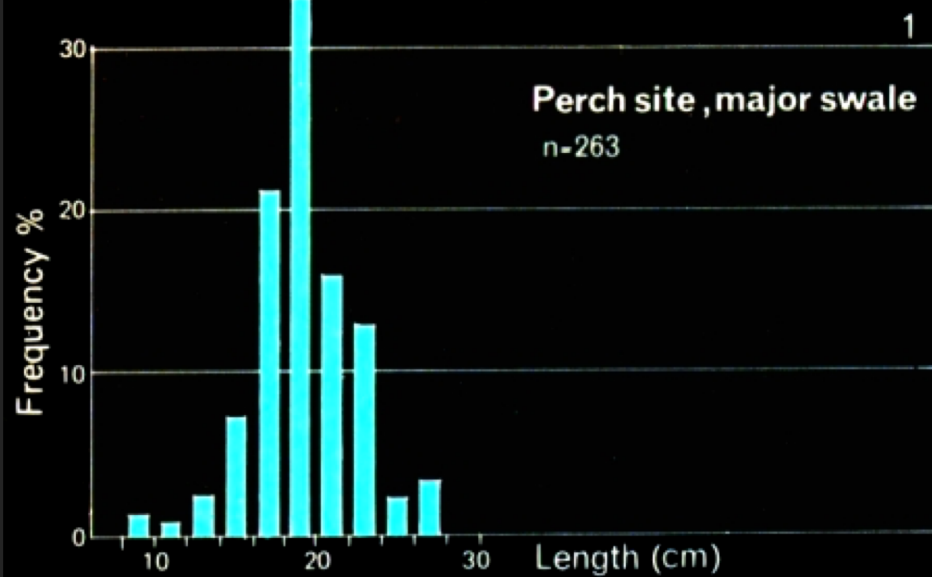


# Shell date site

n=59

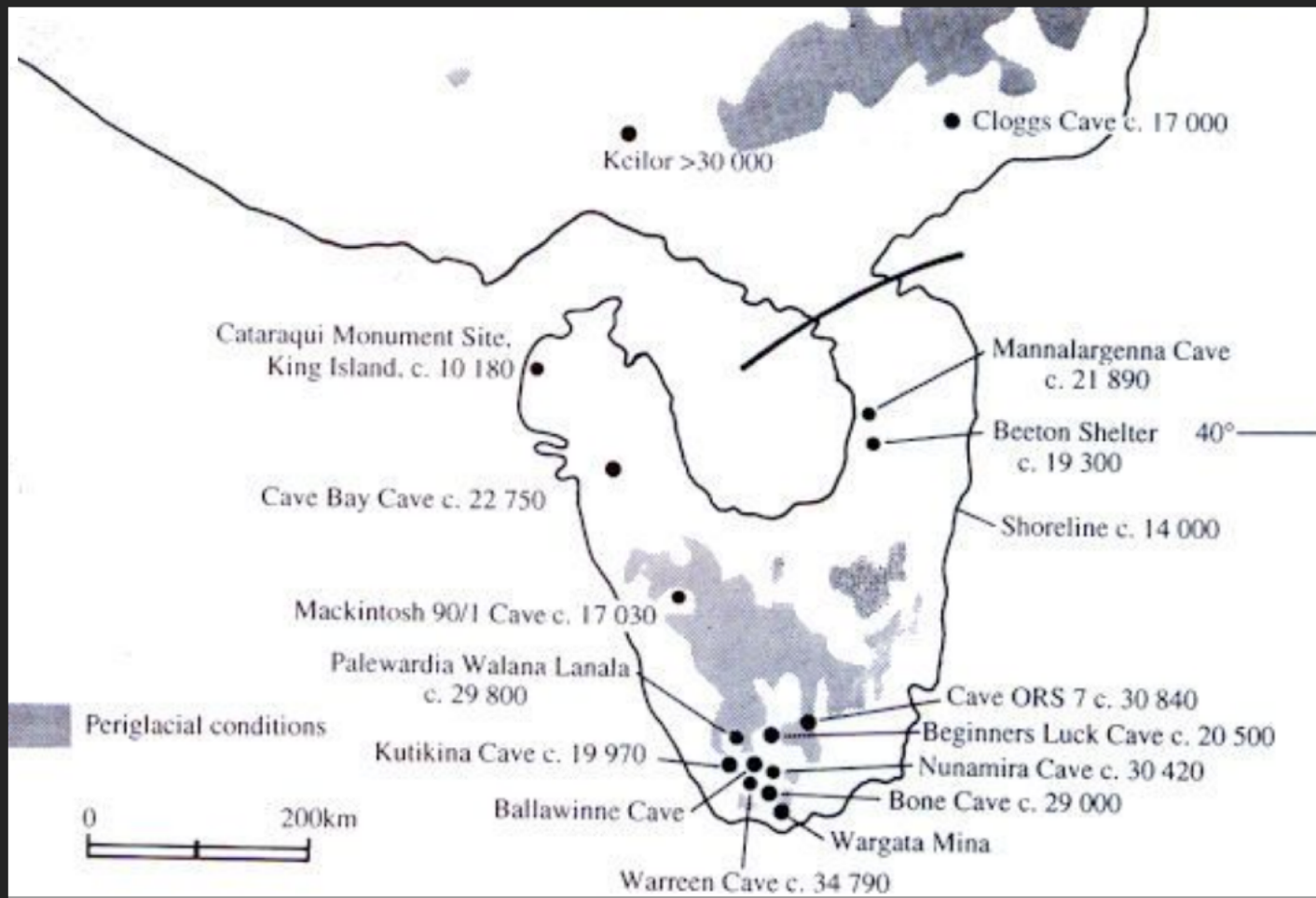








# What is happening down south?













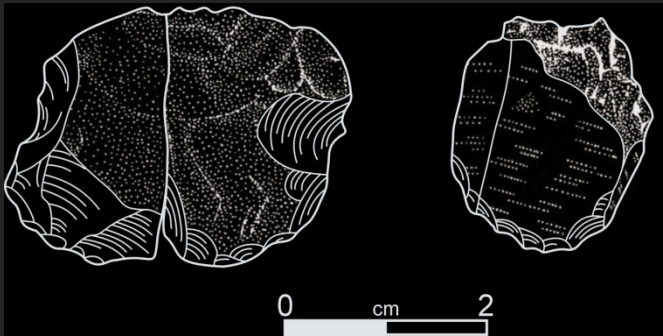






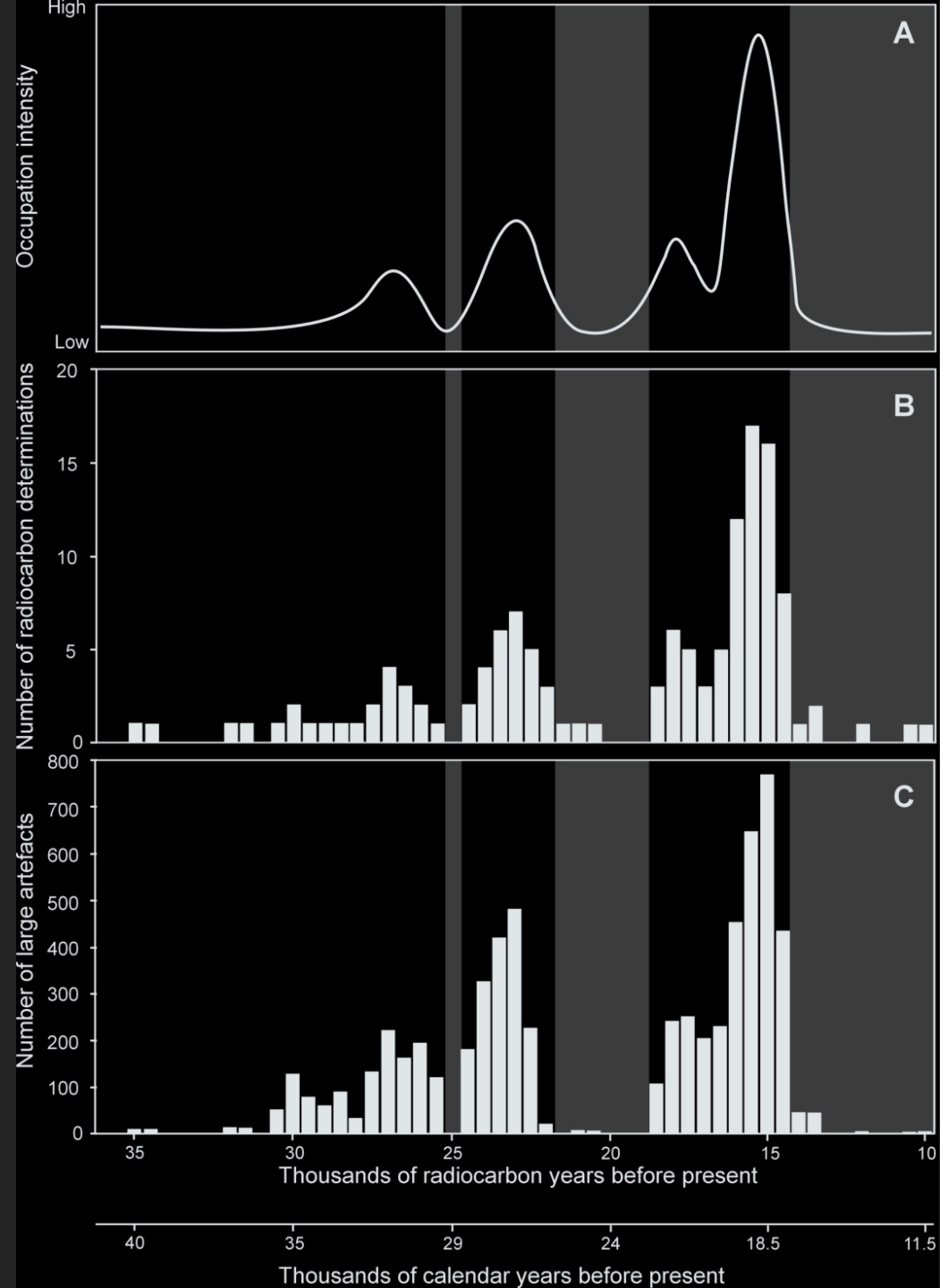
1. Economy closely tied to wallaby resources.

2. Economic systems collapsed and reformed on multiple occasions.



3. Economic cycles rather than economic stability; the consequence of adaptation.

4. Economic systems enabling the exploitation of harsh landscapes



# What can we conclude from this sampling of Pleistocene economies?

1. Highly diversified. There is no single system of subsistence. No generalised ancient economy.
2. Economic practices are well adjusted to their local context.
3. Employing complex technologies for resource capture.
4. Not changing from simple to complex

# **Pleistocene technology**



## What technology did early Australians have?



Stone artefacts survive better than any other class of archaeological material.

Archaeologists therefore often rely on stone artefacts to understand the ancient technology.



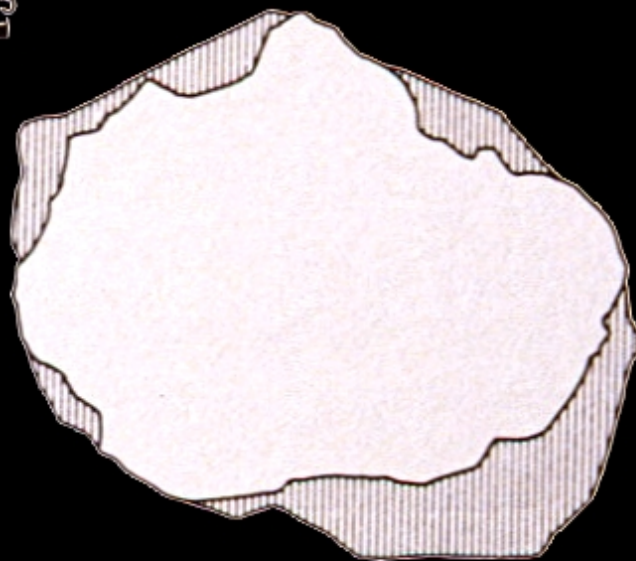
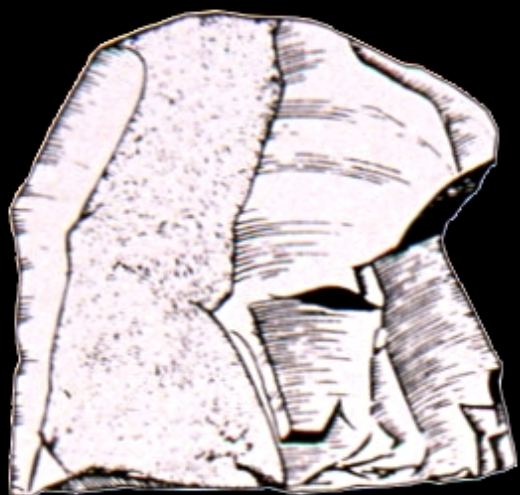
The traditional view of Pleistocene stone assemblages was that they are characterised as:

1. Large and/or relatively thick, robust implements
2. Stone implements relatively simple and lacking in variation
3. Uniform throughout Sahul.

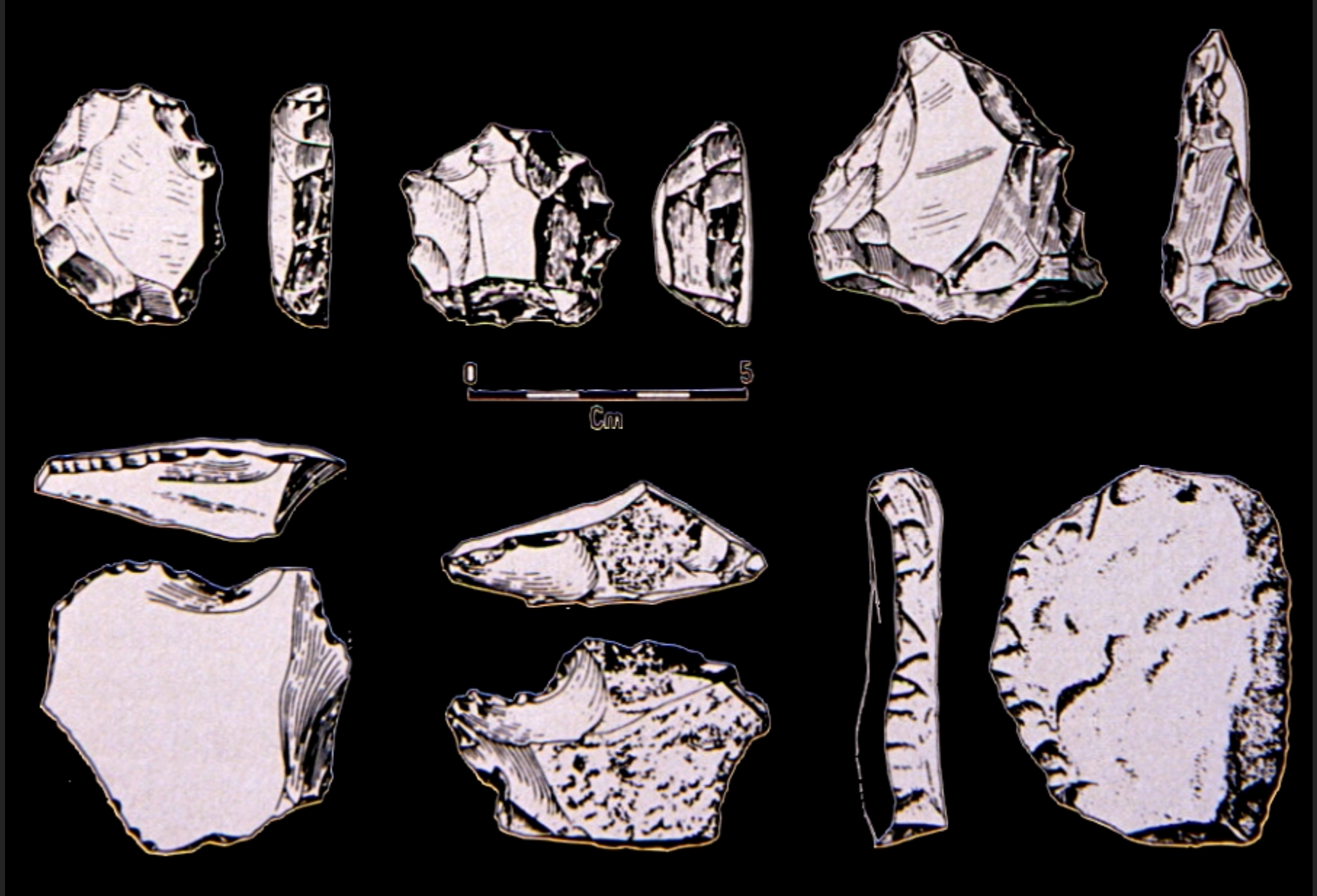
Pleistocene stone assemblages were seen in the 1960s -1990s as a single pancontinental cultural tradition which Harry Allen and Rhys Jones named the....

# "Core Tool and Scraper Tradition"





"...large horse-hoof shaped or in some cases pebble core tools..."



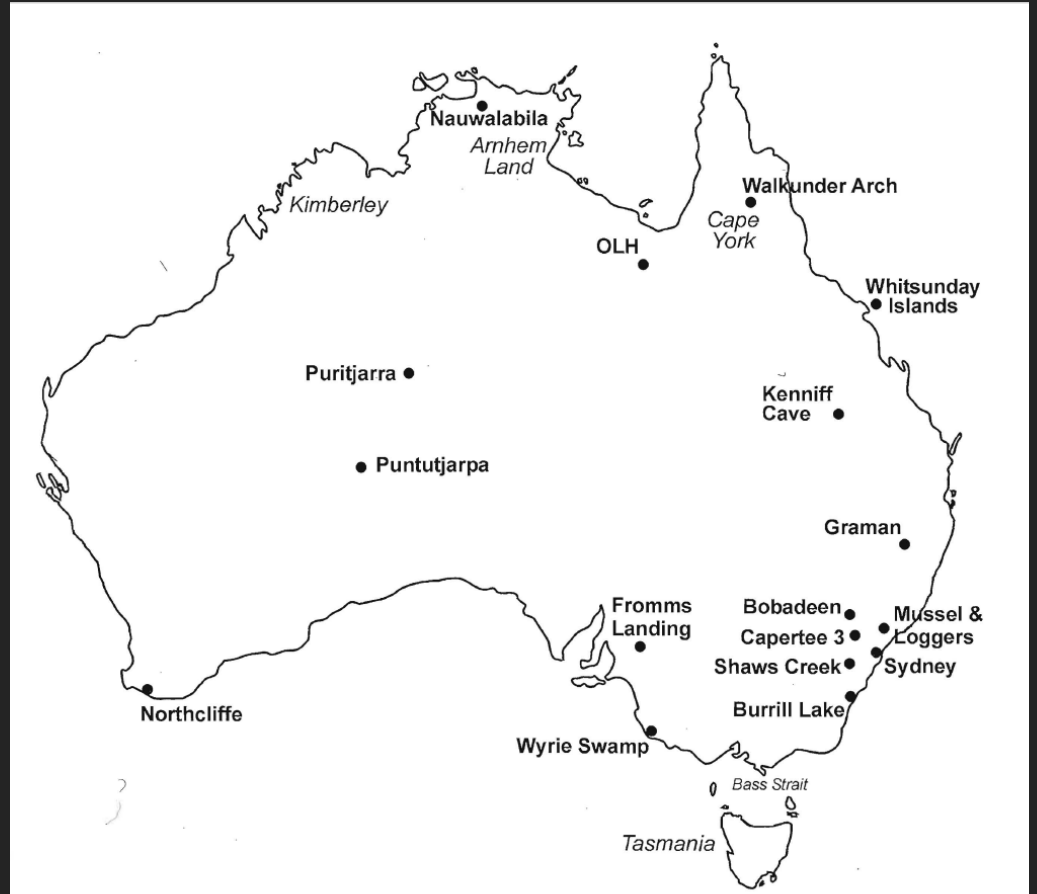
"...scrapers mostly with steep step-flaked edges and with notches."



## Technological conservatism: Sandra Bowdler & Leslie Maynard



Panaramitee style rock art panel at the Helen Springs site, Northern Territory; an example of track and geometric petroglyphs once believed to be the earliest style present in Australia.



Great moments in Australian  
Archaeology: John Mulvaney digs  
Kenniff Cave





Mulvaney excavated Kenniff Cave in 1960-1964

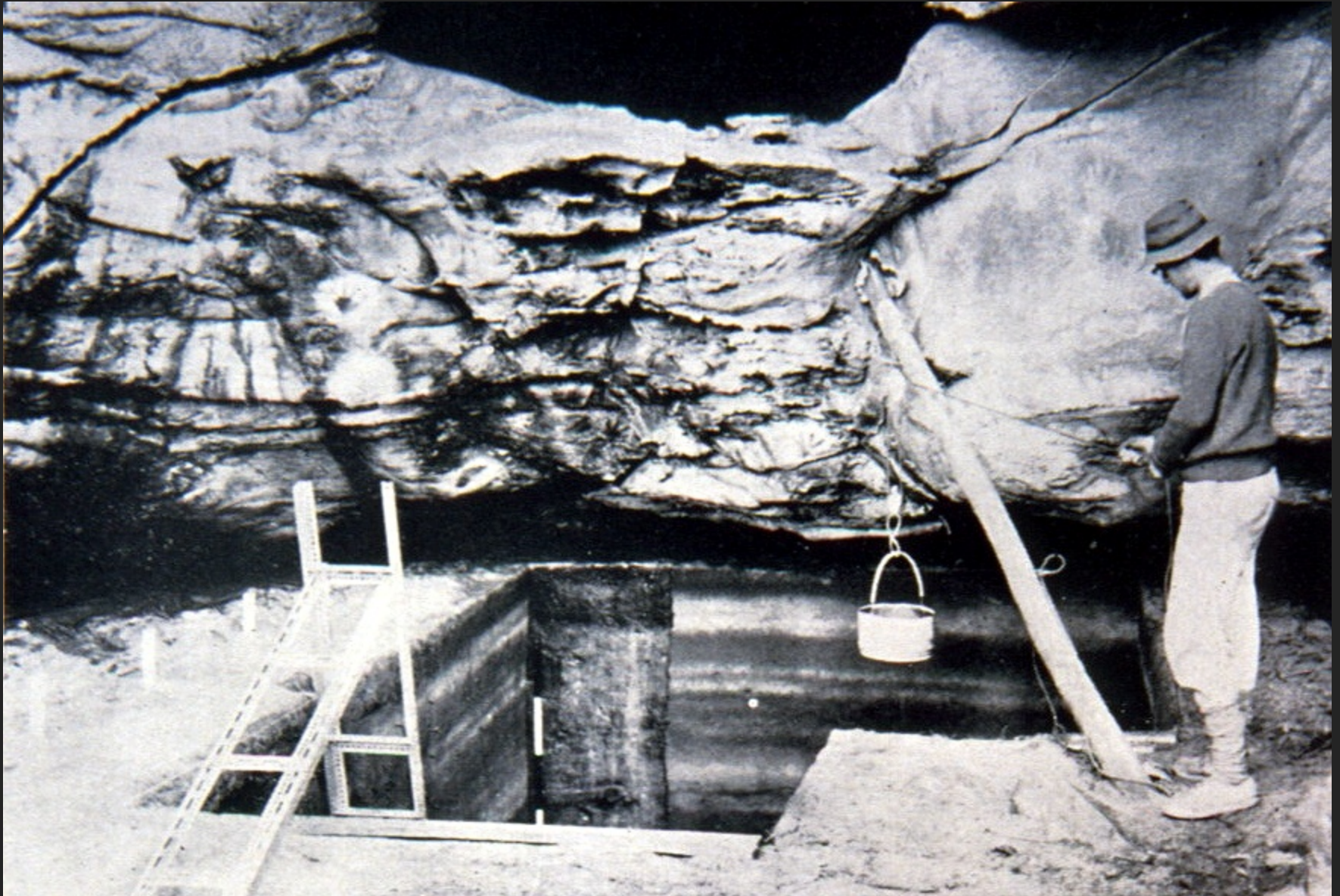
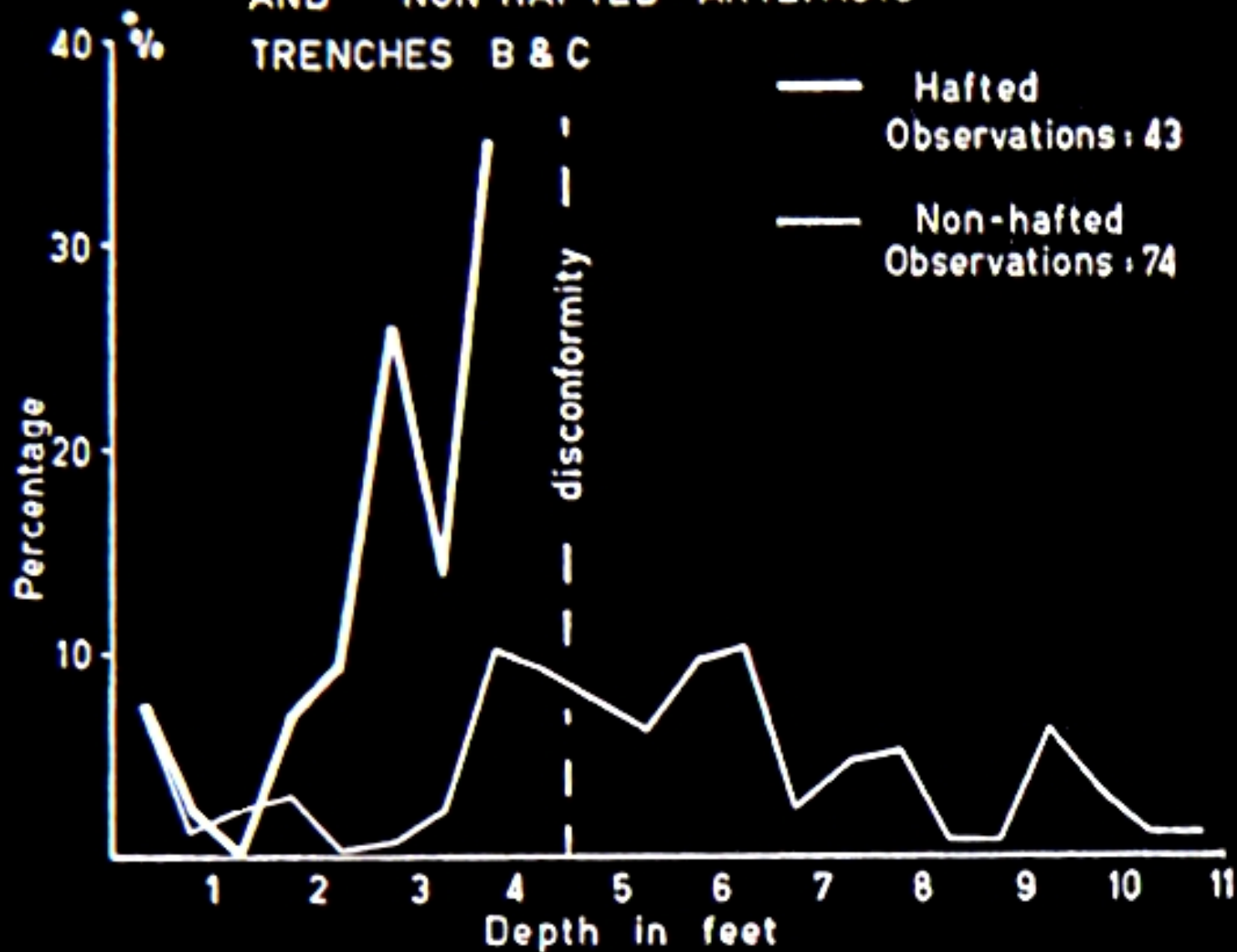




Fig. 6

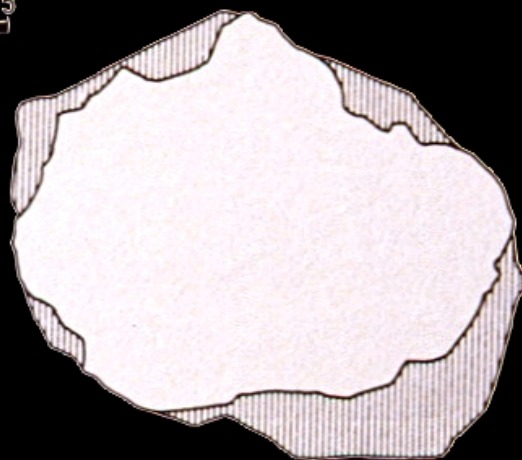
PERCENTAGE DISTRIBUTIONS FOR HAFTED  
AND NON-HAFTED ARTEFACTS

TRENCHES B & C

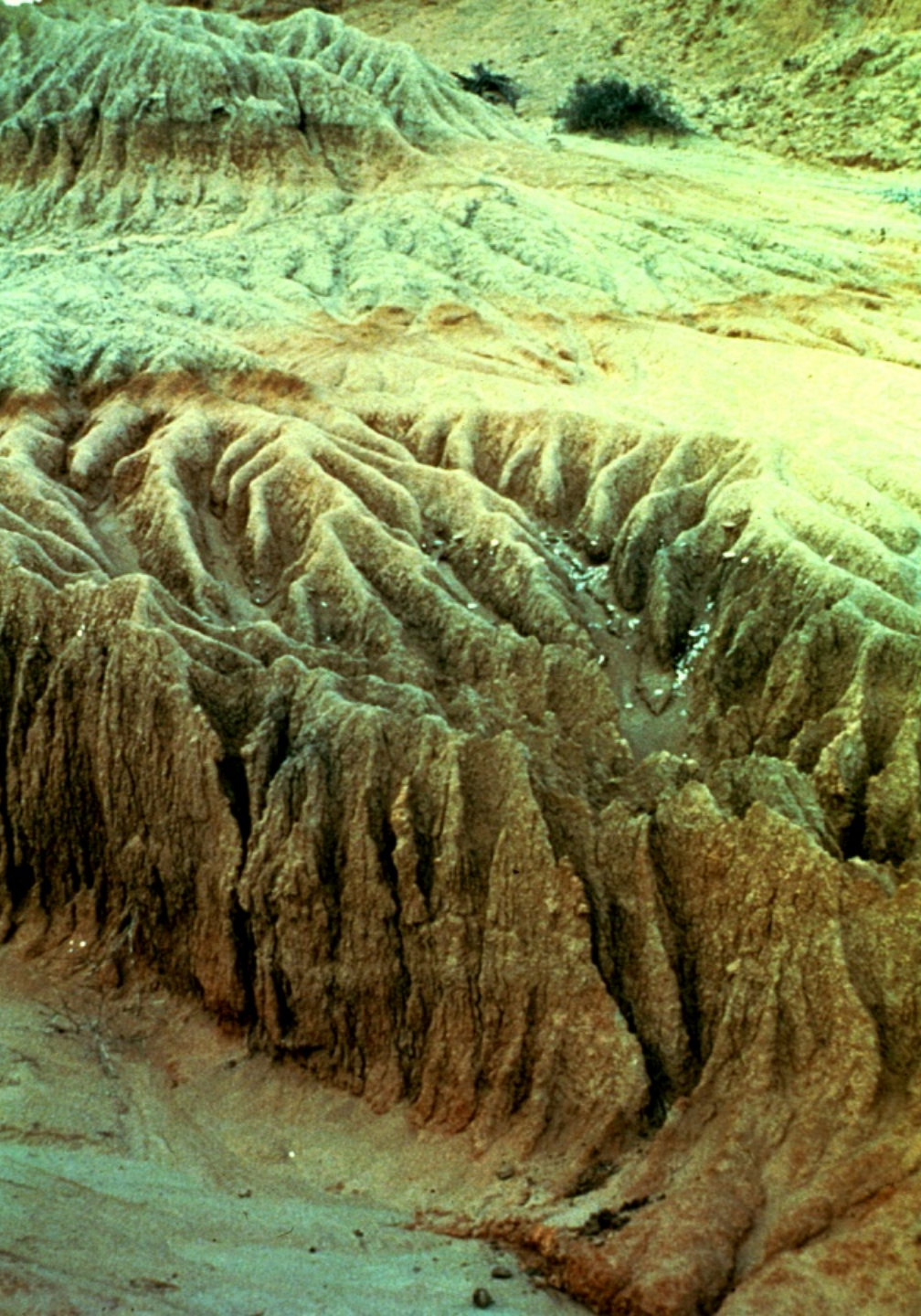


Inventive phase

Adaptive phase







Horsehoof at Mungo:

"They are heavy, ranging from 100 to 1,000g in weight, and were probably used for pounding or heavy planing and scraping activities"

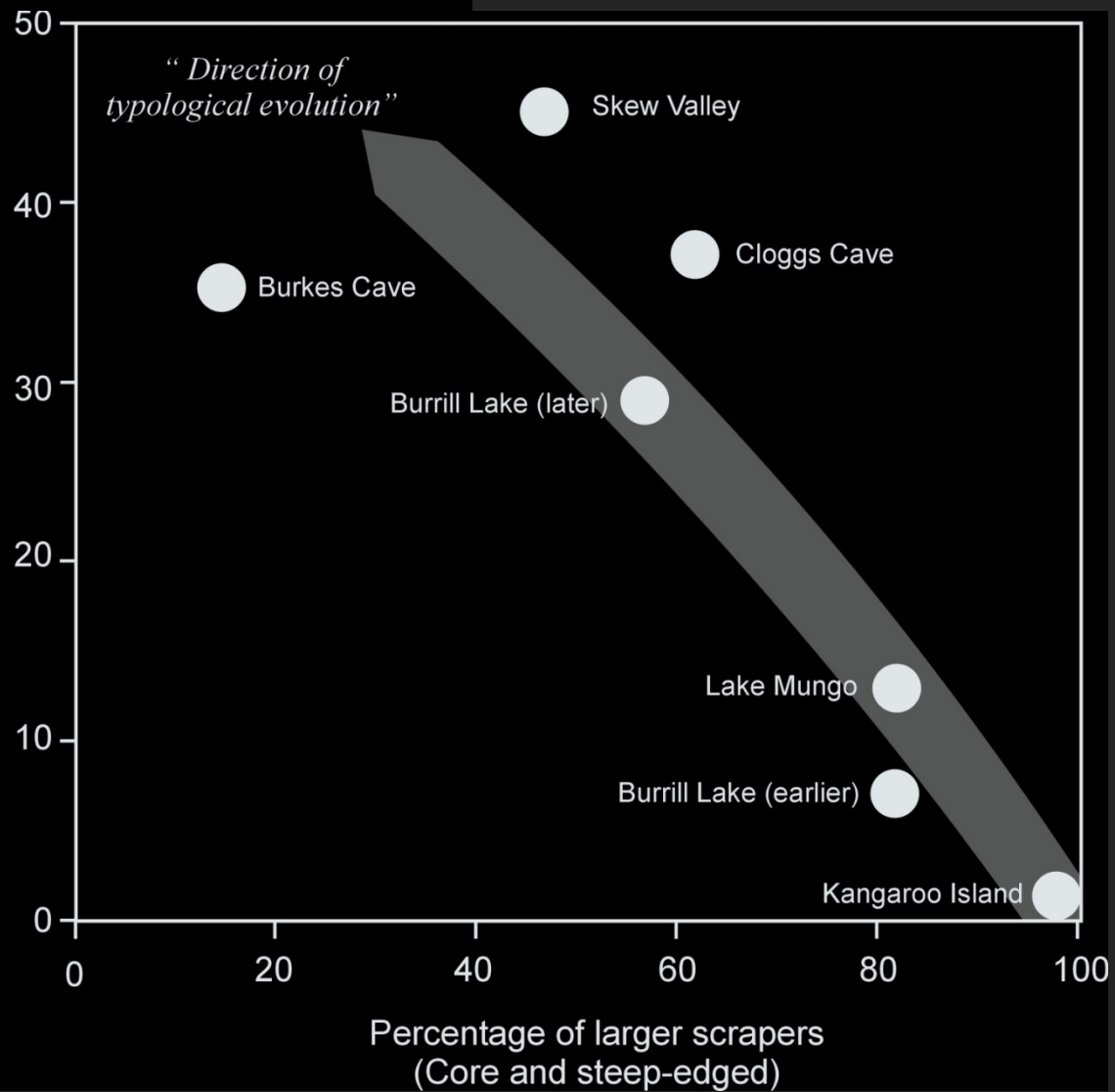
"Although there is some regional and temporal variation, the similarities are so marked that all examples can be treated as part of the 'core-tool and scraper tradition'..." (White and O'Connell 1982)







Percentage of smaller scrapers  
(Notched, concave convex and flat)



“typological evolution” as *progression*

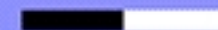
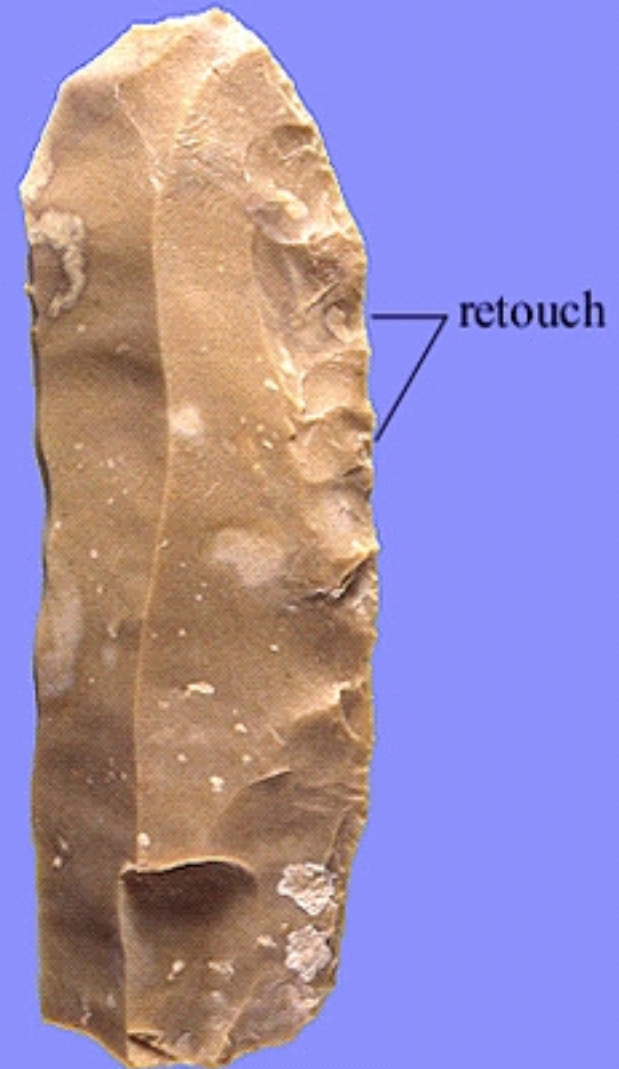


Devil's Lair - >35,000

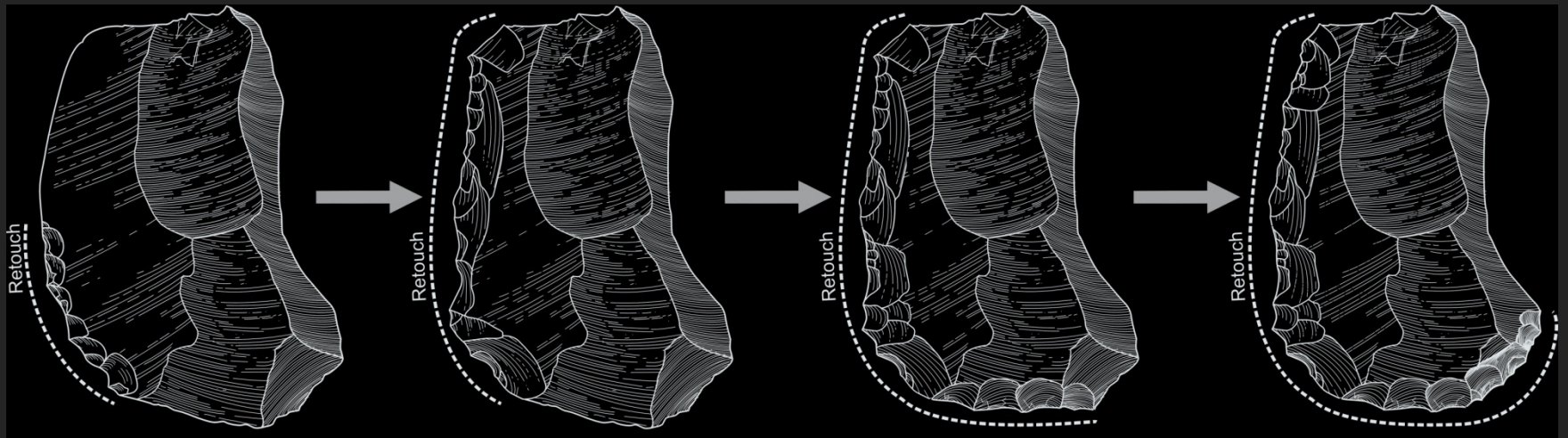


Colless Creek Cave - >20,000





Early Stone working technologies were centred around retouching flakes, to produce durable edges and conserve raw material – just the kind of technology required.



Foragers are always in danger of incurring costs when they have to resupply themselves with tools.

By having artefacts that can be maintained for a long time the cost of procuring further material is reduced.

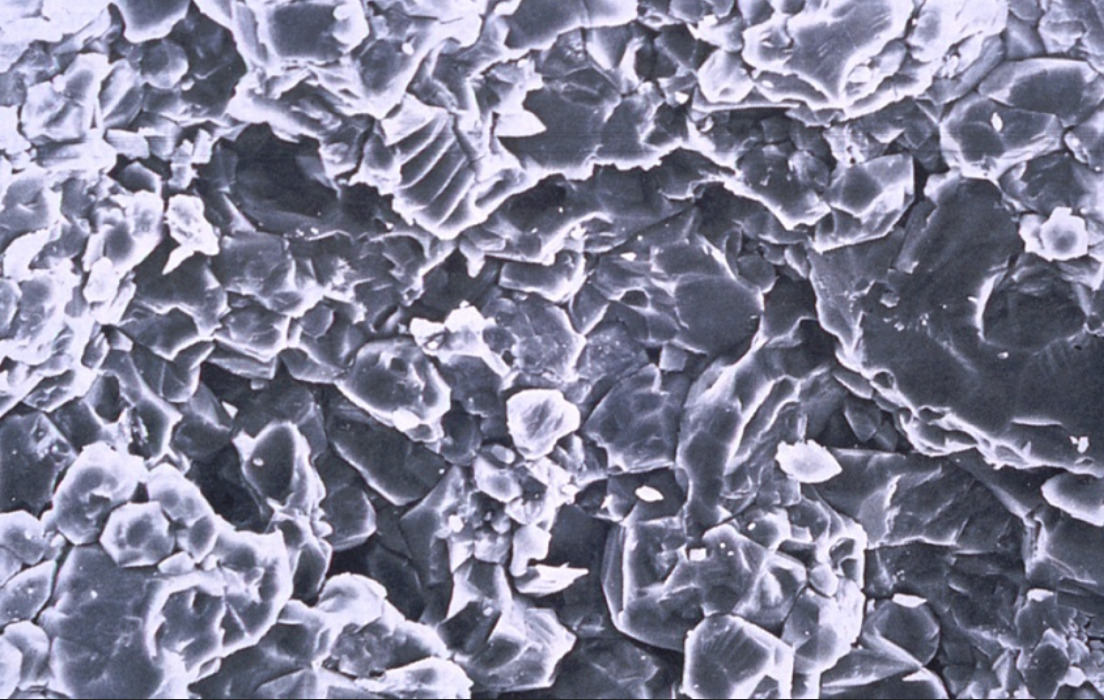
These artefacts were sometimes made in complex ways.



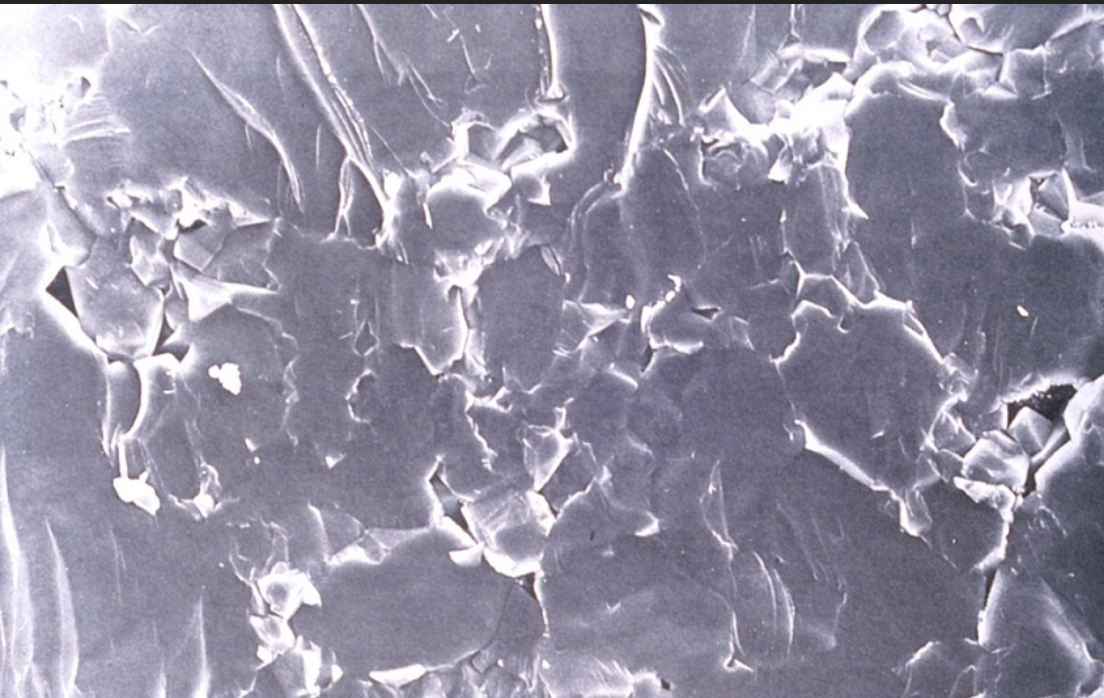


Heat treatment was used at Burrill Lake for more than 20,000 years





Most rock fractures in a 'rough' way, making it difficult to control delicate stoneworking.



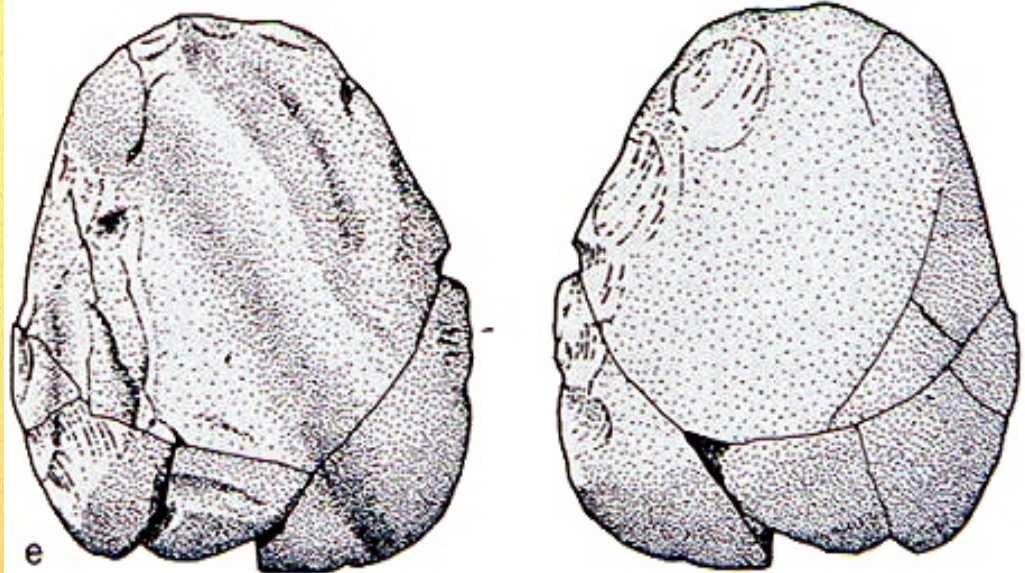
People can change the rock. This is the same rock after heat treatment.



Elaborate stone artefacts such as axes are known from Australia



In northern Australia axes were being made more than 25,000 years ago



# **Pleistocene non-lithic technology**





Stone artefacts were not the only tools. Bone was also used.



What were bone points used for?





Another possibility is the use of bone points to make nets, or as hooks.

A third possible function is that they were used as spear points.

But did early Aboriginal groups use spears?

At Wyrie Swamp wooden spears have been found – 11,000 years old



Australia's oldest Boomerang, from Wylie Swamp in the south-east of South Australia. Dated at about 10,000 BP







The Mungo 3 individual shows signs of having used a spear.



The joints in one arm show arthritic changes that indicate repetitive injury – perhaps using a spear.

If so, spears were used 40-50,000 years ago

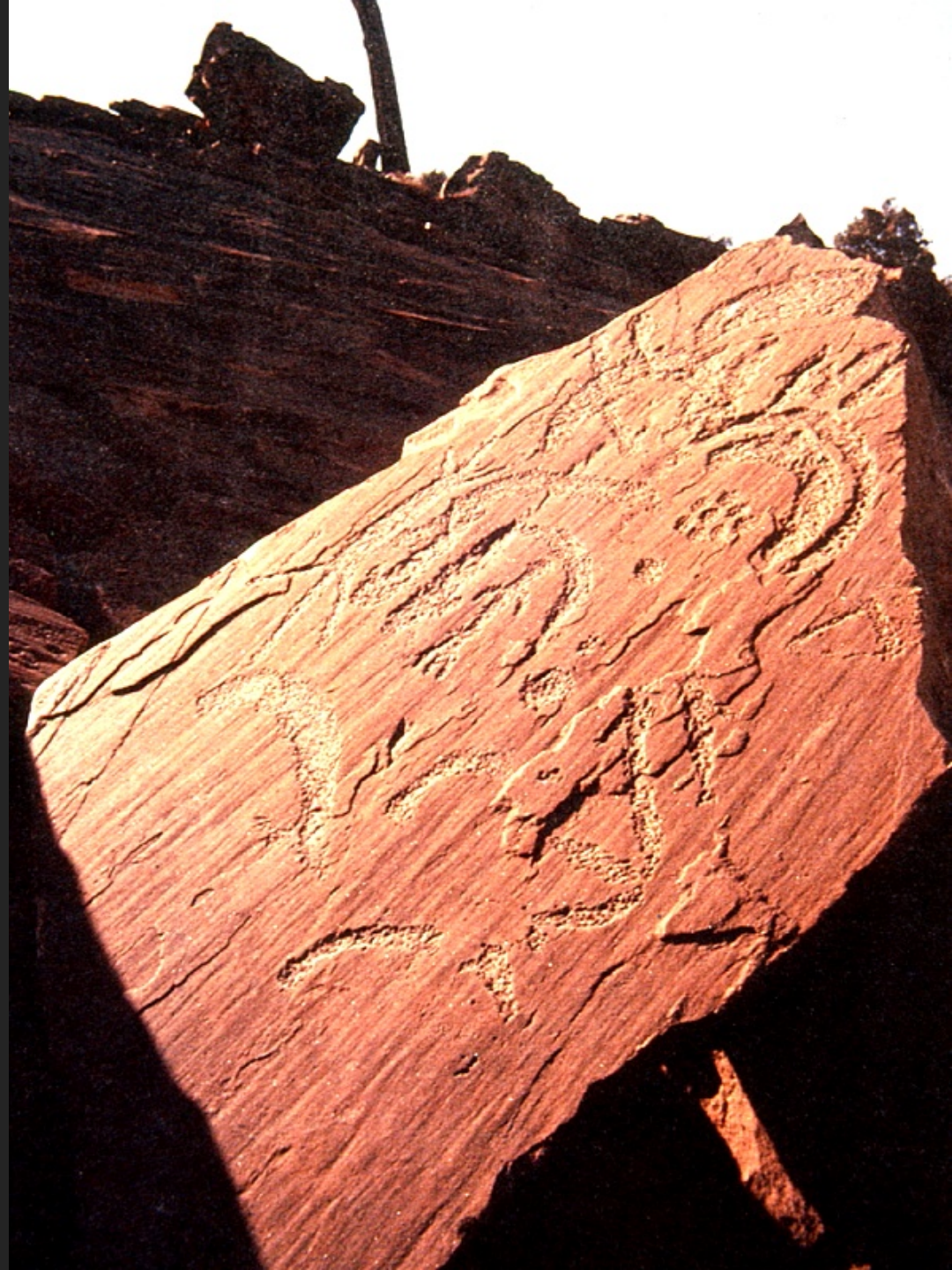




# **Pleistocene art**

Rock art is very hard to date, but there is evidence that it was practiced from the earliest phase in Australia.

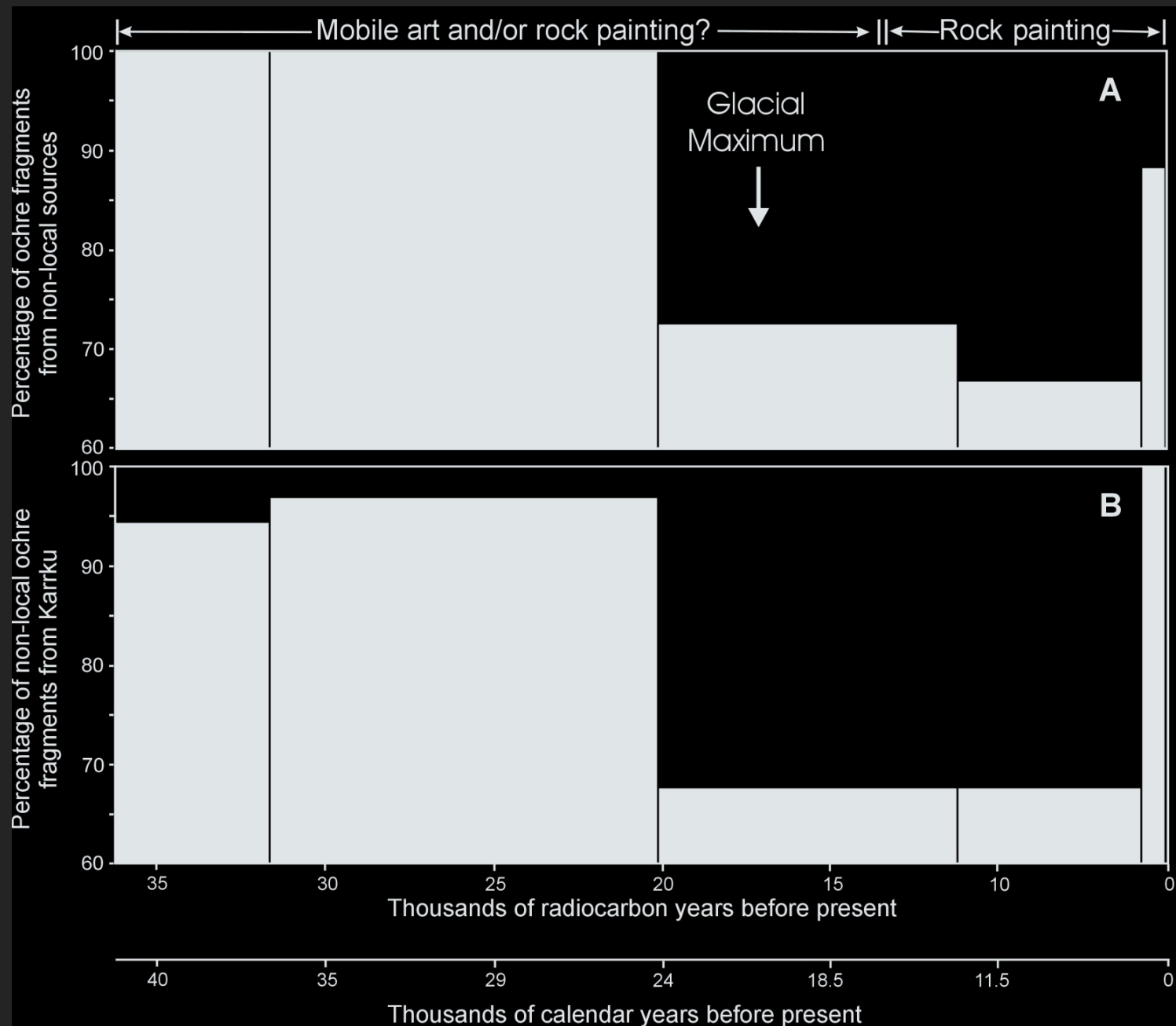
This perhaps indicates the presence of complex social mechanisms for conveying information and organising social relations.





Puritjarra rockshelter, in the McDonald Ranges of Central Australia. Excavated by Mike Smith, 1986-90



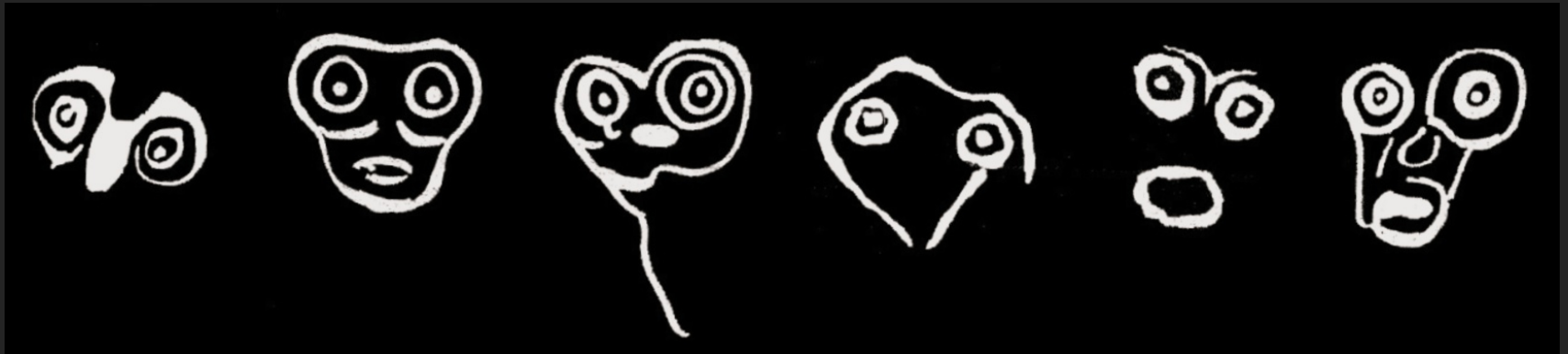






Mt Isa: regional  
Panaramitee

Western Desert:  
Archaic faces







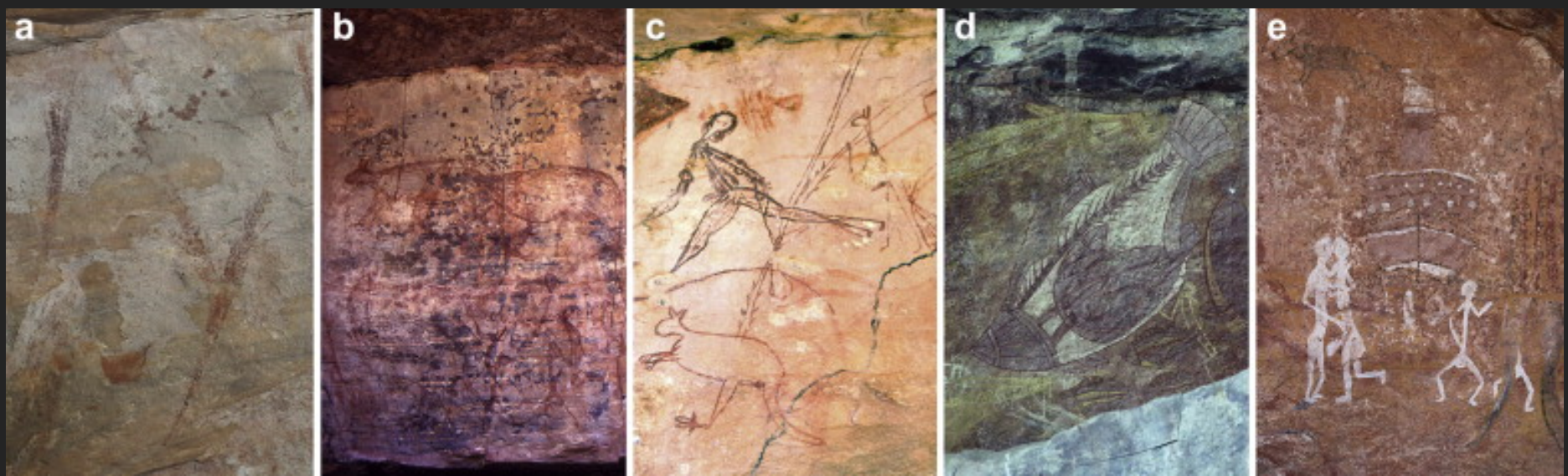


Ornamentation at  
Madu Mandu and  
Lake Mungo









Sequence of Arnhem Land rock art showing: a) early grass print; b) painted naturalistic macropods,; c) dynamic figures; d) X-ray fish; e) example of contact period art including a ship,









Dynamic figures at Ubirr, NT





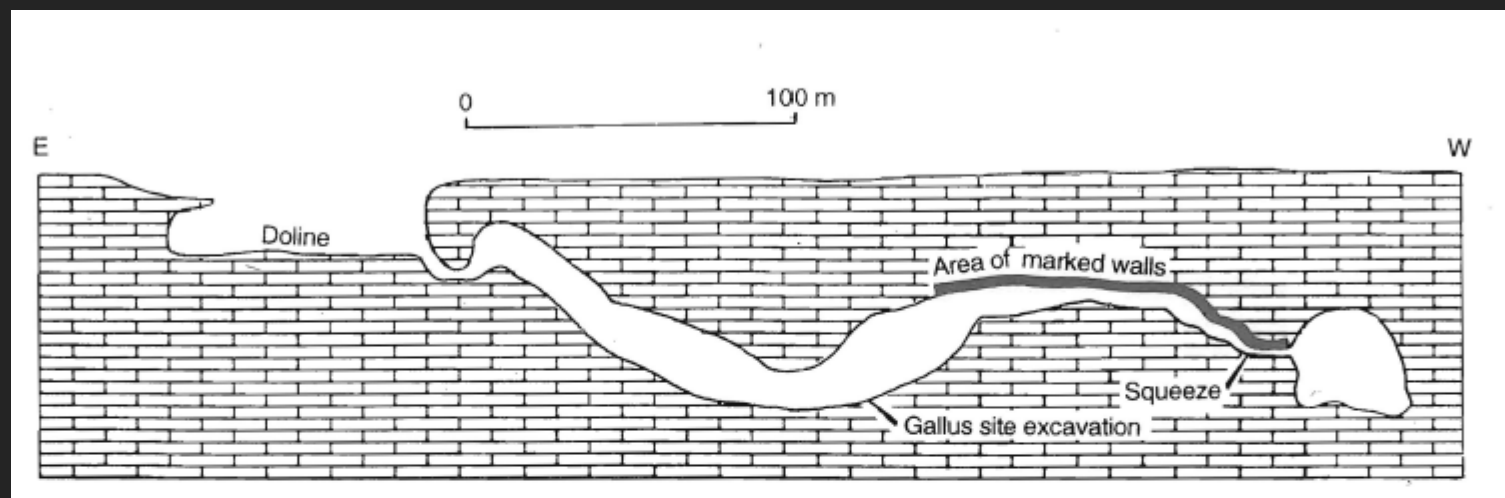
Therianthropes: part-animal, part-human figures







Koonalda Cave, Nullabor Plain



# Summary

It is a mistake to picture the economy, technology and society of Pleistocene inhabitants as the same as recent Aboriginals.

It is a mistake to picture Pleistocene inhabitants as less capable or sophisticated than more recent occupants of Australia.



# THE END



A  
*Warner Bros.-First National*  
PICTURE