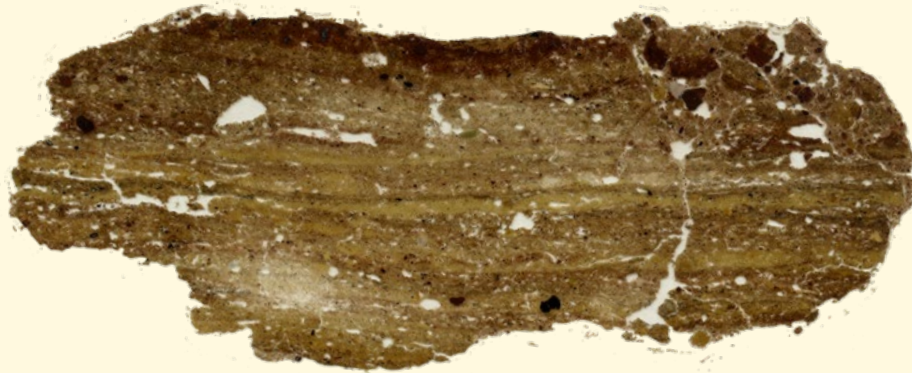




# CROSS VIEWS ON A NEOLITHIC BUILDING OCCUPATIONS LEVELS IN THE SOUTHERN CAUCASUS: FIELD OBSERVATIONS AND MICROMORPHOLOGICAL STUDY AT MENTESH TEPE (AZERBAIJAN)

*Lire le sol en archéologie : pratiques de terrain et regards croisés,  
29 Novembre – 1 Décembre, Tours*

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<sup>3</sup> AgroParisTech – UMR 5140 ASM

<sup>4</sup> Institut National de Recherches Archéologiques Préventives

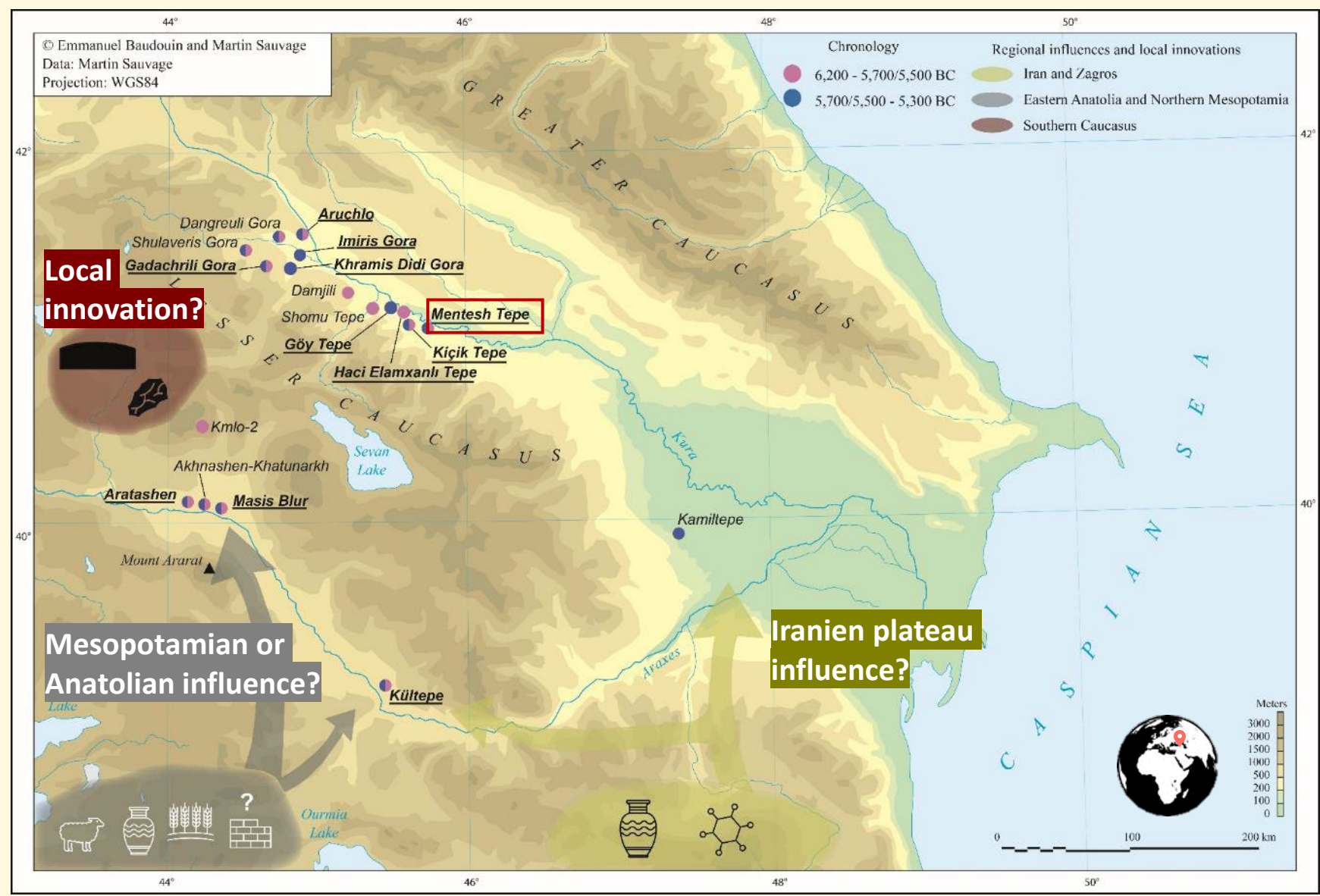
The Southern Caucasus:  
a Late Neolithisation process  
ca. 6000 B.C.

DEFINE CULTURAL IDENTITY  
OF NEOLITHIC COMMUNITIES

Local and autonomous origin  
(Lithic, architecture)



Contribution of  
Mesopotamian communities  
(Breeding, ceramic,  
cropping, architecture)



Neolithic cultures and influences in the Southern Caucasus (6000-5000 B.C.),  
Bellat after Baudouin (2021)

# "PRE-HISTORICIZING" THE PROCESSES OF ARCHITECTURAL DESIGN

Convergence inside and between communities



Similar needs/same capacity



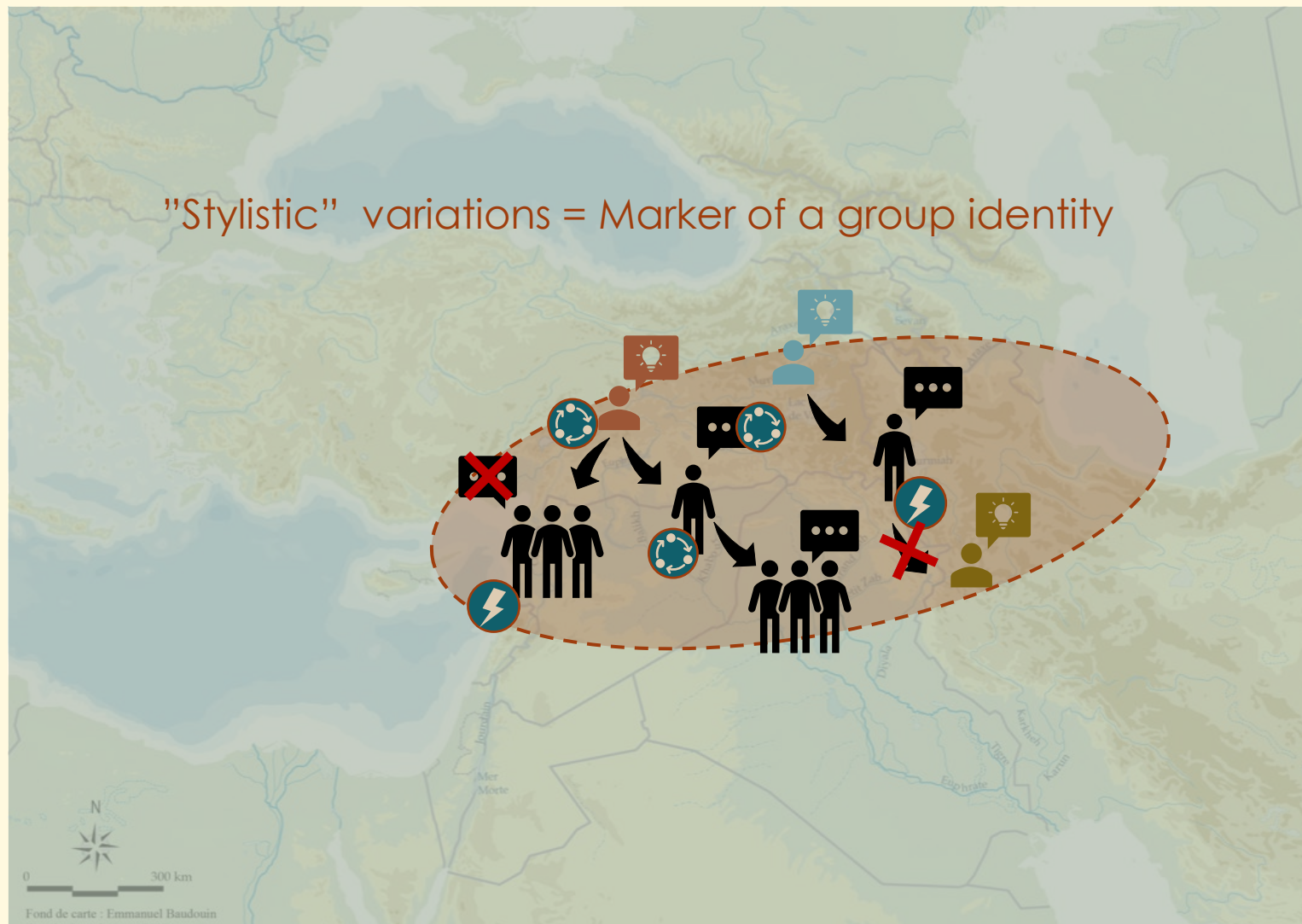
Invention



Diffusion, transmission



Convergence



## INTERPRETATION OF SEDENTARY OCCUPATIONS

Rythmes of occupations  
+



Reconstruction,  
dates

Subsistence means  
+



Archaeobotany,  
archaeozoology

Activities  
+



Artefacts

Architecture



Elevations and floors

## DIFFICULTY OF ARCHITECTURE STUDY FOR NEOLITHIC

Time



No text



"Perishable" material



Earth everywhere



Scale

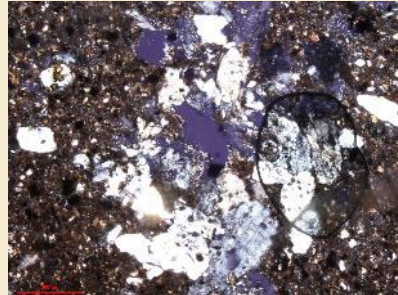




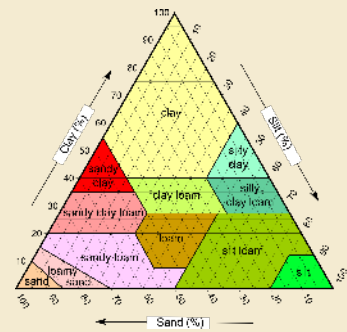
# MICROSCOPIC



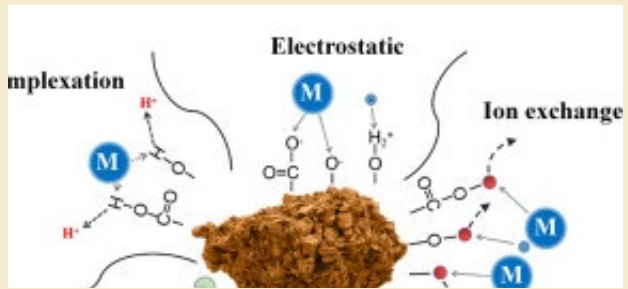
Microscale



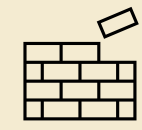
Geology



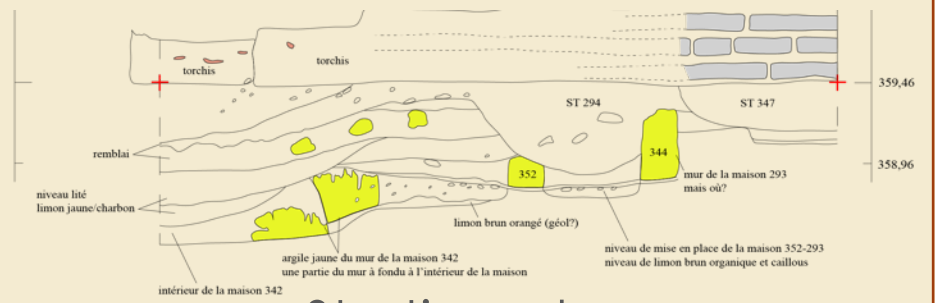
Soil physic



Soil chemistry



# MACROSCOPIC



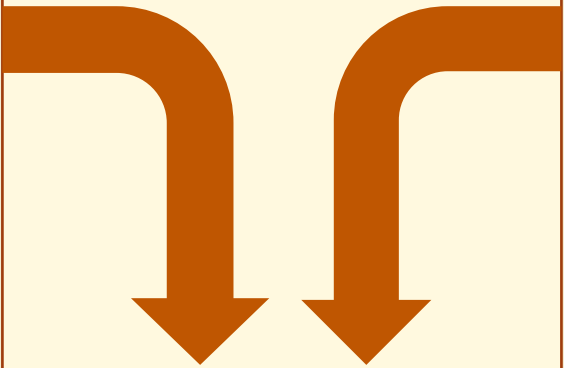
Stratigraphy



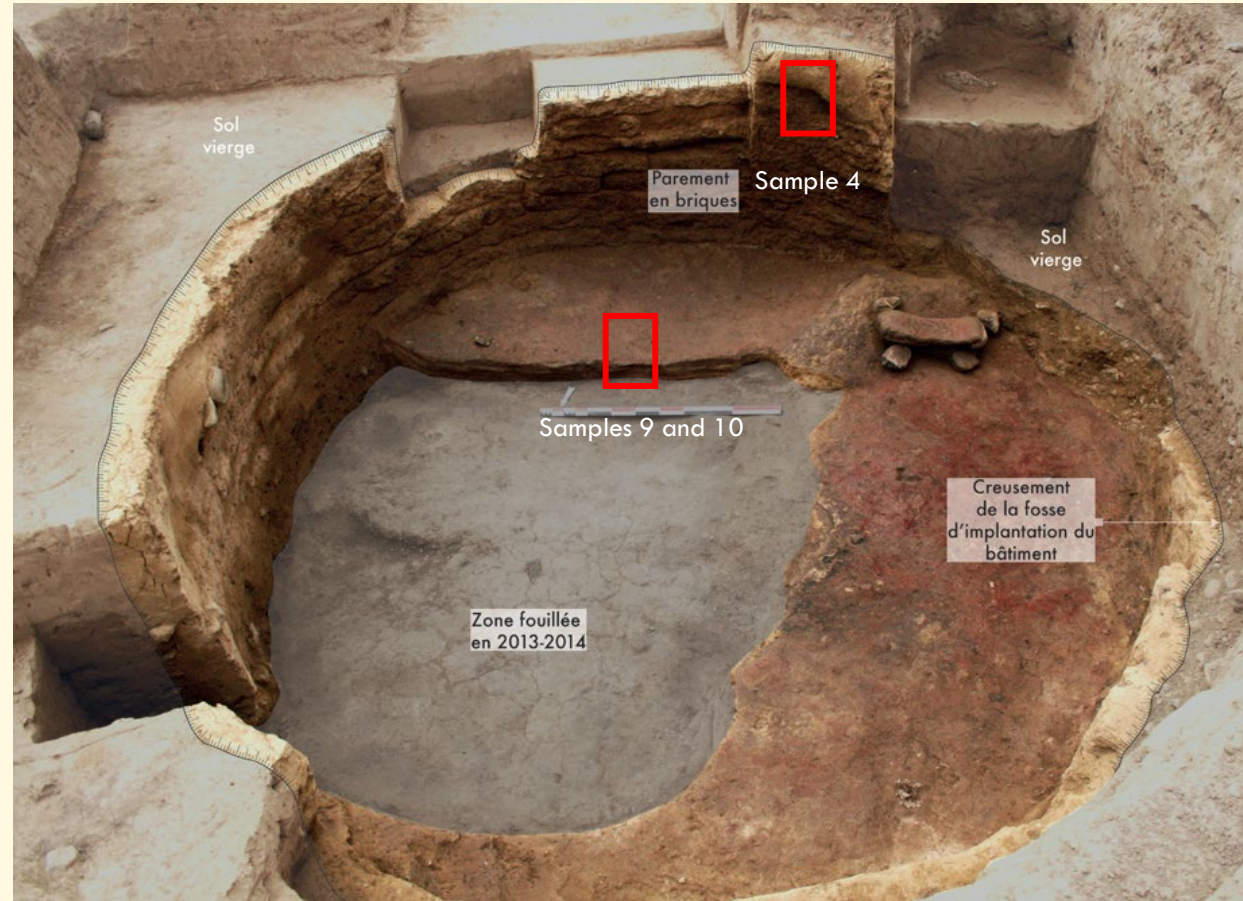
Spatial organsiation



Human artefacts



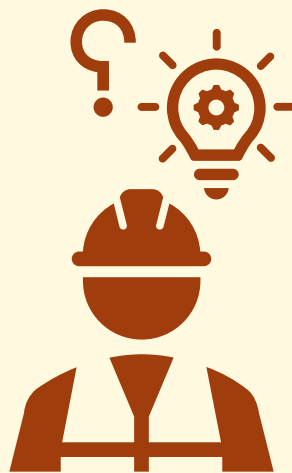
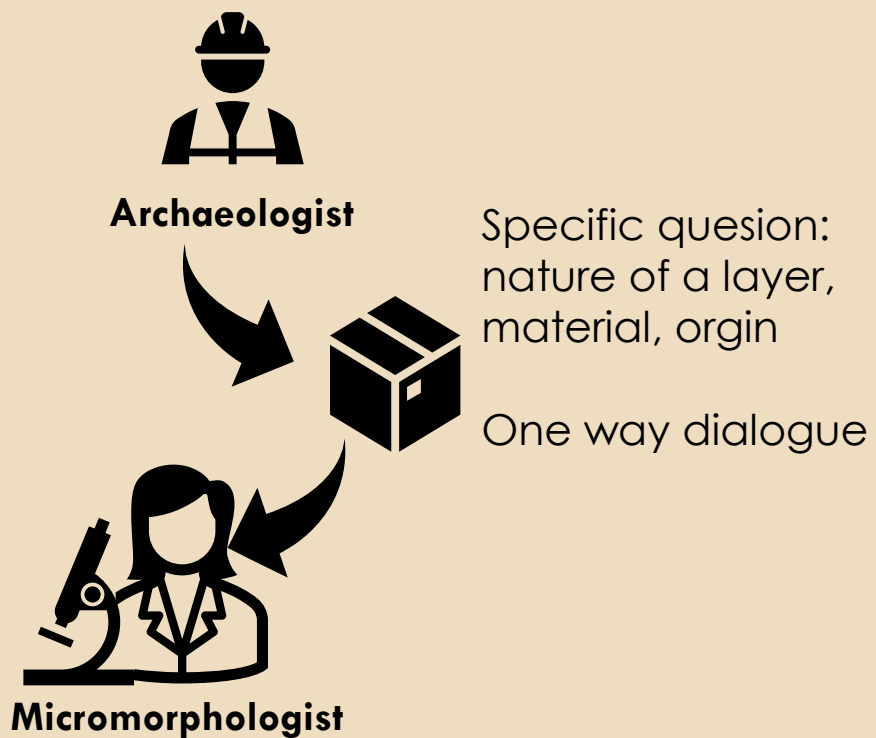
**MULTISCALAR**  
**"CHAÎNE OPÉRATOIRE"**  
**CULTURAL FEATURES**



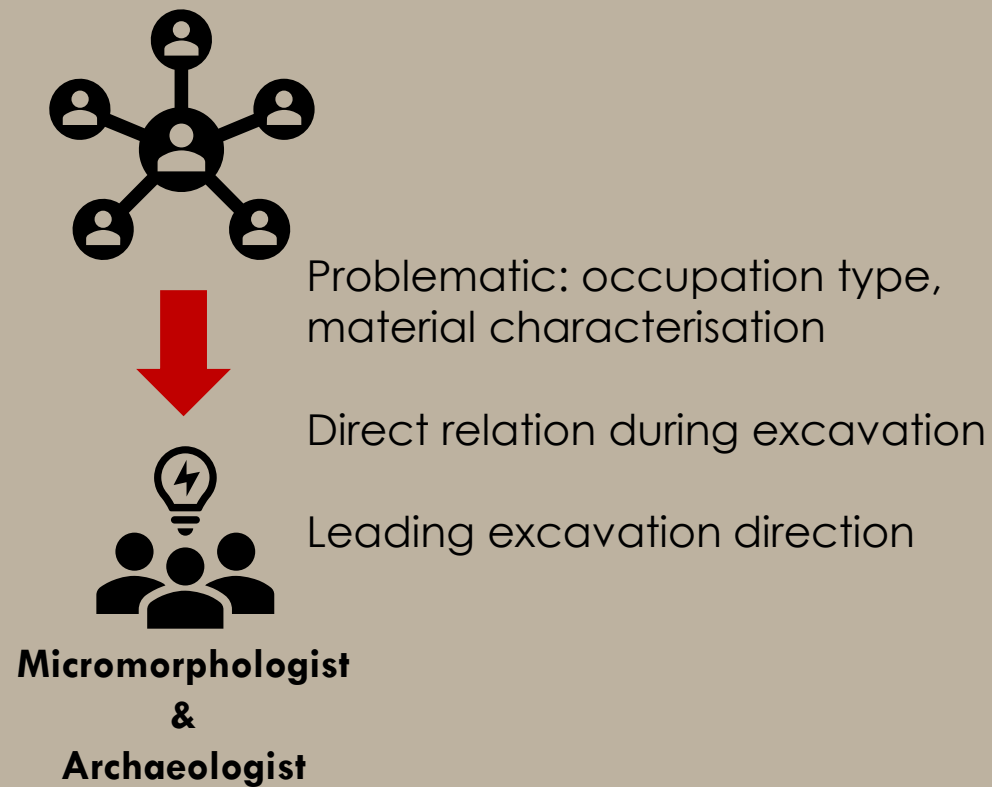
@Mission Boyuk Kesik

**What elements of architectural identity in the Southern Caucasus cultures during Neolithic macroscopic and microscopic observations are able to identify?**

### Expertise



### Combined study







### Archaeological site

Macroscopic analyse  
(colour, layout, stigmata...)  
Stratigraphy  
Spatial organisation  
(site, building, rooms)

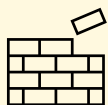


Infilling MR1031 Mentesh Tepe

### Sampling



Micro analysis

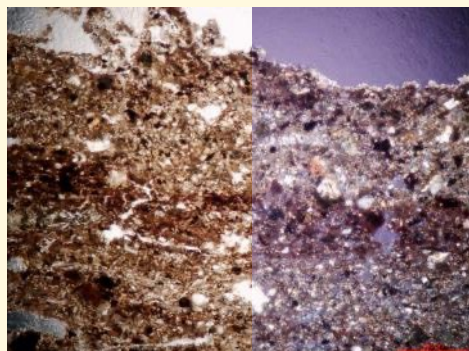


Macro analysis



### Laboratory

Micromorphology analysis  
(features) and chemical analysis  
"Second looks" (context,  
stigmata, comparison), *chaîne  
opératoire*



Compacted layers SU 1194  
on microscope (PPL/XPL)

### Results



### Reflexion

Collection comparison  
Additional experience  
Bibliography  
Ethnoarchaeology  
Experimental archaeology



Dung application on floor– Czechia 2019,  
Lisá et al. (2020)

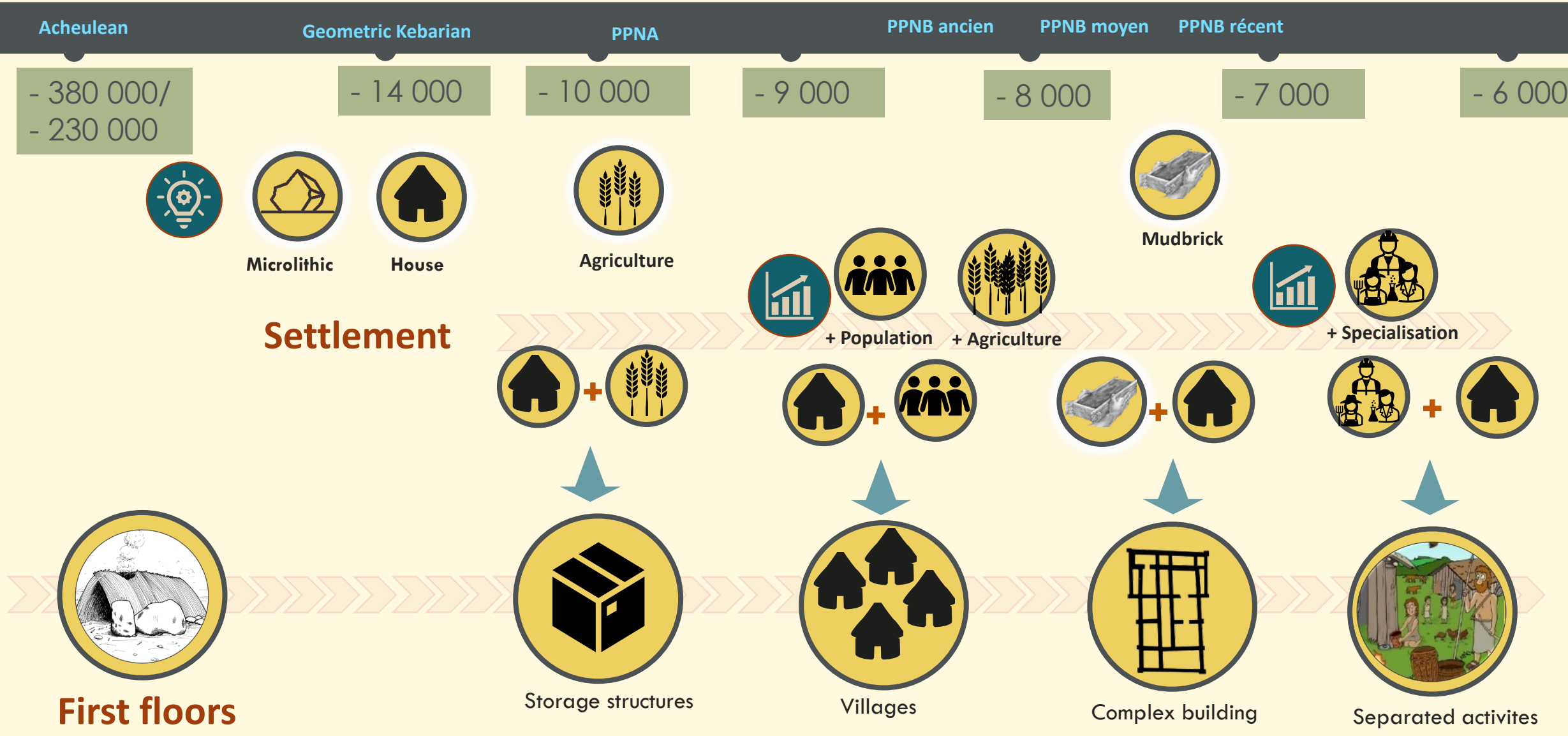
### Discussion

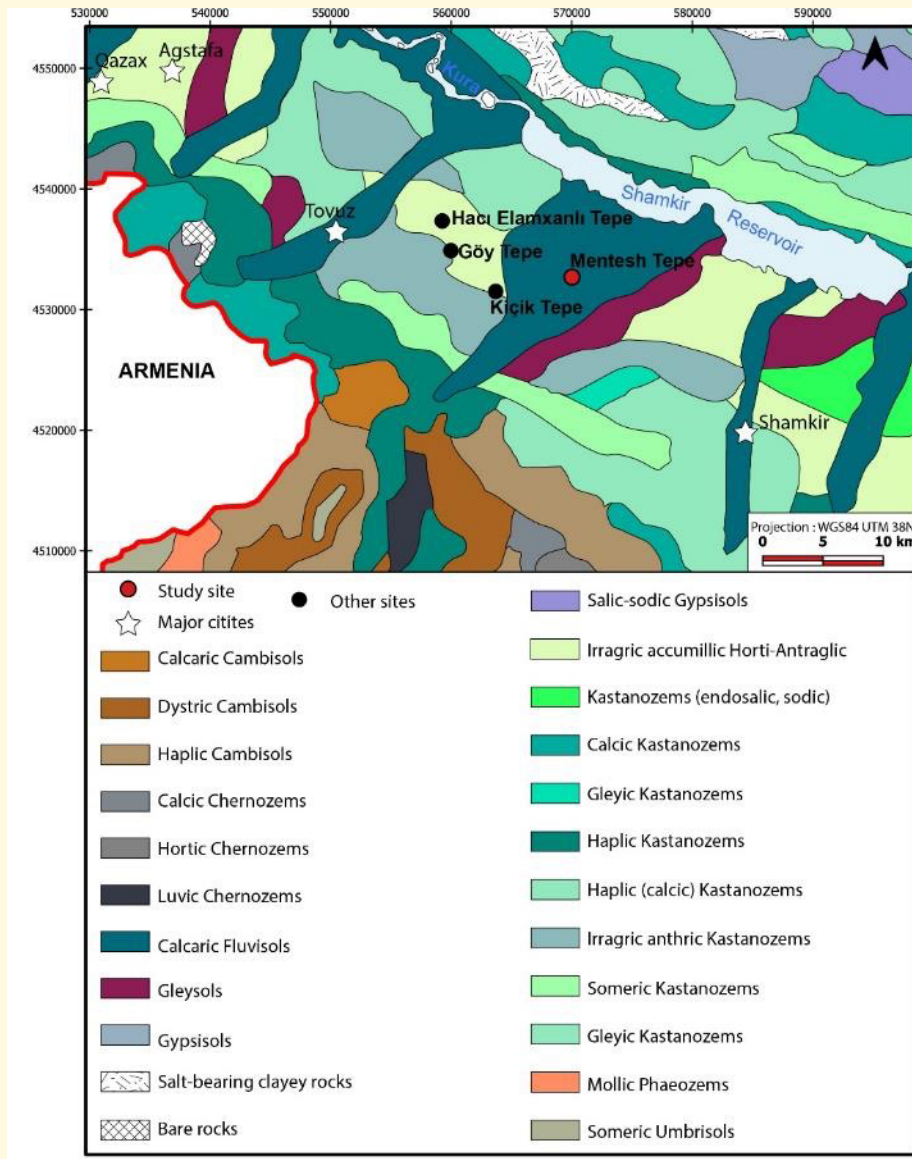


Cross analysis

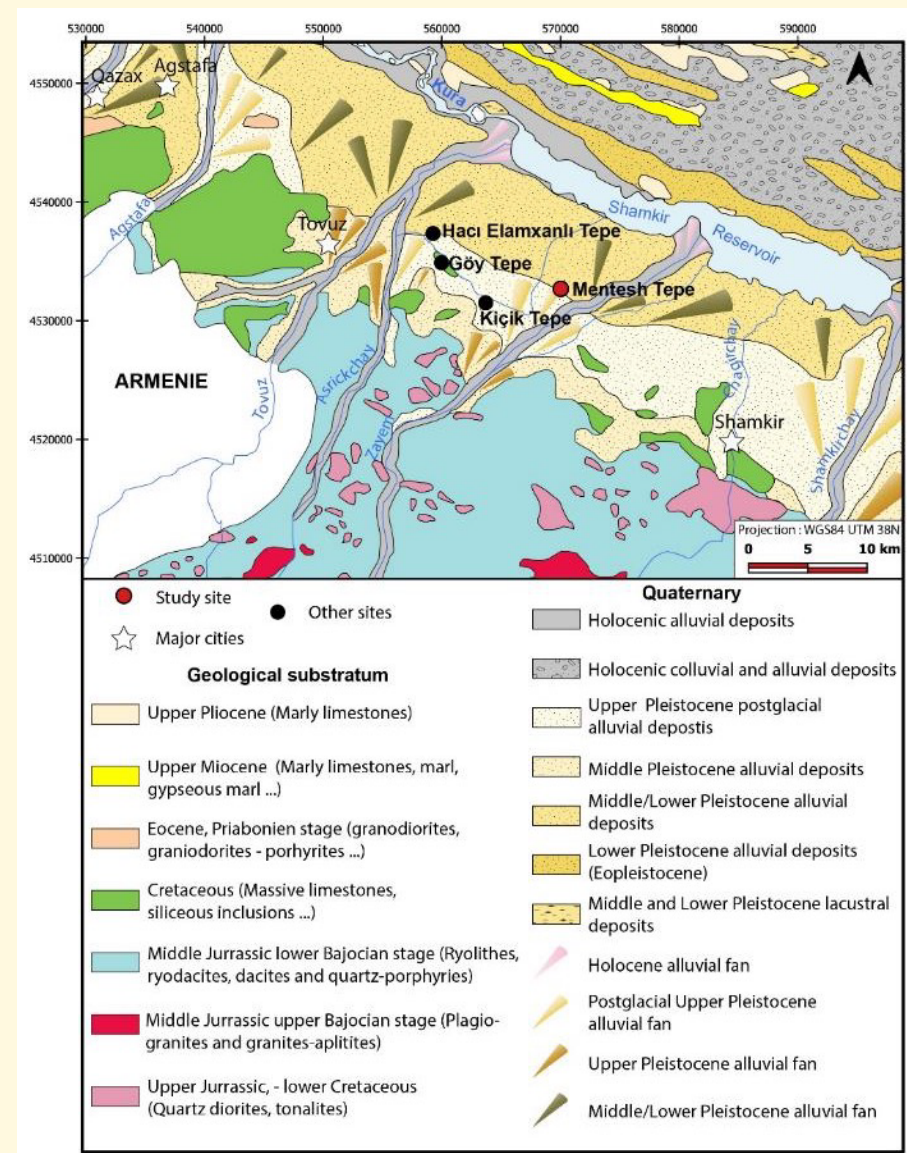
### Conclusion

New reflexion on  
technical transfer and  
development  
Regional corpus





Soil maps after Aliev et al. (1997, 2003)



Geological maps after Alizadeh et al. (2008) and Ollivier et al. (2015)

## MENTESH TEPE

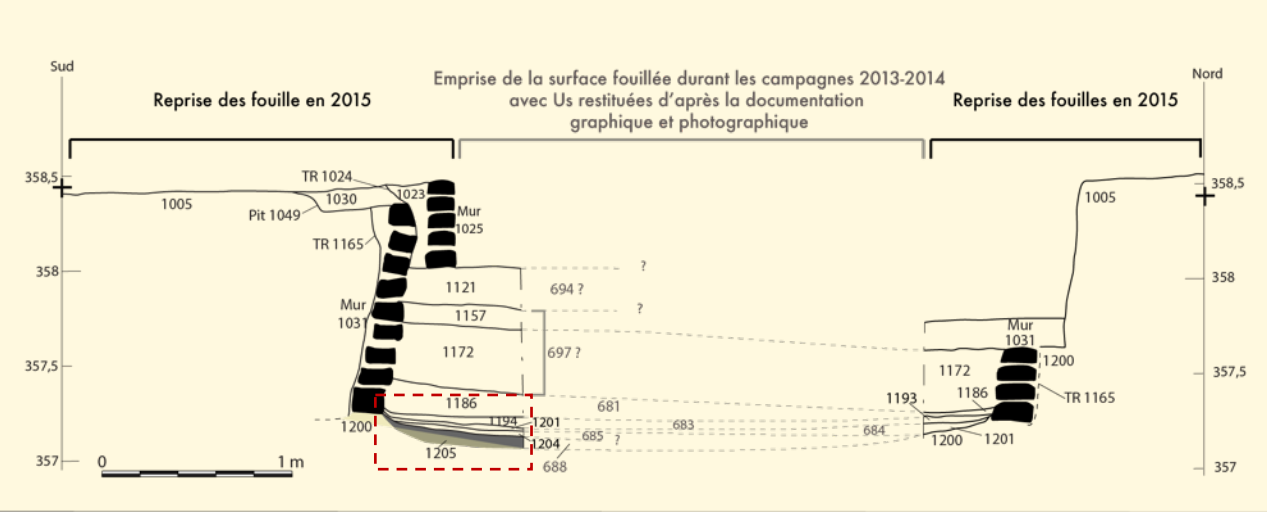
- Lower terrace:  $11,220 \pm 60$  B.P.
- Upper alluvial fan  $4,495 \pm 35$  B.P.
- Discovered in the 1960's
- 2008 – 2015 B. Lyonnet and F. Guliyev
- Neolithic: 7,750 – 7,600 B.P.
- Chalcolithic: 6,700 – 6,080 B.P.
- Bronze Age: 5,400 – 4,350 B.P.



Mentesh Tepe location in the Middle Kura valley (Google maps)



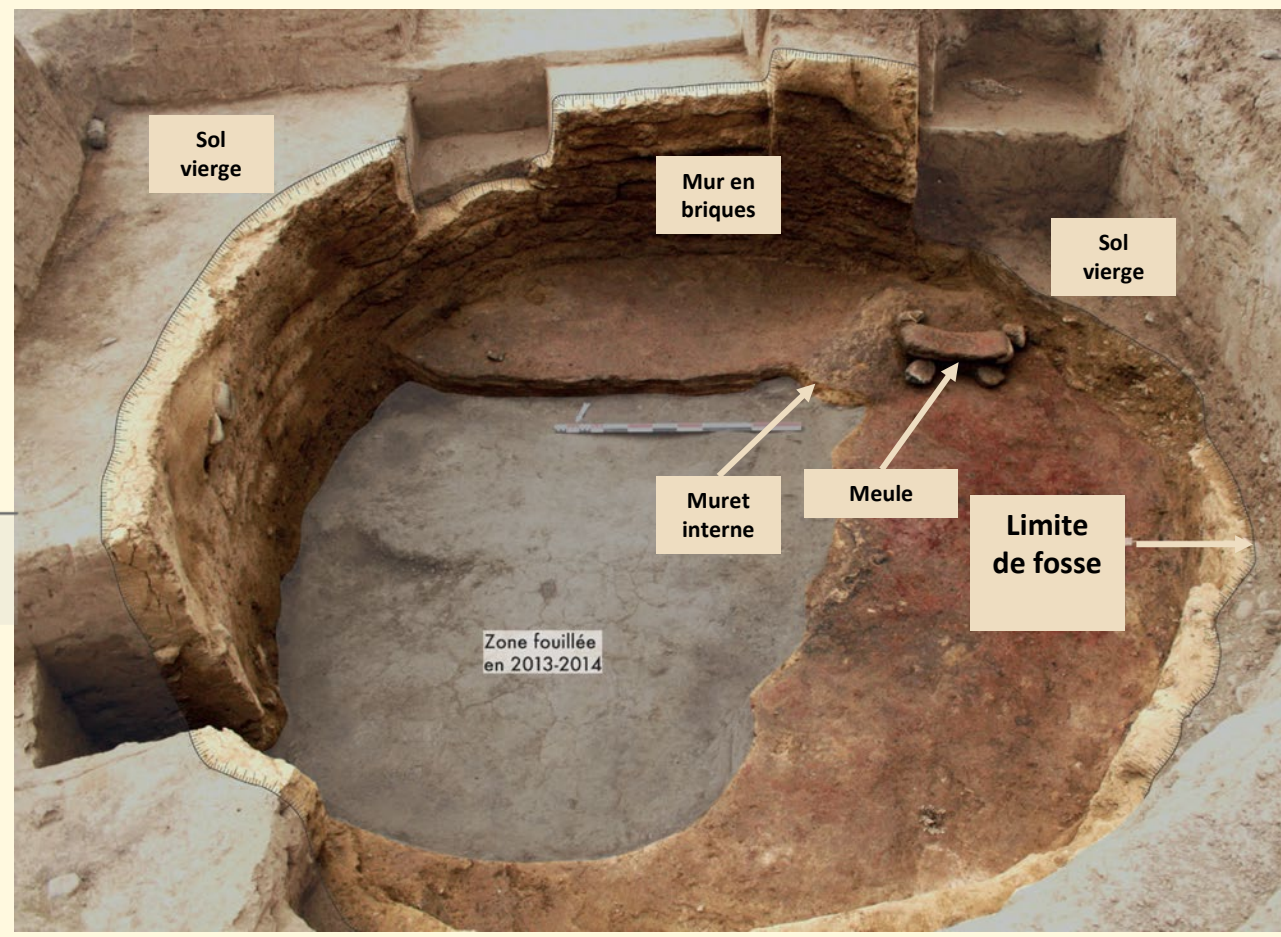
Mentesh Tepe Neolithic phase structures  
 Mathias Bellat, Emeline Degorre @Mission Boyuk Kesik



**Légende**

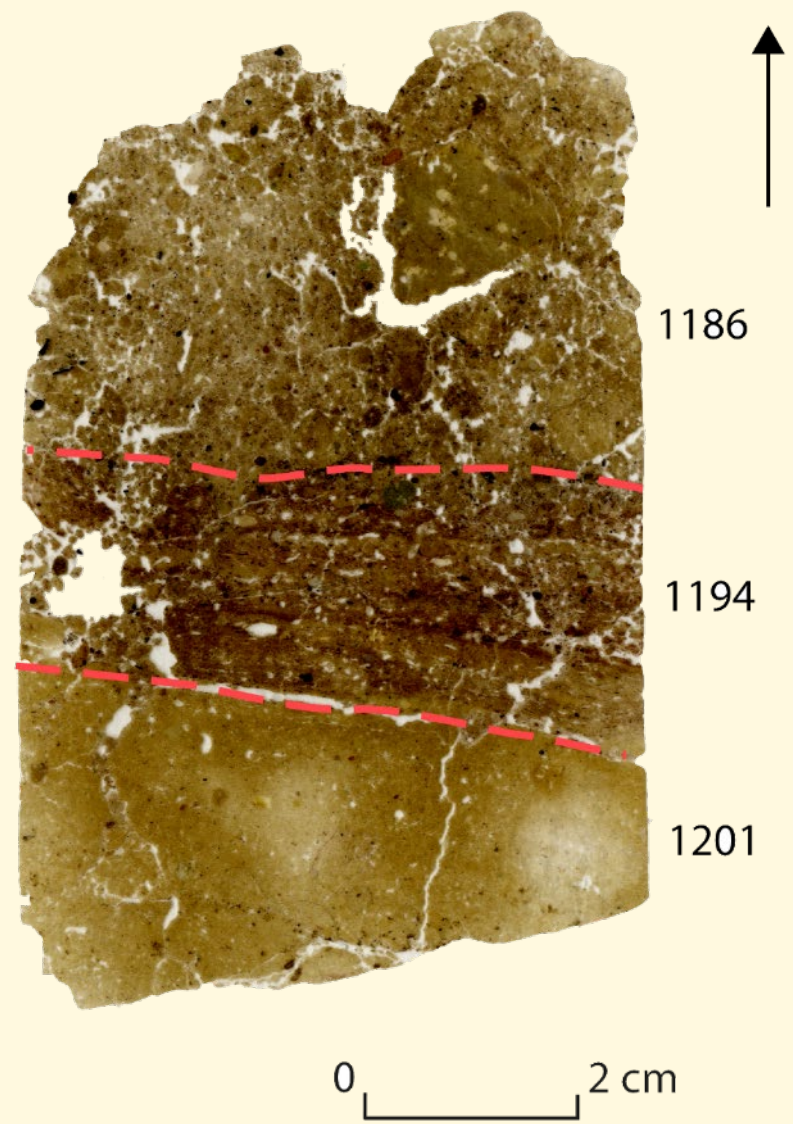
- Surface fouillée durant les campagnes 2013/2014
- Radier argilo-limoneux (Us 1205)
- Briques crues

Profil section of MR1031 infilling @Mission Boyuk Kesik





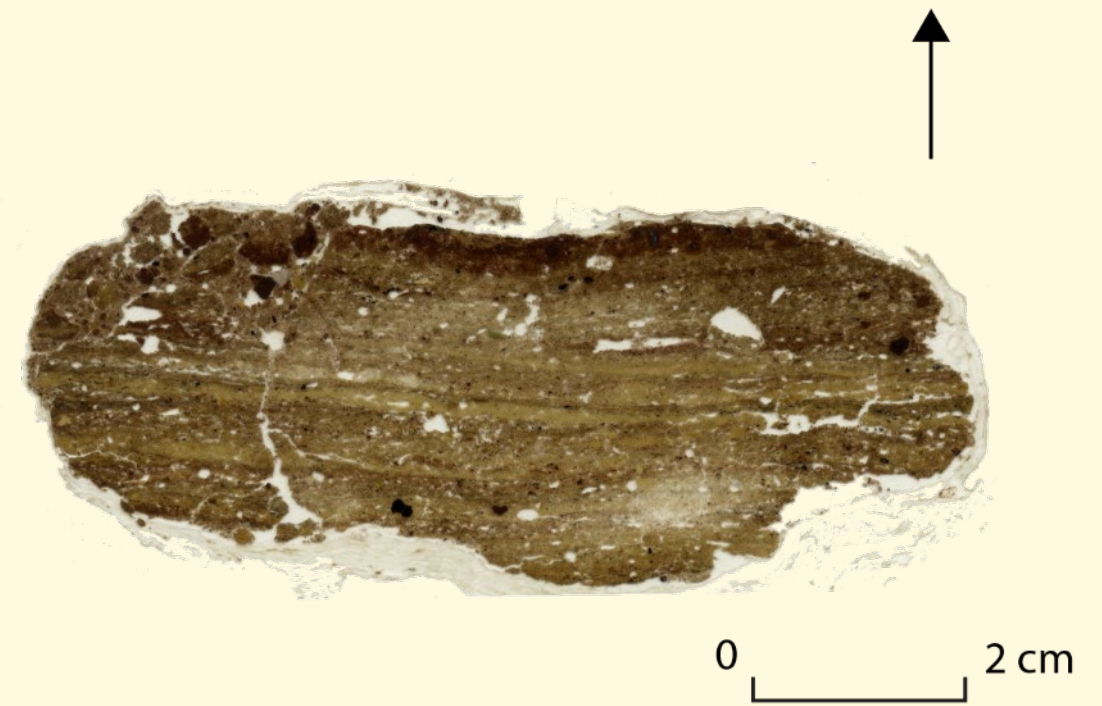
Location of the thin section sampling @Mission Boyuk Kesik



Sample MT2015Micro\_09



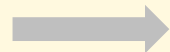
Bottom of the MR1031 structure @Mission Boyuk Kesik



Sample MT2015Micro\_10



## MAIN FEATURES



## INTERPRETATION

- 1** Elongated planar pseudomorphous voids
- 2** Bone, charcoal, flint, seed
- 3** Silt, clay crust, hypocostings
- 4** Residual agregate
- 5** Phytoliths
- 6** Cracks and sub/horizontal organisation

Plant material

Anthropic artefact, activity

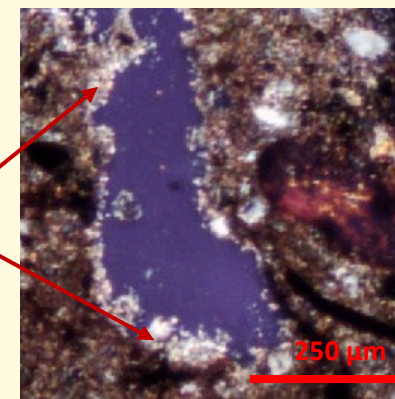
Water stagnation/ circulation

Pedofeatures from soil

Plant material

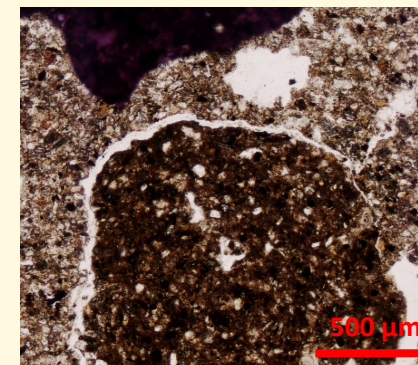
Trampling

**3**



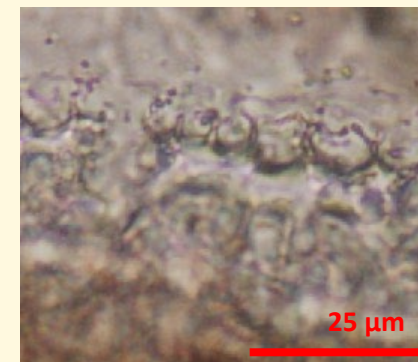
SU 1204

**4**



MR1025

**5**



SU 1204

## FEATURES

Elongated planar  
pseudomorphous voids



Charcoal, burnt bones and  
pseudomorphous fibers



Cracks, sub/horizontal  
organisation and microlayers



## INTERPRETATION

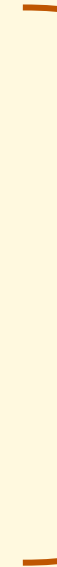
Vegetal  
material

+

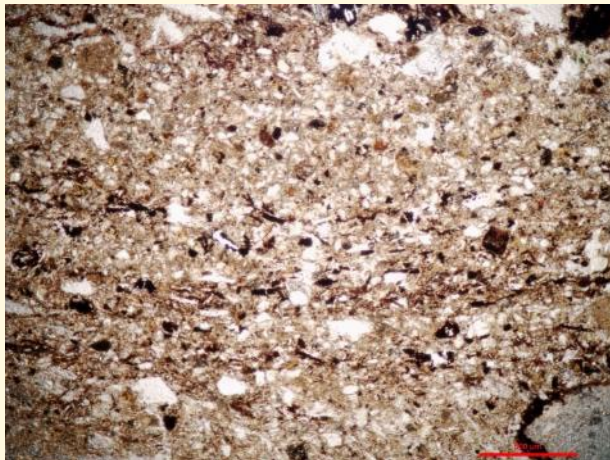
Anthropic  
components

+

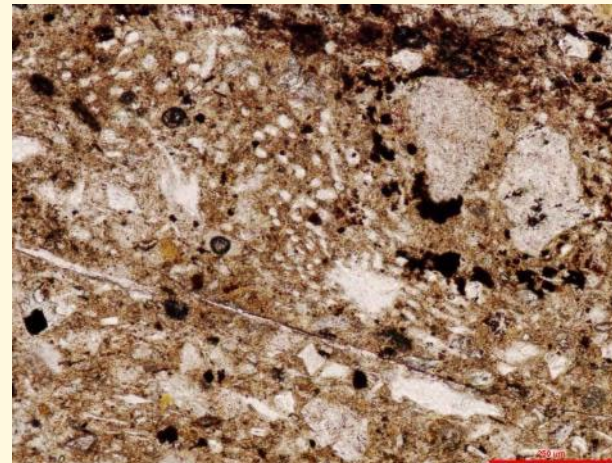
Trampling



**An occupation level  
with horizontal  
organisation and a  
vegetal mattress?**



Microlayers horizontally oriented (PPL)



Pseudomorphous fibers (PPL)

## FEATURES

Iron oxydation, hypococoatings and silty-calyic intercalation



## INTERPRETATION

Water circulation

+

Trampling of the upper layer (1194)

+

Absence of plant material

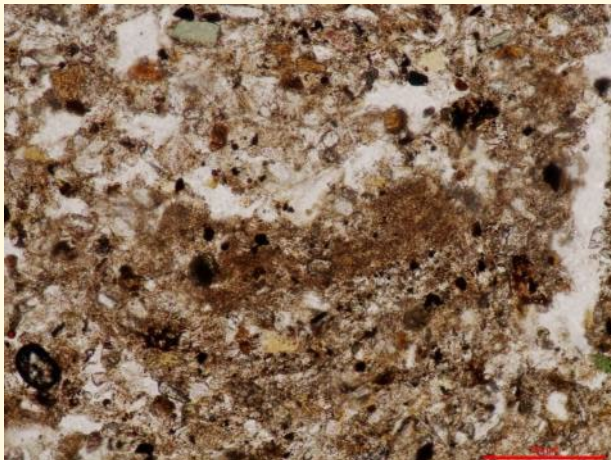
Sub horizontal cracks and vughs of the top



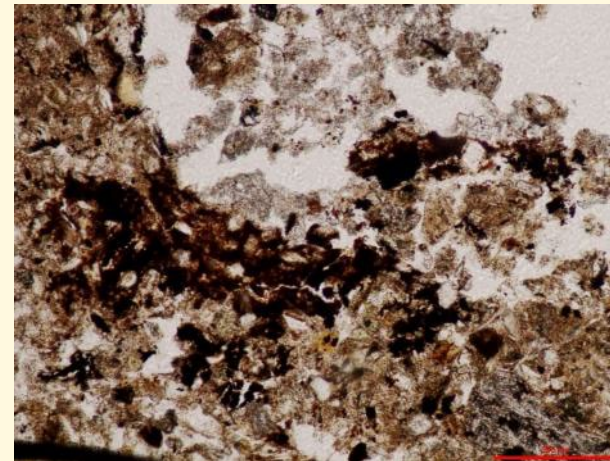
No pseudomorphous voids



**Levelling layer  
between two floors.  
Human activity with  
artefacts**



Clay lenses subhorizontally oriented (PPL)



Iron oxydation and micritic deposit (PPL)

## FEATURES

Elongated planar  
pseudomorphous voids,  
phytoliths

Clay and silt intercalation  
horizontal oriented

Charcoals, burnt bones

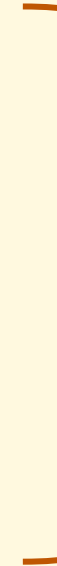


## INTERPRETATION

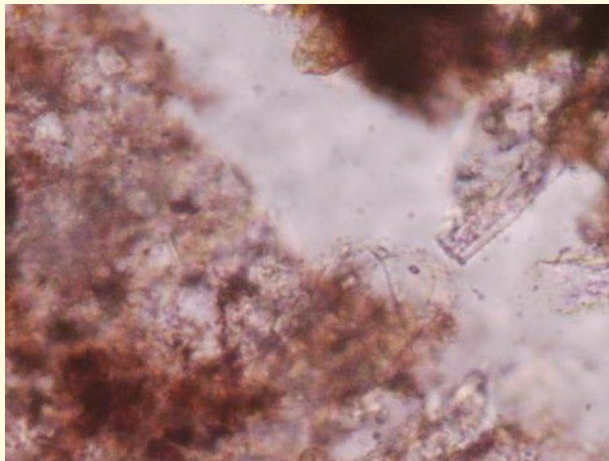
Vegetal  
material  
+

Trampling  
+

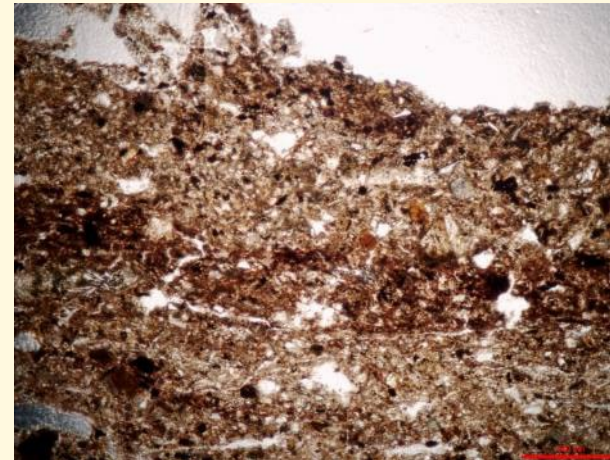
Anthropic activities



**Floor level with  
anthropic  
component but  
regularly cleaned or  
less activity**



Planar phytoliths (PPL)



Brownish intercalation horizontally oriented (PPL)

## FEATURES

Massive aggregates within fine material

Shells, charcoal, burnt aggregates

## INTERPRETATION

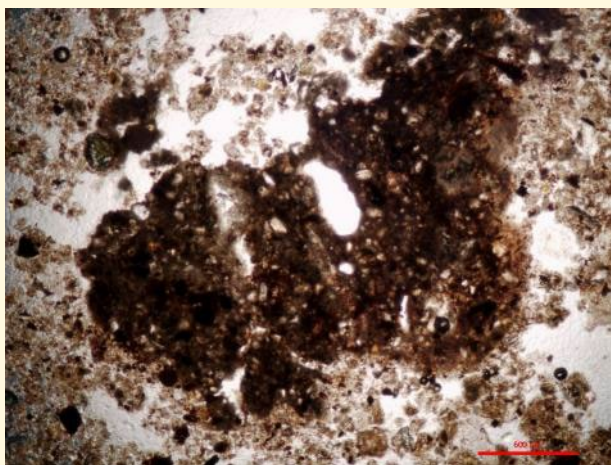
➔ Mediumly prepared material, relic from soil

+

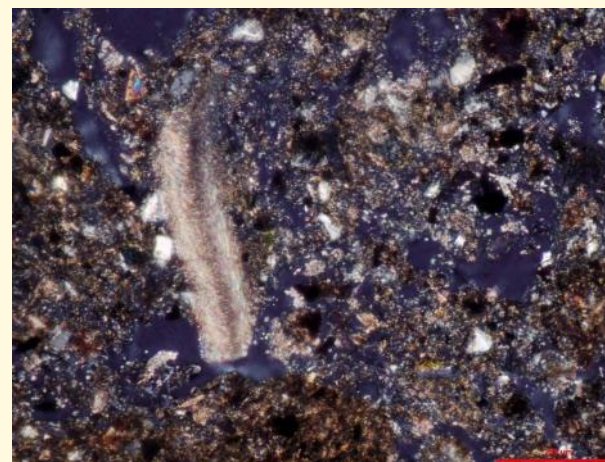
➔ Eroded earthen material

=

**Abandon level and destroyed earthen architecture material**

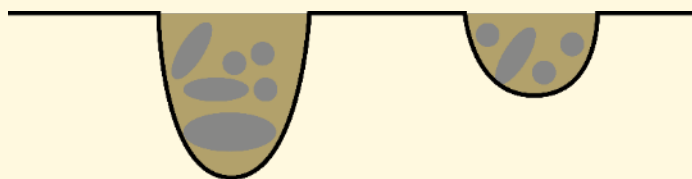


Massive aggregate in a fine matrix (PPL)

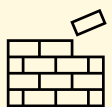


Shell in a massive fine matrix (XPL)

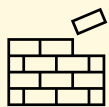
# WHAT UTILISATIONS OF THE BUILDINGS?



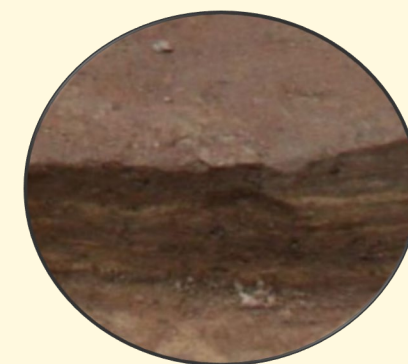
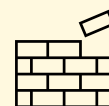
Leveling



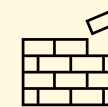
Destruction



Rebuilding



Successive floors

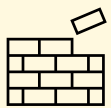


@ Friesem et al. 2014

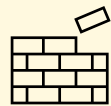
# WHAT UTILISATIONS OF THE BUILDINGS?



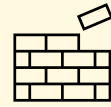
Red pigments



Few activities remains



Vegetal mattresses



Cleaning



Specialisation

MACROSCOPIC OBSERVATIONS



Site	Rebuild	Red pigment
<b>Mentesh Tepe</b>	Yes	Yes
Mureybet ( J.-C. Margueron 1980)	Yes	No
Hajji Firurz (Dyson et al. 1969)	Yes	Yes
Ali Kosh (Darabi 2018)	Yes	Yes



Building reuses



10 – 15 years (Nishiaki 2018)

Red pigment



Function/Specialisation



MICROSCOPIC OBSERVATIONS



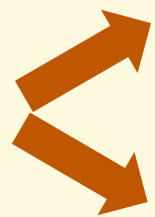
Site	Mattress	Human activity	Intense cleaning
<b>Mentesh Tepe</b>	Yes	No	Yes
Klimonas (Mylona et al. 2017)	Yes	Yes	No
Çatal Höyük (Ryan 2011)	Yes	Yes	Yes
Makri (Karkanias and Efstratiou 2008)	No	No	Yes
Qdeir 1 (Stordeur and Wattez 1998)	No	Yes	No
Kamiltepe (Shillito 2012)	Yes	Yes	No



@ Wikipedia



Vegetal mattresses



Confort

Protection



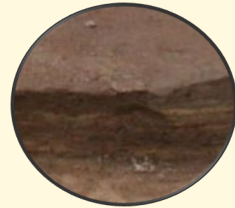
“Light installation”



Low human activity

## Common Near East/Mediterranean culture

Rebuilding and successive floors



Ocher pigments on the floors



Vegetal mattresses



## Local traditions ?

“Light” floors construction

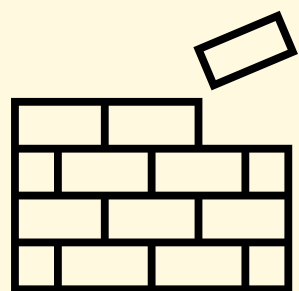


Few activities remains

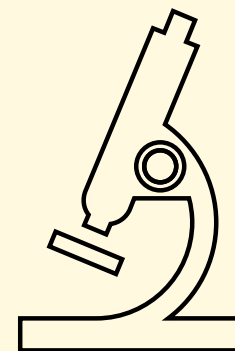


**No clear identification of regional architectural identity**

## MULTIDISCIPLINARY APPROACH

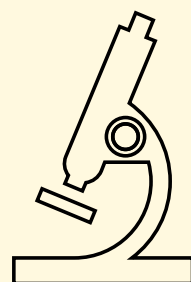
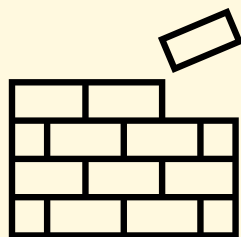


Ocher pigments on the floors

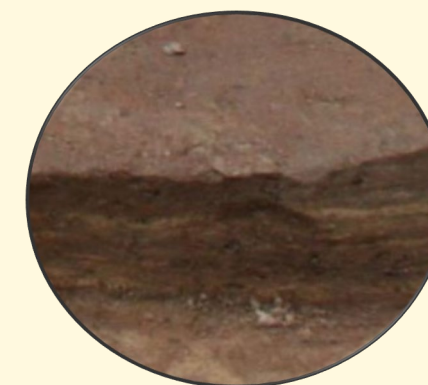


Few activities remains

Vegetal mattresses



Rebuilding and successive floors



Thank you for your attention !



*New insights into the Neolithic architecture of the  
Southern Caucasus: A micromorphological case-study  
from Mentesh Tepe (middle Kura Valley, Azerbaijan)*  
Bellat et al. 2023

**Mathias.Bellat@uni-tuebingen.de**