



Dusting off the old stones. Correlating old collections with new excavations: The case of "layer 2" of Coupe-Gorge (Montmaurin, France)

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Dusting off the old stones.

CORRELATING OLD COLLECTIONS WITH NEW EXCAVATIONS: THE CASE OF 'LAYER 2' OF COUPE-GORGE (MONTMAURIN)

Mathias C., Boulbes N., Garcia-Fermet T., Guadelli J.-L., Lartigot-Campin A.-S., Moigne A.-M., Testu A., Utge J., Violet A.

Montmaurin karstic system (Haute-Garonne, France) was explored early in the XXth century in the frame of quarrying activities. Several sites were thus excavated (Middle Pleistocene >> Holocene). A new project (dir. A. Violet) is conducted since 2018 in order to date and understand the environmental and cultural context of occupations. New fieldworks are focused on the upper levels of **Coupe-Gorge** cave, especially **layers from Unit 2**, which were previously attributed by L. Méroc to Upper Paleolithic (Chatelperronian, Aurignacian at the basis & Magdalenian on the top) with possible perturbations.

Evidences of occupations dated to the end of Middle Paleolithic / onset of Upper Paleolithic are still rare in the Pyrenees. We present here the report of our analysis on the material from old and new excavations to better define the context and components of this stratigraphical unit.

FAUNAL REMAINS

	Old exc.	New exc.	Total
 Bovinae ind.	62	27	89
<i>Bison priscus</i>	18	3	21
<i>Bos primigenius</i>	6	-	6
<i>Rupicapra pyrenaica</i>	8	2	10
<i>Capra pyrenaica</i>	7	4	11
 Rangifer tarandus	165	74	239
<i>Capreolus capreolus</i>	6	8	14
<i>Cervus elaphus</i>	43	17	60
<i>Megaloceros giganteus</i>	3	-	3
<i>Sus scrofa</i>	1	1	2
 Equus sp. (cf. gallicus)	49	34	83
<i>Equus hydruntinus</i>	4	5	9
<i>Coelodonta antiquitatis</i>	3	3	6
<i>Mammuthus primigenius</i>	2	1	3
<i>Mustela sp.</i>	1	11	12
<i>Meles meles</i>	1	-	1
<i>Felis silvestris</i>	-	1	1
<i>Panthera spelaea</i>	1	1	2
<i>Crocota crocuta</i>	6	7	13
<i>Ursus arctos</i>	-	6	6
Ursus spelaeus	49	112	161
<i>Vulpes lagopus</i>	-	1	1
Vulpes vulpes	61	125	186
<i>Cuon alpinus</i>	-	1	1
<i>Canis lupus</i>	15	18	33
Total	511	462	973

- ▶ Mostly reindeers, foxes and bears
- ▶ Consistency between old and new excavations
- ▶ Low impact of carnivores (even if present) & human actions
- ▶ ≠ spatial location of carnivores species and burnt bones (hearths) within the site; presence of coprolites (*Crocota*) and deciduous teeth = occupations by carnivores

ENVIRONMENTAL DATA

Palynological analysis

(Girard & Renault-Miskovsky, 1979):

Steppe grasslands/ Reduced tree & shrub strata / dense & diversified herbaceous stratum

- ▶ Cold & dry continental climate

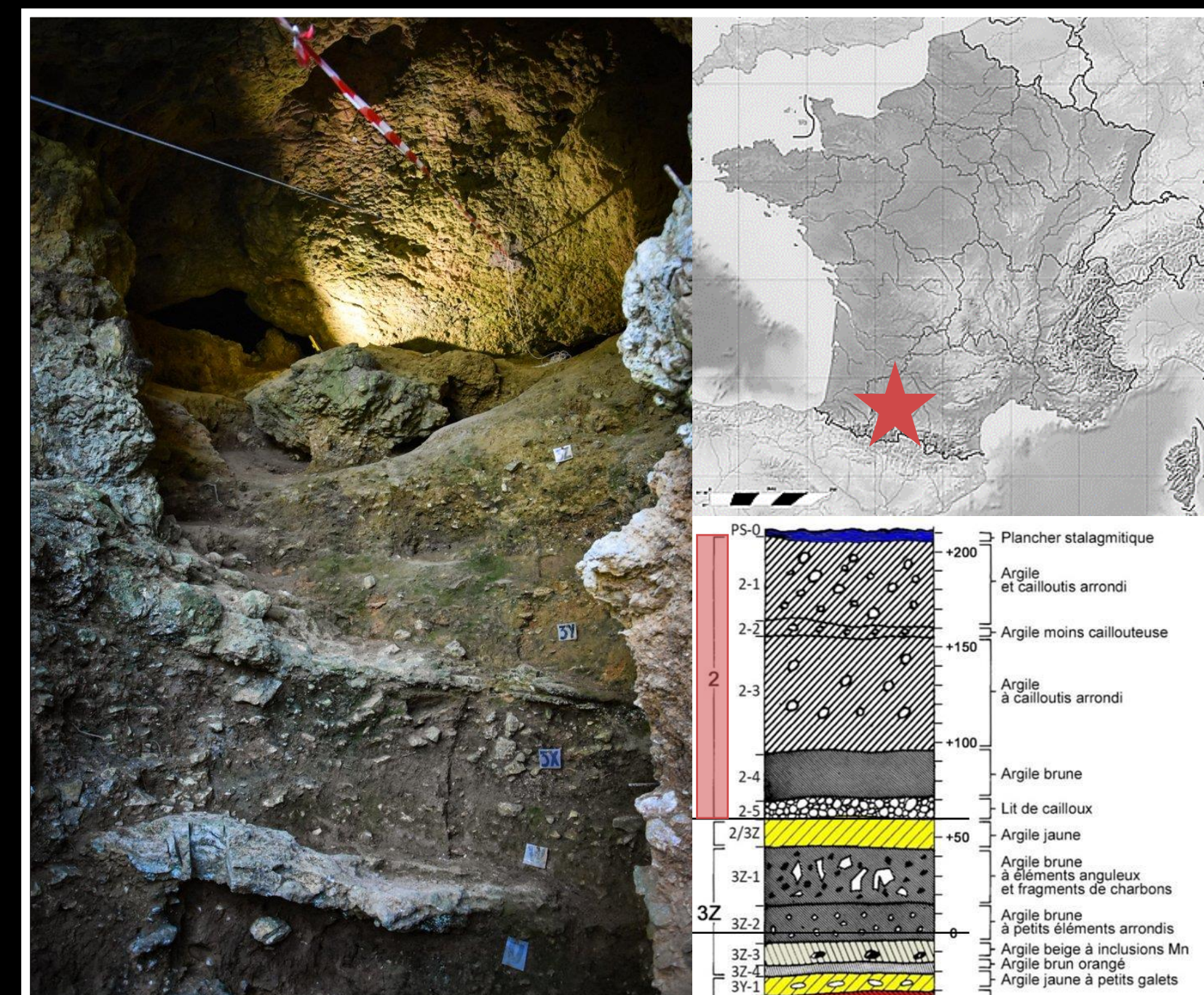
Avifauna: *Coturnix coturnix* & Cf. *Bubo scandiacus* = cold climate with steppes (to be confirmed)

CONCLUSIONS

- ▶ Mixed occupations by both Humans and Carnivores in several layers
- ▶ Upper Pleistocene = MIS 3? (59-27 ka)
- ▶ Possible ancient *Homo sapiens* humerus (DNA preliminary results from coprolites* & sediment**)

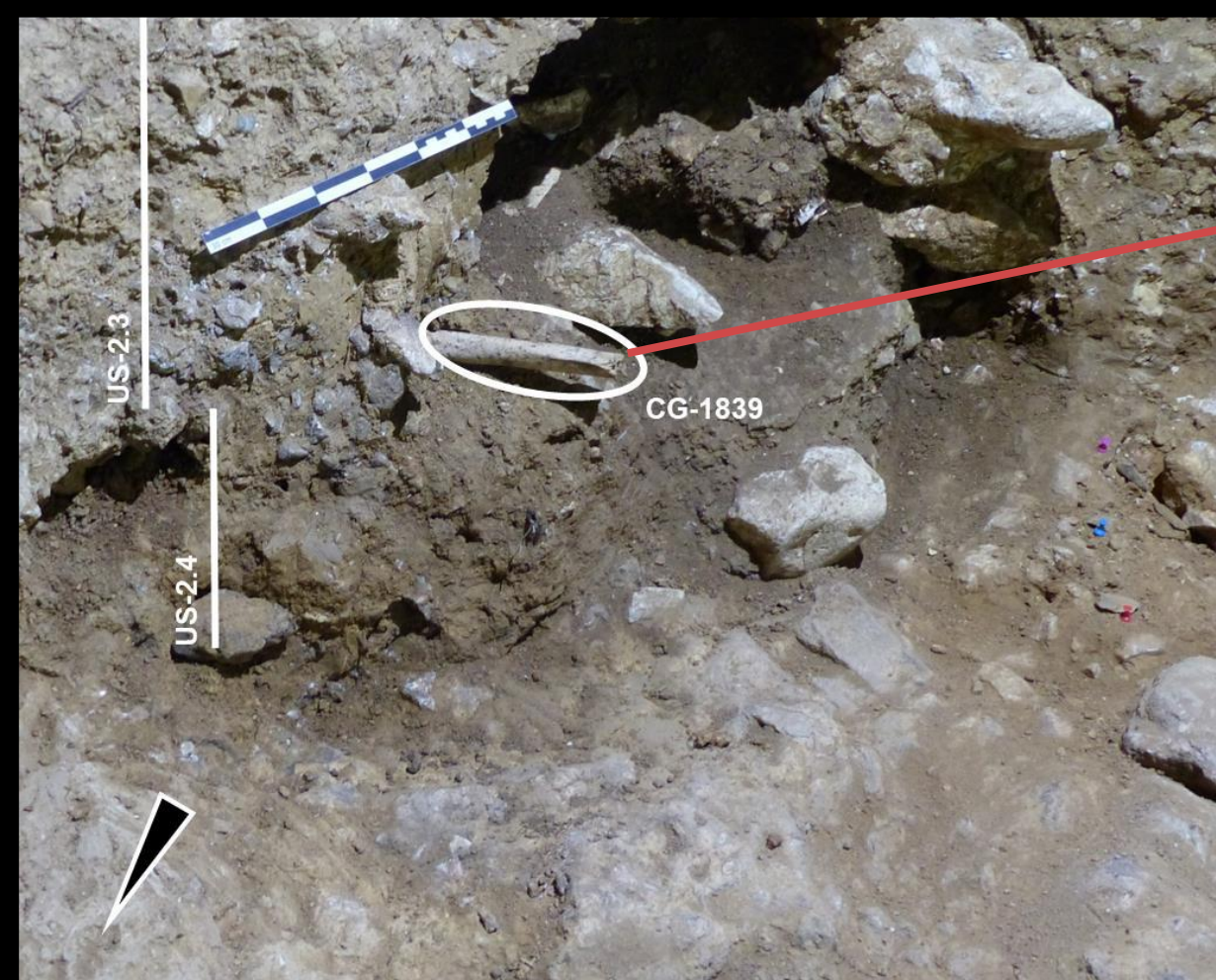


- ▶ A possible combination/mix of Upper and Middle Paleolithic lithic components = palimpsest or short term occupations. Possible dispersion of older artefacts from the chimney (cf. Cammas & Gaillard hypothesis) – No long knapping sequences *in situ* so far
- ▶ Difficulty to assess lithic industries using both quartzites & flints from the UP
- Perspectives: radiocarbhone dates on charcoals & directly on the human humerus with DNA sampling (taxonomic attribution); further climate considerations & spatial analysis**



Location of Coupe-Gorge cave and stratigraphy of the Upper Units.

THE HUMAN HUMERUS (2022)

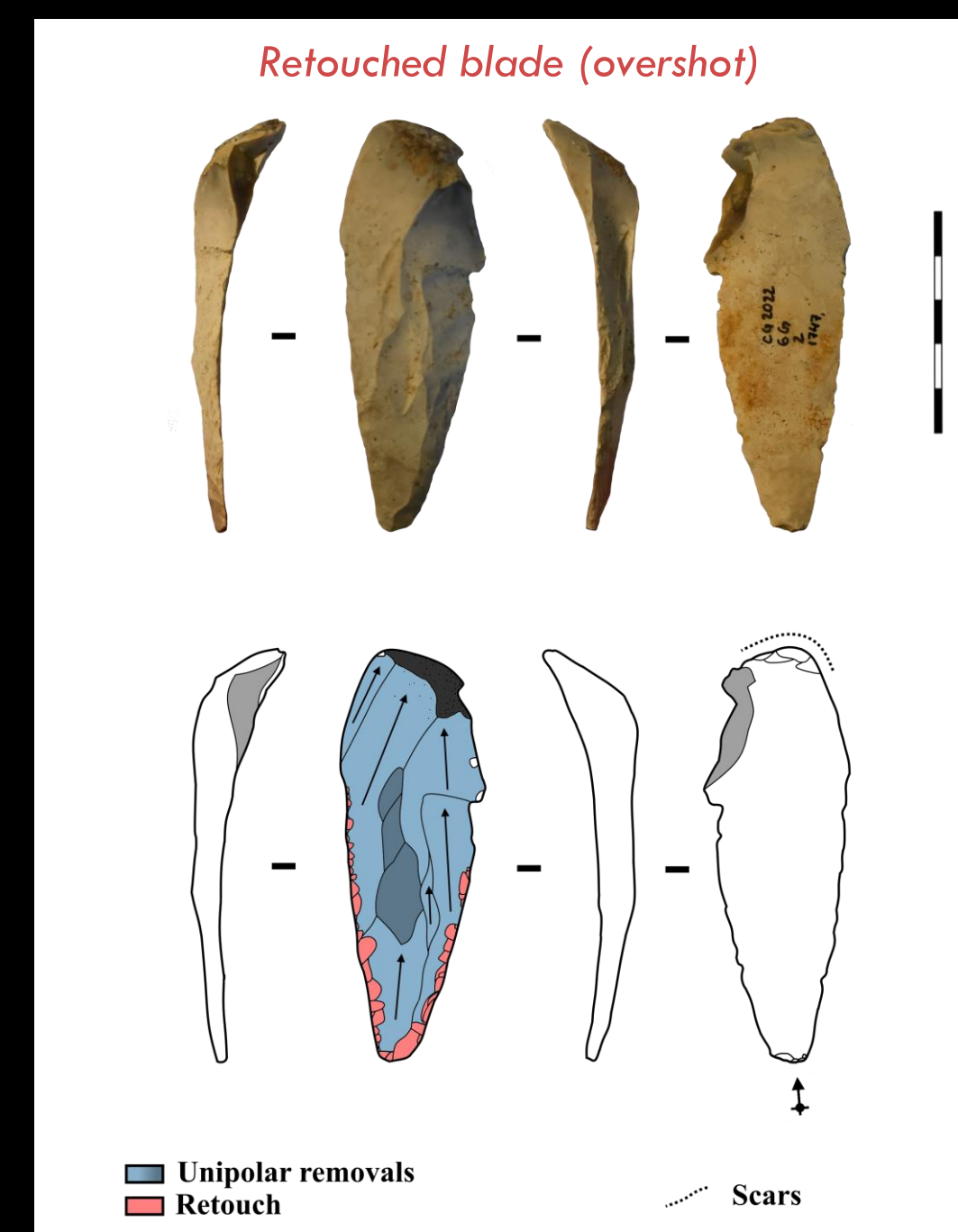
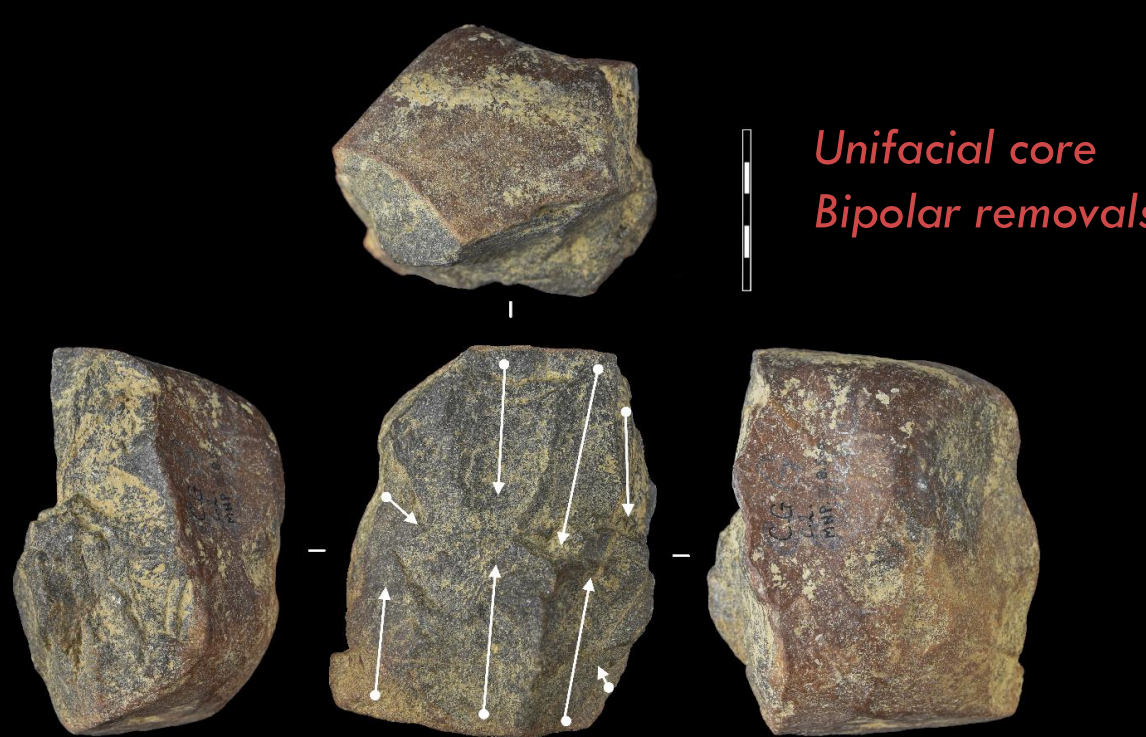


- ▶ Maybe an ancient *Homo sapiens* left humerus, but falls within the variation of Neanderthals and *Homo heidelbergensis*
- ▶ Carnivores traces (on fresh bone)



LITHIC TECHNOLOGY

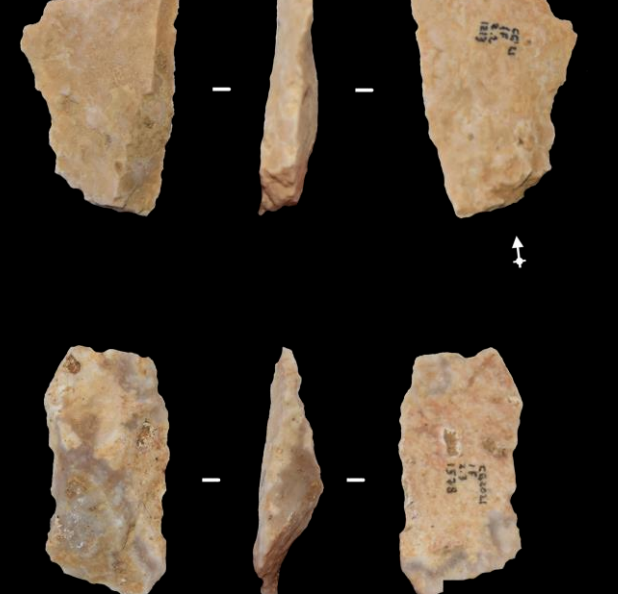
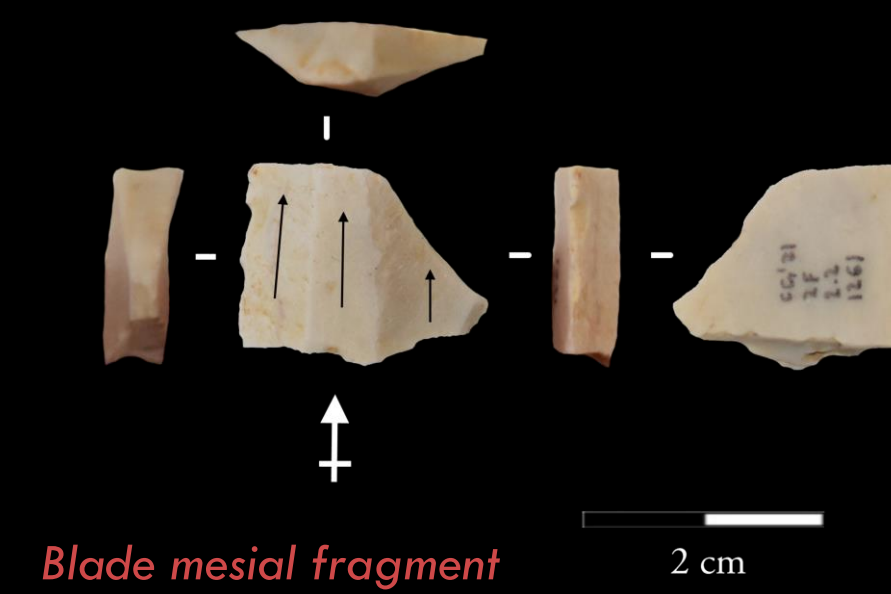
- ▶ Local raw materials: quartzites (Garonne alluviums) and Danian flints (Petites Pyrénées); some Lydian and Flysch flints (ca. 50 km West from the site)
- ▶ Fragmented *chaînes opératoires*: short term occupations
- ▶ Undiagnostic quartzite main production (S.S.D.A. etc.)
- ▶ Laminar and Discoid components on flint



Cammass collections (MNP)	Quartzites	Flints	Volcan.	Limestone	Total
Flakes without cortex	9	6	-	-	15
Flakes with residual cortex	9	2	1	-	12
Semi-cortical & cortical flakes	5	1	-	1	7
Elongated flakes/blades	-	3	-	-	3
Retouch flakes	-	1	-	-	1
Total flakes	23	13	1	1	38
S.S.D.A. cores - 2, 3 surfaces	2	1	-	-	3
Unifacial cores	2	2	-	-	4
Kombewa cores	-	1	-	-	1
Cores « à pan » (elongated)	-	1	-	-	1
Bipolar on anvil cores	1	-	-	-	1
Total cores	5	5	-	-	10
Hammerstones & fragments (tools)	4	-	-	-	4
Total	32	18	1	1	52
%	61,5	34,6	1,9	1,9	100



New excavations	Quartzite	Flints	Lydian	Quartz	Total
Chunks	-	1	-	-	1
Flakes	12	7	2	-	21
Laminar flakes, blades	2	6	1	-	9
Retouch flakes	-	1	-	-	1
Raw pebbles/cobbles	-	-	-	1	1
Cores or shaped items	1	-	-	-	1
Hammerstones & fragments (Retouched)	2	-	-	-	2
Total	17	15	1	1	36



* Analysis performed at the technical platform "Paléogénomique et Génétique Moléculaire P2GM", MNHN, with the collaboration of C. Bon and P. Verdu. ** Analysis performed by M. Meyer, L. Jauregui and J. Richter.

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