



HAL
open science

**The Middle Paleolithic sites of
Brive-Laroche-Aerodrome and their lithic assemblages:
A new key-site for the understanding of Neanderthal
movement dynamics and technical behavior in
Southwestern France.**

Cyrielle Mathias, Cyril Viallet, Paul Fernandes, Aurélie Ajas, Vincent Delvigne, Eugénie Gauvrit Roux, Christelle Lahaye, Jean-Pierre Platel, Mathieu Rué, Alain Turq, et al.

► **To cite this version:**

Cyrielle Mathias, Cyril Viallet, Paul Fernandes, Aurélie Ajas, Vincent Delvigne, et al.. The Middle Paleolithic sites of Brive-Laroche-Aerodrome and their lithic assemblages: A new key-site for the understanding of Neanderthal movement dynamics and technical behavior in Southwestern France.. European Society for the study of Human Evolution Meeting 2020, Sep 2020, Worldwide (virtual), Germany. hal-03149036

HAL Id: hal-03149036

<https://hal.science/hal-03149036>

Submitted on 22 Feb 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

THE MIDDLE PALEOLITHIC SITES OF BRIVE-LAROCHE-AERODROME AND THEIR LITHIC ASSEMBLAGES:

A NEW KEY-SITE FOR THE UNDERSTANDING OF NEANDERTHAL MOVEMENT DYNAMICS AND TECHNICAL BEHAVIOR IN SOUTHWESTERN FRANCE

Cyrielle Mathias¹, Cyril Viallet^{1,2}, Paul Fernandes^{2,3}, Aurélie Ajas², Vincent Delvigne^{3,4}, Eugénie Gauvrit-Roux⁵, Christelle Lahaye⁶, Jean-Pierre Platel⁷, Mathieu Rué^{2,8}, Alain Turq³, Gilles Monin² & Sébastien Bernard-Guelle^{2,9}

[1] UMR 7194 - HNHP, [2] Paléotime, [3] UMR 5199 - PACEA, [4] Service de Préhistoire - Liège University, [5] UMR 7264 - CEPAM, [6] UMR 5060 - IRAMAT CR2PA, [7] BRGM, [8] UMR 5140 - ASM, [9] UMR 7269 - LAMPEA

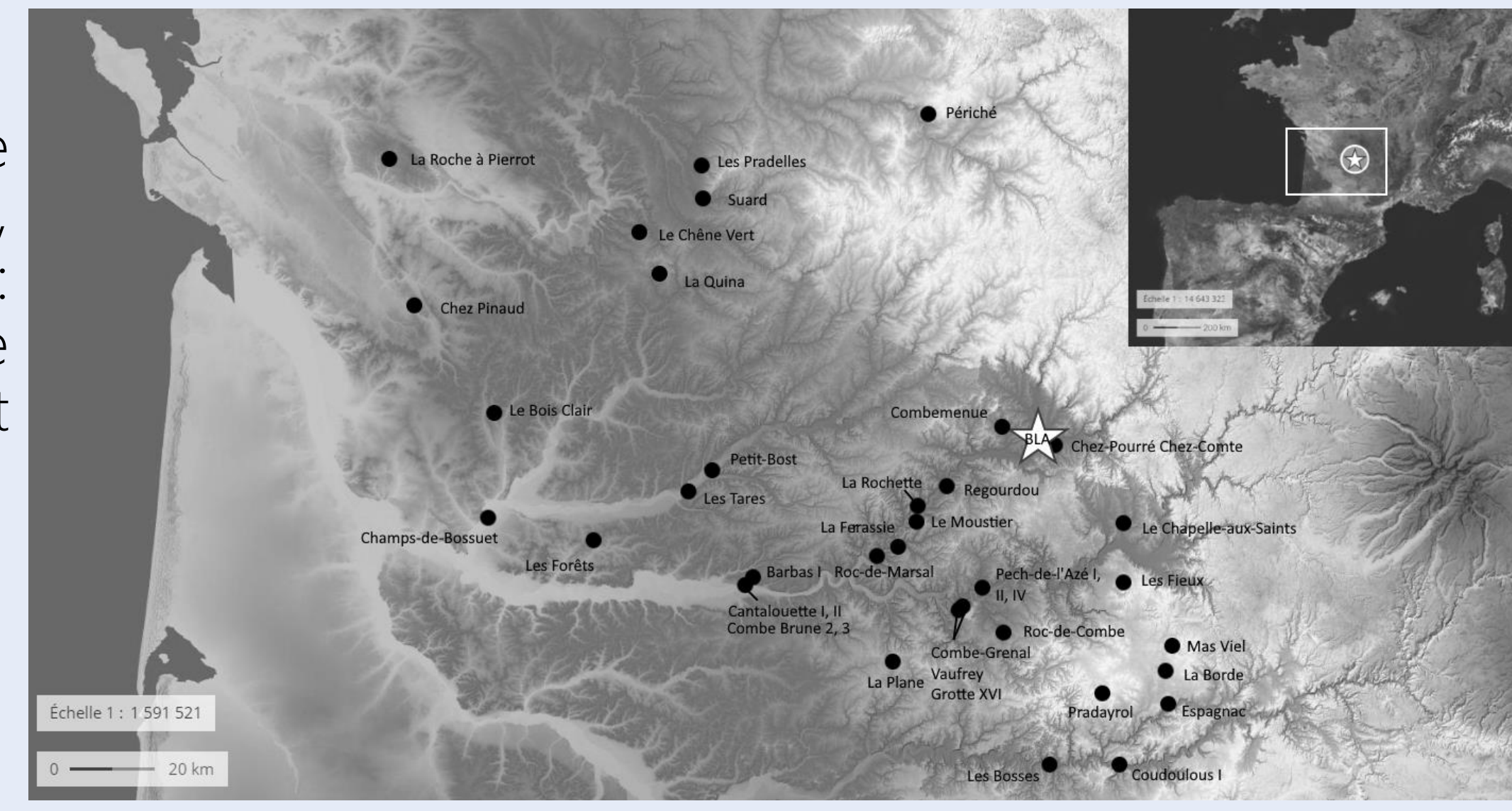
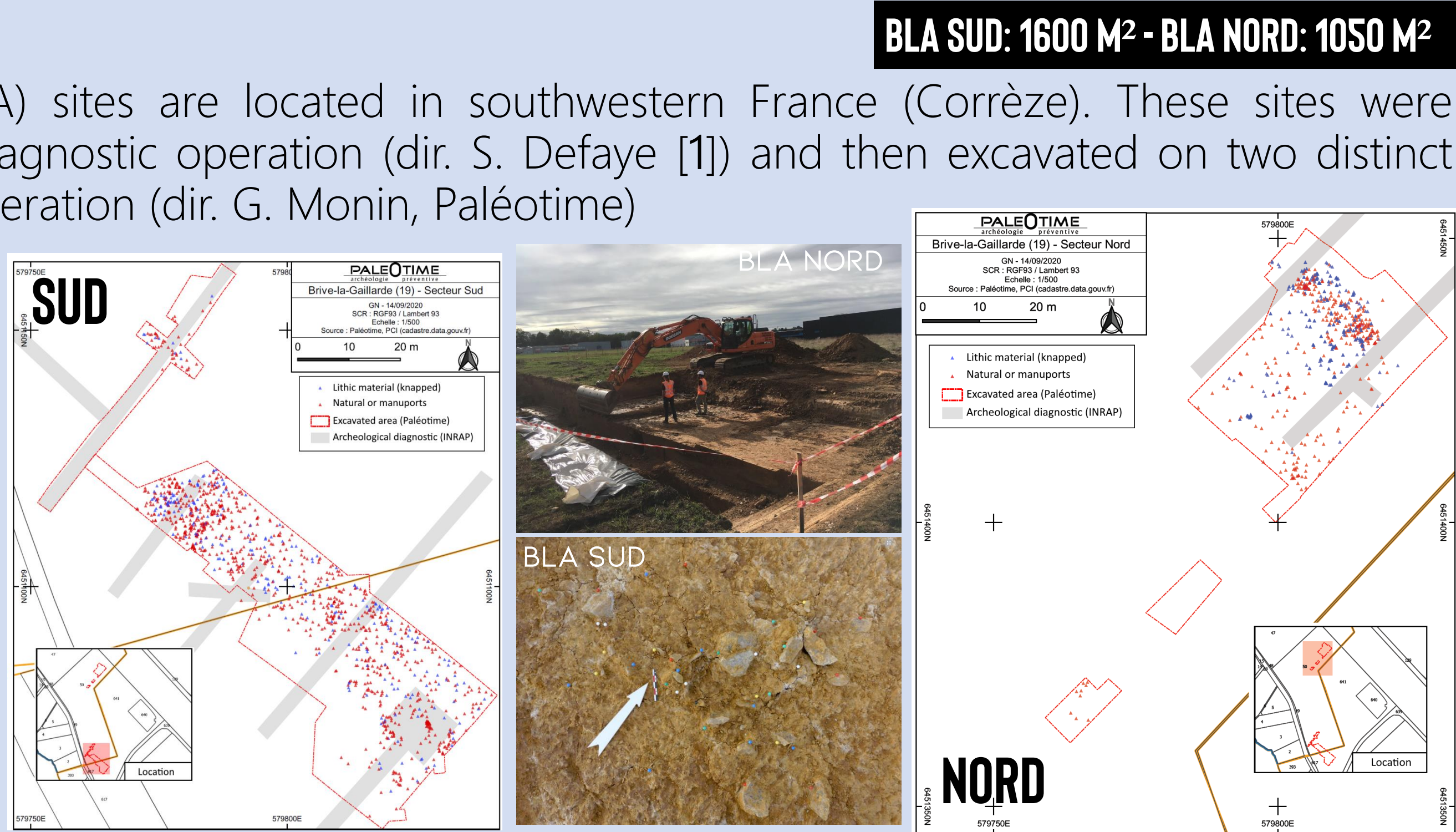
INTRODUCTION

Southwestern France is an area well known for its numerous Middle Paleolithic occupations, as evidenced by the eponymous site of Le Moustier or other major sites such as Combe-Grenal or La Ferrassie among others. However, peripheral areas such as the Brive basin are very little known for the Paleolithic. Only a few sites have been excavated: la Chapelle-aux-Saints, Chez Pourré-Chez Comte or Combemenu. We report here a new evidence of Middle Paleolithic occupation in the department with the open-air sites of Brive-Laroche-Aérodrome (BLA). In a different mineral environment, these sites highlight technical and economic behaviors specific to these peripheral areas.

SITE PRESENTATION

Brive-Laroche Aerodrome (BLA) sites are located in southwestern France (Corrèze). These sites were discovered in 2015 during a diagnostic operation (dir. S. Defaye [1]) and then excavated on two distinct areas in 2019 in a preventive operation (dir. G. Monin, Paléotime)

Mechanical methods were used, excepting for an unusual concentration excavated manually. The site consists of lithic material that is scattered in a yellow argillic horizon developed on silty colluvial deposits. First spatial analysis suggest a complex taphonomic history of the sites formation.

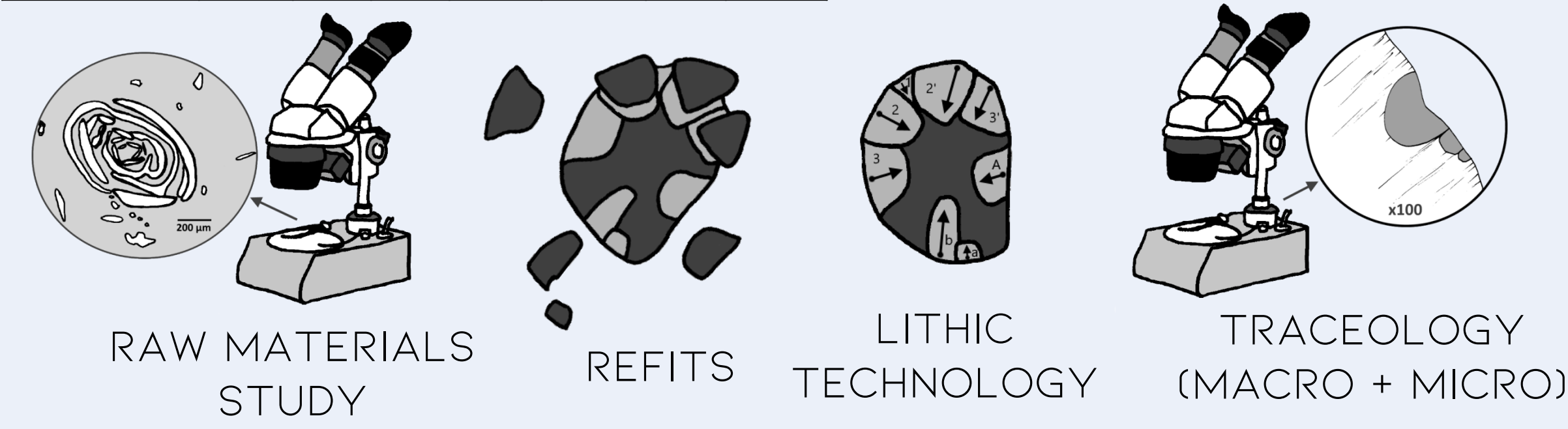


MATERIAL AND METHODS

BLA SUD = 972 PIECES **BLA NORD = 340 PIECES**

BLA SUD	Quartz	Flints	Gneiss	Granite	Metam.	Total	%
Debitage products	582	164	2	2	2	752	77,4%
Flake-tools	27	26	-	-	-	53	5,5%
Cores	151	20	2	-	1	174	17,9%
Hammers	30	-	1	1	-	32	3,3%
Cores recycled as hammers	37	3	1	-	-	41	4,2%
Anvils	3	-	-	-	-	3	0,3%
Total	777	184	5	3	3	972	100,0%

BLA NORD	Quartz	Flints	Gneiss	Total	%
Debitage products	190	103	3	296	87,1%
Flake-tools	-	23	-	23	6,8%
Cores	25	8	2	35	10,3%
Pebble-tools	2	-	-	2	0,6%
Hammers	5	-	2	7	2,1%
Total	222	111	7	340	100,0%



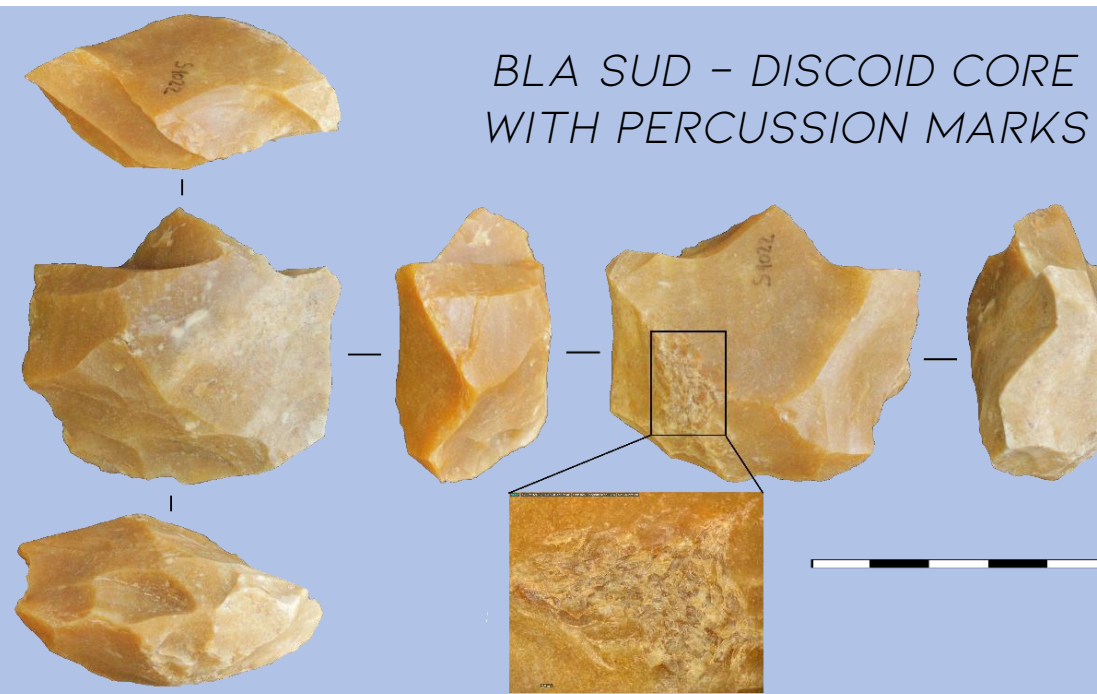
TECHNOLOGICAL & TECHNO-ECONOMIC ANALYSIS

BLA SUD LITHICS

REFITS RATE: 9%
MAIN RAW MATERIAL: QUARTZ
 → S.S.D.A., Discoid *s.l.*
 → Cores used as hammers
 → Rare pebble tools and flake tools (notches & denticulates)
SECONDARY RAW MATERIALS: FLINTS
 → Levallois, Cores-on-Flakes, Discoid *s.s.*
 → Dominant flake tools (scrapers)
 → Cores used as hammers

79,9% QUARTZ - 18,9% FLINTS - 2,2% GNEISS, GRANITE

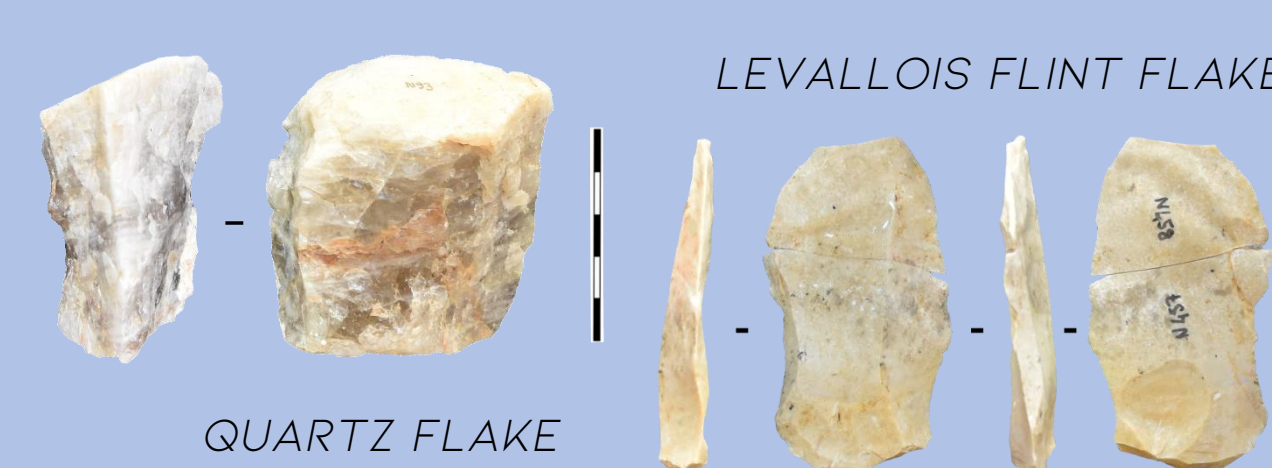
TECHNICAL & ECONOMICAL BEHAVIORS
 - RAW MATERIALS ECONOMY
 - RECYCLING: RAMIFICATION, CORE REUSE



TRACEOLOGY
 → Moderate influence of mechanical alterations
 → Coloured patina: may have participated in traces preservation
 → Diverse worked materials and actions performed with flakes

65,2% QUARTZ - 32,2% FLINTS - 2,6% GNEISS

TECHNICAL & ECONOMICAL BEHAVIORS
 - RAW MATERIALS ECONOMY
 - RECYCLING: RAMIFICATION



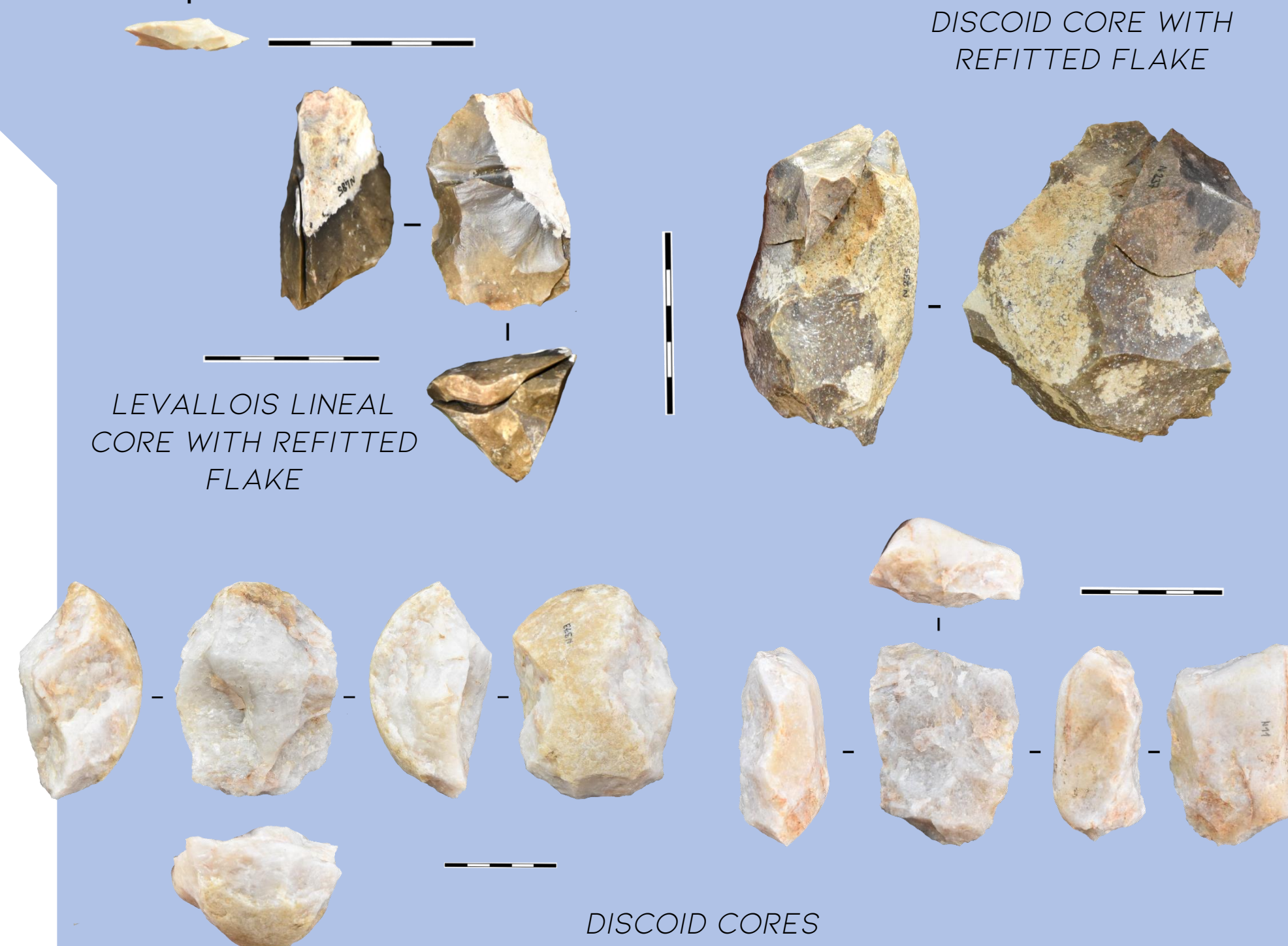
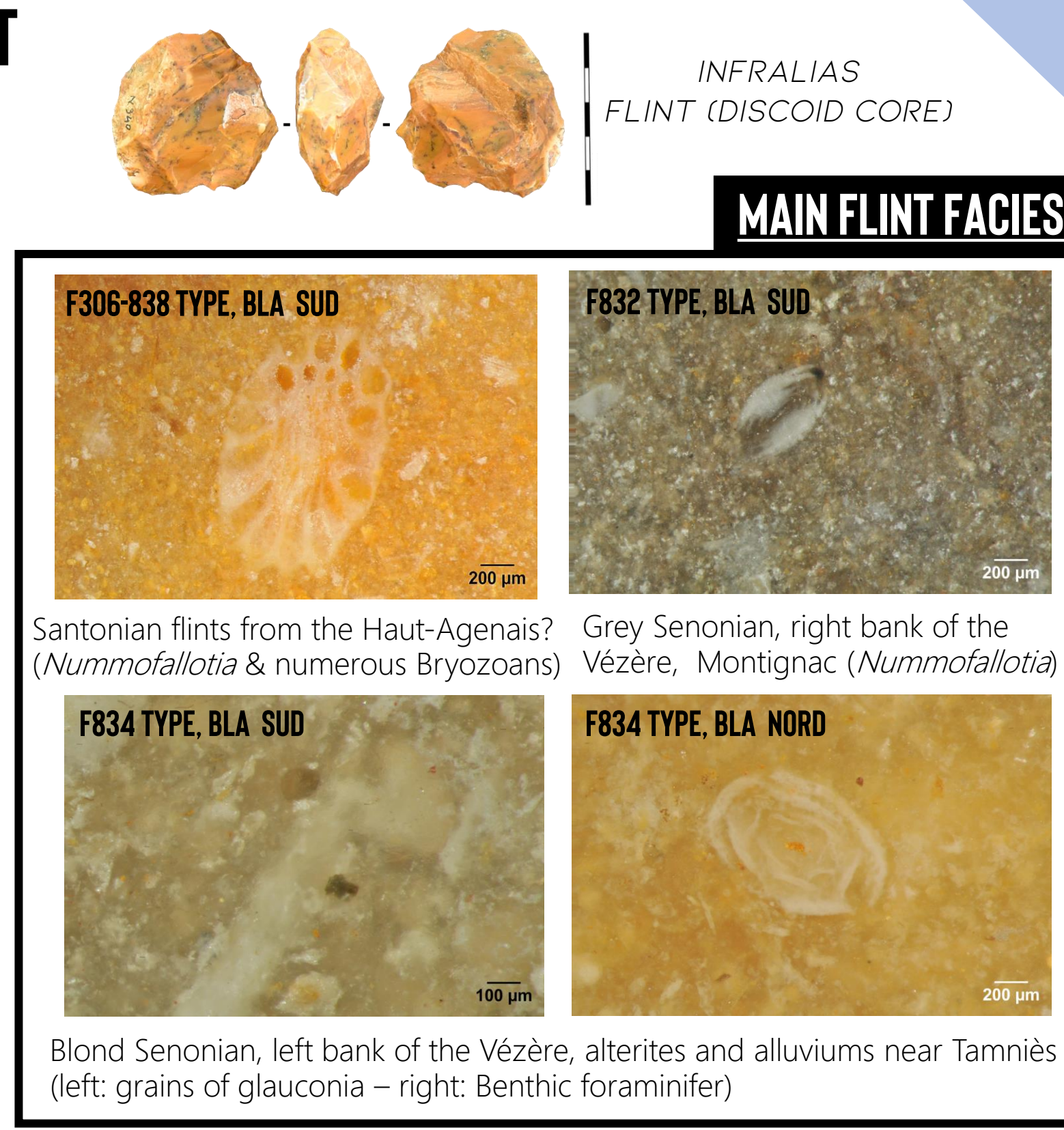
BLA NORD LITHICS

REFITS RATE: 13,2%
MAIN RAW MATERIAL: QUARTZ
 → S.S.D.A., Discoid *s.l.*, hierarchized debitage
SECONDARY RAW MATERIALS: FLINTS
 → Levallois, Cores-on-Flakes, Discoid *s.s.*
 → All flake tools (scrapers, Mousterian points) are in flint
 → Presence of 2 bulb retouchers

RAW MATERIALS PROCUREMENT

- **QUARTZ, GNEISS, GRANITE**
 → Local (within Corrèze & Vézère alluviums)
 - **FLINTS**
 → 20 silicites identified = 6 geotopes
 → Mainly Santonian near Montignac; Tamniès plateau, Bajocian-Bathonian from the Tourmente valley (+Lot, Haut-Agenais ?)
 → Lithotypes diversity more important for BLA SUD, distance more important

= DIFFERENT FLINT PROCUREMENT BETWEEN THE TWO SITES



DISCUSSIONS & CONCLUSIONS

BLA SUD and BLA NORD present numerous similarities, in particular on the knapping method used and on the techno-economic behavior. Local quartz are dominant, represented by entire *chaînes opératoires*. Exogenous flints are used, exhibiting partial and ramified *chaînes opératoires* with different mineral areas exploited by the two sites. Some specificities exist within each site, such as cores recycled as hammers for BLA Sud and a specific raw material economy for BLA Nord (all retouched tools are in flint). The use of metaquartzites as main raw materials influence the knapping methods used. Discoid (mainly unifacial), S.S.D.A. and bipolar-on-anvil methods are used to produce backed flakes (cortical back & *à dos limité*). The classical markers of the Middle Paleolithic are however present in the flint series, as often [2,3,4]: Levallois, cores-on-flakes & Discoid (bifacial). The series can be attributed to a mixed technocomplex [5]. OSL dates ongoing by the CR2PA should confirm the attribution to Late Middle Paleolithic. The two lithic assemblages allow us to better understand the dynamics of occupation of the Brive Basin and their relationships with surrounding areas during the Middle Paleolithic. The main use of quartz enables us to highlight once again the variability that exists within the Mousterian techno-complex and the adaptability of Neanderthals to their environment. The techno-economic behaviors identified are comparable to those of other neighboring zones where metaquartzites dominate such as Les Fieux, Le Mas Viel or Pradayrol [2,3,6]. The adaptation to local raw materials constraints and the diversity of flint identified appear as typical features of these Late Middle Paleolithic sites, linked with specific mobility patterns and anticipation of needs. All these sites are included in a wider territory, covered by the groups according to needs and resources.

REFERENCES

[1] Defaye, S. (Dir.), 2015. Brive-la-Gaillarde, Saint-Pantaléon-de-Larche - Ancien aérodrome de Brive-Laroche, phase 2. Rapport de diagnostic d'archéologie préventive, INRAP. [2] Colonge, D., et al., 2008. Périché (Verneuil-sur-Vienne, Haute-Vienne), un gisement paléolithique moyen en Limoustin cristallin. BSPF, mémoire XLVII, pp. 151-171. [3] Villeneuve, Q., et al., 2019. Etude techno-économique du Moustérien de Pradayrol (Caniac-du-Causse, Lot): entre mobilité des ressources lithiques et adaptation aux matériaux locaux, un exemple de gestion complémentaire des quartz et silex au Paléolithique moyen récent en Quercy. C.R.Palévol, 18(2), 251-267. [4] Brenet, M., Cretin, C., 2008. Le gisement paléolithique moyen et supérieur de Combemenu (Brignac-la-Plaine, Corrèze), du microvestige au territoire, réflexions sur les perspectives d'une approche multiscale. B.A.R. International Series, 1831, pp. 35-44. [5] Faivre, J.-Ph., et al., 2017. Late Middle Paleolithic lithic technocomplexes (MISS-3) in the northeastern Aquitaine Basin: Advances and challenges. Q.I., 433, 116-131. [6] Faivre, J.-Ph., et al., 2013. Paléolithique moyen du Quercy: comportements techno-économiques et variabilité des productions lithiques. In: Jarry, M., et al., (Eds.), Modalité d'occupation et d'exploitation des milieux au Paléolithique dans le Sud-Ouest de la France: l'exemple du Quercy, Paléo supplément (4), pp. 231-270.

AKNOWLEDGEMENTS

We would like to thank the SRA Nouvelle Aquitaine and particularly T. Bismuth, G. Navennec (Paléotime) for the repartition maps as well as the excavation field team.